OPINIONS ON A STRATEGY TO PROMOTE NURSES' HEALTH RESEARCH CONTRIBUTION IN SOUTH AFRICA

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Keywords: strategy; contribution; impact; health research; nurses; Delphi technique; research capacity building; collaboration; dissemination and utilisation; research leadership; research priorities; quality of health research

ABSTRACT

This is the second article in a series of three articles on a strategy to promote nurses' health research contribution in South Africa. This article describes a Delphi study that was conducted to explore the panel of experts' opinions on nurses' health research contribution and to develop a strategy to promote this contribution. A qualitative and quantitative, descriptive design was used. A Delphi study consisting of three successive rounds was conducted from January 2005 to February 2006. A panel of experts (round one: n=28; round two: n=31; round three: n=18), selected from multiple health-related and health research-related clusters, participated. Professional nurses in academic/educational positions were the main participants. Multi-disciplinary team members, other than nurses, at international as well as national level, also made valuable contributions as part of the panel. Data were gathered by circulating a list of open-ended questions (round one) as well as questionnaires (rounds two and three). Analysis was done using open coding and descriptive statistics. Findings were processed and, in an anonymous way, fed back to panellists to re-assess and change if necessary. In this way, outcomes in the various rounds resulted in a move towards consensus in opinions between the panelists. Elements essential to a strategy to improve research done by nurses, could be identified, namely research capacity building, collaboration, dissemination and utilisation of research results, quality of research conducted by nurses, leadership, resources and research priorities. These elements are seen as a framework for a strategy, and this framework was explored further in a subsequent article.

OPSOMMING

Hierdie is die tweede artikel in 'n reeks van drie artikels oor 'n strategie om die gesondheidsnavorsingsbydrae van verpleegkundiges in Suid-Afrika te bevorder. Hierdie artikel handel oor 'n Delphi-studie wat uitgevoer is om die opinies van 'n paneel kundiges oor die gesondheidsnavorsingsbydrae van verpleegkundiges te verken en om 'n strategie om hierdie bydrae te bevorder, te ontwikkel. 'n Kwalitatiewe en kwantitatiewe, beskrywende ontwerp is gebruik. 'n Delphi-studie, bestaande uit drie opeenvolgende rondtes is van Januarie 2005 tot Februarie 2006 uitgevoer. 'n Paneel kundiges (rondte een: n=28; rondte twee: n=31; rondte drie: n=18), geselekteer uit veelvuldige gesondheidsverwante en gesondheidsnavorsingverwante trosse, het deelgeneem. Professionele verpleegkundiges in akademiese/opvoedkundige posisies was die primêre deelnemers. Multi-dissiplinêre spanlede, buiten verpleegkundiges, op internasionale en nasionale vlak het ook waardevolle bydraes as deel van die paneel gelewer. Data is ingesamel deur 'n lys met oop-einde vrae (rondte een) asook vraelyste (rondtes twee en drie) te sirkuleer. Analise is uitgevoer deur gebruik te maak van oop kodering en beskrywende statistiek. Resultate is verwerk en op 'n anonieme wyse aan paneellede teruggevoer vir heroorweging en verandering, indien nodig. Op hierdie manier het die uitkomste van die onderskeie rondtes gelei tot ooreenstemming in opinies tussen die paneellede. Kern-elemente vir 'n strategie om navorsing deur verpleegkundiges te verbeter, kon geïdentifiseer word, naamlik navorsingskapasiteits-

bou, samewerking, bekendmaking en benutting van navorsingsresultate, gehalte van navorsing deur verpleegkundiges, leierskap, hulpbronne en navorsingsprioriteite. Hierdie elemente word beskou as 'n raamwerk vir 'n strategie, en hierdie raamwerk word verder in 'n hieropvolgende artikel verken.

