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An International Survey on Advanced Practice Nursing Education, Practice, and Regulation

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Abstract

Purpose: To describe international trends on the developing role of the nurse practitioner-advanced practice nurse (NP-APN), including nomenclature, levels and types of NP-APN education, practice settings, scope of practice, regulatory policies, and political environment.
Design: A cross-sectional, descriptive Web-based survey sent in February and March 2008 to a total of 174 key informants and active members of the International Nurse Practitioner-Advanced Practice Nursing Network of the International Council of Nurses.
Methods: An international Web-based survey preceded by a pilot survey.
Findings: Ninety-one nurses from 32 countries responded. Thirteen titles were identified on nomenclature for the NP-APN in different countries. NP-APN education was available in 71% of the 31 countries responding to this item, with 50% identifying the master's degree as the most prevalent credential. Twenty-three countries had formal recognition of the NP-APN role. Of these, 48% had licensure maintenance or renewal requirements for the NP-APN, with most requiring continuing education or clinical practice. The greatest support for the NP-APN role came from domestic nursing organizations (92%), individual nurses (70%), and the government (68%), while opposition came primarily from domestic physician organizations (83%) and individual physicians (67%).
Conclusions: Interest in the NP-APN role has been gaining ground worldwide. This study presents a snapshot of education, practice, and regulation for NP-APNs as they develop their unique role in delivering health care in various countries. Areas that may require more support are highlighted.
Clinical Relevance: The NP-APN role in healthcare systems is expanding and will benefit from international networking and support.

The number of nurse practitioner-advanced practice nurses (NP-APNs) has been growing worldwide and in recent years increased interest has been seen. In the United States, the NP-APN role was initiated in 1965 (American Academy of Nurse Practitioners, 2008; Pearson, 2009). NP-APNs are considered to play an important role in helping to alleviate the shortage of human resources in health care in both developed and developing countries (Horrocks, Anderson, & Salisbury, 2002; International Council of Nurses [ICN], 2001; ICN, 2005). However, barriers still exist to developing the role, and there is very little research in this area. In October 2000, the ICN established an International Nurse practitioner-advanced practice Nursing Network (INP-APNN) to promote

networking and to provide support to NP-APNs around the world (Cross, 2007). The internationally recognized definition of the role developed through this network is:

> A Nurse practitioner-advanced practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master's degree is recommended for entry level. (ICN, 2001)

In 2006, the Education-Practice Subgroup of this network recognized the need to conduct an international Web-based survey to collect data in the areas of NP-APN education, regulations, and practice, thus building on the work of a previous survey by the Research Subgroup of the INP-APNN (ICN, 2005).

This paper reviews current knowledge regarding the development of the NP-APN role internationally and presents the results of a global survey on NP-APN education, practice, and regulation. It also identifies and discusses issues encountered by researchers in developing and refining a global Web-based survey tool. Finally, the paper discusses the implications of these results for international research and offers recommendations for future surveys.

Literature Review on International NP-APN Role Development

In the current literature, most country-specific information comes from more developed and primarily English-speaking countries, such as the United States, Canada, Australia, and the United Kingdom. Moreover, several themes appear as a common thread in discussing NP-APN role development worldwide. These include variation around nomenclature, educational qualifications, scope of practice, prescriptive authority, licensure, and regulatory practices. Other common issues include an environment that may or may not be conducive to the development or support of the role and only a small body of research on the quality and outcomes of care provided by the NP-APN (Chiarella, 2006; Schober & Affara, 2006; Sheer & Wong, 2008; Walsh, 2004). The following sections discuss the literature on these issues.

NP-APN Nomenclature

Australia, Belgium, Botswana, Canada, Fiji, New Zealand, Sweden, Thailand, the United Kingdom, and the United States tend to use the title of nurse practitioner (Canadian Nurses Association [CNA], 2006; Loke, 2005; Payap, 2004; Seitio, 2000; Sheer, 2003; Sheer & Wong, 2008), while other countries, such as South Korea, Singapore, and Switzerland, most commonly use the title of advanced practice nurse (Payap; Schober, 2004). However, variation and some confusion have existed as the role evolved. One example is the United Kingdom, where the prevalent term used is nurse practitioner, although some interchange of the terms specialist and NP still occurs. This interchange of terms most often occurs when the nurse who has specialized knowledge in a certain area has an advanced practice title (National Association of Rural Health Education and Research Organizations, 2001; Sheer & Wong).

