

Health Literacy Knowledge and Experiences of Nursing Students at a South African University

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Abstract

A worldwide high prevalence of low health literacy has been reported, and despite the emergence of health literacy as a better determinant of health than socio-economic status, it is alarming that little attention is being accorded to training health workers on health literacy practices. This study thus sought to describe the health literacy knowledge and experiences of nursing students gained during training in order to establish a basis that will inform future health literacy training. A descriptive cross-sectional survey was carried out using a questionnaire to establish the health literacy knowledge and experience of 82 nursing students. Data were analysed using descriptive as well as inferential statistics. The students exhibited unsatisfactory health literacy knowledge as measured by the questionnaire, with an average score of 73 per cent, with knowledge gaps in some areas – for example with regard to the effect of low health literacy on patient health outcomes and identification of patients with low health literacy. Their health literacy experience was also lacking, with students only reporting some experience in the use of written materials in providing patient education. The results portray that the emphasis of health literacy in the curriculum failed to have a sufficient effect on health literacy knowledge.

Keywords: nursing students; descriptive research; health literacy experience; health literacy knowledge; South Africa



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Introduction

It is estimated that almost half of all Europeans had been found to have inadequate health literacy skills (WHO 2013). A survey conducted by the National Assessment of Adult Literacy in the United States (US) estimated that only 12 per cent of adults have proficient health literacy (US Department of Health and Human Services 2012). The US Department of Health and Human Services, Centers for Disease Control and Prevention, and National Center for Health Statistics (2012) defines health literacy as the capacity of an individual to obtain, interpret and comprehend basic health information and health services and the competence to use such information and services to enhance health. It is also the currency through which individuals negotiate access to quality healthcare. A survey conducted by the National Assessment of Adult Literacy found that more than a third of US adults (approximately 77 million people) would be unable to perform routine health tasks, such as reading and adhering to instructions on a prescription drug label or complying with standard immunisation schedules (US Department of Health and Human Services, Centers for Disease Control and Prevention, and National Center for Health Statistics 2012). In South Africa and other African countries, this problem is compounded by multiple official languages causing communication barriers between healthcare workers and patients. Another issue is the general low English literacy levels in Africa, which makes low health literacy a big challenge since most health information is communicated in English.

Nurses have the largest responsibility to provide patient education since they form the largest segment of the health workforce (Barrett-Marshall 2008). The nurses' role in providing healthcare information in a variety of health settings is imperative as they constantly face challenges presented by persons with low health literacy. Nurses are therefore the best solution to the health literacy crisis because they are already in an excellent position to promote effective communication between providers and patients (Singleton and Krause 2010).

In a health literacy workshop convened in Washington D.C. in 2013 to discuss improving health, health systems, and health policy around the world, it was pointed out that in South Africa there are no education efforts with regard to health literacy that target health professionals, let alone nursing students.

Problem Statement

Health literacy is currently emerging as a major determinant of health status and mortality (WHO 2013), yet it is not receiving enough attention especially among health professionals. It is imperative that nurses and other healthcare providers be knowledgeable and skilled in the detection of patients with limited or low health literacy to improve patient health outcomes. There is a scarcity of health literacy research within the literature. It is unknown the extent to which student nurses in South Africa are

knowledgeable and skilled with regard to health literacy, therefore the need to establish their knowledge and experiences in order to improve their educational preparation in this regard.

Aim

To investigate the knowledge and experiences of patient health literacy by undergraduate nursing students at a university in South Africa.

Objectives

1. To describe nursing students' knowledge of the effects of low patient health literacy.
2. To describe nursing students' knowledge of the signs and symptoms of low patient health literacy.
3. To describe the knowledge of nursing students' regarding patient health literacy during patient interaction with the health environment and resources.
4. To assess nursing students' knowledge of factors and strategies that promote patient health literacy.
5. To describe the health literacy experiences of bachelor nursing students at a university in South Africa.

Literature

Health literacy is regarded as a more powerful predictor of health status than education attainment, social and economic status, gender or age (Parker, Wolf, and Kirsch 2008). Patrick et al. (2009) found that the majority of Australians are likely to have low health literacy. A study of 200 patients attending a tertiary care hospital in southern India revealed that the health literacy status was below the adequate level in more than 50 per cent of the patients (Rathnakar et al. 2013). While these studies indicate the possibility that low health literacy is prevalent worldwide, the status of health literacy in Africa is not well documented.