INTRODUCTION

Health research conducted by nurses is essential for the improvement of health care delivery as well as for ensuring the ongoing development of nursing as a science and a profession (Brink, 2002:4). Nurses have the potential to significantly contribute to health research (Sajiwandani, 1998:35). However, in South Africa this contribution seems to be limited as health research conducted by nurses does not make a significant impact on health and health care, as mentioned by several authors (Zeeman, Poggenpoel & Myburgh, 2002:4; Ehlers, 2001:2). This view was confirmed by the results of this research. A strategy to promote the research contribution of nurses needs to be developed (Muller, 1998:9; Ehlers, 2001:2).

The objective of this research – which was part of a larger study with the purpose of developing a strategy to promote nurses' health research contribution in South Africa – was to anonymously obtain the opinions of stakeholders knowledgeable in health research, on health research conducted by nurses, on the contribution of nurses towards health research as well as to develop a strategy to promote this contribution. Throughout this research, the researcher applied ethical principles as prescribed by the Declaration of Helsinki (World Medical Association, 2002), Brink (2002:37-50) and Strydom (2002:62-75). This entailed that, before commencing with the research, ethical permission was obtained from the ethics committee of the North-West University (reference number 04K22). The researcher regarded participants to be autonomous, and therefore informed consent was obtained from participants. Fair selection and treatment was ensured through scientific sampling methods, as explained under the section "Sample", and by clearly indicating what was expected from potential participants. The researcher also protected participants from possible discomfort by ensuring voluntary participation, anonymity and confidentiality.

RESEARCH DESIGN AND METHOD

The research has quantitative as well as qualitative elements, and a descriptive survey design (Brink, 2002:109; Burns & Grove, 2005:239) was followed. The research was conducted using the Delphi technique (Burns & Grove, 2005:407; Mcilfatrick & Keeney, 2003:631). Data were gathered in successive rounds, of which the first round was more qualitative in nature, and the following two rounds more quantitative. The Delphi technique was utilised because it allowed the researcher to obtain the anonymous opinions of stakeholders. This ensured that stakeholders could share their opinions honestly and freely. Because of the expertise of the participants, it was possible through the Delphi technique to develop a representative group opinion on a relatively unexplored topic (Powell, 2003:380; Burns & Grove, 2005:407; Brink, 2002:208).

The purpose of round one of the Delphi study was to explore the opinions of the panel of experts. Round two served to present the results of the first round to the participating stakeholders for verification and to establish the level of consensus. The final round was conducted to give feedback to the panel of experts on aspects that they strongly agreed upon to determine whether these should be included in a strategy and to explore further convergence to consensus on these aspects. The decision to execute three rounds was based on stability of responses between rounds, as indicated by effect size between means of rounds two and three (Ellis & Steyn, 2003:52), and participation fatigue (Hasson, Keeney & McKenna, 2000:1011; Powell, 2003:380).

SAMPLE

National as well as international stakeholders in health research who are influenced by or who influence health research conducted by nurses in South Africa, were taken as the study population. A finite number could not be linked to this population and multiple clusters were identified, as described by Babbie and Mouton (2004:194). The clusters included stakeholders in health research funding, professional nurses who have input into nursing regulatory institutions, stakeholders who have input on multi-disciplinary regulatory institutions, professional nurses in academic and educational posi-

tions, professional nurses in practice and professional nurses with international input into health, research and/or nursing. In order to identify a panel of experts from these clusters, purposive sampling (Burns & Grove, 2005:353) was used, by selecting panellists based on selection criteria. These criteria included the following:

Potential participants should:

- not be limited to South African participants, but international experts should also be included to obtain national and international viewpoints;
- not only include nurses, but be from multiple health-related and/or health research-related backgrounds to ensure that different viewpoints are obtained;
- be persons with experience in health research;
- be in a position of a stakeholder influencing and/or influenced by health research; and
- have access to e-mail and/or facsimile facilities.

Existing databases, as suggested by Hasson *et al.* (2000:1011), were used to gain access to potential participants within the clusters. A number of 197 individuals/organisations were contacted by e-mail or fax and invited to participate. During round one a total of 28 experts participated. During round two only 19 experts responded. In order to enhance this response rate, the invitation was extended to the original population identified in round one. A total of 12 further participants responded. Statistical data analysis indicated that there was no statistically (alpha) or practical (effect size) significant difference between the responses of these two groups, and the responses were therefore interpreted as from one group of participants (n=31). During round three 18 of these experts participated.

