Structure, Process, and Outcomes of Healthcare Service Provision, at Two Primary Care Settings, by an Advanced Community Nurse Practitioner and a General Nurse Practitioner

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Abstract: This descriptive comparative study aimed to: describe the process of care and community health service programs managed by an advanced community nurse practitioner (ACNP); and, compare the outcomes of healthcare service provision (health status, service satisfaction, and health care expenses of service users), at two primary care settings, between an ACNP and a general nurse practitioner (GNP). Through purposive sampling, 405 service users were recruited from a province in northeastern Thailand. Two hundred users were receiving care from the ACNP in one health center and 205 were receiving care from the GNP in another health center. Quantitative data were collected via interviews through the use of questionnaires. Qualitative data were collected via in-depth interviews and observation. Quantitative data were analyzed using Chi-square and the Mann-Whitney U test, while qualitative data were assessed via content analysis. The results revealed that the service users receiving care from the ACNP had higher satisfaction with services ($p < .001$) and higher healthcare expenses ($p < .001$) than those receiving care from the GNP. No significant difference in health status was found between the two groups. Qualitative data revealed the ACNP initiated a number of projects and innovations, indicating the success of participatory service provision and proactive work leading to quality of care and satisfaction of service users. The findings suggested the ACNP should be recognized and constantly supported for role development to enable her to work on effectively promoting health and quality of life for people in the community.

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Introduction

As a result of current health care reform in Thailand, emphasis has been placed on the quality and accessibility of primary care services to all of the people. Health centers and sub-district health promoting hospitals serve as the primary care service facilities throughout Thailand. The mission of these primary healthcare institutions is to provide services, based on national policy and social contexts, that emphasis

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development of service users' potential for promoting health and preventing disease, while simultaneously managing health problems. The need for more nurses in these health care institutions is evident, particularly in northeastern Thailand where the nurse to population ratio is 1:638.[1, 2] In 2002, the Thai government created a policy to work towards the provision of nurse practitioners in all health promoting hospitals within ten years. To support this policy, a four-month short course training program for registered nurses (RNs) to become general nurse practitioners (GNPs) was developed. However, many schools of nursing believe that advanced community nurse practitioners (ACNPs), prepared at a masters level, need to be developed in order to increase accessibility and a higher quality of primary care services, especially for individuals residing in rural areas.[3] Thus, two types of nurse practitioners (NPs) are being prepared in Thailand: ACNPs and GNPs.

In 2007, it was reported that 96.5% of the 1,928 Thai NPs graduated from the four-month short training course for GNPs, developed by the Thailand Nursing and Midwifery Council (TNMC), as opposed to graduating from a masters level program for ACNPs.[4] More than half (57.5%) of these NPs worked in public hospitals, while only 28.6% of them worked at a health center or a primary care service center.[4] The type of practice, in which they engaged, tended to focus primarily on respiratory problems, monitoring chronic illnesses, disabilities, palliative care, health promotion, and disease prevention.[4] However, little information is available that compares the quality of care delivered by ACNPs prepared at the masters level, and GNPs prepared by way of the four-month short course training program.

Literature Review

Unlike GNPs, ACNPs are advanced practice nurses, with advanced knowledge and education, who play a major role in the development of health service provision plans to meet the needs of service users, including individuals, families, and communities, as well as ensure effective standards and quality of care to promote, treat, and rehabilitate health of service users, and provide outcome-based care to manage major health problems of a target group/service users.[5] Health care provided by ACNPs has been found to help prevent diseases and complications, reduce rates of hospital admissions, increase satisfaction and quality of life of service users, and decrease medical expenses of service users, families, communities, and the government.[5]

The role of ACNPs embraces equal access of individuals, including individuals with chronic illnesses or disabilities, postpartum mothers, and newborn infants, of all ages and health conditions, to healthcare services regarding primary medical care and home visits. ACNPs also initiate health programs and innovations for health promotion and disease prevention, as well as enhance the provision of quality care.[6]

Advanced nurse practitioners (ANPs) have expanded their roles due to a shortage of physicians, making it possible for users of health care services to have equal access to quality healthcare delivery.[4] Major competencies of ANPs are health promotion and disease prevention, primary medical care, including differential diagnosis and treatment of common health problems of the individual, and provision of care to persons with chronic illnesses, dependency needs, and disabilities.[6]

The TNMC has played a major role in developing competencies of professional nurses in response to Thailand's healthcare policies, especially at the primary care level, via collaboration with academic nursing institutions to develop curriculum standards, training programs, and practice guidelines, including specifications regarding prescription of medication by ANPs, according to their scope of practice.[7] Thus, the role of ANPs has changed from assisting physicians to functioning within a professional scope of practice under governmental laws. These changes have led to the extension of better healthcare service provision, with respect to the needs of the public, as well as

enhancement of the self-esteem of NPs. Previous studies have shown that ANPs are important healthcare personnel providing primary healthcare services, especially in areas where no physicians exist.[7-10]

