Are nurses ready for evidence-based practice? A descriptive study of information literacy competency among clinical practicing registered nurses in a private hospital in Malaysia

Chun Hoe Leng, Suk Yin Lim, Wei Fern Siew

Background: Nurses are the highest numbered healthcare professionals who work in a knowledge-driven environment, where accurate and updated information is needed when delivering care to clients. Information literacy has therefore become one of the criteria in determining nurses' readiness for evidence-based practice in recent years. In the actual day-to-day care practice, are nurses ready for this?

Objective: To determine the information literacy competency in readiness for evidence-based practice among clinical practicing registered nurses in a private hospital in Penang, Malaysia.

Methods: This cross sectional descriptive study was conducted in the selected private hospital. Universal sampling method was used. At the time of study, there were 443 registered nurses who met the eligibility criteria of this study. The registered nurses were asked to complete a self-reporting questionnaire about information literacy for evidence-based practice.

Results: The response rate was 86.2%, with a total of 382 returned questionnaires. Less than half of the participants (47%) stated that they frequently sourced information to support nursing practice. Poor research experiences among these participants were identified where 56% of the registered nurses never identified researchable problems, 59% have not evaluated a research report and 54% have never utilised research into practice. Registered nurses frequently sought information sources from colleagues or peers (65%) rather than from printed resources, where only 43% and 33% respectively make use of CINAHL and MEDLINE bibliography databases as the electronic resources for their practice.

Conclusions: Results demonstrated that information literacy among registered nurses from this hospital was lacking. Organisation efforts are needed to create awareness of information for evidence-based practice as well as to encourage more research activities and the search of bibliography database among its registered nurses.

Introduction

Nurses work in a knowledge-driven environment where accurate and updated information is needed to deliver safe care to clients. And for this reason, evidence-based practice (EBP) has become a great emphasis in health care in recent years (Grove, Gray, & Burn, 2013). Evidence-based practice (EBP) was defined as the "integration of the best research evidence with clinical expertise and patient needs and value (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). The promotion of EBP echoed the need of health care professionals to be clear about the importance of providing intervention which is not outdated and inappropriate to the type of patient cared for (Craig & Smyth, 2011). Some researchers had already ascertained that instilling such a culture must be the very first step for implementing EBP (Melnyk, Fineout-Overholt, Stillwell, & Williamson, 2010).

Nurses need information update constantly. According to Glasziou *et al.* (2008), an enormous amount consisting of more than 12,000 articles is freshly added weekly to Medline database, one of the important databases for nursing journals. For this reason, nurses' knowledge acquired from academic training years might soon become outdated once they enter into working life. On top of that, due to the hectic daily nursing tasks, nurses need to have an immediate access to information technology devices or printed literature, well developed searching skills and be capable of quickly processing and interpreting the information found (Dalton, 2013).

Information literacy (IL) is "knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner"

Division of Nursing, School of Health Sciences, International Medical University, No. 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, MALAYSIA

Address for correspondence:

Ms Siew Wei Fern, Division of Nursing, School of Health Sciences, International Medical University, No. 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, MALAYSIA
Email: weifern_siew@imu.edu.my

(Chartered Institute of Library and Information Professionals, 2014). IL can play an important role in nursing professional empowerment. In recognising the benefit of the use of evidence-based information, the American Nurses Association (ANA) (McNeil *et al.*, 2003) calls for all levels of nurses to acquire IL skills within the established guidelines of Scope and Standard for Nursing Informatics Practice. Birks, Francis, Chapman, Mills and Porter (2009) recognised the immaturity of nursing professionals in Malaysia and the need of assisting and promoting the development of skills directing to the implementation of the EBP. Shamsudin (2006) asserted that nurses in Malaysia must continually learn and proactively equip themselves with new skills and attain higher education to bring up the nursing profession in Malaysia. By obtaining competent IL skills, Malaysian nurses could be actively involved in improving patient care by initiating EBP and this will facilitate the uplift of the professional status of Malaysian nurses.

