

A survey of nurses' perceived barriers to research utilisation in Hong Kong

Aim

The aim of this study was to examine the barriers to research utilisation for nurses in a Chinese community.

Background

Enthusiasm towards the achievement and continuous development of professional status in nursing has resulted in an increased recognition of the need for distinct body of knowledge based on research to underpin nursing practice. Despite the drive towards evidence-based practice, implementation of the available research evidence is unclear and failure of research to inform nursing practice has been an important topic of debate and study over the past decade (Hutchinson & Johnston 2004).

Funk *et al.* (1991) is the pioneer to explore the scope and magnitude of nurses' perceived barriers to research utilisation in the United States (US) using a postal questionnaire entitled the Barriers to Research Utilisation Scale (BARRIERS). Reported barriers in Funk *et al.*'s (1991) and recent studies in the US and Europe within a variety of clinical settings include: lack of time, lack of authority to make changes, inadequate organisational and peer support, insufficient research knowledge and skills, and limited facilities and ability to search and interpret data generated from advanced statistics (Parahoo & Mccaughan 2001, Fink *et al.* 2005, Glacken & Chaney 2004). In Hong Kong, the health care system, culture and organisation are built on a mix of English colonial and Chinese traditional and hierarchical structure. As long as very few have been reported in Asian countries, potential barriers to research utilisation specific to Hong Kong need to be examined in order to provide direction for effective education and practice, as well as data for comparison across countries.

Design

This study used a cross-sectional, correlational design to elicit opinions of registered nurses.

Methods

A stratified randomised sample was selected from the hospital staff lists of two 800-bed regional general and two 600-bed psychiatric hospitals of the Hospital Authority, Hong Kong. About 200 nurses were selected from each hospital using a computer generated random numbers table and were invited to participate. This represents 13.3% of the 6,000 registered nurses in the study hospitals and 3.1% of the total number of practicing registered nurses in Hong Kong (n=25,770, Hong Kong Nursing Council 2009).

The 29-item self-administer BARRIERS (Funk *et al.* 1991) was administered to elicit nurses' views about barriers to research utilisation in their practice, due to its most frequent use in previous studies and high reliability and validity across settings and countries (Parahoo & Mccaughin 2001). Approval to conduct the study was sought and granted by the hospital research ethics committees to ensure rights and confidentiality of all respondents being protected. Registered nurses working full-time during the four-week period of questionnaire distribution were randomly selected and invited to complete the BARRIERS and a demographic data sheet. A cover letter with full information about the study was attached with the anonymous questionnaire and return of completed questionnaires implied consent to participate. To ensure high response rate, the questionnaires were hand delivered to the selected participants and a self-addressed envelopes were also provided for them to return the completed questionnaire into a collection box on their ward.

The respondents were asked to rate each item of the BARRIERS as to what they perceived as the barriers to their use of research in practice, according to a four-point Likert-type scale, from 1 = 'to no extent' to 5 = 'to a large extent'. The BARRIERS consists of four subscales: characteristics of the adopter of research (nurse, nine items), the organisation (or setting, eight items), the innovation (research, six items), and the communication of research (six items). The scale demonstrated high internal consistency (Cronbach's Alphas ranged from 0.81 – 0.87) and satisfactory test-retest reliability (Pearson's $r = 0.68 - 0.83$), as well as satisfactory content and construct validity (Hutchinson & Johnston, 2004). Content validity was re-examined by a panel of experts, including nurse educators, advanced practice nurses and nurse researchers, before use. Only minor amendments were made on two items, in which 'physicians' was amended to 'health professionals' and 'statistical analyses' was expanded to 'statistical and/or qualitative data analyses'.

Frequency and descriptive statistics were employed to describe demographic characteristics of respondents and summarise the BARRIERS scores. Pearson's and Spearman's correlation tests were used to examine the relationships between nurse characteristics and their perceived barriers to research. A list of top ranked barriers in which more than 50% of the respondents rated 4 or 5 were made.

Results

Finally, 710 registered nurses were recruited and the response rate was 88.8% (i.e. 710/800). The mean age and years of post-registration experience of the participants were 37.8 (SD 7.1, range 23 – 54) years and 10.8 (SD 8.1, range 2 – 30) years, respectively. Majority of them were female ($n=604$, 85.1%) and obtained bachelor of nursing degree ($n=550$, 77.5%). A wide variety of specialty areas such as medicine ($n=130$, 18.3%), surgery ($n=59$, 8.3%), intensive

and coronary care (n=26, 3.7%), and acute and rehabilitative psychiatric/mental health (n=69, 9.7%) were included. Approximately two-thirds had research experience (n=471, 66.3%) and most had direct patient care (n=598, 84.2%) as their main job function.

