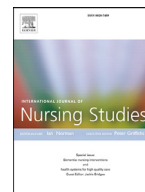




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Factors supporting career pathway development amongst advanced practice nurses in Thailand: A cross-sectional survey

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ABSTRACT

Background: Thailand has recently reformed its health care system and this change has contributed to the rapidly increasing need for skilled and experienced specialist nurses and in 2003 a new Advanced Practice Nursing role was formally introduced. While Advanced Practice Nursing is now accepted as a clinical career option, there is little understanding of the factors conducive to successful career development. This study offers the first examination of factors associated with successful career progression for Advanced Practice Nurses in Thailand.

Objectives: 1. To provide a description of the Advanced Practice Nurse population in Thailand, as represented by a purposive stratified national sample. 2. To examine the factors influencing successful career pathway development of Advanced Practice Nurses in Thailand. 3. To examine the factors which influence the extent to which Advanced Practice Nurses in Thailand engage in evidence-based practice and research.

Design: National cross-sectional survey.

Setting: Thailand.

Participants: 333 currently practicing Advanced Practice Nurses.

Methods: A national cross-sectional survey was conducted in Thailand in order to identify and examine key influencing factors on the successful development of Advanced Practice Nurses. The research tool was a specifically designed questionnaire in the Thai language, informed by international academic literature on the development of the Advanced Practice Nurse role, validated and piloted with 30 Advanced Practice Nurses to assess its reliability using Cronbach's alpha.

The data were analysed in SPSS (version 21). Initial parametric testing was done using the Kolmogorov-Smirnov test and Pearson's correlation analysis was performed to examine the relationship between the independent variables (those measuring demographic and support factors) and the dependent variables (measuring career pathway development).

Results: A response rate of 90% was achieved. A lack of clear progression routes in the Advanced Practice Nurse structure was identified along with inconsistent patterns of working including variation in the number of days per week (range: 1–5 days) that nurses dedicated to the Advanced Practice Nurse role and the amount of autonomy achieved in this role.

The study highlighted a lack of research productivity in and production of outputs (59% had never published) and given the expectation of Advanced Practice Nurses to both produce and utilise research evidence, this constitutes a significant gap in current practice.

Other factors reported as important for career pathway development of Advanced Practice Nurses related to the environment, peer networks, institutional (hospitals) and external (government and the Thai Nursing Council) support.

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Conclusions: Our study offers insights for national and local policymakers and highlights the need to firmly establish, standardised career pathways in Advanced Practice Nursing to support career progression and the implementation of evidence into practice.

These findings also have implications for clinical departments which have a responsibility to ensure they provide an enabling environment for Advanced Practice Nurses to fully carry out their roles.

Tweetable abstract: Our study reports findings from a first national survey in Thailand investigating the factors which support career development in Advanced Practice Nurses.

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What is already known about the topic?

- The Advanced Practice Nurse role is well established in many countries and was formally introduced in Thailand in 2003.
- Evidence suggests the Advanced Nurse Practice role is associated with positive outcomes for patients including reductions in hospital mortality rates, length of stay, cost and morbidity.
- Currently in Thailand there are no clear targeted mechanisms to support the professional development of Advanced Practice Nurses and a lack of firmly delineated organisational structures.

What this paper adds

- This study offers the first examination of factors associated with successful career progression after securing a position as an Advanced Practice Nurse in the Thai context.
- This study notes that currently, Advanced Practice Nurses in Thailand, are not sufficiently supported to achieve successful progression through their career pathway.
- The study highlights a need for improved structures to support the career pathway of Advanced Practice Nurses in Thailand and a need to clarify and define their role.

1. Introduction

Thailand has recently reformed its health care system through extensive government efforts to promote a new vision for health services and policy, a change which reflects the increasing and aging population and the rise in the prevalence of chronic diseases and associated healthcare costs (Hanujareernkul and Punpakdee, 2010). This transformation has focused more on prevention than on cure (World Health Organization, 2011) and health promotion has now become an enhanced role in nursing (Goudreau and Smolenski, 2018).