NP-APN Scope of Practice and Prescriptive Authority

Scope of practice for the NP-APN encompasses a broad range of activities. These include advanced health assessment, diagnosis, disease management, health education and promotion, referral ability, prescribing diagnostic procedures, medications and treatment plans, admitting and discharging privileges, patient caseload management, collaborative practice, evaluation of healthcare services, and research (ICN, 2005; Sheer & Wong, 2008).

The initiation of the NP-APN role began in many ways. In the United Kingdom, NPs were initially viewed as providers who could to ease the general practitioners' workload, especially in disadvantaged communities. The NP was initially used as a first point of contact in patient triage and in primary care. Changing the view of employers and the public to allow nurses to work at a higher practice level proved challenging for the early NPs there (White, 2001). This progress in the United Kingdom mirrored the history of NPs in the United States, where the first NPs were employed to meet shortages of primary care providers in rural and underserved areas of the county. In some of the Asian countries, the initial role was as a clinical nurse specialist or specialist nurse in hospital settings (Sheer & Wong, 2008). This often depended on the status of nursing practice in that country, especially in relation to other providers, such as physicians.

Countries have varied in the speed with which they have been able to expand scope of practice and add prescriptive authority. For example, the Netherlands, with its relatively new NP role, has already developed a clear scope of practice and has provided NPs with prescriptive authority (Sheer, 2003; Sheer & Wong, 2008). However, other countries are still struggling with these issues. An example is Botswana, where family nurse practitioners (FNPs) provide comprehensive patient care. However, no legislation clearly defines the FNP's scope of practice. FNPs prescribe drugs under the Drugs and Related Substance Act no. 18. Yet the extent

of their prescriptive authority is unclear because FNPs have limited prescribing ability with certain employers (Miles, Seitio, & McGilvray, 2006; Seitio, 2000). In larger countries such as Australia and the United States, scope of practice and prescriptive authority have varied within the country as the role evolved. In Australia, the Nurses Registration Board of NSW defined the NP role and began regulation and licensing criteria in 2000. They are just now working to create national regulatory standards for the country (Gardner, Carryer, Dunn, & Gardner, 2006; Sheer & Wong).

In Australia, new national standards for registration are in the process of being discussed and implemented (Gardner et al., 2006; Sheer & Wong, 2008). In the United States, regulatory titles for the NP often differ by state as do the extent of prescriptive authority and levels of independence in practice (Pearson, 2009).

NP-APN Education

While the goal is to bring NP-APN education to the master's level, not all countries have reached this goal. Some countries, such as Canada, Pakistan, Hong Kong, and the Netherlands, offer master's level programs for NP-APNs (Loke, 2005; Schober, 2004). While the Royal College of Nursing in the United Kingdom has developed a master's curriculum for NP education, universities are not obliged to adopt it. Therefore, NP courses are offered at both the baccalaureate and master's levels in the United Kingdom (Association of Advanced Nursing Practice Educators, 2009; Schober, 2004; White, 2001). In Australia, leaders generally accept that a master's degree with a minimum of 5 years of clinical experience is required for advanced practice (Green, 2008; Sheer & Wong, 2008). In Africa, the goal is to establish the role at the postbaccalaureate level and some programs are at the master's level; however, overwhelming needs for health care coupled with resource constraints have thwarted progress.

Political Environment

The political environment of a country can have tremendous impact on the development of the NP-APN role. For example, Canada has had NPs since the early 1970s. However, their role in health care was minimal until healthcare reform was implemented in 1990, after which time NP numbers increased dramatically (Sheer, 2003). Canadian NPs gained political strength by creating a Canadian Nurse Practitioner Initiative, which promotes the NP role in primary health care (Sheer & Wong, 2008). In Australia, New South Wales conducted pilot studies in the 1990s on the role of the NP and CNS. These studies led to the development of the NP role through legislative changes in the various states and territories and increased positions for NPs (Gardner et al., 2006).

In Botswana, the FNP role developed when the focus of medical care shifted from hospital-based care to primary care in the 1970s. FNPs currently run rural and urban clinics in underserved areas. In outpatient hospital departments they work as part of the medical team and have expanded their practice to other types of settings as well. Lack of understanding of the FNP role and ambiguity in scope of practice and prescriptive authority still present major challenges (Pilane, Ncube, & Seitio, 2007; Seitio, 2000).