Besides studies on the health literacy status of patients, a number of studies have been conducted to determine the health literacy knowledge among nursing students and professional nurses. Nurses represent the major workforce required to improve the health literacy status of patients. To this end, nursing education has an important role in preparing nurses for this task. The effect of educational input regarding health literacy was measured in a comparative study conducted to assess the knowledge of health literacy of bachelor nursing students before and after implementation of an online educational module. The study reported a significant difference between the pretest and post-test scores (McCleary-Jones 2012). This finding highlights the benefit of the inclusion of health literacy education in the nursing curriculum.

Studies to assess the integration of health literacy in clinical practice among undergraduate nursing students from a Canadian university (Egbert and Nanna 2009), and another in the US among medical students (Ross et al. 2013), revealed that students possessed extraordinary competencies in dealing with health literacy. However, recommendations were made that instructional strategies that deepen students' existing knowledge and skills in health literacy be included before students graduate from nursing programmes.

These studies demonstrate that students have some knowledge of health literacy despite some gaps. However, of more concern is the fact that these gaps also exist among registered nurses currently in practice. In this regard, a study conducted among 456 registered nurses who attended an annual educational conference in the US to determine nurse practitioners' knowledge, experience, and intention to use health literacy strategies in practice, concluded that the knowledge of health literacy and health literacy strategies was low (overall score = 69%). Screening patients for low health literacy and evaluating patient education materials were also found to be areas with a knowledge deficit (Cafiero 2013).

Macabasco-O'Connell and Fry-Bowers (2011) investigated the knowledge and perceptions of health literacy among nursing professionals in California. The results of the study revealed that nursing professionals had limited knowledge of health literacy and little understanding of the role health literacy plays in patient health outcomes, and also revealed that health literacy was of low priority among providers and organisations. These results reveal that knowledge of health literacy is low not only among student nurses but also in registered nurses in practice.

Methods

Design and Participants

A descriptive cross-sectional survey design was utilised to gain information about nursing students' health literacy knowledge and experience. The study population comprised fourth-year undergraduate nursing students. The data were collected during a lecture session using a self-administered questionnaire.

Data Collection

The questionnaire was developed based on the work of Cornett (2009) on assessing and dealing with health literacy. The questionnaire focuses on demographics: gender, age and any education undertaken after matric before the nursing degree, knowledge of health literacy and health literacy experience in the curriculum as well as in the clinical areas. Cronbach's alpha score was .825. Data were collected in September 2015.

Data Analysis

Data were analysed using SPSS version 23. Measures of central tendency and dispersion were used in the description. For the Likert-scale type questions, agree and strongly agree were given a score of one, strongly disagree, disagree, and not sure were scored zero. Reverse coding was done for negative statements.

An independent Kruskal-Wallis test was run to compare the medians of the knowledge scores against the age groups of the participants. A one-way analysis of variance (ANOVA) was conducted to determine whether the variance in the emphasis on health literacy in the curriculum is in any way a reflection of the health literacy knowledge scores.

Results

Of the 82 respondents in the study, 57.3 per cent were aged between 20 and 24 years, while the 40–60 age group was the lowest at 3.7 per cent. There were more female (75.6%) than male (24.4%) respondents. The mean age was 26.4, the median was 24, and the range was 37.

The majority (78.1%) of the respondents had no prior or post-matric education, 7.3 per cent had an undergraduate degree and 14.6 per cent obtained certificates or diplomas. An independent sample Kruskal-Wallis test run to compare the distribution of knowledge scores across these categories revealed a p-value of .670, which implies that the fields of study for prior education may not be health related, making it irrelevant when it comes to knowledge of health literacy.

Health Literacy Knowledge

Generally, the performance on the health literacy knowledge questionnaire was average. However, considerable knowledge gaps were evident in three sections: the effects of low patient health literacy, the signs and symptoms of low patient health literacy, and patient health literacy during patient interaction with the health environment and resources. The score on all 33 questions was 73.5 per cent. The scores ranged from 0 per cent to 96.97 per cent, mode: 78.79 per cent, SD: 15.54.