In order to implement EBP, nurses need to have acceptable IL skills to search and retrieve relevant literature from the massive resources available in this technology-driven century (Polit & Beck, 2013). According to the Association of College and Research Libraries, IL is inseparable with EBP as a professional standard of healthcare professions today (ACRL, 2014b). This important skill in identifying, searching and applying relevant information was published and emphasised in recent published Information Literacy Competency Standards for Nursing.

Unfortunately, many studies had proven that these ideal conditions are not happening in reality. Literature revealed that many nurses were unprepared for EBP because they do not possess IL to engage in EBP activities (Pravikoff, Tanner, & Pierce, 2005; Thiel & Ghosh, 2008; Baker, Ellett, & Dudley-Brown, 2010).

At present, there are very few studies conducted on Malaysian nurses to assess their IL competencies, and none was focused on nurses in the private hospitals

(Lai, Teng, & Lee, 2010; Soh *et al.*, 2011). Despite the availability of research studied on IL of nurses worldwide, those findings may not capture the local perspective of Malaysian nurses as the IL skills and needs can differ significantly across different countries due to the differences in clinical environment and the country's development status (The SEA-ORCHID Study Group, 2011). A baseline assessment of nurses' readiness for EBP should be performed before actions are taken to initiate EBP (Thiel & Ghosh, 2008). As IL is the prerequisite for EBP, implementation of effective EBP in this country can only be achieved if nurses attain good IL skills.

This study was conducted to describe the IL competencies of the registered nurses (RN) in a selected private hospital in Malaysia. We hope that through this study, the baseline knowledge of the registered nurses' IL in the selected setting and their perceived barriers that potentially hinder their information search can be identified. Understanding the IL of registered nurses in this organisation will also allow the authorities to develop strategies to assist registered nurses to apply updated evidence into their daily clinical decision making.

Methodology

We carried out a descriptive study using a survey technique over a three weeks' period in October 2014. A universal sampling technique was used, where at the point of study there were 443 RNs from this hospital who met the criteria of this study. The inclusion criteria were: Malaysian, registered with Nursing Board Malaysia, full-time employment and working in clinical areas delivering direct patient care. Those nurses who did not provide direct nursing care (e.g. administrators/ managers, educators) were excluded. Questionnaires were distributed by the nurse manager in each department and the participants were required to sign an informed consent.

The conceptual framework chosen for this study was the Information Literacy Competency Standards for

Nursing (ACRL, 2014a) where it relates the various IL skills into its five skill-based standards. The research variables of this study were organised based on these standards.

The instrument of this study was adapted (with permission) from The Information Literacy for Evidence Based Nursing Practice (ILNP) Questionnaire by Pravikoff *et al.* (2005). It comprised of demographics in Part A and research variables determining IL and barriers to IL in Part B. The questionnaire was pilot tested on 10 participants to ensure clarity and to rule out any ambiguity in the questions tested on the participants. Items-level content validity index on clarity, importance and relevancy was evaluated by 6 content experts comprising of 2 nursing tutors, 2 senior Registered Nurses, a Nursing Matron and a Deputy Director of Nursing of the hospital of the actual study site. Lynn (1986) recommended that the items content validity index should be not lower than 0.78. The entire items-level content validity index from this questionnaire was validated at 0.88 to 1.00.

This study was approved by IMU Joint-Committee on Research and Ethics. The data were analysed with Microsoft excel 2010 in percentages and mean scores.

Results

Of the 443 questionnaires distributed, 383 questionnaires were returned. The return and acceptance rate of this study was 86.5%. The attrition rate of 13.5% was due to sick leave, maternity leave and some of them did not want to participate in this study. The demographic data of the 383 respondents were tabulated in Table 1 below.