NP-APN Research

Research on NP-APNs is increasingly needed to validate the effectiveness of services as well as to provide evidence of the need for the role. For example, researchers have begun to examine patient outcomes and quality of care provided by NP-APNs to support the increasing need to develop this role (Higuchi, Hagen, Brown, & Zieber, 2006; Mundinger et al., 2000; White, 2001). A review of studies analyzing NP practices in primary care in the United Kingdom found patient outcomes equivalent to physicians in most areas, and with increased satisfaction (Horrocks et al., 2002). In Australia, extensive pilot studies have been used to investigate the development of the NP role. Educational institutions in Australia and New Zealand have also conducted research in order to develop NP standards (Gardner et al., 2006; Walsh, 2004).

In addition to the aforementioned issues, Schober and Affara (2006) identified other challenges to NP-APN role development, such as limited access to educational programs, limited nursing textbooks and journals (which are usually in English and from the United States or United Kingdom), insufficient nursing education, focus on the medical model, lack of respect toward the nursing profession, lack of understanding of the NP-APN's capacity, dominance of the medical profession, and issues surrounding intercountry credentialing.

This paper presents an international Web-based survey by the ICN's INP-APNN, which aims to describe international trends on the developing role of the NP-APN, including nomenclature, levels and types of NP-APN education, practice settings, scope of practice, regulatory policies, and political environment.

Methods

Pilot Survey Tool

The Education-Practice Subgroup of the INP-APNN decided in 2006 to develop a pilot survey to gather

preliminary international data on education, regulatory, and practice issues facing NP-APNs and the relevant political environment. The development of the pilot survey tool included an extensive process to ensure that the tool was universally understandable across different cultures and groups. Multiple drafts were sent to nurse experts from the INP-APNN and ICN to be examined for content validity and language. The pilot tool also included a section requesting feedback on the tool itself. In addition, the pilot survey was presented at a discussion forum at the ICN conference in Yokahama, Japan, in 2007, when further suggestions for refinement were sought. The final Web-based survey tool was refined based on input from these experts and from feedback from the pilot survey.

Test-retest reliability was examined by having 10 nurses take the Web survey and repeat it in 2 to 4 weeks. The 34 items were pooled across the six respondents who returned the repeat survey. The retest demonstrated disagreement in 5% of the items and either omissions or additions in 16% of the multiple response descriptive items.

Final Survey

The final survey format included 47 questions in the following categories: general descriptive information on the respondent's role (7 questions), NP-APN education or programs (5 questions), regulatory issues (8 questions), NP-APN practice-role (5 questions), general questions on policy and support for role in the country (8 questions), a section to identify in-depth information on one NP-APN educational program in the country surveyed, including the student profile for this particular program (10 questions), and 4 questions on the survey tool itself. Finally, respondents were asked to identify any Web sites that listed or described NP-APN programs in their country. This paper will report on the first 33 questions of the final survey and will not discuss individual in-depth program data.

Human Subjects Considerations

The survey was reviewed and approved by Boston College's Institutional Review Board and the ICN INP-APNN Core Steering Committee. Since results were viewed in the aggregate and no responses were able to be linked to an individual participant, confidentiality was ensured.

Sampling Method

A convenience sampling method was used and the survey was sent to 174 key informants who were registered as members of the INP-APNN. Between 1 and 13 persons from each country were invited to participate. Before sending the full survey, a trial e-mail was sent to determine e-mail addresses that were no longer valid. The survey was sent to 174 participants.

Data Analysis

The data were analyzed through the Survey Monkey tool Results Summary and Open-Ended Results Detail. Descriptive data were analyzed using SPSS version 14 (SPSS Inc., Chicago, IL). Data were analyzed using two data levels: individual responses (n=91) and country level responses (n=32).

At the country level, when more than one respondent from a country provided an answer, this country's responses were analyzed separately. Answers to questions were analyzed by hand and the most prevalent answer selected. When a discrepancy occurred, experts from the country were consulted for the best response. **Table 1** provides the number of respondents from each country.

Study Results

Ninety-one nurses responded to the survey, and of these, 71.4% completed all items in the survey. The participants were from a total of 33 countries; one country had to be dropped due to lack of information on the form, for a total of 32 countries. Given that the total number of countries represented in the INP-APNN is 34, this response (94%) was considered excellent.