This 21st century movement towards prevention in health care has emphasised the role of the delivery system, especially in nursing practice, because nurses are members of front-line health care teams, and must respond to the evolution of the health system and influence change in health care policy (Goudreau and Smolenski, 2018; Hanujareernkul and Punpakdee, 2010). Rapid advances in disease prevention, and managing and integrating new clinical care technologies along with modifications in care delivery in a broad range of clinical settings, have contributed to increasing need for skilled and experienced specialist nurses (Wongkpratoom et al., 2010) and in 1997, the Thai Nursing Council approved the **concept** of advanced practice (Hanujareernkul, 2012) and 2003 saw the employment of the first Advanced Practice Nurses. The approach to the development of the role in Thailand was based upon the American model (Hickey 2000). However since its inception, there has been little study of its development and the role remains unclear and ill-defined (Wongkpratoom et al., 2010). Indeed in Thailand, as elsewhere (Andregård and Jangland 2015; Laurent et al., 2009; Pulcini et al., 2010; Gardener et al., 2010) Advanced Practice Nursing is an umbrella term used to cover a range of clinical roles (Beach et al., al.,2006), undertaken by nurses educated at post-graduate level (Chiang-Hanisko et al., 2008). However, in line

with international definitions (ICN 2020****), in Thailand an Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice. As recognised elsewhere (Dowling et al., 2013), clinical practice is a defining feature of the role and what makes the role advanced is the integration of clinical practice with responsibilities for education, organisational leadership, professional development, evidence-based practice and research (Dowling et al., 2013). Ideally then, the role provides the opportunity for integration of these core professional skills.

In Thailand, Advanced Practice Nurses currently work in one of ten specialist roles: maternal-child health, paediatrics, medical-surgical, psychiatry, elderly care, community care, nurse practitioner, midwifery, infection control and anaesthetics (Lungkapin, 2007) and Advanced Practice Nursing is now accepted as a clinical career option for general nurses (Cronenwett, 2017). However, presently there are no clear targeted mechanisms to support the professional development of Advanced Practice Nurses (Sonpaveerawong et al., 2012; Wongkpratoom et al., 2010) and a lack of firmly delineated organisational structures underpinning the role (Hanujareernkul and Punpakdee, 2010). Previous studies have focused on factors affecting the transition from general to advanced practice nursing (Hanujareernkul, 2012; Butterworth and Bishop 1995), investigating core clinical competencies (Lungkapin, 2007) and on the effectiveness of nursing interventions in the clinical setting (Sathira-Angkura and Khwansatapornkoon, 2014; Thosingha, 2008). Advanced Practice Nurses are understood to have higher levels of independence than general nurses (indeed it is not uncommon for Advanced Practice Nurses to have full autonomy in managing their time when they operate in the role for only part of their working week and continue in their original role for the remainder of the week), and clinical expertise in the management of complex diseases (Lungkapin, 2007). Evidence shows that Advanced Practice Nurses are associated with reduced hospital mortality rates, as well as other patient outcomes such as reduced length of stay, cost and morbidity (Sonpaveerawong et al., 2012). However research from Thailand has also indicated low levels of satisfaction with the working environment among Advanced Practice Nurses (Ueatrongchit et al., 2012).

Despite the growing demand for Advanced Practice Nurses, historically, there were limited data to guide the successful implementation and optimal utilization of these roles (Bryant-Lukosius and Dicenso, 2004). However, there is now a growing body of literature reporting on studies which aim to better understand scope of practice, standards and competencies and better conceptualize the role (Dowling et al., 2013). Indeed, the International Council of Nurses has recently published new guidelines to facilitate common understanding of Advanced Practice Nursing (ICN 2020). However wide variation in the regulation of advanced practice nursing roles as well as their educational, licensing and credentialing requirements has been reported (Heale and Reick Buckley 2015) and it is acknowledged that, given the diversity of contexts across nations, it is important to systematically assess the individual country context to inform country-specific implementa-

tion (Bryant-Lukosius et al. 2017; de Araújo Olímpio et al. 2019). There is also a need to understand facilitators and barriers to successful career pathway development (defined as a series of organisational structures and support services through which healthcare professionals progress gain additional knowledge, skills and roles in order to attain higher levels of clinical and educational advancement) (Association of UK University Hospitals, 2016).

