THE UNIVERSITY OF HULL

The Development of Advanced Practice Nursing in Thailand: Passage and Process

being a thesis submitted for the Degree of

Doctor of Philosophy

in the University of Hull

by

Prathana Langkarpint

MSc (Nursing), MSc (Physiology), BSc (Nursing and Midwifery), RGN

April 2005

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Abstract

This thesis examined the development of advanced practice nursing in Thailand. The research focused on the perceptions of advanced practice nursing among Thai health care professionals and the factors affecting Thai nurses who are in the process of preparing to become advanced practice nurses (APNs).

Although a large amount of literature about APN has been published, only one study has reported on the situation of the APN in Thailand. Other papers have been conducted with developing countries which employed different health services and nursing service systems. Various issues arose and were reported since the concept of APN was implemented in those countries, e.g. definition, qualifications, examination, registration, boundaries, incentive schemes and scope of practice. It was argued that nurses had encountered various obstacles during the preparation and transformation in becoming APN. Nevertheless, Thailand was only at the beginning of adopting this concept into the health service system. Therefore, this research aimed to investigate the development of APN in Thailand, which has never been explored. The study concentrated on the development of APN in nurses who are working in intensive care units (ICUs) because the model and the role of APN in this clinical area lack clarity in the published literature.

Triangulation of two research methods was employed to address the research questions. The sample included staff nurses, head nurses, doctors and master

degree students in an APN preparation programme. In the quantitative study, 226 questionnaires developed by the author were posted to 23 hospitals and 28 master degree students, yielding 156 usable responses. Qualitative data were collected from five focus group interviews with 28 master degree students using a semi-structured interview schedule developed and piloted by the author.

Factor analysis of quantitative data revealed five expected roles of the APN in ICU: extended roles, ensuring standards, patient management, nursing roles and academic roles. Regression analysis explained that there were significant relationships between being a head nurse and ensuring standards ($P<0.5$), age and nursing roles ($P<0.5$) and being a doctor and patient management ($P<0.5$). Being a head nurse, age and being a doctor appeared to be strong predictors of ensuring standards, nursing roles and patient management respectively.

Qualitative data were analysed following Miles and Huberman and Strauss and Corbin's guidelines. Two central categories emerged: passage and process of the development of APN. Finally, a paradigm model was constructed, explaining the development of APN. Some concepts in the paradigm model were consistent with published literature, e.g. the readiness to change, transition and role theory. Other concepts were reflections of the unique Thai context, e.g. preparations for the development and anticipation of the role of APN. Thus, the development of APN in Thailand is a combed model. The thesis concludes with suggestions for the future research.

Acknowledgement

I would like to express my sincere gratitude to Professor Roger Watson and Doctor Peter Draper, my research supervisors for their valuable advice, patience, and guidance throughout my study at the University of Hull. My warmest thanks to all staff at the office of the Faculty of Health and Social Care, Graduate School, Brynmor Jones Library and Computer Centre for their kind support. Special thanks to Dr. D.E. Gardiner for a consultancy in statistics and Mr. Alan Reese for computer technical support.

I am deeply indebted to the United Board, the USA who gave a financial support through Payap University for my studying in the UK. This thesis is dedicated to all my teachers who were 'weavers' of my knowledge and skills. I am also thankful to my colleagues at McCormick Faculty of Nursing for their encouragement, trust and taking over all my duties during my study leave.

This thesis would not have been possible without the co-operation of all participants. I am deeply grateful to all nurses, doctors, head nurses and master degree students who took part in this study. My thanks to Taew for prompt transcribing, and to Pat and Kathryn for editorial work.

Finally, without the constant support and understanding of my family and friends in Thailand, this thesis would not have been accomplished. I would like to express

The Author

Prathana Langkarpint was brought up in Chiang Mai, Thailand. She was educated in Dara Academy, Chiang Mai from kindergarten to high school level between 1966-1979. She received a Bachelor of Science in Nursing and Midwifery (Second Class Honours) from McCormick Faculty of Nursing, Payap University, Chiang Mai in 1984. Her nursing career began as a staff nurse in the general intensive unit at McCormick Hospital, Chiang Mai in 1984, then she decided to continue studying in a master degree programme in Physiology at the Department of Physiology, Faculty of Medicine, Chiang Mai University. She received the degree of Master of Sciences in Physiology in 1989.

After completing her master degree in Physiology, Prathana became a nurse educator at McCormick Faculty of Nursing, Payap University between 1989-1992. During that time she was also an adjunct lecturer at Chiang Mai Nursing College. In 1993, she left Payap University and became a nurse educator at the Department of Surgical Nursing, Faculty of Nursing, Chiang Mai University between 1992-1996. She was also an adjunct lecturer at Faculty of Health, Sukhothaithamathiraj, the Open University in Thailand.

Prathana was a principal investigator in a number of research studies focusing on HIV/AIDS. She received a grant from the World Health Organisation (SE GPA 250 FX) to be a principal investigator in a research about the socio-economic

needs of older people in caring for PWHIV/AIDS between 1995-1996. Apart from being a nurse lecturer and a researcher, she also worked for the HelpAge International (Asia Regional Office) as a speaker, researcher and translator.

In 1996, Prathana came to England and completed her six months practice under supervision at the University of Birmingham Hospital and was registered as a nurse (Part One) with the Nursing and Midwifery Council (which was the United Kingdom Council of Nursing and Midwifery at that time) in 1997. She practised as a qualified staff nurse in intensive care unit in several hospitals in England and Scotland, including Walsgrave Hospital NHS Trust in Coventry (1998-2000), Hull Royal Infirmary NHS Trust in Hull (2001-2002) and New Royal Infirmary of Edinburgh, The Lothian University Hospital NHS Trust (2003-2004).

Between 1997-2000, Prathana studied in a master degree programme in nursing at the Royal College of Nursing, London. She received a master degree in nursing in 2001. She was support financially from the United Board, the USA through Payap University to read her PhD at the Faculty of Health and Social Care, the University of Hull between 2001-2005.

Abbreviations

AACN	The American Association of Critical Care Nurses
AANA	The American Association of Nurse Anaesthetists
AANM	The American Association of Nurse-Midwives
AANP	The American Academy of Nurse Practitioners
ACNM	The American College of Nurse-Midwives
ACNP	Acute Care Nurse Practitioner
ANA	The American Nurses Association
ANCC	The American Nurses Credential Centre
APN	Advanced Practice Nurse
APNCM	Advanced Practice Nurse Case Management
APNPO	Advanced Practice Nurse in Paediatric Oncology
APNs	Advanced Practice Nurses
APNS	Advanced Practice Nurse Student
CAI	Computer Assisted Instruction
CCU	Cardiac Care Unit
CEU	Continuing Education Unit
CNM	Certified Nurse Midwife
CNS	Clinical Nurse Specialist
CRNA	Certified Registered Nurse Anaesthetist
DoH	The Department of Health
GDP	Gross Domestic Product
HSRI	The Health System Research Institute
ICU	Intensive Care Unit
IMF	International Monetary Fund
MoPH	The Ministry of Public Health

NACNS	The National Association of Clinical Nurse Specialists
NICU	Neonatal Intensive Care Unit
NMC	The Nursing and Midwifery Council
NP	Nurse Practitioner
ONS	Oncology Nurses Society
PCA	Principal Component Analysis
PCT	Primary Care Trust
PCU	Primary Care Unit
PMN-ANP	Psychiatric Mental Health-Advanced Practice Nurse
PMS	Personal Medical Services
PN	Practical Nurse
RN	Registered Nurse
SPSS	Statistical Package for the Social Sciences
TN	Technical Nurse
TNA	Thailand Nurses Association
TNC	Thailand Nursing Council
UK	The United Kingdom
UKCC	The United Kingdom Council for Nurses and Midwives
USA	The United States of America
WHO	The World Health Organization

CHAPTER 1

Introduction

This thesis examined the development of advanced practice nursing in Thailand. The research focused on the perceptions and characteristics of advanced practice nursing among Thai health care professionals and the factors affecting Thai nurses who were in the process of preparing to become advanced practice nurses (APNs).

Although a large amount of literature on advanced practice nurse (APN) has been published, only one study has reported on the situation of APN in Thailand. Other published papers focused mostly on other developed countries which use different health services and nursing service systems. Various issues arose and were reported since the concept of APN was implemented in those countries, e.g. definition, qualifications, examination, registration, boundaries, incentive schemes and scope of practice. It was highlighted that nurses had encountered various obstacles during the preparation and transformation into becoming APN.

Nursing was recognised as an important profession in Thailand and it was supported by the Monarchy for centuries. It can be said that the establishment of the Department of Nursing in 1888 was the fist step towards creation of the Ministry of Public Health, although the department was originally part of the Ministry of Education (The Ministry of Public Health, 2002). The Department of Nursing was restructured periodically until 1918, when the Department of Public

Health was initiated under the Ministry of Interior and became the Ministry of Public Health in 1952 (The Ministry of Public Health, 2002).

Hanucharernkul (2003) reported that specialist nurses, e.g. nurse anaesthetist, nurse practitioner, nurse midwife and clinical nurse specialist, have long existed, albeit informally and unsystematically in Thailand, although it was in 1988 that these specialist nurses were officially recognised in the structure of the Thai nursing system. In 1994, the Thailand Nursing Council (TNC) introduced formal examination and credentialing for five branches of specialist nurses: community, psychiatric and mental health, paediatric, maternal and child health and medical-surgical nursing (Hanucharernkul, 2003). Although the areas of specialism appear to be similar to the medical model, according to the Professional Nursing and Midwifery Act 1985, the educational preparation programmes for these specialist nurses must be approved by the TNC and organised by nursing academic institutions. An educational programme for nurse anaesthetists is prepared and organised by the Medical Council. Thus these specialist nurses were not registered with the TNC. A combination of factors: changing trends in relation to health problems, shortage of doctors, increasing health expenditure and the government policy of health system reform, were the important motivations for changes in Thai nursing service system.

In collaboration with the other three healthcare professional councils for medicine, pharmacy and dentistry, the Thailand Nursing Council (TNC) has exerted effort to have the concept of APN incorporated into the Thai health service system, by proposing this concept to the government. In 1998, the Regulation of the Specialist Nursing and Midwifery Certification was approved and enforced. The TNC has moved forward the implementation of APN by organising the National Conference on Educational Preparations for the APN in 2001. Since then, the nursing academic institutions have developed particular training and master degree programmes, as preparation for APN. The TNC arranged examinations for nurses who aimed to be qualified as APN in 2002 and 2004. At present, there are 141 APNs practice nurses in Thailand. This is only 0.20% of the total registered nurses who are practising actively in the health services of Thailand.

It can be seen that Thailand is only just beginning to apply the concept of advanced practice nursing in its health service systems. Due to the early stage of the implementation, and the lack of study and published papers in this field, it was of great interest to the author to explore the development of APN in Thailand, an area which has yet to be explored. This study concentrated on the development of APN in nurses who are working in intensive care units (ICU) as the model, role and boundary of practice of APN in this clinical area was unclear. Two research questions were addressed: 'What is the perception of APN among head nurses,

nurses, doctors, master degree students?' and 'What are the characteristics of the development of APN in Thai nurses?'

This thesis reflected the attempts of the author to investigate the development of APN in Thai health systems. The entire process is presented in seven chapters, including this introduction to the study. Chapter 2 addresses the background of the study. The chapter begins with the development of the role of the APN and the relevant educational preparation in the USA, where the concept originated. Factors affecting the development of the role of APN and issues arising after the application of the concept of APN are highlighted. The chapter also reports the development of nursing systems in Thailand and the adoption of the concept of APN into its health service systems. The rationale of the present study is presented at the end of chapter 2. Chapter 3 is concerned with the current knowledge about APN. The results of systematic review and the gaps in published research are discussed. In this chapter, the expectations and research questions of the study are proposed. Chapter 4 describes the research design and methods. A pre-pilot and pilot study in the UK and Thailand are reported. The chapter also summarises the aims, objectives and time scale of the study. The sampling methods and the development of research instrument are described. Ethical consideration and techniques used for data management are emphasised. The chapter ends with a report of pilot studies in Thailand. Chapter 5 provides the results from quantitative data analysis, including demographic data and results from factor and regression analysis. Chapter 6 focuses on the findings from qualitative data analysis. Seven clusters constructed from open coding are presented

and supported by commentaries, quotations from the participants and relevant literature. Chapter 7 presents a crucial discussion on a paradigm model which was constructed as an ultimate result of the study. The contribution and significance of the paradigm model are explained. Strengths and limitations of the study are highlighted, and recommendation offered. Finally, conclusions are presented and a way forward is suggested.

CHAPTER 2

Background

2.1. Introduction

The aim of this chapter is to give general information related to advanced practice nursing. The chapter is divided into two parts: The first part draws attention to the milestones of practice development, titles used and educational programme development for the APN. Factors affecting the development of the APN, confusion cased by titles used and the core characteristic and competencies are emphasized.

The second part explains the implication of APN in Thailand. The development of the health and nursing services systems, health problems and summaries of The National Health and Development Plan and the National Nursing and Midwifery Development Plan 1997-2006 are highlighted. The chapter also focuses on the regulations with regard to Specialist Certification of Nursing and Midwifery and the renewal of registration. The analysis of the background of nursing and the health service systems is intended to explain the contextual background to the researcher's intention in conducting this study. At the end of this chapter, the rationale for conducting this research is outlined.

2.2. The Development of Nurse's Role and Its Changes Following the Evolution of Advanced Practice Nursing

The nurse's role has begun to be modernised in the 19th century. The miles stones of the practice development of APN including issues arising after the implication of this concept are described as follows.

2.2.1. The Milestones of Practice Development and Titles Used

The milestones of practice development and titles used for APNs aims to give an overview of the development of APNs' roles and their impacts. Factors affecting the changing role of the nurse will be described. Figure 1. presents the development of nurses' roles.

Figure 1. The development of nurses' roles

17ᵗʰ century	18ᵗʰ century	19ᵗʰ century	20ᵗʰ century

Midwife

Nurse anaesthetist

⸻⸻⸻ health nurse

Nurse midwife
Clinical nurse specialist
Nurse clinician
Nurse practitioner
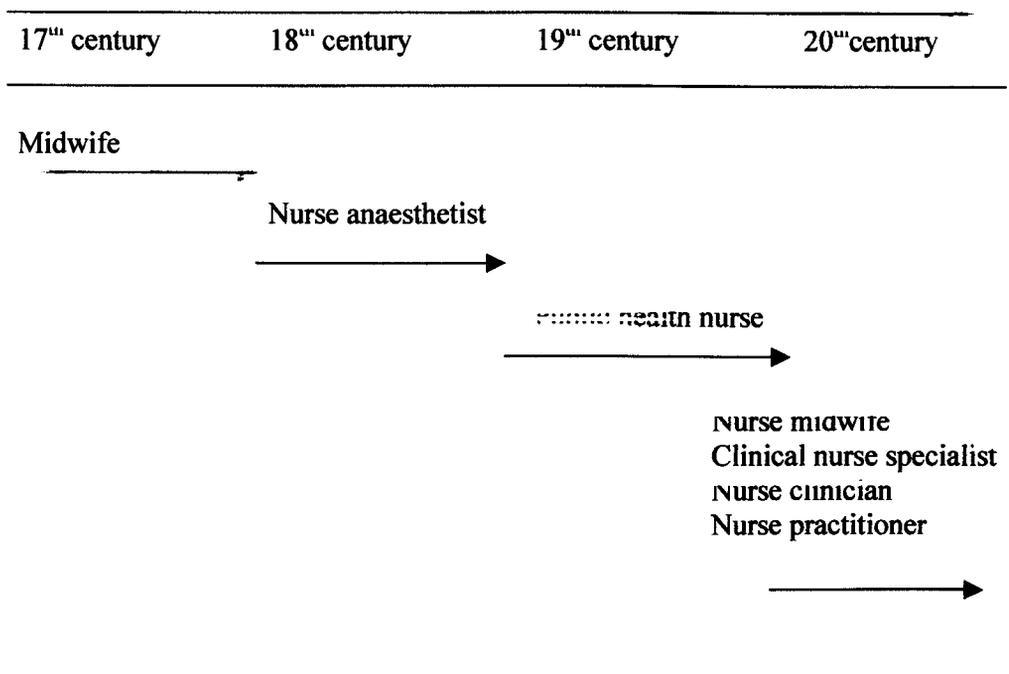
Among the two female dominated professions in history, midwifery was formally recorded before nursing. Robinson (1984 cited in Hamric *et al.*, 2000, p.9) noted that midwives came into the USA during the slave trade in 1619. During the mid 19ᵗʰ century, nurse anaesthesia was developed (Hamric *et al.*, 2000). Sister Burnard was the first nurse anesthetist at St. Vincent's Hospital, Pennsylvania, USA in 1877 (Bankert, 1989; Hamric *et al.* 2000). The title nurse anaesthetist was

first used at St. Mary's Hospital, Rochester, Minnesota, USA in 1912 (Snyder and Mirr, 1999).

Two decades later, Wald used a title public health nurse for nurses who worked independently at Henry Street Settlement House, USA (Hawkin and Thibodeau, 2000; Hamric *et al.*, 2000). The merging of nurse and midwife titles was used by Beckenridge, the first nurse who was trained in the UK and practised as a nurse-midwife in the USA (Snyder and Mirr, 1999; Hawkin and Thibodeau, 2000; Hamric *et al.*, 2000; Hickey *et al.*, 2000).

In the 20th century, it was found that many titles for nurses were introduced. The title clinical nurse specialist was first used in the USA in 1938 to describe nurses who were expert in caring for a particular group of patients or a specific disease (Hamric *et al.*, 2000). A few years later, nurse clinician was first used by Reiter in the US (Hawkin and Thibodeau, 2000). Since there were many titles used for nurses, Mayo tried to clarify the clinical nurse specialist to avoid the confusion caused by using many titles (Hickey *et al.*, 2000).

In the USA, Ford used a title nurse practitioner in 1965 (Hawkin and Thibodeau, 2000; Mezzey and McGivern, 1999; Snyder and Mirr, 1999; Hamric *et al.*, 2000). This type of APN was introduced due to the shortage of medical staff. Nurse practitioners' roles focus on health assessment, ordering laboratory and investigative procedures, diagnosing and prescribing.

In the 1970s, the term case management was used (Hamric *et al.*, 2000). An acute care nurse case management model was introduced by Zander at New England Medical Centre Hospital, Boston, in the US in 1985 (Hamric *et al.*, 2000). A few years later, a community-based nursing case management was initiated at Carondelet Saint Mary's Hospital, Tucson, Arizona, in the US (Hamric *et al.*, 2000).

In the late 1990s, an Acute Care Nurse Practitioner (ACNP) was introduced in the USA and was widely accepted both in hospital and primary care settings (Hickey *et al.*, 2000). Since many titles for APNs were created in the 20th century and caused confusion and role blurring, the idea of merging the CNS and NP role was considered. There were a lot of discussions about merging these two titles because neither of them wanted to lose its own identity. Finally, the Councils for the CNS and the NP were merged the USA in 1990 (Hawkin and Thibodeau, 2000).

It was noted that using many titles could cause problems both among nursing professionals and the general public. First, a loss of identity could occur when nurses performed many roles. Second, the loss of unity: using various titles caused fragmentation within the professional hierarchy. Third, the general public such as patients, and relatives might be confused when they were given care by different types of nurses.

2.2.2. The Milestones of Educational Programme Development

The development of educational and training programmes for nurses commenced in the 19th century. In the 20th century, the number of educational and training programmes increased rapidly because nursing became an increasingly important health care profession and there was an increasing need to have a formal education and training. The milestones of development for the educational programme for APNs is summarised in Figure 2.

Figure 2. The milestones of development for educational programmes for advanced practice nurses

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Late 19[th]century   Early 20[th]century   Mid 20[th]century   Late 20[th]century

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Nightingale school of nursing
Psychiatric nursing

───────────▶

        Public health nursing
        Nurse midwifery
        Nurse anaesthetist (post graduate)
        Acute care nurse practitioner

        ───────────▶

                Psychiatric nursing (master's degree)
                Paediatric nurse practitioner

                ───────────▶

                        Family nurse practitioner
                        Nurse anaesthetist
                        (master's degree)
                        Clinical nurse specialist

                        ───────────▶

The first modern training school for nurses was founded by Nightingale at St. Thomas's Hospital, London, the UK in 1860 (Abel-Smith, 1960; Calder, 1955). Student nurses were also taught about Christianity, social reform, women's liberation, medical discoveries and the impact of war. In the US, the first nurse training school was established at Bellevue Hospital, Philadelphia using the Nightingale system (Gortner and Nahm, 1977).

The specialist training programme for nurses commenced in the late 19th century. A training programme for psychiatric nurses was initiated at McLean Hospital, Massachusetts, USA in 1880 (Hamric *et al.*, 2000). Two decades later, a training school for the public health nurse was established by Macleod at Boston, USA in 1906 (Hawkin and Thibodeau, 2000). At the beginning of the 20th century, the first nurse-midwifery training programme was initiated in 1932 at the Maternity Centre Association, Lobenstein Clinic, New York City, USA (Hamric *et al.*, 2000; Snyder and Mirr, 1999).

Nursing education was further developed to postgraduate level at the beginning of the 20th century. The first postgraduate programme was initiated for nurse anaesthetists at St. Vincent's Hospital, Portland, Olando, USA (Thatcher, 1952; Hamric *et al.*, 2000; Hawkin and Thibodeau, 2000). In 1931, there were 137 post graduate programmes for nurses in 137 hospitals across the USA (Hawkin and Thibodeau, 2000). It was noted that the early education and training programmes for nurses were initiated by hospitals not by universities or general academic institutions.

In1941. the first accreditation programme for monitoring anaesthesia programmes was established in the USA by the American Association of Nurse Anaesthetists (AANA) (Hamric *et al.*, 2000; Snyder and Mirr, 1999). The university became involved in developing postgraduate programmes for nurses during this time. In 1954, the first master's degree programme in psychiatric nursing was introduced at Rutgers University, USA by Peplau (Hawkin and Thibodeau, 2000; Hamric *et al.*, 2000). The certification of training programmes for nurse anaesthetists in 95 nursing schools or colleges across the USA were changed to master degree level in 1955 (Hawkin and Thibodeau, 2000).

The paediatric nurse practitioner training programme was established at the University of Colorado, USA in 1965 (Hawkin and Thibodeau, 2000; Hickey *et al.*, 2000; Hamric *et al.*, 2000) followed by a family nurse practitioner programme at the University of California (Hawkin and Thibodeau, 2000) and ambulatory care for women and children at Boston College, USA in 1966 (Hawkin and Thibodeau, 2000). It can be seen that, many titles for APNs were created in the 20th century and caused blurring of titles and roles.

In 1970, nurse-midwife educational programmes were accredited by The American College of Nurse-Midwives (ACNM), the National Certification process was also recognised in the USA (Snyder and Mirr, 1999). A year later, the National Certification Programme for Nurse-Midwives was established in the USA (Hawkin and Thibodeau, 2000; Hamric *et al.*, 2000). The nurse practitioner preparation programme was introduced at the University of Washington, USA in

1971 (Hawkin and Thibodeau, 2000). In 1973, the first master's degree programme in nurse anaesthesia was introduced at the University of Hawaii (Hamric et al., 2000).

In 1993, the number of master degree programmes for CNS increased to 250, and then 312 in 1998 (Hawkin and Thibodeau, 2000). It can be said that the preparation programmes for APNs grew rapidly in the late 20th century, however, Mezey and McGivern (1999) reported that the study programmes for CNS and NP in the USA lacked clarity

2.2.3. Factors Affecting the Development of the Advanced Practice Nurse

In the USA, it was reported that factors affecting the development of the APN concept includes:

- the shortage of doctors in the late 1900s (Hickey et al., 2000).

- the changes in health care needs, for example, chronic diseases, older people, the disabled and preventable diseases such as heart disease, cancer and HIV/AIDS. These increased the needs for specialist nurses and the importance of the preventive role are increased (Prieto, 1994; Trnobranski, 1994; Poole, 1996).

- the trends in health care services have moved from hospital based to community based and family care (American Nurses Association, 2001). Nurses needed to increase their knowledge and skill in caring for patients with both simple and complex health problems (Elder and Bullough, 1990).

- increasing health care expenditure and changing health care needs has led to health care reform (Dunn, 1997). Nurses, who are the biggest group among health care professionals, were expected to be involved in the reform.

- nurses are officially allowed to perform advanced practice roles such as health assessment, diagnosing and prescribing within the law (Hicks and Hennessy, 1999).

- the use of advanced technology in health science encouraged nurses to increase their knowledge and skill (Ball, 1997; Jarvis, 1999). Nurses have to learn how to look after the patient using modern equipment as well as extending their roles in advocating, promoting health, prevention of diseases and conducting and using research.

- nurses were educated to a higher degree level (Ketefian *et al.*, 2001).

2.2.4. Confusion Caused by Titles Used

Since CNS and NP were developed progressively in the US, CNS and NP are the most widely used titles in the US at present. However, different titles are also used for nurses who perform advanced procedures in other countries such as nurse consultant (Mills, 1996; O'Brien and Spry, 1995; Sneed, 2001), nurse specialist (Chang and Wong, 2001), specialist nurse (Hunt, 1999) nurse case manager (Hamric *et al.*, 2000).

It was noted that although some of the titles used for APNs were precisely defined, others remained unclear. In the USA, (Mick and Ackerman, 2000) studied the difference between the two titles used for APN: CNS and ACNP in a critical unit using descriptive exploratory research. The study was conducted with 18 APN (6 CNS and 12 ACNP) using self-completed questionnaires. The participants were recruited from two hospitals and from the Internet (advanced practice listserv). The questionnaires were posted to APNs (no number reported),

21 returned but only 18 were suitable for analysis. The response rate was not mentioned.

The participants were requested to prioritise the expertise domain of their practice using a Likert scale with score 1-10 following the least to the most important expertise domain. It was reported that the first five most important expertise domains for their practice were: direct comprehensive care, support of systems, education, research, and publication and professional leadership respectively. Direct comprehensive care was identified as advanced procedures that they performed such as health assessment, diagnosing and laboratory test ordering. Support systems referred to the contributions they make to the service system, such as working collaboratively with the academic sector, involvement in policy and procedure development and becoming a mentor, consultant and advocate. Education was classified as participating in academic activities such as becoming an educator and preceptor for staff, patients and families. Research referred to any practice related to research both personally and collaboratively such as developing research projects, conducting and using research. Finally, publication and professional leadership referred to professional contributions such as presenting and publishing research results, becoming a representative of a committee of a professional organisation. The limitations of their study were reported as a small sample size because it was a pilot study. Part of this may be caused by recruitment of participants' from the Internet. However, the distribution of participants was met in terms of the geographical criteria because they worked in the US, Canada and Australia. It was summarised that the expertise domains for APN roles was

strongly supported by a strong model of APN based on Benner's model of skill acquisition (Benner, 1984).

In the UK, a comparison of the CNS and the NP roles was investigated by (Henderson, 2004). It was argued that CNSs and NPs were different in terms of the aims of the post and the area of services provided, for example, the CNS aims to improve the quality of nursing care while the NP seems to increase access to health care services (Henderson, 2004). It was reported that the CNS works mainly in the hospital (secondary care) but the NP tends to work in the community (primary care), however, CNS and NP both required higher knowledge and skills than other qualified staff nurses and some of their roles overlap such as health assessment, diagnosing and performing invasive procedures such as central line and chest tube insertion (Henderson, 2004).

2.2.5. Core Characteristics and Competencies

Since the APN concept was widely adopted in many countries, the roles and responsibilities of the APN were broadly defined depending on each culture. Therefore, it was difficult to limit the definition of the APN. However, the clarification of characteristics and competencies should be similar according to the concept of the APN. The APN is expected to have the follow characteristics: 'risk taking, vision, flexibility, articulate, inquisitiveness and ability to lead' (Patterson and Haddad, 1992 cited in Davies and Hughes, 2002, p.149). O'Rourke (1989 cited in Davies and Hughes, 2002, p.149) suggested that the APN should have the follow capacities 'self-direction, modify theory to practice implementation, re-perceive knowledge and/or rearrange it to develop new theories, transfer knowledge and introduce new learning in the interest and the

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service and of the public'. Davies and Hughes (2002) summarised that the essential competencies of the APN were: clinical expertise, critical thinking and analytical skill, clinical judgement and decision making, communication, problem solving, collaboration, education and research and programme development.

In general, the characteristics of the APN can be summarised as a nurse who has both theoretical knowledge and practical skills at a higher level. They perform advanced roles compared to other staff nurses and focus on one particular area. The APN works both in hospital and in the community. The competencies required for the APN involve: direct care, research, teaching and management.

2.3. The Implication of APN in Thailand

The implication of APN in Thailand begins with the involvement of the Monarchy in the development of nursing services in Thailand. Then the situation of health problems which affected the health systems reform and the adoption of the concept of advanced practice nursing are highlighted.

2.3.1. The Monarchy and the Development of Health and Nursing Service Systems

In Thailand, the monarchy was not just a symbol or an institution but the King and the royal family have played an important role in health system development both in the past and the present. This section will describe how the monarchy was involved in health system development generally and nursing education particularly.

Health care in the 12th Century (Sukhothai Kingdom) was mainly provided by family members and the mother was the key person who looked after the health of the family (Hanucharurnkul, 2001). There was no formal training for carers, they practised according to people's beliefs or used methods that they had seen or heard about. It can be said that health problems in Thai people caused by poverty, poor hygiene and lack of knowledge. Thai people believed that the patient must not eat certain foods (sa-lang) when they were ill because such food would exacerbate their condition. Examples of prohibited foods include e.g. beef, egg and preserved food (using salt). These beliefs were transmitted to the present generation and some of them continue to be practised. Between 1240-1350 AD, Thai herbs and remedies were used according to popular beliefs. Fate and occultism also played an important part in treatments (Hanoocharurnkul 2001).

The Ratanakosintara Kingdom (Chakri Dynasty) started when Siam (as Thailand was named at that time) was ruled by King Rama I (1872-1809). The Buddhist temple became a centre for health service provision (The Ministry of Public Health, 2002). There was an epidemic of cholera during the reigns of King Rama I and King Rama II (1809-1824). The King gave moral support to his people by firing canon around the capital, arranging the Emerald Buddha parade and the King practised all the Buddha's commandments strictly (Hanucharurnkul, 2001). It can be seen that the royal monarchy of Thailand played a significant role in Thai people's health during that era. Furthermore, King Rama II initiated the idea of listing all Thai traditional medicines, in which then came to be known as 'The Royal Formulas for the Royal Pharmacy' (Tamra Luang Samrab Phra Osoth,

literally, the medicine of the king), it was claimed to be the first traditional medical textbook of Thailand (The Ministry of public health, 2002, p.1).

King Rama III (1824-1851) began to concern with self-care, thus traditional medical formulas were engraved on stone columns and in the temple walls. The temple became the first open university of Thailand (The Ministry of Public Health, 2002). Western medicine was accepted by King Rama III when Dr. Bradley, the first American Christian missionary, came to Siam in 1835 and provided smallpox innoculation and operations (Hanucharurnkul 2001).

During King Rama IV's (1851-1868) reign, two other American missionaries, Dr. Lane and Dr. House visited Siam in 1847. The latter was the first surgeon to use ether for anaesthesia in Thailand (The Ministry of Public Health, 2002). In 1861, Mrs. Prateepasen was the first Thai woman to graduate as a trained nurse in the United States of America (USA) under the sponsorship of Mr. and Mrs. Mattoon, who were American missionaries. Mrs. Pateepasen brought the concepts of modern nursing and midwifery from the USA to Siam (Hanucharurnkul 2001).

Siam was greatly modernised during the reign of King Rama V (1868-1910). After his Royal Visits to the Western countries, he decided to send his children to study abroad in order to bring back modern knowledge and response to system reform such as health services; legal, financial and educational systems and slavery abolition. The first hospital in Siam, 'Siriraj', was built with the aid of donations from the King's fund and a grant of royal land. It was opened in 1881 and was named after the King's son, who had died during an epidemic of

dysentery. At that time, people were treated free of charge (Hanucharurnkul 2001).

Health services and education were greatly developed in King Rama V era. The Nursing Department was established under the Ministry of Education in 1888 (The Ministry of Public Health, 2002). Since then, it was restructured and renamed periodically and was included in The Ministry of Interior in 1908. In 1952, the Ministry of Public Health (MoPH) was established and Department of Nursing was included in the MoPH. The first medical school was founded, teaching both traditional and Western medicine in 1889 at Siriraj hospital. The first midwifery school was also founded at Siriraj hospital in 1896, funded personally by Queen Sripatcharintara (the wife of King Rama V) (The Ministry of Public Health, 2002). At the beginning there were only 14 students. The Queen encouraged Thai women aged between 15-40, who had a primary education, to study this three-year programme. She invited the women of the palace (royal family) to study too, because people at that time appeared to follow the example of the royal family (Hanucharurnkul 2001). The Queen helped to modernise Thai people's health beliefs by encouraging them not to lie near the fire after giving birth ('yoo fai' a traditional practice after giving birth). She explained that she was fine without doing this and gave money (4 Baht average 6 pence if 1£ =70 Bath), a diaper and a baby cushion to anybody who followed her example (Hanucharurnkul 2001).

The MoPH (2002) reported that other health institutions were established in this era e.g. the Sanitation Pilot Programme (1905), the first National Pharmaceutical

textbook (1907), Chulalongkorn hospital and the Thai Red Cross Society (1911), the Pasteur Institutes and Vajira hospital (1912), and a health centre ('suk sala') (1914). The Nursing Department was renamed the 'Public Protection Department' and brought under the Ministry of Interior in 1916.

Prince Mahidol (the father of the King Rama IX) was the first royal family member who was seriously interested in becoming a doctor (The Ministry of Public Health, 2002). He studied medicine and public health at Havard University. Having received a certificate of Public Health and a degree as a Doctor of Medicine, he returned to Thailand and devoted himself to improving Thai public health, in both the health services and academic sectors. He worked as a physician in Siriraj Hospital in Bangkok and McCormick Hospital in Chiang Mai. Unfortunately, he became seriously ill after working hard for two months at McCormick Hospital, Chiang Mai and died. He was named 'the Father of Modern Thai Medicine'. It is said that public health in Thailand would have been developed much further if Prince Mahidol had lived longer. The Ananda Mahidol Foundation was initiated in 1955 under King Rama IX (the present King) as a memorial to his brother. He also awarded a scholarship for outstanding undergraduate students and health care professionals, to enable them to continue post graduate studies abroad (The Ministry of Public Health, 2002).

2.3.2. Development of Nursing Education

As mentioned previously that nursing education in Thailand was established at Siriraj in 1896. It was further developed and modified by Prince Mahidol to be a modern programme in 1925 (Hanucharurnkul, 2001). He contacted the

Rockefeller Foundation. after which he appointed Miss Fitzgerald as a Nursing Director (1926-1927). She was followed by Miss M.B. Porter (1927-1935). Thai nurses were supported in their studies with funds from Prince Mahidol's personal fund and The Rockefeller Foundation.

Hanucharurnkul (2001) summarized that the nurse training programme has been adjusted and developed many times as follows:

- In 1956 a four-year degree programme (Bachelor of Science in Nursing) was introduced. The applicants needed upper secondary certification. The students studied within the Faculty of Pharmacy for two years and the School of Nursing for two years. Students who wanted to study midwifery had to undertake another six months' training.

- In 1960, a three-year programme incorporating a Diploma in Nursing was introduced. Midwifery certification still required a further six months training. A one-year practical nurse (PN) programme was initiated. Both male and female students who had upper secondary certification could apply for this.

- In 1965, students could apply to study at the School of Nursing twice a year. There were only 100 nursing students at that time.

- In 1969, the Ramathibodi School of Nursing was founded as a part of the Ramathibodi Faculty of Medicine. The School developed into a Faculty of Nursing at the Mahidol University.

- Hanucharurnkul (2001) noted that Red Cross School of Nursing was also founded by Queen Sripatcharintara in 1914. The school offered a one-year programme. Students with any background educational could apply for this. The curriculum was adjusted to a three and a half-year programme in 1919. Between

1932-1955. students who applied to study at this school needed to have an Upper Secondary Certificate. The curriculum was then adjusted to Diploma level in 1964. The school's name was changed from the School of Nursing and Midwifery to the Red Cross College of Nursing. It is now a part of the Faculty of Nursing, Chulalongkorn University.

Since the first school of midwifery and nursing was established in Bangkok, there has been an increase in nursing education and training in both the public and non-profit sectors led by American missionaries. The first school of nursing in the rural sector was the McCormick School of Nursing. It was founded in 1924 by Dr. McDonald and Miss McCormick, Presbyterian missionaries from the USA. At present its title is the McCormick Faculty of Nursing, Payap University. It was also the first private school of nursing in Thailand.

In 1946, the Ministry of Public Health also opened a College of Nursing and Midwifery using the Siriraj curriculum. Many nursing colleges were established around the country, and produced both professional and practical nurses. In 1994, all colleges of nursing under the MoPH were named 'King's Mother College of Nursing', they became a part of The Institute of the King's Father (Prince Mahidol) which was founded in 1993. The aim of these colleges was to develop a health team workforce. Many of these colleges were later established in the private and military sector e.g. the Royal Navy College of Nursing and The Royal Air Force College of Nursing.

The first master level programme, master of nursing administration, was developed at Chulalongkorn University in 1973, since then, nine other nursing academic institutions also developed master level programmes, which were approved by the TNC (Hanucharurnkul, 2001). The master level programmes in nursing were recently modified to conform with the Regulations of the Specialist Certification of Nursing and Midwifery (1994), the Regulation for the Educational Reform (1999) and the Health Systems Reform (2000). According to the Standard of the Curriculum for Advanced Practice Nurses Master Degree in Nursing (Thailand Nursing Council, 2003), some graduate core modules must be included in the curriculum, for example: health system, research conduct and utilisation, leadership, law and ethics. The compulsory core modules for advanced practice nursing must includes: advanced health assessment, advanced physiology and pathophysiology; concepts and theory of the development of the APN core modules (Thailand Nursing Council, 2003).

2.3.3. Professional Association of Nursing

The TNA was founded in 1896 by King Rama IX's mother. The aims of the TNA are to provide a centre for the development of nursing knowledge, to promote nursing identity and standards, and to represent and coordinate the public and private nursing sectors. The TNC was established in 1985, the same year as the Professional Nursing and Midwifery Act was approved by the government (The Ministry of Public Health, 2003 retrieved 2 July 2003 from http://www.moph.go.th/nursec/aboutus.htm). The TNC is responsible for training and registration of nurses and midwives. It represents the voice of professional nurses and midwives and plays an important role in providing justice and welfare

for its members. Physicians were involved with the Professional Association of Nursing as presidents of the TNC from the beginning until 2000. However, the current president is the first president who is a professional nurse.

2.3.4. The Ministry of Public Health of Thailand

The history of Thai public health was very closely related to the Nursing Department. In the early years of modern public health, there were many changes in administration and periodic restructuring. All hospitals were governed by the Ministry of City Affairs. The Department of Nursing was re-established and renamed the 'Public Protection Department' in 1916 under the Ministry of the Interior and became the 'Public Health Department' in 1918 under the Ministry of City Affairs (The Ministry of Public Health, 2002). The Ministry of Public Health Affairs was established in 1942 under the Department Reorganisation Act. It was renamed the 'Ministry of Public Health' (MoPH) in 1952. The MoPH was further reorganised in 1991. It is the responsibility of the MoPH to maintain Thai people's health by providing education and services. The MoPH plays a key role in health promotion since the policy was changed from 'defence' to 'offence' (The Ministry of Public Health, 2002). The MoPH focused on sustaining Thai people's physical and mental health by helping people to live longer without preventable disease, and to protect Thai people from disaster. The future trends for the MoPH were started in 1999 when provincial hospitals were allowed to become 'autonomous organisations' and health centres were allowed to become part of the local administration (subdistrict or 'tambol' level). The local administrative policy makers are allowed to set their own policies with regard to health service standards and monitoring. The structure of the MoPH was recently

reorganised in 2002. Figure 3. presents the recent general structure of the Ministry

of Public Health Thailand.

Figure 3. General structure of the Ministry of Public Health Thailand
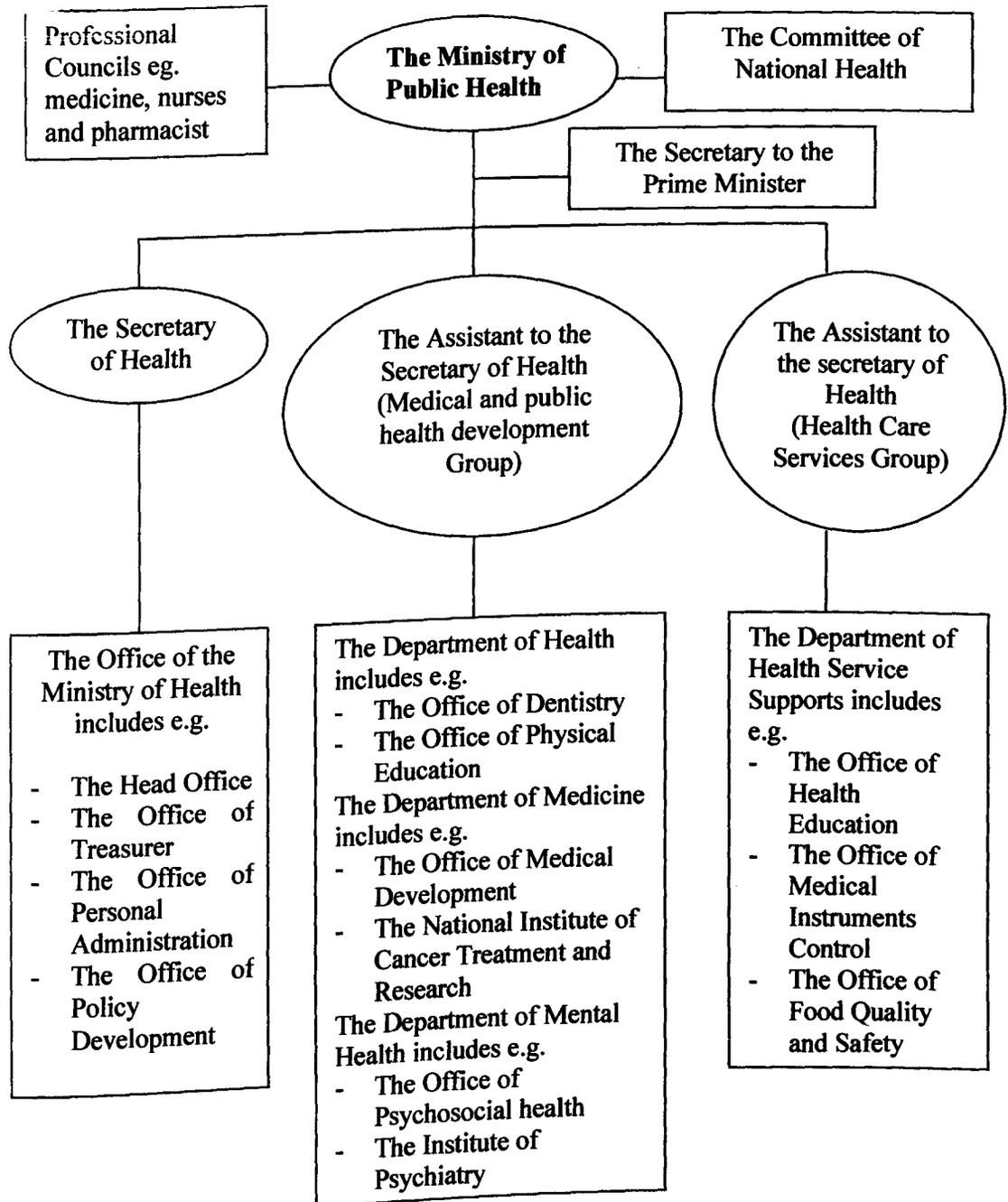
Figure 3. suggests that professional institutes and the Committee of the National Health are on the same level as the MoPH. This structure acknowledges the balance of power in politics with regard to development plans, e.g. the National Health and Social development Plan, the National Health System Reform and the National Health Act, the National Nursing and Midwifery Development Plan, The Professional Nursing and Midwifery Act. Recently, two important regulations were approved and enforced: the renewal of registration for nurses and midwives and the Regulations for Specialist Nursing and Midwifery Certification. These will be described in follow sections.

2.3.5. The Present Situation with Regard to Health Problems

It was reported that the number Thai people who die of the followings were increased: HIV/AIDS; chronic diseases e.g. heart diseases and diabetes; cervical and breast cancer, occupational related diseases and road traffic accident. Thai people also suffer from tropical diseases and diseases related to behaviour and life-style (The Ministry of Public Health, 2002). Thai people's behaviour e.g. smoking, alcohol consumption, not using seat belts and helmets when driving, has become one of the most important factors in their health (The Ministry of Public Health, 2002). These point out that many Thai people have died of preventable causes. Figure 4. presents causes of death per 100,000 between 1996-2000.

Figure 4. Causes of death per 100,000 between 1996-2000
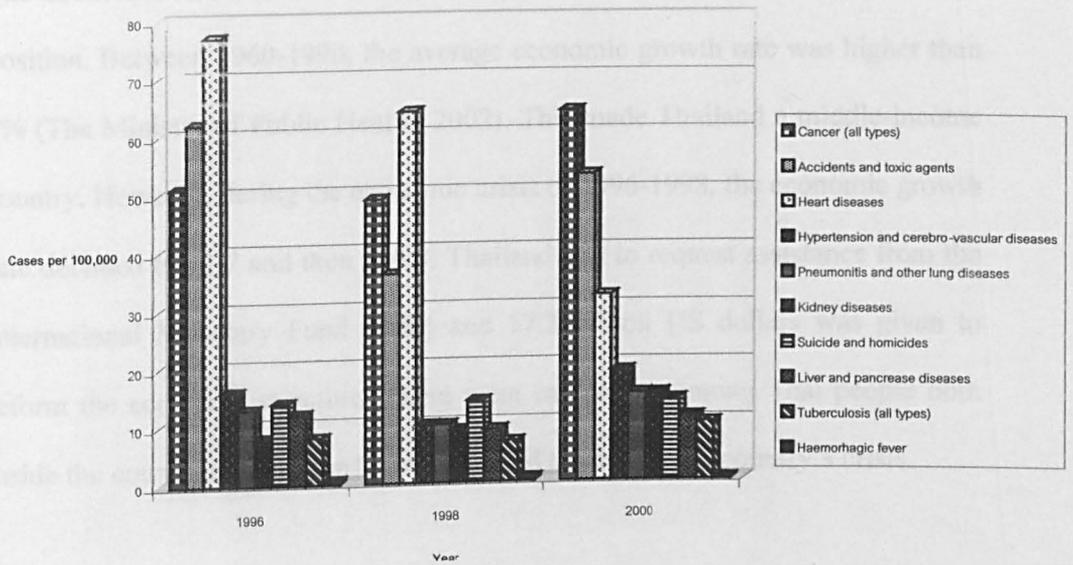
(Source: The Ministry of Public Health, 2002)

Figure 4. indicates that the number of people dying of cancer and kidney diseases has increased significantly. Although the number of deaths due to heart disease appears to have reduced, the increase in the number of deaths due to hypertension and cerebro-vascular diseases is significant. There has been a noticeable increase in suicide and homicide rates due to mental disorders, because of the impacts of economic, social and cultural transformation (The Ministry of Public Health, 2002). Nevertheless, infectious diseases remain the main cause of death in Thai people, followed by cardiovascular disease, cancer, road traffic accidents, homicide, respiratory disease and diabetes. The effects of health problems impacts on national health expenditure, which is increased every year. On this basis, it may be inferred that Thai people need to be educated and encouraged through health promotion with regard to prevention of diseases.

2.3.6. The Impact of Economic Crisis on Health System Reform

The economic status of the country is a broad picture of its people's economic position. Between 1960-1990, the average economic growth rate was higher than 7% (The Ministry of Public Health, 2002). This made Thailand a middle-income country. However, during the economic crisis of 1996-1998, the economic growth rate declined to −1.7 and then −10.8. Thailand had to request assistance from the International Monetary Fund (IMF) and 17.2 billion US dollars was given to reform the economic structure. There were campaigns among Thai people both inside the country and those who lived abroad to resolve the country's crisis.

An economic crisis in Thailand affecting directly both Thai people and the Thai government. The Ministry of Public Health (2002) reported that the economic crisis caused increases of health expenditure, the government budget on health, rural-to-urban migration, mental health problems and investment in health technology. Figure 5. displays gross domestic product and growth in real-term expenditures on drugs and healthcare between 1988-1998 (1988 price = 100).

Figure 5. Gross domestic product and growth in real-term expenditure on drugs and healthcare between 1988-1998
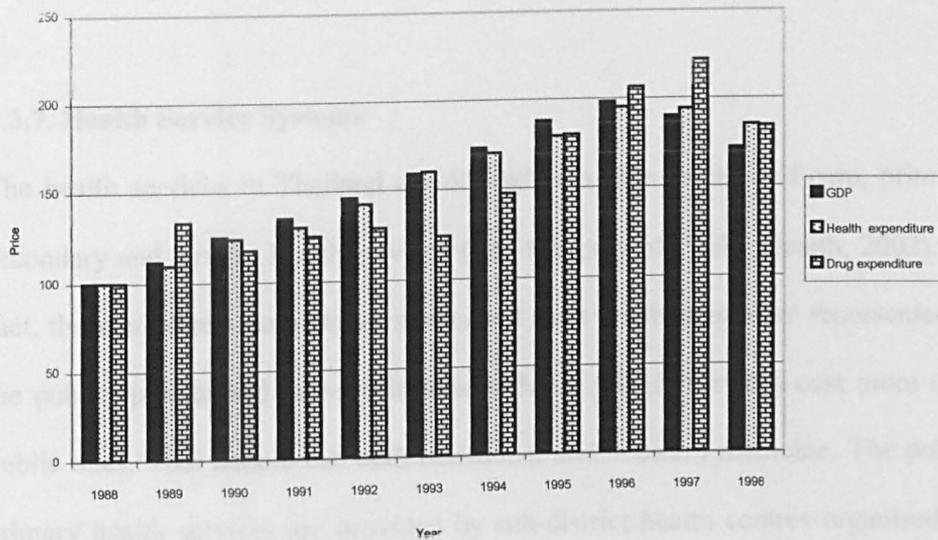
(Source: The Ministry of Public Health, 2000)

Figure 5. illustrates that there was a significant increase in drug expenditure between 1988 to 1997. The slight drop of GDP during the economic crisis between 1996-1997 appears to have had an impact on the decreasing drug expenditure in 1998. However, it was indicated that the real term expenditure on drugs was higher than the GDP because people could not afford health services provided by hospitals, therefore, they tended to use self-prescribed drugs (The Ministry of Public Health, 2002). The MoPH budget for outpatient and inpatient care increased by 15.6% and 11.55 % respectively after the period of economic crisis, because of the devaluation of the Thai currency (Baht) (The Ministry of Public Health, 2002). National health spending increased eleven fold from 1980 to 1998 (The Ministry of Public Health, 2002). It can be said that the economic crisis

had a great impact, not only on Thai people's personal economic condition but also on national health expenditure. Certainly, this impacted on health care services and the health system reform later.

2.3.7. Health Service Systems

The health services in Thailand are divided into four levels: self-care, primary, secondary and tertiary health services (The Ministry of Public Health, 2002). In fact, there are three main health services at most levels which are represented in the public, private and non-profit sectors. Most private services cost more than public ones. Thai people use both traditional and Western medicine. The public primary health services are provided by sub-district health centres organised by registered nurses and health care volunteers who are non-qualified staff. The private sector is served by local private clinics staffed with doctors. The secondary and tertiary health services are found in the form of public (district, provincial and university hospitals), private and non-profit making (charity and foundation) hospitals. Some people are covered by health insurance, while a larger number of Thai people cannot afford this. It was reported that thirty per cent of Thai population have no health insurance (The Ministry of Public Health, 2002).

While health problems have become increasingly complex, personal health expenditure has increased because people seek a better health service and drugs. After the economic crisis, the GDP decreased but the healthcare and drug expenditure remained higher than GDP (Figure 5.). People could not afford private healthcare, so they turned to self-medication (The Ministry of Public

Health. 2002). The primary health service became a basic and cheap service which Thai people were able to access. Some doctors left the public sector to work in the private sector, attracted by the higher demand, higher income and easier workload. This resulted in there being no doctors in twenty-one community hospitals in 1977 (The Ministry of Public Health, 2002). Consequently, nurses became the key people providing health services at a community level.

Health services seemed to be centralised in Bangkok. The Ministry of Public health (2002) reported that, in 2001, there were 5 medical teaching hospitals in Bangkok but only 4 medical teaching hospitals in all other regions. While there were 29 general and 19 specialist hospitals in Bangkok, there were only 25 general and 41 specialist hospitals in all other regions. There were 60 public health centres in Bangkok and 9,738 in all other regions. Table 1. summarises the types and number of private health services in Bangkok and other provinces.

Table 1. Types and number of private health services in Bangkok and other provinces

Health Service	Bangkok	Other provinces
Inpatient service hospital	116	306
Inpatient service midwifery clinic	0	23
Inpatient traditional service hospital	1	6
Outpatient service hospital (first class)	2155	5043
Out patient service hospital (second class)	0	0
Dentist (first class)	881	1140
Dentist (second class)	93	96
Midwifery (first class)	27	2089
Midwifery (second class)	0	1999
Physiotherapist	15	35
Medical Technician	12	110
Traditional medicine clinic	343	180
Modified traditional medicine clinic	23	6
Traditional Midwifery clinic	3	0

(Source: The Ministry of Public Health, 2002)

Table 1. indicates that the accessibility of health services in Bangkok is greater than in other provinces when compared to the population (Bangkok had a population of 6.355 million, Thai population 61.88 million in 2000.

Thai people can buy medicines and health care products such as antibiotics, antidepressant and wound care products from the chemist, without prescription. The numbers and types of chemists in Bangkok and all other provinces are presented in Figure 6.

Figure 6. Number and type of chemists in Bangkok and other province
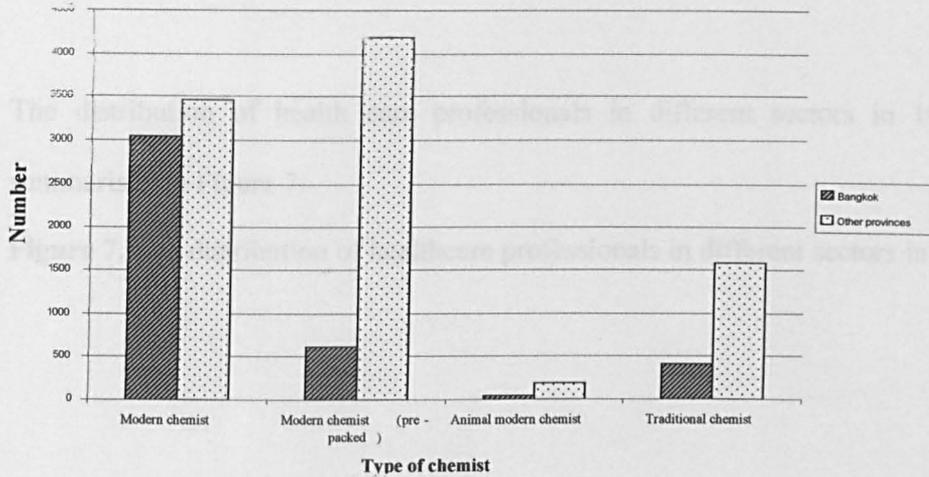
(Source: The Ministry of Public Health, 2002)

Figure 6. suggests that the number of modern chemists (pre-packed) in other provinces is significantly higher than Bangkok, as is that of traditional chemists. It can be said that the demand for these types of chemist in other provinces is much higher than in Bangkok.

2.3.8. The Healthcare Workforce

The main professional workforce is represented by doctors, dentists, pharmacists, professional nurses, technical nurses and practical nurses. Other healthcare workers are physiotherapists, occupational therapists and social workers. In health centres, there are community health workers who have successfully completed a two-year training course run by the public sector. They are able to provide basic health care, e.g. wound dressing, blood pressure monitoring and distribution of

ready-packed medicines provided by the local council. There are healthcare volunteers in each village, who had been to short course training about health issues run by local council. They also work as mediators, bringing health care news from the local council to the community.

The distribution of health care professionals in different sectors in 1999 is summarised in Figure 7.