Table 1: Demographic data of respondents (n = 383)

Characteristic	n	%
Age (year)		
21 – 30	322	84.1
31 – 40	44	11.5
41 – 50	17	4.4
Gender		
Male	22	5.7
Female	361	94.3
Ethnic group		
Chinese	247	64.5
Malay	65	17.0
Indian	53	13.8
Others	18	4.7
Educational background		
Diploma in Nursing	363	94.8
Baccalaureate Degree	12	3.1
Associate Degree	8	2.1
Master's Degree and Doctorate Degree	0	0

Standard 1: Determines the nature and extent of the information needed

Table 2: How often do you need information to support your nursing role? (n = 379)

Responses	n	%
Often (≥ 2 times a week)	81	21
Regularly (weekly)	97	26
Occasionally (1 – 2 times a month)	161	42
Seldom (< once a month)	40	11

Table 2 shows how often the RNs needed information to support their daily nursing activities. When the respondents were asked whether they had identified a researchable problem in daily nursing role for the past one year, only 3% of the RNs said they did it more than 3 times, 29% said only once and 12% said two to three times. Meanwhile, 56% of them stated that they had not identified one problem at all in the past one year. When asked about the adequacy of the various information resources in the hospital, RNs rated that the printed materials (62%), online resources (49%) and other information resources (49%) in the hospital were adequate.

Standard 2: Accesses needed information effectively and efficiently

Table 3: When you need nursing information, how do you find it? (n = 383)

Sources of nursing information	Responses									
	Always		Frequently		Sometimes		Rarely		Never	
	n	%	n	%	n	%	n	%	n	%
Ask colleagues / peers	111	29	136	36	113	30	17	4	5	1
Internet / WWW	128	34	120	31	107	28	24	6	3	1
Bibliographic database	18	5	74	19	160	42	101	27	28	7
Journal / clinical guidelines	29	8	78	20	158	41	90	24	27	7
Books	35	9	78	21	178	47	74	19	15	4
Conferences, workshop, nursing program	31	8	104	27	186	49	54	14	7	2

Abbreviation: WWW, World Wide Web

As shown in Table 3, the majority (65%) of the participants chose to get nursing information by asking their colleagues and peers most of the time. On the other hand, only 5% of the participants stated that they always search the bibliographic databases while 19% stated that they search these reliable resources frequently. A total of 56% of the nurses in this hospital claimed that they have never been taught on the use of printed and paper-based journal indexes or electrical bibliography databases. Meanwhile, 43% of the participants do not search CINAHL while 33% had never searched MEDLINE. When asked on their capability in searching various resources, RNs rated themselves as 45% and 49% of success in searching Google Scholar and internet or World Wide Web respectively. The ability to use a computer and word processing programme (e.g. Microsoft Word) scored 3.46 and 3.48 respectively where the scale of 1 indicates novice and 5 as expert. However, the mean score was only 2.77 when it comes to the use of other computer programmes and bibliographic databases.

Standard 3: Critically evaluates the procured information and its sources

Table 4: In the last year, how frequent have you personally evaluated research report, utilised research findings in work and participated in research?

Responses	n	%
Evaluating research report (n = 377)		
> 3 times	10	3
2 – 3 times	42	11
Once	103	27
Not at al	222	59
Utilising research findings in work setting (n = 376)		
> 3 times	11	3
2 – 3 times	52	14
Once	109	29
Not at al	204	54
Participated in research (n = 379)		
> 3 times	42	11
2 – 3 times	110	29
Once	120	32
Not at al	107	28

Table 4 shows how frequent the RNs evaluated research report, utilised research findings and participated in nursing research for the last one year. Very few participants reported to have evaluated research reports, with only 3% of participants having done the evaluation more than 3 times.

Standard 4: Uses information effectively to accomplish a specific purpose

As shown in table 4, more than half of the participants (54%) never utilised research findings in their work setting at all.

