

PRODUCING AND UTILISING RESEARCH: BARRIERS FOR A NURSING FACULTY IN OMAN

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Introduction

One objective of the Oman Ministry of Health (MoH) 8th Strategic Plan 2011 - 2015 (1) is "to enhance the capabilities and skills of teaching staff and students on approach and methodology of scientific research" (p.4). The MoH estimated that in 2010 only 2 percent of the faculty who had been trained in research design and methodology had conducted research. There are no estimates of "research utilized for planning and improving teaching and related activities" (1).

The MoH one year post-basic specialized nursing Diploma programmes for registered nurses emphasizes evidence based practice and includes a core research paper. Only the specialized Community Health programme is at Bachelor degree level and that contains a module on Evidence Based Practice taught by faculty from Cardiff University.

In this paper the production and utilization of research by faculty at the only specialized nursing institute in Oman is explored using the BARRIERS to research utilisation questionnaire (2, 3, 4).

Literature

The gap between research findings and the utilization of research by nurses has been discussed over many decades (5). A systematic review of sixty three studies identified that barriers appeared consistent over time and across geographic locations (6). Barriers to utilizing research in clinical practice are complex with several overlapping factors (7). Reports list time constraints, lack of awareness of available literature, insufficient authority to make changes, inadequate skills in research appraisal and lack of support to implement change based on research evidence (8). One descriptive study, from the Arab

Abstract

Background and Objectives:

One year specialised nursing programmes for registered nurses are undertaken in one national institute in Oman, however there is very little nursing research conducted or published by the faculty. The study was conducted to discover the barriers to the production and utilization of research from the perspective of the faculty at the specialized nursing institute in Oman.

Methods: The BARRIERS scale has been used extensively to identify barriers to research utilization. This scale was chosen and adapted to identify barriers to research production as well as utilisation in this specialised institute. The survey tool was divided into two main sections, the production of research and the utilization of research. All available faculty members were invited to take part and sixty two percent participated.

Results: Accessibility, facilities and aspects of the research itself were seen as barriers to the utilization of research, while time, workload and lack of motivation were perceived as barriers to producing research.

Conclusion: In order to produce clinical nurses who deliver evidence based specialised nursing practice, the facilities and support for research by the faculty must be prioritized in the education setting.

Key Words: Nursing, Nursing Education and Research, Evidence based practice

world, to identify barriers and facilitators of research utilization among Iranian nurses (9) demonstrated consistency with Western findings such as time, inadequate facilities, and lack of authority.

An overview of current literature about barriers to research utilisation from scientific nursing journals, focusing on two hundred and twenty six articles published between 1995 and 2005, found that barriers related to the organisation, communication of research and the nurses' competence in clinical research, strongly suggested education institutes needed to increase nurses' research knowledge and skills, and provide nurse educators with research time (7).

As there were no studies found exploring barriers to producing research and therefore no suitable tool available, the BARRIERS tool was modified to apply to nursing educators.

The BARRIERS tool

The survey tool on barriers to research utilization in clinical practice used in the reported research is the validated Barriers' Scale (2, 3, 4). The authors (2) believed that a barrier hindering the implementation of change was the lack of an effective diagnostic tool. After studying the literature the team developed the BARRIERS scale based upon Rogers' theory of diffusion of innovation (10, 11). Change is perceived to depend on the Characteristics of the Adopter; the Characteristics of the Organization; the Characteristics of the Innovation; and the Characteristics of the Communication. They also studied the Code and Utilisation of Research in Nursing (CURN) project where nurses were supported to implement the findings in practice (12). The validity and reliability of the BARRIERS scale were tested along with an investigation of the relationship between the four factors in Rogers' model (2).

A review of forty five studies where the BARRIERS scale had been used found the same barriers predominated (13). With continuous consistency over the years it raises questions about why the barriers have not been overcome (6).

While an assumption was made that similar findings would be found among the specialty nursing faculty in Oman the research was specifically conducted with the aim of making transparent the perceived barriers to management so that rationale for implementation of change was supported by evidence. An advantage with the current study is the MoH objective to enhance the capabilities and skills of the teaching staff in research. Unlike countries where similar studies were conducted, utilization (and production) of research is supported by the Oman government which makes strategies for change more likely to be implemented.

Aim

The aim of part one was to identify barriers to the utilisation of research. The aim of part two was to identify barriers to the production of research as perceived by the faculty of the nursing specialty institute.

Design

A modified BARRIERS survey was divided into two main sections: the utilisation of research using the full BARRIERS to research utilization survey; and a modified version on research production, adapted to reflect nursing education through minor changes where the words "nursing education" replaced "clinical practice".

Part one consisted of thirty questions and Part two consisted of sixteen questions where respondents were asked to rate each item on a 4 point Likert scale from 1 = no affect to 4 = a great deal of affect plus a fifth 'no opinion' option. Open ended questions were included for the respondents to add barriers.

