TEACHING AND SUPERVISING RESEARCH: CHALLENGES OF NOVICE EDUCATORS

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ABSTRACT

Nurse educators play a pivotal role in strengthening the nursing workforce. They serve as role models and provide the leadership needed to implement evidence-based practice. To be successful in this endeavour nurse educators should not only be role models as researchers, but must also be able to teach research methodology and supervise students who conduct research projects. Educators at some education institutions, who have recently entered the higher education sphere and are not in possession of a master's or a doctoral degree, ultimately lack a research background. The purpose of this article is to report on a study conducted to identify and describe the challenges faced by nurse educators in teaching research methodology and acting as supervisors when students have to conduct their own research. A qualitative, explorative, descriptive and contextual study was conducted. Data were collected by means of a focus group discussion with all nurse educators involved in the research module. Participants acknowledged that they face many challenges. They highlighted a

lack of human resources; research experience and competencies; research guidelines; physical resources; and a lack of support from the management as major challenges, and provided suggestions to support them and enhance a research culture in the institution.

Keywords: nurse educator; research; research culture; research supervision

INTRODUCTION AND BACKGROUND

The objective of the Swaziland Nursing Strategy (Swaziland Ministry of Health, 2013:16) is to improve the quality of nursing care in Swaziland by creating a culture of research in higher education Institutions. The culture of research, however, is influenced by the research skills, competencies and experience of the nurse educators. The experience of student nurses regarding research will also contribute to a research culture. As an institution that only recently joined the higher education sphere, nurse educators are novices in research and are expected to develop the research curricula, teach research methodology and supervise students, without having a research background in the form of a master's or a doctoral degree (University of Swaziland, 2015:14; Southern Africa Nazarene University, 2014:3; Good Shepherd Nursing College, 2014:3).

Nurse educators who are responsible for teaching in diploma nursing programs, where research competencies do not form part of the curricula, are now expected to teach research to student nurses in graduate nursing programs. This is a challenge for nurse educators because in order to produce competent nurse researchers for the future, nurse educators should be knowledgeable about and competent in research methodology and therefore be able to provide quality research supervision to students (Roets, 2013b:12).

STATEMENT OF THE RESEARCH PROBLEM

Colleges and universities, which had previously only offered diploma nursing programmes, have become responsible to offer degree programmes in nursing and have become part of the higher education system. Many nurse educators in these institutions do not have a master's or a doctoral degree in nursing (Southern Africa Nazarene University, 2014:3; Good Shepherd Nursing College, 2014:2). Without a background in research, theoretical knowledge about research methodology and previous experience in research supervision, they are required to develop a curriculum that includes a research module or modules, teach research methodology and supervise the students when they write research proposals and conduct research. This is a daunting task when they are also expected to contribute to a positive research culture within an institution with a focus on the scholarship of discovery.

AIM

The article reports on a study that describes the challenges faced by nurse educators as novices in research at a participating higher education institution, where they are expected to teach research methodology to undergraduate student nurses. An attempt is made to communicate the support that educators need.

RESEARCH METHODOLOGY

A descriptive, qualitative and contextual research design was utilised. Data from nurse educators were collected through a focus group discussion.

Population and sampling

The study population included all nurse educators working at a purposefully selected university that was the only university that started with a degree programme in nursing recently. All ten nurse educators involved in nursing research education at the time of data gathering were invited to participate. Nine participants took part in the focus group interview that lasted for two hours.

Exploratory interview (Pre-testing)

Pre-testing of an instrument is the procedure of testing and validating an instrument by administering it to a small group of participants from the intended test population (Barker, 2003:339). The participants in the exploratory interview did not participate in the main research study as suggested by Grinnell and Unrau (2008:179); the participants were from another institution of higher learning similar to the selected university.