Positive clinical outcomes, regarding the use of Thai NPs, regardless of whether they are ACNPs or GNPs, have been noted. These outcome have included: decreased healthcare complications; accessibility of NPs to patients asking health-related questions; reduction in the presence of patients' risk behaviors; patients' improved quality of life; an increased number of service users of healthcare centers; decreased overcrowding in hospitals; the presence of strong healthcare provider networks in communities; reduction in health-related problems; and, establishment of health promotion groups.[4] In addition, not only in Thailand,[11] but also in other countries,[8-10] a decrease in healthcare expenses has been found to be related to the use of NPs within the healthcare system. Finally, it has been noted that patients have expressed more satisfaction and confidence regarding acute illness, psychosocial, and health promotion care they have received from NPs compared to similar care they have received from physicians.[12] It also has been reported that when Thai NPs, in remote areas, have operated private clinics that are open after normal healthcare clinic hours, the recipients of the services provided have been satisfied with the care they have received with respect to relief of acute healthcare problems, as well as in regards to emergency situations.[13]

Prior studies have clearly revealed the benefits of NPs functioning within a healthcare system.[8-12] However, previous studies have not examined the differences in quality of healthcare service provision of ACNPs and GNPs. In order for Thai health policy makers to value ACNPs, in the health care system, this difference requires evaluation. Therefore, the purposes of this study were to: describe the process of care and community health service programs managed by an ACNP; and, compare the outcomes of healthcare services provision (health status, service satisfaction, and healthcare expenses of service users), at two primary care settings, between an ACNP and a GNP.

Conceptual Framework

Based on Donabedian's Theory of Quality Healthcare,[14] this study focused on the elements of quality service provision delivered by an ACNP and a GNP. Quality of service provision referred to what the healthcare system needed to provide through the delivery of services to individuals, families and communities, which had to be in compliance with professional knowledge. Donabedian's theory identified three objects of evaluation: structure, process, and outcomes. A complete quality assessment program requires a simultaneous use and examination of the relationship among all three objects of evaluation.

Structure, according to Donabedian's theory, was defined as different components in the health service provision settings (i.e., equipment, tools, budgets, and organizational structures). In this study, structure referred to: characteristics and positions of the ACNP; characteristics of the service users; settings and work contexts; and, factors influencing provision of healthcare services. Process, according to Donabedian's theory, refers to provision of services or activities of service providers and service users. In this study, process referred to: the activities of the service providers; collaboration among related individuals and parties; and, activities that promoted positive outcomes. Finally, Donabedian's theory refers to outcomes as the effects of services on the health status of service users. For this study, outcomes were defined as: health status; satisfaction; and, healthcare expenses of service users, resulting directly or indirectly from structure and process.

Method

Design: A descriptive comparative design, using both qualitative and quantitative data, was used.

Ethical Considerations: Prior to implementation, the study was approved by the Ethical Committee on Human Rights Related to Research Involving Human Subjects of the primary investigator's (PIs) academic institution. Potential participants were informed about: voluntary involvement; confidentiality and anonymity issues; the purpose of the study; data collection procedures; the right to withdraw at any time without repercussions; and, expected outcomes and benefits of the study. Participants consenting to take part in the study were asked to sign a consent form prior to data collection.

Setting and Sample: The setting consisted of two health centers located in the same province in northeastern Thailand. The health centers were selected because they were located in the same province and geographical area of the country, and each of them employed either an ACNP or a GNP to provide healthcare services. The study participants consisted of an ACNP, a GNP, eleven stakeholders affected by the practices of the ACNP, and the healthcare users of the services provided by the ACNP and GNP.

The ACNP was identified by way of the database of the Registration Unit of the TNMC and from the profiles of the academic conference, "Work Accomplishments of APNs," organized by the TNMC in March 2009. Selection criteria of the ACNP included: working full time as an ACNP; identified as demonstrating "best practice in the advanced role" at a health center of employment; recognized as an ACNP both within and outside the health center; and, willing to participate in the study. The selected ACNP was: female; 45 years of age; married with children; master's degree prepared in community health nursing; engaged in nursing practice for more than 22 years, with 17 years in a hospital and five years in the community; prepared by way of additional short training courses in primary medical care, critical care, and ultrasound on pregnant women; certified as an ACNP in 2008 and the first APN to practice in the province; a member of the provincial committee on public policy specification; and, noted for professional accomplishments regarding development of a manual for pregnant women, and for research on work quality and nursing innovations.

