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Chang, Anne M. and Gardner, Glenn E. and Duffield, Christine and Ramis, Mary-Anne (2010) *A Delphi study to validate an advanced practice nursing tool*. Australian Journal of Advanced Nursing, 66(10). pp. 2320-2330.

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A Delphi study to validate an Advanced Practice Nursing tool

Anne M. Chang^{1,2}, Gardner, GE^{2,3}, Duffield C⁴ & Ramis MA^{2,5}.

Anne M. Chang PhD RN FRCNA

Professor of Clinical Nursing

¹Institute for Health & Biomedical Innovation, Queensland University of Technology, Brisbane, Australia and

²Mater Health Services, South Brisbane, Australia

Glenn Gardner PhD RN FRCNA

Professor of Clinical Nursing

¹Institute for Health & Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

³Royal Brisbane and Women's Hospital, Brisbane, Australia

Christine Duffield RN PhD FRCNA

Professor of Nursing and Health Services Management

⁴Centre for Health Services Management

University of Technology, Sydney, Australia

Mary-Anne Ramis RN BN Grad Cert (Infect.Cont.)

Research Assistant,

¹Institute for Health & Biomedical Innovation, Queensland University of Technology, and

²Mater Health Services, South Brisbane, Australia

Correspondence to Anne Chang:

School of Nursing and Midwifery
Queensland University of Technology

Room 339, N Block

Victoria Park Rd., Kelvin Grove

Brisbane, Australia, 4059

e-mail: am.chang@qut.edu.au

ACKNOWLEDGEMENTS

We gratefully acknowledge funding for the study received from the Queensland Nursing Council, Australia.

ABSTRACT

Aim: This paper is a report of a study conducted to validate an instrument for measuring advanced practice nursing role delineation in an international contemporary health service context using the Delphi Technique.

Background: Although most countries now have clear definitions and competency standards for Nurse Practitioners, no such clarity exists for many advanced practice nurse roles, leaving health care providers uncertain whether their service needs can or should be met by an [advanced practice nurse](#) or a [nurse practitioner](#). The validation of a tool depicting advanced practice nursing is essential for the appropriate deployment of APNs. This paper is the second in a three phase study to develop an operational framework for assigning advanced practice nursing roles.

Method: An expert panel was established to review the activities in the Strong Model of Advanced Practice Role Delineation tool. Using the Delphi technique, data were collected via an on-line survey through a series of iterative rounds [in 2008](#). Feedback and statistical summaries of responses were distributed to the panel until the 75% consensus cut-off was obtained.

Results: After three rounds and modification of five activities, consensus was obtained for validation of the content of this tool.

Conclusion: The Strong Model of Advanced Practice Role Delineation tool is valid for depicting the dimensions of practice of the [advanced practice](#) role in an international contemporary health service context thereby having the potential to optimise the utilisation of the [advanced practice nursing](#) workforce.

Keywords: Delphi technique, domains of practice, service potential, advanced practice nurses, instrument validation

SUMMARY STATEMENT

What is already known about this topic

- While the nurse practitioner role has been well defined in most countries, there is no clarity internationally on the service potential and domains of practice for advanced practice nursing roles.
- The Strong Model of Advanced Practice has been identified through previous research, as an appropriate tool for delineating the domains of practice and activities for APN roles but requires validation.
- When used appropriately, the Delphi technique can provide a successful method to obtain consensus, and is being increasingly used in health research.

What this paper adds

- [Methods for effectively addressing common issues raised in use of the Delphi technique.](#)
- Validation of previous research toward developing an operational framework for assigning advanced practice nursing roles.
- [A tool for defining the core activities of APN practice required to ensure more appropriate adoption and evaluation of APN roles.](#)

Implications for practice and/or policy

- Using this tool as a framework for defining role domains and activities for APN practice will enable development and recognition of strong individual role identities within the nursing profession and the general community.
- Content validation of the Advanced Practice Role delineation tool (Mick & Ackerman, 2000) provides a platform for wider research and statistical validation of the instrument in a specific health service context.

- Further research is recommended to test the use of this tool in operational planning for APN service provision.