Means and standard deviations of the total and four subscale scores of the BARRIERS are presented in Table 1. The results indicated significant negative relationships between the BARRIERS total scores and the respondents' years of post-registration experience (Pearson's $r = -0.43$, $P = 0.001$), as well as their education level (Spearman's $r_s = -0.39$, $P = 0.02$).

Less than half of the respondents (n= 301, 42.4%) rated approximately 40% of the items as moderate or great barriers. The seven top ranked barriers to research utilisation included: 'The nurse does not feel she has enough authority to change patient care procedures' (73%); 'There is insufficient time on the job to implement new ideas' (70%); 'The nurse does not feel capable of evaluating the quality of research' (69%); 'Other staff are not supportive of implementation' (65%), 'The amount of research information is overwhelming' (60%); 'The nurse feels results are not generalisable to own setting' (58%); and 'The nurse is unaware of the research' (53%).

Discussion

With effective strategies in administration of study questionnaires, a very high response rate achieved in this study, when compared with those (< 50%) reported in several studies using the BARRIERS (e.g., Hutchinson & Johnston 2004, Parahoo & Mccaughan 2001). Overall, the Chinese nurses perceived there to be fewer barriers to research utilisation than those in the US, UK, or Australia (Hutchinson & Johnston 2004), with the majority rating >40% of the barrier items as moderate or great (58%, 65% and 40% of items as moderate or great, respectively).

The top seven barriers reported in this study show considerable consistency with the top 10 barriers identified in other recent studies (e.g., Fink *et al.* 2005, Glacken & Chaney 2004,

Hutchinson & Johnston 2004). Furthermore, the top barriers fell within two domains of barriers, including low organisational support for evidence-based practice and limited research skills and perceived role and value of research among nurses. Despite the improvements of nurses' professional status and education have been described in recent years, these findings highlight how time, skills and perceived role in research are still seen to be major constraints in achieving evidence-based practice among clinical nurses. Although nurses appear more confident about their ability to begin to effect change than early days, lack of authority and non-supportive organisational culture that is not receptive to change are seen to militate against implementation of evidence-based nursing practice.

In this study, the nurses with lower educational levels and less clinical experiences perceived higher levels and amounts of barriers. Novice nurses, especially those with diploma or associate degree, are found to have more constraints in time and research skills to implement evidence-based nursing practice. Nurses are generally reported to be overloaded in work and have inadequate critical ability and assertiveness in implementing changes or innovations in clinical practice (Parahoo & Mccaughan 2001).

Reporting bias associated with the self-report method and the BARRERS developed in Western culture raises questions about the extent to which the responses accurately represent nurses' perceptions of the barriers to research utilisation as well as the cultural equivalence of the questionnaire items. For eight of the 29 BARRIERS items, 13% of the nurses (n = 92) responded 'no opinion' and thus psychometric testing of the English version should have been performed prior to the survey. Furthermore, this study was conducted in four of 15 regional hospitals in Hong Kong and the findings may not be generalised to other settings.

Relevance to clinical practice

The findings in this study highlight the most important perceived barriers to research utilisation in practice regarding organisational support for research-based practice and nurses' research skills and role limitations among Hong Kong nurses. These issues, together with the educational preparation and experience of evidence-based practice, should be addressed in order to provide high quality of care to patients, thus resulting in better patient outcomes.

Contributions

Study design, data collection and analysis, and manuscript preparation: WTC.

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The study does not have any funding source. The author does not have any conflict of interests with respect to this publication.

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Table 1. Ranges, means and standard deviations of the BARRERS total and subscale scores

Scale and Subscales	Actual Range	Mean	SD	95% CI
BARRERS (29-116)	33 - 98	2.79	0.43	2.31 - 3.12
Characteristics of the research users (9-36)	9 - 32	2.62	0.52	2.38 - 3.14
Organisation or setting (8-32)	10 - 30	2.98	0.60	2.46 - 3.61
Innovation in research (6-24)	9 - 22	2.53	0.57	2.28 - 3.31
Communication of research (6-24)	8 - 23	2.71	0.65	2.41 - 3.33

Possible ranges of scores are written in the parentheses.