The GNP was identified by the database of the Registration Unit of the TNMC and the profiles of the provincial health office. Selection criteria for the GNP included: working full-time as a professional nurse; having a certificate indicating completion of the four-month short course training program for NPs; and, willingness to participate in the study. The selected GNP was: female; 37 years of age; married, without children; Buddhist; prepared in nursing at the baccalaureate level; holder of a certificate indicating completion of the four-month short course training program for NPs; working as a GNP for 10 years; noted for playing a major role in health screenings for individuals with diabetes, hypertension, cervical cancer, and breast cancer; and, noted for coordinating, with other members of the health team, health promotion projects at her respective health center.

The stakeholders were eleven individuals influenced, in some way, by the services provided by the ACNP. The eleven stakeholders included: two assistant public health officials who were colleagues of the ACNP; the head of the health center that employed the ACNP; two village health volunteers working proactively with the health team and community members related to the health center; two heads of the village in the catchment area where the health center was located; one teacher in a secondary school located in the catchment area where the healthcare center was located; one primary youth member who was part of the youth project located in the catchment area where the health center was located; one healthcare service user who received care from the ACNP; and, one family caregiver of a healthcare service user who received care from the ACNP.

Regarding the users of the healthcare services provided by either the ACNP or GNP, it was determined, using a power of 0.80 and a significance level of

0.05,[15] that a sample of 384 healthcare service users was needed. To deal with possible existence of incomplete data, an additional 21 users were added, making a final required sample size of 405. Two-hundred of the healthcare service users were purposively selected from the health center that employed the ACNP, while 205 were selected from the institution that employed the GNP. Selection criteria for the healthcare service users were: 18 years of age or older; receiving healthcare services at one of the two health centers used as a data gathering site; receiving care from either the ACNP or GNP; able to communicate in Thai; and, willing to participate in the study.

The characteristics of the users of the healthcare services provided, by either the ACNP or GNP, were similar. No statistical differences were noted in regards to demographics between the two groups of users. Most of the ACNP healthcare service users (n = 153; 76.5%) and GNP healthcare service users (n = 155; 75.6%) were female. No statistical difference in age ($t = -1.22$; $p > .05$) was noted between the two groups of users (ACNP healthcare service users mean age = 44.9 years ± 6.8, while GNP healthcare service users mean age = 44.2 ± 6.3 years). Most of the healthcare service users were: Buddhist (n = 200; 100% and, n = 203; 99%, respectively); elementary school graduates (n = 151; 75.5% and, n = 155; 75.6%, respectively); farmers living near their respective healthcare center (n= 145; 72.5% and, n = 147; 71.7%, respectively); and, earning less than 5,000 baht (30 baht = 1 USD) a month (n = 144; 72.0% and, n = 148; 72.2%, respectively). The major type of healthcare service used was primary medical care (n = 188; 94.0% and, n = 185; 90.2%, respectively). All of them had received primary care services, at least twice within the prior five years, from the ACNP or GNP.

Instruments: Five instruments were used for data gathering, including a: researcher-developed *ACNP and GNP Demographic Questionnaire; researcher-developed ACNP and GNP Performance Observation Form;* researcher-developed *Interview Protocol for the ACNP and Stakeholders Influenced by the Practices of the ACNP;* researcher-developed *Service Users' Questionnaire;* and, *Service Users' Satisfaction Questionnaire.*[16] Permission was obtained for use of the non-researcher-developed instrument. In addition, prior to implementation of the study, three experts, in community health, nursing, and qualitative research, assessed the content validity of each instrument. Based on the experts' comments, the interview protocol was revised.

The researcher-developed *ACNP and GNP Demographic Questionnaire* requested information regarding each NP's: gender; age; marital status; religion; nursing education; years of nursing practice; certification; and, specific professional accomplishments related to the nurse practitioner role. The researcher-developed *ACNP and GNP Performance Observation Form* requested an observer view and record information regarding the ACNP's and GNP's: professional activities; service users health problems addressed; examinations conducted; basic laboratory investigation (i.e., hematocrit); diagnoses made; treatments administered; nursing care provided; health education and health promotion activities provided; consultations conducted; referrals made; and appointments made with the healthcare service users. To obtain and record these data on the form, the PI, second author, and a trained research assistant (RA) engaged in five participant observations, twice weekly, for one month of both the ACNP and GNP.