Participant Characteristics

Respondents were asked to indicate the areas in which they work and were allowed to list more than one area. Of 91 respondents, 84% were practicing nurses, of whom 67% practiced as NP-APNs, 25% practiced as registered nurses (RNs) or generalist nurses (GNs), and 21% identified "other" practice. Examples for the other category include management or supervisor, quality assurance, training, professional development, consultant,

Table 1. Countries of Respondents in the NP/APN Survey (N=32 countries)

Argentina: 1	France: 1	Netherlands: 1	South Africa: 7
Australia: 25	Grenada: 1	New Zealand: 1	South Korea: 1
Botswana: 2	Hong Kong: 1	Nigeria: 2	Switzerland: 2
Canada: 5	India: 2	Oman: 1	Taiwan: 2
China: 2	Ireland: 4	Pakistan: 1	Tanzania: 1
Ethiopia: 1	Italy: 1	Portugal: 1	Thailand: 4
Fiji: 1	Jamaica: 1	Saudi Arabia/KSA: 1	United Kingdom: 6
Finland: 1	Japan: 2	Singapore: 1	United States: 6

facilitator, or holding position in a country-level nursing association. Fifty-five percent of the respondents were nurse educators, 56% of whom taught at the NP-APN level. Twenty-one percent held administrative positions, and 43% were involved in nursing-related research.

NP-APN Titles

For the NP-APN equivalent, 13 different titles beyond basic RN titles were listed. Of the 86 people who listed titles, 44% provided the NP title and 17% gave APN as a title. Other titles included advanced nurse practitioner, clinical nurse specialist, nurse specialist, professional nurse, expert nurse, certified registered nurse practitioner, chief professional nurse with post-basic training in primary health care, nurse consultant, specialist nurse practitioner, primary healthcare nurse, and advanced nurse in a specialty.

Country Level Responses

NP-APN Education

Of the 31 countries that responded to this item, 71% responded that their countries have a formal program for NP-APN education. Twenty countries, for which multiple responses were possible, indicated that credentials were granted to NP-APNs. Ninety percent had programs that awarded master's of science degrees, 45% a bachelor's of science degree, 40% a certificate, and 35% an advanced diploma. However, when asked which was the most prevalent credential, 50% of the countries responded that it was the master's degree. **Table 2** describes the NP-APN programs provided in these educational institutions.

NP-APN Regulatory Issues

Twenty-three countries reported that formal recognition of the NP-APN role existed. Of these countries, 87% indicated that formal recognition of the role was provided by professional organizations, 78% by the government, 78% by hospitals and healthcare agencies, and 26% by other. "Other" includes medical councils, dental councils, and nursing or midwifery councils. It was unclear as to whether these councils are professional organizations or branches of the government. Twenty-five countries indicated that they had specific requirements for NP-APN practice. Ninety-two percent required completion of an educational program, 76% registration or licensure, 64% an academic degree, 24% clinical agency sponsorship, and 24% other (requirement varies by region or position, accreditation by national councils or boards). Of the 27 countries with responses, 48% had requirements for NP-APN licensure renewal, of which 15% renewed their licenses annually, 54% every 5 years, and 31% at another time interval. Participants from 16 countries

Table 2. International Credential, Specialties, Positions, and Scope of Practice of NP/APNs

	N	%
Most prevalent credentials granted from NP/APN programs (20 countries)		
Certificate	3	15
Associate degree	4	20
Bachelor of science	5	15
Master's degree	10	50
Specialties taught in NP/APN education programs (21 countries)		
Community health	16	76
Mental health	16	76
Hospital/acute care	15	71
Paediatric NP/APN	15	71
WH/midwifery	15	71
Specialty (disease)	14	67
Adult NP/APN	13	62
Geriatric NP/APN	13	62
Specialty (age/population)	12	57
Family NP/APN	11	52
Other	8	38
Practice settings of NP/APNs (25 countries)		
Hospital	24	96
Community-based clinic	20	80
Hospital-based clinic	20	80
Mental health	20	80
Specialty practice	19	76
Public health/MOH	18	72
Faculty	17	68
Administration	16	64
Home health care	13	52
Research	13	52
Independent nursing practice	12	48
Long-term care	11	44
School health	11	44
Doctor's office	10	40
Occupational health	10	40
Other	3	12
NP/APN scope of practice (24 countries). Results may vary at the state or provincial level.		
Are consulted in their practice by other healthcare professionals	20	83
Carry their own case load of clients	19	79
Refer to other healthcare professionals	19	79
Have the authority to prescribe medications	15	63
Practice independently without physician supervision	13	54
Have the authority to dispense medications	11	46
Maintain malpractice insurance	8	33
Receive payment for services from other sources (NHS, insurance companies)	7	29
Receive direct payment for services from clients	3	13