INTRODUCTION

There is global confusion surrounding nursing roles, with ambiguity in nomenclature and role definition for the advanced practice nurse (APN) (Jamieson & Williams, 2002, Daly & Carnwell, 2003, Bryant-Lukosius et al., 2004). This ambiguity has led to an identity crisis in nursing (Castledine, 1994), with terms such as ‘extended role’ and ‘expert practice’ failing to differentiate the myriad APN roles and titles. As clarity in role definition for the nurse practitioner (NP) becomes established internationally (Furlong & Smith 2005, Gardner et al., 2006, Stanley 2009, van Soeren et al., 2009), service managers are seeking guidance to determine the service potential of other APN roles. The development of an appropriate framework for advanced nursing practice is necessary to guide operational planning, education and career development for advanced practice nursing roles.

BACKGROUND

Role terminology

No consensus has been found in terminology used for nursing and midwifery roles in government reports and regulatory guidelines in the Australian context (Heartfield, 2006). This is consistent internationally, with role ambiguity identified by Lloyd (2005) as one of the major barriers to the introduction of APN roles. Calls for clarification of these roles abound in the international literature (Furlong & Smith, 2005, Lloyd-Jones, 2005, Bryant-Lukosius et al., 2004, Jamieson & Williams, 2002, Pearson & Peels, 2002), with global agreement that delineating the activities APNs undertake is necessary to define the role (Macdonald et al., 2006, Por, 2008).

The [International Council of Nurses \(ICN\)](#) has recently defined the APN role as that of a Registered Nurse who has expert knowledge, complex decision-making skills and clinical competence required for expanded nursing practice, with specific characteristics determined

by the credentialing country or context of their practice (Sheer & Wong, 2008, ICN, 2009). This broad concept of the APN role is supported globally (Bryant-Lukosius et al., 2004, Macdonald et al., 2006, Sheer & Wong, 2008). However, a recent survey by the ICN identified that, among 18 countries worldwide, 14 different titles exist for the APN role; this figure is inclusive of nurse practitioner titles as well (ICN, 2008, ICN, 2009).

Developments in the delineation of the nurse practitioner role (Gardner et al., 2006, Stanley 2009, van Soeren et al., 2009) have led in several countries to consensus on the definition of a NP and, in some countries to development of practice standards (Gardner et al., 2004, College of Nurses of Ontario, 2009). This important step clearly differentiates the NP by definition and service model. However, no such clarity exists for the more generic APN role, with confusion concerning the APN title more evident since delineation of the NP role.

In order to contribute to the knowledge base on this issue, we conducted an exploratory study of the dimensions of practice of APN roles, other than the nurse practitioner role. A qualitative study was conducted with a randomly-selected sample of nine advanced practice nurses working in acute care hospitals in south-east Queensland, Australia (Gardner et al., 2007). The findings from the in-depth interviews identified the practice dimensions in the Strong Model of Advanced Practice Role Delineation Tool (Mick & Ackerman, 2000) as best reflecting the parameters of practice of the APN study participants. These findings provided data to be further tested using quantitative methods aiming to validate the APN role delineation tool, based on the Strong Model, for an international context and the contemporary health service environment.

The Delphi technique

Validation of an existing tool, prior to use in a different country, can be obtained through advice and consensus from relevant local experts. The Delphi technique, which incorporates a

series of iterative rounds, is a method for exploring divergence as well as obtaining consensus from an expert panel (McKenna, 1994, Hasson et al., 2000), and is increasingly being used in healthcare research (Pelletier, 1997, Roberts-Davis & Read, 2001). Examination of issues in using the Delphi technique can assist in overcoming the limitations concerning establishment of the expert panel, communication with panel members, structured versus unstructured first round, number of rounds and the process of gaining consensus.

Establishing a Delphi expert panel requires identification of those who are well-informed about the specified field (McKenna, 1994, Hasson et al., 2000). In addition to expertise, the participants should be interested in the topic, credible within their field and willing to participate throughout the entire study (Keeney et al., 2001, Powell, 2003, Hanafin, 2004). While there is no clear recommended panel size, results may be biased if representation of subgroups being studied is not achieved (Hardy et al., 2004), with heterogeneous groups from diverse backgrounds possibly producing more reliable results (Keeney et al., 2001, Powell, 2003).