This study offers the first examination of factors associated with successful career progression among Advanced Practice Nurses in Thailand. The study draws on international research (Jackson et al., 2012) which identified key determinants of successful career development among nurses and other health care professionals, including the nature of the environment, peer networks, institutional and/or external support and the ways in which this literature informed the questionnaire are detailed later in this paper.

2. Objectives

- (1) To provide a description of the Advanced Practice Nurse population in Thailand, as represented by a purposive stratified national sample.
- (2) To examine the factors influencing successful career pathway development of Advanced Practice Nurses in Thailand.
- (3) To examine the factors which influence the extent to which Advanced Practice Nurses in Thailand engage in evidence-based practice and research.

Specific research questions

- (1) Are demographic and support factors important to the professional career pathway development of Advanced Practice Nurses in Thailand?
- (2) Do Advanced Practice Nurses in Thailand fulfill their responsibilities related to research?
- (3) What are the barriers and facilitators to undertaking research-related activity?

3. Materials and methods

A national cross-sectional survey was conducted with Advanced Practice Nurses currently in practice across Thailand, in order to identify and examine key influencing factors on the successful development of their career. Data were captured from all geographical regions of Thailand and across the range of Advanced Practice Nurse specialist roles.

3.1. Questionnaire design

The international academic literature on the development of the Advanced Practice Nurse role was examined to inform the development of the questionnaire, which was developed, distributed and analysed in the Thai language (elements have been translated into English for the purposes of publication in the international literature). Given the lack of existing validated tools, the questions/statements were not taken from existing questionnaires, but devised specifically for this study, informed by published academic literature, as detailed below. The questionnaire was tested for face and content validity and reliability, and pilot tested prior to distribution.

In addition to underlying demographic variables, further key potential independent variable groups, likely to impact successful career progression were identified. The questionnaire included a total of 64 questions/statements within three sections: **Section 1:** demographic factors (10 items); **Section 2:** support factors (22 items); and **Section 3:** career pathway development (32 items).

Section 1: Demographic variables included gender, age, family circumstances, place of current employment, years' experience of

work as a registered nurse and an Advanced Practice Nurse, time spent working as an Advanced Practice Nurse per week, specialist training, additional qualifications and salary.

Section 2: Support factors: Respondents were asked to say the extent to which they agreed/disagreed with a range of statements about potential factors supporting the successful development of their career as an Advanced Practice Nurse. The key determinants here were originally identified by Jackson et al. (2012) in their work on professorial roles among nurses/midwives, social workers, and allied health professionals in the UK. The specific questions in this section of the questionnaire were informed by the work Jeenkool and Ratchukul (2008) who conducted a comprehensive literature review of relationships between personal factors, achievement, motivation, organisational support and career success among nurses in the Thai context, the theory of organisational support (Eisenberger et al., 1986, 1999) and Advanced Practice Nursing roles and competencies as outlined by the Thai Nursing Council (2010). This section contained four 'support factors': environment (4 items), peer networks (6 items), institutional (6 items), and external (6 items). The specific items are outlined below.

Using a 5-point Likert scale participants were asked to score the extent they agreed with each individual statement.

3.2. Environment

- Your hospital/workplace has a policy to support Advanced Practice Nurses
- Your hospital/workplace has a role structure for Advanced Practice Nurses to support you
- Your hospital/workplace has a healthy working environment
- Your hospital/workplace provides culturally competent care by supporting the use of evidence-based practice and findings from research to improve patient outcomes

3.3. Peer networks

- You work within a multi-disciplinary team to design clinical practice guidelines based on evidence-based practice and / or findings from research
- You work within a multi-disciplinary team by circulating schedules to teach patients in clinic (e.g. exercise/self-care at home)
- Your colleagues and the multidisciplinary team work with you to deliver change in practice
- Your colleagues and the multidisciplinary team assist you to deliver clinical care
- Your colleagues support you to undertake clinical research
- You and your colleagues demonstrate ethical values in the care of patients

3.4. Institutional support

- Your department supports you to care for patients using evidence-based practice and/or findings from research
- Your department co-operates with you to care for patients using evidence-based practice and/or findings from research
- Your department supports you to use best practice in your role as a change agent
- Your department supports your role as a consultant
- Your department supports you to undertake research
- Your department expects patient care to be based on ethical values