The researcher conducted an exploratory focus group interview. The group consisted of six respondents (nurse educators) from another institution who were involved with research and volunteered to participate. The aim of the pre-testing was to identify the weaknesses of the focus group discussion in the study context, to assess the competence of the facilitator as well as the questions that needed to be answered. In the actual study the researcher changed the questions suggested by the participants:

> Please describe the challenges that you are facing when you need to teach research methodology to nursing students.

> Please describe the challenges that you are facing when you have to supervise them when conducting their research projects.

> Please describe any idea or suggestion on what can be done to support you in teaching students research methodology.

Please describe any idea or suggestion on what can be done to support you in supervising them on their research projects.

Data gathering

A focus group was conducted on a date and time agreed upon by the nine participants who volunteered. A trained facilitator ensured that the two questions were exhausted and saturation of data was reached. The participants expressed no need for a second focus group discussion.

Trustworthiness

The quality and the expertise of the facilitator of the focus group play a very important role in trustworthiness of the data gathered (De Vos *et al*., 2011:367). The facilitator was trained as required and conducted the exploratory interview to assess her competency as a facilitator. An expert facilitator and an expert in focus groups assessed the competency level of the facilitator and agreed that she could continue with data gathering.

Trustworthiness of the study was further assured by implementing the principles of credibility, transferability, dependability and confirmability as described by Polit and Beck (2012:745).

Ethical aspects

Ethics approval to conduct the study was obtained from the Research Ethics Committee of the custodian university and the vice-chancellor of the university where the study was conducted. All nurse educators at the university received information letters regarding the research study and were invited to volunteer to participate. The data were kept confidential. Only the researcher, the supervisor and co-coder had access to the data. The tapes were destroyed after the results of the study were received.

DATA ANALYSIS

The interview was transcribed verbatim and the data manually analysed into themes categories and sub-themes according to the step-by-step framework suggested by Tesch in Creswell (2009:186). A co-coder contributed to the trustworthiness of the data and the data gathering process as she agreed on the themes and categories that were open coded, as well as the process followed.

FINDINGS

The participants were homogeneous in the sense that they were all nurse educators from the same institution. They were heterogeneous in that there were six females and three males. Both sexes were represented, but the majority were females, as is the case in the nursing profession. In Swaziland the current female:male ratio is 7:3 (Swaziland Nursing Council, 2010b:13). Three participants had master's degrees and none had a doctoral degree.

Five themes, as illustrated in Table 1, emerged from the data: inadequate human resources, a lack of physical resources, a lack of research skills and competencies, inadequate policies, student perceptions and a lack of support from management. The categories were formed by adding together similar verbatim statements that are portrayed as the direct quotes from the participants in the discussion. The categories and statements underpin the identified themes. Participants were very clear on what they proposed should be done to support them.

Table 1:   Themes, categories and statements pertaining to the challenges faced

Themes	Categories
Inadequate human resources	Lecturer to student ratio too high
	Not enough IT personnel
	Too few Librarians
Lack of physical resources	Library problems
	Inadequate books
	Lack of Journals
	Lack of data sources
	Problems with technology/computers
Inadequate research skills and competencies	Lack of research experience and competency
	Lack of research guidelines
	Diverse educational backgrounds
Inadequate policies	Ethics committee matters
	Time limitations
Students' perceptions	Students' attitudes
Lack of support from Management	Affective Support
	Financial constrains

DISCUSSION

Institutions play a pivotal role in fostering a positive research culture. Various aspects are to be considered if research is to be promoted in an institution. Some of these important aspects are (1) a positive research culture, (2) experienced and competent research supervisors, (3) support personnel (librarians, statisticians, editors, information technology personnel), (4) physical resources (which include a library, classrooms, equipment and supplies, for example, computers, books, journals, laboratories), and (5) management support by ensuring the availability of research funding and decentralised research policy (Salazar-Clemeña & Almonte-Acosta, 2007:1). All the above-mentioned aspects are vital for preparing nursing students to become researchers and provide quality care that is evidence based (Courtney & McCutcheon, 2010:18). The data gathered revealed that the above important aspects were the ones that the educators experienced as lacking and challenging.