Figure 7. The distribution of healthcare professionals in different sectors in 1999
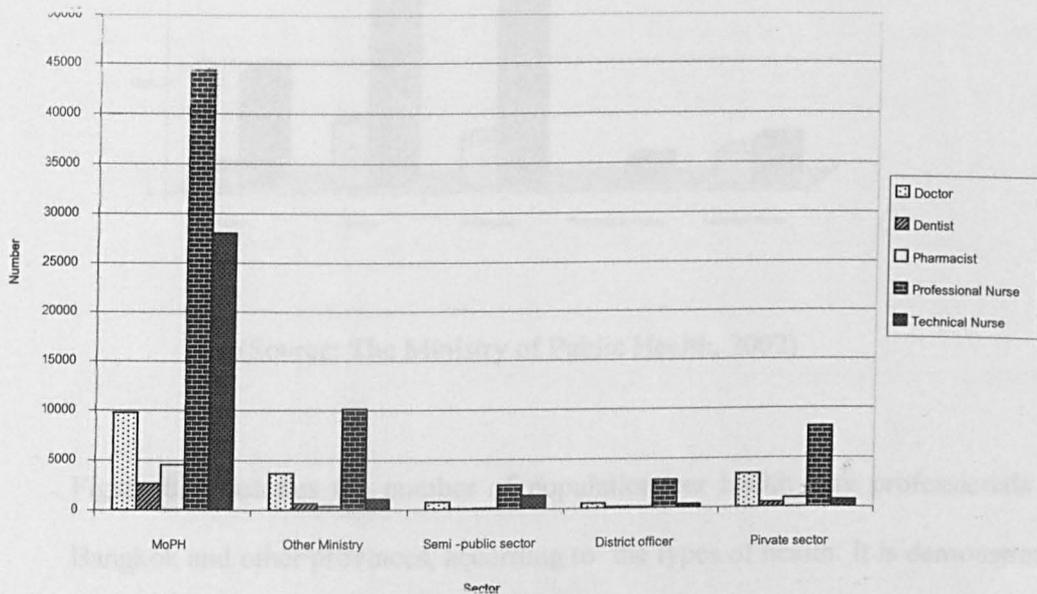
(Source: The Ministry of Public Health, 2002)

Figure 7. indicates that most health care professionals work in the public sector, the number of professional nurses being the highest.

Figure 8. Number of population per healthcare professional in Bangkok and other provinces divided by types of healthcare professional
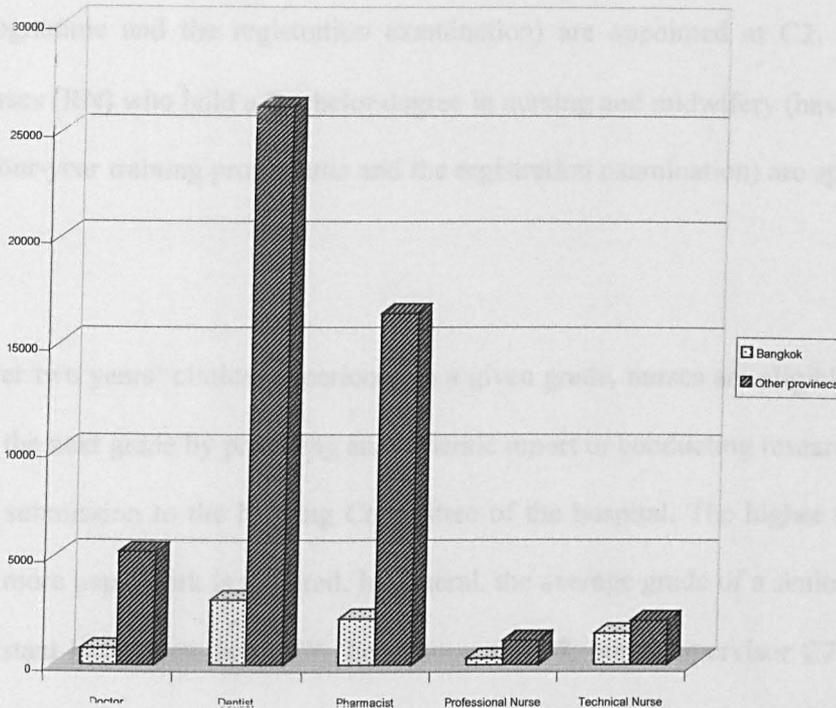
(Source: The Ministry of Public Health, 2002)

Figure 8. illustrates the number of population per health care professionals in Bangkok and other provinces, according to the types of health. It is demonstrates that the number of population served by each doctor, dentist and pharmacist in other provinces was significantly higher than in Bangkok.

2.3.9. The Grading System for Nurses
The public sector uses the same grading system as the government officers. The public sector includes regional, specialist, community, district, university

hospitals and health centres. Public healthcare staff are divided into 11 grades: C1-C11. Practical nurses (PN) who hold a practical nursing certificate (having passed a one-year training programme) are appointed at C1. Technical Nurses (TN) who hold a diploma in nursing (having passed a three-year training programme and the registration examination) are appointed at C2. Registered nurses (RN) who hold a Bachelor degree in nursing and midwifery (having passed a four-year training programme and the registration examination) are appointed at C3.

After two years' clinical experience in a given grade, nurses are eligible to apply for the next grade by preparing an academic report or conducting research or both for submission to the Nursing Committee of the hospital. The higher the grade, the more paperwork is required. In general, the average grade of a senior nurse or assistant head nurse is C5-C6, head nurse C6-C7, nurse supervisor C7-C8, sub-directorate C8-C9, directorate C9-10, and the Director of Nursing C10-C11. The private sector (hospitals and university hospitals) does not use the same system as the public sector. They have their own system which depends on each hospital's policy.

2.3.10. The 8th National Health and Social Development Plan (1997-2001)

The previous government set up the 8th National Health and Social Development Plan as a part of the 8th National Economic and Social Development Plan (1997-2001). The general targets of this plan are to reduce the infant mortality rate and the incidence of malnutrition, deaths from road traffic accidents, cardiovascular disease, and cancer. It also aims to reduce the morbidity rate caused by diarrhoea

and Dengue Haemorrhagic Fever. Moreover, it plans to control the rate of HIV infection and the prevalence of Pulmonary Tuberculosis, and to reduce tobacco consumption. The important targets that relate to health care services are: to increase access to health services for particular group, such as people with HIV/AIDS, the homeless, victims of violence, and disabled, and to improve health resources and the quality and standards of existing health facilities. Furthermore, it aims to increase health insurance cover to 100% of the population and to encourage Thai people to be aware of other health issues.

2.3.11. The National Nursing and Midwifery Development Plan (1997-2006)

As mention previously that the TNC is representative of all nurses and midwives who are registered practitioners in Thailand. The TNC exists not only to serve the interests of the members but also to maintain standards of practice and to promote both pre-registration and post-registration education and research. Moreover, it is also responsible for professional development in order to keep up to date with other countries. The TNC committees developed the National Nursing and Midwifery Development as a master plan for all professional development (The Thailand Nursing Council, 1996). This plan was developed with the agreement of 39 committees. These included the TNC committees, representatives from the World Health Organisation (WHO), nursing scholars and the professional institutes of medicine, pharmacy and law. The plan consists of three parts. Part one contains an analysis of the economic and social situation which impacts upon people's health status and national public health. Part two includes data of the public health situation, e.g. nursing workforce, nursing education, nursing

research and Thai peoples health problems. Part three consists of two sections: the National Vision for Nursing and Midwifery and its strategies.

2.3.12. The National Health Systems Reform Project and the National Health Act

It is noted that the idea of the National Health Systems Reform in Thailand was initiated in November 1999, by the Health System Research Institute (HSRI) committee (The Ministry of Public Health, 2002). Because of the large numbers of health problems in Thai people and the dramatic increase of National Health expenditure, the HSRI committee decided to listen to the public about the needs of a National Health Act. This Act highlighted what health reform was needed in order to develop a suitable health system for Thailand in the future. It is reported that the National Health Act was created as a results of public suggestions, it reflects the needs of Thai people, not only those suggested by the HSRI committee (The Ministry of Public Health, 2002). The government accepted the committee's recommendations on reform of the health systems in Thailand in April 2000. The National Health System Reform Committee (NHSRC) was set up officially in August, 2000 led by the present Prime Minister. The collaboration of various institutions and organisations is expected in the National Health Systems Reform especially health professional organisations. In addition, many experienced and knowledgeable professionals working in the clinical and academic sectors have contributed. They have become part of the internal resources that play an important role in developing an appropriate health system for Thailand.

2.3.13. The 9th National Health and Development Plan (2002-2006)

The 9th National Health and Development Plan (2002-2006) was developed by the present government, led by the Prime Minister. This plan consists of two concepts: health promotion and holistic health development. Health promotion focuses on prevention rather than cure. Holistic health development is a systematic development, which includes economic, social, politic, cultural and environmental development. The strategies of this plan are to ensure that Thai people: have good quality health insurance and equal access to health services; to promote healthy families, communities and society; and to encourage learning and participating in health management by using both local and universal knowledge. This plan aims to use an outreach strategy instead of a health care based strategy. The government aims to use the National Health Act and the National Health Insurance in order to meet the objectives of this plan. It is expected that the doctor: patient ratio in rural areas will be 1:6,000 and the bed: patient ratio in rural areas will be 1:6,000 by the end of 2006. A summary of strategies of the 9th National Health and Development Plan is presented in Figure 9.

Figure 9. A summary of strategies of the 9th National Health and Development Plan (2002-2006)


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                    ┌─────────────────────┐
                    │   Healthy People    │
              ┌─────┴─────────────────────┴─────┐
              │  Basic factors, behaviour and   │
              │      competitive potential      │
         ┌────┴─────────────────────────────────┴────┐
         │        Guaranteed quality service         │
    ┌────┴───────────────────────────────────────────┴────┐
    │          Body of knowledge and technology           │
┌───┴─────────────────────────────────────────────────────┴───┐
│                 Health management process                    │
└──────────────────────────────────────────────────────────────┘
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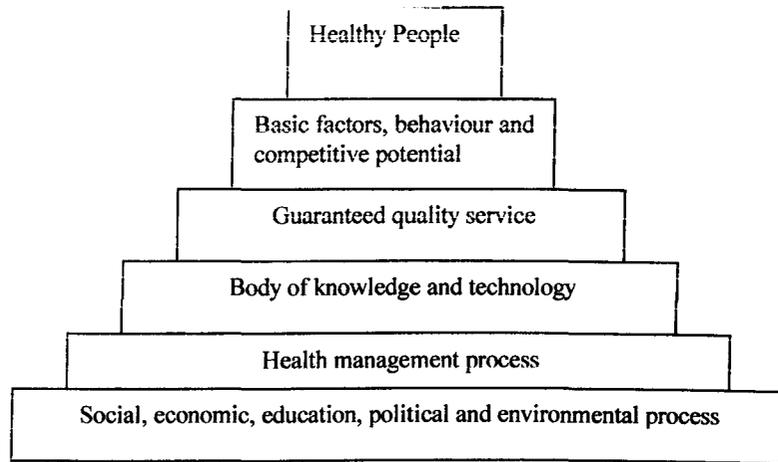
(Source: adapted from The Ministry of Public Health, 2002)

2.3.14. The Professional Nursing and Midwifery Act 1985 and 1997

According to the Professional Nursing and Midwifery Act 1985, there were two types of registration: first class and second-class registration. Nurses and midwives who finished the training courses were automatically registered and this was life-long registration. In 1997, this Act was reviewed and resulted in three changes: the newly qualified nurses and midwives must apply for the registration examination run by the TNC; the registration covered them for five years and needed to be renewed before the expiry date; all life-long registrations which were issued previously expired on 24 December 2002 (Boonthong, 2003). The reasons for these changes were explained as: 1) to protect clients or consumers by requiring professional nurses and midwives to continue to study and update their knowledge, in order to provide a high standard of care 2) to maintain the

standards of professional practice, 3) to encourage nurses and midwives to maintain post registration education and 4) to keep records of the number of active professional nurses and midwives in order to plan for future training and needs (Boonthong, 2003). In 2000, it was reported that there were 105,924 professional nurses who were registered but only 70,978 were actively practicing (The Ministry of Public Health, 2002). Nurses and midwives who renewed their registration before 24 December 2002 did not need to take the examination (Boonthong, 2003).

2.3.15. Adoption of the Concept of Advanced Practice Nursing

Many Thai scholars in academic institutes of nursing returning from the US after gaining their doctorate degrees brought the APN concept back to Thailand. Professor Hanucharurnkul was one of the Thai scholars who played an important role in advocating the development of advanced practice nursing in Thailand. She was one of the TNC committees and funded by the TNC to visit the ANCC and the American Academy of Nursing Practitioners (AANP) in 2000 (Hanucharurnkul, 2001). She had met the Director and staff at the ANCC and discussed about the concept of APN, credentialing and other issues. She also attended the International Nurse Practitioner Conference at San Diego, California in 2000 where she met members of the AANP (Hanucharurnkul 2001). She brought back a large quantity of information to present to the TNC. This information was considered as one of the important factors prompting the TNC to consider adopting the concept of APN in the nursing system of Thailand at a later date.

Several Thai nurses were educated to master degree level but these nurses were unable to use their knowledge in clinical practice, even though they were young, knowledgeable and active staff, because they were not in administrative positions. The seniority system remains part of the Thai nursing culture. It was therefore a waste to produce nurses to a master degree level of education. Some nurses who held master degrees left their jobs in clinical practice to become academic staff or research nurses. There were some nurses who wished to continue their clinical practice and bring their knowledge to develop better nursing care. The question arose, how could they remain in clinical practice and bring knowledge to develop nursing care when they were not at an administrative level?

The TNC has considered adopting the APN concept within the last few years. According to the Professional Nursing and Midwifery Act 1997, the TCN was allowed to issue the specialist certification for nurses. The Regulation of the Specialist Certification of Nursing and Midwifery was then published in 1998 (The Thailand Nursing Council, 1998). However, the introduction of advanced practice nursing in Thailand was not conducted systematically. Therefore, it was three years after the Regulation was published that a systematic process of APN certification was developed.

The National Conference on Educational Preparation for Advanced Practice Nursing was held in August 2001. At that time, it was planned to commenced APN certification and licensing in October 2002. There are five branches of specialty: community nursing, psychiatric and mental health nursing, medical and surgical nursing, pediatric nursing and maternal-child nursing. According to

discussions at the National Conference on Educational Preparation for APN in Thailand in August 2001, there were two tracks to follow to apply for the examination according to the the Regulation of Specialist Certification of Nursing and Midwifery 1998: First, a master degree in nursing. Second, a training programme developed by the TNC. A training programme leading to certified proficiency in nursing practice aims to produce specialist nurses within particular clinical areas. Specialist nurses and midwives are expected legally to be practitioners who perform advanced clinical procedures. Therefore, they must have knowledge and skill in clinical practice, management, teaching, consultancy, research, morals, ethics and law (The Thailand Nursing Council, 1998). The length of the training programme is two years.

The title to be given to practitioners with these new roles was exclusively discussed among the committees. The word 'advanced' in Thai (khan soong) means 'a higher level'. The title 'khan soong' was therefore avoided in order to prevent dissociation in the nursing profession hierarchy. Thus, 'specialist nurse' seems to be appropriate in term of its meaning in Thai language.

It was suggested that there were three main aims for the TNC in adopting the concept of APN into Thai nursing system (Hanucharurnkul, 2003):

- To develop a career pathway for nurses who were educated to master degree level, particularly, junior nurses who were not at an administrative level
- To improve nurse identity
- To improve outcome of patients and nurses.

2.3.16. The Regulation of the Specialist Nursing and Midwifery Certification 1998

The present government approved the Regulation of Specialist Nursing and Midwifery Certification in 1998. The regulation includes the details of five branches of specialist certification: maternal and child health nursing, paediatric nursing, medical and surgical nursing, psychiatric and mental health nursing and public health nursing. It covers the terms and definitions of each specialist branch, training programme and examination process. The committee providing the training and examination for specialist nursing and midwifery certification consisted of the Vice President of The TNC, the secretary of the TNC and nine honorary committee members chosen by the TNC committees.

According to the Regulation of Specialist Nursing and Midwifery Certification 1998, nurses and midwives who wished to apply for the examination had to have completed the specialist training programme from a nursing institution which was approved by the TNC, to hold master degrees or higher and to have at least three years' clinical experience in their chosen specialist field.

Nurses or midwives who applied for the specialist training programme had to hold at least a bachelor degree in nursing, be registered in Part One of Nursing or Midwifery or both, have three years' clinical experience related to the branch for which they applied for and have any other specific qualifications the branch committees may require. Specialist training programmes are being developed by some schools of nursing and then have to be approved by the TNC.

The TNC announced the first specialist certification examination between May and June 2002. The qualifications for applicants are: 1) holding master degree in the same branch of application, or holding master degree in nursing with 2-3 credits of nursing theories, 6 credits of specific clinical nursing and 1-2 credits of role development modules, or having attended the advanced practice nursing seminar with at least 15 credits 2) having at least 3 years clinical experience in the same branch for which they were applying.

The specialist certification examination consisted of three parts: the written examination, the oral examination and any other type of examination which the special branch committees may require. The first specialist certification examination was held in Bangkok in 2003. The examination fee was 1,000 Baht (average £14.28 if 1£ =70 Baht). Forty-nine nurses passed this examination and were certified as APNs. The second examination was held in 2004 and 95 nurses were qualified. At present, there are 144 APN in Thailand. It was counted as 0.20% of the total number of registered nurse who are actively practice in Thailand. The registration fee for each APN was 2,000 Baht (average £28.57 if 1£=70 Baht).

Hanucharurnkul (2003) summarised that the APN in Thailand was expected to have ten capabilities as follows:

1) being a clinical expert

2) skill in teaching

3) skill giving consultancy

4) skill in collaboration with intra and interdisciplinary health team and other staff in work organisation and systems

5) skill in initiate change

6) leadership inside and outside profession

7) skill in conducting research and utilising research results to improve quality of nursing and health services

8) skill in making ethical decision

9) skill in evaluating nursing outcome

10) skill in quality assurance

The numbers of APNs who were certified in the examinations divided by branches of specialty is illustrated in Table 2.

Table 2. Numbers of APNs who were certified in the examinations divided by branches of specialty

Branch	Year 2003	Year 2004
Maternity and Child Health Nursing	1	7
Paediatric Nursing	8	13
Medical Nursing*	19	44
Surgical Nursing*	12	19
Psychiatric and Mental Health Nursing	0	5
Community Health Nursing	9	7
Total	49	95

*Medical and Surgical Nursing are the same branch of specialty according to the Regulation of the Specialist Nursing and Midwifery Certification 1998

(Source: The Thailand Nursing Council, 2004)

2.3.17. The Rationale for Conducting this Research.

The APN has presented a challenging role and concept for the nursing system in Thailand. It is interesting to explore to what extent people understand this concept. To what degree this concept is accepted. A number of queries emerged after the concept of advanced practice nursing was adopted into Thai nursing systems. Is advanced practice nursing necessary and important to health services in Thailand? Do APNs really increase or improve quality of care? Thus, the rationale for conducting this research can be summarised as follows:

1. Thailand is in the early period of the implication of the concept of advanced practice nursing. There is a dearth of study of this topic in Thailand.

2. The adoption of a new concept will inevitably involve changes. Therefore, it is interesting to explore the understanding and acceptance of these changes among health care professionals and the general public. What are their responses?

3. At the beginning of the transition to APN, it is , been interesting to study the factors facilitating and inhibiting this transition to gain useful information and learn lessons to help nurses who plan to become APN in the future.

CHAPTER 3

Literature Review

3.1. Introduction

The purposes of this study are to explore the perceptions and transition process of APNs. The objectives of the literature review are:

1. to present an overview and recent knowledge of advance practice nursing

2. to provide a summary of selected literature which is relevant to the present study

3. to evaluate and critically analyse the selected literature

4. to identify research gaps in the literature

5. to develop directions for reducing the gaps in the literature

The literature review is divided into three parts: the systematic review of recent knowledge of advanced practice nursing, the gaps in published literature and the research questions. Issues of concern in the literature regarding the implications of the APN will be demonstrated to introduce the source of research questions for the study of APNs in Thailand. The first part presents the results of a systematic literature review which was carried out by electronically searching six databases: CINAHL, Cochrane, Embase, Medline, http://www.theses.com and http://www.lib.umi.com between November 2001 and April 2002. The key terms used were combined to retrieve relevant literature. These terms were: 'advanced', 'practice'; 'nursing'; nurse'; 'nurses'; 'clinical'; 'specialist'; 'practitioner'; 'anaesthetist; 'midwife', midwifery'; 'midwives' and clinician.

The gaps in published literature will be highlighted in the second part. Finally, the research questions of the present study will be presented. To meet the purposes of this review and retrieve only the papers relevant to this study, combined terms were used. These combined terms were: 'advanced and practice and nursing'; 'advanced and practice and nurse'; 'advanced and practice and nurses'; 'clinical and nurse and specialist'; 'nurse and practitioner'; 'nurse and anaesthetist'; 'certified and nurse and midwife' and 'nurse and clinician'.

3.2. Systematic Review

A systematic review of the literature was carried out from four databases: CINAHL, Cochrane, Embase and Medline. The master and doctoral theses and dissertations were reviewed in two websites: http://www.theses.com and http://wwwlib.umi.com. The years for literature search were limited between 1980 to 2002 to retrieve recent published papers. Having use the combined term as described in 3.1., the limitations for searching were applied to retrieve papers which met the aims of the literature review. The limitations used in searching from the CINAHL database were: abstract available, blind peer review and journal article. No restriction was applied in the Cochrane database. Abstract, English language and reviewed article were limitations used in the Embase database. The limitations in the Medline database were English language, abstract, journal article and nursing journal. For masters and doctoral theses, no limitation was applied. The number of papers hit on four databases is presented in Table 3.

Table 3. Numbers of papers hit on databases

Key terms	CINAHL	Cochrane	Embase	Medline	theses.com	lib.umi.com	Total
advanced and practice and nursing	80	3	14	76	19	8	200
advanced and practice and nurse	132	13	27	126	19	10	327
advanced and practice and nurses	347	18	42	193	19	18	637
clinical and nurse and specialist	1349	48	81	474	24	12	1988
nurse and practitioner	1548	150	684	1038	131	20	3571
nurse and anesthetist	65	4	45	48	0	8	168
nurse anaesthetist	3	0	9	1	0	0	13
certified and nurse and midwife	9	16	49	23	0	2	99
certified and nurse and midwifery	1	35	18	6	0	2	62
certified and nurse and midwives	28	99	228	107	0	0	479
nurse and clinician	52	12	38	537	24	2	665
Total	3614	398	1235	2629	236	99	8209

In order to present up-to date knowledge and highlight the key issues arising in the area of advanced practice nursing, restriction of the number of papers to be reviewed was applied. A preliminary review was carried out by reading all abstracts retrieved from the three main combined terms. These were: 'advanced and practice and nursing'; 'advanced and practice and nurse' and 'advanced and practice and nurses'. Abstracts retrieved from other combined terms were selected for review only when they were considered relevant to the aims of this study or suitable to be included in the main categories: issues arising after the implementation of the APN, preparation, practice outcome and areas of specialty. Another important criterion used for selecting papers for the review included the research papers concerning APN types which would be developed in Thailand. These were the five branches of clinical nurse specialist and the nurse practitioner.

The presentation of systematic review includes the results of systematic search, summary of the published papers and the analysis of the research methodologies and methods in the published papers.

3.2.1. The Results from Systematic Search

The exclusion criteria used for the second review were duplicated papers and abstracts both within database and across databases, descriptive papers, clinical guidelines, regulations and others which were not research based. Finally, 82 research papers were retrieved. A second review was carried out on these papers which included full text papers and papers in abstract format if full text papers were not available. The full text papers were collected from three sources: photocopying from hard copy journals in the local library, printing from online

databases and interlibrary loans. Twenty six papers were excluded from this review for three reasons: first they did not include major roles of APN as described in 2.2.8.; some of them were the development of APN role in particular group of patient or culture, therefore, they could not be applied to Thai health services e.g. the APN provided health care services for the Amish (Dellasega *et al.*, 1999) the role of the APN in physician assisted suicide (Kowalski, 1997), the clinical nurse specialist role in giving psychotherapy for children with alcoholic depression (Kuhns, 1997). Second, they were considered not relevant to five branches of the APN in the present health service system in Thailand e.g. a certified registered nurse anaesthetist (Waughaman and Lohrere, 2000) and an economic analysis of the investment in nurse anaesthetist education (Fagerlund, 1998). Thirdly, they were not congruent with the present health problems and service system in Thailand e.g. the role of APN in home care service (Brooten *et al.*, 1998; Herrmann *et al.*, 1998), end of life care at a nursing home (Happ *et al.*, 2002) and computer network for social support (Hudson *et al.*, 1999). Finally 75 studies were reviewed. These included 56 research papers, five masters and 14 doctoral theses. Three full doctoral theses were available from inter-library loan. Other theses were reviewed in abstract forms. Four main categories and 29 sub-categories emerged. Figure 10. presents four categories emerging from a review of published papers.

3.2.2. Summary of the Published Papers

A summary and comments on these papers are presented in Appendix E. and will be used for the presentation of the summary of published papers.

Figure 10. Categories emerged from a review of published papers


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                    │   Advanced Practice Nursing     │
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Issues arising after the implementation of the APN	Preparations and educational programmes	The outcome of practice	Areas of specialty for the APN
1. Perceptions 2. Roles 3. Authority to prescribe 4. A non-physician health care providers 5. Marketing 6. Employment funding 7. Merging of the CNS and the NP	1. Core competencies 2. Higher degree programme 3. Continuing education 4. Evaluation of teaching methods 5. Database for practice	1. Quality of life: an outcome measurement 2. The nurse practitioner 3. The APN in cardiology 4. The nurse practitioner and certified nurse midwifery 5. The APN in oncology 6. A multi-professional group 7. Managed care and case management 8. The APN in prenatal care	1. Oncology 2. Women's health 3. Cardiology 4. Transport nurse 5. Acute care 6. Critical care 7. Transitional care 8. Psychiatric and mental health 9. Care of older people

3.2.2.1. Issues Arising after the Implementation of Advanced Practice Nurses

Thirteen papers, nine doctoral and five master theses were included in the category of issues arising after the implementation of advanced practice nursing. This category consists of seven sub-categories: perceptions, roles, authority to prescribe, APN as a non-physician health care provider, marketing, employment fund and merging of CNS and NP.

Perceptions

Clifford (1981) examined perceptions of the employer and the educator toward the CNS practice in the USA by conducting a survey using the Clinical Nurse Specialist Functions Inventory (CNSFI) as a research instrument. This instrument was developed by Clifford and consisted of 37 items on four major functions of the CNS: clinical, education, administration and research. The questionnaires were randomly posted to 777 potential participants and the response rate was 88%. Data from 152 educators and 190 employers were analysed and the results showed that clinical function was valued as the highest function while administrator was the least valued function.

A few years later, another survey was conducted by Branyon (1985) to investigate perceptions of nurse administrators toward the CNS in the USA. The questionnaire was developed and randomly posted to 150 directors of nursing. The response rate was 71%. Descriptive statistic and correlation were used for data analysis. It was found that the CNS was accepted as they improved patients' care but further details were not received. Although 50% of the nurse administrators agreed that the CNS was needed, the limitation of budget for the

CNS employment existed. They also reported the suitability and cost effectiveness of the CNS. However, when asking about the employment of the CNS in the next five years, only 26.4% of the participants though that it would be increased. These results appeared to consistent with Ploessl (1989) study who reported that the nurse administrators agreed with the cost-effectiveness (84.4%) and the improvement of patients' care (96%) of the CNS.

The perceptions of physicians towards the NPs in the USA was investigated by Wingert (1998). This descriptive study was conducted with five physicians who worked at the Air Force Emergency Department using a qualitative approach. Data were collected by interviews and analysed using Munhall and Boyd's methods. The findings showed that four issues were concerned: role performance, educational background and knowledge base trust issues and role receptivity.

In the same year, a study of the opinions of patients on the NP in the USA was conducted by Schweser (1998). Telephone interview was used as the method of data collection. The criteria used for sampling were age above 18 and able to make their own choice about healthcare. Finally, data were collected from 149 random sampled participants. Schweser (1998) concluded that the NP was highly accepted by the participants.

Perceptions about the role of APN in the USA have been investigated using both quantitative and qualitative approach. Balkon (2000) conducted a descriptive study using a qualitative approach. This interpretative study was conducted with six ACNPs focusing on the process of and barriers to the ACNP roles including

role socialisation. Data were collected by interviews. It was found that the framework of the ACNP was drawn between the symbolic interactionism domain and creations of selves. Four themes emerged: self-satisfaction, cognitive dissonance as a challenge and motivator, knowing oneself and relying on others and identity. Although the role satisfaction of the participants were mentioned they also reported the blurring of role boundaries of nursing and medicine.

Daniell (2001) conducted a study of perceptions of nurse administrators of CNSs toward the role of CNS. Role theory was used as a conceptual framework for this descriptive study. It was summarised that the perceptions of the CNS role between the CNS and the administrator were different in terms of a researcher, consultant and change agent (Daniell 2001).

The above studies showed that when the new concept of the APN was adopted and implemented into the work organisation, it was not uncommon to have queries such as what advanced practice nursing is about, how it could be included within the old system, what would need to be changed, is it suitable and how would it make things better? Issues also arose after the implementation of the APN that need to be clarified or solved e.g. perceptions, attitudes and legal related issues. Although the above studies had examined perceptions about the APN in many groups of e.g. educators, physicians, patients and APNs, however, they have not included all groups of sample in one study. Therefore, perceptions about APN were mixed because the findings came from different settings and groups. It was noted that most studies which were conducted in the late 20th century appeared to use quantitative approaches. In the 21st century, qualitative approach and nursing

theory was increasingly used in nursing research into APN roles. Overviews of methodology, triangulation or using multiple research methods was increasing used by many researchers. Some advantages of triangulation were described as increasing data accuracy (Lobiondo-Wood and Haber, 2002) and reducing personal bias (Denzin and Lincoln, 1998). Most importantly, it reduces the weakness of using a single methodology (Ormond-Walshe, 2001). Denzin and Lincoln (1989) suggested that five types of triangulation could be applied: data, investigator, theory, methodological and interdisciplinary triangulation. However, most of the reviewed papers appeared to use a single approach and limitations were left unresolved.

Roles

The advanced practice nursing concept was widely implemented in various countries e.g. the UK (Miller, 1995; Castledine, 1982; Woods, 1998b; Catini and Knowles, 1999; Bamford and Faith, 2000; Bamford and Gibson, 1999; Jarvis, 1999), Iceland (Sigurdardottir, 1999), Australia (Smith, 1996; Duffield *et al.*, 1996; Offredy, 2000), Nicaragua (Gubser, 2000), Hong Kong (Chuk, 1997; Wong, 2001; Chang and Wong, 2001), Switzerland (Hurlimann, 2001), the Netherlands (Schuurmans, 1996), New Zealand (Clendon and White, 2001), Norway (Lorensen and Jones, 1998) and Thailand (Ketefian *et al.*, 2001).

Many titles were used for nurses who perform advanced practice in these countries apart from the four major titles used the USA e.g. nurse consultant, practice nurse and nurse specialist. The confusion about titles and roles of the APN occurred among their colleagues, patients and the general public regarding

to who these nurses were accountable and what their roles were. Some other issues arising from the use of many titles were: lack of professional unity, salary scales and reimbursement. Thus, the idea of merging the CNS and the NP was considered in order to initiate professional unity, reduce confusion among the general public and enable negotiation of salary scales and reimbursement. William and Valdivieso (1994) compared the roles of the CNS and the NP in the USA using a survey method. Questionnaires were posted to 228 APNs who identified themselves as CNSs (62%) and NPs (30%). These APNs were convenience sampled and were approached using the list from one state board of nursing. William and Valdivieso (1994) noted that there was overlapping of the roles of CNSs and NPs although the CNSs reported that they were involved in educator, consultant, researcher and administrative roles more than in a direct carer role. The results of William and Valdivieso's (1994) study support the idea that there were some similarities between the role of CNSs and NPs.

The role of the APN as a direct carer in the intensive care unit was easily observed because of the nature of the nurses' role in performing advanced or invasive procedures e.g. arterial line and central line replacement, cardiopulmonary resuscitation and venepuncture. In the USA, Paredes and Frank (2000) explored the perceptions of nurses and parents in a neonatal intensive care unit towards the nurses' roles. The samples in this cross-sectional study were recruited conveniently: 25 parents of patients who were infants and 35 nurses from a neonatal intensive care unit (NICU). The participants were requested to complete self-administered questionnaires which were adjusted from an original version referenced in Paredes and Frank (2000).

The result showed differences between parents and nurses' perceptions towards the roles of the NICU nurses. Parents' perceptions of the nurses' responsibilities were higher than the nurses such as giving emotional support and guidance to parents. Parents were also concerned about communication more than nurses. Nurses expected parents to be involved in some tasks e.g. feeding and drug administration so that parents could continue these tasks when infants were discharged from the unit. In contrast, parents saw these tasks as nurses' responsibilities. Nurses felt their knowledge was limited and not sufficient to educate and support parents.

The results of Paredes and Frank's (2000) study were useful for the APN working in NICU by highlighting the importance of the role of educator to help increase knowledge for NICU nurses by providing teaching and training sessions. Being a knowledgeable member of staff increased the confidence in transferring knowledge and giving emotional supports to parents. The APN could develop teaching and training sessions for parents to increase confidence and decrease anxiety. Simple or regular tasks which parents could perform at home could be included in teaching session e.g. feeding and drug administration. The APN can also use these results in improving their role as a co-ordinator or developing methods of communication between nurses and parents e.g. providing parents with a leaflet which includes information about the NICU environment and nursing care activities.

Wood (1998b) examined the role transition of the APN in the UK, who worked in critical care settings using case study approach. The theory framework used for this study was Nicholson's theory of work role transition. The study consisted of five case studies from five areas: adult intensive care unit, accident and emergency unit, neonatal intensive care unit, gynaecological intensive care unit and rehabilitation unit. Each case study included a staff nurse, consultant, APN preceptor, directorate manager, clinical nurse manager and university pathway co-ordinator. Data were collected by interview, clinical observation and the analysis of documents and used NUD-IST software package to assist with data analysis. It was found that the major roles of APN in critical care included direct carer, researcher, change agent, consultant and educator. The most important factors affecting role implementation were support for medical and nursing staff. Performing previous roles at the same time as APN roles and lack of understanding and resistance from medical and nursing staff were reported as the most important obstacles for the implementation of APN roles.

As described previously, conducting research and research utilisation were recognised as roles for the APN. At the present time with the emphasis on the importance of evidence-based practice, the APN must have skills in research and be able to apply research results into practice. Carrol *et al.* (1997) conducted a survey to explore the facilitating and inhibiting factors for nurses in utilising research results in the USA. The research instrument used was a rating scale. It was suggested that nurses were lacking in knowledge and research results were inaccessible. Time constraints were noted as barriers preventing implementation of new ideas. These results should encourage the APN to assist other nurses by

giving consultation on searching for research results and how to apply those results in practice.

A survey about nurses' attitudes toward research in the USA was investigated by Wells and Baggs (1994). A 15 item attitude scale was used with 279 nurses who had experience in conducting research. These nurses identified themselves as staff nurses, nurse managers and APNs. The results suggested that there were three factors affecting nurses' attitudes toward research: research value, confidence and perceived support. Valuing research and confidence were reported to be higher in the APN group than others. The respondents reported that they utilised research results in clinical practice but only a few of them were conducting research. The reasons why they utilised research results in clinical practice were found to be different. Wells and Baggs (1994) suggested some methods to increase the value of research in clinical practice: encouraging nurse to conduct research by including research expectation in their job description, promoting the presentation of research results in the workplace and creating a post and employing a clinical researcher who held a doctoral degree to be a consultant for research project development. The results from the above studies emphasise the importance of the role of APN as a researcher and the implications of putting research results into clinical practice.

A Korean nurse's attitude toward research was examined by Kim *et al.* (2002). The aim of this study was to prioritise the topics of nursing research which were conducted by Korean nurses. A two-round survey was carried out using a Delphi method. The total number of participants was 347 and the response rate in round

one and two were 31 and 33 % respectively. The results showed those Korean nurses conduct research in 29 areas and 1,013 research questions were explored. The three most popular areas for nursing research were clinical nursing practice, nursing education and research utilisation. The research on advanced practice nursing was the most popular in clinical practice research. Other topics were nursing intervention, clinical competency, quality and effectiveness, standardised tasks and home health care.

Walton (2002), who was an APN in the USA, conducted research into the spirituality in haemodialysis patients. Walton used grounded theory as a methodology to discover the meaning of spirituality in this group of patients. Eleven participants (four men and seven women) in one out patient haemodialysis unit volunteered to participate. They were interviewed in depth and data were analysed using Glaserian methods (Glaser and Strauss, 1967). The theoretical framework was built up from data analysis. The central core category was 'finding the balance' (Walton 2002, p.448). The spirituality transition was described in four phases: confronting mortality, re-framing, adjusting to dialysis and facing the challenge. Walton (2002) suggested that this theoretical framework was useful for nurses to develop perceptions of the patient's spirituality and understand the process of life transition in each stage.

Nurses in each culture or country are the best persons to prioritise the needs of nursing research in their own working places. Using scientific methods to conduct research could help to construct appropriate frameworks for nursing research. The above research projects using Delphi and grounded theory

methodology were helpful for nurses to learn how to use different research methodologies. The APN could learn about developing research questions and carry out each step of research from the above studies. These researches may also encourage nurses to develop their own research projects. The APNs can use their knowledge and skills in research and become principal investigators or a consultant of the research project.

After the APN had started to develop their roles in the USA, Martin (1995) explored perceptions of 23 NPs in toward their roles. The qualitative data were collected by interviews using open-ended questions. These NPs work in different settings and areas of specialty e.g. paediatrics, adult, family and geriatrics. Grounded theory method was used for data analysis. The findings showed that the NPs faced two important issues during their role development: discounting and devalued. Four strategies were used to overcome these issues: cultivating, bargaining, confronting and disengaging.

The role of traditional CNS in the USA was explored by Scott (1997) in a descriptive research using role theory as a theoretical framework. The Likert type questionnaire was developed and piloted. Content validity and reliability were tested. The questionnaires were posted to a convenience sample of 2,379 CNSs. The response rate was 31.6%. The participants prioritised the important of their roles as follows: expert practitioner, educator, consultant, administrator and researcher. The administrator and expert practitioner were increased and the advanced skill must be strongly agreed by physicians.

In the USA. patients have been studied about the acceptance of the APN role. Frank (1996) identified the patient's view in receiving health services from the APN. The results from this survey study showed that the following variables could be used to predict the willingness to use the APN: high school education, Medicaid, food stamp and negative health attitude. Another study about patient' satisfaction of the services provided by NPs was explored by Allen (2001), using client satisfaction tool (CST). The questionnaire was used to assess patient's satisfaction in three aspects: technical-professional skill, trusting and educational relationship. The questionnaires were posted to a convenience samples of 44 The results showed that 97% of the samples reported their satisfaction with the services from NPs. The reasons why the rest of patient did not satisfied with the NP were not clarified.

In Canada, the role satisfaction of the NP was investigated by Harper-Femson (1998). This qualitative study was conducted within 10 NPs using semi-structured interviews. The NPs described their role satisfaction in terms of challenging, autonomy, acceptance, career choice, support given, holistic approach, multidisciplinary and multicultural environment. The dissatisfaction included job security, legal support, lack of role understanding and support, titling, disagreement of roles, salary and being unable to complete their work in time.

McGowan (2000) explored the physicians' opinions about the NP role in the USA by conducting a survey using questionnaires. Fifty-seven physicians reported their satisfaction with the NP knowledge, abilities and roles. Although they appeared

to have a limited knowledge about the NP preparations e.g. education and licensing, nevertheless, they would like to work in collaboration with the NP.

Having reviewed the above papers, it was noted that the role of APN became of interested by a number of researchers. In the countries where different titles were used for APNs, the studies of the role were also conducted and explored separately.

Authority to Prescribe

In the USA, APNs were permitted under the law to perform health assessment e.g. history taking, physical examination and laboratory tests and investigations ordering (Hamric *et al.*, 2000; Hickey *et al.*, 2000). However, prescribing without a physician supervision was not always automatically authorised for the APN (McDermott, 1995; Tally and Richens, 2001; Glod and Manchester, 2000). This remains an issue of contention and of increased interest, particularly in private practice where there was no physician in nurse led clinics.

In the USA, North Carolina was the first state which authorised APNs to prescribe in 1975 (McDermott, 1995). Since then APNs in 50 other states and the District of Columbia were authorised to prescribe to some degree under the Nurse Practice Act in the 1980s (Tally and Richens, 2001). Psychiatric nursing was one of the pioneers for advanced practice nursing development in the 19th century. The authority to prescribe in areas of specialty like psychiatric nursing was not automatically approved when the APNs in this branch were certified.

A descriptive survey research, therefore, was conducted by Tally and Richens (2001) to explore the prescribing practices of the psychiatric advanced practice nurse (PAPN) using two types of questionnaires. The first questionnaire was about demographic data. The second one was about issues related to prescribing, e.g. knowledge required, list of medication, confidence of nurses and barriers for prescription. The first questionnaires was posted to 290 PAPNs in eight states in where the prescriptive practice license for the APPN existed. There were 191 returned questionnaires (66% response rate) but only 88 PAPNs (46%) reported they were prescribing. These PAPNs were requested to fill out the second questionnaires and 52 % (n=46) were returned.

The results of Tally and Richens's (2001) study showed that the majority of the PAPNs who were prescribing were white, women, certified as adult psychiatric nurse specialists and holding master or doctoral degrees. The average number of years for which they had prescriptive authorities was 4.08 (SD 3.48). Half of them had started prescribing since 1990. Most of the PAPNs worked as independent practitioners within the private sector or through contract arrangements in communities. They had seen an average of 301 patients in a year. A difference in nurse practice acts in each state made 82% of them need no signature of a physician for prescribing. The participants stated that they also order laboratory tests, refer patients to the consultant psychiatrist and admitted patients into the hospitals. The medical evaluations were carried out by the patients' own doctors or the consultant psychiatrists or the NPs. The four drugs most commonly prescribed by the PAPNs were antidepressants, medication for neuroleptic side effects and/or sleep, mood stabilisers and neuroleptics. Education was mentioned

as a very important need and the PAPNs gained knowledge from continuing education and attending conferences.

A survey into patterns of prescribing for the APN in the USA was conducted by Glod and Manchester (2000). The aims of their study were to investigate the prescriptive practice in terms of the differences and the barriers to these practises. The self-administered questionnaires were sent to 2,651 APNs in one state in the USA. The response rate was 51% (n=1,352). The results demonstrated that 59% of the participants reported that they were authorised to prescribe. The barriers to prescribing were identified as prescribing fees, the process of gaining authority to prescribe and the insufficiency of physician supervisions.

It was found that authority to prescribed was an important issue that arose in countries where the APN were employed. Regarding this role, it was not clear if, once nurses were qualified as APNs, they should be authorised to prescribe automatically or not. The diversity of regulation in each country or even in the same country but different states like the USA was reported.

A Non-Physician Health Care Provider

In the USA, when there was a shortage of physicians, non-physician health care providers were initiated and used to perform some of the roles which used to be the physician's (Bergeron *et al.*, 1999). Physician assistants and APNs became non-physician health care providers because they were able to practice under the

law to perform some roles of the physician e.g. health assessment, diagnose and giving treatments to patients with non-complex diseases.

Bergeron *et al.* (1999) studied the benefit of using APNs and physician assistants in small rural hospitals in the USA. This survey consisted of two parts. Quantitative data were collected by sending questionnaires to 285 small rural hospitals which were awarded Rural Health Care Transition (RHCT) for financial and management improvement. These hospitals reported they were employing APNs (70%), physician assistants (30%) and both APNs and physical assistants (20%). The hospitals were divided into five categories regarding the use of the APN and the physician assistant: no use, low use, high use, increased use and decrease use. After the cluster sampling, 35 hospitals were used for site visits and interviews to achieve qualitative data. Thirty-one hospitals (86%) were employing both APNs and physician assistants. Qualitative data were received from semi-structured interviews with administrators, hospital staff, physicians, APNs and physician assistants.

The results showed that 88% of APNs and physician assistants worked in hospital and primary care bases. Their roles were in-patient services (58%), education (55%), nursing home visits (53%) and emergency services (45%). Most of them worked under physicians' supervisions (96%) and were guided by protocols (89%). They prescribed (85%), ordered laboratory tests and investigations (95%), admitted patients (32%) and discharged patients (39%). Dissatisfaction was reported regarding the autonomous practice and the authority to prescribe. Twenty-two percent of them would like to increase their practice autonomy and

20% would like to increase the authority to prescribe. Moreover, the acceptance and benefits of employing both non-physician health care providers were decreasing costs and increasing benefits and services. Bergeron *et al.* (1999) suggested that these benefits should be used to increase acceptance for the APN and the physician assistant.

The further results showed that the APN and the physician assistant brought up six major benefits to these hospitals: reducing recruitment cost (less time spent in recruitment and lower salary to employ), operating cost and staffing needs; increasing revenues, patient volume and improving physician recruitment and retention. Bergeron *et al.* (1999) suggested that the effectiveness of health services could increase when using APNs and physician assistants. The advantages of using the APN and the physician assistant encouraged the hospitals to increase the use of these health care staff (60%). However, physicians' oppositions to the APN and the physician assistant were reported (40%) and focused on four issues. First, practising beyond the scope of professional practice could affect patient safety and the hospital's reputation. Secondly, less training might decrease quality of care. Thirdly, the physician's supervision increased the physician's workload. Fourthly, physicians whose income was insecure felt that APNs and physician assistants were competing with them. The public misconception was another issue which made the APN and the physician assistant unemployed by the hospitals. Even some hospital staff perceived these two health care providers as doctors.

It was clearly reported that the APN was used to substitute physicians even though substitution remained an unsatisfactory term to describe the work of the APN. The

above studies showed the advantages of using APNs. However, this issue needs to be further examined because the APN was employed in different settings and areas of specialty.

Marketing

Nurse practitioners were widely known as autonomous practitioners in the USA (Mezey and McGivern, 1999). Patients or consumers may receive health services from NPs but how much do they know about and how satisfied are they with the NP. Garfield (2000) explored the attitudes of consumers and human resource personnel in a marketing research carried out in one city. Data were collected in two phases by focus group and telephone interviews. The focus group interviews were conducted with the consumers (patients) who were local residents and the human resource personnel. Some of them were sampled randomly for the telephone interviews.

The consumers thought that physicians were the experts and the best persons to give diagnoses. They reported that they were treated with respect. Nurses gained a good reputation in giving time and caring and compassion to the patients. The consumers did not appear to be familiar with the APN or NP. They could not define who the APN or NP was and what their roles were. Registered nurses were chosen as the first persons whom the consumers wanted to meet if the physicians were not available. If the NP was qualified and had extra training and advanced knowledge, the consumer would be more confident to see them. The human resource executives remained poorly educated regarding the NP and other issues relating to them such as reimbursement. Garfield (2000) suggested that the NP

should be introduced to the public by providing more details: qualifications obtained, extra training, experiences and authorisation to prescribe.

Publicity is a good method of informing consumer or patients to know about the details of the APN and their roles. People seem to be more educated and aware of the qualifications of health care providers, therefore, acceptance could be built up by giving further information to public as well as provision of standardised care and psychological support. Research about costs and benefits of employing the NP as a substitution for physicians could encourage the human resource executives to consider using the NP in their organisations.

Employment Funding

Employers should consider some issues related to the employment of APNs e.g. the source of fund and the salary scales. Philips *et al.* (1995) used two instruments in a survey to evaluate the financial and administrative issues in employing the APN in tertiary care centres in the USA. The first instrument was adapted from the Nursing Care Encounter Specific Record. The second instrument was developed and used by other researchers as referenced in Phillips *et al.* (1995). These instruments were used to collect data about nurses' indirect activities e.g. telephone encounters. Data were collected from 12 full-time APNs (seven NPs, two CNSs and two APNs).

The results showed that other staff who had limited knowledge and skills could do some tasks performed by the APNs. Secondly, the roles of the APN both inside and outside the hospital settings were considered appropriate for managed care

environment. Philips *et al.* (1995) noted that further research should be conducted by revising the research instruments and extending the time of data collection in order to confirm the results.

Merging of the CNS and the NP

Since there were many titles used for APNs, this caused confusion or overlapping of roles. The merging of two major categories of the APN: the CNS and the NP was discussed (Hawkins and Thibodeau, 2000). Perception seems to be a basic issue which needs to be explored when merging between the CNS and the NP is considered. Hester and White (1996) studied the perception of CNS preceptors when the merger was considered in the USA. A survey research was conducted by mailing questionnaires to 80 participants who were the preceptors for the CNS educational programme in one university. The response rate was 53%. Only 12% of the participants reported that they agreed with combining the roles between the CNS and the NP. Seventy-one per cent did not want the CNS role to be deleted. Only 0.02% suggested to use the title of acute care nurse practitioner. The participants prioritised the important of the CNS roles as follows: a clinical expert (88%), a consultant (52%), an educator (57%), a manager/administrator (9%) and a researcher (21%). It is noted that a clinical expert role was perceived as the important role of the CNS. The participants who were educators agreed that the importance of a manager/administrator role was equal to a researcher role. The qualitative study could be developed to receive in depth details about the reasons why the CNS educators saw the clinical expert role as the most important one. No consensus about merging was reached (Hester and White, 1996).

Martin (1996) examined the opinions of CNS and NP on merging these two type into one. Data were collected from CNSs and NPs who worked in four areas of specialty: adult, gerontology, medical-surgical and community in the USA. Factor analysis and multiple regression were carried out. The results of factor analysis showed that there were seven factors which influenced on role setting, experiences, education and area of specialty were found congruent with Fenton and Brykczynski's model of advanced practice nursing. The regression analysis showed that experience and setting were less significant predictors for practice. Level of education was a little significant predictor for practice. Martin (1996) suggested that the results did not support the merging of the CNS and the NP, however, the common core curriculum for these two type of APNs should be similar but each of them should focus on its role and area of specialty.

3.2.2.2. Preparations and Educational Programmes

Although the core characteristics, competencies, definitions and roles of the APN were described previously in section 3.2.6. and 3.2.8., the differences of these components could be described in depth in each specific area e.g. oncology, cardiology, primary care and geriatric nursing. Ten research papers were found relevant to the preparations and educational programme for the APN. These papers examined: the core competencies of oncology nurses, higher degree programme, continuing education, evaluation of teaching methods, economic analysis of the education programme and database development for the APN practice.

Core Competencies of Oncology Nurses

Oncology nursing was one of the specific areas in which APN developed their roles (Rozenweig *et al.*, 1997; Peterson *et al.*, 2001; Calzone *et al.*, 2002). Cancer genetics was perceived as the cause of cancer therefore oncology nurse should have sufficient knowledge in cancer genetics to be able to convey this knowledge to patients and relatives. Peterson *et al.* (2001) conducted a survey of the evaluation of knowledge about cancer genetics in oncology nurses in the USA. The questionnaires were posted to potential participants who were sampled randomly from the Oncology Nursing Society (ONS) (n=1200) and the ONS-Cancer Genetics Special Interest Group (n=75). The response rate was 51% (n=656) but only 573 questionnaires met the criteria. Most of the participants were staff nurses and 8% of them were specialist in cancer genetics. They worked inside and outside hospitals. Regarding to the knowledge about cancer genetics and other related areas, the scores of nurses who had a higher education, were continuing education in cancer genetics and held other posts apart from staff nurse were significantly higher than others. Staff nurses who had limited and insufficient continuing education, worked in out-patient clinic and private practice managed care did not see the important of continuing education. Only 26% of the participants experienced referring patients but 35% of them were not aware of this procedure.

Calzone *et al.* (2002) noted that genetics was not included in general nursing curricula and that nurses' basic knowledge of genetics was limited. The knowledge of oncology nurses in genetics had not been explored, therefore, Calzone *et al.* (2002) examined the required level of knowledge in genetics

knowledge for APN in oncology using the Delphi technique. Calzone *et al.* (2002) used a two round national survey in the USA to explore the core competencies in cancer genetics for the APN. The first questionnaire was developed by the Oncology Nursing Society Think Tank on Cancer Genetics. The Standards of Advanced Practice in Oncology Nursing was posted with the questionnaires so that the experts could use these as guidelines for their opinions. The questionnaire used in the second round survey was developed based on the opinions of the experts from the first round. Data were collected from multi-disciplinary genetic experts including nurses, physicians and scientist. Thirty-seven experts were approached. These included nine nursing educators or researchers, nine experts in general genetics, nine genetic experts (oncology specialists) and ten APNs in oncology. Two different questionnaires were posted to all experts. Finally, a level of consensus was achieved using the information from twenty-seven experts (73%) who were completely involved in both survey rounds. The questionnaires used in the first round consisted of three parts: skills, attitudes and competencies required for working in an area involving genetics. The experts were requested to rank each competency in the second round using questionnaires which included six domains within each competency: direct caregiver, co-ordinator, consultant, educator, researcher and administrator.

The results of Calzone *et al.*'s (2002) study was useful in stimulating nurse educators to consider including genetics in a curriculum for the APN in oncology. Knowledge of genetics was important for the APN in oncology to act not only as an educator but also as a resource for fellow colleagues, junior staff, patients,

relative and the general public. Becoming knowledgeable in genetics could increase confidence and promote more positive attitudes toward the APN role.

The Delphi technique was found to be appropriate for gaining consensus from the expert panels. However, the researcher should be aware of setting up the criteria for the expert panel recruitment. The consensus should be decided by the experts within each particular area of study. Using postal questionnaires was also a low cost method of data collection but reminding a non-responder was necessary in order to achieve an acceptable response rate. The results from Calzone *et al.*'s (2002) study were considered beneficial for developing a curriculum for the APN in oncology. It was felt that further research could be developed for assessing or evaluating of the curriculum for nurse educators and APN students.

The development of educational programmes for NP was first initiated in the USA in 1965 as described in 3.2.3. Since then, master degree level became a formal preparation for NP. Assessment of the curriculum became necessary to implement improvement in the quality of educational programme in the USA. A descriptive study of education preparation for APN in oncology in the USA was explored by Rozenweig *et al.* (1997). The aim of the study was to examine a curriculum for NPs in oncology developed by one school of nursing. Data were collected from publication and interviews. The number and details of the participants and interviews were not reported. Rozenweig *et al.* (1997) suggested that an instrument to be used for the curriculum evaluation should be developed, posted and filled out by the master degree students. Furthermore, the employers should be involved in the NP preparation and evaluation. Finally, the faculties remained

responsible for continuing practice and becoming role models for master degree students.

The core characteristics and competencies could be used a basis for further curriculum development but the evaluation of the curriculum by students and employers is vital because it is one way of gaining the satisfaction of the consumers. The results should be used to improve the educational programme e.g. expanding one particular area of knowledge or introducing some areas of clinical practice into the programme.

Higher Degree Programme

One of the qualifications of the APN as described previously was a nurse who held a master or doctoral degree. Many academic institutions had developed higher degree programmes for the APN at both master and doctoral level in accordance with the regulations in their countries as described in 3.2.9. In general, the curriculum consisted of core competencies which had the same regular basis e.g. advanced pathophysiology, pharmacology and physical examination. Nevertheless, the curriculum should be evaluated after the implementation in order to know what should be adjusted or improved and the appropriate curriculum could be re-developed.

Putnum (1994) used a Delphi approach to find out a model master degree programme for the community NP from 34 of 48 purposive experts across the USA and Canada. The criteria used to select the experts were the health and education reform and primary health care. Questionnaires were posted to the

experts in three rounds. The consensus was reached and it was concluded that the model master degree programme for the community NP should: consist of essential knowledge and skills, be based on health promotion and include primary health care management, education and research. The programme should be an interdisciplinary approach which focused on community practice.

In general, the purpose of any doctoral education in nursing is to contribute to the body of knowledge in nursing. Sterling and McNally (1999) were interested in studying clinical experiences of doctoral students in nursing who had experiences in working as APNs both in hospital and community bases in the USA. This qualitative study used phenomenology to find out the meaning of clinical practice in doctoral students, the contributions of doctoral degree nurses and the differences between master and doctoral degree nurses.

The participants were 20 doctoral students from 13 states recruited by snowball method and by putting an announcement in newsletters of the regional nursing research organisation. The respondents identified themselves as CNSs (60%), nurse midwives or nurse practitioners (40%). The interviews were conducted via telephone and were tape-recorded using a speakerphone. Data were analysed using Colaizzi's method. The validity of findings were tested by sixty per cent of the participants.