From a statistical viewpoint, these response rates seem low. However, the Delphi technique does not require a statistically representative sample, but rather that the qualities of the participants should represent expertise in the topic under investigation (Armstrong, Parsons & Barker, 2000:298), as was achieved. Table 1 provides information on the qualities of the panel of experts.

The adequacy of these samples is further supported by the fact that the results of the overall project are not solely dependent on these samples, but triangulation (Burns & Grove, 2005:224) was implemented with the successive rounds of the Delphi technique, implementation of further phases in the overall research project (not covered in this article) and literature reviews.

DATA GATHERING

During round one data were gathered by means of a list of open-ended questions based on a literature study by Du Plessis (2007:94-119). The development of questionnaires used in successive rounds was based on the results of the previous round, as described by Hasson *et al.* (2000:1012). The list of open-ended questions as well as the subsequent questionnaires was evaluated by independent, experienced researchers and pilot studies were conducted before finalisation and distribution. These pilot studies entailed requesting two panel members to complete and return the questionnaires before each round of data gathering. No alterations on the list of questions or questionnaires were needed and these participants' responses could be included for data analysis.

During round two of the Delphi study, the list of opinions identified in round one was collated and presented to the panel of experts. They were requested to indicate their agreement/disagreement with these opinions by completing a Likert scale ranging from "Strongly agree" (1) to "Strongly disagree" (5).

The final questionnaire contained the opinions of the panel of experts on which consensus was evident (cumulative frequency level of 90% and above). Participants were requested to reconsider their individual opinions in light of the opinion of the panel as a whole and to once again complete the Likert scale. They were asked to give reasons for changes in their opinions as this limited the risk that participants changed their opinion merely to conform to the group's opinion (Greatorex & Dexter, 2000:1018).

DATA ANALYSIS

During data analysis relevant information was identified and fed back in a collated format to panellists. This ensured anonymity of responses, as required in the Delphi technique (Hasson *et al*. 2000:1010).

During round one data were analysed qualitatively by

Table 1: Qualities of the panel of experts

ROUND ONE	ROUND TWO	ROUND THREE
Two health research funding experts (national level). Two health researchers (national level). Three nurse leaders (national level). Four professional nurses, experienced in health research and serving on international nursing research-related committees (two at national level, two at international level). Eleven professional nurses in academic/educational posts. Two nurses at practice level, in managerial posts at institutional level and linked to a training facility for nurses. Three health researchers, from different disciplines (natural sciences) involved in research and linked to organisations with research development as a core objective (one participant at international level, two at national level).	Two experts in health research funding at national level. One health researcher at national level. Four nurse leaders at national level. Three professional nurses (one from South Africa, two at international level), experienced in health research and serving on international nursing research-related committees. One professional nurse in an academic/educational post (international level). 17 professional nurses in academic/educational posts in South Africa. One professional nurse in a research post (national level). Two health researchers, from different disciplines (natural sciences) involved in research and linked to organisations with research development as a core objective (one participant at international level, one at national level).	One health researcher at national level. Three nurse leaders at national level. Two professional nurses (one from South Africa, one at international level). Ten professional nurses in academic/educational posts in South Africa. Two health researchers, from different disciplines (natural sciences) involved in research and linked to organisations with research development as a core objective (one participant at international level, one at national level).

means of content analysis (Powell, 2003:377). Similar themes were grouped together to produce a list of opinions. An independent co-coder was appointed to verify that the results were a true reflection of the gathered data (Hasson *et al*. 2000:1013). The results of this round were formulated as opinions, as reflected in Table 2.

An independent statistical consultant performed a statistical data analysis during rounds two and three. For each individual opinion, statistical summaries were produced. This included cumulative frequencies and mean values as indicators of levels of consensus and standard deviation levels as indicator of disagreement

(Greatorex & Dexter, 2000:1018). A smaller mean value and standard deviation value and a higher cumulative frequency value indicated consensus. The minimum level of consensus was set at 90% (cumulative frequency). The rationale for setting a high minimum level of consensus was that it enabled the reduction of the large amount of data to aspects that the panel of experts strongly agreed upon. These aspects were used to develop a strategy to promote the research contribution of nurses.