Inadequate human resources

Any institution that wants to promote a research culture and research education needs to invest in its human resources. Human resources include an investment in trained and experienced supervisors at a manageable supervisor-student ratio as well as other specialised staff that contribute to research teaching (SNC, 2010a:17; Henard, Diamond & Roseveare, 2012:17). Participants, however, expressed the lack of human resources, as one of their major challenges. They were challenged because of the lack of trained and experienced research supervisors, the supervisor-student ratio was too low, and there was a lack of experts such as IT personnel and librarians.

The student to lecturer ratio was raised by the participants as a major challenge and one of the participants mentioned that: 'The educator/student ratio is low, culminating from large student enrolment figures that do not match the available human resources.' The ideal ratio for a classroom setting is between 20–30 students per nurse educator (Nursing Board Malaysia, 2010:13), yet, at the university under study, the educator student ratio is 1:90 for theory teaching sessions, For example, the module on research methodology. If these educators have to supervise the same number of students when they are writing their proposals, this situation would be even worse as emphasised by the participants: 'The issue of human resource will even become worse when the students begin to do their projects.'

The supervisor-student ratios should be manageable, and research supervisors should not be allowed to supervise more than six research projects at any given time (Monash University, 2014:6), yet at some institutions there are supervisor-student ratios of about 1:16 for an experienced supervisor (Roets, 2013b:12).

The participants suggested that a manageable number of nursing students enrolled should be reduced to support a smaller ratio of lectures to students and to enhance the

quality of research supervision. 'If we can enrol a number of students that can support a smaller ratio of lecturers to students ….'

Research is complex and highly dependent on technology hence experts such as IT personnel are vital when teaching and supervising research projects, to support both supervisors and students in their research activities, to promote a positive research culture and to produce quality research (SNC, 2010a:17; Henard *et al.*, 2012:17). The participants considered the shortage of IT personnel at the university as a challenge and mentioned that:

> The shortage of IT officers is a challenge; we don't have enough IT personnel. It's now a big institution, but we just have only one person in the IT ….

> One IT officer cannot service the whole organisation by himself. If the IT person is held up somewhere and you need his services, you cannot have an access to the services and that is a demotivating factor in terms of research.

The participants recommended that the university should employ adequate numbers of IT personnel who will provide quality services to nurse educators, research supervisors and nursing students when they are doing research. 'We also need more IT officers to assist within the institution and the library ….'

Librarians are important in the production of expert researchers. They provide searching tips for reliable information to both research educators and students (Schulte & Sherwill-Navarro, 2009:57). The participants viewed having one librarian for an entire institution as a challenge because the university has grown and is offering degree programmes, such as nursing, which they did not have in the past.

> The university has grown and still there is only one librarian who is providing services to the huge number of students and research supervisors. Looking at the number of students enrolled at the university versus the only one librarian who provides the services in the library also cause a challenge to the nurse educators who teach research methodology and supervise research projects for the nursing students.

The participants recommended that adequate numbers of librarians are needed at an institution like a university to provide adequate services, such as searching for reliable and relevant information required in research. One of the participants said: 'We also need human resource so in the library ….'

In Swaziland the majority of the population speaks SiSwati as their mother tongue and English as their second language. Although the participants did not identify expert language and technical editors as important people to assist with research projects or ensure quality research outputs, it is important to have trained and certified language and technical editors to present the research report in an acceptable academic format (Polydoratou & Moyle, 2008:79). Therefore, English language and technical editors are important at a university to ensure that research reports are presented in correct English (Derntl, 2014:106).

Lack of physical resources

Physical resources are required to effectively conduct research activities and produce research experts. These resources include well-equipped libraries with computers, research books, scientific journals and access to databases (SNC, 2010a:13).