Barriers in the use of research

The questionnaire also addresses the student's perceived main barriers to their personal use of research. The main barriers which hindered the RNs from undertaking research for personal gain were highlighted in Figure 1.
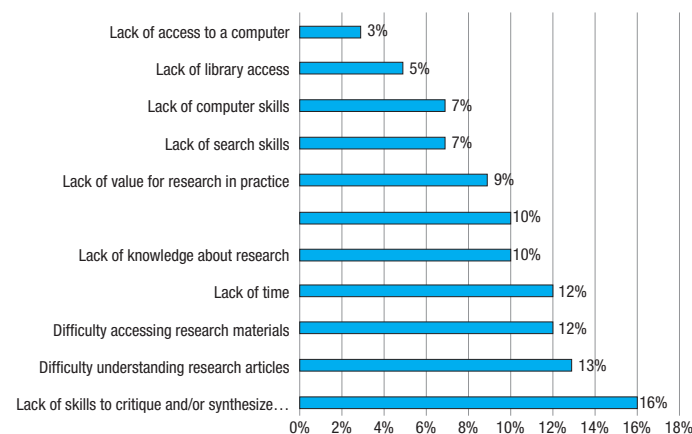
Figure 1: Main barriers to personal use of research (n = 383)

Discussion

From the results, it was revealed that most of the RNs in this hospital felt that they only needed information occasionally to support their patient care. This attitude was also reflected where more than half of the RNs were found to have never identified a researchable problem in the past one year. Literature had shown that information resources adequacy played a great influence on nurses' use of information (Marshall, West, & Aitken, 2011), however the RNs in this hospital scarcely performed the search on nursing information to guide their practice for reasons which may be due to lack of understanding and awareness of the importance of EBP. Instead, they relied on their colleagues or peers as their frequent source of nursing information and the most reliable bibliography database were inadequately used. In accordance with previous studies, interpersonal information from peers was the most frequently referred and preferred information sources due to its easy access for a quick answer (Pravikoff, Tanner, & Pierce, 2005; Thiel & Ghosh, 2008: Baker, Ellett, & Dudley-Brown, 2010). This is worrisome as majority of the RNs failed to recognise bibliography database as the most essential information source due to its greatest reliability. No doubt, this situation was likely because many of them were not trained and unconfident in the use of printed or paper based journal indexes or electronic bibliography databases. The unconfidence in using these resources can also be reflected from the poor ability to use a bibliography database rated by them, although they generally possess good computer skills. As diploma level RNs form almost all the respondents in this study, bibliography training needs to be strengthened in the diploma training in order to increase the use of up-to-date evidence.

Not only that, lack of research activity in the hospital causes the low awareness of research importance among the RNs. Lack of skills to critique and synthesise the literature was the highest ranked barrier that holds nurses back from research use. This was different from previous findings where time was the most frequently cited obstacles to the implementation of research evidence in practice. Implementing evidence is impossible if nurses do not know which evidence is stronger and should be incorporated in their patient care (Craig & Smyth, 2011).

Recommendation

In order to uphold the professionalism of nursing, it is recommended that diploma nurses should further their studies in order to increase their knowledge and improve their IL. The educational sector should reconsider diploma syllabus in order to train quality information literate nurses. However, the educator themselves must first be information literate. The hospital should provide more easily accessible information resources and should also set up a research group to study hospital and nursing care trends and at the same time, encourage the participation of their RNs in continual research and development activities.

An extensive research can be carried out to study a larger population to provide a clearer picture of IL skills among the whole Malaysian nursing population. Future investigation can also be explored from nursing tutors and administrators perspectives. This can help us to understand whether they have acquired IL skills to teach and influence nurses to be information literate and promote EBP culture for optimum patient care.

Conclusion

Overall, the study demonstrated that IL among registered nurses from this hospital was lacking. They are not ready for evidence-based practice application into their day-to-day nursing practice. Their knowledge of the importance of evidence-based practice in their work was insufficient, coupled with the lack of confidence and skills in searching for information through databases as evidenced by the RNs' responses. The hospital's efforts are needed to create awareness of information for evidence-based practice as well as to encourage more research activities and the search of bibliography

database among its registered nurses in order to prepare them to meet the unceasing challenges and complex needs in the care of clients in healthcare services.

Acknowledgements

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