Table 2 contains the results on which the highest consensus levels were obtained in the successive rounds.

The opinions of the panel of experts that reached the highest consensus levels are listed in Table 2 in rank order from highest to lowest level of consensus – arranged per sub-theme – based on the cumulative frequency values (%), mean values (M) and standard deviation values (SD) obtained during round two. The results of round three are also tabled in Table 2. A detailed discussion of these results, as well as brief references to opinions on which consensus was not reached, follows after the discussion on rigour.

RIGOUR

To ensure rigour, Guba's model of trustworthiness as explained by Krefting (1991:214-222) was followed and measures to ensure validity and reliability were adhered to.

In order to ensure trustworthiness, truth-value strategies, such as prolonged engagement – maintaining contact with participants by means of the successive rounds of data gathering, triangulation – gathering data in different, successive rounds, and peer examination, were implemented.

Applicability (Krefting, 1991:220) was ensured by means of a dense description of the research process. Furthermore, the involvement of a co-coder during the data analysis of round one, and consensus discussions between this co-coder and the researcher enhanced the consistency of the results.

Additionally, confirmability strategies were implemented to promote neutrality (Krefting, 1991:221). A confirmability strategy applied in this research was that the promoter was an auditor of the research process, research results, conclusions and recommendations.

Validity was ensured by including as many participants as possible in the sample, based on the assumption of safety in numbers (Hasson *et al*. 2000:1013), although the representativeness of the sample was rather judged on the qualities of the expert panel, as explained (refer to Table 1). In addition, the use of successive rounds helped to increase the concurrent validity and reliability (Hasson *et al*. 2000:1012). As the validity of results is also affected by the response rates (Hasson *et al*. 2000:1013) stakeholders who did not react to initial invitations to participate were contacted again and the invitation repeated.

DISCUSSION OF THE RESULTS

Because of the small sample, these results should be seen as the opinion of a certain panel of experts at a certain point in time, as explained by Hasson *et al.* (2000:1013). In order to retain the richness and depth of the findings of round one, opinions were elaborated on by means of accompanying sub-statements. Panel members were requested to assess these opinions and sub-statements as a whole, but some participants found this cumbersome and confusing. In an attempt to limit this problem during round three, explanatory sub-statements were omitted and long statements divided into shorter statements. Follow-up research on these issues is advisable.

Notwithstanding these limitations, valuable results pertaining to two broad themes, namely nurses' research contribution as well as a strategy to promote this contribution, were obtained. Round one produced rich and large amounts of data on these themes, as well as additional and contrasting opinions. During successive rounds shifts in emphasis within these opinions became evident.

Nurses' research contribution in South Africa

Round one elicited the opinion that nurses' contribution to health research is severely limited as health research conducted by nurses does not usually directly contribute to the scientific, clinical knowledge base of nursing, does not influence health and health care and