The respondents performed best in the section on knowledge of factors and strategies that promote patient health literacy, with > 90 per cent correct responses. They performed poorly in questions 1, 2, 8 and 20. (See Tables 1 to 4.)

Table 1: Knowledge of the effect of low patient health literacy

<i>Questions</i>	<i>Frequency (%)</i>
1. Low health literacy is associated with poorer overall health status	44 (54)
2. Low health literacy is associated with increased emergency department and hospital use	44 (54)
3. Patients with low health literacy understand medical vocabulary and the basic concepts in health	51 (62)
4. Low health literacy is associated with poor ability to take medications properly	53 (65)
5. Low health literacy is associated with poor ability to interpret labels and health messages	54 (66)
6. Patients with low health literacy often miss appointments and/or make errors regarding their medication	56 (68)
7. Low health literacy is associated with inability to utilise health services, e.g. for administration of vaccines	59 (72)

Table 2: Knowledge of symptoms of low patient health literacy

<i>Questions</i>	<i>Frequency (%)</i>
8. People with low literacy skills are good at concealing their deficit so it is difficult to realise that a problem exists	27 (33)
9. Patients often make excuses when asked to read or fill in forms	52 (63)
10. Patients provide an incomplete medical history or check items as “no” to avoid follow-up questions	54 (66)
11. A patient’s poor communication skills indicate a lack of intelligence	61 (74)
12. Patients with poor literacy skills may feel intimidated and avoid asking questions; this can be misinterpreted to mean that they understand the instructions when they do not	71 (87)

Table 3: Knowledge of patient interaction with the health environment

<i>Questions</i>	<i>Frequency (%)</i>
13. A patient's literacy level is a concern in healthcare settings because some patients are not aware that they have low literacy skills	46 (56)
14. Patients with low health literacy are often considered non-compliant	49 (60)
15. Patients with low literacy skills are often ashamed of this problem and rarely tell anyone	56 (68)
16. People with poor literacy skills find that understanding healthcare information is a challenge	65 (79)
17. Patients with low health literacy skills understand medical jargon	66 (81)
18. Filling in registration forms, health histories, and consent forms is difficult for those with low health literacy skills	67 (82)
19. Stress and anxiety limit the ability to listen, learn, and remember	75 (91)

Table 4: Knowledge of factors and strategies that promote patient health literacy

<i>Questions</i>	<i>Frequency (%)</i>
20. Provide this help preferably in an area where others can overhear what is being said	35 (43)
21. Reinforcing information is not necessary for retention	44 (54)
22. Patients with low literacy skills are not likely to benefit from seeing pictures	57 (70)
23. To increase retention, speak slowly and limit the amount of advice given to patients	60 (73)
24. To increase retention, organise the information logically, focusing on the three to five most important “need-to-know” points	72 (88)
25. Offer all patients help in completing forms	72 (88)
26. Ask for all necessary information at registration or during admission to a facility	74 (90)
27. Ensure that verbal instructions are reinforced with printed instructional materials that are easy to read and visually appealing	75 (91)
28. Break down complex instructions into small units of information to help the patient grasp and understand the information and to increase retention	76 (93)
29. Use plain language as opposed to medical jargon	78 (95)
30. Review the instructions with patients and check to be sure they understand the information	79 (96)
31. Simplify all forms using clear language, non-medical terms when possible, and easy-to-read formats	79 (96)
32. Make written instructions clear and simple, using language that is easy to read and understand	80 (98)
33. Ask patients to clarify what the doctor told them before they leave	80 (98)

Health Literacy Experience

To rate their experience with health literacy in the nursing curriculum, the students were asked how frequently health literacy was emphasised in the nursing curriculum. Their responses are as indicated in Table 5.

Table 5: Frequency of health literacy emphasis in the curriculum

<i>Options</i>	<i>Responses (%)</i>
Most subjects in the students' curriculum	51.2
One subject	28.0
At least once	9.8
Never	11.0

Table 6 presents the frequencies of health literacy experiences of students with a focus on patient interaction.