The researcher-developed *Interview Protocol for the ACNP and Stakeholders Influenced by the Practices of the ACNP* served as a guide for eliciting data on the structure, process, and outcomes of the factors influencing the practices of the ACNP. Examples of items in the interview protocol for the ACNP included: "Please share the problems and experiences you have encountered as a result of working in the community (depending upon the response, this item could assess either structure or process)"; "How have you managed the community

problems you have encountered, through the health service programs, that have involved the stakeholders and related parties (process)?"; and, "What are the outcomes that have resulted from the structure and process of the community's context (outcomes)?" Examples of questions for the stakeholders were: "Please share the services you or your family members received from the ACNP, and explain which were helpful and how you feel"; "What are the programs/ projects and activities you or your family member joined with the ACNP?"; and, "Please share your experiences working with the ACNP or participating in activities, and express your impression, comments, and suggestions."

The 10-item researcher-developed *Service Users Questionnaire* consisted of three parts: the demographic characteristics of the healthcare service users and the type of services they used (8 items); an assessment of the health status of the users (one item); and, the users' healthcare expenses (one item). The first component of the questionnaire addressed information regarding: gender, age, religion; educational level; occupation; income per month; type of healthcare service used; and, number of times healthcare services were received from either the ACNP or GNP. The second component of the questionnaire involved the use of one item from the SF-36[17] that addressed the overall health status (physical and mental health) of the healthcare service users. The item had possible responses ranging from 0 = "not good at all" to 4 = "excellent." The score then was classified as either "poor" or "good." The third component of this questionnaire, healthcare expenses, asked how much the service users paid, in baht, for medications, treatments, and transportation.

The fifth and final instrument used to obtain data was the 17-item *Service Users Satisfaction Questionnaire.*[16] This instrument assessed each user's satisfaction with the healthcare services he/she received from the ACNP or GNP, and consisted of three subscales: being sympathetic (6 items); accessibility to service and care (7 items); and, professional competence (2 items). Examples of the items were: "The nurse understands my problem (being sympathetic)"; "The nurse continuously followed up with me (accessibility to service and care)"; and, "I am confident that I received good healthcare service from the nurse (professional competence)." Possible responses ranged from 0 = "strongly disagree" to 4 = "strongly agree." The last three items in the questionnaire were open-ended questions that addressed: the most impressive nursing care received; outcomes of the nursing activities; and, suggested improvements in the nursing care received. Prior to use in this study, the questionnaire was pilot-tested on 15 individuals, similar to the subjects in the study, and found to have a reliability of 0.88. For the actual study, the reliability of the questionnaire was found to be 0.91.

Procedure: Once approval to conduct the study was obtained and the participants consented to take part in the study, data gathering commenced. First, qualitative data were obtained from the ACNP, GNP, and stakeholders, via interview, through use of the: researcher-developed *ACNP and GNP Demographic Questionnaire and the researcher-developed Interview Protocol for the ACNP and Stakeholders Influenced by the Practices of the ACNP.* Each interview was conducted either at the health center or at the home of the respective participant and lasted approximately one hour per subject. Following completion of the interviews, the researcher-developed *ACNP and GNP Performance Observation Form* was used, by the PI and RA, to obtain data on the ACNP's and GNP's performance while they were working at their respective healthcare center. Both the ACNP and GNP were observed five times, twice weekly, for one month (for a total of 60 hours for each NP).

Once the qualitative data were obtained from the ACNP, GNP, and stakeholders, the second part of the data gathering process took place. This involved obtaining quantitative data, from 405 healthcare users, via the researcher developed *Service Users' Questionnaire*

and the Service Users' Satisfaction Questionnaire.[16] Data were gathered, in a private area of the clinic waiting room at each health center, after the healthcare users were seen by either the ACNP or GNP. Both questionnaires were administered via interview, and took approximately 15 to 20 minutes to complete.

Data Analysis: The qualitative data were analyzed via content analysis. The quantitative data were analyzed using descriptive and inferential statistics, including Chi-square test and the Mann-Whitney U test.

Results

Structure of the healthcare center with the ACNP: The healthcare center where the ACNP worked was one of 13 healthcare centers in the district that provided holistic care to individuals, families, and members of a community, according to the government's policy that emphasizes the provision of quality service, using specific standards and guidelines (i.e., guarantee of primary care and treatment within 15 minutes; prenatal care within 12 minutes; and, assessment of development and immunization within 22 minutes). In addition, the healthcare center emphasized access to healthcare services and community participation, as well as specifications for budget plans, staff development, roles and responsibilities of healthcare staff members (i.e., primary treatment; referrals; coordination with village healthcare volunteers, local administrative organizations, and health networks in the district; home visits; rehabilitation; consultation; and, provision of health promotion projects and new innovations). Regarding manpower, six staff members worked at the healthcare center, including a/an: public health academic in charge of the center; community public health official; assistant to the community public health official; clerical staff person; janitor; and, ACNP. Healthcare services were provided on a daily basis. After normal healthcare center hours and on weekends, an after-hour clinic was in operation.