Table 2: Opinions of the panel of experts

Aspects essential to a strategy to promote the contribution of nurses towards health research	Results round 3			*Effect size
	M	%	SD	
A research strategy to promote the contribution of nurses towards health research is necessary (M=1.63, %=86.67, SD=0.90).	1.47	94.12	0.62	0.26
A research strategy to promote the contribution of nurses towards health research in South Africa should be realistic and feasible within the current South African context, should not be exclusive, and should promote research within the multi-professional team (M=1.65, %=90.32, SD=0.66).	1.53	100	0.51	0.24
A research strategy to promote the contribution of nurses towards health research requires the commitment of various stakeholders to take responsibility to initiate and drive such a strategy and to facilitate the availability of resources (M=1.71, %=90.32, SD=0.87).	1.53	86.67	0.74	0.24
Research capacity building				
The strategy should aim to strengthen nurses as researchers by means of research capacity building (M=1.39, %=96.55, SD=0.99).	1.35	94.12	0.61	0.07
Undergraduate training should encourage questioning attitudes, critical thinking and problem-solving skills, give attention to study skills and research-based learning, facilitate students to conduct research; and contain sufficient exposure to research methods to foster interest in research (M=1.19, %=100, SD=0.40).	1.41	94.12	0.62	0.35
During post-graduate training, post-graduate students rationale, motivation and commitment to conduct research should be explored, and a research orientation to improve practice should be encouraged (M=1.55, %=100, SD=0.51).	1.53	94.12	0.62	0.03
Research capacity building should be introduced at undergraduate level to instil a research culture and develop the potential of nurses to conduct research, leading to research-oriented nurses who are confident in being involved in research (M=1.29, %=96.77, SD=0.53).	1.53	88.24	0.72	0.33
Research leadership amongst nurses should be encouraged (M=1.32, %=96.77, SD=0.54).	1.53	94.12	0.62	0.34
Study leaders should strengthen their own research profile to build their capacity to provide leadership and to be recognised as leaders (M=1.45, %=96.77, SD=0.81).	1.41	100	0.51	0.08
Research capacity building should include the encouragement of nurses to become involved in research (M=1.45, %=96.77, SD=0.81).	1.38	100	0.50	0.14
Study leaders should act as mentors for students by transferring/fostering a positive attitude regarding research, involving students in research, and being involved in students research, for example collaborative research projects to strengthen their skills, to expose them to a variety of research skills and to stimulate interest (M=1.55, %=96.77, SD=0.81).	1.50	93.75	0.63	0.08
Post-graduate programmes should offer the following: (M=1.65, %=96.80, SD=0.8)				
Opportunities for students to share knowledge with peers	1.65	94.12	0.61	0.00
Exposure to a variety of research methodologies	1.53	94.12	0.62	0.19
A strong research component (cutting edge, in-depth research)	1.59	100	0.51	0.12
Greater emphasis on statistics	1.65	88.24	0.70	0.00
Encouragement of ongoing research	1.47	94.12	0.62	0.29
Research capacity building should include promoting research as a career (M=1.55, %=93.55, SD=0.72).	1.53	94.12	0.62	0.03
Educators and study leaders should be empowered, by means of re-training and advanced research methodology courses, to be competent and creative in teaching research methodology and in guiding and monitoring post-graduate students in the appropriate use of research design and methodology (M=1.58, %=93.55, SD=0.85).	1.65	88.24	0.70	0.10
Research capacity building should start with creating research-mindedness and a research culture amongst nurses (M=1.61, %=93.55, SD=0.84).	1.82	76.47	1.82	0.26