Four major themes emerged: management of patient care, interwoven partnerships, leadership and practice values. The management roles consisted of health assessment, diagnosing, giving consultations, treatment plan development

and implementation, monitoring, teaching, arranging services and giving support to patients. Working as partnerships with the multidisciplinary team (both physician and non-physician staff e.g. dieticians and social workers) included consultations and referrals. Leadership was found not only in administration but also education and research. Nurses valued their clinical practice as making them experts, therefore, they preferred to continue clinical practices after graduation.

The participants viewed doctoral education as the development of cognitive skills e.g. the applications of various concepts and theories. They also believed that doctoral education would increase self-confidence in performing their roles, improve their role self-assurance and increase acceptance by colleagues. Although most of the participants could not identify the difference in clinical practice between master and doctoral degree nurses, some of them believed that it existed and could be judged by others.

From the results of the above study, it appears that the needs of the APN in continuing education were found to be different after a decade. Further research may be conducted to try to ascertain reasons why the needs had changed, what are the implications for continuing education needs such as the curriculum development and changes in trends of health services on these needs and the development of information technology?

Continuing Education

After being certified, APNs should maintain their knowledge and skill and update their knowledge through continuing education and clinical practice. The APNPO

should be knowledgeable in becoming the educator e.g. mentors for APN students and developing teaching and training sessions for staff. In the USA, the re-licensing required continuing education units (CEUs) granted by continuing education programmes e.g. attending lectures, conferences or self studying packages (Fergusson and Diserens, 1996). The comparisons of results from a duplicate study about the continuing educational needs for the APNs in paediatric oncology (APNPO) were carried out by Ferguson and Diserens (1996). The same questionnaires were used in two studies in 1987 and 1995 respectively. The response rates for these studies were 61 and 88%.

The results showed that, although the demographic data of the APNPO in both studies were heterogeneous, e.g. age, educational background and clinical roles but they both reported that they required the continuing education. The numbers of the participants in the second study who held master and doctoral degrees were higher than the first study. The most popular format of the continuing education preferred by the participants in both studies was going away for a one-to three-day conference. The ranking of the first 10 topics for continuing education were different but similar in term of focusing on scientific development in oncology, except managed care topic was needed in the second study. The first three topics needed in the first study were: monoclonal antibodies, role of genetics in oncology and recent findings in the pathophysiology of cancer. In the second study, they were: managed care, neurological assessment and role of genetics in oncology.

From the above study, the differences of topic needs in continuing education may be caused by the changes of advanced technology and methods of treatment,

health services system and the educational background of the participants. Further research may be conducted using qualitative approach to gain the reasons why the need has changed? Is there any impact on continuing education need e.g. the curriculum development, changes of trend of health services on these needs and the development of information technology?

Evaluation of Teaching Methods

Siccardi (1999) explored the suitability of narrative methods of teaching in the NP educational programme in the USA. The finding showed that the NP needed to continue the learning process for many years during the transformation. They had to learn about the process of solving problems, challenging and socialisation. Siccardi (1999) suggested that narrative methods of teaching were necessary for developing diagnostic reasoning skills. Stories and case studies were identified as good examples of narrative methods of teaching.

Ahern-Lehmann (2000) evaluated the clinical competency in the NP educational programme in the USA using the Delphi approach. Two methods of data collection were used: postal questionnaires and focus group interview. Eighty-one experts who were educators in 52 NP educational programmes agreed to take part in the study. The participants identified clinical competency as the most important and regularly used method to evaluate the NP students.

High technology has been implemented in most sectors including industry, finance and education. Computer literacy became one of the necessary skills in daily life particularly for health professionals. Both hardware and software

packages were used in health services in different department e.g. of laboratory investigation, patient database system and treatments. In education, computer assisted instructional (CAI) programmes were developed to enhance students' opportunity to study at home. This technology was used in nursing education and also APN programme. Neafsey (1997) examined the students' knowledge and self efficacy in the USA using questionnaires in a survey research. The participants were 27 APN students who used CAI programme five hours as during home study. This programme was developed by Neafsey (1997). It was suggested that the score for knowledge and self-efficacy of the APN students increased after five hours study using the CAI programme at home. The APN students reported that advantages of the CAI programme were animation and interactive questions.

Neafsey's (1997) CAI programme was a good example of a self-study method which encouraged APN students to study at home without face to face teaching. This kind of study may be considered appropriate for distance learning programmes because many nurses who are undertaking masters degree programme have to work full-time and are studying part-time.

The Internet is another aspect of technology that is used in education. New methods of teaching and learning were developed suitable to part-time and self-studying students. The Internet was found to be useful for teaching and learning methods as the students do not need to attend classes and save both time and travel expenses. In the USA, Kemper *et al.* (2002) used a randomised crossover trial study to examine knowledge, confidence and communication among four groups of participants: physicians, pharmacist, APNs and dieticians who

undertook a 10 week internet study programme about herbs and other dietary supplements. Five hundred and thirty-seven peoples were invited to participate in Kemper's study via email. The participants were randomly assigned one of two kinds of intervention: immediate or waiting-list group. The participants were assessed after the interventions were completed. The results revealed that there was no significant difference between the baseline scores for knowledge, confidence and communication between two groups (divided by each intervention, not professionals). Kemper (2002) noted that the post intervention scores for three areas in the category of immediate intervention were significantly higher than those of waiting-list group. When looking at the scores within a group, it was found that those within the post intervention group were higher than the baseline scores. Kemper (2002) suggested that the Internet curriculum about herbs and other dietary supplement was appropriate to increase knowledge, confidence and communication.

The success of internet-based education in Kemper's (2002) study could be applied to the APN curriculum in terms of improving theoretical knowledge. In developing clinical skills, the author considered practising in a real situation or clinical area was the most suitable method. Nevertheless, simulated clinical encounters using standardised patient was developed for the APN education and has been used for a few years.

Vessey and Huss (2002) summarised the advantages and disadvantages of using simulated clinical encounters as a method of teaching in health professional particularly physicians. The advantages of this method were reported as:

manipulation, matching with curriculum objectives, mistreatment avoidance, comfortable atmosphere, availability of repetition, accuracy and cost. The above method of teaching was used for medical students in the past and it was adopted for the APN education in the late twentieth century. Vessey and Huss (2002) explored the advantages and disadvantages of using standardised patients in simulated clinical encounter as a teaching method for graduate and NP students in the USA. Data used for this retrospective descriptive study were the 26 videos which were taped recorded while the students were using standardised patients in final clinical examination in a laboratory were used as data for analysis. The analysis was carried out after the students had graduated, this means the whole process of examinations were completed including marking and grading. Other data used for Vessey and Huss's (2002) study were collected using an evaluation checklist completed by students who had used the simulated clinical encounter. The categories in the checklist included details of examination e.g. the clarification of information and the differential diagnoses. The results demonstrated that students were very anxious because they were not accustomed to the equipment and the pressure of being videoed. Vessey and Huss (2002) suggested that the standardised patient was suitable for the assessing interpersonal skills and basic assessment abilities but not for reasoning and diagnostic skills. The objective structured clinical examination (OSCE) was recommended as being successfully used in assessing the NPs students' skills in physical examination (Khattab and Rawlings, 2001). Vessey and Huss (2002) also suggested that the OSCE and multiple choice examination paper could be more appropriate methods for summative evaluation.

Database for Practice

Nursing language is important in communication within the profession and with other health and non-health professionals. Some nurse theorists and professional organisations have tried to develop a specific nursing language so that nurses do not need to use the language of other disciplines primarily medical based and then the identity of the nursing profession could become more visible. Two examples of nursing languages were nursing diagnosis developed by the North American Nursing Diagnosis Association (NANDA) and Nursing Intervention Classification (NIC). The database was developed for the APN using these two standardised nursing languages so that it was easy for the APN and other health professional to understand. O'Corner *et al.* (2000) examined the usefulness of this database to describe the practice patterns of the 19 final year NP students in the USA.

Having used the American Medical Association's Evaluation/Management coding system, the results showed that 50% of patients who came to see NPs were problem based focused. The most frequent nursing diagnoses made by NPs students based on NANDA were pain, health seeking behaviour, altered health maintenance and knowledge deficit. The most frequent nursing intervention based on NIC were patient education, drug management, information management and risk management. O'Corner *et al.* (2000) suggested that the database using standardised nursing languages was suitable for the NP.

3.2.2.3. The Outcome of Practice

In the past decades, quality of patient care and effectiveness of health professional practice has become of great interest for nurse researchers (Hawkins and Thibodeau, 2000). Some criteria used for outcome measurements in health

services include quality of patient life, cost and length of hospital stay, symptom resolution, functional status, knowledge of patients and relatives, patients and family satisfaction (Oermann and Floyd, 2002). The outcomes of the APNs were described in literature e.g. Ingersol *et al.* (2000), Urden (1999), Prevost (2002) and Oermann and Floyd (2002). Fourteen research papers from a systematic review were included in this category. The sub-categories were: quality of life, an outcome measurement, nurse practitioner, the APN in cardiology, nurse practitioner and certified nurse midwifery, the APN in oncology, a multi-professional group, managed care and case management and the APN in prenatal care.

Quality of Life: An Outcome Measurement

Change agent was recognised as one of the sub-roles of the APN (Hamric *et al.*, 2000; Snyder and Mirr, 1999). The change agent was expected to initiate change in transforming knowledge into practice. In Canada, Fisher and Mitchell (1998) examined the role of APN in transforming knowledge by conducting qualitative research based on the Parse's human becoming theory. The aim of Fisher and Mitchell's study was to gain understanding about quality of life of patients who received acute psychiatric treatment. The interviews were conducted with 26 patients and three themes emerged from data analysis. These themes represented the quality of life of the patients: feeling of loss and shifting value priorities, the complex nature of relationships that ease and upset, and the hopes that fuel the intense struggle to go on living.

In the USA. Kelly (1999) chose quality of life as an outcome measurement for the study of patients who were suffering from chronic genital herpes because the patients' quality of life can be described from their lived experiences. Case study methodology was used because Kelly (1999) believed that patients were the experts able to tell people about their health and quality of life. Having advertised the research project in the newspaper and the local self-help group, eight persons (four males and four females) were consented to participate in the study. The APN met the group of participants seven sessions and 1.5 hours each over a 10-week period. A nurse consultant was the evaluator of the participants' quality of life. The data were collected using nine open-ended questions at every pre-session and post-session meeting. The participants' feelings in pre-session meetings were found to be negative e.g. fear, confidence, shame, pain, sexual relationship and body image. The opposite was found in post session meetings, the participant felt better e.g. better attitudes, much more comfort and less ashamed. Kelly (1999) summarised that there were three patterns of changes in quality of life: struggling to tell others, comfort with others and trying to meet personal goals.

Kelly's (1999) study could encourage the APN to conduct research based on nursing theory to fulfil a specific area of scientific knowledge. Using Parse's theory could enable the APN to assess the changes of patients' quality of life or group of people who were affected by particular problem or disease. Nevertheless, theories from other disciplines e.g. social science and psychology may be found to be suitable for each research project.

Another chronic problem which had an impact on patients' quality of life was migraine. Allen *et al.* (2000) examined the quality of life of patients who suffered from migraine in the USA using a quantitative retrospective approach. The research instruments were Ferrans and Power's Quality of Life Index and Martin, Holroyd and Powers' Headache Specific Locus of Control questionnaires. The results revealed that patients who were educated about headache by APNs had a higher score for both quality of life and locus of control than the non-intervention group. Allen *et al.* (2000) noted that APNs play an important role in patient education which improved patients' quality of life.

The Nurse Practitioner

Since the APN concept was implemented in countries outside the USA, the APN outcome in particular areas have been investigated. In Canada, the outcome of one NP in palliative care was explored by William and Sidani (2001) using multi-methods of data collection. This NP had worked at the cancer research centre in the palliative ambulatory clinic for almost a year. She held a masters degree and had more than 15 years of clinical practice experiences in difference areas. A self-completed questionnaire developed by Sidani *et al.* (1999) and William and Sidani (2001) was used to collect quantitative data about the NP role performance. Qualitative data were received from the NP practice patterns in a three-month period. The NP created a database of practice patterns. This database included data on the assigned patient, the intervention provided and the outcome of practices. Quantitative data were analysed using descriptive statistics. The content analysis was carried out with qualitative data.

The results revealed that there were four major roles of the NP in palliative care: a direct carer, counsellor, co-ordinator and educator. The direct carer roles included health assessment, interpreting laboratory tests, diagnosing, developing treatment and follow up plan. The counsellor roles were giving consultation to other health care team members and patients about treatment, follow up and home care plans. The co-ordinator roles involved arranging home services, follow up visits and transferring patients to other services e.g. home care. The educator roles consisted of formal and informal education. The NP was a formal educator for nursing students and colleagues by being a clinical preceptor and arranging clinical teaching sessions. An informal educator involved being on a committee in the hospital and community and research projects. A time most spent in the first three activity was education and counselling (37.5%), diagnosing (28.3%) and co-ordinator (23.5%).

The pattern of practice was described as assessment, monitoring and evaluation. These were continuing practices covering three periods: diagnosing, radiotherapy and after completed a radiotherapy. The patients whom the NP had encountered reported that their first three important problem were: related symptoms to cancer and treatments (57%), insufficient of knowledge (13.5%), psychosocial and care related concerned (7.7%). The services provided by the NP were summarised in eight steps: assessing the problems, identifying reasons, discussion with patients, finding effective treatment strategies, giving suggestions to patients, educating patients and families, co-ordinating with other health care members and agencies and referring patients for further management.

The outcomes of the NP performances were assessed by 11 criteria: patients' knowledge, comfortable feeling of the patients, compliance of treatment plans, the feeling of control in patients, patient coping abilities, biochemical values, complications, patient satisfaction, physical and psychosocial functioning and quality of life. William and Sidani (2001) suggested this one case study research revealed that the NP contributed quality performances. The outcome assessment of the NP performances showed that the effectiveness and efficiency of care were met.

Although William and Sidani's (2001) research was a single-case study, the results of their study produces a lot of information. This information was systematically collected and analysed. The case study research of the APN performance could be developed using this methodology. A single-case study may be an appropriate method to start with the APN in each area of practice because the small number of the APN at the beginning. However, if the number of the APN was increased, a multi-case study research could be developed in the future.

The APN in Cardiology

The length of stay in hospital, re-admission and mortality rate and drug compliance were used as criteria for the APN in cardiology outcome assessment (Dahl and Penque, 2000). This study aimed to evaluate the APN-directed heart failure programme in order to consider replacement, modification, continuing and replicating this programme in the USA. The results demonstrated that APN played an important role in this programme both designing and improving patient outcome.

The Nurse Practitioner and the Certified Nurse Midwifery

Nurse performance was examined along with patient outcome in Gregg and Bloom's (1999) study. This descriptive survey study was conducted to evaluate four practices of APNs: frequency, responsibility, parameters and patient outcomes. Two thousands and ninety-three nurses in the USA were approached by sending questionnaires. The response rate was 39%. Eight hundred and twenty-two participants were recognised as NPs and others were CNMs. Most of the participants (75.9%) reported that they were evaluated annually. The evaluators were physicians (56.9%) and peers (17.5%). The parameters used for the evaluation were appropriateness of care, patient satisfaction, patient outcomes and patient volume. Four categories in patient outcome assessment were clinical endpoints, complications, compliance and functional status. Gregg and Bloom (1999) suggested that regularity, and formality of evaluation should be set up and peer review elements should be revised.

The APN in Oncology

The APNs in oncology had developed their roles including screening, giving treatment, educating and giving support to patients. Similarly to the above study, quality of life was used to measure the outcome of APN in oncology. Ritz *et al.* (2000) used a modified Brooten's cost-quality model to assess quality of life and cost outcome of 210 newly diagnosed breast cancer women in the USA. This randomised control trial research consisted of two groups of patients. Four hundred and seventy-three patients were approached, 177 (37%) of these did not meet the criteria. Two hundred and eleven patients (71%) of 296 agreed to

participate in the study. The control group (n=105) were given standard medical care while the intervention group (n=106) were contacted by the APN two weeks after being diagnosed using telephone or home visit. Time and duration of contacts was agreed by patients and APNs at their convenience between 8 am to 8 pm week days and 8 am to 12 pm weekends. During the contact, patients might receive consultations and support. All patients received pre-paid envelopes with questionnaires by post at 1,3, 6, 12, 18 and 24 months after diagnosis.

Four major categories of measurement in Ritz *et al*. (2000) study were uncertainty, mood, well-being and overall cost. The results showed that the intervention group reported a lower level of uncertainty than the control group but not significant differences in mood disturbance and well being. The unmarried women in the intervention group reported a significantly lower level in all categories than the control group. The overall cost was measured by length of hospital stay, number of health care visits and reimbursement. The results indicated no significant difference of overall cost between the two groups. Ritz *et al*. (2000) suggested that the APNs helped improve the quality of life in patients with breast cancer. The research of the outcome of APNs should be conducted in other areas using the same framework but suitable instruments should be developed because of the differences in nature of each disease and patient's needs.

Protocol, clinical guideline, algorithm and protocol development is a part of the educational role of the APN. These documents should be developed using research results to be counted as scientific based. In the USA, the outcome of APN in gerontology nursing who worked with staff nurses in long term care

(nursing home) was investigated by Ryden *et al.* (2000). Scientifically based protocols were developed and implemented with patients who had incontinence, pressure ulcers, depression and aggressive behaviours. The APNs were assigned randomly to implement the scientific based protocols in the intervention group (two nursing homes with 86 residents). The control group (one nursing home with 111 residents) received ordinary cares. The results indicated that residents in the intervention group showed greater improvement of the above problems. The cognitively impaired residents in the intervention group had less deterioration than the control group. Ryden *et al.* (2000) summarised that the APN played an effective role in implementing scientific knowledge. It could be said that, although protocol, clinical guideline, algorithm and protocol development were sub-roles of APN, this could be used as another tool to evaluate the APN outcome.

A Multi-Professional Group

A multi-professionals group practice was expected to be a cost-effective strategy for health care services because only the physicians could not cover the health care needs of communities (Schaffner *et al.*, 1995). A survey of the use of APNs in multi-specialties group practices in the USA was examined by Schaffner *et al.* (1995) Thirty health service systems were approached and 26 of them agreed to take part in the study. Telephone interviews with Vice Presidents of Nursing or equivalent post in each system were conducted by eight open-ended questions. These were about the post, role, usage and outcome assessment of the APN. Data were analysed using content analysis. The results demonstrated that the APN was used in in-patient, out-patient and across settings. NP was the most used category and most of these worked in obstetric and gynaecology and paediatric units.

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Others were CNMs and CRNAs. Some health service systems reported that the APNs work without boundaries while others were under physician supervision. Issues arising related to the use of APN were reimbursement, legal constraint and insurance. Managed care was reported as a successful strategy for APN to implement within their roles autonomously e.g. burns, back, diabetes and oncology clinic. The outcome assessment of APN was inconsistent and no standard methods were used. Schaffner *et al.* (1995) summarised that the APN was a cost-effective non-physician health care provider with high patient satisfaction and no adverse affects.

The results of Schaffner *et al.*'s (1995) study may predict the increased acceptance of the APN in the future. There might be changes within the law to solve the problem of reimbursement and insurance and then the APN can increase their services to help improve people's health which is the major aim of most health services.

Managed Care and Case Management

Managed care and case management were initiated in the USA since the 19th century because of the urbanisation, migration and industrial societies which were followed by compact and low income communities (Hamric *et al.*, 2000; Hickey *et al.*, 2000). This concept was formally employed in health care services of the USA in the 20'" century. Since then, many countries have adopt it into their health service systems and developed the Case Management Associations e.g. the UK, Australia and Hong Kong (Hamric *et al.*, 2000). The case management services were developed and provided by health and health related professionals e.g.

physicians, nurses, social workers and dieticians (Hamric *et al.*, 2000). The advanced practice nurse case management (APNCM) was included in this service because of their qualifications and capability in case management. However, the debate remains continue whether the APNCM could be yet another main category following on from the previous ones: NP, CNS, CRNA and CNM. Some argued that the role of APNCM was overlapped with others. The outcome or cost effectiveness of APNCM could be the deciding criteria for the above debate.

Micheels *et al.* (1995) explored the quality and cost effectiveness of APNCM in patients following colon resection in the USA. The retrospective study was conducted with 78 patients of 35 were case-managed and 43 were non-case-managed. The quality and cost effectiveness were measure by mean acuity level and length of hospital stay. The results indicated that the patient whose case-managed by the APN had higher levels of acuity and shorter hospital stays but the statistical test showed no significant differences. Micheels *et al.* (1995) suggested that the APNCM appeared to have an affect on the patient outcome.

The aim of the implementation of new trends of health care services such as reducing number of days in hospital and early discharge was to reduce the health care expenditure. Discharge plans and home visits were the strategies used for preparing patients prior to discharge and providing continuing home care Rawl *et al.* (1998). A randomised control trial study was conducted by Rawl *et al.* (1998) to evaluate the effectiveness of nurse managed care with rehabilitation patients. The intervention in this study was a proactive formal follow up programme which was developed by the APN to provide four contacts: two telephone and two in-

person contacts for patients. The contact using telephone commenced within 48 hours after the patients were discharged from the unit. The telephone contacts aimed to discuss the patients' concerns regarding to a hospital to home transition. Two in-person contacts were carried out at one and four months post discharge period. These contacts consisted of the assessment and support for physical, psychological and social aspects; giving support; education and counselling. One hundred patients in rehabilitation unit were assigned randomly to control (n=51) and intervention group (n=49). The criteria used for the evaluation were functional independence, complication rates, re-admission rates and anxiety levels. Two research instruments used in this study were the Functional Independence Measure (FIM) and the State-Trait Anxiety Inventory (STAI) as referenced in Rawl *et al.* (1998). The outcome assessment was carried out from numbers and types of calling to the unit, time spent by staff nurses and social workers to provide e.g. clarifying the instructions, emotional and psychological support.

The results showed that half of the patients in this study were diagnosed cardiovascular accident (CVA), one-third of them were orthopaedic patients who had hip fracture. Most of the home caregivers were husbands and wives (45%). The FIM scores were significantly increased in both the control and experimental group but no significantly differences between them. The STAI scores at the four month period after discharges in the intervention group was significantly lower than the control group. The number of telephone calls and the time spent on telephone consultations by staff nurses and social workers at the unit for the control group was significantly higher than the intervention group. There were

significant differences in the anxiety levels, numbers of calls to the unit and the amount of time spent by staff nurses and social workers between the control and intervention group.

A survey of attitudes toward managed care in the medical resident and the APN students were examined by Breer et al. (2002). The aim of Breer et al.'s (2002) study was to compare the attitudes between two groups toward manage care, practice guideline, capitation, Medicaid, practice areas and population served. The questionnaires were posted to 225 APN students (APNSs) and 725 medical residents (MRs) in the USA. The response rate were 68% in APNSs group and 59% in MRs group. Factor analysis and t-test were used as statistical methods to reduce numbers of variables from questionnaires. Five factors were retained: economic threat, service intentions, practice guidelines, outcomes and practice and prevention and cost.

The results revealed that APNSs and MRs had some similar and different opinions. There were four major similar opinions in both groups. First, managed care was a good cost control strategy but it focused on cost more than quality of care. Secondly, capitation had impacts on laboratory tests and referring to medical specialist. Thirdly, the criterion of role success was limited use of referral to medical specialist. Fourthly, reimbursement was the main obstacle to participating in Medicaid managed care. The different opinions occurred on four issues. APNSs had stronger agreement than MRS on seeing managed care as a preventive healthcare. The feeling of autonomy threatened by managed care was stronger in MRs than APNSs. APNSs' value of practice guidelines was higher than MRs.

APNSs were not recognised as a primary health care provider in that region. This recognition affected on the third party reimbursement issue. Therefore, they did not anticipate in free-for-service patient (Medicaid).

The APN in Prenatal Care

The APNs had developed their roles in a collaborative practice prenatal care unit. They performed baby delivery with low-risk pregnancy. Mvula and Miller (1998) evaluated the effectiveness of these APNs at one collaborative practice clinic in the USA (n=179) by comparing with a pre-natal clinic at one state university medical centre (n=181) in the USA. The primary outcome measurement were used e.g. gestation age and baby weight.

The demographic results show that the number of teenager and black women who attended a collaborative practice clinic appeared to be higher than a university medical centre. They were also unmarried, unemployed women and under Medicare. The number of pregnancy visits in the collaborative practice centre was also higher than the university medical centre. However, the low birth weight and pre-term delivery rate in a collaborative practice centre was lower than the university medical centre. Mvula and Miller (1998) summarised that the outcome of APNs' practice in a collaborative practice centre was satisfactory and effective when using two criteria: low birth weight and pre-term delivery.

3.2.2.4. Areas of specialty for the APN

Since the APN concept was adopted into health service system in many countries, more titles were used and the roles of APNs in different areas were greatly

expanded. Robert-Davis and Read (2001) investigated typologies of the domains of the APN in the UK. They summarised that there were two main types of the APN: generic and specific types. The generic type included the individual and community domains. The examples of individual domain were family, general and school health. An example of the community domain was nurse managed care service. The specific type consisted of skill/task (e.g. blood samples taking and applying plasters), role (e.g. endoscopy and minor surgery), condition (e.g. diabetic care and oncology) and client group (e.g. homeless and drug dependency).

Having reviewed literature about specialist areas in which the APN practice in various countries, it was found that the specialist types of the APN were greatly increased. The summary of typologies and examples of the areas describing the roles of the APNs is as follows:

Settings: Hospital (McBride, 1995; Lynch *et al.* 2001), Community (Trnobarnski, 1994; Haste and Macdonald, 1992), Home (Herrmann *et al.* 1998; Brooten *et al.* 1998), Transitional care (Naylor *et al.*, 2000; Hughes *et al.* 2000), Primary (Stilwell, 1982; Beeber and Charlie, 1998; Brown and Olshansky, 1997; Brown and Grimes, 1995), Intermediate care (Wiles *et al.*, 2001), Tertiary/ intensive care (Beal, 2000; Ball, 2000; Woods, 1998b).

Patient' s needs: Urgent/acute care (Rowlee, 1999; Callahan, 1996; Read, 1998; Morse, 1999; Kleinpell, 1997; Whitcomb *et al.*, 2002), Emergency (Hayden *et al.*, 1982), Continuing care (Allen *et al.*, 2002; Peiper *et al.*, 1998).

Medical domain: Oncology (McMillan *et al.*, 1995; Lynch *et al.*, 2001; Hinds *et al.*, 1999), Cardiology (Paul, 2000; LaBresh *et al.*, 2000; Savage and Grap, 1999), Psychiatry (Tucker *et al.*, 1999), Transplant unit (McBride, 1995).

Geographical areas: Urban/ Metropolitan (Herrmann *et al.*, 1998), Rural (McCabe and Macnee, 2004; Dellasega and Zerbe, 2002).

Cultural/religious affiliations: Amish (Dellasega *et al.*, 1999), African (Gore, 1999), Jewish (Happ *et al.*, 2002).

Age: Older people (Dellasega and Zerbe, 2002; Happ *et al.*, 2002), Adolescent (Hudson *et al.*, 1999), Paediatric (King *et al.*, 2001), Neonates (Beal, 2000).

Health promotion/prevention: Cervical cancer screening (Mahon, 1995), Breast examination (Devine and Frank, 2000; Stacey *et al.*, 2002), Pregnancy (Brooten *et al.*, 1998), Postpartum (Hamilton *et al.*, 2002).

Specific services: Haemodialysis (Dwight *et al.*, 2002), HIV/AIDS (Davis, 1999; Irwin, 1998), Alcohol abuse (Kuhns, 1997), Pressure ulcer (Krasner, 1996), Diabetes (Sigurdardottir, 1999), Stroke (Allen *et al.*, 2002), Learning disability (Jukes, 1996), Incontinence (Engberg *et al.*, 1997), Tissue viability (Flanagan, 1996), Infection control (Ormond-Walshe, 2001), Breast cancer (Poole, 1996).

Professional groups: Private/nurse-led (Mackintosh and Bowles, 1997), Multi-professsionals (Scholes and Vaughan, 2002), Collaborative practitioner (Dwight *et al.*, 2002).

From systematic review, 21 research papers about areas of specialty for the APN were reviewed. Nine subcategories emerged from this review: oncology, women's health, cardiology, neonatal intensive care unit, transport nurse, acute care, transitional care, psychiatric and mental health and care of older people.

Oncology

A qualification examination was introduced for nurses who wish to be certified as APNs. Learning about the APN roles in particular areas they wish to be qualified was an important preparation for those nurses. A survey of roles of APNs in oncology in the USA was examined by McMillan *et al.* (1995). The participants were national sampled: 637 APNs in oncology who held masters degrees and 619 staff nurses who were in training courses of oncology nursing. The questionnaire used in this study consisted of 190 items and was divided into five sub-scales related to the APN roles: a direct caregiver, consultant, administrator/co-ordinator, researcher and educator.

The results showed that the opinions of both groups were similar in a direct caregiver role. The opinions of a consultant and a researcher role were found to be significantly difference between them. The APN group stated that the two most frequent roles they performed were a direct caregiver and educator. These roles were perceived as the most important roles for the APNs. McMillan *et al.* (1995) noted that the results of their study was used for developing a blueprint for the advanced practice oncology nursing qualification examination which was started in 1995.

After the APNs in oncology became certified and widely employed in the USA, there were papers about various issues related to the implementation of these nurses. Therefore, Lynch *et al.* (2001) became interested in investigating the critical issues which arose after the implementation of the APNs in oncology. A

survey research was carried out in the USA by Lynch *et al.* (2001). They posted questionnaires to 1,000 APNs who were members of Oncology Nursing Society (ONS). The questionnaires consisted of two parts: 62 multiple-choice and open end questions. Various issues were included in the questionnaires e.g. authority to prescribe, licensure and certification, outcome measurement and continuing education. The response rate was 36.8% (n=368). Data were analysed using the Survey Pro software package and descriptive statistics were carried out.

The results demonstrated that 49% of the participants identified themselves as NPs, CNSs (29%), NP/CNS (9%), administrators (3%), researchers (2%), educators (2%), and case managers (2%). Most of them worked at a primary services at haematology/medical oncology units (60%), urban setting (62%) and in hospitals (29%). They annual salary were between US$50,000-10,000. Regarding practical issues, the APNs reported that they work as a primary care provider (96%), in collaboration with physicians (58%) and under contractual agreement (70%). Seventy-three per cent were required to sign collaborative practice agreement in the states where they were working. The important practical issues were identified as lack of the following: privileged agreement among state boards (89%), patients' knowledge about the APN (86%), unclear definition for the APN (80%) and nursing colleagues understanding about the APN role (63%).

The APNs had prioritised their outcomes in these areas: symptom management (97%), quality of patient's life (95%), patient and family satisfaction (92%) and cost of care (79%). Authority to prescribe has been identified as a very important issue (82%). Eighty-one per cent said that their states allow the APN to have

authority to prescribe but they must work in collaboration with physicians (57%), had taken pharmacology course at master degree levels (50%), passed state board certification (48%), held master degree in nursing (43%) or had continuing education points (CEs) in pharmacology (28%). The ranking of the importance in reimbursement issue were: no billing allowed for the APN practices (56%), the insufficiency of generated income for employers (42%), no reimbursement from third party (42%). The qualifications and continuing education needs for the APN in oncology remained inconsistent (83%).

The educational programmes were varied from training course, master degree programme and post-master's certificates. The participants reported that the educational programmes did not include some important content e.g. specific skills in oncology (36%), pharmacology (35%) and physical assessment (34%). However, continuing education was reported as a requirement for state license examination (59%), re-qualification examination (86%) and license to prescribe (53%). The qualification examination was reported as a more important issue than state licensing. The legislative issues included recognition and maintenance of oncology nurses, opposing effort and collaborative practices.

Paediatric patients in oncology units appeared to have some similar symptoms which affected their daily activities and discouraged them from developmental processes e.g. pain, nausea and fatigue (Hinds et al., 1999). Fatigue was one of the distressing symptom for paediatric patients. Staff perceptions of these symptoms could help increasing effectiveness in giving care and treatments. Hinds et al. (1999) explored staff perceptions of fatigue in seven-to-12 year old patients with

cancer in the USA. The participants were recruited by advertising in staff meetings and personal post. The exploratory study was conducted with 38 staff from two children's hospitals. They were eight APNs, twenty-three staff nurses, two nurse managers, three nutritionist, one chaplain and one physician. Focus group discussion using nine open-end questions was used to collect data. The focus group discussions were tape recorded and transcribed. Data were analysed based on pragmatic and content analysis.

The demographic data of the participants showed that the average year of experience in paediatric oncology of the participants was 23. Four core categories emerged: fatigue description, contributing factors, alleviating factors and staff-initiating alleviating factors. There were four sub-categories for the fatigue description: lacking will or emotional energy, negative attitude, no energy and unable to perform usual social activities. The contributing factors consisted of hospital environment, adverse affect of treatments, changes of sleep patterns and treatments. The alleviating factors included need of support, protected rest time/protected schedule, direction toward new activities and being firm. Staff could initiate alleviating factors by figuring out dosages of medicine and nutritional needs, giving blood products e.g. plasma, listening to patients' preferences e.g. methods of taking medicines and maintaining quietness of the environment.

The concept analysis was carried out on data received from focus group discussions. Consequently, a conceptual model about contributing and alleviating factors affecting on fatigue in a seven-to-12 year old patients with cancer was

built up. Hinds *et al.* (1999) suggested that this conceptual model could be useful for staff when planning and giving treatments to this group of patients.

Hinds *et al.* (1999) provided a good example of collecting data from multidisciplinary participants. Focus group discussions with multidisciplinary participants could promote understanding and perceptions of each other's views. Furthermore, the results could be useful for further project development involving the multidisciplinary team e.g. developing a clinical practice guideline for patients who had fatigue.

Women's Health

Health promotion and prevention were common strategies used to maintain health status. Some women's health problems e.g. breast cancer, cervical cancer and obesity were specifically targeted for using the above strategies to promote women's better health and longer life. Consequently, these two problems were chosen because of their high incidence and related serious health problems e.g. hypertension and diabetes.

Gore (1999) investigated women's perceptions of weight in the USA because some women's health problems were to be found related to obesity e.g. hypertension and diabetes. Fifty-five African American women who visited one urban clinic agreed to participate in Gore's study. Five focus group discussions were conducted involving the African American woman because weight was regarded as a delicate issue for women. Using a woman who came from the same culture and spoke the same language could help to gain reliable data.

Fifty per cent of the participants in this study were overweight according to standard indices of Body Mass Index as referenced in Gore (1999). However, these participants may not perceive themselves as overweight because of personal perspectives and cultural norms. The participants did feel that being overweight or obesities was an unhealthy condition. Gore (1999) suggested that the research could be conducted in other cultural group because perceptions of obesity was affected by cultural norms. The APN could use the results of this research in planning for health promotion services in particular groups. Knowing about cultural norm could increase the APN's understanding and assist in finding an appropriate strategy for the intervention of health promotion in any particular group.

Breast cancer was one of the main health problems for women which caused either death or affected their body image after mastectomy. Health promotion services and prevention programmes for breast cancer e.g. self-breast examination and mammogram were used to initiate awareness and decrease the incidence of breast cancer in women. Devine and Frank (2000) studied nurses' practice and teaching skills with regard to breast self-examination in the USA. The participants consisted of 300 nurses, both qualified and students. Most participants agreed that nurses should teach self-breast examination but only 75% of them had occasionally done this. Less than half of nurses performed self-breast examination monthly. The reasons why nurses did not teach others about self-breast examination were they were not aware this technique and did not know when and how to do it. The APN can use these results to initiate teaching sessions and

promote the awareness of the importance of self-breast examination among nurses and students nurses.

In Canada, Stacey *et al.* (2002) examined the support needs in women who were at high risk of breast cancer. A descriptive research was carried out with women who were concerned about breast cancer and received consultations from one breast assessment clinic for the high-risk patients. This clinic was a multidisciplinary collaborative practice which provides services relevant to breast cancer e.g. screening, consultation and treatments. Staff included experts in breast cancer such as oncologists, surgeons and APNs. Questionnaires were posted to women who telephoned and received consultations from APNs at a breast assessment and 97 of them agreed to take part in the study.

The results showed that 78% had family history of breast cancer. Only 42% of women age under 40 never had mammogram done, 13% had never performed breast-self examination. Eighty-three per cent of women age under 40 had clinical breast examination. These results revealed that many women remained unaware of prevention and screening for breast cancer. Most women stated that they need information about risk factors, screening and prevention methods. The satisfaction survey was conducted after the participants received services from the clinic. Ninety-three per cent reported that they were satisfied with the consultations. All participants (100%) said that they would recommend others to come to the clinic.

The APN played a major role in this research project not only in approaching the participants and data collecting process but also provided services in the clinic.

Stacey *et al.* (2002) summarised that the APN roles in high-risk breast cancer clinics were made explicit as a direct carer, a researcher, an educator and collaborative practitioner. The APN could provide information and make women aware of the risk of breast cancer. The attitudes towards breast cancer could be changed and thus promote behaviour changes e.g. performing breast self-examination monthly.

Cervical cancer was another type of cancer which affected the mortality rate in women. Early detection could prevent the metastasis to other organs. Therefore, screening seemed to be a successful preventative strategy for cervical cancer. The system used to classify the results may have an impact on the interpretation. One hospital in the USA had initiated a new system for classification of cervical and vaginal cytology and it was reported that the new system increased the number of referrals involving abnormal findings. The APNs in this hospital were involved in collecting cervical and vaginal specimen. A retrospective study was conducted to described the adequacy and effectiveness of the APNs' practice, to compare the findings and referrals between the old and new system used in this hospital and to find out the results of follow up after referrals in non-specific Pap smears (Mahon, 1995). Five hundred and thirty-three patients' charts were reviewed and 108 cervical or vaginal smear samples were collected by the APNs in the USA.

The results demonstrated that most of the cervical smear specimens (90%) were found to be appropriate for the interpretation. Having used the new system, 128 women were recommended to have repeated smears regarding their non-specific results but only 53% returned for repeated smears. Fifty seven per cent of the

repeated smears were found to be normal while 43% show persistent non-specific smears. If the old system was used for the interpretation of the same samples, fewer than 10% of the women would be referred for repeated smears. Mahon (1995) suggested that nurses played an important role in informing patients about the use of the new interpretation system and further clinical implications.

The importance of APNs' role in health promotion and prevention is not only as a direct carer but also as an educator. Teaching breast self examination should include further advice and action needed if abnormalities were suspected. With regard to the implication of new interpretation system like Mahon's study, the APN should provide sufficient information about the changes to women who came to have smear tests in order to increase the number of patients returning for repeated smears. The education for women should focus on the benefits for women themselves.

High-risk pregnant women was another group which was of interest to the APN to develop transitional care in order to reduce healthcare cost. High-risk pregnancy could give low birth weight infants e.g. pre-term delivery, infection, and abnormalities of placenta. These could lengthen hospitalisation, increased health care resource used and expenditure. Pregnant women who had diabetes, hypertension and high-risk for pre-term labour were included in high-risk pregnancy. A randomised clinical study was carried out in a pre-natal home care project for high-risk pregnant women in the USA (Brooten *et al.*, 1998). The APN involved in delivering pre-natal home care used home visit and giving consultation via telephone. There were 171 pregnant women who were pre-

gestational diabetes (n=20), gestational diabetes (n=23), pre-term labour (n=48), at risk for pre-term labour (n=44) and chronic hypertension (n=36). The control group (n=86) received standard antenatal and postpartum care. The intervention group (n=85) was given half care by physician at clinic and the other half care by APNs. The APN interventions included physical and emotional assessment and giving general support to the mothers and infants. Brooten *et al*. (1998) reported that the APN spent the longest time and highest number of contacts with pre-gestational diabetes group. It was noted that there was a limitation in length of time and number of contacts regarding reimbursement plan. Therefore, the contacts were not provided in accordance with the pregnant women' s needs or the judgement of the APN.

The secondary analysis was conducted by Hamilton *et al*. (2002) using the above data to examine the re-hospitalisation of these samples during a year after delivery infants. It was found that the highest number of re-hospitalised women and acute care visits was a gestational diabetes group. The longest hospitalised time was a chronic hypertension group. Hamilton *et al*. (2002) suggested that re-hospitalisation was one parameter used for the outcome of care. Thus, the results of the above study could be useful for initiating and improving pre-natal care services for high-risk pregnant e.g. developing educational session for this group.

Cardiology

The role of APN in cardiology was developed by operating a congestive heart failure clinic in one university hospital in the USA. The APN involved was in a team of multidisciplinary professionals. Paul (2000) investigated the effectiveness

of the APN by conducting a comparative study with patients who were admitted to the hospital with congestive heart failure prior to and following participation in the congestive heart failure clinic. The parameters used for this evaluation were: number of admissions, length of hospital stay, number of emergency admissions, expenditure on admissions and reimbursements.

The results revealed that the number of admission prior to joining the clinic (n=38) was higher than after attending the clinic (n=19). After joining the clinic, the mean length of patient stay in the hospital (3.8 days) was lower than prior to joining the clinic (4.3 days). The numbers of emergency admissions appeared to decrease after joining the clinic but no statistical significantly change was detected. The average expense of hospital admissions after joining the clinic was significantly decreased as well as the reimbursements. It could be said that this clinic increased both the patient and hospital benefits. Paul (2000) suggested that this clinic improved the outcome of heart failure patients.

In the USA, the practice of the APN in running a nurse-based disease management programme under supervision of four cardiologists was reported in LaBresh et al. (2000). This retrospective study aimed to assess the effectiveness of four APNs' practice in a lipid centre for patients with coronary heart disease by comparing some parameters between two groups of patients who attended a lipid centre (n=352) and a non-lipid centre (n=289). The parameters used in this study were the low-density lipoprotein (LDL) level, the treatment used for lowering lipid and the achievement of the National Cholesterol Education Programme II (NCEP II) which LDL level ≤ 100 mg/dL.

The achievement of pre-determined goals of the NCEP II in both groups of patients was met. However, the achievement in the older patients who attended the lipid centre appeared to be higher than the other group. There was no significant difference in gender for goal achievement between the two groups. Nevertheless, within a non-lipid centre group, the number of male patients who achieved the goal appeared to be higher than females. Although the above results may not explain clearly the success of introducing implementations of the APN in a lipid centre, it was suggested that these could be useful for developing further study by using other parameters or control some potential significant variables e.g. age and gender (LaBresh *et al.*, 2000).

The APNs in cardiology had developed their roles not only in a nurse-led clinic but they initiated a post-operative follow up service for patients who had open-heart surgery. This service was created because the clinical nurse specialist (CNS) was concerned about patients' problems which may have occurred at home after a short stay (five days or less) in hospital after the surgery (Savage and Grap, 1999). The CNS telephoned patients seven-14 days after discharge from the hospital. Two groups of data were collected: patients' problems and the consultations given regarding the problems. Three hundred and forty-two patients were contacted in this study.

The patients reported that they had problems with oedematous legs (48%), appetite disturbance (35%), dyspnoea (29%), sleep disturbance (12%) and wound drainage (9%). The interventions given by the CNS via telephone were: reassuring

the patients about progress (86%) and educating patients about diet (31%), activity (29%) and medication (13%). The patients also received emotional support (25%) and 16% of them were referred to the physicians for further treatments. Savage and Grap (1999) noted that the results were used by the nursing practice council to improve educational programme for postoperative patients. It was suggested that a post-operative follow up service, contacting patients by telephone, was an appropriate method for decreasing patients' and families' stress after discharge from the hospital. A follow up service using telephone could provide a low cost service when compared to home visits by nurses or follow up visits to the hospitals by patients. However, it would only be practicable if a telephone system was available in that area.

Transport Nurse

The transport nurse became an important member of staff when needing to transfer patients without the presence of physician. The APN was recognised as more educated and skilled in advanced practice to perform this role. King *et al.* (2001) studied the practices of APNs as transport nurses for paediatric patients in the USA. The participants were taken from convenient samples and data were collected with 336 transportations of paediatric patients in a four month period. Transport sheets were used to collect data during transportation. These were: type of procedures, outcome and complications associated with procedures performed by the APN.

The results demonstrated that 95.2% of the transports were performed without physician presence. The advanced procedures were carried out in 26 patients

(8.8%). Among these, the APN performed eight intubations and they were 100% successful. There was no report of complications or adverse incidents related to these procedures. King *et al.* (2001) noted that the numbers of advanced procedures performed by transport nurses remained low. It could be said that the APNs are suitable for being transport nurses.

Acute Care

Although the nurse practitioner (NP) was recognised as the most recently developed among four major categories of the APN (Hickey *et al.*, 2000), it has been vastly expanded and introduced in different work sites and regions in the USA (Kleinpell-Nowell, 2001). The educational programmes for acute care nurse practitioner (ACNP) was initiated in the late 20ᵗʰ century and were further developed into master and doctorate level (Kleinpell, 1999). To date, the role of the ACNP has been greatly developed in various specialties e.g. cardiovascular surgery, transplant unit and intensive care unit, both adult and paediatrics. The first qualification examination for the ACNP in the USA was awarded in 1995, later Kleinpell (1997) had investigated the practice profiles and the roles of the ACNP who had applied for this examination. A survey was conduct by mailing questionnaires to 136 applicants. The response rate was 93%.

It was found that most applicants were practising as ACNPs (76%). Their salary raged from $34,500 to $90,000 per year (average $56,121). Seventy-six per cent stated that they had graduated from ACNP programmes and 27% adult NP programmes. Most of them (96%) were working in intensive care units (ICU) e.g. cardio-thoracic, surgical, coronary and medical ICU. The participants working

shifts included working on weekday, weekend, day, night and on-call hours. Their roles involved history taking (93%), physical examination (95%), ward rounds (94%) and performing procedures (82%). Others roles involved transferring, giving consultation and writing discharge summaries. The three most frequent procedures they performed were: discussing care planning with family members (95%), ordering and interpreting laboratory tests (90%) and initiating discharge planning (88%). Seventy per cent reported that they used practice protocols. It was noted that conducting research scored rarely as a procedure (6%). When asked about the job satisfaction of the ACNP, more than half of them (66%) were very satisfied with the physician collaboration. Fifty-three per cent were very satisfied with their position and collaboration with others. The ACNP felt that autonomy was the most job satisfying of their positions (31%) followed by collaborative care (7%) and clinical practice (6%). The most dissatisfaction was reported with working hours (14%), salary (13%) and resistance from other nurses (7%). They also stated that their role remained poorly understood. Klienpell (1997) pointed out that the ACNP were quite satisfied with their roles although it was felt that there were some constraints to their practice. These results were used for developing the following studies about the ACNP by the same researcher.

After the first qualification examination for the ACNP in 1995, the number of the ACNP grew annually. Kleinpell-Nowell (1999) conducted a 5-year longitudinal study about the progression of the ACNP roles and issues related to their practice. Following a report after the first year, the questionnaire from the first study was adjusted from 41 items 44 items. These questionnaires were then posted to 740 ACNPs. The non-responders were reminded by sending the second copy of the

questionnaire to them within four weeks. Six hundred and nineteen participants responded (84%).

The results showed that the number of employed ACNP had increased to 72%. However, some of them had left their posts (n=28) because of various reasons e.g. no satisfaction with their jobs and position was not available in the area they wished to work. The average working hours was slightly decreased from 50 to 49. Time spent in the role of educator role was increased (62%). Time spent on other roles included direct patient care (38 %), department project (36%), programme development (32%), administration (30%) and quality assurance (29%). Conducting research was found to have increased from six to 34%. The roles of ordering and interpreting laboratory test also increased to 96% while discussion with family members about care planning remained high (94%). The average annual salary was increased from $56,121 to $59,590. The average annual salary of the male ACNPs ($61,500) was slightly higher than females ($59,528) but the highest female ACNP annual salary ($110,000) was higher than that of the male ($90,000). Kleinpell-Nowell (1999) concluded that the ACNPs appeared to satisfy with their jobs because of 'increased independence, autonomy, responsibilities and confidence in the role'. However, the participants reported that the ACNP educational programmes were fairly good (32%) and not very good (14%). They suggested that there were certain things that should be included in the educational programmes e.g. pharmacology, patho-physiology and physiology. The number of hours of practice during training should also be increased.

In the second year report, Kleinpell-Nowell (2001) adjusted questionnaires to include 46 items and posted them to 619 ACNPs. The response rate was 88%. Seventy-three per cent of the participants reported that they were employed as ACNPs. The reasons given why they were not working as ACNPs were: working in other positions (31%), seeking employment (18%), child care responsibility (13%), family responsibility (3%) and others (31%). Some others reasons given were interesting e.g. job dissatisfaction and lay off policy. The average of annual salary was slightly increased from $59,590 to $61,963. There was no change in the average working hour. Nevertheless, some participants (55%) stated that they had not enough days off. Time spent on research and education continued to increase from 34 to 38% and 62 to 65% respectively. It was noted that conducting research increased steadily from Klienpell's first study in 1997 (6%). Discussion with family members seemed to be a very important role of the ACNP because 98% of them performed this role frequently. Benefits of the ACNPs post produced a very interesting result e.g. annual leave (92%), sick leave (84%), medical insurance (88%), dental insurance (74%), continuing education (73%), liability insurance (68%), authority to prescribe fee (26%), license renewal fee (25%) and journal subscriptions (16%). Klienpell-Nowell (2001) suggested that there was dramatic expansion in the employment of ACNP, salary and benefits. However, changes in the health service system e.g. hospital down sizing became a constraint for the ACNP employment and role development. The suggestions from the participants about educational programme improvements should be of interest to the educators. The administrator should re-consider the policy of employment opportunity and benefits when looking at the double increment of the number of job leavers from 28 in year 1 to 59 in year 2 report and their reasons.

Critical Care

Woods (1998b) examined the transitional process of the NP in the critical care unit in the UK. Seven domains were described in the reconstruction process of the APN in three critical care units both in hospital and community settings (Woods, 1998b). The critical areas were divided into three levels: high, acute and episodic and chronic dependency. The reconstruction process was studied from two aspects: personal and practical. The definition and the development of the APN in this specialty were not included in the aims of his study.

Ball (2000) examined the development of the role and activities of the APN in adult critical care units in the UK which included the intensive care unit, emergency department, cardiac transplant unit and general intensive care units. Ball used grounded theory methodology to study the role of the APN in five countries: the USA, Canada, Australia, New Zealand and the UK. Forty APNs were interviewed and the model for advanced nursing practice in adult critical care unit was developed. Since the grounded theory methodology was developed in the late 19th century, it was widely implicated and recognised as one of the four major qualitative research methods. This methodology enables development of an inductive theory from data collected. Therefore, it was chosen for Ball's study.

In the USA, Beal (2000) conducted an ethnography study with seven NPs who worked in five neonatal intensive care units (NICU). The ethnography methodology was used because the researcher aimed to study the NP in NICU which was a unique cultural group. The purpose of this study was to describe the

model of practice of the NPs in this specialty. The participants were recruited by purposive sampling methods. They had to meet three criteria: certification, working full-time as an NP and willing to take part in the study. Two methods were used to collect data: interviews using unstructured open-ended questions and participation observation at the place of work. Qualitative data were produced from scripts and field notes. Five NPs were interviewed and observed but two NPs were interviewed without observation because of the unit policy.

The demographic data showed that all NPs held master degrees and worked at level II/III NICUs. The average years of experiences as NP was 11. It was discovered that the NPs worked in an environment of medical dominance and used highly technological equipment. The practices of NPs in NICU were described as management and integration of medicine and nuring. The NPs stated that their roles included direct carer, consultant, educator, co-ordinator, maintaining standard of care, manager and leader. They reported that they were significantly responsible and accountable for expanded nursing roles e.g. diagnosing, laboratory test ordering and tracheal intubation. It was summarised that the NPs practices were congruent with an advanced practice model by focusing on health, holism and caring (Beal, 2000). These were both holistic and humanistic models. Beal (2000) suggested that the NP practice model in this specialty should be further developed and examined. The future research may explore the perceptions of others on the NP in NICU e.g. physician, staff nurse, parents and administrator. Consequently, the nature, contribution and outcome of the NPs in this specialty should be examined (Beal, 2000).

It may be difficult for nurses who practice in a high technologically equipped units like intensive care to use only nursing and exclude medical knowledge and skills in their practice. Nurses should combine this knowledge and skills in their daily practice in order to increase patients' outcome. Integrating nursing and medical practice resulted in extended roles of nurses in intensive care unit such as insertion of central venous or arterial catheters. In developing distinct roles and contributions to the unit, the NPs need a lot of knowledge and skills in this area. The NPs could use some methods e.g. developing clinical practice guideline and outcome assessment to make their roles observable and assessable.

Transitional Care

A primary care provider was one of the roles previously carried out by physicians and now undertaken by APN. The role involved diagnosing, admitting and initiating discharge of patients. Furthermore, the APN also took part in comprehensive discharge planning and home follow up services after discharge (Naylor *et al.*, 1999; Naylor *et al.*, 2000). Early discharge may decrease the cost of hospital admission but patients should be well prepared and reassured about the transitional stage from hospital to home. In the USA, Naylor *et al.* (1999) studied the effectiveness of APNs in developing a comprehensive discharge plan and home follow up services project for older patients in the USA. Three hundred and sixty-three patients in their study had received both medical and surgical treatments such as cardiac surgery, bowel and orthopaedic surgery. The samples were randomly allocated into a control (n=186) and an intervention group (n=177). The control group received the normal discharge plan and was visited by nurses (bachelor's prepared) but the intervention group was given personal

discharged plan e.g. assessed and visited by APNs (master's prepared) at two, six,12 and 24 weeks after discharge from hospitals. Finally, data collected from only 262 patients were usable because some of them had withdrawn or died before the study was completed. Naylor *et al.* (1999) reported that there was no statistical difference between the two groups in terms of socio-demographic, health characteristics, index hospital DRG, type of admission and length of hospital stay.

The results showed that the control group appeared to have more multiple readmission than the intervention group ($P=0.01$). Time from discharge to the first readmission in the intervention group was longer than the control group ($P<0.001$). There was no statistical difference between the two groups in mean functional status ($P=0.33$), depression ($P=0.20$) and patient satisfaction ($P=0.92$). The number of unscheduled visits to emergency departments and home visits in both groups were similar. The saving of Medicare reimbursement in the intervention group was higher than the control group. Naylor *et al.* (1999) noted that having used the APN in a comprehensive discharge plan and home follow up project was cost effective because it reduced readmission rate and lengthened the time before readmission.

Data from the above study were analysed for a second time by Naylor *et al.* (2000) to find out the problems that occurred after discharged and the interventions given to patients by the APN. Qualitative data used for the analysis were care logs which were completed by the APN during home follow up services. The care logs (n=30) from the intervention group of the above study

were sampled randomly (every third record). The data were divided into two groups depending on whether they were medical and surgical patients.

There were no statistical differences between the medical and surgical patient groups in demographic data, number of home visits, telephone calls and the APN encounters. Surgical patients had a longer hospital stay then medical patients (P=0.01). Nevertheless, medical patients had a significantly worse health condition (P=0.01) and functional health status (P=0.03) than surgical patients. The two most frequent problems occurring in both groups were discharge planning and circulation. Having used the Problem Classification Scheme and Intervention Scheme of Omaha System, Naylor et al. (2000) reported that problems between the two groups were different. The medical patients appeared to have problem with the prescribed medication regime, nutrition, health care supervision, vision, hearing and income. The surgical patients were likely to have problems with pain, sleep, bowel function, digestion and hydration. The APN interventions given during the follow up services were divided into four categories: surveillance (66%), health teaching, guidance and counselling (20%), case management (14%) and treatments and procedures (1%). When the relevance of the APNs' interventions and patient's problems were considered, the most frequent activities of the APNs in case management and surveillance categories were found to be similar in both groups. These were: communication, physical signs and symptoms and medical care. For teaching, guidance and counselling category, physical signs and symptoms were the most frequent subjects discussed with the medical patients while for the surgical patients, these were medical action and side effects. Naylor et al. (2000) summarised that medical patients appeared

to have more problems with health status, environment, income and unsafe residence than surgical patients. Further research should examine details of problem types and severity. The differences between competencies of general nurses and APNs could be assessed and the extent to which the continuity of care could prevent and resolve the problems may be investigated (Naylor *et al.*, 2000).

Recently, a transitional care project was developed for older patients with cancer. A randomised clinical trial study was conducted in upon the older patients in the USA who had surgical treatments and home nursing care after being discharged from the hospital in Hughes *et al.* (2002). A secondary analysis was carried out to examine the home nursing care given by APNs. The APN interventions were recorded using Grobe's Nursing Intervention Lexicon and Taxonomy (NILT) (Grobe, 1996 cited in Hughes *et al.*, 2002, p.110). The results showed that nursing care given by the APN included teaching, giving psychosocial support and reassurance, assessing patients' need and status and giving indirect care.