While communication with Delphi panel members can occur through face-to-face meetings, mail or internet techniques, Snyder-Halpern et al., (2000) found that email responses, compared to mail-based responses, were more legible, eased data entry and enhanced communication tracking. Furthermore, email was cheaper and faster, although response rates may be affected due to technical issues with system capabilities and compatibilities and participants' technical expertise (Snyder-Halpern et al., 2000). However, the increasing use of such online systems (Internet World Stats, 2009) for personal and professional use, suggests that these difficulties may be on the decline.

Maintaining anonymity in a Delphi study allows participants to respond openly and avoids the influence of dominant personalities which may arise in other group consensus methods,

thereby enabling expression of honest and open views (Keeney et al., 2001). True anonymity is often difficult to achieve, as the participants need to be known to the researcher for the provision of feedback and follow-up (Hasson et al., 2000, Keeney et al., 2001); total anonymity may lead to low response rates and lack of accountability for responses (Keeney et al., 2001, Powell, 2003, Hanafin, 2004).

While the first round of the classical Delphi is usually unstructured (Keeney et al., 2001, Roberts-Davis & Read, 2001, Powell, 2003, Hanafin, 2004), such a process may produce large amounts of poorly-defined and ambiguous information (Hardy et al., 2004). Keeney et al., (2001) indicate that large amounts of information from an open-ended first round may lead to numerous subsequent rounds, placing a strain on participants and threatening the validity and reliability of the study. Modification of this classical technique by giving panellists some pre-existing information in round 1 is gaining acceptance, especially when the Delphi study proposed follows on from previous research or is generated from available literature (Hanafin, 2004, Hardy et al., 2004, Keeney et al., 2006). This process, labelled the 'reactive Delphi' (McKenna, 1994), was used for the current study as pre-existing work offered initial support for the Advanced Practice Role Delineation tool, founded on the Strong Model (Ackerman et al., 1996, Mick & Ackerman, 2000), in an Australian context (Gardner et al., 2007). Strategies for minimising respondent bias using this method include providing respondents with opportunity to comment, in addition to using rating scales and avoiding early closure on ideas raised by participants to prevent them feeling psychological pressure to conform to existing information (Keeney et al., 2006).

There is no set limit on the number of rounds for a Delphi study (Keeney et al., 2001, Pulcini et al., 2006), with anywhere between four (Young & Hogben, 1978) and ten rounds (Woudenburg, 1991) undertaken to achieve consensus. Three rounds is a commonly-accepted

approach (McKenna, 1994, Pulcini et al., 2006), with more rounds often exposing problems such as participant fatigue and increased attrition rates (Keeney et al., 2001). If early group consensus is achieved, the number of rounds may be as short as two (Snyder-Halpern et al., 2000, Hanafin, 2004).

While the goal of the Delphi technique is to achieve consensus, this is a contentious topic, with descriptions of consensus varying from convergence of opinion (McKenna, 1994) to stability of responses between rounds (Duffield, 1993) and to decrease in the variance of responses (Pulcini et al., 2006). Hanafin (2004) suggests that decrease in variance may be attributed to increased attrition rates. A commonly-accepted method for determining consensus is to attribute a percentage value to the level of agreement, which may range from 51% (McKenna, 1994) to 100% (Williams & Webb, 1994). The decision is often arbitrary (Keeney et al., 2001); however, it is agreed that clearly stipulating the method of reaching consensus, along with the authors' definition of consensus, prior to analysing the data, is crucial to the credibility of any Delphi study (Hasson et al., 2000, Hanafin, 2004, Keeney et al., 2006). Keeney et al., (2001; 2006) suggest that even when consensus exists, it does not indicate that the correct answer has been derived, and further research will often be required to enhance the findings of a Delphi study (Powell, 2003).

THE STUDY

Aim

The aim of the study was to validate an instrument for measuring advanced practice nursing role delineation in an international contemporary health service context using the Delphi Technique.

Design

The Delphi technique was used to review systematically the items in the APN Role Delineation tool to establish content validity. The Delphi method used for this study addressed previously identified issues in using the technique by: 1) including panel members representative of those working at the level of an APN, aspirants to this role and managers who potentially would be involved in decisions about using advanced practice nursing services; 2) incorporating an email and web-based system for communicating and managing the Delphi rounds; 3) using a structured approach thereby building on previous work in the field; 4) using as many rounds as needed to obtain consensus and 5) defining the cut-off for consensus as 75%.