Note. APN, advanced practice nurse; MOH, Ministry of Health; NHS, National Health Service; NP, nurse practitioner; WH, women's health.

indicated that there were requirements for NP-APN licensure maintenance. Ninety-four percent required practice requirements for license maintenance, 81% continuing education, 50% a portfolio, and 25% examinations. Other practice requirements included research and audit and a licensing fee.

NP-APN Employment and Scope of Practice

Of the 23 countries from which participants responded, 74% stated that the majority of NP-APNs in their country work at the post-RN/GN level, while 17% stated that the majority continue to work at the RN/GN level. Nine percent described NP-APNs as working at an "other" level such as a post-RN/GN with a midwifery certificate, expert nurse, RN or midwife with a certificate in public health, autonomous or semi-autonomous role, or post-RN/GN specialist. **Table 2** describes areas in which the NP-APNs practice in the countries surveyed and NP-APN scope of practice at the country level of response. Differences in scope of practice also exist within countries, since NP-APNs are often regulated at the state or provincial levels.

Individual Level Responses

General Questions

These questions related to the development of the NP-APN role. Multiple responses were permitted in this section. Seventy-eight participants listed factors that facilitated the development of the role, which are listed in **Table 3**. Of 77 respondents, 92% indicated that the strongest support for the role came from nursing organizations within the country, 70% identified individual nurses, and 68% identified the government as the strongest supporter. Meanwhile, of 60 responses, 83% stated that the strongest opposition came from domestic physician organizations and 67% stated that it came from individual physicians.

Table 3. Factors That Facilitate the Development of the NP/APN Role (*N*=78)

Strong support for nursing practice	58%
Need for more health care providers for rural/underserved areas	80%
Consumer demand for increased access to health care	72%
Other[a]	14%

[a]"Other" facilitators included the need for development of career pathways in the clinical rather than the managerial domain, reduction in health dollars and increased healthcare cost, nurses and nursing/health organizations, lack of physicians in primary care, increases in preventable illnesses/poverty, requests from physicians and health officials exposed to the NP/APN role.

As for NP-APN political involvement, of 79 respondents, 77% stated that NP-APNs participated in policy making or healthcare planning at the local level, while 61% said that NP-APNs participated at the national level. Eighty-five percent indicated that NP-APNs are organized as a professional group within their countries. However, most of these organizations were not specific to the advanced practice role, but instead were affiliated with the country's national nursing organization.

Implications of Results and Discussion

Nomenclature and Education

One of the most difficult parts about developing an NP-APN role is the nomenclature, since title alternations tend to signal role change. The nomenclature may become easier to discuss now that the ICN has developed a definition of the NP-APN as well as a preferred level of education (master's degree). This could encourage countries to use either the NP or APN title and to work on developing a more uniform level of educational preparation.

Clarification of the NP-APN Role

Differences exist within and among countries with regards to the distinction between specialty nursing and advanced practice. This is important to clarify so that the NP-APN role can develop to its fullest. Also, variation exists because of the differences found in the scope of practice, prescriptive authority, and licensure requirements. These differences are not only between countries, but within countries as well.

Settings for NP-APN Practice

One interesting finding was the high prevalence of hospital-based NPs or APNs found in the survey. As was stated, in many places the role began in primary care, community, or rural locations, but the hospital or acute care settings did emerge as prevalent locations for practice. This may reflect a strong trend for specialty practice in these acute care settings. Mental health settings and practice were also prevalent in this survey, signaling an increasing need for this type of specialization globally.

Support and Opposition to the NP-APN Role Development

The survey indicated that many groups are interested in and support NP-APNs. Countries need to be able to transform this support into political will and to advocate for the development of educational programs, clear

regulations, and scope of practice. This is particularly critical in light of the shortage of healthcare workers in primary care and increasingly scarce healthcare dollars. In addition, it is important to understand why others, such as physician organizations and individual physicians, tended to be in opposition. This lack of support was demonstrated in many countries.