Process of healthcare service provision at the healthcare center with the ACNP: The ACNP developed the service system to provide, through a skill-mixed team, holistic care for individuals, families, and members of the community. The activities were integrated involving health education for approximately 5,000 villagers in six villages, with an average of 1,800 healthcare service users per month. In fiscal year 2009, the number of monthly service users increased to 3,590.

Regarding role development, the ACNP initiated projects and new innovations by way of: situational analysis; the problem solving process; relevant planning; development of proactive operations; and, periodic assessments. Coordination with related parties was conducted and the community was invited to participate, as working team members, to promote their healthcare potential.

The target groups for the ACNP, for one of her projects, were children and adolescents. Regarding children, she assessed the various stages of their development, starting with their fetal development. However, once the children entered the school system, healthcare services were integrated into school health, which was under the control of teachers. Major problems that the ACNP noted, among the children and adolescents, were: poverty; quarreling; stealing; gambling; unsafe sex; teenage pregnancy; complications from illegal abortions; and, substance abuse. Regarding problems related to the children, the ACNP stated:

> *"I closely monitored all of them. I know the development of each of them and who they live with. However, once children enter the school system, healthcare services are under the teachers' control. Healthcare services become related only to school health. As a result, a distance is created between the nurse and the children for whom she has provided care, since their fetal development. Nurses will see the children only when they have problems."*

> *"The causes of the children's problems are complicated... If health services continue to be provided in the same way they have been provided, they may not be sufficient. One main problem is the way community members think. They put the blame on young people and see them as the cause of their own problems... Community members need to become a nurse in order to understand the healthcare system... and be brave enough to protect children who have problems."*

Regarding problems related to the adolescents, the ACNP described how she managed the teenage pregnancies, especially in light of how community members tended to blame the youth for their own problems.

> *"I helped the female adolescents without letting community members know about their problems. I contacted the hospital and made a quick referral."*

A number of projects were developed, by the ACNP, based on the belief that good children and problematic children: could co-exist; were able to work for improvement of society; and, were not different in terms of value. The process used, during development of the projects consisted of: developing the children's/adolescents' potential by promoting leadership, offering opportunities to do challenging work, and engaging in good deeds for others; providing love, understanding, protection, and education; and, creating activities that generated self-worth and value for others.

The main projects carried out by the ACNP were: a) two research studies (i.e. "Solutions to Household Debts" and "Prevention of Gambling in Children and Adolescents"); b) the "Healthy Child Volunteer Project;" and, c) the "Healthcare Service Provision System Development Project." Details regarding these projects follow.

The first project involved two research studies (i.e., "Solutions to Household Debts" and "Prevention of Gambling in Children and Adolescents") funded by the Thailand Research Fund. The projects originated as a result of the prevalence, among children and adolescents, of economic poverty, and drinking and gambling at funerals. These situations, in turn, lead children and adolescents to fight with and steal from others. The ACNP stated:

> *"Parents did not have anything left. They had sold everything in their house. They did not have enough money for food, so the children and adolescents started to steal from others. The children and adolescents became addicted to paint thinner solvents (for drinking) and gambling. They also formed gangs and fought with members of other gangs."*

In order to appropriately deal with these issues, the ACNP realized data needed to be gathered and shared with members of the community. During the initial phases of the research projects, community members did not understand why data, regarding poverty, drinking, and gambling, needed to be gathered. However, the ACNP indicated, after data obtained from the research studies were shared with members of the community, there was a realization about the importance of networking among relevant parties within the community (i.e., teachers/administrators of schools, police officers, and local administrative organizations at the sub-district and village level) to deal with the problematic children/adolescent issues. The outcome of the research studies lead to development of a policy entitled, "No drinking and gambling at funerals."

The second project, "Healthy Child Volunteer Project" funded by "Foster Parents Plan for Children,"[18] was developed for the purpose of promoting health education among children and adolescents. Children and adolescents were provided with opportunities to learn about and practice first aid (i.e., application of

wound dressings). The purpose of such training was to assist the children/adolescents in being able to dress their own wounds, should they become injured in a minor accident (i.e., falling off of a motorcycle). In addition, the children/adolescents were encouraged to come to the healthcare center, by themselves, for consultation on issues such as sexual relationships and birth control. Fortunately, the parents realized the importance of these services and supported their children and adolescents in becoming active in the project. The activities involved in this project lead to the creation of another project, "Development of a Participatory Health Center." This project allowed children and adolescents to help the healthcare center staff with preparation of certain medications (i.e., pills) for distribution by the healthcare center and to volunteer to become a member of a committee for the Provincial Children's Council. The ACNP described the success of the "Development of a Participatory Health Center" as follows:

> *"The 'Development of a Participatory Health Center' project lead to the healthcare center becoming a place of learning. The children/adolescents came to learn through experiential learning activities and to understand how healthcare was provided. When they got involved, their self-esteem increased. In addition, when the children/adolescents came to the healthcare center, their parents came too.... so the healthcare center also became a place of learning for the adults."*

The third project, "Healthcare Service Provision System Development Project," involved two components: providing primary healthcare and making home visits. Regarding primary care, the ACNP was responsible for the provision of primary care to the healthcare service users. Her role also involved giving advice to co-workers at the healthcare center and sharing her experiences in primary care with them. The process of providing primary care involved: the healthcare service users registering themselves at the clinic check-in desk; retrieving their files, which were arranged by house number and village, from the storage cabinets; weighing themselves; and, meeting with the ACNP. The ACNP then: took their medical history; assessed their vital signs; performed physical examinations; made a differential diagnosis; provided healthcare information regarding the diagnosis and basic healthcare; prescribed medications, if needed; provided instruction on the proper use of the medications prescribed; allowed time for questions related to health problems and self-care; and, scheduled a follow-up appointment, if needed. As required, the ACNP referred the healthcare service users to a physician if further care was needed.

As the ACNP delivered primary care, she had to address the presence of four cultural beliefs held by many of the users of her healthcare services. First, since some of the healthcare service users believed in the use of 'traditional healers' in their respective village, the ACNP had to coordinate her care with the 'traditional healers' by asking them about the treatments they had used (i.e., use of holy water, special herbs and/or ointments). As the ACNP stated, *"I established a network. I showed respect by asking ['the traditional healer'] what he had previously done and what I should do."* Secondly, many of the healthcare users believed that 'ghosts' were dwelling in their bodies. As a result, the ACNP, along with other members of the healthcare center, showed acceptance of this belief and encouraged the healthcare service users to think about the incidents that took place when they were haunted by the 'ghost' (i.e., "Did the ghost come when you ran out of money?). Thirdly, the ACNP had to address the healthcare service users' belief in *"kha-lum"* (i.e., foods/items that are not good for one's health, such as alcohol, beer, tobacco, raw food and fermented food). To deal with this particular belief, the ACNP used the health-promoting strategy of telling the healthcare service users to *"Come and look for 'kha-lum' at the health center."*

The fourth cultural belief was the service users' unrealistic belief about injections, whereby they requested an injection because they thought it was more effective than other healthcare methods (i.e., oral medications or medicated ointments). If the service users did not receive an injection, they felt they were not being adequately treated for their healthcare problems. Thus, the ACNP repeatedly had to explain why an injection was not necessary and, thus, it was ill-advised for her to give them an injection.

Finally, as part of the provision of primary care services, the ACNP and other members of the healthcare center provided their service users with a set of 'basic' medications (i.e., antipyretics, mild analgesics (i.e., acetaminophen) and antiflatulents) for use in their households. These 'basic' medications, along with medical supplies (i.e., bandages, ace wraps, cotton balls, gauze pads, 70% alcohol, and normal saline), were made available, after normal clinic hours, for use in case urgent first-aid was need.

Home visits, the second component of the "Healthcare Service Provision System Development Project," involved the ACNP, as well as other healthcare providers (i.e., public health officials, assistant public health officials, and village healthcare volunteers). Home visits to the healthcare service users were made in advance and generally carried out by two healthcare providers, who used their pick-up truck or motorcycle for transportation. The ACNP, along with all of the other staff at the health center, believed home visits were an effective way to: obtain factual information; do follow-up regarding healthcare outcomes; and, determine if the healthcare service users were satisfied with the services they received. As two service users indicated: *"When I was sick, the ACNP came to see me, every time, even after I gave birth;"* and, *"When I want to see her (the ACNP), I will check to make sure her car is in the parking lot."* The ACNP also shared her positive experience about home visits when she indicated: *"It was effective. The healthcare service users were satisfied with our care and we had a chance to get truthful information."*

Outcomes of healthcare service provision at the healthcare center with the ACNP: The desirable outcomes of the performance of the ACNP could be summarized as: reducing the cost of medications for the healthcare users because of the healthcare center's provision of 'basic' medications; increasing the ability of children and adolescents to perform first-aid; readily providing information and consultation for adolescents, regarding sexual relationships and birth control; providing readily accessible primary health services; and, providing healthcare services the service users found satisfactory.