The library is a store house of knowledge and provides access to information resources and information required for research and evidence-based practice, hence quality nurse researchers are produced as prepared as lifelong practitioners and researchers (Adeoye & Popoola, 2011:1). Libraries are important in helping academics generate information for the purpose of effective research teaching and research supervision of students. The participants were of the opinion that their library was too small: 'Our library is small to accommodate all the number of students.' They therefore suggested that: 'there is a need to extend our library, whether going up or sideways'.

The participants felt that the library at their institution was also not accessible at convenient times: 'The library sometimes closes and then it restricts access to students.' The extension of the library hours allows access to the library for the researchers after normal working hours. 'We need to extend library working hours.'

Participants identified the lack of books/literature/journals as another challenge: '[I]t's the books, some of the books are there but they are old ….'; 'also that of the journals we don't have enough …'. This is a concern as research requires recent literature and facts due to the continuous development and change of theories (Nick, 2011:1).

Participants recommended that: 'Books need to be checked all the time like the University of Botswana. There are people who remove the old books on a daily basis and replace them with new ones'; and, 'I think the issue of getting journals; I think the university needs to subscribe to more journal publishers.'

Inadequate research skills and competencies

Nurse educators who teach research and supervise students in research projects should have sufficient knowledge and skills that will enable them to teach research methodology and supervise students to conduct quality research projects (Hughes & Ferrett, 2011:72). An experienced research supervisor is a nurse educator who has experience in supervising students towards successful completion of research projects and has supervised research projects for a number of years under supervision of an experienced supervisor, has knowledge of and interest in the research topic of the student, and is in possession of at least a master's degree or a doctoral degree (Kiley, 2011:588). The experience and the expertise of the nurse educator influence the quality of the future nurse researchers and research (Roets, 2013a:144).The participants felt that they were inexperienced and saw this as a challenge: 'I feel like I am dead because I do not have the experience and we have never supervised any student, hence we are experiencing challenges'; '… most of us are not capacitated to the level of a master's degree'.

Not surprisingly, the participants recommended:

> A workshop is important for us nurse educators to put us on board since we have never supervised a research project.

> … think the best thing is to have more guidance, I think we all need to follow guidelines and be guided by someone with experience in supervising research during the supervision of the research projects since we have no experience.

Participants were aware that guidelines for research supervision are important, but there was a lack of available guidelines, saying that 'another challenge is that we do not have laid down guidelines on how to go about the research, so each and every lecturer will do what he or she knows'.

The absence of written guidelines to regulate the conduct of research and supervision of research projects may lead to a situation where students move from one educator to another, seeking research supervision assistance. Students may end up seeking assistance from educators they consider to be more knowledgeable than others (Roets, 2013b:4). This could result in a conflict between educators who may be applying different systems and standards given that there is no home-grown instrument for regulating research projects. The participants highlighted that there is an urgent need to develop research guidelines to ensure quality research supervision. The participants said 'and as for guidelines. Speed up the guidelines, make sure they are prepared.'

Participants also experienced their differences in education backgrounds as a challenge: 'Even us as nurse educators, I foresee a challenge that we are coming from different institutions, I'm from there and the other one is from there.' The educational background and the absence of an instrument for regulating the conduct of research give way to an individualised system of supervising research according to each educator's understanding and educational background.

Participants were of the opinion that a workshop should be facilitated to ensure that all supervisors work according to the same principles and merge the differences among nurse educators resulting from their varied educational research backgrounds: 'A workshop, I think the committee is also planning to give one to the nurse educators so that we match our research skills and knowledge ….

Inadequate policies

Policies are very important when conducting research; they provide guidelines and the basis of how research in an institution should be taught and conducted. Policies also allow for the development of a comprehensive framework for the minimum acceptable ethical standards when conducting research. Researchers have to follow the policy where research proposals are reviewed and approved by the research ethics committee (Swaziland Scientific and Ethics Committee, 2008:2).