A combination email and online method for data collection was chosen, as the panel members were selected to represent the widespread regions throughout Queensland, Australia. The study was carried out between February and September, 2008.

Participants

Purposive stratified sampling was used to establish the Delphi panel. The 16 nurses invited to form the panel were from different nursing operational levels, including clinicians, educators, managers, advanced practice nurses and senior directors, and represented rural, remote and metropolitan settings. The panel members were required to be knowledgeable about and familiar with the parameters of professional nursing practice and health service workforce requirements, and credible within their profession.

Data collection

Panel members were asked to review the APN Role Delineation tool developed in the USA based on the Strong Model of Advanced Practice (Mick & Ackerman, 2000). Permission was obtained to use this tool from the authors. This tool identifies five domains which are proposed to address the main areas of APN practice. The domain titles are Direct Comprehensive Care, Support of Systems, Research, Education and Publication and Professional Leadership. Within each domain are listed the activities undertaken by the APN. For each of our Delphi rounds, panel members were asked to respond with regard to the practice of advanced nurses, excluding nurse practitioners, and to indicate the extent of their agreement with each of the five domains of advanced practice nursing and with the activities within the domains, using a 5-point Likert scale (5 = Strongly agree; 4=Agree; 3=Undecided, 2=Disagree, 1=Strongly Disagree). Prior to reading and rating the activities listed within these domains, the panel members were asked to give comments on the domains of practice.

Data received from each participant's completed online survey were automatically compiled and emailed to the researchers. In subsequent rounds, panel members were emailed feedback of their own and the panel's responses, as well as the hyperlink to the next version of the tool. This feedback process is a vital part of the study as it forms the only communication between panel members and has been documented as an important feature of Delphi studies (Murphy et al.1998, Efstathiou et al., 2008, McKenna et al., 1994).

The on-line data collection method was a cost effective and efficient means to enable expert panel members to communicate their opinions and responses to us.

Ethical considerations

The study was approved by the appropriate ethics committees.

Data Analysis

At the outset of the study it was decided that activities rated 3 or above with a content validity index (CVI) of 0.75 or greater would be the acceptable level of consensus with APN domains and activities. The CVI was calculated from the percentage of panel member ratings of 4 or 5 on the Likert scale (agree or strongly agree) for each APN domain or activity. The data were analysed using SPSS (version 16.0).

RESULTS

The expert panel comprised 10 nurses from the acute care setting: 3 Clinical Nurses, 3 Nurse Unit Managers, 2 Nursing Directors, 2 District Directors of Nursing; and 2 community nursing representatives. There were also 2 panel members from an academic setting, 1 from a professional association and 1 from an industrial body. Some panel members represented more than one field (see Table 1). One panel member changed job positions during the study, going from a clinical to a managerial position. The same expert panel was used for all Delphi rounds, with one person discontinuing after round 1. The average length of nursing experience for the panel was 23.62 years. The majority were female (n=14) and their ages ranged from 20 to 49 years. Four had PhDs, while 8 had Master's degrees, with the remainder having completed certificate, Bachelor's degree or post-graduate certificate qualifications.

Round 1.

APN Domains

Round 1 of the survey had a 100% response rate. Consensus was achieved for all five domains of Advanced Nursing Practice, with the APN domain of Support of Systems and Education receiving 100% agreement and the lowest percent agreement being 87.5% for the domain of Publication and Professional Leadership (see Table 2).

APN Activities

There was consensus, with a CVI of 75% or above for 37 of the 42 activities from the APN Role Delineation tool. Five activities did not reach the predetermined level of consensus, with the first and lowest rated activity being activity 1.3 – ‘making a medical diagnosis’ with a CVI of 37.5%, indicating that the panel were undecided about this activity. Comments by some panellists signified that they did not believe medical diagnosis was part of an APN role.

The activity of ‘initiating and identifying diagnostic tests’ also did not reach the cut-off for consensus.