Comparison of the outcomes of healthcare service provision between the ACNP and GNP: No difference in health status was found between the healthcare service users receiving care from the ACNP and the healthcare service users receiving care from the GNP (see Table 1). However, the service users receiving care from the ACNP indicated higher satisfaction, compared to the service users receiving care from the GNP, with respect to overall services, as well as for each component of the satisfaction measurements (i.e., being sympathetic, accessibility, and professional competence). In addition, the healthcare expenses for the healthcare service users, receiving care from the ACNP, were found to be higher than the healthcare expenses of the healthcare service users who received care from the GNP (see Table 2).

Table 1 Comparison of Health Status of Healthcare Service Users Receiving Care at the Healthcare Center with the ACNP and at the Healthcare Center with the GNP

Healthcare Centers	Health Status		χ^2	*p*
	Poor n (%)	Good n (%)		
With ACNP	38 (19.0)	162 (81.0)	2.60	> .05
With GNP	26 (12.7)	179 (87.3)		

Note: ACNP = Advanced Community Nurse Practitioner; GNP = General Nurse Practitioner

Table 2 Comparison of Healthcare Service Users' Satisfaction with Services Received and Healthcare Expenses Incurred at the Healthcare Center with an ACNP and at the Healthcare Center with a GNP

Outcomes	Possible Ranges	Healthcare Centers				Z Statistics
		With GNP (n = 200)		With ACNP (n = 205)		
		Min-Max	Mean (Standard deviation)	Min-Max	Mean (Standard deviation)	
Overall satisfaction with services	0-60	28-60	54.7 (7.9) Median 60	13-60	48.1(11.1) Median 49	-6.12***
- Being sympathetic	0-24	12-24	21.7 (3.3) Median 24	4-24	19.3 (4.6) Median 19	-5.56***
- Accessibility	0-28	13-28	25.5 (3.9) Median 28	7-28	22.4 (5.3) Median 23	-6.39***
-Professional competence	0-8	3-8	7.3 (1.1) Median 8	2-8	6.4 (1.5) Median 6	-6.75***
Healthcare expenses (baht/visit)	-	0-50	8.1 (8.1) Median 10	0-100	6.2 (13.5) Median 0	-5.74***

Note: ACNP = Advanced Community Nurse Practitioner; GNP = General Nurse Practitioner; *** p < .001

Discussion

The findings suggested the structural factors consisted of the ACNP's personal/professional characteristics, and the diversity and support provided by the ACNP and the other healthcare providers at the health center. The ACNP held a master's degree, and had knowledge and experience as an ACNP providing care to individuals, families, and community members. The ACNP was a local resident in the community where she worked. Thus, she had an understanding of the cultural, health, and social contexts of those for whom

she provided care. The results revealed the ACNP was strongly committed to her responsibilities of providing primary healthcare and supervising other health center staff members. As reflected in the literature,[19, 20] the ACNP demonstrated the necessary skills of an advanced practice nurse (i.e., clinical competence, leadership, decision making, counseling, and coordinating health related activities). The fact that the service users receiving care from the ACNP had higher healthcare expense, than the healthcare service users receiving care from the GNP, mostly likely was due to the fact that the ACNP was able to prescribe medications, while the GNP was not.

Regarding the characteristics of the healthcare members at the health center, other than the ACNP, they provided a wide and varied set of skills and experiences (a public health academician, who was in charge of the center; a community public health official; and an assistant to the community public health official). The availability of these staff members to the ACNP, no doubt, facilitated her ability to provide quality primary care within the structure of the healthcare center.

In terms of process, the ACNP was able to manage the healthcare service system, in which she worked, by having the necessary skills of an APN, and by being able to network appropriately with others in the healthcare system, as well as with members of the community (i.e., 'traditional healers'). In addition, she was sensitive to the cultural context of her service users by being able to incorporate their cultural beliefs into her healthcare practice. The incorporation of this cultural sensitivity into the ANCP's role appeared to be different from some of the aspects of advanced practice roles of nurses in other countries.[10, 21] Finally, the fact the ACNP was able to incorporate participation of community members (children, adolescents, and adults) into parts of the healthcare center's service activities enhanced the delivery of primary healthcare to the community.[22]

Consistent with prior research,[23] the primary outcome of the ACNP's practice was a high level of service users' satisfaction with healthcare services received. The fact the service users' were so satisfied with their care may have been due to the ACNP's ability to: work with and coordinate a skill-mixed team; network with community members and the multi-disciplinary healthcare teams; and, be culturally sensitive.[21, 24]

The fact that no significant difference was found in the health status, between the healthcare service users receiving care from the ACNP and the healthcare service users receiving care from the GNP, may have been due to the fact that the healthcare service users' characteristics (i.e., age, education, occupation, and community environment) were not different. Therefore, they did not perceive their health status in a different manner. In addition, the GNP appeared to have a good working relationship with the healthcare service users receiving her care, as well as with the healthcare team at the healthcare center where she worked. Thus, her practice abilities, although lacking in creative health-related projects, were adequate to meet the needs of the healthcare service users she served.