Table 6: Health literacy experience in patient care

<i>Questions (n = 82)</i>	<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Very often</i>	<i>Always</i>
38. How often do you evaluate the cultural appropriateness of healthcare materials including different handouts, videos and audiotapes before using them for teaching?	9	21	33	14	5
39. How often do you evaluate the use of illustrations in written healthcare materials before using them for teaching?	5	17	32	18	10
40. How often do you use written materials to provide healthcare information to an individual or a community group?	1	10	27	29	15
41. How often do you use audiotapes to provide healthcare information to an individual or a community group?	21	25	22	13	1
42. How often do you use videotapes to provide healthcare information to an individual or a community group?	21	28	22	8	3
43. How often do you use computer software to provide healthcare information to an individual or a community group?	16	29	15	18	4

Discussion

A total of 54 per cent of the respondents were unable to identify low health literacy as being associated with poorer health status and increased emergency department use,

they also could not identify that poor health status and increased emergency use are an effect of low health literacy (Table 1), pointing to a lack of understanding of the meaning of health literacy or its effects on health status. An Asian study found that the majority of immigrant women had inadequate health literacy to manage health information and to navigate the Taiwanese healthcare system. The interpersonal communication gap between immigrant women and healthcare providers exists because of the lack of health literacy in addition to language and cultural barriers (Tsai and Lee 2016). The majority (62%) of the respondents correctly indicated that patients with low health literacy do not understand medical vocabulary and the basic concepts in health, showing that the respondents had a firm grip of some basics of health literacy. Macabasco-O'Connell and Fry-Bowers (2011) reported lower results, albeit among nurse professionals with only 38 per cent having an awareness that low health literacy is associated with the inability to utilise health services, yet 72 per cent of the students (in this study) correctly associated low health literacy with the poor utilisation of health services.

Only 33 per cent of the students were able to identify that people with low literacy skills are good at concealing their deficit and that it is difficult to identify that a problem exists. This indicates a gap in knowledge regarding the lengths that patients may go through to avoid being exposed as health illiterate and the possibility that respondents do not expect patients to be deceitful when divulging information regarding their health. The wording of the question may also have contributed to this result by portraying the patient as dishonest, which is not what is implied by the statement; however, it is possible that the respondents may have perceived it that way.

Three-quarters of the respondents indicated that a patient's poor communication skills do not indicate a lack of intelligence. This is a good indication that students interact respectfully with patients and are likely to create a shame-free environment to avoid embarrassing patients. In this environment, patients will feel comfortable disclosing personal information to the nurse, without fear of embarrassment. Two-thirds of the respondents were aware that patients often make excuses when asked to read or fill in forms. However, a study carried out to examine health literacy knowledge and experiences of nurses in the State of Georgia reported that 92 per cent of the respondents were knowledgeable that when patients are provided with health information and they express a desire to take the information home to read, it may be an indication that the patient has difficulty reading the materials (Knight 2011). The respondents in the Georgia study were, however, registered nurses, therefore likely to be more knowledgeable and experienced than the student nurses in the current study.

The majority of the respondents correctly identified that patients with poor literacy skills may feel intimidated and avoid asking questions, which may be misinterpreted to mean that they understand the instructions when in fact they do not. It is important that nurses be cognisant that patients may lack the knowledge and skills to ask for clarification for instructions or even to ask questions about their health. Being aware of this should

prompt nurses to encourage patients to open up by providing a judgement-free environment. Nurses should make it their goal to ensure that patients are able to utilise and to reap maximum benefits from the healthcare that they provide.

More than half of the respondents recognised that patients' literacy level is a concern in healthcare settings because some patients are not aware that they have a low literacy. A total of 44 per cent of the respondents reported not knowing that some patients are unaware of their lack of health literacy capabilities, which is a point of concern (see Table 3). The implication is that almost half of the respondents would be unable to identify a patient with low health literacy, let alone apply any strategies to enhance their health literacy. This highlights a knowledge gap, which can only be filled by educating nursing students about health literacy, more so on how to recognise low health literacy.