The other three APN activities with a CVI of less than 75% were - Evaluating education programs, Seeking out funding and Designing clinical information systems (see Table 3). At the conclusion of round 1, no new activities had been suggested for the tool and no activities were removed.

Responses and comments from the first round were collated and the responses sent to each panel member. These included the panel’s mean score for each domain and activity, alongside the individual panellist’s own response for each domain and activity and the hyperlink for the second round survey.

As part of the ongoing feedback process, additional information was sent to panel members following their comments in round 1 to suggest that they consider whether a broader perspective than solely focussing on clinical activities for the APN could encapsulate the proposed diversity beyond an exclusive clinical APN role. Accordingly, an explanation was included at the start of round 2 (see Figure 1).

Round 2.

The response rate for round 2 was 93.75% (n=15). There was very little difference in mean scores for all of the activities and domains of practice; however, the activities that had been

scored low in the first round were again scored below the anticipated level of consensus. More specifically, these were – activity 1.3 (making a medical diagnosis); 2.2 (recruitment and retention); 3.2 (formal educator); 4.3 (seeking out funding); 4.6 (engineer or design clinical information systems) and 5.6 (shaping public policy).

The activity concerning making a medical diagnosis by APNs was deleted at the end of round 2 due to continuing low consensus (CVI = 66.6%) and comments from round 1 and 2 indicating that this was not part of APN practice.

Due to the minimal difference in round 1 and 2 levels of agreement with the majority of APN activities, only responses for the five activities below the 75% CVI cut-off level of agreement were collated and sent to panel members for the third Delphi round. Participants were sent alternative wording for these activities (see Table 4) in response to comments received from panel members in round 2. Activity 4.6 about clinical information systems was divided into two separate activities, resulting in six activities for the panel to review. The document sent for round 3 included the mean of the overall panel's responses for the five activities from round 2, alongside the individual panellist's response for each of these activities. A hyperlink was included to complete Delphi round 3.

Round 3.

There was a 93.75% (n=15) response rate at the end of round 3, and all but one activity had reached the 75% CVI level of consensus. Positive comments were received about the wording changes, indicating that the reworded activities reflected a more appropriate and contemporary view of APN activities.

Although activity 4.3 regarding funding sources continued to score lower than the 75% cut-off, comments from the panel with reference to this activity suggested that there was some indecision about role of the APN in seeking out or identifying funding sources. We therefore decided to leave this activity in the tool with the new wording for the third follow-on study to see whether results from a wider sample of nurses would clarify the APN role for this activity. At the end of phase 1 the modified Advanced Practice Role Delineation tool based on the Strong Model (Mick & Ackerman, 2000) was ready for use in a larger follow-up study.

DISCUSSION

Study limitations

Commencing the Delphi technique with previous work on the topic is seen by some (Powell, 2003) as a limitation in this study design as panel members can feel constrained in their responses and comments. Although our panel members were given space for comments to assist in overcoming such possible constraints, no additional activities or domains were suggested. It may be that indicating their level of agreement with the domains and activities predominated and lessened their consideration of possible additional APN domains and activities, or that they found the Strong Model to be sufficiently comprehensive in delineating the role of the APN.

Although panellists were definitive in their responses on removing the item on making a medical diagnosis, the activity relating to identifying and initiating diagnostic tests did achieve consensus and was left in the tool. While this latter activity may be seen by some to be associated with medical practice or a nurse practitioner role, the expert panel's preference for retaining this activity for APNs suggests that further investigation is needed.

The Advanced Practice Nurse role

It was apparent from comments after the first Delphi round that there was some confusion and discrepancy within the panel on the role and activities of an Advanced Practice Nurse. This is not a unique problem, as APN role confusion is experienced both within and outside the nursing profession globally (MacDonald et al., 2006). In the USA, the term advanced nursing practice is complex and [confusing](#) and there is ongoing debate whether advanced practice roles should be blended or differentiated (Mick & Ackerman, 2002, Sheer & Wong, 2008). A previous study in the USA using the Mick & Ackerman APN Role Delineation tool (2000) showed higher levels of expertise for the Clinical Nurse Specialist (APN) in all practice domains compared to the Nurse Practitioner (Mick & Ackerman, 2000).