In Swaziland research studies that involve human participation should be approved and monitored by the Swaziland Scientific and Ethics Committee. Participants mentioned that the 'approval process by the *ethics committee* also takes a long time', and the process delays the commencement of research projects. It was argued that it is very difficult to see the Swaziland Scientific and Ethics Committee because it is centralised in the capital city. According to the policy, once the applicant has submitted the proposal for approval, the applicant is invited to come and defend the submitted proposal to the Ethics Committee (SSEC, 2008:4). The implication is that the number of students will increase, and they will have to travel to the capital city with substantial financial and time implications. As research is now a requirement in the curriculum of students, these implications need to be addressed (Southern Africa Nazarene University, 2011:10).

In order to address this challenge participants were of the opinion that the work of the Swaziland Scientific and Ethics Committee should be decentralised and the committee should assist to establish and register an institutional Health Research Ethics Committee:

> I think we need to set up our own research ethics committee which can do smaller scale research that are done by students at the university.

> The university needs to engage in the dialogue with the ethics committee and possibly get permission to approve research proposals at institutional level for academic purposes.

Students' perceptions

Studies have shown that students perceive research as a difficult subject, thus they need to be convinced about the importance of research in nursing and they should be given the opportunity to participate in research (Mellish *et al.*, 2009:333). The participants also emphasised the students' perceptions of the difficulty thereof*:* '[W]hen you start teaching a student research methodology, it's something new, so they feel it's very difficult because it's different from other nursing subjects.'

*The negative attitudes towards research emanate from the manner in which the students had been taught research or their previous experiences regarding research (Ryan et al., 2013:1). P*ositive attitudes towards research as lived by the educator or supervisor can influence the attitude of the student towards research. According to the participants:

> What we need to do is to change attitude and say it (research) is doable.

> I think the strategy is to role model the students so that they see it's not difficult, show the interest of the lecturer ….

Maybe if we improve our motivation, the culture of research will improve where we conduct research and present to the whole school so that the students may develop some passion for research.

Also we can pick some projects that have been done by the students and also present them and all the student bodies there, present to their colleagues and to us teachers and that would help the upcoming researchers to develop the attitude of saying I want to go out and do research so that I can be picked and present my study.

Lack of support from management

It is the role of the university's management to ensure that quality new researchers are produced by offering the research supervisors the support they need. The support could be in the form of establishing clear goals, effective leadership, training, developing research centres and also support in the form of finances (SNC, 2010a:13).

The participants stated: 'Management does not support when the lecturers raise issues, they just promise and never address the issues.' Literature has proven that lack of effective support from the institution's management is an obstacle in the achievement of a positive research culture (Roets & Lubbe, 2014:9). Participants were not prepared for supervising research projects. They mentioned that: 'most of us are not capacitated up to the level of a master's degree', and 'we have never supervised research projects'.

If universities or institutions want to produce quality nurse researchers, nurse educators should be listened to when they have issues concerning the teaching of research and the supervising of research projects for nursing students.

The role of the nurse educator is to shape future nurse researchers. Therefore, the institutions should provide adequate financial resources to support research teaching and research supervision. Both nurse educators and nursing students need to be financially supported when conducting research and presenting their papers at conferences in order to promote the research culture and develop research skills (SNC, 2010a:14). Funding enables nurse researchers, even those with financial challenges, to grow and develop the skills of research. Participants were aware of the importance of grants when conducting research and revealed that: 'It is demotivating because the management does not give us financial support when we are doing our research and when we want to go and present at conferences.'

RECOMMENDATIONS

Low lecturer/student ratio in any institution should be addressed. Institutions should enrol a manageable number of students who can be supported and supervised. A lecturer/student ratio of about 1:30 is suggested for a module such as Research Methodology. For research supervision, a ratio of 1:4 for the inexperienced supervisors and 1:10 for the

experienced supervisors is recommended, depending on the other academic workload of the educators (Monash University Institute of Graduate Research, 2014). The Low lecturer/student ratio, as is the case at the university under study, will further increase the workload on the side of the lecturer. This may compromise the quality of nurse researchers produced at the university and poor quality research projects, hence, a poor research culture.