Limitations of the Survey

Increasing Participant Response Rates

While the researchers were pleased to get 32 countries to respond to the survey, in some items, a small number of participants responded. As a result of the pilot survey, measures were taken to increase the item response rates by adding options such as "I do not know" or "not applicable" for certain questions. Also, this Web survey was constructed to allow participants to go back to complete unanswered questions (Gunn, 2002).

Number of Participants

To increase the response rate for the member countries, more than one survey was sent to participant countries. In some cases the survey link may have been shared with others in the country, and in one case, 25 responses were received from one country when that number was not originally sent out. This is a limitation of an Internet-based survey with a survey link. Thus, when multiple responses were received from one country, the researchers looked at these individually and tried to identify the most prevalent response for the country level. When differences occurred, country experts were consulted. This could have introduced selection bias into the responses.

Internet Access

Participants must have Internet access, which may be a particular problem in developing countries. Internet access may only exist at work or be difficult to access because of poor connections. Participants may need to spend time at work to complete the survey, which may not always be feasible, or they may be required to do the survey in several sessions. One limitation is that Internet addresses change frequently and require more vigilant follow-up with potential respondents.

Language Issues and Translation

Translation into languages other than English will need to be considered in future surveys. Since this survey was in English, language may have been problematic for some participants.

Participant Biases

The key informants we have selected as participants were often already involved with the INP-APNN and have an appreciation for the international scope of the development of the NP-APN role. Because we only had a few participants from each country, their views and knowledge may not be representative of the national perspective.

Conclusions

Working on an international Web-based survey proved interesting for two reasons. The first was the process of conducting international research on this topic. It provided insight into the complexity of developing a study questionnaire to be used in different countries and by non-native English speakers. Great attention to detail is required in both the construction of the survey and the complexity of transferring the survey onto the Web-based survey tool. Through a pilot survey, the researchers gained critical insight into how to translate study results and feedback into an improved final survey.

This survey captures a formative stage in the development of the NP-APN role globally. This issue is of critical importance not just from the perspective of an NP, but also from a public health perspective. NP-APNs represent a sleeping giant for healthcare systems worldwide, particularly in developing countries, to meet the need for increased access to quality health care. Increases in healthcare and nursing needs have occurred with countries experiencing aging of their populations and with people surviving childhood and living longer with disabilities or chronic illness. These issues can be addressed by bringing well-prepared NP-APNs to the forefront of the healthcare system. The final survey will be followed by repeat surveys every 5 years. The researchers plan to track the progress of NP-APNs worldwide and thereby detect relevant trends and issues. Another component of the survey is to help build a database that can be used to enhance the International NP-APN Network, provide support for the role, and develop political and lobbying power. The growth of the NP-APN role internationally also provides a significant step toward increasing recognition of nursing as a profession and improving education and status of women and nurses worldwide.

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Clinical Resources

- International Nurse Practice-Advanced Practice Network: http://icn-apnetwork.org/
- Royal College of Nursing: http://www.rcn.org.uk/

References

American Academy of Nurse Practitioners. (2008). *Nurse practitioner facts*. Washington, DC: Author.

Association of Advanced Nursing Practice Educators. (2009). *Universities and advanced practice programmes*. Retrieved April 4, 2009, from http://www.aanpe.org/AANPEHEIs Members/AANPEMemberUniversitiesCoursesProgrammes/tabid/469/language/en-US/Default.aspx

Canadian Nurses Association–The Canadian Nurse Practitioner Initiative. (2006). *Helping to sustain Canada's health system: Nurse practitioners in primary health care*. Retrieved February 21, 2009, from http://www.cnaaiic.ca/CNA/documents/pdf/publications/Toolkit_Implementation_Evaluation_NP_e.pdf

Chiarella, M. (2006). Advanced nursing practice. *Journal of Advanced Nursing*, *55*(3), 276–278.

Cross, S. (2007). *Network history. International Council of Nurses: International Nurse practitioner-advanced practice Nursing Network*. Retrieved July 15, 2006, from http://www.aanp.org/INP%20AON%20Network/About%20INPAPNN/Network%20History.asp

Gardner, G., Carryer, J., Dunn, S., & Gardner, A. (2006). Nurse practitioner competency standards: Findings from collaborative Australian and New Zealand research. *International Journal of Nursing Studies*, *43*(5), 601–610G.