3.5. External support

- The Thai Nursing Council supports you to do clinical research by providing funds

- The Thai Nursing Council supports you to do take care of patients based on ethical considerations under their code of ethics
- A regional hospital supports you to be a leader of knowledge management by using evidence-based practice or findings from research to take care of patients
- The University hospital supports you to be a leader of knowledge management by using evidence-based practice and findings from research to take care of patients
- The Tertiary hospital supports you to be a leader of knowledge management by using evidence-based practice and findings from research to take care of patients
- The Nurses' Association of Thailand assists in the funding of your clinical research

Section 3: Career pathway development referred to routes which develop the knowledge, skills and roles of Advanced Practice Nurses in order to allow them to work confidently, effectively, and to improve service provision whilst developing their nursing career. This section of the questionnaire is in three parts:

Part 1 (22 items under one of three headings): Respondents were asked to say the extent to which they agreed/disagreed with a range of statements about potential *individual, social and societal-environmental* influences on the success of their own career development. The statements were adapted from a 'career development influence' questionnaire based on the system theory framework of career development (McMahon, 2002) and informed by the work of Srisuphan and Sawangdee (2012) on solving nursing staffing shortfalls in Thailand a review of professional career pathways (Sawangdee (2012).

3.6. Individual

- Physical and mental health are both important in your career pathway development
- The Advanced Practice Nursing role as change agent is important in your career pathway development
- A role as a researcher is important in your career pathway development
- Disability may be a barrier to your career pathway development
- A good personality is important to your career pathway development
- Clinical specialism within your Advanced Practice Nurse role is important to your career pathway development
- The Advanced Practice Nurse administrative role is important to your career pathway development
- A variety of practice opportunities beyond Advanced Practice Nurse roles are important to your career pathway development
- Other skills beyond nursing knowledge are important to your career pathway development
- The Advanced Practice Nurse role as consultant is important to your career pathway development
- The Advanced Practice Nurse role as educator is important to your career pathway development

3.7. Social

- Your family is important to your career pathway development
- Your friends and colleagues are important to your career pathway development
- Your community groups are important to your career pathway development
- Educational Institutions are important to your career pathway development
- Your workplace is important to your career pathway development
- Social media is important to your career pathway development

3.8. Societal-environmental

- Geographical locations are important to your career pathway development
- Political changes are important to your career pathway development
- Hospital policy changes are important to your career pathway development
- The socio-economic environment is important to your career pathway development
- Globalisation is important to your career pathway development

Part 2 (7 items): Research outcomes of practicing Advanced Practice Nurses. Respondents were asked about their key Advanced Practice Nursing activities 1) authorship of peer reviewed publications, 2) editorials, 3) non-peer reviewed articles, 4) poster presentations, 5) oral presentations, and 6) innovation in nursing practice. These questions were informed by literature from the Thai Bureau of Health Policy and Plan (Jamjuree, 2010) which recommended that indicators for evaluating career pathway development for nurses should include outputs or results from behaviours, competencies and academic work such as research or innovation in nursing practice.

Part 3 (3 items): open-ended questions about training undertaken, perceived barriers to undertaking research and using evidence-based practice.

3.9. Questionnaire validation and pilot

The content validity of the questionnaire was guided by the work of Polit and Beck (2017). The wording of the questionnaire items and presentation of response options were reviewed initially by one of the authors (KN), an expert in the subject area, for clarity and appropriateness (Onwuegbuzie and Johnson, 2006). The suitability of the questionnaire's structure, appearance, feasibility, readability, consistency of style between questions, formatting, and clarity of language were also examined. Five experts, purposely selected because of their knowledge of the Thai health care context and questionnaire scale construction (1 healthcare scientist, and 4 professionals working within a healthcare setting) then undertook the validation exercise (specific details are included in supplementary table A).

Based upon the review, minor changes were made, and the questionnaire was subsequently given approval by the expert panel.

The questionnaire was then piloted with a small sample of Advanced Practice Nurses ($n = 30$) to assess its reliability using Cronbach's alpha. This was found to be satisfactory (Cronbach's alpha for Section 2 - support factors =0.78 and Section 3 - career pathway development =0.89) and no further revisions were required.