Our findings support the potential of the Strong Model of Advanced Practice Role Delineation tool as a framework for determining the service potential of APN positions. The original tool's domains of direct comprehensive care, support of systems, education, research and professional practice all received high levels of consensus, which suggests that these domains are integral to the role of an APN.

The direct comprehensive care domain, which forms a large portion of the APN Role Delineation tool, received a high level of consensus from the expert panel. This domain consists of patient-focussed activities including procedures, assessments, interpretation of data and patient counselling (Ackerman et al., 1996). Comments about this domain led to the removal of 'making a medical diagnosis' as an activity, as this study did not include validation of this tool for use with nurse practitioners. However, if in Australia a future study were undertaken to compare the APN and NP, this activity would need to be included, as it has been in USA, to distinguish between those working as nurse practitioners and those working in other types of advanced level positions.

The support of systems domain achieved full consensus. This domain incorporates activities which optimise functioning of the institution and includes recruitment and retention activities, strategic planning, mentoring and quality improvement activities. Within this domain, the original tool included a reference to an APN contributing to medical centre and school of nursing recruitment and retention activities. Rewording of the activity to omit reference to medical centre and school of nursing but retain the APN's contribution to recruitment and retention resulted in a much higher level of consensus, indicating contextual relevance.

The education domain also achieved full consensus after three Delphi rounds. This domain encompasses a wide scope for education to meet the needs of [patients](#), communities, clinicians and students (Gardner et al., 2007). While there is much literature on the role of patient education and the APN's role as an educator (Brooten et al., 2002), by deleting the word 'formal' from one activity within this domain, consensus on that particular activity increased. This may reflect the large amount of 'informal' teaching activity conducted by APNs.

The fourth domain in the Strong Model, research, is aimed at supporting a culture of practice that challenges norms and seeks to improve patient outcomes through scientific enquiry; it is not just reflective of conducting research (Mick & Ackerman, 2000, Gardner et al., 2007). A high level of consensus was obtained following rewording of two activities in this domain. Funding for additional services to those provided by public or private healthcare systems requires nurses to be aware of sources for innovative projects to improve patient care. Eckhart (1996) agrees that creativity is needed to identify funding sources, particularly for nurses working in the community or public health sectors. Kinsey & Buchanan (2003) and Glick (2003) also state that nurses must be aware of funding sources and potential funding opportunities to optimise nursing interventions. Although not quite reaching the 75% cut-off,

divergent comments received indicated that the activity could be retained for the third follow-up study. Further research is needed to determine if this activity should continue to be part of the contextualised tool.

The second reworded activity within the research domain related to designing clinical information systems. While few nurses or APNs would be able actually to design clinical information systems (Epping & Goossen, 1997), it is important for them to be able to use and be involved in the development of health information systems (Eley et al., 2008). Rewording and dividing this activity into two separate activities changed the emphasis to focus on recognition of the type of information systems required, as well as working collaboratively with information technology specialists.

Publication and professional leadership is the last domain in the tool. A high level of consensus was achieved from the expert panel on this domain, after rewording of the activity on shaping public policy on healthcare. The new wording introduced a collaborative aspect to this activity. Ackerman et al., (1996) suggest that this domain is reflective of a commitment to the profession. The activities within this domain, according to the original model, should be aimed at promoting nursing and healthcare.

The main changes to the APN Role Delineation tool made in this study resulted in the deletion of one activity and wording clarification of five activities. The wording of three activities was changed to emphasise a more collaborative approach to the APN role than was evident in the original wording. Collaboration is one of the conceptual strands in the original Strong Model, and such changes are consistent with those who propose professional and interdisciplinary collaboration as part of the APN role to optimise patient outcomes (Mick & Ackerman, 2000).

Introducing and successfully implementing new roles requires a consistent and definitive framework to ensure the optimal utilisation of such roles (Bryant-Lukosius et al., 2004, Brown, 1998), and incorporating a managerial perspective in this framework is imperative, as managers are often called upon to support and guide these roles (McKenna, 2008).

The Delphi technique

The Delphi technique provided an appropriate forum for our expert panel to indicate their levels of agreement with the domains and activities in the APN Role Delineation tool. The credibility and validity of the study were enhanced by addressing issues commonly raised in relation to the Delphi technique in advance.