Support staff, for example, IT personnel, librarians, language editors as well as technical editors are essential if quality research is to be conducted and the results disseminated. The standard ratio for IT personnel/user (nurse educators and students) is 1:200 and 1:100 for librarian/users (Applegate, 2007:66). When appointing staff, the numbers of the available support staff should be realistic, taking into consideration the number of nurse educators as well as nursing students who need support with research.

The availability of physical resources such as an accessible library, computers, up-to-date books, and journals should be addressed in any institution where the scholarship of discovery is one of the pillars of the institution. Where the specific library cannot provide adequate services, an interlibrary loan facility in collaboration with other libraries should be established. This will allow both the students and nurse educators to have access to study material that is available in other universities (University of Aberdeen, 2015:1). The librarians should motivate for the subscription to online journals and e-books because hard copies are no longer the only way to access resources. Students should also undergo training in the library to assist them with the use of the available databases and resources. Collaboration with other institutions becomes essential. Libraries should also have extended open hours to maximise accessibility, but internet access to the library at any hour can contribute to better access.

Nurse educators feel threatened and incompetent when they do not have the competency to supervise students or to teach research methodology. It is recommended that the research directorate or those responsible for managing research at institutions should enhance the research competence among research supervisors by providing very specific training. Training should include communication skills, how to provide constructive feedback, how to build a relationship between students and supervisors as well as how to select and allocate students to be supervised. Workshops can provide valuable information on the trends in research supervision and will provide an avenue to obtain competency in coaching, guiding and the supervision of nursing students. For quality education in teaching research, the institution should also consider the recruitment of experienced nurse educators in research supervision who will assist in the mentoring of the novice supervisors.

Ethics in research is essential in any institution and needs to be emphasised in research training in all institutions. Universities can establish their own research ethics committees that can be registered and audited by a nation regulatory body, such as the Swaziland Scientific and Ethics Committee, to ensure that quality proposals are approved. In other countries such as South Africa, all research ethics committees that

approve research on human subjects must be registered with the National Health Ethics Research Council and audited once a year (South Africa, 2006:13). Similar processes can be negotiated to speed up the process of approving research proposals and prevent all proposals going through a national committee.

In order to promote a positive research culture in institutions, nurse educators should act as role models for students by conducting research and disseminating the results in peer-reviewed journals. Acting as a role model for students will contribute to the positive attitude of students towards research. The nurse educators should cultivate research skills and a positive research culture and convince students about the importance of nursing research in education and in the nursing practice.

The management of higher education institutions should adhere to the voice of the nurse educators when they raise their concerns and challenges. Attending to challenges and addressing concerns could serve as a motivational factor for producing quality researchers.

Financial assistance in the form of grants or scholarships (American Association of Colleges of Nursing, 2014:1) is important when an institution wants to promote the scholarship of discovery.

Research days that engage expert researchers, nurse educators and students in presenting research publications, debating research issues and showcasing research items by excelling students should be sponsored. The presentation of research papers at national and international conferences gives the university merit (Salazar-Clemeña and Almonte-Acosta, 2007:12) and therefore the research budget should allow for educators and students to present their research findings in the public domain.

CONCLUSION

The nursing profession is in dire need of more master's and doctoral degree prepared nurses as the profession is aging, and experienced researchers and supervisors are leaving the profession. Teaching nursing students research methodology and instilling in them a love of research will form the building blocks for a positive research culture in any institution and will provide for the future generation of researchers. Experienced nurse educators and supervisors should act as mentors and coaches for the novices who experience numerous challenges in institutions that have recently become part of the higher education sphere. Institutions should therefore recruit and retain expert researchers in nursing education to fulfil a mentoring role and assist research management to foster a positive culture of research.

LIMITATIONS OF THE STUDY

The article reports on a study that focused on the challenges faced by nurse educators in teaching research methodology and supervising research projects in one African

university. The study's results can therefore not be generalised, but can be transferred to similar contexts where novice researchers have to supervise students and lecture research methodology without research experience and competence.

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