Collaboration				
Nurses should be encouraged to be part of research teams, or to initiate collaborative research projects. They should have confidence to take leadership in teams (M=1.39, %=100, SD=0.50).	1.59	88.24	0.71	0.28
Regarding collaborative research, nurses should take the following challenges into consideration: (M=1.77, %=93.33, SD=0.82)				
The individual strengths and inputs of each researcher in the team should be acknowledged for the purpose of a track record and promotion.	1.76	94.12	0.56	0.02
Nurses should have the opportunity to be empowered in writing and critical thinking skills so as to develop beyond the profile of a fieldworker in order to become part of the initiating group in collaborative research projects, independent researchers or research leaders.	1.59	94.12	0.62	0.29
Collaborative research requires realistic expectations and dedication, and should not be attempted without specific reason/outcomes.	1.88	88.24	0.78	0.14
Collaborative research could improve the implementation of findings, as nurses skills and knowledge are then more visible and can be recognised, which promotes credibility and implementation (M=1.77, PA=93.33%, SD=0.82).	1.76	88.24	1.76	0.66
Nurses should collaborate with: (M=1.77, %=90.00, SD=0.86)				
Communities, guided by the nature of the research project, the communities capacity and willingness to collaborate and by relevant ethical principles.	1.76	88.24	0.66	0.02
People who can add value, with practitioners in any/all fields which impact on the health and well-being of patients.	1.76	88.24	0.66	0.02
Nurses in practice and nurses in academic/research institutions.	1.65	94.12	0.61	0.20
The science and technology sector, which can do much in developing a critical mass of excellent nurse researchers that will be leaders in the field.	1.76	94.12	0.56	0.02
Teams that are not necessarily defined by discipline but by topic of research.	1.82	88.24	0.64	0.08
Collaboration should take place at the following levels: (M=1.77, %=90.00, SD=0.88)				
At local, national as well as international level.	1.53	94.12	0.62	0.39
Interdisciplinary, intradisciplinary, multidisciplinary, intersectoral, intrasectoral.	1.53	94.12	0.62	0.39
Dissemination and utilisation				
The strategy should aim to improve the dissemination and utilisation of research conducted by nurses (M=1.48, %=96.55, SD=0.57).	1.53	94.12	0.62	0.08
Nurse managers should encourage evidence-based practice (M=1.52, %=96.77, SD=0.81).	1.47	94.12	0.65	0.08
Nurses should submit their work to journals that are read by a cross-section of health care providers, and not only to nursing journals, especially clinical research (M=1.52, %=93.55, SD=0.72).	1.56	93.75	0.81	0.05
Study leaders should encourage the dissemination and utilisation of research results (M=1.55, %=93.55, SD=0.85).	1.50	93.75	0.63	0.08
Research utilisation requires a concerted effort by policy makers, health service administrators and academics together to make an impact. Cooperation between researchers/academics and services should be promoted and expanded. Cross-functional teams between different health institutions should be created to promote the communication and utilisation of research results (M=1.58, %=93.55, SD=0.85).	1.56	93.75	0.63	0.03
The notion that it is the responsibility of nurses to disseminate and utilise research should be fostered. Nurses ability to conduct relevant research needs improvement, and they should be encouraged to conduct research as a cyclic process, with depth and continuity, that should be followed up and serve as a basis for further research (M=1.71, %=93.55, SD=0.82).	1.81	93.75	0.54	0.19
Writing workshops should be held to encourage and motivate nurses to write up more of their research immediately after completion of research (M=1.65, %=90.32, SD=0.75).	1.56	93.75	0.63	0.14

Practicing nurses should have the opportunity to conduct and publish small research projects in journals. Nurse educators and managers should encourage this (M=1.68, %=90.32, SD=0.87).				
Quality of research conducted by nurses				
Research conducted by nurses should be strengthened by improving nurses skilfulness in conducting research (M=1.50, %=96.77, SD=0.95).	1.69	93.75	0.60	0.32
Research conducted by nurses should be strengthened by improving the methodology used by nurses (M=1.53, %=93.55, SD=0.98).	1.47	93.33	0.64	0.09
Research of high quality should be encouraged, as it has a better chance of being disseminated and utilised (M=1.61, %=93.55%, SD=0.84).	1.63	93.75	0.62	0.03
More clinical research should be conducted by nurses (M=1.67, %=93.33, SD=0.71).	1.81	87.50	0.65	0.22
Research conducted by nurses should be strengthened by taking the following into consideration (M=1.48, %=93.10, SD=0.87):				
Research should add value, and should not only be of academic value, but of practice value as well. The researcher s orientation should be to improve health care and systems.	1.56	93.75	0.63	0.13
Researchers should be competent.	1.56	93.75	0.63	0.13
Researchers should be connected to communities and patient care.	2.00	68.75	0.91	0.54
Research should be conducted in an ethical and honest manner.	1.38	93.75	0.63	0.16
Larger studies, follow-up research and translational studies should be conducted to enhance the quality and implementation of research.	1.81	81.25	0.75	0.44
Leadership				
Leadership should foster a culture of sharing and cooperation amongst nurses: knowledge, skills, data, research results, from onset of training to researchers, leaders (for example sharing with peers at undergraduate as well as post-graduate level) (M=1.73, %=90.32, SD=1.12)	1.94	81.25	0.85	0.25
Resources				
The strategy should improve access to research-related resources, namely funding, human resources, infrastructure and information (M=1.70, %=90.00, SD=0.88).	1.69	93.75	0.60	0.02