Limitations and Recommendations

When applying the findings, the study's limitations need to be taken into consideration. Only one ACNP and one GNP, from two different health centers, were part of the study. Thus, generalizability of the findings is very limited. Future studies need to include a larger number of APNs from a variety of sites throughout Thailand. In-depth data on the GNP, unlike the in-depth data obtained from the ACNP, was not obtained. Thus, some assumptions may have been made that were not grounded in actual data. Future studies using GNPs need to obtain more concrete and in-depth data than the data obtained in this study.

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โครงสร้าง กระบวนการ และผลลัพธ์ของการให้บริการสุขภาพโดยพยาบาลเวชปฏิบัติชุมชนขั้นสูงและพยาบาลเวชปฏิบัติชุมชนทั่วไป

นพวรรณ เปียซื่อ, เวหา เกษมสุข, สุจินดา จารุพัฒน์ มารุโอ, สมจิต หนุเจริญกุล

บทคัดย่อ: การศึกษาเชิงบรรยายเปรียบเทียบครั้งนี้มีวัตถุประสงค์เพื่อ 1) ศึกษากระบวนการในการดูแลและจัดการบริการสุขภาพในชุมชนของพยาบาลเวชปฏิบัติชุมชนขั้นสูง และ 2) เปรียบเทียบผลลัพธ์ของการให้บริการสุขภาพระหว่างพยาบาลเวชปฏิบัติชุมชนขั้นสูงและพยาบาลเวชปฏิบัติชุมชนทั่วไป ผลลัพธ์ประกอบด้วย ภาวะสุขภาพ ความพึงพอใจต่อบริการ และค่าใช้จ่ายในการบริการสุขภาพของผู้ใช้บริการ กลุ่มตัวอย่างผู้ใช้บริการจำนวน 405 คน เลือกแบบเฉพาะเจาะจง เป็นผู้ที่มารับบริการจากพยาบาลเวชปฏิบัติชุมชนขั้นสูงที่สถานีอนามัยแห่งหนึ่งจำนวน 200 คน และผู้ที่มารับบริการจากพยาบาลเวชปฏิบัติชุมชนทั่วไปที่สถานีอนามัยอีกแห่งหนึ่งในจังหวัดทางภาคตะวันออกเฉียงเหนือของประเทศไทยจำนวน 205 คน เก็บรวบรวมข้อมูลเชิงปริมาณโดยการสัมภาษณ์จากแบบสอบถาม เก็บรวบรวมข้อมูลเชิงคุณภาพโดยการสัมภาษณ์เชิงลึกและการสังเกต วิเคราะห์ข้อมูลเชิงปริมาณโดยใช้สถิติ Chi-square และ Mann-Whitney U test วิเคราะห์ข้อมูลเชิงคุณภาพโดยการวิเคราะห์เนื้อหา ผลการศึกษาพบว่า ผู้ที่มารับบริการจากพยาบาลเวชปฏิบัติชุมชนขั้นสูงมีความพึงพอใจต่อบริการมากกว่า ($p < .001$) มีค่าใช้จ่ายในการบริการสุขภาพมากกว่า ($p < .001$) ผู้ที่มารับบริการจากพยาบาลเวชปฏิบัติชุมชนทั่วไป อย่างไรก็ตาม ไม่พบความแตกต่างของภาวะสุขภาพอย่างมีนัยสำคัญทางสถิติ ข้อมูลเชิงคุณภาพพบว่า พยาบาลเวชปฏิบัติชุมชนขั้นสูงมีการพัฒนาโครงการและนวัตกรรมต่างๆ แสดงให้เห็นถึงความสำเร็จของการทำงานแบบมีส่วนร่วม ซึ่งนำไปสู่คุณภาพการดูแล สุขภาพที่ดีและความพึงพอใจของผู้ใช้บริการ ผลการศึกษามีข้อเสนอแนะว่า พยาบาลเวชปฏิบัติชุมชนควรได้รับการส่งเสริมสนับสนุนในการพัฒนาบทบาทอย่างต่อเนื่อง เพื่อให้สามารถทำงานได้อย่างมีประสิทธิภาพในการสร้างเสริมสุขภาพและคุณภาพชีวิตของประชาชนในชุมชน

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