In this study the characteristic divisions Adopter, Organization, Innovation, and Communication (2) were identified as the Nurse [in this case Faculty], the Setting, the Research, and the Presentation and Accessibility of the research as previously modified (5).

Ethics approval

The proposal was approved by the Institute Research Committee and permission was obtained from the Dean. Faculty was informed by memorandum about the aims, purpose and details. Each questionnaire was numbered and the number matched to a master list held by the Dean's office where only one administrator (non researcher) had access to the list (but not the questionnaires). Non-responders were reminded on two occasions by the administrator. The researcher was not aware of who had responded. At the end of the data collection period the master list was shredded by the administrator to ensure that anonymity and confidentiality were maintained. Consent was implied by return of completed questionnaire.

The statistics for the institute indicated a male to female ratio of 1:3 and a mean age of 45 years. One faculty member held a PhD, twenty four held Master's degrees, and twelve Bachelor's degrees. All available faculty were invited $N = 37$ and $n = 23$ (62%) faculty responded. Some members were on long term leave or absent for various reasons. The number was considered representative of the total faculty. Feedback to the faculty and their response about the results confirmed the overall interpretation and findings.

Analysis

As the group of respondents in the current study was small the analysis was confined to the descriptive level. Frequencies of responses to each question were tabled on an Excel sheet. The mode of response per question was colour-coded to represent "little barrier," "moderate

barrier” and “a great barrier.” The results are outlined as Part One (Barriers to research utilization) and Part Two (Barriers to production of research).

Results (Part ONE):

Utilisation

Questions 1, 6, 12, 13, 19 clustered at Likert 4 “a great barrier” and Questions 7, 24, 26 clustered at Likert 3 “a moderate barrier” as shown in Table 1.

Two of the great barriers (Statements 1, 12) concern the Characteristics of Presentation and Accessibility of research. Five statements (6, 7, 13, 19, 26) concern the Setting; and one (24) the Research itself.

Qualitative responses

From the qualitative responses, the greatest barrier concerned lack of support (both collegial and by authorities) to be able to make changes.

“Other colleagues are not supportive of change”

“Resistance to change by clinical people”

Other comments suggested that there was “lack of statistical abilities to be able to understand quantitative research”; “resistance to change”; “inadequate facilities”; “poor participation in research because of lack of knowledge and practice of how to do it right.” Staff felt “isolated from colleagues who are interested in research”. Some did “not see the value of doing research in their current position.”

Results (Part TWO):

Production

As very little research was being produced the differentiation between the two categories “moderate and great” was not meaningful. Therefore the moderate and great barrier results were collapsed into one domain and percentages were

calculated. The main barriers to producing research are shown in Table 2 (next page) along with a description. In addition, while 63.6% considered their managers were very supportive of research, 77.3% had no interest in personal benefits of producing research.

Qualitative responses

Free responses highlighted the need for confidence, a healthy environment and fairness in workloads. Assistance from an experienced research committee and statistician plus access to databases, were also seen as important facilitators of being able to produce research.

The three greatest barriers described were:

- i) **Time** - “there is not enough time to conduct research”
- ii) **Workload** - “negative attitude of people toward research means there is no reduction in workload”

Question number	Statement (Likert 3/4)	Mode (n)	Cluster (Likert)	Median (Likert)
1.	Research results are not readily available	18	4	3
12.	The relevant research cannot be found in one place	16	4	3
6.	The facilities are inadequate to implement the research	14	4	3
13.	You believe you do not have the authority to change practice	14	4	3
19.	Administration will not allow implementation of research findings	8	4	3
26.	Colleagues are not supportive of change	15	3	3
7.	No time to read research	15	3	3
24.	The literature reports conflicting findings	10	3	2

Table 1: Factors perceived as moderate to great Barriers

iii) **Lack of drive and passion to undertake research** - "it takes effort" "there is no initiative.

Discussion

The analysis of Likert scales has been debated with some arguing the data should be treated as ordinal and others as interval (14). In this study the group is homogenous

which delimits the variability and the data is considered ordinal in that there is a logical ordering of the categories. Some statisticians recommend using the median and mode for such data (15) as order is relative and shows only sequence. Thus the decision was made to report the median and mode of response to each question in part

one and the percentages in part two.