*Guidelines for interpretation of effect size 0.2 small effect; 0.5 medium effect; 0.8 large effect (Ellis & Steyn, 2003:51)

is not recognised in the traditional health research field. Furthermore, nurses lack research leadership and the confidence to disseminate their research findings. Items related to this opinion reached cumulative frequency levels of around 80% in successive rounds. A low consensus figure was found on opinions such as that nurses have the potential and unique skills to conduct research, that health research conducted by nurses have added value in that it leads to professional development that critical thinking is promoted and that research methodologies are consequently refined. Additionally, nurses are involved in a variety of activities, not only research, that cumulatively contribute to the body of nursing and health care knowledge, ultimately improving patients' quality of life.

A strategy to promote nurses' research contribution

The results of round one indicated that the panel acknowledged the value of a strategy for the South African context, namely that it may ensure that essential and relevant health research is undertaken, that nurses are empowered as renowned researchers and that the perception of nurses change from being "only part of a workforce" to that of professional health scientists. The panel indicated that the strategy should not necessarily aim to unify efforts by nurses, as a multi-disciplinary context and collaboration across disciplines will then be limited, but should rather be used to direct and focus research efforts. During subsequent rounds consensus was reached on the opinion that a strategy is

necessary, but should be feasible and realistic within the South African context and follow a multi-disciplinary approach.

During round one the panel of experts confirmed that research capacity building, a collaborative approach, dissemination and utilisation, quality of research conducted by nurses, leadership, resources and research priorities should be included in a strategy. Subsequent rounds revealed that further emphasis was placed on these elements and that links between these elements became evident.

Research capacity building

Research capacity building was seen as a core element of a strategy. The highest levels of consensus were reached on items relating to this aspect. Suggestions about research capacity building on which the panel reached consensus are reflected in Table 2. Opinions in round one indicated that the initial focus should be on creating research awareness amongst nurses. However, during subsequent rounds panellists revealed that research capacity building, as presented in Table 2, in itself will create research-mindedness.

Furthermore, suggestions were made during round one regarding who should take responsibility for research capacity building. It became evident that universities, the South African Nursing Council, health care facilities as well as funding institutions should play a role. Nurses, as life-long learners, should also take responsibility to develop research-mindedness and to be involved in focused research. During subsequent rounds, it further became apparent that educators and research supervisors might play a key role in research capacity building.

A controversial issue between the panellists was that universities should re-introduce research theory at the honours degree level to adequately prepare nurses to apply appropriate research methodology. There was little support for this opinion (cumulative percentage=41.94%, mean=2.94, standard deviation=1.39).

A collaborative approach

The panel of experts initially indicated that collaborative research forms part of a strategy to promote research. The argument that collaborative research is not appropriate in all research projects and that the challenges involved may negatively influence research-mindedness, was raised. Subsequent rounds, however, revealed strong support that a collaborative approach, aiming to build partnerships and foster a culture of sharing and cooperation, is more inclusive and could be valuable (Table 2 contains opinions that reached consensus levels).

Throughout the research results participants presented contrasting opinions on the aspect of smaller versus bigger collaborative research projects. Some participants were of the opinion that nurses should be more involved in inexpensive, smaller, grass-roots projects, to gain experience in conducting research and in seeing the impact of research on health-care delivery, while other participants were more in support of bigger research projects, with increased access to funding, more opportunities for international partnerships and an increased impact on health care delivery. This debate might be further explored in follow-up research.

Dissemination and utilisation of research results

The panel reached consensus that the dissemination and utilisation of the findings of research conducted by nurses often do not occur. Reasons for this phenomenon are poor methodology, lack of depth in and follow-up research; lack of evidence-based practice; a trend among nurses to not regularly buy or subscribe to and to read journals or research-related material, the lack of critical reading and analysing skills and inaccessibility of libraries and other resources.

According to the consensus view of panelists, dissemination and utilisation of research results are directly related to the building of research capacity, often obtained within a collaborative approach.