Psychiatric and Mental Health

Psychiatric and mental health nursing has evolved since the 19th century as described in 3.2.3. It was the first specialty undertaken as a CNS (Hamric *et al.*, 2000). The health care reform in the USA in the 21st century brought up many changes e.g. organisation restructuring, decreased hospital length of stay, new services initiatives such as nurse-led units, home services and transitional care (Hicky *et al.* 2000). The APN became a fast growing professional of the health care providers. They developed their roles in many specialties including psychiatric and mental health.

In 1998. the psychiatric mental health advanced practice nurse (PMH-APN) was included in a collaborative practice in the primary care setting in the USA. This pilot project was developed to increase access and provide interventions for women who were twice as vulnerable to depressive symptoms than men (Beeber and Charlie, 1998). Thirty-three women who were identified as having depressive symptoms were referred to the PMH-APN who provide interventions based on the interpersonal theory of Peplau. These were 'establishing a therapeutic relationship, assessing life transitions, investigating the role of depressive symptoms in women's management of anxiety and understanding depressive symptoms in the context of self and relations' (Beeber and Charlie 1998, p.249). Pre and post experimental data were collected using Beck Depression Inventory (BDI), Describe Yourself Inventory of Self-esteem and Tilden Interpersonal Relationship Inventory.

Prior to being diagnosed as having depression the patients reported they had physical problems e.g. pain and eating disorders. Their BDI scores were over 10 which was interpreted as some degree of depressive symptom. Having used a paired sample t-test, there was a significant difference between pre and post intervention in depressive symptoms (P<0.01). There were few changes in self-esteem and satisfaction within interpersonal relationship. Beeber and Charlie (1998) noted that the sample was too small and the background of patients e.g. ethnic and cultural background and a limitation of design had affect on these results. They suggested that further research should be developed with a larger sample and using randomised experimental design.

In the USA. the collaborative practice framework (CPF) was developed and implemented in an in-patient unit (unit-based nursing leadership) at one medical centre. Tucker *et al.* (1999) explored the impacts and outcomes of the APN as CNS who was a part of this framework. The data were collected from a case study survey research using the Clifford Clinical Nurse Specialist Functions Inventory (CCNFSI) with 34 nurses from the unit who agreed to take part in the study. Secondly, nine nurses from the above were sampled randomly to be the interviewed. Thirdly, multidisciplinary staff were invited personally to join two open forums so that more information was acquired e.g. staff experiences, positive and negative outcomes of the CPF and other issues concerning about the CPF. The participants involved in two forums were three psychiatrists, two social workers, one recreational therapist and nine staff nurses. The response rate was 76%. The average score of the importance of CNS roles in the CPF was 92.15 (SD=17.59). Among four major roles of the CNS (clinical, research, education and administration), the two most important roles of were research and education e.g. giving in-service education, being a consultant for nursing and medical staff, maintaining and promoting standard of care and utilising research results in to practice. The two least important roles were giving routine direct caring and patients' goals development.

Tucker *et al.* (1999) used Giorgi's method for qualitative data analysis because the study focused on the participants' experiences of working with the APN using CPF. It was hoped to gain the whole meaning of these experiences. The themes emerging from the qualitative data analyses were: the integration between the

APN and other staff and its constraints and the growth of nursing profession. The findings from two open forums gave a more in-depth reflection on the APN role in CPF. With regard to the experience of working with APN, some of the forums' members reported that they had no experienced at all while others were working with the APN daily. Although they recognised the scope of practice and professional development of the APN, some of them remained confused with the APN role. However, the forums thought that the APN had put great effort in building up not only roles but also relationships with colleagues. Furthermore, the APN should increase his/her roles in education and initiated a post discharge continuing care.

Conducting research with multidisciplinary teams helps to gain various perspectives of the implementation of APNs. Tucker *et al.* (1999) suggested that the above results were useful for encouraging the APN to cope with and find out the solutions for issues arising during transition e.g. resistance from colleagues and job security. Nevertheless, further research should include patient perspectives, and outcome measurement. The number of participants in Tucker *et al.*'s (1999) study was quiet small and the study was descriptively conducted, therefore, other methods should be considered e.g. experimental or randomised clinical trial which includes patients, relative and the public in samples.

Care of Older People

The increased numbers of older people who were unhealthy or suffered from chronic health problems had a great impact on carers' physical, economical and mental status Dellasega and Zerbe (2002). The APN specialising in care of older

people had initiated transitional care focused on carers who look after frail older people who had been discharged from urban hospitals in the USA to their homes in rural areas. Thirty-two carers were randomly recruited and agreed to take part in the study. The control group (n=16) received a standard discharge care but carers in the intervention group received three types of intervention: a standard discharge care, three follow-up telephone calls by the research assistants and the APN intervention. The follow-up telephone calls were carried out after 48 hours, and at two and four week intervals after discharge. The APN intervention consisted of one in-hospital visit and two home visits using Brooten's Transitional care Model. General information about caregivers was collected using Caregiver Information Form (CIF). Caregiver Burden Inventory (CBI) was used to measure caregiver stress levels. Health and Daily Living Form (HDL) was used to assess the physical, mental and economical status of the carers. The APN interventions were recorded using the Omaha System.

It was reported that here was no significant difference of care giving, demographic variables, physical health and health care resource usage between the control and the intervention group. The control group reported a higher level of physical, emotional and depressive symptoms (e.g. headache and insomnia) than the intervention group. They also had a higher score for thoughts, feelings, time and energy. The APN interventions were classified into four domains according to Omaha System: physiological (63%), psychosocial (22%), health-related behaviours (12%) and environmental (3%). The average expense for the APN intervention was $150. Dellasega and Zerbe (2002) summarised that the APN interventions increased the outcome of the carers.

Transitional care could be considered to increasing benefits for patients and carers because in Thai culture, family members usually looked after older adults. As mentioned elsewhere that the possibility of this type of care depends the availability of the human resources. If the APN developed their roles beyond the hospital care, they could expand the services and decrease stress in carers. This would help others to see the importance and needs of the APN.

3.2.2.5 General Critique from the Systematic Review

In relation to the published papers, it can be said that the APN was widely accepted and was included in the health care provider group for at least three reasons:

1) a shortage of physicians

2) to increase accessibility to health services

3) to improve the quality of patient care in the health services

Although the APN was recognised as knowledgeable and highly skilled they still encountered various problems such as devaluing because they were a low paid employee comparing to their qualifications (Ingersol et al., 2000; Boyle, 1995; Prevost, 2002). Drawing upon the issues that have arisen in the USA and some other countries where the APN concept has been initiated. Different issues at each stage of the implementation were observed.

In the early stages of the APN role development, attitudes towards them appeared to be a very important issue e.g. perception, acceptance and resistance. These

attitudes became facilitating and inhibiting factors for the APN when developing their roles. The core competencies and qualifications of nurses who sought to become APNs were also vital issues. If the above issues are not clearly identified, outlined and accepted, difficulties in role development, credentials and certification may follow. These issues have not yet been explored in Thailand where the APN concept is at the beginning of implementation.

The role development of the APN in the published papers have provided a lot of important information which will be useful in developing the study of the APN in Thailand. In the future, the role of the APN may be further developed in various areas e.g. oncology, cardiology and accident and emergency because cancer, heart diseases and road traffic accidents are the most common causes of death for Thai people. Nurse educators should be aware of the knowledge and skills needed for the APN in these areas. Administrators should organise the introduction of the APN concept and give some details about the roles and authority thereby increasing the understanding of other health care staff about the role of the APN and thus decreasing opposition. Salary scales and other privileges should be prepared within organisations prior to employment. Moreover, the TNC and the TNA should be made aware of the legal issues and should also be involved in preparations for introducing the law and ensuring its enforcement.

Authority to prescribe was one of the issues relevant to the law. The MoPH in Thailand had published the Regulations of Primary Health Treatments and Immunisations provided by Nurses in 2002 (The Ministry of Public Health, 2002). Any nurses who were registered with the TNC, under the Professional Nurses and

Midwives Act 1997. were authorised to provide primary health treatments and immunisations for some non-complex health problems listed in this regulation. The TNC incorporating the Royal Physicians Association, the Pharmacy Association and the Association of Dentists, published the Handbook and the Guidelines of Primary Health Care for level one registered nurses in 2002. These handbooks contain a list of medicines including the necessary details for administration e.g. doses, adverse reactions and precautions.

Prescribing requires advanced knowledge in pharmacology. APNs are required to have this knowledge to enable them to prescribe. Becoming licensed to prescribe is another issue which needs to be considered within the context of the law. If there is also to be a law for the APN in Thailand to prescribe medicine as part of their advanced practice, regulation for qualifications and licensing should be developed. The handbooks for the APN to use as guidelines in their roles of physical examination and prescribing should be included in future publications. The handbook would be very useful particularly for APNs who practice within the primary sector where a physician is not available.

The physician assistant post was developed in other countries. In Thailand the APN may be the only primary health care provider who is available to help increase access to health services for patients specifically in rural areas. Although the TNC has adopted the APN concept into the Thai nursing system and the government has approved this, no posts as yet exist. Many nurses are making preparations to apply for certification, by continuing their studies on masters degree programmes.

At present, a few universities in Thailand have developed masters and doctoral degree programmes in nursing. From the author's experience, the number of graduates to masters degree level who have continued in clinical practice has increased but most of the graduates to doctoral level work in the academic sector. Publication of studies involving comparisons of work areas between masters and doctoral nurses is very rare. A comparison of jobs and clinical practice areas where the masters and doctoral nurses worked pre and post completion of their studies is another area worthy of exploration.

After the employment of APNs was initiated, it would have been interesting to know what benefits the APN brought to patients and their employers, for instance, increasing access to the health service, decreasing expenditure on health and efficiency of the APN. Apart from the effectiveness which was expected, improved quality of care was also anticipated. A free patient service is available for the low-income group and patients under 12 or above 60 years of age. Recently, the present government initiated free access to the health service using a gold card. A study of the attitudes of the APN and the medical residents towards the Thai health care service could be initiated guided by Breer *et al.* (2002). It would be interesting to explore similarities and differences in agreement and disagreement and these could then be used for educational purposes for both groups to develop positive attitudes towards the Thai health service system.

The studies involving the APN working in specialty areas gave a general idea of the scope available for the APN to develop their roles e.g. a study of factors

facilitating and inhibiting their transitions. Different specialities available for the APN to work in may be developed e.g. oncology. As mentioned previously cancer is one of the major causes of death for Thai people.

Papers which included information about the role of the APN in case management showed the effectiveness of the role and acceptance of colleagues and patients. These appeared to support the appropriateness of the role of the APN as a case manager. Further study could be developed in other areas both in the hospital and community sectors to confirm the effectiveness of the APN as case manager. A randomised controlled trial would be an appropriate method for evaluating the case management role of the APN. The research instruments used for a study in Thailand should be carefully selected and adjusted because the Thai health service system and resources are different to those in the USA e.g. telephones are not available in rural areas. The experiences of the researcher included being unable to locate a patient's house on home visits because of the lack of a good house numbering system, signposts and road names.

Transitional care which was initiated in the USA seems to bring benefits to both patients and hospitals in terms of improving health status and decreasing the costs of hospital stay but this service would only be effective when the resources were available. In Thailand, only general nurses were used for follow up projects because the APN role does not exist. During the health care reform in Thailand, a project involving a 30 Baht fee (average 43 pence if £1=70 Baht) and a mobile community health services was introduced for the benefit of the general public. Patients who registered with local hospitals (which had joined this project and

received support from the government) have to pay 30 Baht for any health service needed e.g. medication, laboratory tests and even major surgery. A mobile community health services was initiated to increase access for people within the community. The hospitals which join in this project would arrange schedules to provide community health services from a multidisciplinary team a weekly or a fortnightly basis. Follow up and home visits could be included in these services as information needed e.g. patient history, treatment received and follow up needs would be available.

3.3. The Gaps in Published Papers and the Ways of Reducing Them.

Having reviewed the literature, a structure for research which aimed to reduce the gaps in the published papers was developed. The development of this study came from critical analysis of literature from a systematic review which was considered relevant to the Thai health system. In this section, the research gaps and the extent to which the gaps in published papers could be reduced by the present study will be highlighted. Then, a summary of the expectations of the study and the research questions will be presented. The present study aims to reduce the gaps observed in published papers covering the following areas: lack of research about the APN in Thailand, choosing the area of study, research methodologies and methods.

Research gap 1. Lack of research about the APN in Thailand

Although the number of published papers about advanced practice nursing retrieved by systematic review was large, all of them reflected the issues occurring in countries other than Thailand. Recently, there is a dearth of published papers about the APN in Thailand. This may be caused by the fact that this concept is

still in its infancy. Therefore, there is an unawareness of the need to conduct this research. It was felt that the study of the APN in Thailand was a great challenge, particularly in the area of critical care where nurses perform advanced practice on a daily basis.

From a review of published papers, there were only three studies on the practice of APNs in critical care (Woods, 1998b; Ball, 2000; Beal, 2000). These papers used different research methodologies. It was of interest to the author to explore the perceptions, characteristics and factors relating to the role development of the APN in Thailand. Having reviewed the above three papers in depth, the present research structure was formulated. The first stage, gaining perceptions about the APN, and the definition of the role of the APN should be examined. It was decided to make this the basis for the present study as this concept is relatively new for Thai people. A few groups of people who work on a daily basis with the APN e.g. staff nurses, nurse administrators and physicians became the main target samples for this study. Other groups which could be included in the study were patients and nurse educators, however, these groups were excluded from the study for two reasons. First, nurse educators appeared to be more involved in the preparation rather than development of the role in the clinical setting. Some nurse educators could become mentors or preceptors for the APN after they were employed or started to develop their clinical roles, nevertheless at the time when this study was developed, there were no APN in the clinical area. Patients were excluded because they can only know the APN when they receive health services from them. Thus, the study of the role of nurse educators on preparing the APN

should be explored separately. The perceptions or satisfaction of the patient regarding the APN role may be explored after the APN is employed.

As mentioned before the APN role is still being prepared in Thailand and the qualifications are being developed. A study exploring perceptions should be carried out both in the nursing discipline and other disciplines who work closely with the APN these should include e.g. the physician in order to gain information on wider aspects. Another group to be included should be master degree students on the APN programme. This group was thought to be an appropriate group to describe the role of the APN. They should be encouraged to outline their expectations after graduation.

Research gap 2. Choosing an area of study

Critical care was chosen as the area of study for of six reasons. First, to reduce the research gaps discovered in the above published papers as they did not focus on any particular category of critical care. Second, the difference in the classification of critical care in Thailand from that of other countries where the development of the APN was studied. Third, the author found that the role of the APN in critical care units was at high risk of lacking clarity of its identity because it is a highly technological, specialised and medically dominated area. Fourth, the autonomy of the APN particularly in the critical care unit in Thailand remained unclear. Fifth, a model of practice for the APN in the critical care unit in Thailand does not exist. Finally, critical care was an area familiar to and specialised in by the author. It was hoped that familiarity and personal experiences would be useful in understanding the context of this specialty including developing research

instruments. collecting and analysing data. Therefore, the present study focused on the critical care unit in hospital only and it is expected that this will clarify the development of the APN in this particular area.

Research gap 3. Methodologies and methods

Most of the reviewed papers were quantitative studies and were mainly survey research. Seven papers were randomised control trial studies. The numbers of samples in control and experimental groups were considerably equal. The samples were randomly divided into two groups. Other methodologies that were rarely used in published papers. These were co relational study, grounded theory, ethnography and Delphi method.

Theories were used as research frameworks in papers which were classified as theory verification. They were both nursing and non-nursing theories e.g. role theory, Parse's theory of Human Becoming and Peplau's interpersonal relation theory. Inductive theories were developed in most qualitative studies. For instance, a model of practice reconstruction of the APN (Woods, 1998b), legitimate influence: the key to advanced nursing practice in adult critical care (Ball, 2000) and a nurse practitioner model of practice (Beal, 2000).

Most of the studies employed a single method while a few studies adopted two and three methods of data collection. The samples used in survey studies were generally recruited by a random sampling method from reliable sources. For instance; the national statistic records, the list of members of professional organisations and the journal subscribers. Thus, they were judged as well

represented samples. Although the response rates in some survey studies were considerably low the number of respondents appeared to be adequate in general.

Questionnaires appeared to be the most common instrument used in the reviewed papers. The weaknesses of using questionnaires were noted: confusion caused by using numbers to indicate levels of opinion, lack of detail in the demographic section. In-depth interviews and fieldwork observation was regularly employed as methods of data collection in qualitative studies. This is because details could be retrieved directly and instantly from the participants. In order to maintain the consistency and validity of data collected by interview, a tape recorder was used. Then the cassette was transcribed verbatim. Telephone interviews were rarely used in published papers. Although the advantages of this method were: saving time and cost but it was only feasible when a telephone system and the telephone numbers of potential samples were available. This method was also impracticable for group interview.

As mentioned above that most published papers used a single method, thus a weakness of each approach should be reduced by using triangulation of methods (Denzin and Lincoln, 1998). According to Woods (1998b), methodological and professional issues were recommended for further research. The present study aimed to reduce the gaps found in published papers including methodology and methods of research by focusing on the APN in the area of critical care. A multi-method of data collection was chosen in the present study because the author could receive data which was both descriptive and detailed. It was believed that peoples' perceptions about the role of the APN could be received by using a

questionnaire. Detailed information gained from the interview would describe the levels of understanding about the role of the APN. Furthermore, the expectations and factors affecting the role development of the masters degree students could be described in detail.

Ball (2000) proposed action research as a methodology to investigate the role of APNs in critical care both in the hospital and community settings. As mentioned above the APN did not exist, therefore, the role of the APN could not be examined. Action research would be suitable when the APN started working in the clinical area and the study could be carried out. Collecting data from many countries may provide a global view but it was time consuming and very costly. Ball took advantage of attending international conferences in these countries to meet and recruit the participants. It was not the aim of the present study to explore the global view of the role of the APN in the critical care unit but to focus on one country where the role of APN was undergoing development.

Beal (2000) used purposive sampling as it was felt that this was appropriate when using ethnographical methodology to study in depth one specific live experience. The use of unstructured interviews was considered reasonable for clinical observation because the clinical situation and nursing procedures were unpredictable. The gap when using purposive sampling could be explained as a bias if selecting a specific hospital or region for study. Therefore, it was hoped that triangulation or using multi-methods of data collection would reduce this bias and increase the representation of the sample.

3.4. The expectation of this study

Research papers involving the APN in Thailand were not found during systematic research. Only one literature was found and this reported the development of the APN in Thailand (Ketefian *et al.*, 2001). This disclosed the fact that study involving the APN is rare. The reason for this could be that the introduction of the APN in Thailand was just being considered. It was hoped that the present study would initiate further research about the APN in Thailand and encourage other nurse researchers to become aware of the importance of study in this area. As mentioned before although the APN concept has been approved by the government since 1985, it took eight years to develop the process of qualification. The APN could use the results of the present study themselves to prepare to move on to the transitional period. It is expected that the results will be useful for improving educational programmes and policy development for the APN in the future.

3.5. Research questions

The research questions of this study are

1. What is the perception of Thai nurses, nurse administrators, doctors and masters degree students of the role of the APN?

2. What are the characteristics of the role development of the APN in Thailand?

3.6. Chapter conclusion

It has been noted that from the numbers of papers hit on databases used for systematic review, the research study about APN was of great interest to many researchers. However, most of the reviewed papers reported the study in developed countries, specifically the USA where the APN originated. It could be summarised that, the trends of research about the APN from the reviewed papers (1980-2002) were as follows.

First, in the early application of the APN during the late 20th century, many researchers were interested in examining perceptions and acceptance of the APN (e.g. Clifford, 1981; Branyon, 1985; Ploessle, 1989; Wingert, 1998). However, this topic continued to be of great interest to many researchers in the 21st century (e.g. McGowan, 2000; Balkon, 2000; Daniell, 2001). It has shown that this topic is very important and the answers from the previous studies remained unclear.

Second, after the APNs were employed and performed their roles in areas of clinical practice, the topic of the transition (e.g. Woods, 1998b) and the development of the role of APN (e.g. Martin, 1995; Scott, 1997) were examined. Perceptions and attitudes of the role of APN continue to be explored (Paredes and Frank, 2000). Patients, as consumers, were used as samples for the study of satisfaction of the services delivered by the APN (e.g. Allen, 2001) and willingness to be seen by the APN (e.g. Franks, 1996). Furthermore, the APN was examined as an appropriate primary health care staff (Bergeron *et al.* 1999; Laurant *et al.* 1998) when the access and quality of care were expected to increase. For the best knowledge of the author, these topics have not yet been

conducted in Thailand. Therefore. it is hoped that the present study will contribute a better understanding about the APN and its roles in this country.

Third, educational programmes for the APN were evaluated to improve and develop better and more appropriate ones e.g. Peterson *et al.* (2001) and Calzone *et al.* (2002). However, only oncology nursing was focused on by the above researchers. Thus there is a need to study the programmes for other areas of specialty such as critical care unit.

Fourth, during the development of the role of the APN, factors affecting the development were investigated (e.g. Carrol *et al.*, 1997; Woods, 1998a). At the same time, various areas of specialty for the APN were developed and studied. For example oncology (e.g. McMillan *et al.*, 1995), children with cancer (e.g. Hinds *et al.*, 1999), Women's health (Gore, 1999), heart failure (Paul, 2000). It was found that the APN in critical care unit was examined in only three studies (Woods, 1998b; Ball, 2000; Beal, 2000). Therefore, there is a need for further study.

Since various issues arose after the implementation of the APN, these issues became of interest to many researchers e.g. prescribing (Tally and Richens, 2001; Glod and Manchester, 2000), employment funding (Phillips *et al.*, 1995). The satisfaction of the APN within their roles was not ignored, this was also explored by one researcher (Harper-Femson, 1998).

All of the above studies were conducted only in developed countries e.g. the UK the USA. Therefore, they could not represent Thailand which is a developing country. Differences were found in terms of health care service systems, structure of work organisation and staff, health problems and culture. Due to the lack of research in the area of APN, the present study is the first research and empirical study in Thailand which explores the significant dimensions of the APN: perceptions, preparation, development and expectations of the role of the APN. It is hoped that the understanding of the title and the roles of the APN will increase following this research. Furthermore, other aspects of the APN in Thailand will be examined. These include factors affecting the role development and the expectations of the role of the APN.

The next chapter presents the development of research design and methods used for the present study. The results and lessons learned from pre-pilot studies in the UK and pilot studies in Thailand are reported. The objectives of this study and the research methods are also highlighted in chapter 4.

CHAPTER 4

Research design and methods

4.1. Introduction

This chapter describes the process of the research project development. It consists of three parts: the pre-pilot study, research designs and the pilot studies in Thailand. Part one explains the pre-pilot study, the intention of which was to increase knowledge about advanced practice nursing and some of the methods of data collection. The pre-pilot study included a meeting with the APN in their clinical area and interviews with three APNs. The general aims of the pre-pilot study were to gain up to date information about advanced practice nursing issues in a real clinical setting and to strengthen the understanding of the concept of APN.

Part two outlines the plan for this study: research questions, aims, objectives, terms and definitions, time scale and research design. The chosen methodology is described and the main terms used in this study will be are defined. The sampling methods are also explained. This part also includes the process of data collection and analysis both in quantitative and qualitative studies.

Part three provides a description of the pilot study the aims of which were to explore the feasibility of the research design and the accessibility of the participants, to perform sampling methods, to test the research instruments: a questionnaire and an interview schedule, and to explore the use of a focus group interview as a method of data collection.

4.2. A Field Visit

After reviewing an extensive amount of literature about advanced practice nursing, a field visit was planned. The aim of this was to gain knowledge and experience of the APN to facilitate the idea of bringing the advanced practice nursing concept into practice. Simple ways of obtaining information, such as observing and listening, were applied. Valuable information was obtained from conversations with the APN. An understanding of the role of the APN was increased by critically analysing all the information received from the above activities. In order to meet the above aims, three projects within a pre-pilot study were conducted using different methods. These were: a field visit, a structured interview and a focus group interview. A pre-pilot study allowed the researcher not only to explore the preliminary aims but also to experience the methods of data collection which were to be used for the main research. Furthermore, the information gained from the field visit was used to develop research tools for a later stage. A pre-pilot study was conducted in the United Kingdom (UK) between March 2002-May 2002. A letter was sent to the PMS manager to gain permission for a visit. Then, telephone contacts were used to arrange a visit.

The Personal Medical Services (PMS) were initiated by the Department of Health (DoH) of the UK in 2000 under the Primary Care Trusts (PCT) (Department of Health, 2000 retrieved 30 November 2001 from http://www.doh.gov.uk/pricare/pcts/htm). This service provides primary health care in a medical centre led by a nurse practitioner (NP). The NP is one model of advanced practice nursing (Hamric *et al.*, 2000). A visit to one local PMS centre in the UK was agreed by the research supervisors to meet the following

objectives: 1) to learn about the development and structure of a PMS centre, 2) to meet and learn about the role of nurse practitioners in clinical practice, 3) to discuss with a nurse manager clinical service issues in a PMS centre, 4) to observe the general services provided by a PMS centre. This visit was arranged at the convenience of the practice manager of a local PMS centre and took place on 24 April 2002.

4.2.1. General Information on the Local PMS Centre in the UK

The author aimed to learn about the APN role in primary care in the UK so that she could gain knowledge of the role of APN and services provided in this level of health services. The information gained from this visit could be useful for choosing an area for her main study.

This centre was the first clinic within the PMS pilot project in the area under the Primary Care Trust (PCT) Pilot Project 2000. It was set up by two general practitioners in April 2000. This three-year pilot project was intended to provide services to local people between 2001-2004. The aim of this centre was to increase access to sufficient primary health services. These services were provided by nurse practitioners. There were two PMS centres within this project, located three miles south of a city centre. The health care team of the PMS centre included a nurse practitioner, physiotherapist, chiropodist, dietician, health visitor, pharmacist and doctor. There were about 2,000 patients registered in each centre. The organisation of the PMS centre is presented in Figure 11.

Figure 11. The line of organisation of the Personal Medical Services Centre.

```
        ┌─────────────────────────┐
        │ Local Primary Care Trust │
        └─────────────────────────┘
                    │
                    │         ┌──────────────┐
                    ├─────────│ PMS Manager  │
                    │         └──────────────┘
                    │         ┌──────────────┐
                    │         │   Practice   │
                    │         │   Manager    │
        ┌───────────┴──┐      └──────────────┘
        │   Doctors    │      ┌──────────────┐
        └───────┬──────┘      │     PMS      │
                │             │ Administrator│
                │             └──────┬───────┘
        ┌───────┴──────┐      ┌──────┴───────┐
        │    Nurse     │      │ Receptionist │
        │ Practitioners│      └──────────────┘
        └──────────────┘
```
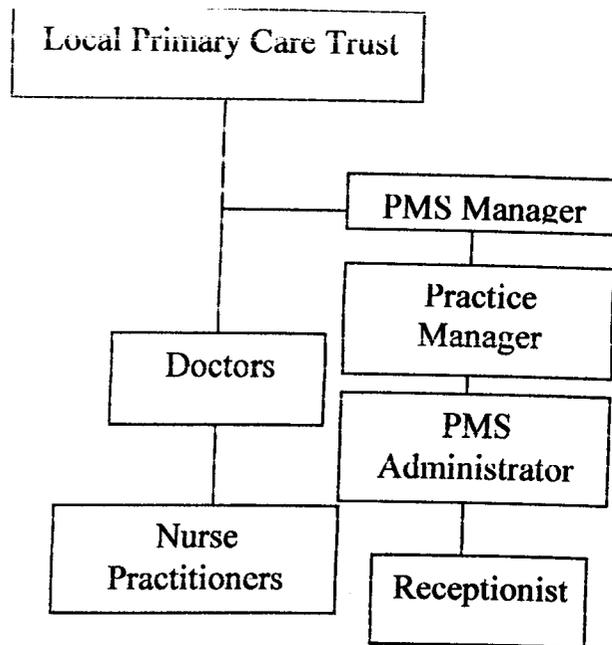
4.2.2. Services Provided by the PMS Centre in the UK

Services in this centre included a general clinic, child health, midwifery, minor surgery, physiotherapy, chiropody, dietician and home visits. Two nurse practitioners were appointed formally in September 2001. The patients who were registered with this clinic were invited to make an appointment through the receptionist to see a nurse practitioner rather than a doctor, other than in the event of an emergency.

Nurse practitioners performed history taking, health assessment, simple laboratory procedures and diagnosis. They also prescribed and gave health education to patients. In cases where further investigation and treatments were needed, nurse

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practitioners had the autonomy to refer patients to doctors. The practice manager reported that, in the first three months after nurse practitioners were appointed, patients were unsure about seeing them. The patients expected to see the doctor every time they came to the clinic. To assess the patients' satisfaction with nurse practitioners' services, a patient forum project was set up, where by patients would have the opportunity to attend regular meetings and give feedback about the services. However, only a few patients attended meetings, because of the difficulty in travelling to the clinic.

According to recent meetings at the PMS centre, most patients reported their satisfaction with the nurse practitioner services. The intention of the research project was to assess the patients' satisfaction with the PMS centre services using a questionnaire, rather than regular meetings. In the future, the clinic aims to initiate other clinical services such as acupuncture and a neurological clinic.

4.2.3. Lessons Learned from A Field Visit to the PMS Centre in the UK

At the beginning of the project, patients were not familiar with assessment or diagnosis by nurse practitioners at the PMS centre. The PCT and PMS should have introduced the new system to the public via local newspapers, local radio and leaflets or flyers to ensure that patients understood the new service system prior to implementation. The qualifications and role of nurse practitioners should be included in the information provided. The regular meetings to allow feedback on the PMS centre's service was a good initiative, allowing everyone to express their satisfaction or concerns. However, the assessment of the new project should also be done formally and systematically using research methods.

4.3. A Structured Interview with Advanced Practice Nurses in the UK

This pre-pilot study was conducted in the UK with the aim of achieving two objectives: to learn about the clinical roles of the APN and to become familiar with interviews as a method of data collection. Interviews with three nurses who work as clinical nurse specialists (CNSs) or nurse practitioners (NPs) were arranged, because these are common models of advanced practice nursing used in the literature. Contacting the CNS was difficult because this post was not well established in the NHS structure in 2001. Two titles: specialist nurse and practice nurse were used for nurses who performed advanced practice both in hospital and within the community. Three nurses agreed to be interviewed. They were a hospital based nurse practitioner, a community nurse practitioner and a practice nurse. The interviews were arranged by telephone contact to each nurse individually. Questions for the structured interview (Appendix A1) were developed after attending a research training scheme. Part one included demographic data. Part two contained questions about APNs' attitudes towards their roles (adapted from APN roles in Hamric *et al.*, 2000). Part three contained open-ended questions. Demographic data of APNs who were interviewed are presented in Table 4.

Table 4. Demographic data of nurses who were interviewed in a pre-pilot study in the UK

Post	Grade	Post basic qualifications	Employer	Length of Post held
Nurse practitioner (Hospital base)	G	B.A. ENB.199 ENB. A33 ENB. 830	NHS Trust	8 years
Nurse practitioner (Community base)	H	ENB. 833 First degree In Nursing	Primary Care Trust	8 months
Practice nurse (Community base)	G	None	General Practitioner	8 years

4.3.1. Results from a Pre-Pilot Study in the UK

A questionnaire was used to ask APNs whether they felt that they performed some roles which were considered to be APN roles (Appendix A1.). They were asked to answer 'Yes' or 'No' for each role, and also to rate the importance of those roles from 'extremely important', 'important', 'moderately important', 'less important' and 'not important' using scores 5-1 respectively. They were also requested to give examples of procedures relating to these roles. Table 5. demonstrates the nurses' attitudes toward their roles.

Table 5. Nurses' attitudes toward their roles

Role	Nurse practitioner (Hospital base)	Nurse practitioner (Community base)	Practice nurse (GP base)
Health Assessment	Yes (5) Fracture, wound	Yes (5)	Yes (5) Cervical smear
Diagnosing	Yes (5)	Yes (5)	No
Prescribing	Yes (4) Analgesia	Yes (5)	Yes (1)
Direct care	Yes (5)	Yes (4)	Yes (5)
Developing Care plan	Yes (3)	Yes (3)	Yes (5)
Invasive Procedure	Yes (5) Wound suture	Yes (3) Venepuncture	Yes (5) Cervical smear
Making Decision	Yes (5)	Yes (5)	Yes (5)
Teaching	Yes (5)	Yes (5)	Yes (5)
CPR	Yes (4)	Yes (2)	No
Research	Yes (4)	Yes (5)	Yes (3)
Referring	Yes (5)	Yes (5)	Yes (2)
Consultation	Yes (5)	Yes (5)	Yes (5)
Project Development	Yes (4)	Yes (5)	Yes (4)
Health Promotion	Yes (5)	Yes (5)	Yes (5)
Independent role	Yes (5)	Yes (5)	Yes (5)

Table 5. indicates that nurse practitioners in the hospital and community in the UK agreed that they perform all of the roles which were described as APN roles.

The practice nurse reported that she did not perform diagnosis or CPR. The importance of each role was prioritised. All interviewees reported that health assessment, making decisions, teaching, consultation, health promotion and independent roles are extremely important.

The answers from part three (open-ended questions) are as follows:

1) What do you think the APN is?

APN 'is not a specialist nurse'. APN 'has autonomy and accounts for making the advanced clinical decisions. They should be a qualified experienced senior nurse who has knowledge and skill'. They should 'be accountable, responsible, reflective, dynamic'. They 'can prescribe medicine' and be an 'extended/advanced skilled nurse'

APN is 'any extended roles or extra training'

APN is 'nurse practitioner, a nurse specialised in a specific field, able to prescribe care etc'

2) What titles are used for them in clinical practice?

'Autonomous nurse practitioner not APN'

'Nurse educator, nurse specialist, nurse consultant, clinical nurse specialist'

'possibly teacher practitioner- nurse practitioner'

3) What are their roles?

'educating, advice and management'

'Teaching nurses, patients. Implementing research, improving standards'

'Prescribing, assessing and diagnosing role, possibly teaching role'

4) How do they become an APN?

'Training, education, experience'

'Apply for post'

'Through experience of the practice nurse role and extending scope of practice through courses, teaching sessions'

5) What qualifications should they have?

'Degree, education programmes in specific areas etc'

'RGN diploma, specific ENB course for their specialty'

'Degree in practice nurse/community nursing certain extended scopes of practice'

4.3.2. Lessons Learned from the Structured Interview in the UK

From the basis of the demographic part, I did not gain enough information. If this method was to be used in the main study, some questions should be added, e.g. age, gender, level of education. Part two of the questionnaire needed to be modified using a Likert Scale so that the participants could easily complete the answers. Open-ended questions in part three allowed participants to describe their thoughts freely. Nevertheless, it was felt that some participants may not complete this part because it is time consuming. However, a semi-structured interview was considered to be more appropriate for my main study, because this would enable the participants to give their answers in detail.

4.4. Focus Group Interview with Master Degree Students in the UK

This pre-pilot study was conducted in the UK to gain experience in this method of data collection and to learn from master's degree students in the UK about their general views of advanced practice nursing. Access to the master's degree students was facilitated via a module leader in the local university. The master degree students were initially contacted by letters. The letter introduced the

researcher, the research project, its aims and the interview schedule. The module leader distributed letters to students about two weeks in advance. The interview was arranged at a convenient time and at a venue agreed by the students.

4.4.1. Procedure of Focus Group Interview in the UK

The focus group interview was conducted with five masters degree students at the local university on 2 May 2002 between 10:30–11:00 a.m. The interview schedule was adapted from the interview with APNs, described in session 4.3.1 (Appendix A2.). Three students were working as advanced nurse practitioners. All students agreed to the use of a cassette tape recorder during the interview. The cassette recording was not transcribed because the main aim of this interview was to try out the method of data collection. The information gained from this pre-pilot study was not analysed as part of the main study.

4.4.2 Lessons Learned from Focus Group Interview in the UK

The researcher learned from the focus group interview as follows:

- The interview took place in a spacious lecture room. The students sat on the front row of the classroom, with the interviewer facing them.

- The cassette was put on the desk in front of the student who sat in the middle. This resulted in unclear recording of both the interviewer's questions and the students' conversation.

- Some topics about APN were discussed broadly. These topics are: APN roles, titles used, job description, qualifications needed, patient satisfaction and public opinion of the APN.

It was decided that certain topics not included in this pre-pilot study should be included in the main study. Moreover, some conclusions were drawn about the procedure to be followed in the main study, as follows:

- Demographic data were not collected. In the main study, all participants would be asked to complete in a demographic data form because this information might be incorporated within the qualitative data analysis.

- In the main study, a smaller room should be used and the participants' seats should be arranged into a circle. The cassette recorder should be put in the middle of the table. It should not be moved around to each student while she/he was talking.

- All participants should be informed about the general rules of focus group interviews. e.g. allow one participant to speak at a time, try not to repeat the same things discussed by other participants.

- At the end of the interview, the interviewer should summarise the discussion to confirm the participants' answers.

4.5. The Aims of the Main Study

The aims of this study were to clarify the perceptions of APN roles from the nurses', nurse managers' and doctors' points of view. The facilitating and inhibiting factors and the way they impact on APN development were to be identified.

4.6. The Objectives of the Main Study

To answer the research questions, the objectives of this study were:

1. to describe the perception of nurses, nurse managers and doctors of the APN's roles

2. to discover the facilitating and inhibiting factors on the APNs' role development

3. to clarify how facilitating and inhibiting factors impact on the APNs' role development

4.7. Time Scale for the Research Project

The overall research process was conducted between September 2001 to March 2005 (Appendix D).

4.8. Research Design

To meet the aims of my research, a combined quantitative and qualitative methodology was considered because it was felt that if only one methodology was chosen, e.g. a quantitative methodology, an in-depth description of why and how facilitating and inhibiting factors impact on APN development could not be achieved. If only a qualitative methodology was chosen, there might be difficulty in prioritising the importance of APN roles as perceived by participants. A combined methodology or triangulation helps the researcher to overcome the weaknesses of each methodology (Guba and Lincoln, 1994). Burns and Grove (2001) suggested that several methods could be used to find the answer for one research question. Morse (1997) also suggested that in methodological triangulation, qualitative and quantitative research should be conducted at the same time. Thus, it is hoped that using triangulation in the present study would reduce the limitations of using a single method, as reported in published papers.

Quantitative and qualitative methodologies have different advantages and disadvantages. The quantitative methodology uses numerical data to examine the phenomenon under controlled conditions, whereas the qualitative methodology uses a narrative description to explain the phenomenon under the researcher's interpretation (Polit and Hungler, 1999; Burns and Grove, 2001). Polit and Hungler (1999) highlighted that quantitative methodology has its own strengths in terms of describing the phenomenon and understanding causal relationships, while qualitative methodology gives the reason why things are as they are.

This study can be defined as a descriptive and exploratory study using multi-method or methodological triangulation. The researcher was aware of the importance of choosing an appropriate methodology, which included choice of the population, sampling technique, data collection and data analysis. In accordance with the first research questions, the perceptions of APN roles among nurses, nurse managers and doctors could be achieved by a quantitative and qualitative methodology. However, quantitative data could be organised and analysed more comfortably. Questionnaires were chosen as a research tool to gain information because this allowed the respondents to answer the questions independently, at their own convenience and without facing the researcher (Cormack, 2000; Polit and Hungler, 1999). It was felt that this would cause less bias than might have occurred if participants answered in the presence of the researcher. The data were formally written, therefore, the researcher could keep them longer and it could be used for secondary analysis. Furthermore, questionnaires can be used with a larger sample and can be posted to participants who live in different areas (Parahoo, 1997). It is also a cheap and quick method for the researcher.

A Likert scale questionnaire was chosen because it is suitable for gaining the samples' attitudes, using numbers to indicate the degrees of their opinions (Burns and Grove, 2001). The range of scores used in the Likert Scale allows the respondents to verify or grade their opinions because there were five options for them to choose. The numeric score used for each category is matched to the degree of their opinion (Burns and Grove, 2001). The researcher could use the scores in each category to analyse information and answers to the study could be reached (Polit and Hungler, 1999).

The facilitating and inhibiting factors of the APN development were most appropriately described by nurses who were preparing to become APNs because these issues reflected their own experiences. Nobody could express these experiences if they were not involved in the process of APN transition. The extent to which influencing and inhibiting factors have an impact on the APN role development could be broadly explained by those nurses who were transforming to be APNs. It was not possible to measure the facilitating and inhibiting factors on APN development numerically, but it was felt that these would be better explained in the form of a narrative description. Furthermore, to answer how or why factors affected APN development required an in-depth description from the participants themselves. Qualitative methodology was considered appropriate because it allowed the participants to express their ideas and experiences naturally (Punch, 2000a).

The interview method was chosen for this aspect of the study, so that direct verbal information from the participants could be obtained. Telephone interview was considered not unsuitable because the researcher would be unable to see or experience the atmosphere, feelings and expression of the participants. To achieve a broad description of feelings or experiences, the structured interview was also thought to be inappropriate.

The focus group interview was chosen because it allowed the researcher to gain in-depth and detailed information verbally about the participants' view and experiences of particular issues (Burton, 2000). The issues discussed in the interviews in this study include: the perceptions of the APN; factors affecting on the development of the role of APN and the suitability of APN in the health and nursing service systems. The atmosphere in the focus group interview also encourages the participant to express their opinions (Polit and Hungler, 1999). Furthermore, the participants in the focus group interview are enable to reflect and explain their own opinions, and respond to each other opinions (Parahoo, 1997; Burton, 2000).

Burns and Grove (2001) suggested that the interviewees in the same focus group interview should be homogenous. The participants in this study were identified as a homogenous group because they were all Master's degree students who studied the same programme in the same school of nursing. The number of participants in each group was 5-7, which was an appropriate number (Burns and Grove, 2001). The length of each interview was also deemed suitable, as it took 45-60 minutes. The validity of data was achieved by conducting interviews until the data

collected was found to be rich and saturated (Burns and Grove, 2001). This means the codes were found to be repetitive and no new code was needed. After five groups of master's degree students had been interviewed, this stage was reached.

4.9. Research Setting

The plan was to conduct the study in Thailand because the APN was in the early stages of application to its health service system. The Northern Region of Thailand was chosen as it well represented and had the resources to fulfil the sample criteria for my study as follows:

- there were private, public and university hospitals

- there was a Faculty of Nursing and a Faculty of Medicine at Chiang Mai University. The master degree programme for the preparation of the APN has been developed and taught recently.

4.10. Target Population

It was considered that nurses were the best people to describe what they thought about advanced practice nursing as this was a new concept adopted recently by the health service in Thailand. Therefore, nurses were chosen to be the first target population for this research. The nurse population was divided into three groups: qualified nurses, nurse managers and master degree student nurses who were studying in the APN programme. These three groups had different levels of knowledge and experience. The other target population was doctors. Doctors were chosen because they work closely with nurses as health team members. Moreover, they are involved in APN training e.g. being a preceptor or mentor for APN (Stilwell, 1982; Gibbon and Luker, 1995; Woods, 1998a). The intensive care unit

was chosen as the area in which to perform the study because the literature suggests this is an appropriate clinical area for the APN to develop their roles (Hall-Smith *et al.* 1997; King and Clark, 2002; Ball, 2000; Woods, 1998b; Jarvis, 1999; Mick and Ackerman, 2000; Callahan, 1996).

4.11. Sample

A local statistician was consulted to decide on a suitable sampling method and sample size for the quantitative aspect. Technical cluster sampling was adopted because the sample consisted of four groups: staff nurses, nurse managers and doctors who worked in ICU and master degree students in the APN programme. Nurses were chosen because advanced practice nursing is a changing role for them. Nurse managers were included because they are involved in adopting the APN concept and post in the unit structure. Doctors were selected because they work closely with these nurses. Master degree students were used because they were in the preparation period towards becoming APNs.

In Thailand, there are three main types of hospital which have ICU: university, public and private hospitals. The Chiang Mai Provincial Office of Ministry of Public Health was contacted with a request for a list of hospitals in the Northern Region which have ICUs. The head nurses of these ICUs were contacted by telephone to assess the accessibility, then letters were sent to the hospital directors for approval as was suggested by the head nurses.

4.12. Development of The Research Instrument

Two research instruments were developed by the author. First, a questionnaire was used in quantitative study. The questionnaire used the Likert Scale in order to receive answers the research questions appropriately. Information gained from literature and the pre-pilot study was found to be very useful for developing the questionnaire. The questionnaire consisted of three parts: demographic data, perceptions of APN and opinion of APN roles in ICU (Appendix A3). Nineteen items in part three (the roles of APN in ICU) were adapted from Woods (1998b), Jarvis (1999), Mick and Ackerman (2000). There were 19 items for the respondents to tick, therefore, the length of questionnaire was appropriate (Cormack, 2000; Burns and Grove, 2001). The instructions for completing the questionnaire were clearly written. After the pilot study, minimal adjustment to the questionnaire was required.

Second, an interview schedule was developed and used in qualitative study. The interview schedule was piloted with the APN (Appendix A1.) and master degree students in the UK (Appendix A2.) as described in session 4.3 and 4.4. This interview schedule was first amended and used in a pilot study with master degree students in Thailand (Appendix A4.). A minimal amendment was carried out prior to use in the main study.

4.13. Validity and Reliability of the Research Instrument

The content validity of these research instruments was approved as follows. The questionnaire and interview schedule were developed in English first. Both were approved by the research supervisors. The research instruments were translated

from English into Thai by the researcher. The Thai versions of the questionnaire and interview schedule were translated back into English by a person who was a colleague of the researcher. She was from a non-nursing background and fluent in speaking and writing both English and Thai (Watson and Foster, 2003; Watson *et al.*, 2003). The versions which were translated back were approved by the research supervisors. The content validity was approved by the research supervisors. The reliability was tested by a pilot study and found to be satisfactory (Cronbach's Alpha 0.89).

4.14. Ethical Considerations

To the best of the researcher's knowledge, there is no local research ethics committee in the region. Each hospital had its own policy regarding research project approval. In conducting research involving human subjects, ethical issues were considered. All participants were advised on the consent form that it was their own decision to take part in this study. They were able to leave the study at any time. A covering letter and a consent form were enclosed with each questionnaire. The purpose of the letter was to reassure the participants regarding confidentiality and anonymity.

4.15. Data Collection and Analysis Techniques

4.15.1. Quantitative Data Collection and Analysis

In the main study, the questionnaires were sent to eight ICUs in a university hospital, nine public hospitals and 12 private hospitals (the three ICUs used in the pilot study were excluded). The head nurse of each ICU was the key person in distributing and collecting these questionnaires. Bearing in mind the composition

of the workforce in each ICU, the number of questionnaires sent to each was seven: one for the nurse manager (the term 'head nurse' is used for a nurse manager in Thailand and is used in this thesis), three for qualified nurses and three for doctors.

Quantitative data were analysed using the Statistical Package for the Social Science research (SPSS) for Windows 10.0. Data from questionnaires were divided into two parts. Demographic characteristics were coded and transformed into numerical form. They were then analysed using descriptive statistics. Numerical data from the Likert Scale were analysed using factor and regression analysis. Quantitative data were analysed using factor and regression analyses.

Factor Analysis

Factor analysis was carried out, the aim of which was to reduce variables to a smaller number (Bryman and Cramer, 2001). The sample size of this study was 156. Therefore, it was felt to be appropriate for factor analysis as Gorsuch (1983 cited in Bryman and Cramer, 2001, p.265) suggested the number of participants should be more than 100. Principal component analysis (PCA) was also used and the number of factors to be retained was decided by using the scree slope method.

Regression analysis

Regression analysis was carried out to examine the relationship between dependent and independent variables. It also helped to indicate the independent variables which are the best predictors for the each dependent variable. The dependent variables used for this analysis were five factors gained from the factor

analysis. Independent variables used were age, gender, post, grade, level of education and number of years clinical experience.

4.15.2. Qualitative Data Collection and Analysis

Qualitative data were received from five focus group interviews with 28 master degree students. All interviews took place at the Faculty of Nursing, as this was most convenient for the participants. The average time taken for the interviews was 55 minutes. A cassette tape recorder was used to record the interviews with the agreement of all participants. The participants sat around a table and the cassette recorder was placed in the middle of the table. The cassette tape was transcribed verbatim as soon as each interview was completed. All interview scripts were typed in Thai and translated into English by the researcher. The translation was verified and corrected by the researcher's colleague whose first language was English but was also fluent in speaking and writing both English and Thai. All transcripts as qualitative data were analysed both manually and using a computer software package. This process is described below.

The Aims and Principles

Qualitative data management was carried out systematically and coherently. Qualitative data analysis was commenced as soon as the transcript from the first focus group interview was transcribed verbatim. This means data were retrieved and stored properly so that the analysis could be proceed effectively. The purpose of employing these was not only to store data systematically and coherently, but also to facilitate accessibility before and after the research was completed.

No clear evidence to support a specific rule for methods of analysing qualitative data was found in any of the literature reviewed. (Punch, 2000b) noted that at least 26 approaches were used for qualitative data analysis. The appropriate approach for each study depends on the purpose(s) of that study (Punch, 2000b), the methodology used (Guba and Lincoln, 1994) and the methods of data collection used (Brink and Wood, 1994). However, the general principles of qualitative data analysis were described as transparency, discipline and reproduction (Punch, 2000b). Polit and Hungler (1993) noted that qualitative analysis is an inductive approach. Therefore, searching for validation and themes were its principles.

Literature describing existing techniques used for qualitative data analysis was reviewed. Glaser and Strauss (1967) introduced a constant comparison method in the early period of the grounded theory. Strauss and Corbin (1990) suggested two major techniques: making comparisons and asking questions. Use of matrix analysis technique within case and cross cases display was recommended by (Miles and Huberman, 1994). Lobiondo-Wood and Haber (2002) summarised that techniques of qualitative data analysis included: reading transcripts; identifying, specifying and grouping the expression of meaning; focusing and synthesis the essences. In general, the researcher became familiar with the data by reading scripts, recalling and listening to cassette tapes (Burns and Grove, 2001). However, a computer software package was used to organise and store qualitative data in this study.

Computer Software Package Used in Qualitative Analysis

The computer (hardware) and software packages became useful tools for research in terms of storage, management and analysis of data. Fielding and Lee (1998) noted that there are 23 computer software packages which have been produced for qualitative data analysis. These computer software packages were created to help the researcher save time in organising and analysing data through storage, organisation, sorting, coding and retaining data. The following are some examples of these computer software packages: NUDIST, Ethonograph, Hyperesearch and Atlas-ti. Miles and Huberman (1994) reported that three-quarters of qualitative researchers used computer software packages. Nonetheless, it has been argued that qualitative research focused on understanding the senses of human existence; thus, qualitative data should be analysed by humans not machines (Denzin and Lincoln, 2000). Ezzy (2002) suggested that computer software packages could help the researcher only in data management, but not the analysis process.

Fielding and Lee (1998) described that the advantages of using computer software packages included: transparency, convenience, systematic, availability for secondary research and reassessment, decreasing paper work, increasing speed of analysis and availability for both textual and audio-visual analysis. However, disadvantages were also highlighted: high cost of computer (hardware) and software packages, the need for a proper RAM, the time needed to learn how to operate the software package and the distance the researcher might feel they worked on screen rather than on the data (Fielding and Lee, 1998). Moreover, when using computers in a developing or under-developed country, the researcher should consider the availability of electricity. Desktop computers are reliant upon

supply of electricity and the portable type constantly needs its battery charging. In contrast, manual analysis allows the researcher to work without time and place constraints.

Having considered the advantages and disadvantages of computer hardware and software, to meet the principles of qualitative data analysis, the researcher decided to use a mixed method of manual and computer analysis. The researcher considered data organising as a part of data analysis, not just a process for preparing data for analysis. Two computer software packages were chosen to assist the researcher to organise and analyse data: the Microsoft Word for Windows 98 and the CDC EZ-TEXT. The Microsoft Word for Windows 98 package was chosen because of its availability and familiarity. The CDC EZ-TEXT was a free computer software package downloaded from the Internet (The Centers for Diseases Control and Prevention, 2003 retrieved 24 July 2003 from http://www.cdc.gov/hiv/software/ez-text.htm). Moreover it was found that CDC EZ-TEXT matched Miles and Huberman's (1994) methods of data management which will be described later.

The interview scripts received from five focus group interviews in the present study were typed using Microsoft Words for Windows 98 and were transferred to a format ready for analysis using the CDC EZ-TEXT software package. This software was selected because it allowed the researcher to create data files and codebooks. The format of data files and codebooks were helpful in organising data and enabled the researcher to proceed effectively with the further steps of

data analysis. A summary of the qualitative data analysis process is presented in Figure 12.

Figure 12. Summary of the qualitative data analysis process

Five interview scripts

Open coding or data reduction (CDC EZ-TEXT , Miles and Huberman 1994)

332 initial codes

Recode (Miles and Huberman, 1994)

316 Substantive codes

Data display (7 clusters)

Axial coding and drawing connection (Glaser and Strauss, 1967; Chenitz and Swanson, 1986; Strauss and Corbin, 1990; Punch, 2000b; Denzin and Lincoln, 2000; Strauss and Corbin, 1998)

4 categories

(trigger, construction, confirmation and transformation)

Selective coding (Strauss and Corbin, 1998)

Theory development

Having reviewed various methods of qualitative data analysis, two major approaches were chosen as main guidelines for the analysis in the study: Miles and Huberman (1994) and Strauss and Corbin (1998). These approaches were clearly described and enabled the author to meet the aims and principles of the qualitative data analysis as mentioned previously.

Data management was then carried out in three steps: reduction, display and drawing connections (Miles and Huberman 1994). Data reduction is described as 'a form of analysis that sharpens, sorts, focuses, discards, and organises data in such a way that "final" conclusions can be drawn and verified' (Miles and Huberman 1994, p.11). Data display was carried out to allow the researcher to get ready for drawing connections among categories emerging from all the interview scripts. Data display aimed to produce an 'organised, compressed assembly of information that permits conclusion drawing and action taking' (Miles and Huberman, 1994, p.11). Finally, drawing connections amongst categories enabled the researcher to build up a paradigm model as a substantive theory in the final stages of data analysis. This process will be described, based on grounded theory methodology as follows.

Grounded theory methodology is recognised as one of the scientific methods of inquiry (Denzin and Linclon, 2000). It was developed by Glaser and Strauss in the late 20th century (Glaser and Strauss, 1967; Denzin and Lincoln, 2000; Polit and Hungler, 1993; Burns and Grove, 2001). Grounded theory methodology is used for theory construction (Polit and Hungler, 2000). In the beginning, grounded theory was mainly used in social research; later it was used widely in nursing

research (Polit and Hungler, 2000). Grounded theory methodology has also been used to explore the role transition of the NP (Brown and Olshansky, 1997), the employment of NPs (Martin and Hutchinson, 1999), perceptions and development of the roles of CNS (Bamford and Gibson, 1999) and surviving strategies for the pioneer NP (Draye and Brown, 2000). Grounded theory methodology allows the researcher to develop an inductive theory from data (Punch, 2000b; Polit and Hungler, 1993). The grounded theory method of data analysis was chosen to be used in this study because the main aim of the qualitative part of this study was to explore the characteristics of APN development in Thailand. The researcher used mixed methods of data analysis for grounded theory methods based on: 1) open coding (Glaser, 1978; Miles and Huberman, 1994) (2) axial coding and conditional matrix (Strauss and Corbin, 1998) (3) selective or theoretical coding (Strauss and Corbin, 1998). Each step will be described as follows.

Open Coding

Open coding was recognised as the first stage of qualitative data analysis which 'generates an emergent set of categories and their properties' (Glaser, 1978, p.56). Burns and Grove (2001, p.597) described a code as 'a symbol or abbreviation used to classify words or phrases in the data'. This process helped the researcher to reduce data using a consistent format. In fact, coding was a part of data analysis (Miles and Huberman, 1994; Punch, 2000b). Strauss and Corbin (1990, p.62) further explained that coding is 'the part of analysis that pertains specifically to the naming and categorising of phenomena through close examination of data'.

It was suggested that open coding should be commenced immediately after the first interview script was translated into English. The researcher chose to use Miles and Huberman's (1994) strategy in open coding because it could be produced systematically and all the codes would have the same format. All codes were typed into the codebook in the CDC EZ-TEXT version 3.05. Every code was given a short description and a full description to clarify the code. The software allowed the researcher to assign a specific response to each question, e.g. only use this code for question number one and do not use for question number two. The specific response assignment was found very useful for data analysis because the researcher could carry out coding and printing out each participant's answer to each question.