3.10. Data collection

At the time of data collection there were 118,087 registered nurses in Thailand, (90% female) of whom 1827 were Advanced Practice Nurses (95.6% female). A list of key contacts was established via a search of the national database of Advanced Practice Nurses housed by the Thai Nursing Council. One lead Advanced Practice Nurse was identified at each hospital and they were sent a batch of postal questionnaires to distribute to fellow Advanced Practice Nurses within their organisations.

3.11. Sample size

The target sample size was calculated using Yamane's formula (1967) which can be used where the total target population is

known. In this study the sampling frame constituted the 1827 Advanced Practice Nurses.

Application of Taro Yamane's formula (1967):

$$n = N/1 + N(e)^2$$

$$n = 1827/1 + 1827*(0.05)^2$$

$$n = 1827/1 + 1827*0.0025$$

$$n = 1827/1 + 4.5675$$

Target sample in this study: $n = 328.15$ (or 329)

($N =$ Total Population in the sampling frame, $n =$ Target Sample size, and $e^2 =$ allowable error at 5% or 0.05)

The total population of Advanced Practice Nurses was stratified by specialist role and the proportion employed in each was calculated to determine the target number of questionnaires to be sent to each group (details are presented in Table B: Supplementary material). The corresponding proportion of total questionnaires were sent to each group to aim for representation across all 10 specialist roles. 370 (slightly more than the target sample size to allow for 10% non-response) paper questionnaires were then posted to eligible participants.

3.12. Inclusion criteria

- Advanced Practice Nurses who had been certified by the Thai Nursing Council by 2012;
- Advanced Practice Nurses currently working in a clinical setting of a general hospital, community hospital or university hospital; and
- functioning in one of ten specialist roles designated by the Thai Nursing Council (maternal-child health, paediatrics, medical-surgical, psychiatry, elderly care, community care, nurse practitioner, midwifery, infection control and anaesthetics).

3.13. Obtaining participant approval

A participant information sheet and a consent form were enclosed with each questionnaire. The purpose of the participant information sheet was to explain the aims of the study and reassure the participants regarding confidentiality and anonymity. The participant information sheet and the consent form made it clear that participation was entirely voluntary and that participants could withdraw from the study at any time without giving a reason. Willing participants were asked to sign the consent sheet prior to completing the questionnaire.

3.14. Data analysis

The data were analysed in SPSS (version 21). Following the process of data cleaning and variable coding, the dataset was examined descriptively to identify minimum and maximum values, means and standard deviations in order to check the range and distribution of the variables. Initial parametric testing (using the Kolmogorov-Smirnov test) established that the data were normally distributed: Pearson's correlation analysis was then performed to examine the relationship between the independent variables (those measuring demographic and support factors) and the dependent variables (measuring career pathway development).

3.15. Ethical approval

Ethical approval was granted by the University of Lincoln and The Thai Nursing Council prior to the start of data collection.

Table 1
Correlation of geographical region and career pathway development.

Region	N	Mean score ($X = 89.78$)	SD	F	Sig.
North	54	91.39	8.70	.947	0.437
Central	65	88.18	9.41		
East	49	89.96	9.09		
West	64	89.93	8.48		
South	101	89.77	9.24		
Total	333				

* $p < 0.05$.

4. Results

4.1. Response rate and demographic profile of respondents

333 of the 370 questionnaires were returned, a response rate of 90% which was then stratified by specialist role (see Table B in supplementary material). The response rate was 100% in 5 of the 10 specialty roles. Lower rates were found among the nurse practitioner (64%) and infection control nurse (50%) sub samples.

The demographic profile of the sample is outlined in Table C in supplementary material. The predominance of women in the sample reflects the gender ratio in the wider sampling frame detailed above: the majority of the participants were female: 328 (98.5%) compared to 5 male (1.5%). Participants ranged between 32 and 59 years old, with a mean age of 43.59 ± 5.2 .

4.2. Geographical distribution of participants

The distribution of responding Advanced Practice Nurses in this study is varied across Thailand with 14.7% of the total sample coming from the Eastern region, 16.2% from the Northern region, 19.2% from the Western region 19.5% from the Central region and 30.3% from the Southern region of the country.