Purposive selection of panel members from industry, academia, clinical, management and community as well as rural and metropolitan settings ensured that the panel was diverse and representative, and that members possessed knowledge about the parameters of professional nursing practice and health service workforce requirements.

The method of communicating via email and online survey was user-friendly and allowed quick individual response times. There was some delay overall in responses from one member due to illness; however, this was effectively followed up via email communications.

Our decision to use a structured first round in the reactive Delphi style (McKenna, 1994, Leeper et al., 2002) enabled progression from the foundation work on the APN Role Delineation tool in the USA (Mick & Ackerman, 2000), and the initial research on the Strong Model of APN in Australia (Gardner et al., 2007). Although there may be a risk of bias or limited responses with the reactive method (Leeper et al., 2002, Hardy et al., 2004), providing for and encouraging comment at each stage of the study allowed participants to express their views freely (Keeney et al., 2006). Comments were reviewed in each round, and were

returned to the panel members, along with individual mean responses and overall mean responses for each round. If panellists had questions pertaining to any activity, the researchers responded to these and clarified points where necessary. All questions and responses were included anonymously, in the response document to all panel members to promote open discussion. This method of controlled feedback facilitated development from previous research, and gave participants opportunities to change their opinions after reviewing the anonymous responses of other panel members (Hasson et al. 2000, Keeney et al. 2006).

Predefining the level of consensus for the study facilitated determining the number of rounds required. The stability of responses between rounds 1 and 2 led to the decision to use a modified round 3, asking only for responses to the five reworded activities. Despite one activity remaining below the predefined level of consensus, contradictory comments supported the need for further discussion of this activity, which will occur in the next phase of our research. Overall, however, modifying the wording of five of the APN activities received positive feedback in relation to contextualising the tool for the local nursing context.

CONCLUSION

This study follows and supports our previous work on the role of the Advanced Practice Nurse. The findings from this Delphi study support the modified APN Role Delineation tool as having potential to reduce confusion surrounding the role. Using this tool as a framework for defining role domains and activities for APN practice will enable development and recognition of strong individual role identities within the nursing profession and the general community. This study is of significance to healthcare providers as it offers a tool for defining the core activities of APN practice required to ensure more appropriate adoption and

evaluation of APN roles. Further research is recommended to test the use of this tool in operational planning for APN service provision.

ACKNOWLEDGEMENT

We gratefully acknowledge funding for the study received from the Queensland Nursing Council, Australia.

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Table 1. Expert Panel Members' Characteristics

| Characteristic | <i>n</i> | % |
|---------------------------------------------------|-----------------|----------|
| Sex | | |
| Male | 2 | 12.5 |
| Female | 14 | 87.5 |
| Current Position | | |
| Clinical Nurse | 3 | 18.8 |
| Nurse Unit Manager | 3 | 18.8 |
| Nurse Manager | 2 | 12.5 |
| Director of Nursing | 2 | 12.5 |
| District Director of Nursing | 2 | 12.5 |
| Academic | 2 | 12.5 |
| Professional/Industrial body representative | 2 | 12.5 |
| Community Health Representative | 2 | 12.5 |
| Highest Level of Educational Qualification | | |
| Certificate | 1 | 6.2 |
| Bachelor of Nursing or equivalent | 2 | 12.5 |
| Postgraduate certificate | 1 | 6.2 |
| Masters | 8 | 50.0 |
| PhD | 4 | 25.0 |
| Age (years) | | |
| 20-29 | 2 | 12.5 |
| 30-39 | 12 | 75.0 |
| 40-49 | 2 | 12.5 |

Table 2. Means and frequencies for Delphi Round 1 Advanced Nursing Practice domains

| Domain | Mean | % |
|-----------------------------------------|-------------|----------|
| Direct and comprehensive care | 4.56 | 93.8 |
| Support of systems | 4.81 | 100.0 |
| Education | 4.69 | 100.0 |
| Research | 4.56 | 93.7 |
| Publication and Professional Leadership | 4.50 | 87.5 |