Each code consists of seven characters according to the format of CDC EZ-TEXT. The structure of each code was developed using abbreviations e.g. FF (facilitating factor), PCA (perception of APN). To magnify the code, - (hyphen) was used e.g. IF-ACAD (facilitating factor- academic institution), PCA-MS (perception of APN-master's degree). Initially, 332 codes were developed from four interview scripts. After revising all codes (Miles and Huberman 1994), 316 codes were retained as substantive codes. The codes which were found to be repetitive or overlapping in meaning were taken out. These 316 substantive codes became the basis for further analysis.

Axial and Selective Coding

Constant comparison is the second step of data analysis in the grounded theory methodology (Glaser and Strauss, 1967). Three steps for constant comparison are

explained by Strauss and Corbin (1998): dimensionalising, axial coding, and the conditional matrix. Dimensionalising was used to arrange the properties of codes in order to build up categories. Axial coding enabled the author to gather codes with similar properties into the same axis. Conditional matrix allowed the author to conceptualise the relationships between categories, conditions and consequences. Axial coding was carried out in three steps (Punch 2000b): First, drawing out the first-order categories from open coding. Second, looking at the relationships among first-order categories. This step helped the researcher to build up propositions. Third, central categories were developed from the propositions using selective coding. The findings from all of the above process of data analysis are presented in chapters 6 and 7.

4.16. The Pilot Study in Thailand

Two pilot studies were conducted in Thailand to assess the feasibility and try out the research instruments.

4.16.1. The Quantitative Pilot Study in Thailand

This pilot study allowed the author to test her questionnaire and the accessibility of samples in Thailand. It was carried out between July and August 2002.

Gaining access for questionnaire distribution

Access to all hospitals was gained in the pilot study. A list of hospitals in the North of Thailand, which have ICUs was provided by the provincial office of the Ministry of Public Health. The addresses and telephone numbers of a university hospital, public hospitals and private hospitals were also made available. There was one university hospital which had nine ICUs, 10 public hospitals and 13

private hospitals all of which had one ICU. The head nurses of these ICUs were contacted by telephone. The researcher introduced herself and her research project. Enquiries about research approval and how to gain access to each hospital were also made during the telephone contact. From the researcher's experience, each hospital had different policies about research. The head nurses recommended that the researcher should write a letter to the medical director of each hospital to obtain approval for the research project.

The sampling used in the pilot study was carried out by drawing out one hospital name from three boxes. Each box contained hospital names from one group: a university hospital (nine ICUs), public hospitals and private hospitals. As the university hospital has nine ICUs, there were nine ICU names in the university hospital group. Once three ICU names had been obtained, one from each group, a letter was sent to each hospital director. Enclosed with the letter were: a letter to the head nurse which contained a request to distribute and collect questionnaires, seven questionnaires with a covering letter to each participant and a pre-paid envelope with the researcher's name and address for returning them. The researcher followed up the project approval and questionnaire distribution by telephoning the secretary to the Hospital Directors and ICU head nurses.

Lessons Learned from Using the Questionnaire in Thailand

Because of the lack of a local ethics committee for research, each hospital has its own policy in giving permission to a researcher to gain access. After writing letters to the hospital directors, the researcher did not receive any replies or letters of permission. Head nurses and the secretary to the director became the key

persons to contact about approval. Delays in gaining access may have occurred at two stages: the hospital director and the nursing director. After the questionnaires were distributed, delays also occurred in collecting them. The causes of these delays were felt to be staff nurses and doctors working rotas. However, all questionnaires were returned in two months. The head nurse was very important as the key person who distributed and collected questionnaires.

4.16.2. The qualitative Pilot Study in Thailand

This pilot study was conducted in Thailand to gain experience of focus group interviews as one method of data collection in my main research project.

Gaining Access for Focus Group Interview

A letter was sent to the Dean of Faculty of Nursing, Chiang Mai University. The course leader of the Master's degree APN programme was contacted. The researcher was allowed to meet master's degree students in one of her classes after being given approval. A class representative was contacted to distribute a covering letter. An interview schedule was also given to students who were interested in the study. The focus group interview was then arranged at the convenience of the students. The students were informed that a cassette tape recorder would be used during the interview for the purpose of accurate data collection. They were ensured that the data would be confidential and the participants would be anonymously reported.

Focus Group Interview as a Pilot Study in Thailand

A focus group interview as a pilot study was conducted on 27 August 2003 at room 201, building number two, Faculty of Nursing. Five master degree students agreed to take part in this pilot study. They were students in Plan A (full-time), year two. The interview took one hour.

The room used for the interview was a small meeting room about 4 metres wide and 8 metres long. There was one round table and ten chairs. The room was air-conditioned. An 'Interview in progress' sign was posted on the door of the interview room to avoid interruption. The interview was started on time because some students had to meet their supervisors after the interview. The participants were informed about the research project and further queries were answered. It was agreed to put the cassette tape recorder in the middle of the table so that the quality of the recording would be acceptable. The students were informed about the rules of the focus group interview, i.e. say what they really understood or felt openly, one person speaks at a time, try not to repeat the issues that have been discussed already.

Lessons Learned from a Focus Group Interview in Thailand

- To prevent the interruption during the interview, the participants should be informed of the time and venue of the interview. The sign 'Interview in progress, please do not disturb' should be posted in front of the interview room

- To prevent distraction, two cassette tape recorders should be used in the main study to avoid changing the cassettes

From the pilot study, it can be said that this research project was found to be feasible. Data collecting for the main study was carried out using the same process as in the pilot studies. No adjustment of the research instruments was necessary. The names of three ICUs used in a pilot study were excluded in the main study. The interview script gained from the pilot study was to be found usable for the main study. Chapter 5 presents the results of quantitative data analysis. Findings from qualitative data analysis are presented in chapters 6 and 7.

CHAPTER 5

Results: Quantitative Data Analysis

5.1. Introduction

This chapter will present results from quantitative data analysis. It is divided into four sessions: demographic characteristics, factor analysis, regression analysis and the expectation on the role of APN in ICU.

Two hundred and three questionnaires were sent to 29 ICUs. One hundred and thirty five questionnaires were returned, two of which were incomplete. Twenty-three questionnaires were also completed by Master's degree students who participated in five focus group interviews. The response rate was 69.9%. The total number of questionnaires used for the main study analysis was 156. Non-numerical data were coded and transferred into numerical form. All data were analysed using the Statistical Package for the Social Sciences (SPSS) for Windows 10. The results will be presented in three sections. First, the demographic characteristics of the samples were analysed and presented in frequency format. Second, variables were reduced using factor analysis. Third, relationships amongst variables were analysed using stepwise multiple regression analysis.

5.2. Demographic Characteristics

The participants were aged between 23 and 55 years with a mean age of 33.1 years (S.D. 6.98). The majority of the participants was female. There were 125 females (80%) and 31 males (20%). Twenty-two of the participants were head-nurses (14%), 63 staff nurses (40%), 48 doctors

(31%) and 23 master's degree students (15%). Table 6. summarises the demographic details of the participants' age and gender divided by group. The results demonstrated that nursing remains a female dominant career and male for doctors.

Table 6. Demographic details of the participants' age and gender divided by group

	Head nurse (n=22)	Nurse (n=63)	Doctor (n=48)	Master degree student (n=23)
Age Range	29-55	23-44	24-54	26-45
Mean age	40.6	30.7	33.1	32.4
Gender: Male	0	4.8%	58.3%	0%
Female	100%	95.2%	41.7%	100%

The various grades represented knowledge, skill and the number of years in clinical experience (described in Chapter 2). Public and university hospitals use the same grading system but private hospitals do not use this system. Master degree students were not counted in this grading system because their job title was designated 'student' for the purposes of this study. Participants without grades were given the code number 99. Other participants' grades ranged between 3 and 8. There were 3 samples grade 3 (1.9%), 13 grade 4 (8.3%), 25 grade 5 (16%), 16 grade 6 (10.3%), 17 grade 7 (10.9%), 8 grade 8 (5.1%) and 74 participants did not identify their grades (47.4%). Only one participant reported being educated to

Diploma level (0.6%), 107 to undergraduate level (68.6%) and 48 to postgraduate level (30.8%). Demographic details of the participants' grade and education divided by group are presented in Table 7.

Table 7. Demographic details of the participants' grade and education divided by group

	Head nurse	Nurse	Doctor	Master degree student
	(n=22)	(n=63)	(n=48)	(n=23)
Grade Range	6-8	3-8	4-8	Not identified
Education: Diploma	0%	1.6%	0%	0%
Undergraduate	68.2%	87.3%	29.2%	100%
Postgraduate	31.8%	11.1%	70.8%	0%

The total participants reported their years of experience between 0 to 32 with the mean score of 6.4 years (S.D. 5.94). There were 13 participants (8.3%) with no experience in ICU. The missing value (99) was used for the participants who did not identify their years of experience in ICU. Table 8. presents demographic details of the number of years of participants' s clinical experience divided by group.

Table 8. Demographic details of the number of years of participants's clinical experience divided by group

		Head nurse (n=22)	Nurse (n=63)	Doctor (n=48)	Master degree student (n=23)
Experience: (years)	Range	1-31	1-21	1-30	0-12
	Mean	9.8	6.3	6.6	3.1
	SD	8.29	4.22	6.64	4.44

Seventy-two participants reported that they were working in a general ICU (46.1%), medical ICU (10.9%), surgical ICU (1.9%), cardiac care unit (5.1%), neonatal ICU (4.5%), paediatrics ICU (5.1%), neuromedical-surgical ICU (3.2%), obstetrics and gynaecological ICU (4.5%), orthopaedics ICU (4.5%), cardiothoracic ICU (3.8%), other wards (not ICU) (10.3). Demographic details of the type of ICU where the participants worked divided by group is demonstrated in Table 9.

Table 9. Demographic details of the ICU type where the participants worked divided by group

		Head nurse	Nurse	Doctor	Master degree student
		(n=22)	(n=63)	(n=48)	(n=23)
ICU type:	General	13	37	20	3
	Surgical	0	0	0	3
	Medical	2	5	7	3
	CCU*	1	3	3	1
	Neonatal	1	3	3	0
	Paediatric	1	4	3	0
	Neuroscience	1	3	1	0
	OB+GYN**	1	3	3	0
	Ortho	1	3	3	0
	Cardio***	1	2	3	0
	Others*****	0	0	2	13

* cardiac care unit

** obstetric and gynaecology ICU

*** cardiothoracic ICU

**** Other wards (not ICU)

When the participants were asked whether they had ever heard about APN , 134 of them said they had heard about APN (86%), 22 of them answered that they had never heard about APN (14%). Table 10. summarises the response whether or not the participants had heard about APN divided by group.

Table 10. The responses whether or not the participants have heard about APN divided by group

	Head nurse (n=22)	Nurse (n=63)	Doctor (n=48)	Master degree student (n=23)
Yes	95.5%	96.2%	60.4%	100%
No	4.5%	3.2%	39.6%	0%

5.3. Factor Analysis

The answers to part three of the questionnaires were coded. There were 19 roles of APN in ICU. Table 11. presents 19 roles and codes representing the roles of APN in ICU.

Table 11. Nineteen roles and codes representing the roles of APN in ICU

Roles	Description
1	Clinical assessment
2	Laboratory ordering
3	Diagnosing
4	Prescribing
5	Cardiopulmonary resuscitation
6	Arterial catheterisation
7	Venepuncture
8	Chest tube insertion
9	Central line insertion
10	Endotracheal tube insertion
11	Teaching
12	Conducting research
13	Research based practice
14	Admitting patients to ICU
15	Discharging patients form ICU
16	Referring patients to medical consultant
17	Clinical supervision
18	Quality assurance
19	Patient outcome control

The answers from 156 questionnaires to part three were entered onto a database. A principal component analysis (PCA) was carried out followed by oblique rotation using a Statistical Package for the Social Sciences (SPSS) programme for Windows version 10. Figure 13. shows a graph of descending variance accounted for by the factors initially extracted.

Figure 13. A graph of descending variance accounted for by the factors initially extracted.

Scree Plot
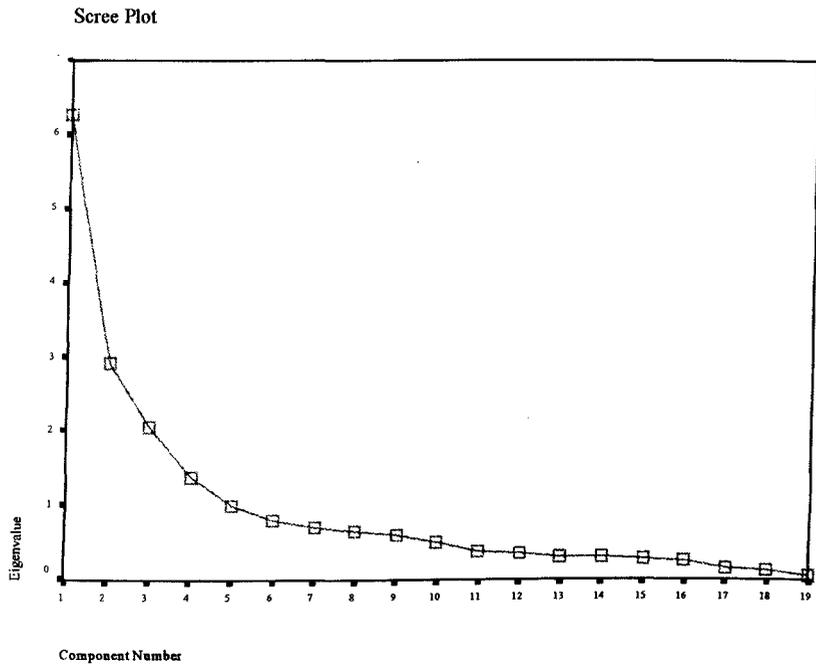
Table 12. presents the results of principal components analysis followed by oblique rotation.

Table 12. Principal components analysis followed by oblique rotation.

Roles	Communuality	Fist unrotated Principal component	Derived oblique factor solution factors				
			1	2	3	4	5
6	.759	.571	.907	.036	.158	-.104	-.111
9	.795	.683	.878	-.010	.053	.070	-.097
8	.729	.662	.835	-.546	-.002	.045	-.115
4	.721	.665	.671	.061	-.262	.035	.309
2	.668	.679	.566	-.029	-.388	.087	.224
3	.634	.698	.551	.034	-.408	.022	.162
19	.897	.402	-.027	.965	.005	-.057	.017
18	.911	.437	.016	.963	-.012	-.092	-.011
17	.733	.486	-.032	.779	-.121	.031	-.150
15	.785	.641	-.013	.025	-.887	-.016	-.031
14	.796	.674	.041	.005	-.873	.023	.000
13	.717	.605	-.031	.043	-.669	.021	-.486
16	.626	.712	.227	.075	-.639	-.020	-.205
1	.492	.524	-.004	.228	-.505	.255	.263
5	.729	.390	-.115	-.228	-.249	.815	-.053
7	.626	.283	.049	.347	.320	.636	-.019
10	.665	.565	.046	-.043	.072	.626	-.105
12	.721	.519	.149	.159	-.154	.070	-.720
11	.581	.460	.014	.283	-.078	.254	-.526

It was decided that the number of factors to be retained for rotation would be five based on the principal components with Eigenvalues greater than 1, which was compatible with the scree slope method of analysis. Table 13. shows the initial principal components and the variance they accounted for.

Table 13. The initial principal components and the variance they accounted for.

Component	Initial Eigenvalues			Extraction Sums of squared Loadings			Rotation Sums of
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	6.254	32.918	32.918	6.254	32.918	32.918	4.593
2	2.910	15.314	48.232	2.910	15.314	48.232	3.432
3	2.043	10.751	58.983	2.043	10.751	58.983	4.238
4	1.378	7.524	66.237	1.378	7.254	66.237	2.476
5	1.001	5.267	71.504	1.001	5.267	71.504	1.821
6	.796	4.189	75.693				
7	.700	3.682	79.375				
8	.637	3.351	82.726				
9	.604	3.178	85.904				
10	.499	2.628	88.531				
11	.380	2.002	90.533				
12	.349	1.838	92.371				
13	.309	1.628	93.999				
14	.299	1.571	95.570				
15	.270	1.419	96.989				
16	.244	1.283	98.272				
17	.147	.776	99.048				
18	.131	.689	99.737				
19	-.050	.263	100.00				

Nineteen variables from the questionnaire were finally reduced to five factors. The first factor was named 'Extended roles' because it is not a fundamental

nursing role and further knowledge and training was needed to perform these roles. These roles are: arterial catheterisation, central line insertion, chest tube insertion, prescribing, laboratory ordering and diagnosing. The second factor was named 'Ensuring standards' because it is the nurses' role to maintain standards of nursing care. These standards are reassured as: patient outcome control, quality assurance and clinical supervision. The third factor was named 'Patient management' because it consists of nursing roles used to manage patients during their stay in ICU. These management roles are: discharging patients from ICU, admitting patients to ICU, research based practice, referring patients to medical consultants and clinical assessment. The fourth factor was named 'Nursing roles' because nurses in ICU normally perform these roles. These nursing roles include: cardio-pulmonary resuscitation, venepuncture and endotracheal tube insertion. The fifth factor was named 'Academic roles' because it involved academic activities. These academic roles are conducting research and teaching.

5.4. Regression Analysis

The relationship among variables was analysed using stepwise multiple regression analysis. The independent (predictor) variables were age, gender, post, grade, education, and clinical experience. The dependent (outcome) variables were five factors obtained from factor analysis. These dependent variables were: Factor 1 (extended roles), Factor 2 (ensuring standards), Factor 3 (patient management), Factor 4 (nursing roles) and Factor 5 (academic roles).

Gender, post and education were presented as qualitative data, therefore, they were transformed into categorical variables before entering them into the

Stepwise multiple regression analysis. Gender was transformed into S1. Female = 0, Male = 1. Post was transformed into P1 (being a head nurse =1, others = 0), P2 (being a nurse =1, others =0), P3 (being a doctor =1, others =0). Education was transformed into E1 (diploma =1, others =0), E2 (undergraduate =1, others =0). Age, grade and experience were presented as quantitative data. They were entered without transformation.

Post and Ensuring Standards

It was found that there was a significant relationship between P1 and factor 2 ($p<0.5$). Being a head nurse contributed a significant relationship to the regression equation and explained 9% of the total variance in ensuring standards. Being a head nurse was the strongest predictor of ensuring standards. The relationship between being a head nurse and ensuring standards is shown in Table 14.

Table 14. Stepwise regression of being a head nurse and ensuring standards.

Variable	Beta	R square	R square change	F
Being a head nurse	0.29	0.09	0.09	7.48*

N=156, * $p<0.05$

Gender, being a nurse, being a doctor, being a master degree students, grade, experience, age, and education were not significant predictors of ensuring standard and did not enter the equation.

Age and Nursing Roles

A significant relationship between age and factor 4 ($p < 0.5$) was found. Age contributed a significant relationship to the regression equation and explained 5% of the total variance in nursing roles. Age was the strongest predictor of nursing roles. The relationship between age and nursing roles is shown in Table 15.

Table 15. Stepwise regression of age and nursing roles.

Variable	Beta	R square	R square change	F
Age	-0.22	0.05	0.05	4.00*

$N=156$, * $p < 0.05$

Gender, post, grade, experience and education were not significant predictors of nursing roles and did not enter the equation.

Being a Doctor and Patient Management

It was found that there was a significant relationship between P3 and factor 3 ($p < 0.5$). Being a doctor contributed a significant relationship to the regression equation and explained 22% of the total variance in patient management. Being a

doctor was the strongest predictor of patient management. The relationship between being a doctor and patient management is shown in Table 16.

Table 16. Stepwise regression of being a doctor and patient management.

Variable	Beta	R square	R square change	F
Being a doctor	-0.47	0.22	0.22	22.27*

N=156, * p<0.05

Age, gender, being a head nurse, being a nurse, being a master degree student, grade, education and experience were not significant predictors of patient management and did not enter the equation.

5.5. The Expectations on the Role of APN in ICU

In order to explore the priority of role expectations of APN in ICU data from questionnaire part 3 was analysed using SPSS version 10 for Windows. The role expectations will be presented in a form of mean score and SD. The results will be demonstrated by 5 groups: all participants (n=156), head nurse group (n=22), doctor group (n=48), nurse group (n=63) and master degree student group (n=23). Table 17. presents the rank of the expectations on the role of APN in ICU from total participants.

Table 17. The rank of the expectations on the role of APN in ICU from total participants

The role of APN in ICU	Head nurse (n=156)	Doctor (n=22)	Nurse (n=48)	Master degree student (n=63)
Patient outcome control	2	3**	4	2***
Teaching	4	2	5	1
Quality assurance	1	3**	7	2***
Venepuncture	5*	1	2	5
Clinical supervision	3	4	6	3
Cardipulmonary resuscitation	5*	6	1	4
Clinical assessment	6	7	3	3
Conducting research	7	5	8	2***
Research based practice	8	9	9	2***
Endotracheal insertion	10	8	10	7
Admitting patients to ICU	9	14	11	8
Refer patients to medical staff	12	10	13	6
Discharging patient from ICU	11	16	12	11
Laboratory ordering	13	13	14	9
Diagnosing	14	12	15	10
Arterial catheterisation	16	11	16	15
Central line insertion	17	15	18	14
Prescribing	15	18	17	12
Chest tube insertion	18	17	19	13

*   equal mean score = 4.68
**   equal mean score = 4.60
***   equal mean score = 4.91

It was found that the five highest mean scores for the role of APN in ICU which were agreed by the participants were: patient outcome control, quality assurance, teaching, venepuncture and clinical supervision. The five lowest mean scores of the role of APN in ICU which were agreed by the participants were: diagnosing, arterial catheterisation, central line insertion, prescribing and chest tube insertion.

The five highest mean scores of the role of APN in ICU which were agreed by head nurses were: quality assurance, clinical supervision, teaching, venepuncture and cardiopulmonary resuscitation. The mean score and SD of venupuncture and cardiopulnomary resuscitation were found to be equal (4.68 ± 0.47). The opinion of head nurses on admitting patient to ICU and endotracheal tube insertion role were found to be equal with mean ± SD 3.90 ± 0.81 and 3.90 ± 1.01 respectively. The five lowest mean scores of the role of APN in ICU which were agreed by head nurses were: diagnosing, prescribing, arterial catheterisation, central line insertion and chest tube insertion.

The five highest mean scores of the role of APN in ICU which were agreed by doctors were: venepuncture, teaching, quality assurance, outcome control and conducting research. The mean score and SD of quality assurance and outcome control were found equal (4.60 ± 0.57). The five lowest mean scores of the role of APN in ICU which were agreed by doctors were: admitting patients to ICU, central line insertion, discharge patients from ICU, chest tube insertion and prescribing.

The five highest mean scores for the role of APN in ICU which were agreed by nurses were: cardiopulmonary resuscitation, venepuncture, clinical assessment and patient outcome control. The five lowest mean scores for the role of APN in ICU which were agreed by nurses were: diagnosing, arterial catheterisation, prescribing, central line insertion and chest tube insertion.

It was found that the mean score and SD of quality assurance, conducting research and research based practice role of APN in ICU were equal (4.91 ± 0.28) in the master's degree students group. The mean score and SD of clinical assessment and clinical supervision were also found equal (4.86 ± 0.34). Therefore, the five highest mean scores of the role of APN in ICU which were agreed by master degree students were: teaching, quality assurance, conducting research, research based practice; clinical assessment, clinical supervision; cardiopulmonary resuscitation and venepuncture. The five lowest mean scores of the role of APN in ICU which were agreed by master's degree students were: discharging patients from ICU, prescribing, chest tube insertion, central line insertion and arterial catheterisation.

CHAPTER 6

Findings: Qualitative Data Analysis

6.1. Introduction

This chapter outlines the results of the qualitative data analysis. The findings will be presented following the process of qualitative data analysis as described in Chapter 4. The chapter is divided into two major parts: data reduction and the complex analysis. The data reduction was carried out by coding five interview scripts. Three hundred and twenty-two codes were produced. Six codes were removed because the meanings were found overlapped. The 316 substantive codes were reduced to seven clusters according to the relationships of the groups of codes (Chenitz, 1986). This procedure was carried out in order to develop an appropriate amount of data so that the researcher was able to perform further procedures of data analysis. These clusters and sub-clusters are presented in Figure 14. The seven clusters were named as follows:

1. Perceptions of the APN (substantive codes n=21)

2. Perceptions of the role of the APN (substantive codes n=36)

3. Preparation to become an APN (substantive codes n=45)

4. Facilitating and inhibiting factors in the development of the role of the APN (substantive codes n=79)

5. Support needed when making the decision to become an APN (substantive codes n=47)

6. The suitability of the APN role within the Thai health service systems (substantive codes n=34)

7. The expectations of the APN in ICU (substantive codes n=54)

Figure 14. Seven clusters emerging from five focus group interviews

Seven clusters emerged from
five focus group interviews
(total = 316 codes)

Perceptions of the APN
(21 codes)
1. Knowledgeable
2. A legitimate practitioner
3. An expertise
4. A specialist
5. A professional developer

The preparation to become an APN
(45 codes)
1. Self preparations

2. The preparations for others

The facilitating and inhibiting factors in the development of the role of the APN (79 codes)
1. Professional organisation
2. Academic institution
3. Health problem trend
4. Nurse themselves
5. Colleagues
6. Work organisation
7. The government policy and the laws
8. Public relations
9. Patients
10. Preceptors
11. Administrative staff
12. Incentive salary
13. Information technology

Perceptions of the roles of the APN
(36 codes)
1. A leader
2. A collaborator
3. A holistic carer
4. An autonomous practitioner

Supports needed for making the decision
(47 codes)
1. Want to be APN
2. Not sure they want to be APN or not
3. Don't want to be APN

The suitability of the APN for Thai health service systems
(34 codes)
1. Suitability
2. Unsuitability
3. Doubt

The expectations of the APN in ICU
(54 codes)
1. A direct carer
2. An educator
3. A researcher
4. A collaborator
5. A change agent
6. A consultant

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The findings will be presented in accordance with the above clusters. The author will provide commentaries and quotations from the participants in each session. The purposes of presentation of quotations of the participants includes giving an opportunity to the reader to envisage the participants' world, presenting the numerous aspects of the participants and enabling the merging of meanings of texts between the participants, the author and the reader could be reached (Ezzy, 2002). The quotations presented were chosen, not because they represented majority meanings, but because they conveyed the concepts constructed from the raw data. The format used to denote each quotation was S (refers a to master degree student) followed by numbers 1-28 which represent individual participants. The rationale for using this system was to maintain the anonymity of the participants.

6.2. Perceptions of the APN

The participants' perceptions of the APN were discussed widely. Although some definitions appear to be similar to the definitions described previously in 2.2.7, however, differences were discovered. The perceptions of the APN were derived from 21 substantive codes and divided into seven sub-clusters. These are: knowledgeable, legitimacy, another level, expertise, specialist, professional developer and other roles of the APN.

6.2.1. Knowledgeable

With reference to the Professional Nursing and Midwifery Act 1997, nursing was defined as 'any action performed on a human being when giving care and help during

Iilness. rehabilitation. prevention of diseases and health promotion, including helping the doctor in treating based on scientific knowledge and nursing arts'. Prior to registration under the TNC, all nurses must pass a comprehensive examination. In Thailand, a bachelor degree in nursing generally includes midwifery and the study programme takes four years to complete. Nurses who are newly qualified and registered are assumed to have knowledge and skill at a fundamental level.

The Regulation of Specialist Nursing and Midwifery Certification 1998 clearly defines that the specialist nursing and midwifery certification is 'confirmation of achieving of having one specific knowledge and skill in nursing and midwifery, and is issued by the Thailand Nursing Council according to the standards, procedures and conditions of the Regulation of Specialist Nursing and Midwifery Certification in 1998' (The Nursing Council of Thailand, 1998). Thus, knowledge and skill is the most important qualification for nurses who wish to apply for the examination.

To be an APN, a nurse must be competent in both theory and practice. Further education higher than diploma or bachelor degree level is necessary. As mentioned previously, there are two tracks available to apply for the examination according to the Regulation of Specialist Nursing and Midwifery Certification (1998). These are completing the specialist training programme or studying nursing and midwifery to master degree level.

During the period when the qualitative data were collected, the first specialist examination was proceeding. Certified APNs did not exist in Thailand at that time. Additionally, some academic institutions were trying to develop specialist-training programmes. This process takes several years because, prior to implementation, programmes must be approved by the TNC following the Regulation of Specialist Nursing and Midwifery Certification (1998). Therefore, another track for nurses to apply for the examination was to obtain a master degree in nursing.

The participants suggested that the APN should hold a master or doctorate degree. They must be able to apply their knowledge in practice. The knowledge base includes medicine, nursing, management, physiotherapy, social sciences, ethics etc. The APN must maintain and update their knowledge by continuing their practice, reading journals of nursing and searching on the Internet. Information technology enables the APN to learn about development, issues and the current situation locally and internationally. They can use the information to develop a research project and utilise the research results. Thus, a master degree was the minimum qualification expected for nurses who perform a higher or advanced level of practice. Other knowledge and skills required by the APN were management, teaching and research:

> 'The important thing is holding a master degree or higher, an experience in clinical practice for a period of time. Also having skill in a specific field of practice (S1)'

> '...The APN must have a higher education and skill than bachelor degree level. Whatever problems general staff cannot solve, the APN can do (S19)'

'...They must pass a learning process, which is approved by the TNC. It is not necessary to choose a particular disease but it is in depth nursing care of one problem, such as a pressure sore (S28)'

'...The APN must have knowledge in particular areas such as cardiac nursing, respiratory nursing and is able to solve complex problems using evidence based practice which needs knowledge at master degree level (S7)'

6.2.2. A Legitimate Practitioner

The participants perceived a legitimate practitioner as being certified. An examination is seen as an important process in the APN transformation because it is the first stage of gaining approval in law, which states that the APN can perform advanced practice. In the USA, the examination is normally organised by the council of nursing e.g. the American Nurses Association (ANA), a professional association e.g. the National Association of Clinical Nurse Specialists (NACNS) and a representative organisation e.g. the American Nurses Credentialing Centre. In Thailand, the examination was exclusively operated by the TNC. At the time of writing this chapter, the TNC had launched two specialist examinations, in 2002 and 2004. At present, there are 144 APN in Thailand. The participants expressed that passing this examination is the most important thing for all APNs:

'One most important thing is having a certificate. Not just any nurse who has experience can be counted as an APN...(S4)'

'...We must have a higher skill and one important thing, we must be certified (S21)'

6.2.3. Another Level

The issue of fragmentation in the nursing profession is not new in Thailand. Since the government produced various levels of nurses to solve the problem of shortages,

there are PN. TN and RN. The training and qualifications of these nurses were described in section 2.3.9. Nevertheless, the scope of practice for each level of nurse is not absolutely clear. There are no protocols to guide the practice of each group. In practice, it is known that in clinical areas where there is no RN, the TN has to practise the RN's role, e.g. giving intravenous fluid. The reasons usually given for this were lack of RN and for the benefit of the patient.

'Another level' was explained as being a higher or more advanced level, which made APN different from other nurses. It was expected that these qualifications would enable the APN to solve complex and urgent problems:

> '... Nursing practice at another level apart from stuaying gener. nursing, but based on knowledge and expertise in ones own specific area (S3')

> '...The APN is different from fundamental nursing. It is an advanced level...(S26)'

> 'Advanced level is a higher level, which must be different from the normal level...(S22)

> '...a nurse who gives care for a patient who has complex problems. It is another level, which is different from a basic nursing care. Because the problems are more complicated (S12)'

> '...We (APN) can give a quicker detection and a better quality of care. This outcome will show the difference between the APN and other general nurses (S23)'

The APN requires these qualifications to perform some procedures which used to be carried out by doctors. If the patient's condition changed, rapid intervention and prevention of deterioration were anticipated. The participants referred to these skills as in depth practice:

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'...If anybody wants to be APN, she/he's not only got have knowledge and skills but be able to solve patients' problems which are more complex than what other staff nurses can do. The APN should be able to solve complex and in dept problems. They are able to perform patient assessment, giving care to seriously ill patients (S3)'

6.2.4. Expertise

Conway (1998, p.78) noted that expert nurses could be distinguished by their competence as a 'technologist, traditionalist, specialist and human existentialist'. It was further explained that the technologist possesses four types of knowledge: 'anticipatory, diagnostic, know-how and monitoring' (Conway, 1998, p.78). The traditionalist can solve problems intelligently, even within limited resources. The human existentialists give holistic care to patients and develop their knowledge and skills using reflective learning. Consequently, Dreyfus and Dreyfus (1986) suggested that not everybody could become an expert. The four steps of expertise development are novice, advanced beginner, competent, proficient and, finally, expert (Dreyfus and Dreyfus, 1998). Hampton (1994) noted that expert nurses use intuition to make clinical decisions. The participants in this study defined the APN as an expert. APNs were also described as having in depth knowledge and skill in a particular area. Although the word intuition was not used by the participant to describe their expertise, it was expressed as the ability to detect and solve complex problems at an early stage, thus preventing the deterioration of the patients. Continual practice was indicated as the way to become an expert:

The APN is smart. skilled and able to look after patients as an expert (S26)'

'...We need to become experts....we see we can diagnose without waiting until a patient becomes seriously ill. We can tell as soon as we

see what is going to happen, so that we can prevent a worse situation (S10)'

'...a person who is an expert in one particular area. For example, if I am interested in a patient group with heart disease or hypertension, I will study this group in depth. Then I will practise with complex problems (S24)'

'Not only know but she/he must continue practising to be skilled in and become an expert in that area (S11)'

'...The APN must be an expert and have higher skill in making the decision than other general nurses...(S21)'

6.2.5. A Specialist

Referring to the Regulation of Specialist Nursing and Midwifery Certification 1998, the APN will be certified in one specialism only. Thus, the APN needs to identify his/her own specialism. Robert-Davis and Read (2001) suggested seven types of specialism according to specific nursing domains. These are skill/task (e.g. intravenous cannulation, defibrillation and electocardigram), role (e.g. endoscopy, colposcopy), condition (e.g. stoma care, cardiac rehabilitation), area (e.g. intensive therapy, coronary care), client group (e.g. homeless, drug dependency), generic individual (e.g. family, general practitioner) and generic community (e.g. nurse managed community service). Chuk (1997, p.502) noted that 'to own one sharp knife instead of many blunt knives would be the expectation of nurses'. The participants described the APN as a specialist who had practised in one particular area for a period of time thereby increasing his/her clinical skills:

'...The APN must be an expert. One important thing, they have not only higher vision but their own specific area...(S22)'

'...We have to choose a specific area and develop ourselves in that area to be able to give the right advice (S19)'

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'The APN is knowledgeable and expert in the area in which she/he works. It might be a group of diseases or a particular technology, which needs actual skills (S15)'

'A nurse who must have knowledge and skill, for instance, if we study about one disease, we have to know in depth all about that disease (S11)'

The participants discussed the specialisms they had chosen at both primary and tertiary care level. These were primary care unit (PCU), respiratory care unit (RCU), emergency and cardiac care unit. They also hoped that, as specialists, they would be able to improve nursing care and promote acceptance:

'...I work in an accident and emergency department, I can make decisions and give basic life support while waiting for a doctor to continue other treatments (S20)'

'...I am interested in a patient group with heart disease or hypertension, I will study in depth this patient group. Then I will practise with complex patients (S24)'

'I am also working in a critical unit. I think nowadays, there should be an APN in the critical care unit...(S19)'

'...My special area is cardiac surgery. I think if I study, I can bring this knowledge to develop my unit ...Actually I want to be an APN. As I work in the cardio field, I want to be a CNS in cardio (S16)'

'...I work at PCU and RCU. I have to perform physical examinations instead of the doctor almost every day. Therefore, when I come to study (APN), I have this knowledge (physical examination). I can use this knowledge to treat patients, give a better service, and increase the acceptance from my colleagues and patients (S22)'

6.2.6. A Professional Developer

Being a member of the TNC is compulsory for nurses who are registered under the TNC. However, it is not essential for nurses to be a member of TNA. Being a

memoer of the committee of the TNA is voluntary and dependent upon the conscientiousness of the individual. Active members of the TNA usually come from the academic sector or hospitals in a big city. They are the committee of the TNA regional office e.g. TNA office in the Northern region is in the faculty of nursing in one public university. The number of active members is very small compared with the total number of members of the TNA. Thus, it is common to hear that nurses in Thailand are big in numbers but small in power.

The participants described the APN as a professional developer. This was explained in respect of evidence based practice and conducting research. Performing in this way helps to build up the body of knowledge in nursing and increase professional identity. Utilising research results also helps to improve quality of care by using evidence based practice. However, for Thai nurses, carrying out research and evidence based practice is no easy matter when they also have a routine job. Although nursing research is included in most bachelor degree programmes for nurses, at this level it can be quite limited. Nurses who hold a master degree are expected to have a higher experience in conducting research and utilising research results, than general nurses.

Only one participant saw the APN as a researcher who used evidence-based practice:

> 'It is nursing care based on research. knowledge based on eviae.:._
> useful and effective. Conducting research in that area to develop our
> profession (S14)'

The participants' perceptions about the APN were congruent with McGee (1992) who defined the APN as one who is knowledgeable, practices with intuition, is recognised as an expert and is a legitimate practitioner.

6.3. Perceptions of the Role of the APN

This cluster will be presented separately from the perceptions of the APN because the participants gave different points of view from the first cluster. Furthermore, perceptions about the role of the APN were received from 36 different substantive codes. These were divided into five sub-clusters: a leader, a collaborator, a holistic carer, an autonomous practitioner and an academic. The results were found to be congruent with Beal (2000) who reported on the model of the nurse practitioner in neonatal intensive care unit, that it is based on three concepts: health, holism and caring.

6.3.1. A Leader

The participants' perceptions about the role of the APN appeared to agree with Patterson and Haddad (1992 cited in Davies and Hughes, 2002, p.149) who summarised the characteristics of the APN as 'risk taking, vision, flexible, articulate, inquisitive and ability to lead'. Leadership was recognised as one the important capabilities of the APN (Hamric *et al.*, 2000). It was explained that leadership qualities of the APN were on three levels according the boundary of disciplines: clinical, interdisciplinary and entrepreneurial leadership (Hamric *et al.*, 2000). One participant defined the APN role as that of a leader, in a manner congruent with clinical leadership, because the definition focused on clinical decision making:

'...the APN is a nurse who can make decisions in helping a patient in a critical situation...to safe that patient from emergency or critical situation...while waiting for a doctor to continue other treatments (S20)'

Bousfield (1997) reported that the elements of leadership necessary to be an APN included: enthusiasm, competence, innovation, self-direction and manipulating the concept into practice to increase quality of care. Leadership by the APN was explored by (Waszynski *et al.*, 2000). It was noted that the APN was capable and successful as a leader of primary care services. This was supported by three outcomes of the role, which were: cost effectiveness, efficiency and patient and doctor's satisfaction (Waszynski *et al.*, 2000).

6.3.2. A Collaborator

Collaboration was indicated as one of the important steps in the transformation of the APN (Hilderley, 1991). The role of the APN as an outcome manager was a good example of a collaborator within a practice team (Wojner and Powell, 1997). The APN works in collaboration with other members of the multidisciplinary team, e.g. doctor, pharmacist, dietician and social workers. The outcome manager works not only with the health care team but also the business team, because they are involved in finance and management plans (Wojner and Powell, 1997). One participant suggested that the APN should perform this role:

'... is a collaboration with allied medical professionals. Building a network and co-operation with colleagues (S16)'

6.3.3. A Holistic Carer

The concept of holistic care is not applied solely to one particular health care member, but nurses appear to be a suitable example to demonstrate holistic care. From the nature of their work, nurses are the only health team members who give care to patients continually and are with patients 24 hours a day. Thus, it is not surprising to see a nurse acting as a listener to the patient's family problems or inviting a monk to pray for patients who are in the terminal stage of illness. The APN was also described by the participants as someone who gave care to patients physically, mentally, socially and spiritually, incorporating all aspects of the holistic approach:

> ' APN must solve complex problems and look after patients holistically (S9)'

6.3.4. An Autonomous Practitioner

Informal titles used to describe the APN have been critically discussed internationally. These titles included: doctors' handmaiden, substitute for doctor, doctor extender and helper. As a result of the policy of reducing junior doctors' hours, nurses then took over many of their roles (Calpin-Davies and Akehurst, 1999). Practically, nurses who work in limited resource areas or developing countries had certainly been practising beyond their scope of professional practice. 'Autonomous practitioner' would be an appropriate term used for the APN, to maintain the identity of nursing profession. However, one participant who worked in a community hospital pointed out that she was capable of performing some of the doctor's roles:

> '...I think I have higher skill than the normal level. That means I can help doctors and work instead of the doctor at some levels. It makes

them see the difference. We really can help their work at this point (S22)'

Regarding the opinion of the participants quoted above, nurses in Thailand appeared to retain the image of subservience that was prevalent in the 19th century. It could be argued that this image may be not appropriate for the concept of APN in terms of the autonomous practitioner. An autonomous practitioner should no longer be a helper or a substitute. Conversely, as a knowledgeable and competent nurse, the APN should be confident enough to combine their traditional roles with their expert role, thus increasing their autonomy (Cutts, 1999).

6.3.5. An Academic

Four roles of the APN were included in this description: an academic, an educator, a researcher, a mentor and a consultant, because these roles require advanced knowledge and various skills. These include transmitting knowledge and skills to students, juniors or staff with lower qualifications. Snyder and Mirr (1999) suggested that the APN should not only be a teacher but also a learner. As a teacher, the APN should know about the teaching-learning process, and as a learner, the APN should be a self-directed and a lifelong learner (Snyder and Mirr, 1999).

Wells and Baggs (1994) reported that the APN was more aware of the importance of research than general staff nurses. Furthermore, the APN was confident in conducting research and using the results. The participants in this study agreed that research is an important role for the APN:

'...One who can perform all APN roles such as role model, consultant and researcher (S1)'

'...Doing research would also be included along with many other things (S2)'

'...Using evidences which were useful and effective. Conducting a research in that area to develop our profession (S14)'

'...the APN should take all roles such as educator, consultant and researcher...(S4)'

It was also discussed that, as an advanced practitioner, the APN should be able to share knowledge of nursing with others:

'...They need to integrate knowledge and research results to improve nursing care (S6)'

'Integrating knowledge and skill in giving care for patients who have complex problems by using research results and other roles of practice nurses (S8)'

The APN is known for their expertise and knowledge. They are expected to bridge the gap between theory and practice. McSharry (1995, p.643) noted that 'The professional nurse is seen to theorise and practise while the technical nurse practise but not theorise'. Nursing knowledge has increased with the merging of theory and research; thus these three parts cannot be separated. The important issue is how nurses succeed in implementing their knowledge or theory practice. The participants discussed evidence based practice and whether it should be instrumental in bringing knowledge into practice by solving patients' problems, particularly complex problems:

'...able to solve complicated problems using evidence based practice which needs knowledge at Master's Degree level (S7)'

'...they not only have knowledge and skill but are able to solve patients' complex problems which are more complicate) than staff nurses can. APN should be able to solve complex problems and in depth. They are able to perform patient assessment, giving care to seriously ill patients in depth (S8)'

The APN should up-date their knowledge and apply it in their practice:

'...they can find more ways to help patients, not only what they have learned such as turning patients to prevent pressure sores but they must have up to date knowledge to help patients get better (S9)'

'The APN must have successfully completed their training and learnt about extended roles such as educator, researcher and evidence based practitioner (S10)'

'...they must have in depth knowledge and be able to instruct their colleagues, patients and relatives about self care (S18)'

6.4. Preparation to Become an APN

Preparation needs for becoming an APN were constructed from 45 substantive codes. These were divided into two sub-clusters: self-preparation and preparation needs for others. Self-preparation includes gaining knowledge and skills and preparation for an examination. Preparation needs in others comprise the workplace; the general public; academic and professional institution; the government policy and the law.

6.4.1. Self-Preparation

Self-preparation covers knowledge, skill, population, mind, self-analysis, English and examination. Self-preparation was addressed in terms of preparation in knowledge and skill, both theoretically and practically. This knowledge must include the concept and roles of APN, the use of evidence based practice, communication

skills, information technology, the English language, health assessment, pathology, pharmacology, diagnosis, teaching, conducting research, research utilisation, and collaboration skills. Knowledge and skills can be developed whilst studying for a master degree. However, it was suggested that nurses should be prepared or introduced to the APN at the same time as studying at undergraduate level. Prior to studying at master degree level, nurses should be aware of the curriculum which may have been developed especially for the APN.

In Thailand, the role of APN is being developed. Therefore the pioneers of this role may have to face various problems, e.g. lack of role models or preceptors and resistance from others. They may have to put all their efforts into making others aware of and understand the benefits for patients in terms of better outcomes. They will have to work extremely hard and work in their own time.

The APN must choose a target population or an area in which they aim to specialise. To do this they need to either have experience or prior knowledge of the area they have chosen. The time needed for this preparation will vary due to individual development needs. In order for nurses to prepare for their examinations, they need not only knowledge and skill but also financial security to enable them to pay school fees, examination fees, travel costs, and registration fees after being certified.

Knowledge and Skill

The participants agreed that APNs have to increase their knowledge both theoretically and practically. Theoretical knowledge should incorporate nursing and some medical knowledge base:

> '…Apart from practising to obtain skill, we have to know more about disease theory or patient groups that we are interested in. Also pathology and how to examine patients. Then study about phenomena, which should not occur in this group of patients. We need to become experts. So that when we recognise illness, we can diagnose without waiting until a patient becomes seriously ill. We can tell as soon as we see something what is going to happen. In this way, we can prevent a worse situation (S10)'

> '…The other thing is advanced knowledge, for example, pathology or diseases…(S13)'

> '…it is advanced knowledge preparation and continual practice until we are skilled in that area (S15)'

> '…two really important things are knowledge and skill in the field of their interests. Knowledge is very necessary because if we don't have knowledge, we cannot give complicated nursing care (S24)'

To become an APN, candidates need to have a higher education to master's level to increase their theoretical knowledge and other necessary skills, e.g. research, consultation and teaching. The most important reason for holding a master's degree is that it is a requirement of the TNC. Thus, applicants for the APN examination must hold master degree:

> '…for other qualified nurses, if they have no opportunity to study at master's degree level, they have to do it, right? They have to study, or others who have graduated formerly, they must study about APN or evidence based practice to prepare themselves (S7)'

> '…According to the Regulation of the Thailand Nursing Council, I agree that the APN must have a higher knowledge than Bachelor level (S19)'

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To enable people to become experts within their field, knowledge and skill must be developed continually, not just whilst studying in a master degree programme:

> 'Apart from knowledge and skill, they must be interested in that area to become an APN. Because being an APN requires continuation of knowledge and skill development (S21)'

> '...something we can study, but not practice. If we ignored what we have studied, we could not bring it into practice. After study, we have to keep on practising to be an expert (S25)'

> 'The APN must have a lot of practice...(S27)'

Knowledge and practice go together to increase skills in areas such as physical assessment, diagnosing and prescribing:

> '...When asking, do we have basic knowledge? We have but we may lack practice. In the past, our role was mostly clinical practice. For example, as a school nurse, we may have to perform physical examinations and other things. It might be a general assessment, not an in-depth one to diagnose or prescribe, which needs a lot of practice... (S27)'

Evidence based practice is used in nursing. Therefore, the APN must know how to search for the evidence on the Internet; evaluate the research results and then apply them; conduct research and develop clinical practice guidelines. After APNs have conducted research, the results should be published, thus allowing others to benefit from what they have discovered:

> '...APNs must be able to search for data and conduct research...We have to conduct our research in an area of interest too. Because to conduct research, we learn many processes...searching data, increase our knowledge and skill (S9)'

'...One important thing is a difference. We will see the difference. We conduct research, publish and utilise research results while general nurses don't. We should use this knowledge and skill to develop our research role (S22)'

Specialisation

An APN is not a jack of all trades. APNs should give care for patients in a specific area, therefore, they have to choose a group of patients or a clinical area of interest to them:

'According to the Regulation of the Nursing Council of Thailand, we need 3 years practice in a particular area of our choice. So after graduating and going back to work in the hospital, we have to find a clinical area to practise in. We have to find a sample group of patients we can practise with (S6)'

'...One important thing is choosing a patient group or topic that they are interested in and work in that particular area until they increase their skill (S7)'

'...We have to choose a specific area and develop ourselves in that area to be able to give the right advice to patients (S18)'

'....APN doesn't mean an expert in all areas. Therefore, we must choose the area in which they want to specialise, not just do all things. We must have our aim and our way to walk and it should relate to our previous experience... (S19)'

Population

To develop expertise, the APN should have in depth knowledge and skill in one particular area (Sutton and Smith, 1995). That means they have to choose a specific group of patients with a particular problem or disease, e.g. heart failure, diabetes or breast cancer. The participants used 'population' to refer to a specific group of interest to them. Apart from choosing a group of patients or clinical area, the

participants focused on increasing their knowledge in that particular area and putting that knowledge into practice too:

> '...I know what my pop (population) is. I will try to search data, which relates to my pop. This is the way to apply knowledge into practice, which I should do...(S11)'

> '...knowledge preparation...bringing this knowledge into practice or introducing certain interventions. We need to practise with patients. We have to search for data and conduct research. I am not good at research at present. I need a lot of practice (S14)'

The cost of studying to master's level includes school fees and other necessary expenses e.g. books, transport and stationery. One participant reported that she was a self-supporting student. Money was therefore another issue in her preparation and investment:

> '...to become an APN is a high investment. The investment is using a big sum of money. When I am certified, it will be useful for villagers and families. When considering a 4-year bachelor degree programme, if there is an APN, students may need not practise in a hospital. They can practise in the community. This is a clear role for an APN (S23)'

Mental preparation

The participants were concerned about their mental status, and they stated that mental preparation is also important. One participant used the term, a 'learning heart' to explain her feelings about mental preparation:

> 'Apart from preparing our bodies, we have to prepare our minds too... (S13)'

> '...the first thing is to prepare is our mind. It is our intention to be APN because many skills are needed. We have to have our intention to change. We have to fight hard enough. Prepare our mind first and then have an intention to change (S26)'

'...we need to prepare everything, knowledge, a learning heart, study widely in the topic that we are interested in. Then we have evidence and we must write it up to let other people know. Although our working organisation does not accept us, but I think we have to do our best first (S28)'

Self Analysis

Competency is one thing that the APN must develop during their preparation. Hamric *et al.* (2000) described APN competencies as direct caring, coaching, consultation, research, leadership, collaboration and making the decisions. These competencies can be developed prior to and during taking a master degree programme. The participants discussed self-analysis prior to preparation for the above competencies:

'...First we have to analyse our qualifications. There are nine qualifications, right? We have to develop and analyse whether we were qualified or not? Then we use the results of that analysis to develop ourselves. One important thing is a difference. We will see a difference. We conduct research, publish and utilise research results while general nurses don't. We should use this knowledge and skill to develop our research role (S22)'

'First, she/he must understand the APN concept. What we need. Then they must develop their knowledge, skill, collaboration, communication, which are techniques or foundations of APN development... (S18)'

'...we need to prepare for five roles we have learned. For instance, a researcher, a direct carer and a consultant. In terms of collaboration, we have to collaborate with other professionals so that our work will be done smoothly (S16)'

English

It is very interesting that one participant stated that English preparation was necessary for APN preparation, because most of the textbooks are in English. Although the APN concept was adopted by the TNC in 1998, the first examination was not until 2002. This means that the APN role is still in the early stages of development. The

concept originates in the USA; therefore almost all textbooks are in English. English is not the first language in Thailand. The participants indicated that language skill needs to be developed, and also textbooks need to be translated into Thai language:

> '...we have to improve our English as well as knowledge (S13)'

> '...we are studying theories in textbooks from abroad. We need to translate them and use trends from abroad (S14)'

The problem of language is not only an issue for non-English speaking nurses. It was felt that nurse theorists did not use simple and understandable language. Thus other nurses found it difficult to interpret and utilise theory into practice (McSharry, 1995).

Examination

Examinations are reported as an important element of preparation, because the participants had to meet certain requirements prior to applying for the examination:

> '..the APN must be an expert and have higher skill in making the decisions than general nurses. We must have a higher skill and one other important thing, we must be certified (S21)'

> '...We have to be well prepared according to the regulations of the TNC. We must have at least 3 years experience. We must be certified... (S24)'

If nurses are qualified, it means they can practise as APN within the law. One participant expressed the importance of regulations for nurses:

> 'Personally, I am now working in a very critical area. I want to develop myself further to become an APN because I will have more self-confidence. The more I develop myself, the more knowledge and skill I have. It helps me in making the decision to safe patients' lives. Sometimes, a doctor who is on-call cannot come in time to perform resuscitation. It must be done in 4-5 minutes. But doctors cannot come

most of the time. It is golden minutes to save a patient's life. If we were APNs and practise under the regulation then we can take on this role. This may save a patient's life and prevent complications. It helps increase survival rates and decrease the death rate' (S20)'

6.4.2. The Preparations of Others

One important thing in preparing to become an APN is the awareness of the need for APN in workplaces. The preparations of others were found to be significant to the development of the APN. This involves the preparation of the workplace, the general public, academic institutions, professional organisations and the government policy and the law.

Work organisation

The work organisation is one of the most important parts of the APN development, because the APN is considered to be a new concept in Thailand. The APN is not yet included in the work organisation chart. Preparation of the workplace is necessary because it helps to increase co-operation and decrease resistance from colleagues and administrative staff. Preparations in the workplace include introducing the APN concept to colleagues (nurses, doctors and other health team members) and administrative staff, e.g. head nurses and nursing directors. Colleagues and administrative staff should be encouraged to discuss the needs and benefits to the patients. If the workplace understands the concepts and accepts the APN, this could decrease the resistance which may occur because of lack of knowledge:

'…we have to prepare the workplace. They must be informed what APN is and how APN work. Then they understand us and know how to use us (S12)'

'...working system...in the hospital where I am working, supervisors and higher administrative staff don't know about APN, even though I am studying the APN programme. If I want to be an APN myself without acknowledgement of administrators, I have to fight hard...there must be a post to make them know (S26)'

'...we need a proper support then we can work as an APN. Other professionals should have the right perception about the APN (S27)'

The participants gave details about the need for preparation in the workplace and indicated that their nurse colleagues are very important to start with. They wanted to prevent feelings of fragmentation or competition:

'...it should start from nurses. Some people may think an APN is a nurse who is trying to separate him/herself from other nurses. They think an APN wants to be a doctor because he/she is an expert in physical examination and prescribing, which are not nurses' roles at all. Senior nurses do not agree with APN roles. Therefore, the APN preparations must be encouraged so that we can push new generation nurses to be interested in becoming the APN (S12)'.

The General Public

The general public is another group who need to be introduced to the concept of the APN. If they understand the role of APN and the benefits they can receive from APNs, they are more likely to agree to being assessed by the APN instead of the doctor, for example in the outpatient and emergency department:

'...I realise the present situation and think I don't want to be an APN because it is difficult to change. We have to make our colleagues and the public to understand, right? Our clients need to understand how we differ from other nurses...(S6)'

Academic Institutions

Academic institutions play a vital role in the development of the APN. The curriculum for the master degree programmes must be approved by the TNC. Nurse

educators should be prepared for teaching and training students on this programme. Mentors or preceptors could help students on the APN programme in their development by providing a role model. Unfortunately, since concept of APN began, there has been no role model or preceptor available for students. Nurse educators are therefore a valuable resource, providing a role model for students:

> 'In terms of the educational system, it must provide both educators and role model. A preceptor is a good example in a real practice. We can learn from a preceptor and theoretical knowledge at the same time. At the moment, we are studying theories from textbooks...(S14)'

One participant mentioned that she was not aware that the curriculum she was studying had been changed to the preparation of the APN programme. The study programme was not well prepared and introduced to students:

> '...There might be difficulties in this curriculum and others when we began. We need a lot of preparation. Before we came to study, we didn't know that this curriculum is an APN preparation. We didn't understand what it is. We knew the concept of the previous curriculum, not this one...(S17)'

Professional Organisations

There are two main professional organisations which take responsibility for the APN preparation: the TNC and the TNA. One participant suggested that the preparation by these organisations was insufficient.

> '...If I go back to my hospital and ask my head-nurse about the APN, if I ask 'how much you know about APN?' they will ask 'What is APN? I don't know'. So I think publicity by TNC and related organisations is inadequate. To make the APN accepted it needs to be publicised at the beginning...(S10)'

The Government Policy and the Law

Health system reform is one of the most important policies for the present government. Patients are encouraged to maintain their own health and prevent illness rather than looking for treatment. Community nurses provide hope for patients in rural areas, especially if they can provide health services at an advanced level. This means the APN should be a considered health care provider in the year of health system reform:

> 'Since there has been a health system reform and other change for example, more complex and chronic health problems, therefore, the APN must be able to solve complex problems ...(S9)'

Some of the above sub-clusters may be repeated in the following section; however the participants described them in different aspects.