About 68 per cent of the respondents were able to identify that patients with low literacy are often ashamed of this problem and rarely tell anyone compared to the 89 per cent score in the study by Cormier and Kotrlík (2009). A total of 57 per cent of the respondents agreed that healthcare providers should provide help to patients preferably in an area where they can be overheard by others (see Table 4). Normally a patient with low health literacy would not disclose much information for fear of embarrassment. It is therefore possible that the students misinterpreted the question, based on the manner in which the question was phrased. Around half of the students disagreed with the statement "reinforcing information is not necessary for retention of information". This was a reversed question, which may have a lot to do with the poor performance owing to acquiescence bias; however, it is a point of concern that about half of the respondents disagreed that reinforcing information while communicating with patients is necessary.

About half of the respondents reported having health literacy emphasised in most subjects in the curriculum, possibly attributed to the division of students into different classes during training or varying class attendance. The results of the respondents' experiences revealed that the students had little or no experience with the use of computer software, videotapes or audio tapes for patient education. However, they demonstrated adequate experience when it comes to written healthcare information and some experience with regard to the use of illustrations for patient teaching. Knight (2011) also reported similar results.

The ANOVA (p -value = .097) revealed no significant difference between the knowledge scores with relation to the students' reports regarding emphasis of health literacy in the curriculum. This indicates that the level of emphasis on health literacy was not sufficient to influence the scores. Table 6 shows the strongest health literacy experience as using written healthcare materials to provide health information to patients and community groups, followed by evaluating the reading level of healthcare materials before using them for patient teaching.

The areas of least health literacy experiences were in the use of audio tapes, videotapes and computer software in patient education. These results reflect the current practice in the field since written materials are more popular when utilised for patient teaching than audio tapes, videotapes and computer software. This is probably owing to the high cost of these materials compared to that of printed materials.

These results show that health literacy exposure in the nursing curriculum is very limited and that the participants will benefit from increased exposure to health literacy in training. Milford et al. (2016) stated that presurveys and post-surveys among medical students' attitudes to the importance of health literacy showed a statistically significant improvement from baseline. They concluded that providing medical students with health literacy training and the opportunity to work with individuals with low health literacy greatly increased their health literacy knowledge and skills. Coleman (2015) conducted an intervention, which sought to examine the effects of health literacy training on physicians and non-physician health professionals. A total of 48 per cent of the professionals reported having overestimated their pretraining understanding of health literacy issues though significant improvement was noted post-training. However, results varied by years of experience, indicating the importance of exposure to health literacy in training.

Lambert et al. (2014) interviewed health professionals in Australia, New Zealand and Canada to ascertain their perceptions of barriers that their patients face while navigating the healthcare system. They found that health professionals have a limited understanding of health literacy and of the consequences of low health literacy for their indigenous patients. This lack of understanding combined with the perceived barriers to improving health literacy limit their ability to improve their patients' health literacy skills and also the capacity to gain understanding of their illness and management of their health conditions. Koster et al. (2016) set out to determine how pharmacy staff identify and support patients with limited health literacy to improve medication use. The majority of the staff mentioned that they recognise these patients based on intuition. This underlines the need to create more awareness of health literacy among not only nurses but also other health professionals. Contrary to literature on students' lack of proficiency in providing patient education, Scheckel, Emery and Nosek (2010) revealed that students possessed extraordinary competencies in acquiring health literacy. They, however, emphasised the need for teachers to design instructional strategies that deepen students' health literacy knowledge and skills before graduating from nursing programmes.

Conclusion

This study has shown that nursing students have some health literacy knowledge but more can be done through training to enhance their knowledge and skills in health literacy. As healthcare providers it is important to know the strategies that enhance health literacy. Knowing how to assess patients' ability to read and understand health

information is essential if we are to identify the most vulnerable patients who most need help in dealing with their low health literacy. Many health literacy studies have shown that the majority of healthcare providers are not aware of the effects of health literacy on health outcomes, and that those who do are not equipped with skills needed to manage low health literacy. It therefore goes without saying that we should teach future generations of not only nurses, but also other healthcare workers effective communication strategies to enable patients with low health literacy to reap the benefits of healthcare and to maintain good health and well-being. Training all cadres of health workers who interact with patients as they navigate the healthcare system will ensure an all-rounded approach, which will be of more benefit to the patients.

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