The results did not indicate any significant difference between geographical region and the main outcome variable: Career Pathway Development (see table 1 below). The correlation statistic of 0.437 was not statistically significant at 0.05 ($p \geq 0.05$) indicating that the career pathway development of Advanced Practice Nurses in Thailand is not affected by geographic location.

Prior to qualifying as an Advanced Practice Nurse, over 63% of nurses worked at either regional or general hospitals, reflecting the fact that both regional and general hospitals are grouped into a tertiary level which due to the nature of care provided, need many more staff nurses than other community hospitals.

The time spent working as a registered nurse prior to qualifying as an Advanced Practice Nurse ranged from less than 10 years to more than 26 years with the highest concentration of registered nurses clustered around the middle ranges of 11–25 years (80%). 88% of all participants had been employed in the role of Advanced Practice Nurse for six years or less (though there was a range from 3–10 years) which reflects the emerging nature of the role.

The highest concentration of Advanced Practice Nurses worked in either regional or general hospitals (63%, $n = 210$). This reflects the distribution of Advanced Practice Nurses working across Thailand and is influenced by the high demand for advanced knowledge and skills in the acute setting (supplementary Table D).

The Medical-Surgical specialty had proportionately more Advanced Practice Nurses who had been in the role for a longer period of time. This could be explained as Advanced Practice Nurses were employed here at an early stage of the initiative in 2003, whereas they were introduced more recently in the areas of midwifery, infection control and anaesthetics (supplementary Table D).

The number of days per week that Registered Nurses carried out their Advanced Practice Nurse role varied widely. For example,

Table 2
Summary statistics for the four categories of support variables ($n = 333$).

Support factors	Mean score ($X = 3.73$)	SD.	Most commonly selected response option*
Environmental support	2.33	3.66	Rarely
Peer network support	4.29	4.44	Often
Institutional support	4.59	3.84	Very frequent
External support	3.71	5.23	Often

* Available response option: Very frequently; Often; Sometimes; Rarely; Never.

in the Medical-Surgical arena, it varied from one to five days per week, with 44 participants able to manage their own time. Similar distributions can be seen for the other areas (supplementary Table E).

A high proportion reported working five days per week in the role ($n = 80$, 24.02%) and almost 30% could manage their own time ($n = 99$) (supplementary Table E).

4.3. Support factors

Differences in the extent to which participants reported that 'support factors' influenced their career pathway development were analysed by the geographical location of the Advanced Practice Nurse across Thailand but no statistically significant differences were found and so it can be assumed that support factors and career pathway development of Advanced Practice Nurses in Thailand is not affected by geographic location.

The study aimed to explore the support available to Advanced Practice Nurses in the development of their role. Table 2 shows the responses to each of the individual statements under the four main categories of support: 'Environmental' Peer networks'; 'Institutional' and 'External'. The responses relate to Section 2 of the questionnaire which asked participants to quantify their experience of engaging with each type of support.

Table 2 shows that within the four categories of support factors, institutional support was most frequently acknowledged as very important in supporting career development. Across the 6 statements representing institutional support, participants opted most commonly 'very frequent' experience of the circumstances outlined ($X = 4.59$, $SD=3.84$). Respondents reported often encountering the range of circumstances described under peer network support ($X = 4.29$, $SD=4.44$) and external support ($X = 3.71$, $SD=5.23$). However, environmental factors ($X = 2.33$, $SD=3.66$) were encountered less frequently and therefore regarded as less influential by Advanced Practice Nurses when considering their career development.

Research findings from the quantitative data supports the opinion that Advanced Practice Nurses are discerning in the importance they place on the various statements under the support umbrella.

Overall, there is a positive correlation between support factors and career pathway development $p < 0.01$ ($r = 0.213$) however, institutional support is considered more important and most actively

Table 4
Summary scores to response options under three potential aspects of influence on career pathway development (Individual/Social/Societal-Environmental) ($n = 333$).