6.5. Facilitating and Inhibiting Factors in the Development of the APN

This cluster was prepared from 79 substantive codes. There were 13 sub-clusters for facilitating and inhibiting factors of the development of the APN. Eight factors were categorised as both facilitating and inhibiting factors. These are professional organisation, academic institution, nurses themselves, colleagues, work organisations, government policy and law, public relations and administrative staff. Three factors were classified as facilitating factors. These included health problem trends, preceptors and incentive salary. Patients and information technology were described as inhibiting factors because of insufficient knowledge about the APN and limited access to the Internet.

6.5.1. Professional Organisations

The participants explained the significance of the role of the TNC in the development

of the APN in terms of promoting acceptance of this concept:

> '...the TNC must fight for the APN to become a professional, to be a part of the nursing profession. That means everybody must accept the APN; including the law, and work organisation. It must be accepted by creating posts and being included in the structure. It must become a part of the nursing services' structure (S1)'

> '...We don't just to do it by ourselves with nothing else to support us. Then the way to walk, the opportunity to change would be difficult. But if there are supports from other nurses, the organisation, the TNC, other benefits they would receive, these will help them to be the APN quicker and better. If they have to fight by themselves, it will be very slow. Perhaps, nobody will want to be (APN) S7)'

> '...the Council of Nursing, academic institutes, working organisations, all of them must help pushing APN up (S12)'

It was mentioned previously that professional organisations should take responsibility

for introducing the APN to patients and the public. Failure to do this may result in

ignorance about the role of APN:

> '...I don't understand, OK, the TNC follows the health system reform policy and think it is our professional development. Who will push this idea to be a real structure?...(S15)'

> 'Our professional organisation is a very important inhibiting factor...(S16)'

> 'The most important factor is our professional organisation. If they know and understand how the APN bring benefit for patients, how patients will receive a better nursing care, then the APN should be promoted. At least, we are not the only group who shouts for the APN. At least, other organisations will listen and think (S14)'

One participant pointed out that information about the APN from the Thailand

Nursing Council was inadequate:

'...the Thailand Nursing Council is not strong enough. They cannot publicise or make everybody accept and have the same perception. With the news (having the APN), there was a rejection. This is another difficulty (S9)'

The TNC has organised examinations in Bangkok in 2002 and 2004. Nurses had to pay their own expenses, e.g. application fee, travel expenses, accommodation and food cost whilst taking the examination in Bangkok. The participants stated that failure in the examination could discourage them from becoming an APN:

'Taking of a certifying exam may be an obstacle. The exam may be too difficult. If they fail the first time, they may be discouraged and don't want to go for the second exam. So they give up and don't want to be APN (S3)'

6.5.2. Academic Institutions

Academic institutions are involved in the development of the APN at four stages. First, academic staff who went abroad to study in higher degree programmes or join in academic visit programmes have brought back with them the concept of the APN. This was then introduced to the TNC. Second, after this concept was accepted, academic faculties developed a curriculum for the APN at master degree level. Training programmes were also initiated to prepare nurses for qualification to meet the requirement of the TNC to apply for the certification examination. Academic staff who worked for the TNC also wrote the examination papers. Finally, after the first examination, the pioneer APNs had no preceptor and role model. Therefore, the academic staff provided such role models and acted as preceptors for the APNs.

One participant suggested that the basic concept of APN should be introduced to undergraduate students to prepare them prior to studying at a higher level:

> 'Another thing is the institution for nursing education. If a master's degree is offered, there should be an APN programme. In the old programmes, we didn't know what the APN is. Or if they teach at the undergraduate level, they should include basic knowledge of what the APN is. They should know... (S1)'

The cost of studying a master degree programme was reported as an inhibiting factor for two reasons: the school fees were too high and there was no financial support for students in some departments, e.g. medical and surgical nursing.

> '...The school fee is quite high. Only the students in psychiatric nursing department receive a scholarship granted by the Department of Mental Health. The APN programme seems to be a good and useful one but there is no support. At the moment, there are many chronically ill patients who need APN but it is not of their interest. These are inhibiting factors (S24)'

> '...the fee is too high so they want students to finish in two years. This is quite a rush. Our time is fixed but on the normal programme (full-time), they can finish their study in five years. Their fee is not high. A maintaining status (student) fee is cheaper too. Our registration fee is too high, this is one of the inhibiting factors (S26)'

Another participant who was a part-time student explained about the difficulties in completing her studies in a limited period of time according to university regulations:

> '...it (the curriculum) is not (stable). It made us do a harder job under a limited time. We have to work harder in studying a part-time programme. There are many assignments. This may be an inhibiting factor. I wonder why we have to finish our study in two years (S25)'

Two participants felt that the standard of the curriculum and the preparation by the lecturer for the APN programme needed to be improved:

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'...Another thing is the curriculum. Two groups of students have started. The curriculum is continually adjusted. Some subjects do not exist, so we have to study others. First we have to pass 39 credit units but the Nursing Council needs 41 or 42 credit units. Therefore, we have to take more credits. The curriculum is not stable. We have to study more, which is hard work (S25)'

'We have to learn a lot. The curriculum is continually modified. Sometimes, we can't catch up (S17)'

It may be concluded that the role of the academic and professional institutions in facilitating the development of the APN is crucial. This includes the standard of the curriculum and the unity of nurses (Jarvis, 1999).

6.5.3. Health Problem Trends

Changes in health problem trends became a facilitating factor for APN development because nurses who give care to patients with chronic and complex diseases should be specialists who need to be knowledgeable and skilled:

'Another facilitating factor is an increase of complex diseases. I think there are many patients with chronic illness. If there are changes of disease or the progression of a disease, caused by many factors, for example technological changes, there is an encouragement to study in depth in that disease. There are changes or more complications. They (nurses) should learn how to look after complex or chronic diseases, which need a particular and knowledgeable staff (S3)'

6.5.4. Nurses Themselves

The participants reported that the most important factor to initiate changes for APN development is the nurses themselves:

'The real facilitating factor is myself. I have to look at myself whether I am ready to be or not? If I am ready, have I prepared myself to be APN or not? If in my heart, I don't want to be APN, I won't be. If I think I intend to be an APN because I see the importance of the APN, what will

happen? What is the advantage? What is the benefit? If I think OK, I know the reasons I will have an intention to be APN and improve myself...(S10)'

'...it begins with myself, we have to prepare ourselves like this and that. Yes, I have to make others see that I have skill. But it doesn't mean I have to fight alone. There must be other related factors to push me to progress smoothly and well...(S7)'

The participants focused on their own intentions (or mental preparation) and readiness as a very important beginning of their transformation:

'Another factor is ourselves. If we are not ready to be APN, it won't work...(S21)'

'The facilitating factor must be myself. First, I must have an intention. I mean myself, my mind. As my colleagues have said, making our mind up. Preparing our mind first, if we have a good preparation of our mind, it will be a facilitating factor for us to meet the goal. We all know that to be an APN is a hard job. If our mind is ready for change, it will be a facilitating factor...(S24)'

Before applying for the examination, nurses must prepare themselves to meet the requirements of the TNC. Thus they must be knowledgeable and skilled in the particular area they have chosen. They have to demonstrate to the examiners that they have performed all the roles of the APN in clinical practice already:

'Other facilitating factors are knowledge and skill. We have to be well prepared according to the regulation of the TNC. We must have at least 3 years experiences. We must be certified. Therefore, we have to prepare our knowledge and skill ...(S24)'

One participant mentioned that nurses were the most important factor in meeting the need for the APN:

'...Actually, it depends on ourselves if the system was excluded. At the moment, our system is not ready. We adopt the APN concept from

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abroad. It is just the beginning for both; the TNC and the master degree students...(S25)'

Although each nurse had strong intentions of becoming an APN, some factors may discourage them, e.g. hard work and health problems. Hard work may not directly affect their intentions, but hard work with no incentive scheme could be a discouragement. Staff shortages was one factor that made the work harder:

> '...An inhibiting factor is found when we work as an APN. For example, while we were studying, we found a lot of obstacles. At the stage of increasing our knowledge, there were many obstacles. We have our intention. For me, when I first came to study I have 100% of an intention or more than 100 because I want to change something. I had a strong intention. This is an internal facilitating factor. But when I faced many obstacles, my heart is getting small....(S24)'

> 'Another inhibiting factor is the nurse him/herself because to become APN is hard work. They have to work in their field practice not only in a ward but outside too. They have to increase knowledge for their own benefit. Working very hard may become an obstacle and discourage that person (S1)'

> '...ourselves, our health, because we have to work hard. To become APN is to sacrifice; because the ratio of nurses and patients in wards at the present time is not in balance. If we have many patients but fewer nurses, meeting the goal is difficult. If our health may deteriorate, we can't continue the work. We arrive home exhausted (S2)'

Two participants explained that there was a shortage of staff for two reasons. First, funding for employing nurses at present is not adequate. Second, the public service system was in the process of transformation from fully supported to half supported by the government. Consequently, the hospitals may have to restrict the number of staff they recruit. This could further affect the employment of the APN in the future:

> 'Not enough. It needs to be solved. The budget is a big problem. It comes like lot by lot. We are moving out of the system too. I think this is an obstacle (S2)'

'...At the moment, even staff nurses who work each shift are not enough. Thus, to have APN means staff nurses will be pulled out. Therefore in clinical practice, we will have APN and staff nurse. If APN is another kind of job (S1)'

Obstacles that were described as affecting attitudes towards the APN were summarised as internal and external inhibiting factors:

'...inhibiting factors are separated into internal and external factors. Internal factors are our attitudes. OK, we like it (APN). We want to be (APN) and we think it sounds good. But when we face troubles, are our attitudes going to change? Secondly, external factors, in terms of organisation, both acceptance from our professional colleagues, other professions and acceptance by patients (S10)'

6.5.5. Colleagues

The development of the APN seems to be greatly affected by their colleagues' attitudes and devotion to unity. As mentioned previously, there is a large number of nurses in Thailand, but they have no power. United nurses have more power, enabling negotiation with the politicians or the government in establishing laws and their enforcement. However, it was suggested that evidence of quality in nursing must be visible to the public, if APNs are to gain acceptance:

'...the unity of professional nurses. It helps the APN development in practical ways (S1)'

'When the structure is good, then we nurses must be smart and good also. Another thing that makes them accept is our knowledge and skill. The evidence must be shown (S5)'

Two participants explained further that unity among nurses was not strong enough and that this could affect the development of the APN. The support from the TNC and work organisations also remains uncertain:

'…At the time when the news (about the APN) spread out, there was rejection, because it divided nurses. This split up different levels of all nurses. Thai nurses deeply felt that they do not form as a group. No unity, no strength and have dissociated ideas…(S9)'

'…our profession is a large group, but we lack power. Thus, I wish the nursing organisation, the TNC and the work organisation have a strong intention to build the APN up. Not just follow a current or idea of creating a better post than general nursing staff. I wonder if they all want to help or not (S17)'

Some participants commented that the understanding of colleagues, both nurses and doctors, about the role of the APN was poor:

'…if the people in the same profession do not understand the importance of APN. What are their roles? Why do they have to do this? If they don't understand, they won't co-operate. They will see that we don't work but do other jobs. Because being an APN is not simply working in a ward. We work as collaborators, educators and co-operators (with other departments). Others may criticise us as we didn't take responsibility for our work on a ward (S10)'

'Our colleagues, nurses and doctors are important too. If doctors don't accept or agree with us that the APN can help them to look after patients or help them by doing the jobs which they cannot do themselves, if they don't think the APN is useful or help them, this is not good. Sometimes we care for patients but doctors might say we do too much. We do more than our role. We have no right to do such things for his/her patients. Actually, doctors do not own patients. Doctors are caregivers. They don't own the patients' life…(S8)'

'…At colleagues' level, if they don't have the right perception about the APN concept, they may not co-operate or support our APN roles (S18)'

Additionally, it was pointed out that nurses and doctors could be obstacles if they lacked knowledge about the benefits of the implication of APN:

'…our colleagues (professional nurses) are the important problems and obstacles (S20)'

'...But inhibiting factors such as nurses, doctors, and others may ask why we have to do that? Why don't we do our normal work? Why we take too much roles (both nurse and doctor roles)? Those are doctors' job. Why don't we let doctors do? Why we have to take this role and discourage ourselves? (S21)'

'...no matter we develop ourselves but the system doesn't want us to take this role. If we had done it, for example, we want to study cases in our ward. We want to give a holistic care. When we close our eyes, we know we can't if our colleagues don't accept that we take another role. We still have to other jobs. But if there is a clear role for APN like abroad, having office and others, these will facilitate us to do our roles. There will be a real APN role in a hospital (S16)'

Among others, the doctor was highlighted as the most important colleague who should have information about the APN:

'...other professionals especially doctors. If they know, understand and accept the APN at this point, to be an APN will be easier (S17)'

'...Another important professional is the doctor. They are working with us. Because in Thailand at present, they are not wide awake enough. Therefore, if our profession or we want to make them see the importance and the need for the APN, we have to take action to make them accept us. I think this will encourage others to co-operate with us (S20)'

One participant clearly stated that her colleagues lacked knowledge about the APN. It could be concluded that lacking acceptance of other health care professionals can limit the development of any role, including that of the APN:

'...when I came to study and go back to my hospital, nobody knows about the APN at all. They don't think the APN is important (S15)'

'Acceptance from people around me, from other professional colleagues, everybody that we work with. If our colleagues and those in other disciplines do not accept the APN, it makes us unable to do what we want to (S5)'

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Lack of cooperation of doctors and confrontation by nurses were also reported by Jarvis (1999) who had encountered these during her transition to nurse practitioner in a surgical intensive care unit. It was suggested that nurses should beware of the challenges and the need for support from colleagues (Jarvis, 1999). This would encourage nurses to continue developing their roles as APN. The obstacles which had an impact on the development of the APN in terms of psychological effects were described as being 'undermined, ignored, excluded, blamed, verbally abused, stigmatised and they were made invisible' (Martin and Hutchinson, 1999, pp.11-12). Furthermore, Leon-Demare *et al.* (1999) also reported that the APNs were stigmatised and opposed by doctors because doctors thought that the APNs were being substituted for and competing with them. Page and Arena (1991) recommended that the APN must use effective coping mechanisms and creative ideas to conquer the resistance or opposition of others. Other strategies included: time management, becoming a politician, documenting and providing portfolios to the superior and continued working in the clinical area (Page and Arena, 1991). Draye and Brown (2000, p.65-66) recommended that the APN should apply the following tactics to overcome the above challenges: 'establishing credibility, explaining oneself and choosing the battles'. In addition, the APN should be able to assess situations whether they should fight or flee. It is suggested that the APN should employ communication and negotiation skills to diminish conflict (Chien and Ip, 2001).

It could be argued that credibility can be established by increasing knowledge and skills, to be more competent. The qualifications, scope of practice and the role of the

APN must be clearly understood by others, particularly colleagues, administrative staff and the public. Draye and Brown (2000) summarised that the APN must focus on the general objectives of the team instead of building up feelings of antagonism.

6.5.6. Work Organisation

Work organisation was discussed widely in terms of facilitating and inhibiting factors. These included demands, career structure, post, salary scale, access to information technology, the nurses' status and image and communication and information technology. It was also pointed out that work organisations should initiate changes and this could be a significant factor in achieving the success of the APN.

Demand

The demand for the APN within work organisations was reported as a significant factor in supporting the development of the APN. However, the need for the APN was not assured:

> '...The image of the APN is good but there is no line of authorisation in my hospital. I have started studying in APN programme, therefore, I wish I could do a survey about my organisation demand...(S15)'

> 'We may want to be an APN but our organisation may not. There is nothing clear at the moment. If we say we want to do it, no matter what they say, we will do it, but the organisation doesn't agree. We are not the only ones who work for the organisation, not only nurses. We still have to co-operate with many people like doctors, physiotherapists and others. If they don't want the APN like we do, we will be discouraged. We were worn out. Nothing improved when we do...(S13)'

> '...There are many factors such as organisational support, seeing the importance of APN, seeing the importance of patient's outcome (S13)'

The participant emphasised the importance of the need for the APN in the workplace:

> '...Another thing is a working organisation's need. If our organisations don't see the importance, an APN is not necessary. They won't help us meeting our goals (S21)'

Career Structure

The career structure within the workplace was broadly discussed. It was suggested

that the APN should be included in the career structure of the workplace and the post,

job description and salary scale should be established:

> '...everybody must accept APN; including the law, and working organisations. It must be must accepted by having posts and being included in work organisation structure. It must become a part of the nursing service structure (S1)'

> 'It should be our organisations which start changes. We have to prepare ourselves to initiates the APN while other people should have a chance to learn together with us. They can prepare themselves at the same time. Then, when there is APN, they will be more accepted. If there is APN in our organisation but she/he was not accepted by ordinary people or others who don't know or don't understand (APN), there might be resistance, which would take even longer (S4)'

> '...I think if I came to study, I can bring this knowledge to develop my unit. When I study in the APN curriculum, I sat and thought it might be possible. But my organisation or administrators don't understand about the APN at all. If you ask me whether there will be APNs in the future or not, I don't know...(16)'

> '...If we think our organisation has no idea at all about why we need to be an APN, it is certainly a problem in terms of structure, post, job description for us and also salary and administrator too...(S10)'

> '...Other external factors are the work system and colleagues. At present, one obstacle is our colleagues. They don't understand what an APN is. This is a very important factor. If our working organisation accepted APN, they are facilitating factor (S24)'

Having a clear job description for the APN can facilitate the role development:

> 'I think my job description. Because routine jobs are hard enough. There are more than enough routine jobs. To be an APN, we need a lot of time to be with patients (S 28)'

Lack of posts in the work organisation was highlighted as an inhibiting factor for APN development. Furthermore, it was noted that promotion after graduation was not assured:

> '...it should be an organisation system...the work organisation didn't really know about the APN roles. They didn't understand the necessary of the APN. This causes frustration to many people (nurses). They (nurses) don't feel confidence to come to study. Another thing is an organisational structure. There is nothing telling us what we can do in the future. There is no post for us after we graduated. There is no APN in the organisation chart. I cannot see my future. If we graduate, where are we going to be? What are we going to do? It's so difficult (S27)'

Nurses' Status and Image

Chang and Wong (2001) reported that doctors were in a higher position among health care professionals. Having the APN in the work organisation may increase pressure on other health team members. One participant showed the frustration felt by nurses at work, particularly, when the APN was appointed. Their colleagues may feel that, together with doctors, the APN would become another higher category of staff. This participant stated that the status of the nurse at work was lower than doctors:

> 'People (nurses) who don't know, worry what they are going to be? What is going to happen? They work for patients, look after patients and care for patients. They must look after doctors, serving all kinds of people. Then there will be another level of nurse above. Everybody worries about themselves (S9)'

In support of the participants' comments, the author has experienced the same feeling during the ward round. Nurses in Thailand have to carry the patients' chart, prepare wound dressing sets or specimen containers for doctors. These practices represent the acceptance of inferior status. This is supported by Mania and Street (2001) who reported that ward rounds in critical care areas were dominated by doctors and benefited doctors only, e.g. teaching junior doctors. Moreover, nurses were hardly involved in making clinical decisions but gave additional information only.

It was noted that doctors felt that they were leaders and nurses were the followers (Jones, 2003). Leipzig *et al.* (2002) also reported that the doctors considered themselves natural team leaders of the multidisciplinary health care team. Doctors view nurses as follows: 'first line of defence for doctors'; 'eyes and ears on the ward in his absence'; 'obeying the doctors' orders' and nurses should 'ensure that doctors are not pestered unnecessarily or thoughtlessly' (Mackay, 1996, p.5,9). It can be said that the APN may have to work very hard to change doctors' ideas and improve nurses' status and image. Jones (1999, p.42) stated that 'Nurses do not, and may never have the same power as doctors and other professionals unless they can become skilled at raising their profiles'.

Communication and Information Technology

Being an 'effective communicator' was reported as one of five competencies for the APN (Catini and Knowles, 1999, p.508). It was further described that, to maintain the effectiveness of communication, the APN should follow the standards and guidelines

with regard to communication within the work organisation, keeping records and discussion with other staff including administrative staff if problems occurred (Cattini and Knowles, 1999). Accessibility of the communication and information technology in work organisations were suggested by one participant as affecting the development of the APN:

> 'It depends on the structure of the organisation and also technology. What kinds of communication are there? In what places or hospitals where we work? These things should be available to help us learn better. This will create APN. It will be seen more clearly (S2)'

6.5.7. The Government Policy and the Laws

The participants suggested that the government could promote the development of the APN by creating a policy to include the following: post, job description and salary scale. Enforcement of laws relevant to the APN should be considered:

> '...everybody must accept APN; including the law, and working organisations. It must be must accepted by having posts and structure. It must become a part of the nursing service structure (S1)'

> '...policy...health care reform...it must be all reformed and fit together. We must create the reformation not just for wait it's being accepted (S5)'

> '..the first facilitating factor is the government policy for increase the number of APN. Second, the ministry of Public Health must see the importance of APN. That will help find the way to increase production of APN...(S6)'

One participant felt that the government should create and implement a policy utilising the APN within the human resources. The NP was seen as suited to the outreach strategy and administrative staff should be encouraged to adopt this vision:

> 'Another inhibiting factor is a ministry structure. As far as I know, the NP is a clearer structure...(S22)'

Kelvin *et al.* (1999) gave an example of a law in the USA which supports the implementation of the APN, e.g. the requirement for doctors to employ APN. In the future, it is hoped that the Thai government may also consider new laws for the APN.

6.5.8. Public Relations

Public relations was described as both a facilitating and inhibiting factor for the development of the APN. The general public would understand the role of the APN if it was explained to them accurately. The participants recommended that a network should be set-up to improve public relations:

> '…other people should have a chance to learn together with us….If there is APN in our organisation but she/he was not accepted by ordinary people or others who don't know or don't understand (APN), there might be a resistance which would take even longer (S4)'

> '…Having network to inform them that there is APN would help. Then people would accept and know more (S2)'

One participant highlighted the importance of promoting the nurse's image as presented by the media. The APNs should be presented to the public, enabling people to understand their capabilities:

> '…I wish to change this culture but it might be difficult because even the media didn't help. For example, in a television, a nurse walks behind a doctor, holding a patient's chart, puts the blanket on a patient, gives a patient water and food. That's all. The patients should know how much APN can do (S13)'

6.5.9. Patients

Patients appeared to have limited knowledge about the APN. This may become an

obstacle for them if patients do not accept the need and the importance of the APN. It

was suggested that patients should understand the role and qualifications of the APN.

They should be made aware of the differences between the APN and other staff

nurses. With this understanding, patients would agree to be seen by APNs. The

participants also explained that patients do not see the importance of nurses:

> '...The patients should understand this point. This will be another
> facilitating factor for the success of APN. Make me feel I want to be APN
> (S8)'

> '...If we send our patients to nurses, they won't accept. They will ask
> 'Why do I have to see a nurse? Why don't you let me see a doctor? (S8)'

> '...At least they should be informed that nurses could do nearly the same
> things as doctors...From my experience, nurses can detect any conditions
> faster than doctors can because we are with patients more than doctors.
> But the goodwill goes to doctors. If nurses can't make patients satisfied,
> they will blame us (S13)'

In the critical care unit, it is important for patients' relatives to know about the APN.

The study of Paredes and Frank (2000) about the perceptions of nurses and parents in

a neonatal intensive care unit was a good example of research being used to increase

the understanding of the role in both groups. The results could be used as a

framework when planning future communication with relatives in critical care.

6.5.10. Preceptors

A preceptor was not as widely discussed as other factors. There was only one

participant who mentioned the necessity of mentors or preceptors. This is quite

significant, because without the preceptor, APNs may find it difficult to develop their knowledge and skill. Practically, doctors and experienced APNs can be preceptors for nurses who are developing their roles:

> 'There should be mentors or preceptors. These are facilitating factors. If there is a mentor to help us at this point, we can see a clearer picture. It really helps us (S11)'

6.5.11. Administrative Staff

According the working culture in Thailand, administrative staff plays an important role in initiating changes. Therefore, their support becomes a significant factor in the development of the APN. For instance, giving study leave and arranging time off duty that suits their class schedule would be helpful when nurses are studying for their master degree:

> '...a nursing director should have this concept for us first, then it facilitates us (S23)'

> '...If they see the importance and push it up, they will facilitate APN development. But if we want the APN but the administrative staff doesn't, APN can't be borne. This is a very important factor (S14)'

> '...A working structure may be a factor. The administrators may not understand the APN concept. When we present something (about APN), they don't understand and may not co-operate with us. This is a very important factor...(S18)'

> 'Facilitating factors are encouragement, supporters and head of departments who support us to continue studying or support us to take this (APN) role (S21)'

Two participants mentioned lack of support from their administrator. They were part time students who had to study in their own time and pay their own school fees.

Being part-time students, they have to work during weekdays and study on weekends.

These made them work very hard:

> 'Our administrator should support us such study leave...They said, 'if you want to study, you have to manage your own time. You take responsibility to yourself'. There is no support in studying at all. This a very important external factor apart from ourselves. I think it is a big discouragement (S25)'

> 'Coming to study in this programme, we have to pay by ourselves, use our own time, our day off too. Giving us study leave is something they could do to help. We didn't ask for extra day off comparing to others. We use all our own day off and all our resources. There should be some support because after graduated, we will go back to develop our unit (S25)'

One reason that the administrative nurse did not support the development of the APN was jealousy. The administrative nurses felt threatened by the APN, thinking that they would take over their role:

> 'If we make them see that the APN will not do any harm to them, will not let them lose power but focuses on patients....They will support us more (S8)'

> '...it seems like everybody worries about their own benefits. It sounds like there is somebody above you. Generally, there are practical nurses, technical nurses and registered nurses, that's all. And there is no clear separation. But when there is APN, so what happen to the previous types? (S10)'

Two participants added that the hierarchical system caused a delay in the development of APN. Promotion was normally offered to the senior staff. Thus, if a junior nurse held a masters degree and was qualified as an APN, it would be difficult to get promotion:

> '...a nursing director and head nurse don't see the importance of APN. They don't want to make it happen. You must not be smarter than me. There is a senior-junior system. New qualified staff nurses who are

smart and skilful are not promoted. They can't use all their skills. So it is 'a swallowing system'. It means smart staff cannot do what they want to or grow up, if they are not senior staff (S16)'

'...it is quite difficult because working culture in Thailand is different from abroad. Acceptance is limited. We still use the system of senior, like senior and junior. It is quite difficult...(S7)'

Chuk (1997) suggested that the APN must use a collaborative role to fill the gap between themselves and the administrative staff. On the other hand, the author would like to argue that the work organisation should have a clear policy for the APN first, eg job description, line of organisation and scope of practice. Then it should be easier for the APN to collaborate with the administrative staff.

6.5.12. Incentive Scheme

An incentive scheme could be used to encourage nurses to work as the APN because they work harder than other nurses. The participants used salary as an example of an incentive scheme, although unfortunately it does not exist:

'...I used to work for quality assurance. I have to act as an APN but I still have to do the old job. How can I split myself to do all jobs? My tutor said I can do but I have to work harder to make them see the difference. I think the APN role development will be very slow. How long does it take to get a real APN after graduation? (S15)'

'...an incentive salary was not set up yet. I don't mean greedy but look at APN roles. There are many roles. Sometime, we have to use a lot of our own time. Like in foreign countries, patients can consult them (APN) at anytime. We have to use our own time for patients, not only an office hour. Thus, the salary should be reasonable (S19)'

'Nurse practitioners in our community should earn more. For example, the insurance system that they use. If a nurse is excellent, patients will trust them (S2)'

'Because there is no APN in Thailand. Another thing is extra income. Our tiredness will disappear if we have that (S4)'

6.5.13. Information Technology

Information technology is involved in the role of the APN in terms of conducting research and evidence based practice. This technology is not available in all areas in Thailand and this may be one of the obstacles preventing APNs from developing their role:

> 'When we talk about information technology, nursing research has been done for a long time. If it is not an academic institution or small community hospital, there are not many research utilization...When looking at the resources, there is the Internet but not in our province, we cannot use the Internet. We don't have this kind of service. Not just a little but none. Small provinces don't have it. There are only old books in the library, no updated knowledge (S1)'

> '...our technology is slowly developed. Like I go back to work at my hospital, the information technology is not ready. There are so many factors that make us unable to take APN roles (S7)'

Some of the facilitating and inhibiting factors cited above were found to be congruent with Woods (1998b), who classified facilitating and inhibiting factors for the implementation of the APN as follows. Facilitating factors included: support from medical and nursing staff and nurse managers; knowledge and confidence of the APN; recognition and trust by medical staff, being valued and acknowledged by nursing colleagues, good staffing levels, being supernumerary in the APN post and autonomy. Inhibiting factors involved: poor staffing levels, remaining in the staffing numbers whilst developing their APN role, time and resource constraints, lack of understanding and acceptance of colleagues, unsuitable incentive schemes, conflict

with nurse managers, opposition and competition from the medical staff, substitution for junior doctors and insufficient protocols (Wood, 1998b).

The above results were supported by Fairley (2003) who summarised that factors influencing the implementation of the role of the nurse consultant in critical care included: the health care policy, law, work organisation, culture, nurses and personal factors.

6.6. Support for Making the Decision to Become an APN

Support for making the decision to become an APN was received from 47 substantive codes. Three sub-clusters were included relating to the responses from the question: 'Do you want to be an APN, why/why not?' The answers were divided into three groups: want to be (n=20), don't want to be (n=2) and not sure (n=6). Reasons why the participant decided to become an APN were broadly discussed, eg studying the APN masters degree programme, wanting to become a qualified practitioner, the need to change, to become a specialist, professional development and community needs. The participants who did not want to be an APN explained that they felt it was difficult to change the work organisation and they did not know the demand for the APN in their workplaces. Six participants were unsure about their decisions for the following reasons: the APN role was not suited to their present job, the future of the APN was still unclear and personal health problems.

6.6.1. The Reasons for Wanting to Become an APN

Hayden *et al.* (1982) reported that reasons why emergency nurse practitioners undertook their jobs included: the opportunity to use their skills, e.g. clinical skills and teaching; job location; support from medical staff; salary scale; reputation and a chance to increase their knowledge. According to Quaal (1999), Bridges' paradigm was used to assess nurses before making the decision to become an APN. The reasons were 'desires, abilities, temperament, assets' (Quaal, 1999, p.39). It was suggested that, before deciding to become an APN, nurses should ask themselves what are their aspirations, capabilities, and personalities. Finally, they should think about the advantages of being the APN. The participants widely discussed the reasons they wanted to become an APN. These appeared to correspond with the above methods of self-assessment. The reasons given by the participants were divided into eight categories: completing a masters degree programme, becoming a specialist, gaining acceptance, a need to change, personal career goals, to improve quality of care, shortage of doctors and interdisciplinary conflict.

Completing Master Degree Programme

Jones (2003) noted that the nurses who had post-basic education appeared to agree with the expansion of their roles. The results of this study are consistent with Jones' views because the participants who wished to become APN reported that studying the master degree programme allowed them to understand fully the role of the APN. Studying the master degree programme gave them inspiration. They also hoped to improve nursing care for patients:

'…if I finish my Master's degree I should have something different from undergraduate level nurses. I don't want to finish the master degree and go back to do the same job. We should do some more useful things for our patients. And the way we can do that is we have to prepare ourselves (S1)'

'…When I came to study, I knew that it is this one. We can do it, feel good. If there is APN, it is good…(S8)'

'…it was not my intention to come to study in the APN programme. I thought it was Adult Health Nursing like Med-Surg. But when I came to study, I learned what APN is. I think APN is good and see more roles for nurses. Nowadays, it is questioned. The productivity of doctors can be measured, what about the productivity of nurses? This cannot be measured. Nursing results cannot be measured or shown. Therefore, I want to be (APN) because of this…(S10)'

'…If I didn't want to be an APN, I wouldn't come to study or take the entrance examination. The more I study, the more I want to be (APN)…(S22)'

Becoming a Specialist

Having increased their knowledge and skills in a particular area, nurses wanted

to be APN:

'I want to be APN because then I know the area I am skilled in so I can do more in that area, not just do all things. I can choose the field I have skill in and work in depth in that field. We can become a leader in that area, able to teach and advise lesser skilled staff in that area (S3)'

'…they are not only have knowledge and skills but are to solve patients' problems which are more complex than what staff nurses can do. The APN should be able to solve complex problems and in depth. They are able to perform patient assessment, giving care to seriously ill patients in depth (S8)'

Two participants showed that they were confident with their decisions to become

APN. Their reply was simultaneous and forceful.

'Yes, I want to be APN (S2 and S4)'

Gaining Acceptance

The participants stated that they wanted their colleagues and patients to accept the APN. One participant said she wanted all nurses to develop their knowledge and skill to become APN. Being an APN may help increasing acceptance from others:

> '...Sometimes, from my own experience in a community hospital, I saw new graduate doctors do something that might negatively affect patients. I was there. I don't mean I am better then them but I have more experience. I can't say anything to them. They won't listen to me. They won't accept my opinion. I think it is good (to be APN) and wish all nurses would be interested in APN and increase our self confidence, to improve our profession (S5)'

> '...I am working in a specific area. I am knowledgeable and skilled at some level. But I still want to increase self- development and to be accepted...(S26)'

> 'For ordinary villagers, general people, formerly thought doctors are always good. But I want to say that the reason why I want to be (APN) is to defeat doctors. Sometimes we give care to patients 24 hours a day but doctors come for only a short time. Patients say they get better because of doctors, not because of us. Sometimes I felt that it's me that makes them get better, not doctors. Doctors receive all the goodwill. Sometimes I want to show patients that I can treat them as well as doctors do. Although we do not give medicines or other procedures, we give a better care because we do it 24 hours a day. I did all job...(S8)'

> '...I feel I want to be smart. I want to make them know my capability. If you ask whether I want to be APN or not? I want to be, because I want to be smart and make other professionals accept that professional nurse is smart. We do not only give nursing care (S14)'

> '...I have this knowledge. I can use this knowledge to treat patients, give a better service, and increase acceptance from my colleagues and patients (S22)'

A Need to Change

Need for a change was highlighted as another step necessary to move nursing in Thailand forward. A change agent was considered to be one of the important roles of the APN. It was believed that the APN is able to improve the reputation of the nursing profession:

> '...because Thailand is starting to have APN. If we don't start, we will always lag behind the countries in Europe. Even though we have to face many problems and difficulties because of our many roles, we have to be change agents. We may find resistance, but changing is a process. If we think it should not happen or it is difficult to have, it won't happen. Therefore, it must start although it is not really complete but it must start from now (S4)'

> '...APN is one of the important development in nursing profession. I am studying in an APN programme so I want to be an APN in the future. I am increasing my knowledge, experiences, and other skills. But I can be APN or not, this is another story. At the moment, I want to be APN so that I can help increasing nursing profession potentiality and others can see our importance (S18)'

Personal Career Goals

A personal career goals were reported as one reason for nurses to consider becoming APN. It was suggested that 'To achieve professional self-determination, nursing requires the confidence gained from knowledge and the developing of expertise' McSharry (1995, p.641). This was agreed with one participant:

> '...I am now working in a very critical area. I want to develop myself to be an APN because I will have more self-confidence. The more I develop myself, the more knowledge and skill I have. It helps me in making decisions to save patient's life...(S25)'

To Improve Quality of Care

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One participant stated that she would like to improve the quality of nursing care. For instance, performing clinical assessment and early detection. These may prevent deterioration or serious illness in patients:

> '...I work at PCU and RCU. I have to perform physical examination instead of doctor almost everyday. Therefore, when I come to study , I have this knowledge. I can use this knowledge to treat patients, give a better service, and increase an acceptance from my colleagues and patients (S22)'

Shortage of Doctors

At present, some nurses perform doctors' roles because there is no doctor available when needed. This situation normally occurs in a small hospital, such as a district hospital where there is only one or two doctors. When a doctor was not available, nurses in a district hospital assessed, gave diagnoses and emergency treatment. The participants hope that the APN can perform these roles better than general staff nurses, because they were qualified. Cardiopulmonary resuscitation was used as an example procedure which nurses can perform before doctors arrived. Shortage of doctors was reported as one factor in promoting advanced practice roles for nurses and encouraging nurses to become APN:

> 'I previously work in community hospital. Patients are mostly general. The number of doctor is small. Not many. Nurses who work at casualty have to do physical exams and treat patients. Even nurses who work in a ward will treat the patient before the doctor arrived. ...(S8)'

> '...I used to work at ER (emergency room) and the work is quite quick. Sometimes I have to think by myself, do by myself before doctor arrived...(S14)'

> '...sometimes a doctor who is on-call cannot come on time to perform resuscitation. It must be done in 4-5 minutes but doctors cannot come most of the time. It is a golden minute to safe a patient's life. If we were APN and practise under the law, then we can take this role. This

may save a patient's life and prevent complications. It helps increasing survival rate and decreasing death rate (S20)'

Two participants pointed out that the APN was an important health care provider at primary care level. The APN was expected not only to solve the problems experienced due to shortage of doctors but also to increase access to health services for patients in rural areas and provide education or mentorship for students:

> '...I want to be (APN) at the moment. I want to work. I am working at a primary care unit without a doctor. The doctor has resigned so there is no doctor to assess patients. There are only doctors in a district hospital. Therefore, we are short of doctors. I feel if I can do it, I want to do it for a hospital, because it is our home. We want to do what we can or what we are skilled in, for the villagers. If we are APN, it seems more respectful. At least, the villagers are assessed by expert nurses (S19)'

> '...to become an APN is a high investment. The investment is using my big sum of money. What I got will be useful for the villagers and families, if we were certified. Considering a four-year nursing programme (Bachelor degree), if there is APN, students may need not to practise in a hospital. They can practise in the community...(S23)'

Interdisciplinary Conflict

The participants thoroughly discussed the interdisciplinary conflict between doctors and nurses. Political and interdisciplinary conflict was unintentionally combined when considering the following events. First, the TNC was established in 1985. Since then, there have been seven presidents who were also doctors. It can be said that Thai Nurses were led by doctors for 14 years, until the year 2000, Associate Professor Boonthong became the first female president of the TNC and she was also a nurse. It was truly an era of reform, which corresponded to reform

of the health service systems in Thailand. Second, with regard to the Professional Nursing and Midwifery Act 1997, the nurse' role was clearly defined and included helping doctors to give treatment. From the above definition, it seems that nurses are doctors' helpers and generally, doctors were presumed to be leaders in the health care team.

The above events gradually built up conflicts between the two disciplines. Some nurses felt that this conflict increased their determination to become APN because of the competition:

> '...community hospitals can see clearly that if nurses do something and no problems occur, that is good. The words 'ordered by doctor' are used. But if there is problem and we report by telephone, the doctor may say he/she didn't order. Or if a nurse treated patient completely, patients don't think it is the nurse who did that but a doctor. We did it, why should others take money and reputation? We are still the same. If it is like this, although we have certification, we can see nursing practice clearly. We take our responsibility. No need to have others to take responsibility. (S8)'

Two participants wanted to become APN but remained doubtful whether they could perform this role. The concept was only recently adopted into the Thai nursing system and they did not know how the patients would respond:

> 'I want to be, but the situation in Thailand is, we are in transition period. To become an APN is not easy because we don't have a model to follow. We are the first group who try to find a clear way. But if there is APN, it will greatly benefit patients, the profession and organisations. So the nursing profession may be more accepted by other disciplines and the public (S2)'

> '...I want to be but how much I can do, we have wait and see. At the moment, I am studying. If I were an APN, it is a professional development, acceptance and also helps people. Patients need not to wait for a doctor only. Nurses can do some procedures but it is not

their role. There is no law to protect them. Therefore, I dare not to make the decision. If possible, being an APN should be accepted from a community. APN help increasing a quality of hospital services (S21)'

6.6.2. Not Sure They Want to be APN or Not

Some participants hesitated to answer whether they wanted to be APN or not, because of the uncertainty of the future, lack of clarity of the role, unsuitability for the present job and personal reasons.

Uncertainty of the Future

The uncertainty of the future for the APN was highlighted as one reason why the participant did not feel confident to reply whether or not she wanted to become an APN:

> '...APN is one of the important development in nursing profession. I am studying in an APN programme so I want to be an APN in the future. I am increasing my knowledge, experiences, and other skills. But I can be APN or not, this is another story. At the moment, I want to be APN so that I can help increasing nursing profession potentiality and others can see our importance (S18)'

Lack of Clarity of the Role

Although some participants reported their intention to become APN, others said they were unsure, due to the uncertainty regarding this role in Thailand:

> 'I am not sure. Our tutor said we have to be trained during the first three years after graduation. We have to study many cases. At the moment, I cannot see a clear picture of that stage. If possible, I wish to be an APN... (S11)'

'...on the one hand I want to be an APN but on the other hand, I don't want to. I don't want to be an APN because nothing is clear. I don't know what's going on in the future. But from what I have studied, I want to be an APN. I want to see a clear picture of APN. I work in a surgical ICU, we should have something to improve our patients' conditions or outcomes. It should be evidence based practices. This is why I want to be. But I don't want to be because of the future is unsettled. There is no structure, post, and job description. I don't want to do all jobs without knowing my position. If the APN post is set up, I wish to know clearly, where is my position and how to work. Not doing both routine and the APN job, and the role is not clear. At least, it should be clear that, if you are APN, what the APN should do. Where is APN in the organisation chart? This is what I want to be (S13)'

Unsuitable for the Present Job

The APN role may not be suitable for the nurse's previous position:

'Personally, it is 50/50 because I am an administrator. I look at a wider picture. Coming to study in the APN programme helps me to develop a higher clinical skill. So that's why I want to study. If you ask about my real goal, do I want to be APN? It is not 100 %. But I agree that studying in this programme, I can bring a lot back and help in training my junior staff. I think it is also my own skill development, to be accepted in caring for patients (S27)'

Personal Reasons

Health status was stated as a personal reason why a participant was hesitating to

be an APN:

'I am also 50/50 because at one side, I think being an APN is hard work and one must continue self-development. I am not sure about my physical status. However, I will try my best (S28)'

6.6.3 Don't Want to be APN

Some participants replied that they did not want to become APN due to the

following reasons: It was inappropriate for their present job and personal reasons.

Incompatibility with Present Job

There were some participants who reported that they did not want to become APN because it was not compatible with their present job. They are a nurse lecturer and a nurse in community hospital:

> '...The important thing is I am not a direct care nurse but work at a college of nursing. I am a nurse lecturer. I think, to become an APN we have to take time in selecting our field. Before taking exam, we have to study in our field for 3 years. It is difficult to choose a field. Sometimes, my advisor said we can work with ward staff. That means we need to use our own time to give direct care but we have no time. There are so many things to do in our main job...(S6)'

> 'I don't want to be an APN because I came from a community hospital. I have experience and was trained to be a specialist nurse. When I go back to my hospital, it may not be useful. Patients have no complicated problems so they don't need expert nurses and high technology. When comparing nurses to other professions, for example, doctors. Specialist doctors who work at a community hospital don't use all of their skills. The community hospital needs only general doctors who can treat many simple diseases. I think of myself. If I am a real APN who works with a particular pop, the rest of the job is fundamental nursing. I am not able to do all other jobs. My knowledge cannot be used in a real practice (S12)'

Personal Reasons

Family commitment was a factor that one participant was concerned about and this discouraged her from becoming an APN:

> '...I think in the future, I will have my own family and I will be unable to spare my time to do that. If you ask me whether I really want to be APN or not? If I can choose, I won't be (S6)'

Bamford and Gibson (1999) suggested that there are three constraints for nurses developing their roles as the APN: time, skills and resources. In this study, lack of

time may be due to by personal commitments, as mentioned by the previous participant. Skill development is dependent on various factors. For instance, if the number of patients is small, the opportunity to practise and develop skills could be affected. Lack of enthusiasm of nurses may be another factor. Limited resources can be both a constraint and a factor which influences creative ideas in nurses when developing their roles by applying those resources to where they will be of the most benefit in practice.

6.7. The Suitability of the APN for Thai Health Service Systems

The suitability of the APN for the Thai health service system was determined from 34 substantive codes. These include three sub-clusters: suitable, unsuitable and uncertain. Most of the participants agreed that the APN concept was suitable for the present Thai health system. Their reasons were: compatibility with the government policy or health system reform. However, some participants felt that this concept would only fit in with the Thai health system if the concept was adjusted to Thai culture. Comparisons between the Thai and the US health service were also highlighted, with regard to the suitability of the implementation of the APN. Some participants did not agree with adopting this concept into the Thai health service because of the differences between the two health systems. Only one participant disclosed her uncertainty.

6.7.1. Suitability

Twenty-three participants agreed that the APN was suitable for the Thai health service system, giving the following reasons: health service systems reform, the need for change, critical illness, chronic illness and primary health services. These were congruent with Ball (1997) who suggested that the APN is needed because of health service system reform and the indistinct career pathway for nurses. One participant suggested that the APN is suitable for some clinical areas but not school nurses and district hospitals. Two participants proposed that APN is a suitable concept when adjusted to the Thai culture. Interdisciplinary collaboration was discussed extensively by five participants to illustrate that the APN is an appropriate concept for the Thai health service systems.

Health System Reform

First, it was explained that Thailand was in the process of health system reform. The government had implemented an outreach strategy in this policy. The participants stated that the APN should be the most suitable person to follow this policy:

> '...At present, health service systems in Thailand is reformed, focusing on an outreach strategy, therefore, nurses should do better than doctors. So the APN will promote people's health, which is good and suitable (S1)'

> '..it is emphasises a reaching-out strategy. So we need knowledge and skilful staff to teach and look after people by encouraging people to have more part in looking after their health; not just wait to be sick and come to hospitals...(S3)'

Two participants suggested that the NP and the CNS were both suitable for primary care services:

> '...In the Ninth National Economic Development Plan, they increase focusing on the NP, the outreach strategy. If you ask whether the NP is suitable for the outreach strategy because people's health is increasingly complicated, the CNS is still necessary (S6)'

> '...we must have the CNS and the NP. That is, we let them be looked after at primary level, giving instruction and nursing care. It is suitable and better...(S7)'

At present, primary care units are organised by various health care staff, e.g. technical nurses and healthcare volunteers. These staff are not qualified nurses; therefore they are able to provide only simple treatments and give advice to people. The APN could be the most appropriate person to increase both access to health services and quality of care for people, because they can perform advanced procedures, eg physical assessment and diagnosis. Now is the most suitable time, because it is an era of health system reform. APNs would also be available in the 30 Baht and primary care unit (PCU) project. In community hospitals, the highest number of doctors is three. One of the three is a medical director the others are administrators. Working at a hospital is hard, but they also have to work at a PCU. This decreases the quality of services. If there was an APN, patients at the PCU need not wait for doctors. The participants suggested that a family nurse practitioner is suitable for providing healthcare in community setting:

> '...the APN is very suitable at present because it help solving problem of quality services...It is impossible for all PCU to have a doctor and become a standard PCU. There should be an APN because our role is clear...We can do more, both counselling, giving advice, referring, detection, and being a mentor for student nurses (S23)'

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'...If the NP worked in the community, it would be more appropriate for a present health system, which focuses on the outreach strategy. As we have mentioned, there must be a doctor in a PCU but the number of doctor is too small. The number of nurses is bigger. The outreach strategy should fit for the nurses(S24)'

'...at least a present system, a PCU is a centre for primary care. We don't know how the public health staff treats people. If there is NP, they should better control a primary care standard. Family nurse should be suitable for the outreach strategy...(S24)'

A Need for Change

When the government initiated the health system reform, it was a good opportunity to promote changes. The APN was considered as one of the changes in the health service systems, because nurses had extended their roles in order to provide a better health service and increase the positive patient outcomes:

'...it is suitable to use this crisis as an opportunity to change many things...this is a good opportunity to change many things at the same time...People are alert with ISO and HA. If we can make it happen in this period, people may accept us more. System, opportunity and concepts are here; so this should be a good time to do (S2)'

'...It should be started because other countries are going forward already. We should start towards this goal (S4)'

'...now is the time for change. An idea of old structure is fixed. It means only senior nurse can make the decision. I think they (senior nurse) don't know and do not accept this point (S18)'

'...it is a changing period. A health system reform changes a health service concept from giving care in hospitals to the outreach strategies. An APN is suitable at this time because it help increasing quality of care. Patients have more choice to choose... (S20)'

One participant emphasised the need for change immediately, saying that it is better to start now, otherwise it will never be done:

'...it is a transition period, a health system reform period. If we don't start at the moment, we don't know when to start. It will grow so slow, not begin at all. Therefore, it is a good opportunity but it might be difficult and takes time. But when talking about Thailand, is it better to start later? We must see that the Thai people and system may not develop. So it might be better to start now (S8)'

Critical Illness

Jones (2003) reported that nurses took on doctors' roles in order to reduce the length of time patients had to wait for treatment. This was supported by the participant in this study. Increasing severity of illness is another factor which supports the usefulness of the APN. One participant who worked in ICU proposed that the APN was able to perform advanced roles when a doctor was not available. There were urgent patients in ICU. Thus, the APN was seen as a very suitable member of the healthcare staff in ICU:

'...APN is suitable in clinical practice...because in my hospital, a doctor who is on duty has not enough time to look after patients. As we all know, the nurse is a person who assesses the situation, assesses patients before doctors and quicker than doctors. In my hospital, doctors stay outside the hospital, a doctor who is on-call is a resident (registrar), extern (senior house officer) or intern (house officer). Actually, they have knowledge but for experience, we (nurses) can detect quicker. Therefore, we can use the APN to keep patients away from crisis, giving faster detection, faster report. It is a better help for patients. But for NP, I am not sure (S16)'

Chronic Illness

As mentioned previously, there are changes in the trends of health problems in Thai people. The incidences of chronic and complex diseases are increasing. In hospital, patients require knowledgeable and skilled staff, e.g. to operate modern medical equipment and interpret laboratory tests. In the community, the APN can

take part in consultations for patients and families when they are transferred to their homes:

> '...it is possible because I look after chronic patients. Staying in a hospital for a long time until they are completely healed is difficult. There should be a referring system. If there is APN, they have enough potential to be a consultant. I think it is good for decreasing the government expenses and admission rate (S28)'

> '...chronically ill patients were increased, so they need the APN to look after them. Therefore, we need to prepare nurses to look after chronically ill patients in order to decrease the expense of treatment (S3)'

Primary Health Services

It was previously explained that the present staff in primary care units are not qualified. Thus, to increase the scope of primary health services, these staff should be educated to a higher level:

> '...there are health centres and health volunteers. They don't have knowledge. So there is a problem that they cannot diagnose and protect the patient at the early stage. They send all patients to hospitals. Even though there are many new buildings (in hospitals for admission), there are still not enough. It is suitable to change by having new system. We don't want the old ones. We have to take the old root out. We have to build a new base. Starting from the present is better than solving problems at the end (S8)'

> '...The NP is appropriate for community hospital because at present, nurses work instead of doctors. To produce doctors takes six years and a lot of money. To use nurses in that position is good and suitable; but at the moment, there is not enough staff (nurses) (S5)'

Suitability for Some Clinical Areas

Only one participant had a different opinion from the others about the suitability of the APN. It was pointed out that not every clinical area needed an APN:

> 'It is suitable but some APN don't need so much skill, such as: school nurse and district hospital...(S5)'

The same point is argued by two commentators in the literature. First, Rajsky-Steed (1996) reported that as a school nurse practitioner she used her knowledge and experience in giving direct care, teaching and co-ordinating. It was explained that she performed advanced roles in giving direct care by history taking, physical examination, emergency care for sports injuries and follow up services. As a teacher, she educated students, parents and her colleagues about normal growth and development as well as illness. Moreover, she was a preceptor for nurse practitioner students. As a co-ordinator, she worked with other staff to arrange registration for students and the schedule of journal club meetings for nurse practitioners. Second, Bergeron et al. (1999) indicated that the advantages of employing the APN and the physician's assistant in small rural hospitals were that the employment bill was reduced and better and health services were provided to people. It could be said that the APN is suitable for district hospitals and schools.

If nurses become APN, this could affect the number of general nurses. The problems of shortages of staff nurses remained unsolved. The participant suggested that the present staff should be developed, not replaced with the APN:

'I would like to add my support to change the system to have prevention at the primary level. But I also think for prevention at the primary level, we should develop the human resources we have. Not putting new staff in without developing old staff to have more knowledge. We should develop current staff. If we know their limitation, we should help them to develop themselves. Nurses as well, should develop themselves; otherwise, we won't have a position in society. We may disappear (S7)'

Interdisciplinary Collaboration

Some significant issues relevant to the interdisciplinary collaboration were

discussed. Medical staff was focused on, as they work closely with nurses:

'...the present health system really needs APN. Not long ago, the National Health Act was initiated. Doctors are afraid of this because patients may take advantages. But we are APN, we study this programme and know what are the patients' rights? We know about the patient's right. They are human beings and we accept this point. A real APN must have this spirit...(S19)'

This participant further explained the reaction of medical staff towards the new

National Health Act:

'...If doctors don't accept this or are not ready to accept, they resign. In my hospital, many doctors had thought about quitting their job. Some of them have resigned already. We should take this role instead of doctors in order to solve two problems: doctors' shortage and an undone job (S19)'

The issue of shortage of doctors was explained as being very serious in

small hospitals, especially district hospitals:

'...in the next two years, doctors' productivity will be decreased. We may not have enough doctors. Perhaps, they may resign and move to the private sector. They don't seem like working in the public sector, so we are short of doctors. At present, we are facing this problem. There is no doctor in a (public) hospital in a rural area. Some hospitals have only one doctor and he sometimes goes to a meeting. The

patients have no opportunity to see a doctor. If there is an APN, patient's detection (assessment or physical examination), and primary care will be improved because nurses are normally always with a patient. Therefore, nurse can do a better detection than a doctor. Although there is a doctor in a hospital, there should be an APN in each hospital too (S21)'

One participant described that nurses play an important role in giving advice to patients and relatives:

'I am working in a big hospital. Doctors don't explain. They don't educate patients about disease or tell them about their diagnosis. Sometimes, they do but not clearly. If we take an APN role in a big hospital, the more we know, the more we can explain. Doctors may do the first half, then we can do the rest. We can explain to his/her family or relative, so that everybody realises what's happening. At least the patients know about their diseases, how to look after themselves and what is going to happen next. We can advise relatives about prevention and health promotion. These should help a lot (S25)'

A participant who worked in the medical school hospital also explained that doctors have to take on teaching roles as well as giving treatment. They have to spend part of their working hours teaching. The APN would be an appropriate person to fill this gap because they would be in the clinical area all the time:

'...there is a collaborative management between education and service in a medical school. A combined system between the two (education and service) cannot give a hundred percent services to patients because a service system was included. Therefore, there are many problems at all times because doctors cannot work 100% in a service part. They have to split their time into two, to teach and to give service. The patients do not receive full services. Doctors may be very smart, rich of experiences, full of skills in operating modern equipment but there is no time to do. This is why APN should be an important person to help (S27)'

One participant suggested that to be accepted by other disciplines specifically, medical staff, evidence of nursing knowledge and skill should be clearly demonstrated:

> 'It's suitable because now is a quality assurance era. There is collaboration as a teamwork among doctors and nurses. Doctors may accept us if we were knowledgeable. They will accept us. It is our opportunity to present our knowledge and skill in this era (S26).