Table 3. Delphi Round 1 Advanced Practice Nurse activities with less than 75% agreement by Expert Panel members

| | Activity | % | Mean |
|-----|---------------------------------------------------------------------------------------------------------------|----------|-------------|
| 1.3 | Make a medical diagnosis within specialty scope of practice and practice guidelines | 37.5 | 3.00 |
| 1.4 | Identify and initiate required diagnostic tests and procedures | 68.7 | 3.69 |
| 3.1 | Evaluate education programs and recommend revision as needed | 68.7 | 3.94 |
| 4.3 | Seek out potential funding sources to support investigation of clinical issues or to fund program development | 62.4 | 3.63 |
| 4.6 | Engineer or design clinical information systems that make available data for future research | 50.0 | 3.50 |

One issue arising relates to different positions being at the level of Advanced Nursing Practice. The model we are testing holds that the practice of an advanced practice nurse includes all five domains but their specific role determines which domains have more emphasis. The chart below gives an example of the differing emphases on domain activities according to position. The example below relates to a clinical researcher. A clinical educator APN or a clinician APN would each have a different relative emphasis in domain activities.

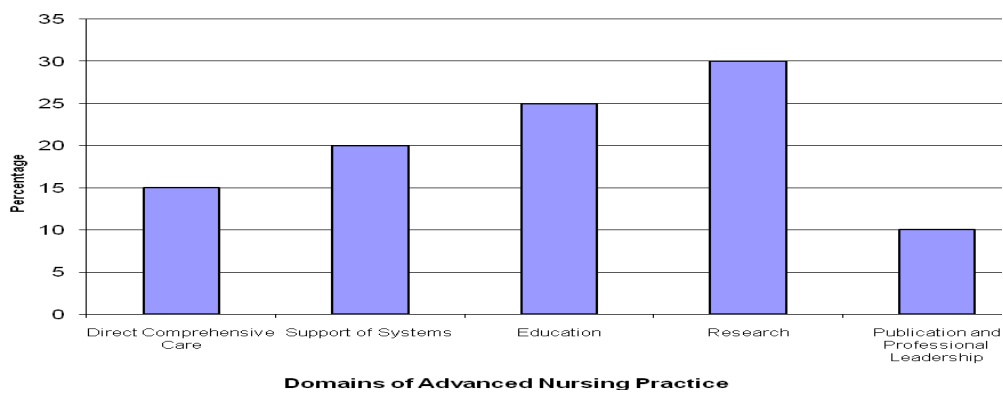


Figure 1. Additional information regarding focus of activity in each domain according to type of possible Advanced Practice Nurse (APN) position, e.g. APN Clinical Nurse Researcher

Table 4. Percentage agreement with selected original and amended activities

| | Round 2 | | | | Round 3 | | |
|----------|---------------------------------------------------------------------------------------------------------------|------|------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| Activity | Original wording | % | Mean | Activity | New wording | % | Mean |
| 1.3 | Make a medical diagnosis within specialty scope of practice and practice guidelines | 66.6 | 3.73 | | <i>Activity deleted according to Panel recommendations</i> | | |
| 2.2 | Actively contribute to medical centre and school of nursing recruitment and retention activities | 66.7 | 3.67 | 2.2 | Contribute to, consult or collaborate with other healthcare personnel on recruitment and retention activities | 100 | 4.47 |
| 3.2 | Serve as a formal educator and clinical preceptor for nursing and medical students, staff and/or others | 73.4 | 4.13 | 3.2 | Serve as educator and/or clinical preceptor for nursing and/or medical students, staff and others | 93.3 | 4.47 |
| 4.3 | Seek out potential funding sources to support investigation of clinical issues or to fund program development | 40.0 | 3.47 | 4.3 | Identify potential funding sources for the development and implementation of clinical projects/programs | 67.7 | 3.80 |
| 4.6 | Engineer or design clinical information systems that make available data for future research | 40.0 | 3.33 | 4.6a | Identify the clinical data that needs to be collected and available in information systems for nursing and midwifery research and quality assurance project. | 100 | 4.6 |
| | | | | 4.6b | Collaborate with Information specialists in the design of information systems for research and quality assurance projects in nursing and midwifery | 93.3 | 4.33 |
| 5.6 | Provide leadership in shaping public policy on healthcare | 73.3 | 4.07 | 5.6 | Collaborate with other healthcare professionals to provide leadership in shaping public policy on healthcare | 100 | 4.33 |