Quality of research conducted by nurses

Although opinions on the quality of research conducted by nurses reached consensus levels (refer to Table 2), it seems that the panel put more emphasis on dissemination and utilisation of research results than on the quality of research. In Table 2 it is shown that the quality of health research conducted by nurses might

be linked to research capacity building, collaboration, as well as dissemination and utilisation, in that the application of these aspects might lead to an improvement in the quality of health research conducted by nurses.

Leadership

It was initially identified that a strong, centralised coordinating body that will lead, drive and coordinate a strategy to promote research, is essential. It was mentioned that this body should include a team of nurses, experienced in health research, who will take responsibility to promote research conducted by nurses nationally. Nurse leaders in the clinical field as well as relevant stakeholders in health research should be included. Such a body should look critically at the feasibility of implementing, managing, mentoring and monitoring the strategy. Developing funded research units should also be included as part of their responsibilities. An important task is to build partnerships with related health research stakeholders, such as the South African Nursing Council, professional nursing organisations, the Department of Health, research funding institutions, health care facilities, as well as other disciplines and research-related institutions, in order to gain support for health research conducted by nurses.

It was interesting to note that centralised leadership in the form of a coordinating body was not emphasised in successive rounds. The only consensus statement related to this was that leadership should be provided to foster a culture of sharing and cooperation amongst nurses (see Table 2). The question about who should and will take responsibility of a strategy remained unanswered and needs further exploration.

Resources

During all the Delphi rounds the panellists agreed that resources are necessary in a strategy to promote research (see Table 2). Such resources include funding, infrastructure, human resources and access to information, which generally are limited or difficult to access. Interestingly, team efforts/collaboration was also seen as a resource that will enhance the accessibility of experts and research-related resources. The panel further pointed out that research conducted by nurses should be regarded as important by the relevant stakeholders, before they will be willing to avail resources.

Research priorities

Panellists clearly aired their opinions on current research priorities in South Africa. It was evident that priorities could be grouped into themes such as issues relating to health systems research, the quality of health care, health care staffing levels and staff mix and HIV/AIDS. Cumulative frequency values of between 80% and 90% were reached on these themes, with the highest values reached on the theme “health systems research”. A high consensus level of above 90% was not reached on the theme that the relevance of research by nurses will be improved by the setting of research priorities. It was argued that nurses should not only research the listed research priorities, but be guided by practice needs and important research problems. The difficulties of setting research priorities for a discipline as a whole were mentioned, as well as the fact that in South Africa research priority setting is not yet well organised and feasible. Links between the results on research capacity building and the quality of health research conducted by nurses indicated that a research promotion strategy, in itself, might improve the relevance of health research conducted by nurses.

CONCLUSIONS

It is clear that research by nurses that is recognised as of a high quality that leads to an increase in the scientific body of knowledge of the discipline of nursing, health and health care, has not been achieved. Personal and professional empowerment of nurses in research and the refinement of appropriate research methodologies need attention to further promote the contribution of nurses towards health research.

The significance of nurses’ contribution towards health research is directly linked to nurses’ level of research competence, confidence and motivation, as well as to the degree to which a focused, coordinated and collaborative research effort is implemented and how research results are disseminated and utilised.

The research supervisor/educator might play a key role in a strategy to promote the contribution of nurses towards health research by acting as a research leader, a research-oriented mentor and by creating opportuni-

ties for developing novice nurse researchers.

Research capacity building, as a core aspect of a strategy to promote health research conducted by nurses, should aim to create a supportive environment in which nurses obtain research-related skills and attitudes, including questioning attitudes, critical analytical skills, interest and skills in reading scientific material, writing skills and a broad basis of research skills.

Partnerships with cross-functional, multi-disciplinary teams seem to have the impetus to develop a network of research leaders that will result in a significant increase in the contribution towards health by means of research conducted by nurses.

These conclusions form the basis of a framework for the development of a strategy to promote the contribution of nurses towards health research. It is recommended that follow-up research is conducted with relevant stakeholders in order to verify and explore the application of this proposed strategy. Such research is explained in the following article.

Acknowledgements

The authors would like to thank Dr Suria Ellis for her assistance with quantitative data analysis and Ms Belinda Scrooby for her assistance as co-coder.

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