Need for Adjustment

Two participants explained that there are differences among health service systems in terms of why the APN is needed. It was suggested that adjustments would be needed in order to implement this system in Thailand:

> 'Looking at the differences of health care system between Thailand and the United States of America. For America, it is about the health expenditure. But for us, it might be a problem of accessibility. The problem is different. Another thing is, if we consider a doctor-nurse ratio. Nurse: patient ratio is better than doctor: patient. We have a lot of responsibility. They (patients) don't have many choices. Thus if we use the APN, sometimes we can't see the difference between the APN and general staff nurse. It can't be seen. In foreign counties, the expenses were reduced. It is the right way to solve problems. That means, finding appropriate staff to develop skills, so that they can helps doctors to do physical examination and screening. Our need is not that point. The people just want to have the right to be treated without pay. Our problem is not the need for anybody to help. Doctors don't want anybody to help them to do the assessment. Doctors do not expect nurses to do more than what we can now (S15)'

> '...it is suitable. But we may have to make adjustments, such as research results from abroad. Samples are collected from other countries. Thus, we need to adjust it to be appropriate to use with the Thai population (S9)'

6.7.2. Unsuitability

The APN concept was discussed in terms of its suitability within Thai health service economics and interdisciplinary conflicts:

> '...it is not suitable, if we copy from abroad. They have health insurance. The insurance companies pay for people. Comparing with our country, only a few have health insurance. Thai people used to pay 500 Baht (average £7 if £1 =70 Baht) per family for a health insurance card. Community hospitals know very well that Thai people are poor. Thai people could not afford to pay that amount (S10)'

> '...the original concept of APN is not suitable. The APN concept from abroad was initiated because of high health expenditure. If they have APN, this expense is decreased. They use APNs instead of doctors at some level. But for our country, the APN concept is not initiated from the same reason as abroad. Doctors do not accept that they are in short supply. They still can do everything. They don't accept us to replace their positions. Thus, this concept is not yet suitable for Thailand (S13)'

6.7.3. Doubts

Only one participant expressed uncertainty about the suitability of the APN specifically at primary care level. Some doubts were cited, e.g. Why not use the present human resources? Will the APN roles overlap with others? It was queried that the present staff in health centre should be developed instead of employing new staff:

> '...I still wonder whether it is suitable for our system. When we consider issue by issue...There are health care givers and community nurses. Why don't they give care at primary level? Every village has staff, a health centre, public health staff, a developer. All staff helps developing preventions at the primary level. Where is the quality at this level? There are doctors in hospitals, nurses to prevent complex diseases but still there is no prevention? Why increasing illness, expenses? What is missing? But APN is now a suitable opportunity to put in. I wonder whether we can really solve all problems? Does our job overlap others? Nobody can tell because there is no APN. It is said

that they (APN) can do the job. They are different. I don't know whether it really overlaps or not in practice. I still wonder if it is suitable or not, but it is our chance (S10)'

6.8. The Expectations for the APN in ICU

The expectations for the APN in ICU were obtained from 54 substantive codes. These were divided into seven major sub-clusters: a direct carer, an educator, a researcher, a collaborator, a consultant and other roles necessary for the APN in ICU. The priority among roles was proposed by two participants. The necessary for the APN in ICU were determined as a spirit of serving, ethical decision-making, management, authority and qualified practitioner.

6.8.1. A Direct Carer

It could be said that direct carer is the real or original nurses' role because it involves giving direct care to patients. The following procedures are some examples of direct carer roles: giving bed baths, maintaining patients' safety, administering drugs and wound dressings. Read (1998) suggested that some procedures were performed by nurses instead of junior doctors: history taking, taking venous blood samples, insertion of venous catheters and administering drugs, referring patients and writing discharge letters. The above procedures require advanced knowledge and skills. Therefore, they were considered suitable roles for the APN.

The participants explained that the APN required in depth, up to date knowledge and higher skills to operate the modern equipment and perform invasive procedures:

> '...One important thing, direct care in ICU may more distinguished because we need to give holistic care, physical, mind, social and spirit. We (APN in ICU) seem to study much more than other staff nurses because there are many factors, such as respirator. We have to know about it. We have to know about invasive treatments. We must have more knowledge than other staff nurses...(S1)'

> 'The role of APN in ICU should cover all roles beginning with direct patient care. The APN and a staff nurse are different. The APN should have skill, new techniques from research and be promoted in organisation...(S4)'

> 'If the patient is getting better, we can help solving other problems, such as rehabilitation or psychosocial problems. In ICU, we may forget about psychosocial because we concentrate on physical problems (S26)'

The author would like to point out that nurses who work in ICU appear to be dominated by a highly technological environment. They were usually acknowledged by nurses from general wards as being technological experts because of their increased knowledge and skill in operating highly technical equipment. In this study, one participant used a ventilator as an example of modern equipment which nurses in ICU should know about not only how to operate it but also how to look after the patients who were being kept alive by this machine. Certainly, in this respect the APN was expected to have a higher level of knowledge and skill than general nurses:

> 'Most patients are on ventilators. Only a few patients who are not on ventilators. We must have knowledge about this. For example, we are interested in caring for patients who are on ventilator; what things should we should do for patients? What complications may occur, and

from what, if they are using a ventilator? We must know all about how to care for ventilated patients. We must have intuition. When we see a symptom, we can tell what's going to happen next and what we must do next (S8)'

It was stated that health assessment was another competency the APN must have:

'...It is good to have APN in ICU so that they can do health assessment. If we are not APN, we can give some primary care but the APN can read monitor and perform health assessment. They may perform a very good assessment and at the right time (S24)'

One participant suggested that the APN should be prepared to look after the patients' relatives and their families too:

'The role for patients may be insignificant but relatives, have to listen to information such as treatment plan; we have to listen to them too, not only give information. At least, in ICU, patient's rights are very important, in terminally ill patient. It should seriously studied because patients have the right to die (S4)'

Evidence based practice was considered a necessary skill for practise as APN.

'For direct care, they should have knowledge in their special interests to become a specialist in their fields. They should use evidence based practice by using knowledge, new research results and solve problems for critically ill patients (S10)'

'...They must know about disease, pathology and practise based on evidence and increase using guidelines for practice not just doing a routine job. They need evidence based practice and to take all role of fundamental nursing practice too (S3)'

As advanced practitioners, APNs should have autonomy in their practice. The participants focused on the autonomy of the APN in interpreting laboratory test results and making the decisions when weaning patients from the respirator:

'...they should be able to interpret lab results such as blood gases. These help us to understand when we discuss with doctors. Doctors will accept us in interpretation and explaining to relatives. When relatives have queries, they don't see doctors but nurses. We can answer and give the reasons why a patient is being like this or being in

this situation. It is really necessary for the APN to take this role...(S23)'

'My opinion is similar to my colleagues but a bit more in depth, such as weaning from respirator or blood gas results and monitor interpret. I think the ICU nurse should be smart enough to do these things (S28)'

Two participants tried to explain the different levels of practice between the APN and other nurses by comparing them with doctors:

'The roles of APN in ICU should be nearly the same as doctors, resident year one. That means they are able to be a consultant and treat patients, such as emergency procedure, before calling resident year two...(S27)'

'...They are also skilled in medical equipment. Sometimes they have more skill than doctors because doctors don't use those equipment at all time. Doctors may give orders but we give a better care. So I think it is suitable. The APN should perform many roles in ICU (S26)'

6.8.2. An Educator

Sigurdardottir (1999) stated that the expert should be an educator for patients, nurses and doctors. Being an expert, the APN should be able to transfer their knowledge and skill to other junior staff members, for instance, qualified staff nurses and nursing and medical students who were on placement in ICU:

'...in our country, one nurse looks after 7-8 patients in ICU while in other countries one nurse looks after one patient. Therefore, another important role is coaching...(S4)'

'...the APN in ICU can be a good teacher for both medical and nursing students. Because we know more so we can teach them. It is easier to teach students in the same profession. For medical students, if we were APN, they would accept us and allow us to each them...(S25)'

Another difference between the qualified staff nurse and the APN was described as being able to apply theory into practice. The APN was educated to master

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degree level, consequently they have a higher theoretical knowledge. They should

share the concepts and theories they have learnt, thus improving nursing care:

> '...a remarkable role of APN is having their own concept, for example
> patient participation. Patient participation brings positive results in
> treatment or continual care. This is an interesting concept for APN in
> all department (S5)'

> '...I should find the way to decrease ventilator time. Discharge
> patients from ICU earlier with good quality of life. Not just come out
> of ICU but still laying there. Should try to make them live near a
> normal life as much as possible (S6)'

> 'Apart from having knowledge, we have to apply knowledge in
> practice. Not just having knowledge but not know how to apply it.
> ...Giving direct care to patients is a skill which needs practising.
> Sometimes we know we have to do this but we cannot do it. Theory
> and practice are different....Apart from having knowledge, we have to
> bring it to a real practice...(S7)

6.8.3. A Researcher

Research appeared to be unpopular amongst nurses and the subject was not

brought up as frequently as other roles, even when discussing for the APN. The

APN may be put under pressure if they have to take on this role without the

following support: funding, access to information technology, co-operation from

colleagues and support and encouragement from administrative staff (McGee,

1996). One participant emphasised the importance of research for the APN

although she did not explain in detail whether she meant by conducting or

utilising research:

> '...Research too, as ICU at present needs continuing research. They need
> to follow up on this (S4)'

McSharry (1995) summarised that there were two main reasons which inhibited the development of the researcher's role in the APN: lack of support and lack of skill. In Thailand, lack of support could be also further described as lack of funding, access to information technology and administrative support. Funding for nurses to conduct research was seen as less important than other disciplines such as medicine. However, from the author's experience, a number of nurses who hold masters degrees were employed by doctors to assist in conducting clinical research, particularly in the data collection process. This could be explained by the fact that the nurse job entails 24-hour care, during which time good relationships are built, along with familiarity and rapport with patients. This could further support the role of the nurse as a data collector. Many research projects employ both bachelor and master degree nurses as research secretaries. The post of research project secretary was attractive to these nurses for such reasons as no shift work, good salary and weekends off. The above situation obscured the nurses' input in conducting research, because the projects generally measure the outcomes from the medical perspective. This was supported by Munhull (2003) who noted that multidisciplinary research mainly focused on the medical perspective. However nurses' skill in conducting and utilising research is also important. The APN could be one category of nurses who have this knowledge and skill, because they were educated to a higher level than other nurses. McSharry (1995) suggested that the APN should bring issues from a nursing perspective to initiate their research, for example the outcome of specialised practice and quality of patients' life.

6.8.4. A Collaborator

The patients in ICU need to be looked after holistically. To provide high quality care which is the common goal of health care services, the APN should work in collaboration with other health team members, such as doctors, physiotherapists, technicians and social workers:

> '...collaborating with allied health professions because patients who are admitted in ICU have contact with many departments from doctors, and need 24 hours reporting, physiotherapists and even social workers. All departments need skill. They need special investigation...(S4)'

> '...collaboration with multi-disciplines, multi-knowledge such as one patient who has COPD and have lots of secretion, must consult physiotherapist. We have to use the role of collaborator to collaborate with doctors and nursing teams. Use this role more clearly (S7)'

Hilderley (1991, p.588) suggested that doctors and nurses working in collaboration needed the followings 'mutual status, understanding, open communication, flexibility, common goals, competence, independence as well as interdependence and a strong desire to make it work'.

6.8.5. A Consultant

This title may cause confusion in the perception of roles of medical staff and nurses. In some countries, such as the UK, the term nurse consultant may be commonly used along with medical consultant. This post does not exist in Thailand. With regard to more educated and skilled nurses, the APN could give expert advice to other staff, patients, relatives and the general public in the areas in which they specialise. The

participants gave an example of an APN consultancy role involving ward nurses and medical students:

> '...because ward nurses may lack of knowledge in using equipment or specific nursing care. The APN can be a consultant for medical students who come to practise in ICU too (S12)'

It was noted that the role of the APN in ICU was highly expected. To fulfil all of the expectations, other characteristics may be required for the APN. O'Rourke (1989 cited in Davies and Hughes, 2002, p.149) pointed out that the APN should have the following characteristics: 'self-directing, able to modify theory to practice implementation, perceive knowledge and/or rearrange it to develop a new theory, transfer knowledge and introduce new learning the interest and service of the public'. Miller (1995) proposed that the APN in ICU should be a clinical expert, a consultant, an educator, a change agent, a researcher and an advocate. The author noted that the advocate and change agent role were not addressed clearly by the participants in this study. The APN should be an advocate for both staff and patients. Professional tradition and culture may inhibit nurses in developing their role as an advocate. Furthermore, Miller (1995) suggested that to be an advocate, nurses need communication and management skills.

In recent years, the APN has become engaged in the legal process. Chan (1996) reported that some APNs were involved in certifying death. Moreover, the APN could be called as an 'expert witness' in the investigation of complaints and in the legal process (Koniak, 1987and Perry, 1999 cited in Chuk, 1997, p.504; Kotzer, 2005). In

the future, the APN in Thailand may develop these roles, for example, the APN in ICU who increases involving in certifying death and complaints.

6.8.6. The Priority Among Roles

Two participants summarised that all roles are important. On the other hand, the participants who are not working in ICU expressed that direct carer is the most important role:

> 'Actually, to be APN in ICU should use all five roles but a direct carer is important. Teaching is also vital. Because sometimes we have to teach our colleagues about our specialties, to patients we have skill to look after. In collaboration, we may not take the whole direct role. Sometimes we have to collaborate with other wards. Being a researcher means we have to look for research results. That means we can improve and apply (research results) with patients as well as we use some new methods, not stick to the old practices. Then we can perform all five roles (S9)'

> '...the importance of each role is a little bit different. All roles are important, no matter a direct carer, a researcher, and a collaborator. I mean we have to do all roles, an educator too. If we can't educate patient, we have to see how to promote a faster rehabilitation for patient. It is impossible to rehabilitate patient on our own. We need relatives or carers. Therefore, we have to do all roles and we must have capability (S16)'

> 'I am not working in ICU. In my opinion, the most important role in ICU should be a direct carer. Because we have to use knowledge and skill in giving nursing care for patients which other nurses cannot do. The next one is to collaborator with doctors and other professionals. This is necessary because it help making a faster co-operation (S17)'

6.8.7. Other Necessary Competencies

Apart from the above major roles, some participants suggested that the APN should have the following competencies: the spirit of serving, ethical decision-

making, innovation, management, autonomy in practice and being a qualified practitioner.

The Spirit of Serving

'Actually, all roles are needed. It depends on the case. We can choose appropriate roles for each case. But I wish all nurses, no matter APN or non-APN use nursing knowledge both science and art. The important thing is a spirit of serving (S13)'

Ethical Decision Making

'To be a CNS in ICU, all roles which have been discussed are important but we should talk about ethics too. As we all know, ICU patients have a high possibility to die. Sometimes, their relatives want to take them back home, we have to take part in making the decision whether this case should stay longer in ICU, go back home, or using other methods of treatment...(S15)'

'...ICU nurse makes a lot of decisions, have higher skill and be an expert. Thus, if all ICU nurses are APN, this will be good...(S18)'

Innovation

'...I am not working in ICU but emergency room. I think all roles are equally important. The role and capacity cannot be separated from others. But innovation is also important and necessary, which makes a better rehabilitation, a better outcome (S11)'

Management

'...Management is also important. For example, theoretically, a staff: patient ratio in ICU is 1:1. But it is impossible in some ICUs. Patients have much equipment and need proper management (S15)'

Authority and Autonomy

'...Most ICU patients are critical. If an APN has a role in making the decision, which we are doing now but no law to support us. Because nurse always be with patients, if we have the right to do, the authority to order, this can help the patient promptly (S18)'

'For example, a patient who is being weaned off a respirator, a COPD patient to whom a problem acutely occurred. An APN who is supported by a law can re-insert an endotracheal tube. Then they can help the patient promptly. If we call a doctor, they may come to do it but there might be complication (S18)'

'...they can work instead of the doctor suddenly. They must have authority because the patient' s life is in their hands, not doctors'. They must be with patients 24 hours. Is it possible that a (nurse) supervisor must be an APN because calling a supervisor is easy. It helps increasing patients' safety and quality of care (S18)'

Order forms were suggested by one participant to be used with the APN. In Thailand, this form is used for doctors only and nurses generally are the persons who take the doctors' orders. Having experience of practicing as a nurse in the UK, the author understands that this form is not currently used in the same way as in Thailand. Nurses in the UK do not take doctors' orders but work in collaboration with doctors. Doctors write the treatment plan, while nurses write nursing care plans:

'..I mean giving treatment while waiting for doctor. I used to work in ICU, if there is a law, is it possible to have an APN order form for APN to write down and everybody accepts it. Nobody, I mean doctor, would ask why you do this? What are the results? (S20)'

Considering the differences in the work organisation culture, it could be said that nurses in Thailand are not working at the same level as doctors. One participant tried to explain the difference between the knowledge and skills of the APN and other staff nurses by comparing themselves to a doctor. The APN is supposed to be on the same level as doctors, therefore, they should be able to write order forms which include treatment plans and laboratory request forms.

It was observed that, although the concept of the APN was been introduced to the health system in Thailand seven years ago, changing the professional culture and attitudes to obedience and seniority requires the appropriate public acceptance over a period of time. This could be one of the issues of which the TNC should be made aware and they may have to find a suitable strategy to promote an advocate for this role.

Legitimate Practitioners

Three participants discussed legal issues involving the APN. Qualified APN should be able to practise legally. It was suggested that some invasive procedures which the APN should be able to perform in ICU included: insertion of endotracheal tubes, taking blood from an artery and giving intravenous fluid. However, one participant gave an example of the road traffic accident, if nurses in the ambulance can perform some of the roles mentioned above, she can save a patient's life:

> '...They can do APN roles but there is no law to support them. For example, a patient is shock, we can make the decision to give an IV fluid, resuscitate shock.Endotracheal tube insertion is another procedure. If a patient arrests for 4 minutes, we have to resuscitate him/her. The present problem in ICU is that it takes a long time to get doctor. Another procedure such as taking the arterial blood. At present, we are doing it but there is no law to support us. If there is a mistake, if we were charged, it is our bad reputation. If an APN is supported by law, we will feel happy to take this role to save a patient's life (S19)'

> '...a patient detection, they should have the rights or law which support them to use invasive instruments and emergency medicine such as Adrenaline, Bi-carbonate. They should have the rights to administer these. Other things are taking the arterial blood, placing

the endotracheal tube These are necessary. Some other things that we may do are ventilator adjustment and gas control. These should be our roles...(S21)'

'...The other thing is a law. There should be a list of medication. There is a problem of pharmacist. Where is the boundary for a clinic run by a nurse? Where is the boundary for clinic run by a doctor? It relates to a patient's right. If it is clear at this point, an APN has a role on emergency, not only emergency in ICU but in community. ...(S23)'

At present, legislation relevant to the APN in Thailand is limited. Recently, the Ministry of Public Health published an order for professional nurses enabling them to give primary health services and immunisation in accordance with the Professional Nurse and Midwife Act (1997). The APN has autonomy to perform primary health services and immunisation following the Scope of Primary Health Care and Immunisation (The Thailand Nursing Council, 2002b) and the Guidelines for Primary Health Care and Immunisation (The Thailand Nursing Council, 2002a). It is the author's hope that a scope of practice for the APN will be published in the near future.

With regard to invasive procedures, Delametter (1999) studied the role of the paediatric critical care NP. It was reported that they performed the following: insertion of arterial and central lines, lumbar puncture and insertion of endotracheal tubes. Dillon and George (1997) also reported that the APN in neonatal intensive care units also perform suprapubic tapping, insertion of umbilical catheters and chest drains. The author would argue that these procedures are generally performed by doctors. These invasive procedures require knowledge and skills. Thus, the APN should practise under the supervision of the doctors until they are competent. If they were then

confident to do these procedures, they should sign a competency form for each separate invasive role prior to commencement of practise without the doctors' supervision. There must be guidelines for all invasive procedures and the APN must follow the guidelines strictly.

6.9. A Complex Analysis

Regarding the general purpose of qualitative approach, it can be said that the author seeks the answer to a few simple questions: 'what is going on here?' (Strauss and Corbin, 1998, p.131); 'how things are proceeding?' and 'why things occur as they do?' (Miles and Huberman, 1994, p.90). Linking this to the research questions: 'What is the perception of APN among Thai nurses, head nurses, doctors and masters degree students?' and 'What are the characteristics of the development of the role of APN in Thailand?', the author applied four complex methods of qualitative data analysis; incident to incident and theoretical comparison (Strauss and Corbin, 1998) and within-case and cross-case analysis (Miles and Huberman, 1994). Seven clusters described previously were taken to a further analysis by axial and selective coding.

6.9.1. Axial Coding

Strauss and Corbin (1998, p.123) described axial coding as 'the process of relating categories to their subcategories'. The rationale for axial coding is to rearrange data by looking the relationships and the relevance of each code. The following questions based on the components of the paradigm model were used to find out the relationship of these codes:

- What is the keyword or the cue that indicates the category?

- Under what condition does the category take place?

- What is the property of the category?

- Is this category similar or different from others?

- What condition interferes with the action or reaction?

- What is the outcome of this sequence?

Four categories were achieved from this process of data analysis: trigger, construction, confirmation and transformation. Subcategories or concepts which support 'trigger' include: perceiving, motivation, improve care and personal career goals. 'Construction' was supported by three subcategories: preparation and impact. Three subcategories supported 'confirmation' namely: competence, verification and anticipation. Legitimacy, autonomy and leadership are three concepts supporting 'transformation'. Although these categories and concepts were built up and described as abstract forms, simple language will be used in the presentation of findings. Metaphor and analogy were used to a limited extent, to enhance the clarity and explanation of meanings. Besides, the meaning of each concept was confirmed by the Oxford Advanced Learner's Dictionary (Hornby, 1995). Table 18. presents a pattern used for the presentation of each category and its relevant concepts, properties and dimensional ranges.

Table 18. A pattern used for the presentation of each category and its relevant concepts, properties and its dimensional ranges

Concept	Category	Property	Dimensional range
Subcategory	Category	Property	← Dimensional range→
Subcategory		Property	← Dimensional range→
Subcategory		Property	←Dimensional range→

Trigger

Trigger is defined as 'an event or a thing that is immediate cause of particular reaction' (Hornby, 1995, p.1276). Four factors indicated by the participants as reasons for becoming APN were incorporated, namely, an intellect, perceptions, motivations and personal career goals. These become the four concepts that support the first category 'trigger'. Table 19. demonstrates concepts, properties and its dimensional ranges relevant to trigger.

Table 19. Concepts, properties and its dimensional ranges relevant to trigger

Concept	Category	Property	Dimensional range
Intellect	Trigger	Level of knowledge	wealthy…limited
Perception		Level of skill	advanced…fundamental
Motivation		Attitude	positive…negative
Personal career goals		Acceptance	more…less
		Quality of care	high…low

An APN was described as an intellect because they used knowledge, skills and sensation of reasoning. It can be said that holding a master degree in nursing made the APN a wealthy knowledge staff. Reasoning was used for performing advanced or invasive procedures, and making clinical decision, such as diagnosing, interpreting laboratory results and being an advocate for patients who are in the terminal stage of illness. Moreover, the APN must have positive attitude towards the roles of APN. Being a skilled nurse in operating advanced technological equipment in ICU was highlighted as a vital competency. Therefore, the APN becomes an expert and advanced practitioner. This encourages nurses to develop themselves to be the APN. The following quotation reveals the participants' perceptions:

'…The APN is different from fundamental nursing. It is an advanced level…(S26)'

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Perception represents awareness of the participants. They perceived that the TNC had adopted APN into Thai nursing system. They also noticed that academic institutions have developed master degree programmes for the preparation of the APN. According to the TNC regulation, holding a master degree is compulsory as a prerequisite for candidates for the examination. Learning about the capabilities of APNs in the master degree programme was noted as a source of enthusiasm for nurses. This made nurses desire to be APN. The following exemplar illustrates the participants' perception towards the master degree programme for the APN:

> '...When I came to study, I knew that it is this one. We can do it, feel good...(S8)'

> 'The more I study, the more I want to be (APN)...(S22)'

The idea of being an APN was encouraged by perceptions and attitudes of the participants towards the APN. It was indicated that APN is knowledgeable and skilled in an advanced level of practice. This made APN different from other nurses. The APN was also perceived as another and a higher level of practice to solve complex problems. To be accepted by others, nurses must become knowledgeable and skilled at a higher level. A master degree was the minimum qualification for nurses who sought to take the APN examination. According to the TNC regulation, all master degree curricula must be approved by the TNC. Having a high level of knowledge and skill is not enough for nurses to be accepted; they must also pass the examination and be a legitimate practitioner. The exemplars below describe the perceptions of the APN:

'...must have a higher education and skill than bachelor degree level (S19)'

'...one important thing, we must be certified (S21)'

Motivation is represented by conflicts and competition with doctors, desire to improve care and personal career goals. Motivation seems higher in nurses who are knowledgeable and skilled. The conflicts between nurses and doctors were a motive for the participants to become APN. Nurses who felt they were treated as inferior and dominated by doctors in clinical practice saw this as a challenge. They want to build up a new image and status of nurses in the health care team. The participants offered exemplars of the needs to be accepted as follows:

'...I want to say that the reason why I want to be (APN) is to defeat doctors (S8)'

'...it is a professional development, acceptance and also helps people ...(S21)'

'...we have to have our intention to change...(S26)'

Personal career goals were one of an important trigger for the participants, and they exerted effort to achieve their goals by increasing self-confidence and the quality of care. Other nurses also anticipated in becoming APN. The comments below represent the participants' personal career gaols:

'...I want to develop myself to be an APN because I will have more self-confidence...(S25)'

'...(I) wish all nurses would be interested in APN and increase our self confidence, to improve our profession (S5)'

Regarding the shortage of doctors and insufficient access to health services, the participants aimed to develop themselves to become APN and improve the quality of care. It was suggested that quality of care could be improved by shortening the time patients have to wait for doctors and by prevention of deterioration. The quotes below represent the participants' intentions to improve quality of care:

'...we can...keep patients away from crisis, giving faster detection, faster report. It is a better help for patients (S16)'

'...we should take this role...to solve two problems; doctors' shortage and an undone job (S19)'

The way to be accepted is making their capabilities visible.

'...They (doctors) will accept us. It is our opportunity to present our knowledge and skill in this era (S26)'

Construction

A definition of construction was 'the action or manner of constructing something' (Hornby, 1995, p.247). Preparation and factors which impact on the process of development of APN were seen as important elements of the construction. Therefore, two concepts supporting the construction are preparation and impact. These concepts, properties and its dimensional ranges relevant to construction is presented in Table 20.

Table 20. Concepts, properties and its dimensional ranges relevant to construction

Concept	Category	Property	Dimensional Range
Preparation	Construction	Studying	post...undergraduate
Impact		Skill developing	expert...novice
		Level of practice	specialist...general
		Length of preparation	short...long
		Factors	backings...obstacles

The participants increased their knowledge by studying in the master degree programme. Thus, studying in master degree programme was claimed as an important process of the preparation. It takes several years for this preparation by taking the master degree programme and developing skills in a chosen area. The master degree programme takes at least two years to complete. According to the TCN, nurses required at least 3 years practice in the area in which they chosen to be a specialist. The APN could become an expert and a specialist after several year of preparation. They are no longer novice nurses who perform only general nursing care. In addition, it was suggested that the preparation should begin with introducing the concept of APN to undergraduate students:

> 'The important thing is holding a master degree or higher and experienced in clinical practice for a period of time. Also having skill in a specific field of practice (S1)'

Knowledge and skills must be prepared to meet the requirements of the TNC. They must be a self-direct and continuing learner. Research and knowledge must be up-to-date. Areas of development for skills include clinical nursing, decision making, communication, collaboration, research, computer and information technology. Mental well-being was suggested to be as important as physical well-being during the preparation. Nurses should be able to perform self-analysis to know about their capabilities and readiness. As a pioneer APNs, they have to be ready for various situations, e.g. disappointment and resistance. Below are the exemplars of preparation needs offered by the participants:

> '...be an expert and have higher skill in making decision than other general nurses...(S21)'

> '...two really important things are knowledge and skill in a field of their interests...(S24)'

> '...the first thing to prepare is our mind...we have to fight hard enough. Prepare our mind first and then have an intention to change (S26)'

Factors affecting the preparation were described as of two types: facilitating and inhibiting factors. These factors have a great impact on the development of the role of APN. Facilitating factors help to back up the preparation process, while obstacles inhibit this process. Some factors can be both facilitating and inhibiting factors. For instance, the presence of support from administrative staff and colleagues can be a facilitating factor, but its absence becomes an inhibiting factor. It was suggested that factors affecting preparation comprised four major parts: personal, organisations, policy and laws and the public.

Personal factors included nurses' inspiration to become APN, attitudes, commitment, health status, English literacy and capabilities. The presence of these factors would be important backings for their preparations. Nurses who lack these may leave the process of development at any stage. The following comments illustrate the needs of facilitating factors:

> '...First we have to analyse our qualifications...We have to develop and analyse whether we were qualified or not...(S22)'

> 'The real facilitating factors is myself. I have to look at myself whether I am ready to be or not? If I am ready, have I prepared myself to be APN or not ...(S10)'

> '...we have to improve our English as well as knowledge (S13)'

Three organisations were reported as facilitating and inhibiting factors: the professional organisation, work organisation and academic institute. The TNC was an important organisation which adopted and implemented the concept of APN into Thai health service and nursing systems. The TNC was expected to take responsibility for the following: introducing the APN to the public; organising the examination and pushing the needs for APN into the laws, policy and the structure of work organisation. If the TCN is unable to achieve the above, the implementation of APN concept may not be well established and unsuccessful.

Work organisation includes four parties: administrative staff, policy, colleagues and other necessary supports. The concept and the role of APN should be introduced to administrative staff e.g. a director of hospital, a director of nursing and a head nurse. When the role of APN was approved and agreed by administrative staff, it should be

included in work organisation structure and policy. A policy which would facilitate the development of APN should cover: career structure, post, job description, incentive scheme and privilege. The implementation of such a policy in work organisation would promote understanding and positive attitudes among colleagues. Other necessary supports were described as information technology, methods of communication, staffing level and reducing interdisciplinary conflicts.

The preparation in academic institutions involves three areas: the development of curriculum, nurse educators and technological supports for conducting research. The curriculum for the preparation of APN should be standardised and approved by the TNC. Nurse educators should be well prepared in terms of: theoretical knowledge, practical and relevant skills. Reasonable tuition fees and flexibility in the study programme may encourage nurses to enrol. Regarding the advanced level of practice, a research centre provided by academic institute would support the development of the role of APN as researcher and a research utilisation. The exemplars below illustrate the need for preparations in organisations:

> '...the TNC must fight for the APN to be a professional, to be a part of the nursing profession...(S1)'

> '...The work organisation must be informed what APN is and how do APN works. Then they understand us and know how to use us (S12)'

> '...it must be prepared both educators and role model...(S14)'

Confirmation

Hornby (1995, p.241) defines confirmation as 'a statement, letter, piece of information, etc confirming that something is true, correct or definite'. Confirmation

represents establishing the evidence of verification. The regulation of the TNC is the most important guideline for the participants to be confirmed. The evidences of developing a new position must be revealed. Three concepts related to making the participants known and recognised as the APN include: competence, verification and anticipation. These concepts, properties and its dimensional ranges are illustrated in Table 21.

Table 21. Concepts, properties and its dimensional ranges relevant to confirmation

Concept	Category	Property	Dimensional Range
Competence	Confirmation	Qualification	met…unmet
Verification		Examination	pass…fail
Anticipation		Role	extended…traditional

Qualification is the first thing the participants need prior to sitting the examination. According to the regulation of the TCN, a nurse who wishes to take the examination for becoming APN must meet the following requirements: holding a bachelor degree in nursing; registered with the TNC as a professional nurse part one or a professional nurse and midwife part one; have three year experiences in the area they apply for, e.g. medical, surgical or paediatrics; and meet other requirements set by the committee of the specific area. This mean the candidate must be a highly competent nurse. The TNC has the sole responsibility for administering the process of

examination, including receiving and approving the application form; announcement of the qualified APN; preparing examination papers and forming the interview committee; arranging the date, time and venue for the examination; the announcement of results and registration for APN. Not all applicants will pass the examination. Passing the examination means nurses were verified. Failure from the verification process could be a discouragement. The participants offered exemplars related to the examination as follows:

> '...We have to be well prepared according to the regulation of the TNC. We must have at least 3 years experiences. We must be certified...(S24)'

> '...If they fail the first time, they may be discouraged and don't want to go for the second exam. So they give up and don't want to be APN (S3)'

A nurse who succeeds in the examination is eligible to be registered as an APN with the TNC. The extended role would be anticipated. The APN would move from being a basic to an advanced practitioner. They perform not only traditional but also extended roles Focusing on the intensive care unit, the APN is expected to be a direct carer, an educator, a researcher, a collaborator, a change agent and a consultant. These roles enable the APN to solve complex problem and make clinical decision. The level of practice of APN was reported as the same level as resident one (senior house officer in the UK system). The following quotes illustrate the anticipation of the role of APN:

> '...direct care in ICU may more distinguished because we need to give holistic care, physical, mind, social and spirit...(S1)'

> '...the APN in ICU can be a good teacher for both medical and nursing students...(S25)'

Transformation

Transformation was defined as 'the action or an instance of transforming something/somebody; the state of being transformed' (Hornby, 1995, p.1270). After being confirmed, the participants could continue to a process of transformation. Three concepts supporting transformation are legitimacy, autonomy and leadership. Table 22. presents concepts, properties and its dimensional ranges relevant to transformation.

Table 22. Concepts, properties and its dimensional ranges relevant to transformation

Concepts	Category	Properties	Dimensional Range
Legitimacy	Transformation	Approve	legal...personal
Autonomy		Practice pattern	dependent...independent
Leadership		Position	leader...follower

To be qualified as an APN means a nurse is approved by law to be a legitimate practitioner. It could be said that, a combination of knowledge and skills in APN builds up an expert. The expert could be acknowledged by other persons only. Being an expert and a qualified APN allows the nurse to be an independent practitioner. Thus, a legitimate practitioner is an expert who is acknowledged by law. In case of emergency or absence of a doctor, for the benefit of patients, the APN should be able

to make clinical decisions. This is one of the independent roles of APN. The following exemplars demonstrate the autonomy of APN:

> '...I can help doctors and work instead of doctors at some levels. This made them see the difference. We really can help them at this point (S22)'

> '...The independent roles are for patients not for us, to try or to show them that we are better than doctor (S21)'

> '...the APN is a nurse who can make decision in helping a patient in critical situation...to safe that patient from emergency or critical situation...while waiting for a doctor to continue other treatments (S20)'

Being a leader is another character of the APN which should be developed during the transformation. This includes leadership in the workplace and in the professional organisation. The comments below illustrate the expectations of leadership in APN:

> '...We can be a leader in that area, we can teach and give advice to junior staff in that area (S3)'

> '...APN is one of the important development in nursing profession....At the moment, I want to be APN so that I can help increasing nursing profession potentiality and others can see our importance (S18)'

6.9.2. Selective Coding

Selective coding is 'the process of integrating and refining the theory' (Strauss and Corbin, 1998, p.143). The following questions were used in the selective coding process. These questions were guided by the criteria used for selecting the central categories (Strauss and Corbin, 1998):

- What are the relationships between central categories and other categories?

- Can the central categories be seen in all participants?

- What are the properties and dimensions of the central category?

- Do the central categories represent abstracts which can be used in other areas of research?

Finally, the two central categories, **passage** and **process** emerged from selective coding.

Passage

Passage was defined 'the process of passing...the action of going past, through or across something...the freedom or right to through or across something...' (Hornby, 1995, p.846). The passage was chosen as a central category in this study because it represents the action of the participants in moving themselves from general nurses to advanced practice nurses. It is a pattern of movement from one stage (basic nursing) to another (advanced nursing). The passage comprises two concepts: construction and confirmation. Table 23. presents concepts, properties and its dimensional ranges relevant to passage.

Table 23. Concepts, properties and its dimensional ranges relevant to passage

Concept	Central category	Properties	Dimensional Range
Construction	Passage	Pattern	complicate...simple
Confirmation		Results	success...failure
		Forecast	predictable...unpredictable

The passage of becoming APN is a complex pattern because nurses must meet the qualifications and must be well prepared in different perspectives, e.g. knowledge, skills, physical, mental and attitudes. Although nurses have met all requirements, these do not guarantee the success in the examination. Moreover, a nurse who is qualified as an APN needs to develop the real role of APN in clinical practice. Some APN may leave the passage before they succeed. For instance, the imbalance of personal commitment between family and personal career goals and physical well-being may become obstacles. Therefore, the passage of construction is also unpredictable in terms of examination and the role development.

Process

Hornby (1995, p.922) defined process as 'a series of actions or tasks performed in order to do, make or achieve something...a series of changes, especially ones that happen naturally...'. In this study, process represents a series of actions performed by

the participants in transition from general nurses to advanced practice nurses. The concept of process consists of transition and transformation. Concepts, properties and its dimensional ranges relevant to process are illustrated in Table 24.

Table 24. Concepts, properties and its dimensional ranges relevant to process

Concept	Central category	Property	Dimensional Range
Transition	Process	Type	personal...organisation
Transformation		Pattern	sequential...simultaneous
		Progress	continue...interrupt
		Length of time	limited...unlimited

Becoming an APN is a transition and a transformation at both personal and organisational level because both of them are changed over time. Personal transition and transformation results in new qualifications, status and roles. Transition in organisation results in new structure, policy and culture. The pattern of transition and transformation could be simultaneous or sequential. For instance, the work organisation may be transformed by the government policy, e.g. health system reform, then followed by personal transformation. In contrast, personal transformation may occur after a nurse was certified and introduced the concept of APN into his/her workplace later. Length of time indicates the time spent in transition. The transition in some nurses or organisations may happen in a limited period of time. The factors

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supporting this transition are economic and policy. Conversely, the transition in other nurses and organisations could be continued for an unlimited time. For instance, transition in small or rural work organisation may need a longer period of transition than in a university hospital. The longer transition period may be cause by limited budget, staffing level and technological support. Furthermore, the preliminary culture and attitude of administrative staff and work organisation towards APN may affect the transition and transformation process.

6.10. Chapter Conclusion

In conclusion, this chapter presents the findings from qualitative data analysis. The chapter began with data reduction. All interview scripts were reduced into seven clusters. Then seven clusters were analysed using complex process guided by Strauss and Corbin (1998) and Miles and Huberman (1994). The results of axial coding were four categories: trigger, construction, confirmation and transformation. Each category and relevant concepts, properties and its dimensional range were described separately. The selective coding was conducted and resulted in two central categories: passage and process. The chapter ended with the presentation of two central categories and concepts, properties and its dimensional range. The following chapter discusses about the findings of this research thesis.

CHAPTER 7

Discussion

7.1 Introduction

This chapter contains a discussion of the outcome and the implications of the study. It is divided into five sections. The first section contains a discussion of the construction of paradigm model: the passage and process of the development of APN in Thailand. Second, a discussion of the association of the paradigm model and current literature is presented. Third, strengths and limitations of the study are highlighted. Fourth, the contribution and the significance of the paradigm model is emphasized and the recommendations are offered for application in education, research, policy-making and practice. Finally, conclusions are presented and a way forward for the APN in Thailand is suggested.

7.2. A Discussion of the Construction of the Paradigm Model: Passage and Process of the Development of Advanced Practice Nursing in Thailand

This research thesis aims to explore the perception of APN among healthcare professionals and the characteristic of the development of APN in Thailand. Two research questions were addressed: 'What is the perception of APN among head nurses, nurses, doctors, master degree students?' and 'What are the characteristics of the development of APN in Thai nurses?' Two methods were used to conduct a research study. Questionnaires were posted to doctors, nurses, head nurses and master degree students to gain quantitative data. The qualitative study was conducted by five focus group interviews with 28 master degree students. The results of the quantitative and qualitative study in the research were integrated to

construct the paradigm model of passage and process of the development of APN

in Thailand. This paradigm model is presented in Figure 15.

Figure 15. The paradigm model: passage and process of the development of advanced practice nursing in Thailand

PASSAGE

Trigger
Intellect
Perception
Motivation
Personal Career Goal

PROCESS

Construction
Preparation
Impact

Confirmation
Competence
Verification
Anticipation

Transformation
Legitimacy
Autonomy
Leadership
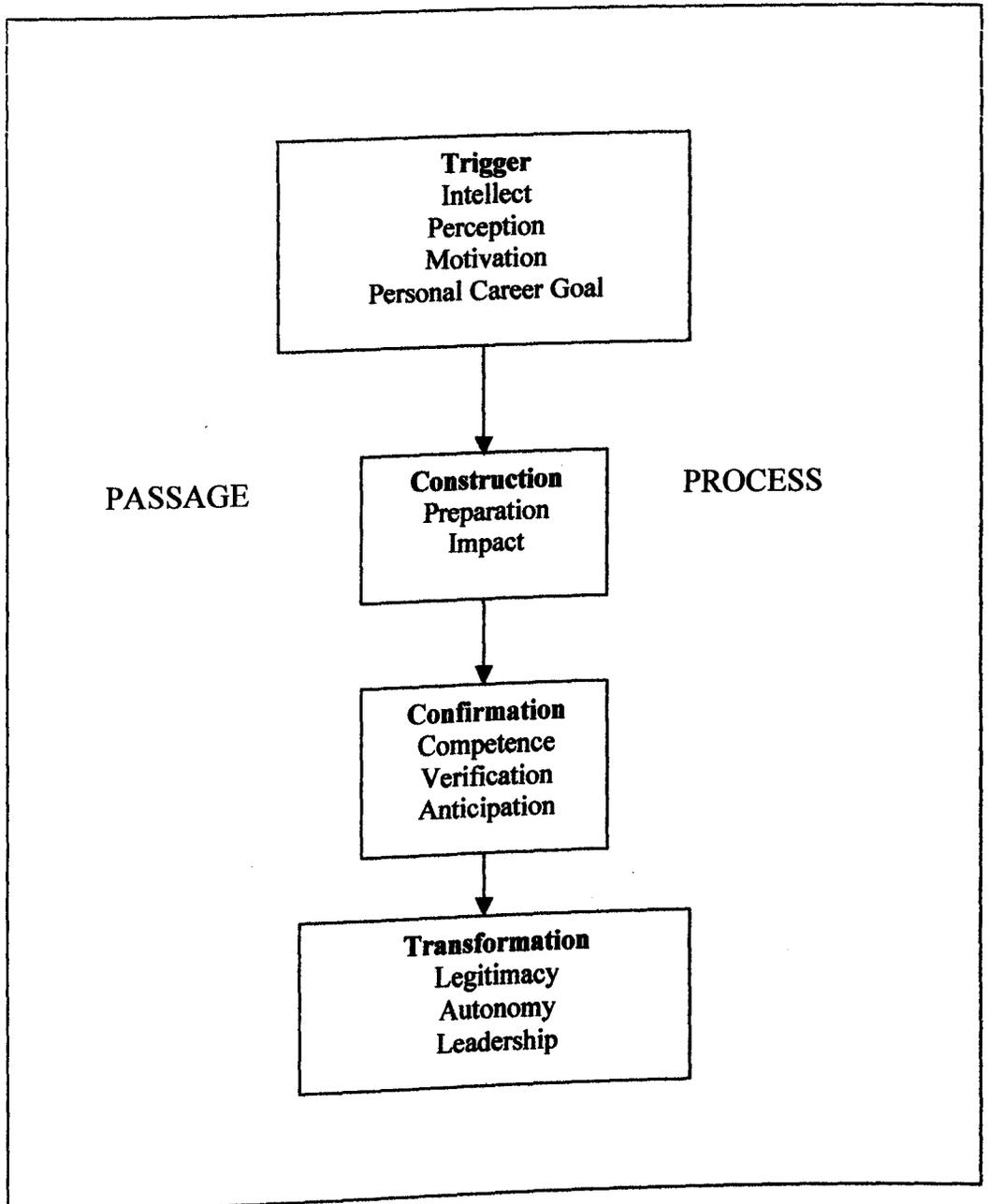
7.2.1. A Discussion of the Structure of the Paradigm Model

A discussion of the structure of the paradigm model is divided into three perspectives: the categories and their relevant concepts, properties and dimensional ranges; the integration of quantitative results and the paradigm model and the essential elements of the paradigm.

7.2.1.1. Categories and Central Categories: The Structure of the Paradigm Model

The paradigm model was constructed from both quantitative and qualitative study in this research. The relationship of categories and the relevant concepts, properties and dimensional ranges were discussed in detail in chapter 6. This paradigm model is used to present the results of this study. Perceptions, motivation, intellect and personal career goals affect directly the way APNs are perceived by themselves and by others. These three concepts act as triggers for nurses who wish to become APNs, for example perceptions of the role of the APN as they are expert, advanced and legitimate practitioner. Holding a master degree in nursing means the APN has academic abilities. The perception of APNs by doctors influences collaboration. If doctors understand the role and capability of the APN, acceptance will be established and resistance to the role of APN will be reduced. The perception of APN among staff nurses and head nurses also affects the development of the role of APNs in the same way.

The characteristics of the development of the APN can be explained by three categories: construction, confirmation and transformation. The construction of the APN is described as the preparation and the impact of various factors on the development of the role of APN. The preparation requires not only nurses who

wish to become APN but also other people and organisations. The important preparation for nurses who wish to become APNs are in the areas of knowledge and skills. Theoretical and clinical knowledge are prepared by studying to a master degree level. Other skills, such as leadership, teaching and research may be developed during the master degree programme and in the transformation period. Other people such as administrative staff, colleagues and the general public are included. The organisations involved in the preparation are workplace, academic institutes and the professional organisation. It was noted that public relations is vital because the implementation of APN in Thailand is only in the infancy stage. A change of culture in a workplace, for example, a seniority system, is needed to promote the development of the role of APNs who are young, knowledgeable, skilled and qualified. Nurses' status and image should be changed through the media, e.g. television, but most importantly the competency of nurses must be made explicit.

Being a competent and qualified APN is a confirmation of nurses who are going to be transformed to become APN. A qualified APN was acknowledged as a legitimate practitioner who was approved by law to perform an extended or advanced role independently. However, in order to be an autonomous practitioner, a document of competency attainment should be available. Leadership was addressed as an important capability for the APN. The APN was expected to be a leader both in a workplace and professional organisation level. The extended roles of the APN were anticipated, for example performing invasive clinical procedures, making clinical decision and patient management.

The two central categories of the paradigm model are passage and process. This means that nurses who aim to become APNs would follow the passage of development of the role of APN. This passage consists of construction and confirmation. Nurses must be well prepared to meet the requirement of the TNC and be certified. Moreover, they must be able to overcome obstacles in this period, for example, by having strong intention to become APN and using techniques to introduce the concept of APN to their administrative staff and colleagues. To overcome obstacles, nurses must have a readiness both physically and mentally. It can be said that the passage of becoming APN is a multi-faceted development.

The process of development of the role of APN consists of transition and transformation. Both processes require various types of support involving the individual and the organisation. The transition of nurses includes developing new roles by becoming a legitimate and autonomous practitioner and a leader. The transition of the work organisation can be seen in changes of culture in the workplace, policy and organisation chart. The pattern and time taken for the transition of nurses and organisation varies. It can be said that the development of APN is a complex process which involves multiple relevant factors.

7.2.1.2. The Integration of Quantitative Results and the Paradigm Model

Five roles of APN in ICU derived from factor analysis include: extended roles, ensuring standards, patient management, nursing roles and academic role. These roles were perceived as advanced levels of practice because the APN requires knowledge and skills at a higher level than other nurses. This perception became a

Trigger for nurses desire to become APNs. Some nurses may experience nursing roles prior to become master degree students, for example, cardiopulmonary resuscitation and venepuncture. Other roles could be constructed during the preparatory period, such as extended roles, ensuring standards and academic roles. If nurses' knowledge and skills were well prepared, they should be confident to apply for certification. This also affects the prediction of the result of the examination.

The results from regression analysis show that there are significant relationships between being a head nurse and ensuring standards, age and nursing roles, and being a doctor and patient management. The participants in this study reported that head nurses lack knowledge about the concept of APN. Therefore, head nurses should be introduced to the role of APN, particularly, ensuring standards. This includes patient outcome control, quality assurance and clinical supervision.

Age was described as a strong predictor of the nursing role. It can be said that the age of healthcare staff affects the perceptions of the nursing role. This could be interpreted as meaning that the older the staff, the more highly skilled they are. Thus, the senior staff should perform a more advanced or extended role than junior staff. When considering the seniority in Thai nursing culture, the participants discussed the difficulties in developing their roles once they graduated or were certified. If the APN is not a senior nurse or administrative staff, there might be resistance from the head nurse.

Being a doctor was the strongest predictor of patient management, which involves discharging, admitting and referring patients and research based practice. Interdisciplinary conflict could be used to explain this, because doctors may not agree with the APN's roles in patient management. In general, these roles are exclusively performed by doctors. Doctors need to be introduced to the qualifications and scope of practice of the APN. The reasons and the need for using APNs, including the benefits to patients should be clearly understood by doctors. If doctors are aware of and agree with these roles, they could agree to be mentors for APNs. This would establish a good relationship between the two disciplines and may also increase collaboration.

7.2.1.3. The Essential Elements of the Paradigm Model

Referring to Strauss and Corbin (1998), a paradigm consists of three essential elements: conditions, actions/interactions and consequences. Each element will be discussed as follows. Conditions are described as 'sets of events or happenings that create the situations, issues, and problems pertaining to a phenomenon and, to a certain extent, explain why and how persons or groups respond in a certain ways' (Strauss and Corbin, 1998, p. 130). There are three types of conditions in this study: causal, intervening and contextual condition. Causal conditions are described as 'sets of events or happenings that influence phenomena' (Strauss and Corbin, 1998, p.131). The causal conditions in this study include perception, improve care and competition. Nurses perceived that being an APN, they could perform advanced practice and be able to improve care in term of increasing access and reduce the time patients have to wait for doctors. The feeling of being inferior to doctors encourages nurse to compete with doctors.

The definition of intervening conditions is 'those that mitigate or otherwise alter the impact of causal conditions or phenomena' (Strauss and Corbin, 1998, p.131). The intervening conditions in this study were identified as the reasons why some nurses continued the process of development of becoming APN while others left the passage before their success. The reason why nurses leave the passage includes: failure of the examination, family commitment, health problem and the unsuitability to the present job. Conversely, nurses who are able to overcome the obstacles would pass through the whole passage: construction, confirmation and then transformation to be APNs. Mental preparation could affect the beginning of the passage. Nurses should be aware of the obstacles they may have to face during the passage of the role development. Strategies used to overcome the obstacles were explained as having strong intention to become APN; increased knowledge and skill during construction; preceding the certification as a confirmation; introducing the concept of APN to administrative staff and colleagues and reducing the interdisciplinary conflict using collaborative and leadership skills.

The third condition was labelled as contextual conditions. It was defined as 'the specific sets of conditions (patterns of conditions) that intersect dimensionally at this time and place to create the set of circumstances or problems to which a person respond through actions/interactions' (Strauss and Corbin, 1998, p.132). The contextual conditions in this study represent evidence which assists or constrain the development of the APN. Two contextual conditions in this study can be identified as facilitating and inhibiting factors of the development of the role of APN. The example of factors which could facilitate and inhibit the process

of development of the role of APN include professional and work organisation; academic staff and institution; government policy and law; and public relations. The inhibiting factors of the development of the role of APN were preceptors, incentive scheme and lack of knowledge about APN and information technology.

Another element of a paradigm is action/interaction. This element includes routine and strategic action/interaction. Routine action/interaction relates to 'what people, organisation, social worlds, or nations do or say' (Strauss and Corbin, 1998, p.133). Preparation denotes routine action/interaction in this study. This concept corresponds with the action/reaction of the participants towards the trigger. All participants came to study in the APN master degree programme after they were triggered. Strategic action/interactions are 'purposeful or deliberate acts that are taken to resolve a problem and in so doing shape the phenomenon in some way' (Strauss and Corbin, 1998, p.133). One strategic action/interaction in this study is wavering. This concept represents the action/interaction of the participants towards the balance between backing and obstacles.

A final element of a paradigm is consequence. The consequence is defined as the 'outcomes of actions/interactions' (Strauss and Corbin, 1998, p.128). The consequences of this study are the decisions the participants have made when they passed through the passage and the process of the development of the APN. Two consequences were found in this study. First, some participants may decide to continue in the passage and the process of becoming the APN. Second, some participants may leave the passage and process at any stage. This will be explained in the following section.

7.2.2 Coding for Process

During open and axial coding, the action and interactions of the participants were observed when there were changes in contexts or conditions. For example, the participant may discontinue the process of the development towards becoming an APN because of unexpected circumstances, e.g. family commitment, health problems and failure in the examination. Strauss and Corbin (1998, p.163) defined process as 'a series of evolving sequences of action/ interaction, changes that occur over time and space, changing or sometimes remaining the same in response to the situation or context'. Coding for process is a method enabling the author to see the connection between theory and a real life. The artificial conditions were involved to predict the action/interaction. A summary of the results of the coding for process is presented in Figure 16.

Figure 16. Summary of result of coding for process
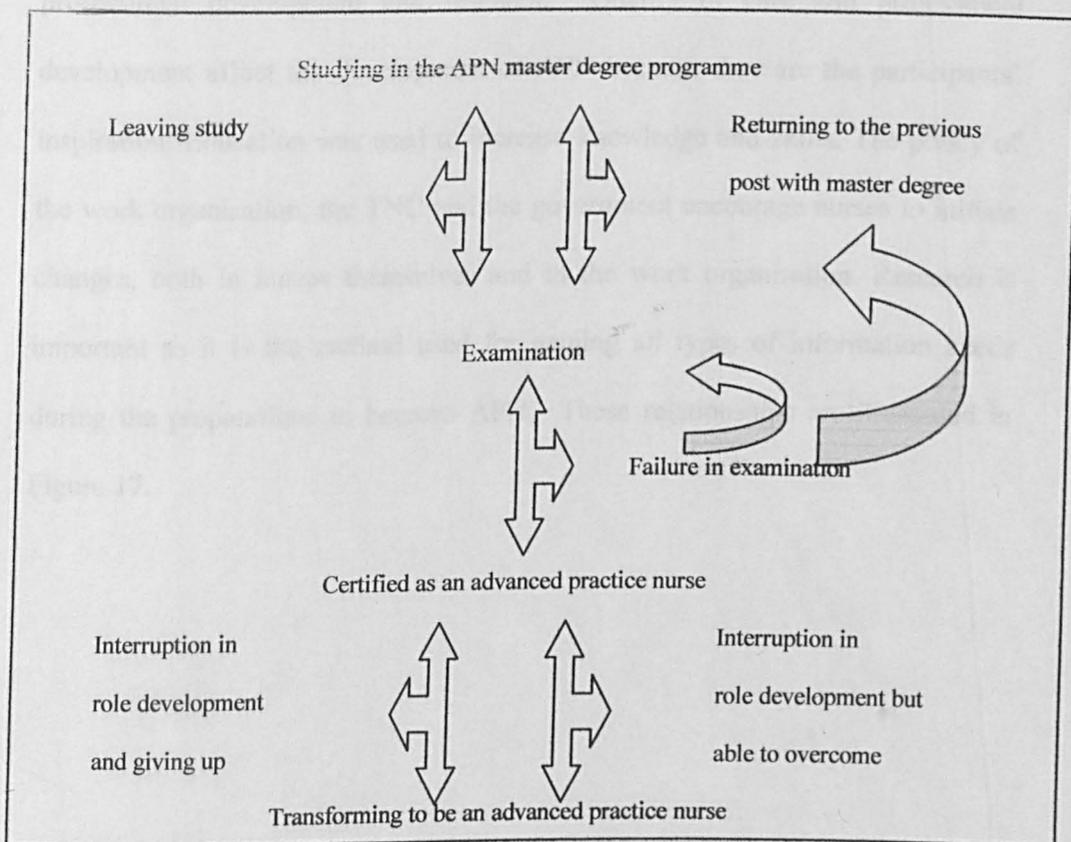
7.2.3. Conditional Matrix

Strauss and Corbin (1998, p.183) described a matrix as 'a diagrammatic representation of a set of ideas'. A conditional matrix, therefore, illustrates the relationship of various sequences of conditions and the action/interaction of the participants. The purpose of drawing up the conditional matrix in this study was to establish the connection between the situations in the study and the wider perspectives.

Initially, the figure of the relationships of the APN and factors affecting the development of role of the APN was drawn up during open coding process. These relationships were drawn up from micro conditions which focus on the scope of APN only (Strauss and Corbin, 1998). There were six major factors involved in the development of relationships: quality of care, education, policy, partnership, professional development and research. Quality of care and professional development affect the development of APN because they are the participants' inspiration. Education was used to increase knowledge and skills. The policy of the work organisation, the TNC and the government encourage nurses to initiate changes, both in nurses themselves and in the work organisation. Research is important as it is the method used for gaining all types of information needs during the preparations to become APN. These relationships are illustrated in Figure 17.