In part one three factors were identified -

- 1) the Research,
- 2) the Setting, and
- 3) the Presentation and Accessibility of the research. Five organizational concerns relating to Setting can be

STATEMENT	MOD + GREAT %	DESCRIPTION
12. You are not confident in data analysis techniques	86.4	A moderate barrier
2. You want to concentrate on further educational qualifications	81.8	Over 50% perceived the greatest barrier was the need to concentrate on further education (Bachelors, Masters)
3. There is not enough time to conduct research	81.8	Over 45% perceived time to be a great barrier
7. Your work environment facilities are inadequate for you to undertake research	81.8	The work environment was perceived to be a moderate barrier
14. You see more value in utilizing other people's research	81.8	A moderate barrier
6. You do not know enough about research methods	77.3	A moderate barrier
4. You do not think others are experienced enough in research to work with you	72.7	Over a third considered this a moderate barrier
9. You do not feel comfortable enough to undertake research	68.2	A moderate barrier
15. There is no career pathway for a nursing researcher	63.6	Of this group 18% thought not having a career pathway was a great barrier
11. You do not know enough about validity and reliability in research	54.6	A moderate barrier
13. You believe undertaking research is too difficult	54.6	A moderate barrier
5. You do not know how to write a research proposal	54.0	A moderate barrier
1. You do not see the value in undertaking research in your current position	50.0	Ambivalence

Table 2: Factors perceived as Barriers to the Production of Research

summarized as Barriers regarding facilities, time, authority, implementation and collegial support. While other factors regarding the ability to find relevant research and manage conflicting research results present as Faculty and Presentation/Accessibility of research characteristics, they may also be viewed as strongly linked to the Organisation/Setting.

In one of the responses (item 24: "The literature reports conflicting findings") the median is different to the median of the other responses indicating the barrier is actually small to moderate. In item 19 "Administration will not allow implementation of research findings" the mode is small although the median demonstrates a moderate barrier. This latter result is skewed by the larger number of "no opinions" recorded (7).

An Australian study (8) surveyed 761 nurses' opinions regarding the barriers and the facilitators of research utilization. The barriers were time constraints, lack of awareness of available literature, lack of authority to change practice, inadequate research skills in particular critique and lack of support for implementation of change. The faculty in this study, as seen in Table 1, had similar opinions albeit in the education setting. Such findings are "remarkably consistent with studies in the USA, UK and Northern Ireland" (8, p.304).

In part two (production of research) four of the barriers are related to the characteristics of the Setting: time, other experienced staff to work with, inadequate facilities and lack of career path for researchers. Faculty characteristics however were also visible and cluster around lack of knowledge and experience in research. The drive to gain Bachelor's, Master's or PhD qualifications is paramount to be eligible for better positions. Thus the ambivalence about the value of producing research in the current position may reflect

an organizational priority to produce teachers, not researchers. Indeed, the lack of concern about personal benefits gained from producing research emphasizes the compulsion to gain higher academic qualifications. While management was supportive and many of the factors are under managerial control, the focus was on acquiring suitably qualified specialist nursing teachers and research outputs were not rewarded.

Little nursing research has been undertaken in Oman as research utilization and evidence based nursing practice is a fairly new concept and nursing research in its very early stages of development. However a study to identify barriers and facilitators to research utilization was undertaken in Iran among 410 nurses from educational hospitals and nursing schools associated with Tehran Medical Sciences University (9). The findings are similar to those found in this Oman study: time, inadequate facilities, not enough authority to change practice. The authors categorized the findings into two main groups i.e. organization and human resources. They concluded that the Iranian health care system did not provide incentives for nurses to engage in or read research due to time availability through nurse shortages and stated that "the most important organizational change that needs to occur is the provision of available facilities for nurses to use research evidence" (9, p. 2194).

Some authors (6, 13) have argued that identifying barriers has not provided evidence of change. Rather nurses outside of North America were significantly more likely to view inadequate facilities as a barrier (6). It is important that the organization in this study supports research by providing the required research environment and adjusting workloads so that faculty can prepare and support specialty nurse graduates utilize research and implement change on return to clinical practice.

In part two of the study, ten of the statement responses are Faculty and four are Setting (a ratio of 5:2). Most barriers to producing research are related to issues such as abilities, motivation and confidence. The concept of time as a barrier, however, may not signify 'real time' but rather indicate improper use of time due to lack of motivation through lack of energy, knowledge and reward. In a Norwegian study (16) heavy workloads resulted in nurses being too tired to undertake research related activities.

The opportunity to read, plan, implement, analyse and write up research reports as a legitimate activity during working hours must be provided by the organization if the strategic research goals are to be met. In addition, while there is an admirable drive to increase the number of PhD nurses in Oman, and full scholarships are being awarded, most of the candidates are prepared for research only in theory.

Conclusion

The Nursing Institute should not be singled out as failing to provide an environment conducive to research as the findings demonstrate that the same barriers exist throughout much of the nursing world. However, the findings should alert the authorities that, in order to produce clinical nurses who deliver evidence based practice, the facilities and support for research must be prioritized in the nursing educational settings, where the nurse educators can act as role models for research. This prioritization is especially important when the vision is to upgrade entry to the nursing profession to baccalaureate level and nursing specialization programmes will transit from diploma to baccalaureate and master's degrees.

Research is now needed to explore whether there is a relationship between perceptions of barriers to research utilization and production, and the utilization of evidence based practice in the education and practice of nurses contextualized to the Omani culture and health service

environment. Engaging nurses in research in Oman is most important and opportunities to practice hands on research can only add to the success of their future studies.

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