Green, A. (2008). Report from "down under" Australia. *International Nurse practitioner-advanced practice Nursing Network Bulletin*, *8*, 2–3.

Gunn, H. (2002). Web-based surveys: Changing the survey process. *First Monday*, *7*, 12. Retrieved April 13, 2007, from http://firstmonday.org/issues/issue7_12/gunn/index.html

Higuchi, K.A., Hagen, B., Brown, S., & Zieber, M.P. (2006). A new role for advanced practice nurses in Canada: Bridging the gap in health services for rural older adults. *Journal of Gerontological Nursing*, *32*(7), 49–55.

Horrocks, S., Anderson, E., & Salisbury, C. (2002). Systematic review of whether nurse practitioners working in primary care can provide equivalent care to doctors. *British Medical Journal*, *324*, 819–882.

International Council of Nurses: International Nurse Practitioner-Advanced Practice Nursing Network, Research Subgroup. (2001). *Update: International survey of nurse practitioner-advanced practice nursing roles*. Retrieved August 12, 2008, from http://icn-apnetwork.org/

International Council of Nurses: International Nurse Practitioner-Advanced Practice Nursing Network. (2005). *Scope of practice, standards and competencies of the advanced practice nurse. Draft-final revision*. Retrieved July 15, 2006, from http://www.aanp.org/INP%20APN%20Network/Policy%20and%20Regulation/policyhome.asp

Loke, A.Y. (2005). Hong Kong scenario. *International Nurse Practitioner-Advanced Practice Nursing Network Bulletin*, *4*, 2.

Miles, K., Seitio, O., & McGilvray, M. (2006). Nurse prescribing in low-resource settings: Professional considerations. *International Nursing Review*, *53*, 290–296.

Mundinger, M.O., Kane, R., Lenz, E., Totten, A.M., Wei-Yann, T., Cleary, P.D., et al. (2000). Primary care outcomes in patients treated by nurse practitioners or physicians. *Journal of the American Medical Association*, *283*, 59–68.

National Association of Rural Health Education and Research Organizations. (2001). *Enhancing rural and remote health care by making better use of the skills and capacity of nurses: Recommendations from a workshop on remote and rural nursing practice*. Retrieved July 15, 2006, from http://icn-apnetwork.org/

Payap, P.L. (2004). Advanced practice nurses are born in Thailand. *International Nurse Practitioner-Advanced Practice Nursing Network Bulletin*, *3*, 1.

Pearson, L. (2009). The Pearson report. *American Journal for Nurse Practitioners*, *13*(2), 8–82.

Pilane, C.N., Ncube, P., & Seitio, O.S. (2007). Ensuring quality in affiliated health training institutions: Advanced diploma programme in Botswana. *International Nurse Practitioner-Advanced Practice Nursing Network Bulletin*, *7*, 2–3.

Schober, M. (2004). *Dimensions and dynamics of international advanced nursing practice*. Conference presentation at Third International Council of Nurses–International Nurse practitioner-advanced practice Nursing Network. Retrieved July 15, 2006, from http://icn-apnetwork.org/

Schober, M., & Affara, F. (2006). *Advanced practice nursing*. Malden, MA: Blackwell.

Seitio, O. (2000). *The family nurse practitioner in Botswana: Issues and challenges*. Paper presented at the 8th International Nurse Practitioner Conference, San Diego, CA, September 28–October 1, 2000.

Sheer, B. (2003). World changes in advanced practice nursing: Practice, policy and regulation. *International Nurse*

Practitioner-Advanced Practice Nursing Network Bulletin, *1*, 2–3.

Sheer, B., & Wong, F. (2008). The development of advanced nursing practice globally. *Journal of Nursing Scholarship*, *40*, 204–211.

Walsh, M. (2004). *The evolution of nurse practitioners, memes and the science of chaos*. Conference presentation at the Third International Council of Nurses–International Nurse practitioner-advanced practice Nursing Network. Retrieved July 15, 2006, from http://icn-apnetwork.org/

White, M. (2001). *Nurse practitioner-advanced practice nursing roles in the United Kingdom: Nurse practitioners/advanced practice nursing in the UK*. Report. Education/practice Subgroup of the INP-APNN-ICN. Retrieved July 15, 2006, from http://icn-apnetwork.org/