Figure 17. The relationship of the APN and factors affecting on the development of the role of APN
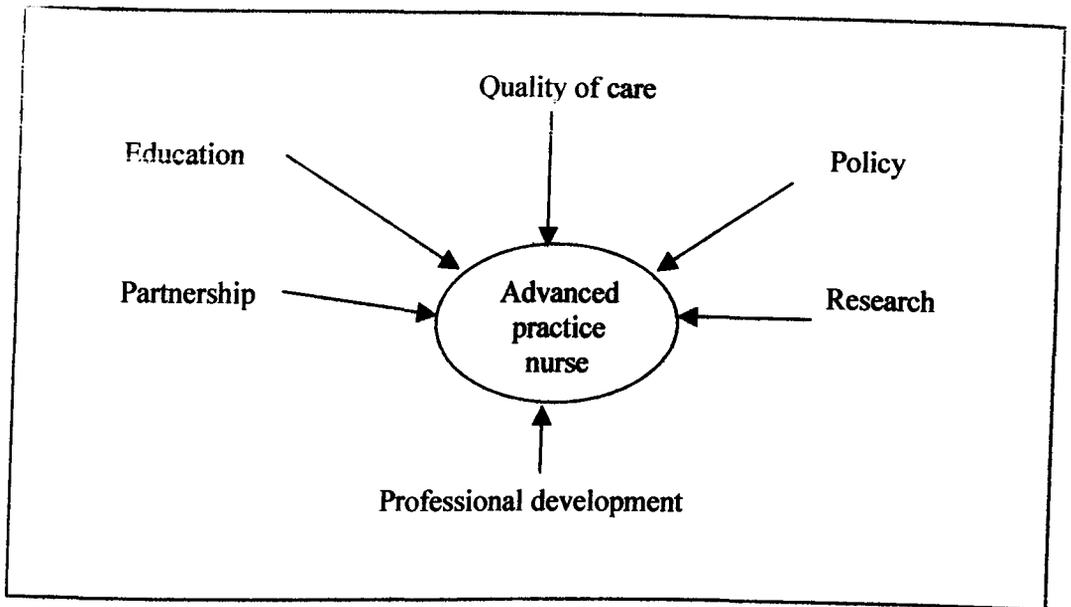
During the development of a paradigm model, the conditional matrix was drawn up to present the relationship of conditions and actions/interactions. The conditional matrix is presented in Figure 18.

Figure 18. Conditional matrix drawn up during the development of the paradigm model (see text for explanation of figure)
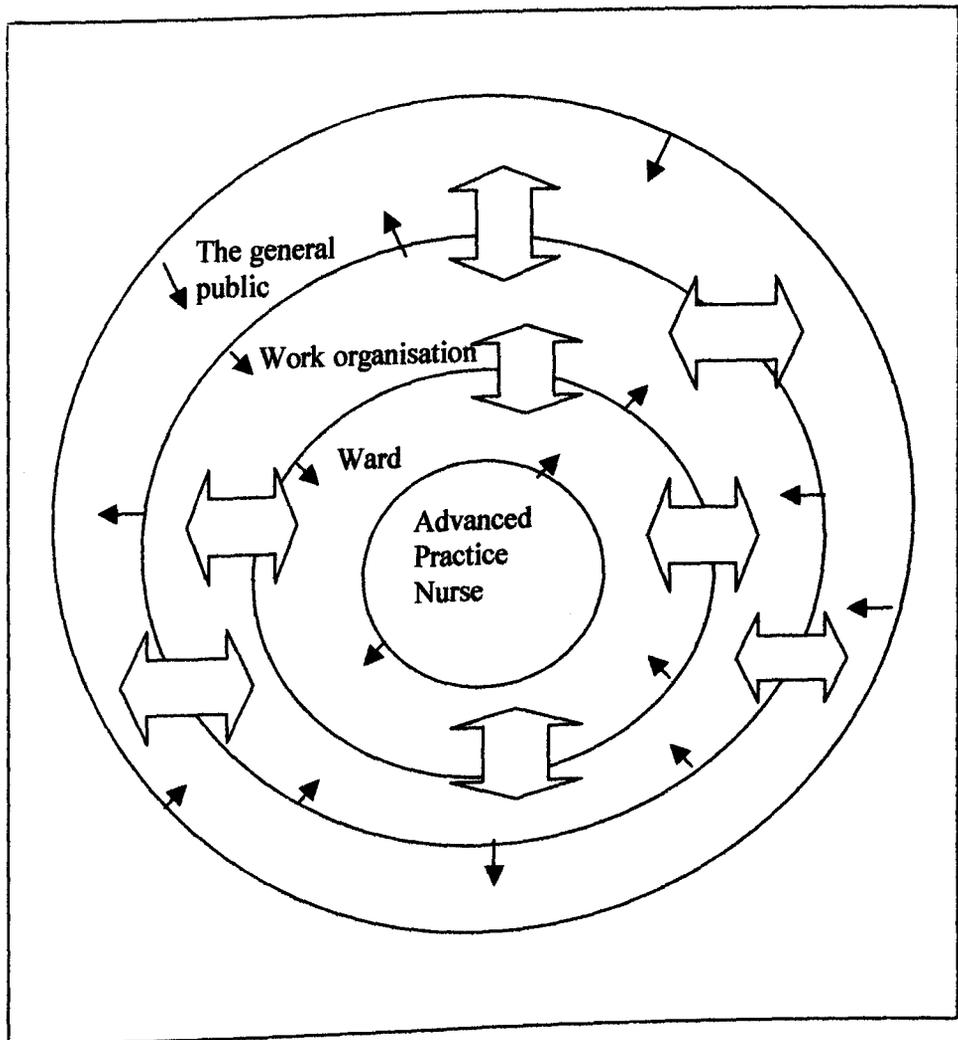
The inner and outer areas of circle do not represent different levels of importance. There were two reasons for drawing up the circles in four levels. First, to demonstrate the sequence of action/interaction which occurred from the inner circle towards the outer circle. Second, the APN was put in the centre of the conditional matrix because this study focuses on the changes in APN. Other circles represent the wider surrounding community. A ward area consists of various groups of staff who are involved in patients' care. This is a

multidisciplinary team including both healthcare and non-health care staff, e.g. doctors, physiotherapist, technician and ward clerk. The work organisation area includes different groups of staff, e.g. administrator, security and the finance department. The general public area involves patients, relatives and larger communities, e.g. regional, national and global communities. Two way blocked arrows indicate the conditions at macro and micro levels. Micro level represents a group of APN, while macro level denotes other people (Strauss and Corbin, 1998). Two-way single line arrows indicate actions/interactions of the participants toward conditions. These arrows point out in different dimensions, representing the diversity and unpredictability of the consequences of the actions/interactions Different conditions cause different actions/interactions and consequences. The actions/interactions and consequences vary over time. For instance, a nurse has learned about the concept and the role of APN during studying in master degree programme. She is aware of her capabilities and the anticipated benefits for patients. Being motivated by the feeling of inferior status in the ward and performing beyond basic nursing procedures, this nurse aims for changes in herself and her unit. A nurse perceives that being an APN could initiate these changes. Then this nurse tries to introduce her head nurse and colleagues to the concept of APN. After completing her master degree programme, she seeks to take the examination. If this nurse qualifies, she will continue the transformation process to become an APN. The passage of becoming an APN in this nurse may take a few or many years. However, unexpected circumstances may occur and result in an unpredictable consequence, e.g. the nurse leaves the passage at any stage or requires a second examination if she fails the first one.

7.3. The Link Between the Paradigm Model and the Current Literature

A discussion of the association of the paradigm model will be presented by linking this model with other concepts, theories and published papers.

7.3.1. The Paradigm Model and The Other Concept and Theories

These connections between the paradigm model and other concept and theories include: A concept of readiness to change (Dalton and Gottlieb, 2003); a theory of transition (Meleis *et al.*, 2000; Schumacher and Meleis, 1994) and a role theory (Anderson, 1976).

Readiness to Change: A Concept

The first category in the paradigm model of this study is trigger. The participants reported different sources of trigger which initiate the needs for change. Dalton and Gottlieb (2003) noted that change is a state and a process. Four steps representing the readiness to change were described as: knowing what to change, knowing the advantages of changes, knowing the purpose of change and knowing how to change (Dalton and Gottlieb, 2003).

It can be said that the participants in this study had passed through the four steps of readiness for change because they could explain the experiences at each step. Three concepts in causal conditions stand for the influences of change. The participants' aims were to increase the quality of care, to compete with doctors and to meet personal career goals. What participants wanted to change included themselves and the work organisation. They had to be knowledgeable and own high level of clinical skill in one specific area. Perceptions, attitudes and

motivations of the participants about APN affected their changes, as these assisted them to overcome the obstacles.

The participants were aware of the advantages of change during the preparation. Although these advantages were not visible and unable to be measured at that time, they can be learned from review of the literature and the knowledge applied to the current situation. For instance, the objectives of the national health system reform policy of the present government correspond with the goal of using APN. The details of purposes of changes, e.g. policy and strategy, may be set up individually, depending on the predisposing situation and the facilitating and inhibiting factors of each person. The participants who had good backing may have different purposes from nurses who faced multiple obstacles. Knowing how to change can be described as an aspect of routine conditions. As described previously, this is compulsory, because nurses must meet the requirement of the TNC if they wish to become APN.

Transition: A Theory

Meleis *et al*. (2000) asserted that transition was a middle range theory. There were four types of transition: developmental, health and illness, situational and organisational (Meleis *et al.*, 2000). The participants in this study were in the process of transition. This could be a developmental, situational or organisational transition. The three types of transition in this study can be explained as follows. First, a developmental transition was found in nurses developing themselves from a general nurse to a specialist or expert nurse. Second, a development of practice from basic or fundamental to advanced practice can be classified as a situational

development. Work organisation could be developed if nurses passed through the passage and process of the development and were transformed to be APN. This type of development is not yet clear in this study. Health and illness development is a type of development which could not be found in this study.

The properties of transition described by Meleis *et al.* (2000) included awareness, engagement, change and difference, time span and critical points and events. The participants in this study were aware of changes which may have occurred as per consequences. However, the results were unpredictable. Nurses engaged in the process of transition by preparing themselves for the transition. Change and difference were described previously. Time span in the transition process can fluctuate. The length of time depends on the balance of backing and obstacles individually. Critical points and events in this study are referred to personal factors. For instance, economic, health and family commitment may affect the transition process.

The transition towards being an advanced practice nurse has been increasingly studied. These includes transition to nurse practitioner (Kelly, 2001; Brown and Olshansky, 1997; Talarczyk and Milbrandt, 1988), clinical nurse specialist (Glen and Waddington, 1998) and nurses in critical care unit (Dunn, 1992).

Role Theory

Role was studied towards various perspectives, for example sociological and psychological. It was noted that nurses may not perform their role as they had anticipated (Anderson, 1976). 'Role strain' and 'role conflict' were the terms used

to explain when nurses could not perform the anticipated role while 'role deprivation' means nurses did not practise what they had learnt (Anderson, 1976, p.102). Anticipation is one concept in the paradigm model achieved from this study. Role alteration was anticipated by the participants, regarding becoming APN. This means the APNs would use their knowledge and skill to solve complex problems which other nurses were unable to do. Although APNs were aware of their anticipated role, they may experience role conflict and role strain in real practice.

Meleis (1975) used 'role insufficiency' for nurses who were not able to perform the anticipated roles during the transition process. This may be caused by two reasons: the insufficiency of knowledge in relation to the role; or rejection of the role because of lack of incentive (Meleis, 1975). Although the participants reported that they increased their knowledge about the role of APN during studying the APN master degree programme, there is a possibility for that they would experience role insufficiency because of various obstacles. According to Meleis (1975), role insufficiency may be caused by lack of an incentive scheme. Other obstacles reported by the participants in this study were lack of understanding of the role in the work organisation, e.g. administrative staff and colleagues; lack of policy, career structure and technological support. These could be indicated as causes of role insufficiency.

Another term suggested by Meleis (1975, p.267) is 'role supplementation', which can be both preventive and therapeutic interventions used by nurses to avoid or diminish role insufficiency. The participants in this study were able to clarify their

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roles prior to and after becoming APN. Moreover, they were aware of the social boundaries and anticipated responses in their workplaces toward the APN. Meleis (1975, p.267) named this 'role clarification', which was a component of role supplementation. The participants were emotionally involved in taking the role of another person. They recognized that they performed a doctor's role and were able to give reasons why they had to take those roles. Meleis (1975, p.268) labelled this as 'role taking' and it is another element of role supplementation. Some methods used to develop role clarification and role taking were 'role modelling, role rehearsal, reference group and communication and interaction' (Meleis, 1975, pp.268-269). It has been suggested that in highly technological environment like an intensive care unit, trial-and-error learning was not recommended as role modelling (Meleis, 1975). Therefore, nurses should be aware of the limitation of using role modelling as their role supplement. Rehearsing the APN role using artificial or imaginative situations was proposed as a significant preparation for role taking (Meleis, 1975). A reference group for nurses who are APN should be initiated, as recommended in section 7.9.1. Networking among APN can promote learning about the development of their roles from each other and allow the members to share their experiences during the transition period. Finally, communication and interaction were suggested as a vital strategy for role supplementation because nurses can express their meanings with others (Meleis, 1975).

The study of the role in APN was increasingly of interest to nurse researchers. Topham (1987) stated that the antecedents of role conflict were lack of support from administrative staff, role socialisation and peer support. These were also

discussed by the participants in this study. Quaal (1999) suggested two strategies for reducing role conflict: role clarification and negotiation with the institution, e.g. work organisation. The role conflict and role restructuring of the CNS was explored by Quaal (1999). It was suggested that the CNS role conflict occurred because of the mismatch of CNS and the advanced practice registered nurse (APRN) model (Quaal, 1999). This situation occurred when the idea of merging between CNS and NP to be APRN was initiated in one state of the USA in 1998. To solve the problem of role conflict, the restructuring of the CNS role was suggested: increasing knowledge in pharmacology, authority to prescribe, experiences in acute and inpatient care (Quaal, 1999). It can be argued that role conflict caused by merging two titles did not occur in Thailand during this study because only one title was used for nurses who were certified as advanced practitioners. Nevertheless, this could be a good example and lesson to be learned for Thai nurses regarding fragmentation among nurses if many titles were used for APN.

Wojner and Powell (1997) used the service line model to describe the role and responsibilities of APN as an outcome manager. The outcome manager worked in a collaborative practice team by being a 'hands-on clinical experts, capable of sound leadership and of mastering change' (Wojner and Powell, 1997, p.19). In the clinical and research domain, the role of APN as an outcome manager was further described as that of 'finance and quality leadership, interdisciplinary consultant and consumer/interdisciplinary educator' (Wojner and Powell, 1997, p.19).

Autonomous practitioner was another role of APN described by the participants in this study. Furthermore, the participants agreed that APN's making clinical decisions represented a higher level than other nurses. Therefore, the APN must be well educated about this during their preparation (Munro, 2001). Cutts (1999) recommend that nurses should be autonomous practitioners under nursing theory primarily.

7.3.2. The Paradigm Model and the Current Published Papers

Perception is one of the constituents of the first category of the paradigm model. Perceptions of the APN was studied in various groups, such as employers, educators, administrators, doctors, patients, relatives and the APNs. The perceptions of the APN role among the participants in this study were found congruent with Clifford (1981) who reported that the employer and the educator perceived clinical function of the APN as the most important function. Other roles of the APN were expected and agreed with Daniell (2001), Woods (1998a), Scott (1997) and Beal (2000). It was explained that the APN should be a researcher, a consultant, a change agent, an expert, an educator and an administrator. When focusing on the area of critical care unit, the anticipated roles of APN in this study were similar to Woods (1998a): a direct career, a researcher, a change agent, a consultant and an educator. Beal (2000) also reported that the role of NP in NICU also includes a co-coordinator, a manager, a leader and maintaining standards of care.

The model for advanced nursing practice: Legitimate influence-the key to advanced nursing practice in adult critical care unit, developed by Ball (2000) was

found congruent with the paradigm model of this study in terms of improved nursing care. This is the most important aim of the implementation of APN.

Acceptance is labeled as one properties of trigger. Although the participants did not describe the consequence of lack acceptance but this could be predicted by the results of Martin's (1995) study. It was reported that the role of NP was devalued and discounted. If the acceptance of APN in Thailand is not established at the beginning of the implementation, in the future, the APN in Thailand may encounter the problem of devalued and discounting.

The preparations were discussed broadly and become a concept of construction of the paradigm model in this study. The participants highlighted that the preparation of knowledge and skills are vital. This was supported by Wingert (1998) who reported that educational background of the APN was highly concerned by doctors. The participants described that the APN should be educated at a higher level than other staff nurses. This means a master or doctoral degree level. Putnum (1994) suggested that a master degree program for the preparation of community NP should focus on health promotion, primary health care, education and research. These knowledge and skills were also emphasized by the participants in this study. Furthermore, Sterling and McNally (1999) noted that a preparation in a doctoral programme should involve management of patient care, partnership, leadership and practice value. The participants in this study also agreed with these preparations.

Information technology was included in the preparation for the academic institutes and workplaces in this study. The participants in this study noted that this technology remains insufficient. In the USA, CAI (Neafsey, 1997) and the Internet (Kemper *et al.*, 2002) were used for education. Vessey and Huss (2002) also introduced a simulated clinical encounter as a method of teaching. However, these methods of educational preparation remain unsuitable for Thailand because of lacking resources.

The factors having an impact on the development of the role of APN is another constituent of the construction. The results were congruent with Woods (1998b) who reported that the facilitating factors for the implementation of APNs namely: support and acceptance from colleagues and administrative staff; staffing levels; increased knowledge, confidence and autonomy. The inhibiting factors highlighted by the participants in this study are also similar to Woods (1998b) in term of staffing levels, lack of resources, incentive scheme and knowledge about the APN, and not being included in organization chart.

Being a specialist or an expert in particular area was noted as a property of construction. The extended roles of the APN in ICU were anticipated and highlighted by the participants in this study, for example, performing invasive procedure e.g. insertion and taking blood samples from arterial and central lines. These was congruent with Delametter (1999), Jarvis (1999) and Mick and Ackerman (2000).

Filling the gaps in the literature on APN can be explained as follow. First, with regard to lack of research about APN in Thailand, this research thesis is the initiation of the research in this area. The paradigm model could be useful as highlighted in section 7.6. It is also expected that this study will raise the awareness of the study of APN in Thailand in others both inside and outside nursing disciplines. Choosing critical care, as an area of study, was appropriate in terms of enabling the author to construct a paradigm model: the passage and process of the development of the APN in Thailand as it is an unexplored area. Using triangulation of research methods help reducing the weakness of single approach. The paradigm model is the ultimate result of the study, and the answers for two research questions were achieved and fulfilled by the integration of results from both quantitative and qualitative parts of this study.

7.4. Strengths of the Study

The strengths of this study will be described in five perspectives: the originality of the study, methodological concerns, ethical concerns, quantitative and qualitative parts.

7.4.1. The Originality of the Study

The originality of this study can be asserted in two respects. First, the study of the development of APN in Thailand has not yet been explored. Thus, this research study is an empirical study and the results provide new information. Second, the research instrument used in this study was newly developed by the author and tested for validity and reliability. The questionnaires and interview schedule have never been used in any previous study.

7.4.2. Methodological Concerns

The general purpose of triangulation is to reduce the weakness of each method. Thus the author employed two types of triangulation in this study: simultaneous methodological and data triangulation (Morse, 1997; Denzin and Lincoln, 1994; Polit and Hungler, 1993). Two methods of data collection used were questionnaires for the quantitative part and interview for the qualitative part. Simultaneous methodological triangulation enables the author to amalgamate the results from quantitative and qualitative parts in the stage of building the paradigm model, which is the ultimate result of the whole study. This integration of findings enhances the significance of the paradigm model (Morse, 1997).

7.4.3. Ethical Concerns

Ethical issues were carefully considered by the author. Therefore, all of the participants in this study received information about the study before deciding to take part in this study. Consent forms were signed by the participants. Since there was no local ethics committee for research, the author explained the objective of the research projected and research instruments in letters to the directors of all hospitals and the Dean of the Faculty of Nursing. Permission for data collection was given by the internal committee of each work organisation. The questionnaires then were transferred, distributed, collected and retuned by the head nurse of each intensive care unit. The process of permission in the Faculty of Nursing was similar to that in hospitals, except the permission was forwarded to the course leader and the author contacted and co-operated with the course leader to recruit the participants for interview.

During the process of transcribing and back translation, the participants were identified by numbers, to maintain anonymity and confidentiality. The author is the only person who had access to the data. The participants were reassured prior to the interview that all cassettes recorded would be destroyed after the research project was completed. All respondents in the quantitative part and participants in the qualitative part agreed voluntarily to take part in this study. The author did not offer any gift or condition to them.

7.4.4. Quantitative Part

The sampling method and the number of the sample used in quantitative part was validated in consultation with the statistician in the local university. Thus, the representativeness of the samples was assured. Moreover, the response rate (69.9%) of returned questionnaire was considered acceptable. Conducting a pilot study allowed the author to test the reliability coefficient of the questionnaire (Cronbach's Alpha=0.89). The content validity and the reliability of the questionnaire were described in section 4.13.

7.4.5. Qualitative Part

The complexity and rigour of grounded theory methodology enable the author to construct a passage and process model of the development of APN. Various methods and guidelines of qualitative data analysis were reviewed prior to and during the process of data analysis (Glaser and Strauss, 1967; Strauss and Corbin, 1998; Polit and Hungler, 1993; Miles and Huberman, 1994; Punch, 2000b; Sim and Wright, 2000; Burns and Grove, 2001; Cormack, 2000; Lobiondo-Wood and

Haber, 2002; Holloway and Wheeler, 2002; Ezzy, 2002). Finally, Strauss and Corbin (1998) and Miles and Huberman (1994) were chosen as major guidelines for the data analysis because the transparency of the methods ensured that the trustworthiness of findings could be achieved.

The homogeneity of the participants in this study was met because all of them were studying in the same APN master degree programme (Burns and Grove, 2001). The validation of findings from the qualitative part was achieved in four ways. First, they were discussed with the research supervisors. Second, although a computer software package was used for organising, sorting and ordering data and codes, the author maintained closeness to data by returning or listening to the interview cassettes and reading the transcripts several times during the data collection, analysis and writing up periods (Sim and Wright, 2000). In addition, using constant comparison (Glaser and Strauss, 1967; Strauss and Corbin, 1998) in data analysis also promoted the closeness of the author and data. Third, a storyline memo was written up by the author prior to discovering the central categories. The storyline memo was sent to the participants to confirm the findings (Chenitz, 1986; Burns and Grove, 2001). Finally, a peer group presentation allowed the members to enquire about the transparency of methodology and offer feedback and supplementary critique (David and Sutton, 2004). A peer group presentation also produced the confirmability of the study (Streubert and Carpenter, 1999).

Trustworthiness represents the rigour of qualitative research (Streubert and Carpenter, 1999). It has been suggested that trustworthiness should be assessed by

four techniques: credibility, dependability, confirmability and transferability (Streubert and Carpenter, 1999). Creditability was achieved by sending a storyline memo to the participants to enable them to validate the findings. Collecting data directly using face to face interview allowed the participants to give their own experiences also increased the credibility of this study (Lobiondo-Wood and Haber, 2002). Two other techniques used to assess the trustworthiness were audibility and fittingness (Lobiondo-Wood and Haber, 2002). Auditability was assured by the description of the whole research process in Chapter 4. Fittingness is also identified as transferability (Polit and Hungler, 1993). Although this study focused mainly on the development of APN in intensive care unit, the paradigm model may be applied in other area or settings. Therefore, fittingness or transferability was achieved.

The representativeness of the participants may not be interpreted in terms of statistics but genralisability was met because of two reasons. First, the meaning or experiences of each participant can be found in the paradigm model. Second, the categories and concepts in the paradigm model of the development of APN can be useful for other nurses, policy makers, the TNC. The obstacles and backing may be improved by the policy makers to increase support for nurses who aim to develop themselves as APN.

7.5. Limitations of the Study

The presentation of limitations of this study is divided into two parts: quantitative and qualitative study. The limitations of the quantitative part can be described in two aspects. First, perceptions about the APN could be diverse; therefore, they

should be explored in various groups. Patients and academic staff were not included in the quantitative part of this study, because most patients in the critical care unit are not able to complete the questionnaires. The academic staff were excluded as they are not regular members of the health care team in critical care units. Thus, the perceptions of these two groups should be investigated separately. Second, the quantitative part of this study was conducted in the critical care unit only. The nature and culture of work in the critical care unit is unique. Perceptions about APN in other units may be found different and should be explored.

The limitations of the qualitative part can be described in terms of the small number of sample (n=28) which cannot compare to the quantitative part (n=156). Recruitment of the participants in qualitative study depended entirely on volunteers. However, the number of participants cannot be considered representative but the data collection was complete when the categories were saturated. This means open coding was found repetitive and no new category immerged from of data.

7.6. The Contribution of the Paradigm Model and Recommendations for Implication

The contribution of the paradigm model will be presented cooperating with recommendations for the implication in four areas: policy maker, education, practice add research.

7.6.1. Policy Maker

The contribution of the paradigm model to policy makers is divided into four levels: the government, the TNC, academic institution and work organisation. The

significance of the paradigm mode for developing policy at the government level is law and enforcement. The outreach strategy for health system reform should include the development of the APN in clinical practice as a policy, for instance, using APN in primary care service (health centres) to increase access and equity for the patients. This could involve health assessment, diagnosing, prescribing, emergency treatment, prevention and health promotion. Considering the qualifications and competency of the APN, they should be the most appropriate health care personnel to perform these roles at the primary care level. However, a mismatch in the number of the APN and primary health centres was noted. At present, the total number of APN is only 144, but the number of health centres reported by the MoPH in 2002 was 9,738. Thus, the preparation of APNs is an urgent issue for policy makers at both the TNC and academic institutions. An urgent issue which should be pursued by the TNC is improved public relations. From this study, awareness of the concept of APN was very limited. This is reflected in the insufficient knowledge and understanding of colleagues, administrative staff, patients and the public about APN. Lack of knowledge was pointed out as the important factor affecting the attitudes of the above people. The negative attitudes became obstacles for the development of the APN. Others issues which need to be clarified and prepared by the TNC include: continuing educational programmes and credentialing for APN; building up the network or association for APN, monitoring the development of the role of APN; re-registration process and increasing areas of registration, e.g. family nurse practitioner, nurse anaesthetist and midwife. The policy at the work organisation level should be consistent with that at the government level. That means the work

organisation must include APN into the line of organisation and authority. The post, job description and salary scale must be clearly established.

7.6.2. Education

The contribution of the paradigm model for academic institutions can be explained in terms of curriculum preparation and the development of academic staff. The competencies required for the APN should be considered in order to adjust and improve the study programme. Academic institutions should be publicize the study programme, so that nurses can receive appropriate information about the objective, content, cost and expense and length of study of the curriculum. Other forms of support for students may be considered, e.g. scholarship and new methods of teaching. Referring to the early stage of the development of the APN, academic staff may need to be developed and prepared to be mentors or preceptors for novice APN.

7.6.3. Practice

The contribution of the paradigm model in practice can be described in two phases: the development and transition phase. The development phase includes the preparations of nurses who are seeking to take the examination. The process of preparations was introduced in the paradigm model. Moreover, backings and obstacles could be anticipated. The paradigm model can be useful for APNs during transitioning phase in two aspects: first, by using this paradigm model as a guideline to develop the methods of overcoming the obstacles; second, by building up the role in collaboration with the expectations of colleagues and patients. It can be used in other clinical areas e.g. emergency and community care.

7.6.4. Research

Regarding to the lack of published paper about APN in Thailand, the contribution of the paradigm model can be explained in terms of encouraging other researchers both nursing and non-nursing disciplines to develop further research to explore the development of APN in additional aspects. Replicated study using the research instrument developed in the present study could be considered. The following areas would be useful for further investigation: the transitioning process of the APN in various settings; the perception of patients about the APN; assessing the outcomes of the APN using different methodology. For instance, using quantitative approach to explore the satisfaction of the patients and the outcome of the care given by APN; the satisfaction of the career development in APN and the evaluation of educational programme for the APN. Phenomenology may be suitable for the study of the lived experiences of the transformation to be APN. The effectiveness of using a particular clinical guideline developed by APN may be explored by action research. The use of research methodology should correspond with the research questions in each project. The above methodologies were excluded from this study because there was no APN in Thailand at the time of this study was conducted.

7.7. Conclusion and A Way Forward

In conclusion, this thesis presented the results of a study of the development of advanced practice nursing in Thailand. The purposes of the research were to explore the perceptions of advanced practice nursing among health care professionals and the characteristics of the development of APNs in Thailand.

In relation to current literature, the substantial amount of published papers on advanced practice nursing retrieved from electronic databases was reviewed systematically. It was found that most literature reported a number of significant issues that arose after the concept of advanced practice nursing was use in developed countries, e.g. the USA, where the concept originated. It was argued that nurses who were transformed to become APNs encountered several obstacles. Four major issues discussed in published papers are: issues arising after the implementation of APN; preparations and educational programmes, the outcome of practice and the areas of specialty. Examples of significant issues arising after the implementation of APN include perceptions, roles, authority to prescribe, and being a doctor's substitute. It was reported that there was a diversity of preparations and educational programmes. Some higher degree and continuing educational programmes were of great interest for preparation, in terms of popularity and market demanding, e.g. oncology. Teaching methods and database for practice for APN were also highlighted as important issues.

A number of studies about the outcome of practice was reviewed. It was found that various measures were used to assess, monitor and evaluate the outcome of practice of the APN. These measures were used in two main groups: APN and patients. The measures in APN included patterns of practice, performance and the assessment of separate role, e.g. direct carer and educator. Examples of criteria used for the assessment of nurses' performance were frequency, responsibilities and patients' outcome. The measures used in patients included: quality of life, length of stay in hospital, rate of readmission and mortality, level of knowledge

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and drug compliance. Other methods used were cost and effectiveness of using APN.

Having reviewed the literature on areas of specialism for the APN, it was found that APN role were developed in a variety of specialism. These were oncology, women's health, cardiology, transport nurses, acute care, critical care, transitional care, psychiatric and mental health and care of older people. It can be summarised that the reasons why the role of APN were developed in these specialism included the insufficient number of doctors and to increase the accessibility and quality of health services.

On the basis of the overall literature review, it was concluded that although the development of the role of APN was found to be well developed and well accepted in some countries, the research about this matter in Thailand remains scarce. In view of the lack of study of the APN in the area of critical care in Thailand, the development of APN in critical care units was found to be unclear.

The purposes of the thesis were to examine the perception of APN among healthcare professionals and the characteristic of the development of APN in intensive care units. Two research questions were addressed by this thesis includes: 'What is the perception of APN among head nurses, nurses, doctors, master degree students?' and 'What are the characteristics of the development of APN in Thai nurses?'

In order to address the research questions, the following research was performed using triangulation of methods: quantitative and qualitative study. In the quantitative study, a Likert scale questionnaire was developed and piloted by the author. The questionnaire consisted of three parts: demographic data, perceptions of APN and opinions of the role of APN in intensive care unit. Nineteen items of the roles of APN in ICU were adapted from Woods (1998b), Jarvis (1999), Mick and Ackerman (2000). The reliability coefficient was tested. Based on information received about the number and address of hospitals which include intensive care unit from the provincial office of the MoPH, 226 questionnaires were posted to 22 hospitals in the North region of Thailand. Data received from quantitative study was analysed using a computer software package, Statistical Package for the Social Sciences (SPSS) for Windows 10. Factor analysis revealed that there were five major roles of APN in intensive care unit. These were: extended roles, ensuring standards, patient management, nursing roles and academic roles. Regression analysis indicated that there were significant relationships between being a head nurse and ensuring standards ($P<0.5$), age and nursing roles ($P<0.5$) and being a doctor and patient management ($P<0.5$). Being a head nurse, age and being a doctor were strong predictors of ensuring standards, nursing roles and patient management respectively. The results of the quantitative study supported the study of the role of APN in critical care units by Ball (1999), Jarvis (1999), Delametter (1999), Mick and Ackerman (2000) and Fairley (2003). It was found that the APN in intensive care unit were strongly expected to perform extended roles which need knowledge and skills at an advanced level to solve complex and emergency problems for patients in a highly technological environment.

In the qualitative study, five focus group interviews were carried out with 28 master degree students using a semi-structured interview schedule developed by the author. This interview schedule was piloted and required minor amendments prior to be used in the main study. The average time used for interview was 55 minutes. All interviews were recorded using a cassette recorder. Each cassette was transcribed verbatim simultaneously and back translation was conducted. Data received from qualitative study were organised using a computer software package, CDC EZ-TEXT. This computer software was developed by the Centres for Diseases Control and Prevention (CDC), USA and can be downloaded from the Internet. This computer software package was developed especially for analysing data received from semi-structured interview. The format of codes used in this software package was found to match with guidelines for qualitative data analysis by Miles and Huberman (1994). The qualitative data analysis was then conducted using complex methods of analysis of Strauss and Corbin (1998) and Miles and Huberman (1994). Four categories were developed: trigger, construction, confirmation and transformation. Each category was supported by concepts, properties and its dimensional ranges. The relationships among and between concepts were described and demonstrated in a sequence of process and conditional matrix. Finally, two central categories were chosen and a paradigm model of the development of APN was constructed. Some concepts in this paradigm model were found to be consistent with current literature. These included the concepts of readiness to change (Dalton and Gottlieb, 2003), transition (Meleis *et al.*, 2000) and role theory (Anderson, 1976; Topham, 1986). It can be said that a substantive theory was ultimately achieved from this study.

The strengths of this research could be described in term of the originality of the study, reducing the weakness of methodology by using a methodological triangulation, ethical concerns and trustworthiness and representativeness of the study. Nonetheless, two limitations in this research were highlighted. First, this study was conducted with a limited group. Only head nurses, nurses, doctors and master degree students were studied. Second, the number of participants in the qualitative study was relatively small.

In relation to the results of this study, the prospects for further research were emphasized. A further study should be conducted in other groups and settings. For instance, the perceptions of APN in patients or academic staff could be explored. An additional study could be conducted in community and chronic care to investigate the similarities and differences of the development of APN. It was suggested that other methodologies could be employed to examine the development of APN individually, e.g. phenomenology and action research.

The way forward for the development of APN in Thailand remains of great interest, to given that the application of the concept is in its infancy. The success of the used of this concept in Thai health service and nursing system depends on collaboration between key persons. These include the government, work organisations, academic institutions, professional institutions, people in the public and most importantly, nurses themselves. It is hoped that the implementation of APN would be a turning point towards great improvement in the nursing profession in Thailand. The most important objective of implementing the APN,

however is not the privileges it will bring to nurse professionals but the potential

benefit to patients.

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The Department of Health of the United Kingdom (2000) (http://www.doh.gov.uk/pricare/pcts/htm)

The Ministry of Public health (2003) (http://www.moph.go.th/nursec/aboutus.htm).

The Centers for Diseases Control and Prevention (CDC), the USA (2003) (http://www.cdc.gov/hiv/software/ez-text.htm).

Appendix A1

Interview Schedule for a pre-pilot study in the UK (APNs)

1. What is your post?

2. What Grade for this post?

3. What qualifications needed to apply for this job?

4. Are you Full-time or Part-time?

5. Who is your employer?

6. What is your job description, scope, limitation?

7. What happen during a transition period?

8. What do you think about your post/ role eg. Pros/cons, things need to be change?

9. Do you practice the following roles?
   If yes, what did you practice? Please score 1 to 5 for the important of each role

   1= not important
   2= less important
   3= moderate important
   4= very important
   5= extremely important

9.1	health assessment
9.2	diagnosing
9.3	prescribing
9.4	direct care
9.5	developing care plan
9.6	invasive procedure eg. Insertion of ET, Art. catheter
9.7	making decision eg. Transfer, consult med, discharge
9.8	teaching
9.9	cardio-pulmonay resuscitation
9.10	research
9.11	project development
9.12	health promotion

Interview Schedule for a pre-pilot study in the UK (Master degree students)

1. What do you think the advanced practice nurse is?

....

....

....

2. What titles are used for them in clinical practice?

....

....

....

3. What are their roles?

....

....

....

4. How do they become an advanced practice nurse?

....

....

....

5. What qualifications should they have?

....

....

....

Questionnaire for a pilot and main study in Thailand

Part One : Demographic Data

Please fill in the blank or check √ in front of the appropriate answer.

1. Age................year

2. Gender ....Male ....Female

3. What is your present job title?...............................Grade..........................

4. What highest level of professional training you have completed?
   ....Diploma
   ....Degree
   ....Postgraduate

5. How long have you work in intensive care unit to the recent year?
   ....year

6. What kind of intensive care unit your are currently working?
   ....Genaral ICU
   ....Medical ICU
   ....Surgical ICU
   ....Cardiothoracic ICU
   ....Newborn ICU
   ....Pediatric ICU
   ....Neurosurgical ICU
   ....others, please specify..

Part Two : Perception about advanced practice nursing

1. Have you ever received any information about advanced practice nurse?

................Yes (go to question 2)

................No (go to question 3)

2. From which source(s) have you were informed about APN?

1)..

2)..

3)..

4)..

5)..

3. Please give the definition of 'advanced practice nurse'

....

....

....

....

Part Three: Attitudes toward advanced practice nurse role

Please check √ in the columns of the most appropriate answer

5 = strongly agree

4 = agree

3 = uncertain

2 = disagree

1 = strongly disagree

Question : Do you agree that advanced practice nurse in intensive care unit perform the following clinical procedures?

		Strongly agree 5	Agree 4	Uncertain 3	Disagree 2	Strongly Disagree 1
1	Health assessment					
2	Laboratory and X-ray ordering					
3	Diagnosing					
4	Prescribing					
5	Cardio-pulmonary resuscitation					
6	Arterial line insertion					
7	Venupuncture					
8	Chest tube insertion					
9	Central line insertion					
10	Endo-tracheal tube insertion					
11	Teaching and training junior staff nurse					
12	Conducting research					
13	Research based practice					
14	Admit patient into ICU					
15	Discharge patient from ICU					
16	Refer patient to medical consultant					
17	Clinical supervision					
18	Quality Assurance					
19	Outcome control					

Thank you

Interview schedule for a pilot and main study in Thailand

1. What is advanced practice nursing?

2. How would you describe an advanced practice nurse (APN)?

3. What preparation do you think you would need to become APN?

4. Why do/don't you want to become APN?

5. What factor(s) would influence your transition? Why?

6. What factors(s) would inhibit your transition? Why?

Questionnaire for a pilot and main study

แบบสอบถามความคิดเห็นเกี่ยวกับพยาบาลผู้มีความรู้ความชำนาญเฉพาะสาขา

ตอนที่หนึ่ง ข้อมูลส่วนบุคคล

1.   อายุ...............

2.   เพศ   ....ชาย   ....หญิง

3.   ตำแหน่ง...ขั้น/ระดับ..............................

4.   การศึกษาสูงสุด

......................อนุปริญญา

......................ปริญญาตรี

......................สูงกว่าปริญญาตรี

5.   ท่านมีประสบการณ์ในการปฏิบัติงานในหอผู้ป่วยหนัก   ....ปี

6.   ประเภทของหอผู้ป่วยหนักที่ท่านปฏิบัติงานในปัจจุบัน

.........................หอผู้ป่วยหนักทั่วไป

.........................หอผู้ป่วยหนักอายุรกรรม

.........................หอผู้ป่วยหนักศัลยกรรม

.........................หอผู้ป่วยหนักศัลยกรรมทรวงอก

.........................หอผู้ป่วยหนักทารกแรกคลอด

.........................หอผู้ป่วยหนักเด็ก

.........................หอผู้ป่วยหนักศัลยกรรมประสาท

.........................หอผู้ป่วยหนักอื่นๆโปรดระบุ.......................................

ตอนที่สอง   การรับรู้เกี่ยวกับการพยาบาลชำนาญเฉพาะทาง

1.   ท่านเคยได้ยินหรือรับทราบเกี่ยวกับการพยาบาลชำนาญเฉพาะทางหรือไม่

........................เคย (กรุณาตอบข้อสองต่อไป)

...........................ไม่เคย (กรุณาตอบข้อสามต่อไป)

2.   ท่านได้ยินหรือรับทราบเกี่ยวกับการพยาบาลชำนาญเฉพาะทางโดยวิธีใด

1)..

2)..

3)..

4)..

5)..

3.   กรุณาเขียนคำจำกัดความของคำว่าการพยาบาลชำนาญเฉพาะทางตามความรู้และความเข้าใจของท่าน

....

....

....

....

ตอนที่สาม ความคิดเห็นเกี่ยวกับพยาบาลชำนาญเฉพาะทาง

กรุณาเขียนเครื่องหมาย √ ในสดมภ์ที่ตรงกับความคิดเห็นของท่าน

5   เท่ากับ   เห็นด้วยอย่างยิ่ง
4   เท่ากับ   เห็นด้วย
3   เท่ากับ   ไม่แน่ใจ
2   เท่ากับ   ไม่เห็นด้วย
1   เท่ากับ   ไม่เห็นด้วยอย่างยิ่ง

คำถาม ท่านเห็นด้วยหรือไม่ ถ้าพยาบาลชำนาญเฉพาะทางในหอผู้ป่วยหนักปฏิบัติกิจกรรมทางคลินิกดังต่อไปนี้

		เห็นด้วยอย่างยิ่ง 5	เห็นด้วย 4	ไม่แน่ใจ 3	ไม่เห็นด้วย 2	ไม่เห็นด้วยอย่างยิ่ง 1
1	ประเมินผู้ป่วยทางคลินิก (Clinical assessment) เช่น ซักประวัติ ตรวจร่างกาย					
2	สั่งตรวจทางห้องปฏิบัติการ (Laboratory ordering) เช่น เอกซเรย์ ตรวจเลือด ตรวจปัสสาวะ					
3	วินิจฉัยโรค (Diagnosing)					
4	ออกใบสั่งยา (Prescribing)					
5	ปฏิบัติการช่วยชีวิตขั้นสูง (Cardiopulmonary resuscitation)					
6	สอดท่อเข้าไปในหลอดเลือดแดง (Arterial catheterisation)					
7	เจาะเลือด (Venupuncture)					
8	สอดท่อระบายทรวงอก (Chest tube insertion)					
9	สอดท่อเข้าไปในหลอดเลือดดำส่วนกลาง (Central line insertion)					
10	สอดท่อช่วยหายใจ (Endo/naso tracheal tube insertion)					
11	สอนและอบรมพยาบาลวิชาชีพ (teaching and training junior staff)					
12	ทำวิจัย (conducting research)					
13	ปฏิบัติการพยาบาลโดยใช้ผลงานวิจัย					

	เป็นหลัก (research based practicing)					
14	ตัดสินใจในการรับผู้ป่วยเข้ารับการรักษาพยาบาลในหอผู้ป่วยหนัก (admit patient to ICU)					
15	ตัดสินใจในการจำหน่ายผู้ป่วยออกจากหอผู้ป่วยหนัก (discharge patient from ICU)					
16	ตัดสินใจในการส่งต่อผู้ป่วยให้แพทย์ทำการรักษา (refer patient to medical consultant)					
17	ควบคุมดูแลการปฏิบัติการพยาบาล (clinical supervision)					
18	ปฏิบัติการประกันคุณภาพการพยาบาล (quality assurance)					
19	ควบคุมผลการปฏิบัติการพยาบาล (outcome control)					

ขอขอบคุณที่กรุณาให้ความร่วมมือในการตอบแบบสอบถาม

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Interview schedule for a pilot and main study in Thailand

คำถามที่ใช้ในการสัมภาษณ์แบบกลุ่มสำหรับนักศึกษาปริญญาโทพยาบาลศาสตร์

1   ท่านคิดว่า การพยาบาลชำนาญเฉพาะทาง คืออะไร

2   คำจำกัดความของคำว่า พยาบาลผู้มีความรู้ความชำนาญเฉพาะทาง ในความคิดเห็นของท่าน
ว่าอย่างไร

3   ท่านคิดว่าการเป็นพยาบาลชำนาญเฉพาะทางต้องมี การเตรียมตัว อย่างไร

4   ท่านคิด อยากจะเป็น พยาบาลผู้มีความรู้ความชำนาญเฉพาะทาง หรือไม่ เพราะเหตุใด

5   ปัจจัยที่ส่งเสริม ท่านในการเป็นพยาบาลผู้มีความรู้ความชำนาญเฉพาะทางคืออะไร เหตุผล คืออะไร

6   ปัจจัยที่ขัดขวาง ท่านในการเป็นพยาบาลผู้มีความรู้ความชำนาญเฉพาะทางคืออะไร เหตุผล คืออะไร

7   ท่านคิดว่า แนวคิดพยาบาลผู้มีความรู้ความชำนาญเฉพาะทางเหมาะสมกับระบบบริการสุขภาพใน
ประเทศไทยหรือไม่ เพราะเหตุใด

8   ท่านคิดว่า พยาบาลผู้มีความรู้ความชำนาญเฉพาะทาง ในแผนกหอผู้ป่วยหนัก ควรมีบทบาทอย่างไร

ขอขอบคุณที่กรุณาให้ความร่วมมือในการสัมภาษณ์แบบกลุ่ม

Appendix C1

Consent form

I was explained by Mrs. Prathana Langkarpint, a PhD student from the University of Hull, who conduct research about perception and transition to advanced practice nurse in Thailand. I understand that an audiotape will be used during the focus group interview.

The information I give to Mrs. Prathana Langkarpint will be kept strictly confidential and used for this research only. All audiotapes will be destroyed at the end of the study. I have the right to withdraw from this study at any time without giving reason to Mrs. Prathana Langkarpint. I agree to take part in this study.

Participant's Signature...

Name...

Date...

Researcher's signature...

Name...

Date...

Appendix C2

Consent form for (in Thai)

ใบยินยอมเข้าร่วมในการศึกษาวิจัย

ข้าพเจ้า นาย / นาง / นางสาว .... ยินยอมเข้าร่วมใน

การศึกษาวิจัยหัวข้อ ความคิดเห็นและการเปลี่ยนผ่านเป็นพยาบาลผู้มีความรู้ความชำนาญเฉพาะทาง: การ

ศึกษาวิจัยแบบสำรวจในหอผู้ป่วยหนัก ภาคเหนือประเทศไทย (Perception and transition to advanced

practice nurse: an exploratory study in intensive care unit, the North Region of Thailand) ข้อมูลจากข้าพเจ้า

จะต้องได้รับการรักษาไว้เป็นความลับและนำไปใช้ในเพื่อการศึกษาวิจัยดังกล่าวและการตีพิมพ์ที่เกี่ยวข้อง

เท่านั้น อนึ่ง ข้าพเจ้ามีสิทธิ์ที่จะถอนตัวออกจากการศึกษาวิจัยโดยไม่ต้องแจ้งเหตุผลแก่ผู้วิจัย

ผู้ยินยอม

ลงชื่อ...

(..)

วัน เดือน ปี ....

ผู้วิจัย

ลงชื่อ...

(นาง ปรารถนา ลังการ์พินธุ์)

วัน เดือน ปี ....

Time Scale and Operational Schedule

Year	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
2001/ 2002	Research Training Literature Review				Full Proposal Writing Developing Research Instruments			Pre-pilot study in the UK			Pilot Study in Thailand	
2002/ 2003	Data Collection						Data Analysis					
2003/ 2004	Writing Up						Intercalation Due to Health Problem					
2004/ 2005	Writing up					Submission of Thesis						

Appendix E. Summary of published papers

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Clifford (1981)	USA*	survey	152 educators and 190 employers	questionnaires	response rate 88%
Branyon (1985)	USA*	survey	106 nursing directors	questionnaires	response rate 71%
Ploessl (1989)	USA**	survey	117 nurse administrators	questionnaires	replicated study
Wingert (1998)	USA**	descriptive exploratory	5 physicians in emergency department	interview	Munhull and Boyd's of data analysis
Schweser (1998)	USA**	survey	149 patients	telephone interview	Chi square
Balken (2000)	USA*	descriptive interpretive	6 NPs in acute care medical specialty	interview	
Daniell (2001)	USA*	descriptive	nurse administrator and CNS	N/A	Role theory

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Author (year)	Country *doctoral theses **master theses	Study design	Sample	Method/tool of data collection	Comments
Hester and White (1996)	USA	survey	80 CNS preceptors	questionnaires	low response rate (53%)
Willium and Valdivieso (1994)	USA	survey	228 APNs	questionnaires	convenience sampling
Paredes and Frank (2000)	USA	survey	25 parents 35 nurses	questionnaires	convenience sampling conducted in one NICU
Woods (1998)	UK*	case study	5 cases	interview observation document analysis	Nicholson's theory of work role transition
Carroll et al. (1997)	USA	grounded theory	356 nurses	interview	
Wells and Baggs (1994	USA	survey	279 nurses	research attitudes scales	response rate staff (42%) manager (90%), APN (62%)
Kim et al. (2002)	Korea	survey	26 experts	Delphi	National sampling two round questionnaires

Author (year)	Country *doctoral theses **master theses	Study design	Sample	Method/tool of data collection	Comments
Walton (2002)	USA	grounded theory	11 patients in out patient hemo-dialysis unit	in depth interviews	Glaserian method of data analysis
Martin (1995)	USA*	grounded theory	23 NPs	interviews	purposive sampling
Scott (1997)	USA*	survey descriptive	724 CNSs	questionnaires	reponse rate 32%
Franks (1996)	USA*	survey	N/A	questionnaire	correlation
Harper-Femson (1998)	Canada*	descriptive	10 NPs	interview	mailing list of the NP association
McGowan (2000)	USA**	survey	57 physicians	questionnaire	convenience sampling
Allen (2001)	USA**	survey	N/A	client satisfaction tool	convenience sampling

Author (year) •doctoral theses ••master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Tally and Richens (2001)	USA	survey descriptive	290 advanced practice psychiatric nurses	postal questionnaire (two types)	response rate 66%
Glod and Manchester (2000)	USA	survey	2651 (NPs and CNSs)	questionnaires	response rate 51%
Bergeron et al (1999)	USA	survey case study	small rural hospitals (survey n=285, case study n=35)	questionnaires site visiting interview	
Laurant et al (1998)	UK	randomised control trail	34 GPs, 5NPs		
Garfield (2000)	USA	survey	350 residents human resource personnel	focus group and telephone interview	

Author (year)	Country *doctoral theses **master theses	Study design	Sample	Method/tool of data collection	Comments
Phillips et al. (1995)	USA	survey	12 APNs	Nursing Care Encounter Specific Record and Indirect Patient Care Record	
Martin (1996)	USA*	survey	CNSs and NPs	N/A	factor analysis multiple regression analysis
Peterson et al. (2001)	USA	survey	573 oncology nurse	questionnaires	random sampling low response rate (51%)
Calzone et al. (2002)	USA	Delphi	9 of the following: nursing educator or researchers, general genetic experts, genetic expert in oncology and 10 APN in oncology	two rounds of survey by postal questionnaires	National survey acceptable response rate 61% and 88%

Author (year)	Country *doctoral theses **master theses	Study design	Sample	Method/tool of data collection	Comments
Rosenzweig et al. (1994)	USA	multi-methods descriptive and survey	1 school of nursing NP curriculum	interview	
Putnum (1994)	USA*	Delphi	34 experts	questionnaires	3 round questionnaires
Sterling and McNally (1999)	USA	survey	20 doctoral students in nursing	telephone interview	snowballing
Fergusson and Diserens (1996)	USA	a duplicate survey	50 APNPOs	questionnaires	response rates 61 and 88%
Siccardi (1999)	USA*	qualitative	N/A	N/A	
Ahern-Lehmann (2000)	USA*	Delphi	81 expert	postal questionnaires focus group discussion	National survey
Neafsey (1997)	USA	survey	27 APN students	questionnaires	CAI can be useful for distance learner

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Kemper et al. (2002)	USA	randomised crossover trial	physicians, pharmacists, APNs, dieticians (total n=537)	ten weeks internet curriculum	response rate N/A
Vessey and Huss (2002)	USA	retrospective descriptive	graduating and NP students (n=26)	standardised patient encounter	not suitable for summative evaluation
O'Comer et al. (2000)	USA	survey descriptive	19 NPs	database composed of core health data element and standardised nursing language	NANDA, NIC
Fisher and Mitchell (1998)	Canada	survey	24 patients who received acute psychiatric care	interview	Parse's Theory of Human Becoming
Kelly (1999)	USA	case study (Phenomenology)	1 nurse consultant	group discussion	Parse's Theory of Human becoming

Author (year) ·doctoral theses ··master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Allen et al. (2000)	USA	retrospective quantitative	79 adult migraineurs	Ferrans and Powers quality of life index	
Willium and Sidani (2001)	Canada	1 case study	NP in oncology (palliative ambulatory care)	multi-methods questionnaire and database developed by the NP	no consent form
Dahl and Penque (2000)	USA	N/A	APN-directed heart failure programme		
Gregg and Bloom (1999)	USA	descriptive survey	822 APNs	postal questionnaires Martin, Holroyd and Penzien's headache Specific locus control	Low response rate (39%)

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Ritz et al (2000)	USA	randomised control trial	210 women with newly diagnosed breast cancer	questionnaires	time limit to return questionnaires
Ryden et al. (2000)	USA	randomised control trial	2 interventions (home residents n=86) 1 control (residents n=111)	protocols for incontinence, pressure ulcers, depression and aggressive behaviour	
Schaffner et al. (1995)	USA	survey	26 health service systems	telephone interview	consensus reached
Micheels et al. (1995)	USA	retrospective	78 patients (colon resection)	acuity level and length of hospital complication rates, re-admission rates, anxiety levels	not significantly difference

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Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Rawl et al. (1998)	USA	randomised control trial (n=51)	control group intervention group (n=49)	FIM, STAI	conducted in only one unit
Waszynski et al. (2000)	USA	survey	46 APRN	acuity level	low response rate (20%)
Breer et al. (2002)	USA	survey	153 APN students 431 medical residents	questionnaires	MRs>APN students
Mvula and Miller (1998)	USA	comparative study	390 pregnancy (collaborative practice centre n=179, university medical centre n=181)	birth weight and number of of pre-term baby	Chi square, Fisher Exact test, T-test

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Hinds et al. (1999)	USA	survey (exploratory)	38 staff from paediatric oncology (8 APNs, 2 nurse managers, 23 staff nurses, 3 nutritionists 1 chaplain, 1 physician)	focus group discussion	multidisciplinary
Gore (1999)	USA	survey	55 African- American women	focus group	King's General System framework Comb and Snygg's concept of perception
Devine and Frank (2000)	USA	survey	300 nurses and student nurses		
Stacey et al. (2002)	Canada	survey (descriptive)	97 women with high risk of breast cancer	questionnaire	
Mahon (1995)	USA	survey (retrospective)	108 women	patients' charts	

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Brooten et al. (1998)	USA	secondary analysis	171 high risk pregnancy	intervention charts	
Hamilton et al. (2002)	USA	secondary analysis	171 high risk pregnancy	intervention charts	
Paul (2000)	USA	comparative	56 admissions (prior to join clinic	number of readmission length of stay n=38, post joining n=19)	
LaBresh (2000)	USA	survey (retrospective)	641 patients with coronary artery diseases (352 patients at a lipid centre, 289 patients at a non- lipid centre)	LDL levels	

Author (year)	Country *doctoral theses **master theses	Study design	Sample	Method/tool of data collection	Comments
Savage and Grap (1999)	USA	survey	342 patient who had open heart surgery	telephone interview	
Beal (2000)	USA	ethnography	7 NPs in neonatal intensive care units	interview and field practice observation	
Ball (2000)	UK*	grounded theory	40 APNs in adult critical care	interview	purposive sampling
King et al. (2000)	USA	survey	336 transports of patients without presence of physician	transport sheet	8 intubations no complication
Klienpell (1997)	USA	survey	126 ACNPs	questionnaire (41 items)	response rate 93%
Klienpell (1999)	USA	survey	619 ACNPs	questionnaire (44 items)	response rate 84%
Klienpell (2001)	USA	survey	545 ACNPs	questionaaire (46 items)	response rate 88%

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Naylor et al. (1999)	USA	randomised clinical trial	363 patients	hospital readmission index hospital DRG comorbid conditions new health problems length of hospital stay unscheduled visited estimate cost functional, cognitive, emotional status patient satisfaction	home and telephone visits
Naylor and McCauley (1999)	USA	secondary analysis	30 patients (15 control, 15 intervention)	content analysis of of care logs	
Hughes et al. (2002)	USA	secondary analysis	148 records of post surgical patients	Grobe's Nursing intervention Lexicon and Taxonomy	
Beeber and Charlie (1998)	USA	pilot study	33 women with depressive symptom	pre and post intervention intervention record	

Author (year) *doctoral theses **master theses	Country	Study design	Sample	Method/tool of data collection	Comments
Tucker et al. (1999)	USA	survey (case study)	34 nurses	CCNSFI interview, open forums	Giorgi's method of data analysis
Brooten et al. (1998)	USA	secondary analysis	85 women with high risk pregnancy	care logs	intervention provided by reimbursement plan not patients' needs
Dellasega and Zerbe (2002)	USA	randomised clinical trials	32 caregivers (for frail older adults)	HDL form CBI form Omaha Classification System	