Professional Career Pathway Development	Mean score ($X = 2.50$)	SD	Most commonly reported response option*
Individual attributes	3.86	4.73	Agree/Influence
Social aspects	2.07	3.24	Neutral influence
Societal-environmental aspects	1.56	3.14	Disagree/Rarely influence

* Available response options: Strongly agree; Agree; Neutral; Disagree; Strongly disagree.

sought compared to peer networks and external support, with environmental support sought less frequently. These findings have implications for all nursing departments where Advanced Practice Nurses have a role as it is incumbent on departments to ensure they provide an institutional structure which enables Advanced Practice Nurses to fully carry out their roles.

4.4. The relationships between support factors (Independent variable) and career pathway development (Dependent variable)

Table 3 below outlines the relationships between the four categories of 'support factors' and the career pathway development of Advanced Practice Nurses. The results are presented using Pearson's correlation coefficient.

A positive correlation between support factors and career pathway development $p < 0.01$ ($r = 0.213$) was found, demonstrating the importance of the four support factor categories.

4.5. Professional career pathway development

The perceived influences on successful career pathway development (explored in Section 3 of the questionnaire) were examined in order to better understand how well Advanced Practice Nurses in Thailand achieve their designated roles, in particular those related to research activities and the use of evidence-base practice in clinical decision making. They were also asked about any barriers to achieving those roles.

As detailed in the methods section, respondents were asked to quantify the extent to which they agreed or disagreed with 22 statements organised under three aspects of influence of their career development: 'individual attributes'; 'Social' and 'Environmental' aspects.

Table 4 shows the summary data by category.

The data show that the main influencing factors on career development were perceived to be those categorised as individual attributes ($X = 3.86$, $SD=4.73$).

When asked about other determinants of their success as an Advanced Practice Nurse, participants, 90.1% agreed that having good physical and mental health was the most important aspect influencing their career success (62.8% strongly agreed). It is known that the workload of Advanced Practice Nurses is demanding and

Table 3
The relationships between support factors and career pathway development ($n = 333$).

Variables	1 Support Factors (SF)	1.1 Environment (E)	1.2 Peer Networks (PN)	1.3 Institutional Support (IS)	1.4 External Support (ES)	2 Career Pathway Development (CPD)
1. Support factors	1					
1.1 Environment	.709**	1				
1.2 Peer networks	.694*	.498**	1			
1.3 Institutional support	.876**	.358**	.384**	1		
1.4 External support	.876**	.358**	.384**	1.00**	1	
2. Career pathway development	.213**	.030	.108*	.267**	.267**	1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Table 5
Research Activities of Advanced Practice Nurses ($n = 333$).

Activities	None	1–2 times per year	3–4 times per year	5 or more times per year
Research publications ($n = 333$)	197 (59.2%)	118 (35.4%)	17 (5.1%)	1 (0.3%)
Editorials ($n = 333$)	279 (83.8%)	54 (16.2%)	–	–
Reviewed articles ($n = 333$)	303 (91.0%)	28 (8.4%)	2 (0.6%)	–
Poster presentation ($n = 333$)	156 (46.8%)	161 (48.3%)	13 (3.9%)	3 (0.9%)
Oral presentations ($n = 333$)	146 (43.8%)	160 (48%)	16 (4.8%)	11 (3.1%)
Innovation for nursing practice ($n = 333$)	226 (67.9%)	98 (29.4%)	6 (1.8%)	3 (0.9%)
Invited lecturer ($n = 333$)	329 (98.8%)	3 (0.9%)	1 (0.3%)	–

being able to maintain good health is a vital attribute. A further important survey finding was that 87.1% of participants agreed that being highly experienced in specialist clinics was necessary for their career advancement and to the advancement of the profession (45.9% *strongly* agreed). Advanced Practice Nurses are expected to demonstrate distinctive clinical responsibilities and leadership when carrying out their role thus differentiating them from more junior ranking nurses. 93.1% of participants agreed that family influenced their career development (42.3% *strongly* agreed) and 86.2% of participants agreed to the importance of the support of friends and colleagues (37.5% *strongly* agreed) as well as community groups (88.9%: 34.5% *strongly* agreed) and their workplace (81.2%; 31.8% *strongly* agreed).

The final section of this paper reviews the survey with respect to the extent to which Advanced Practice Nurses engage with research activity in their clinical practice

Table 5 shows the results of the survey relating to research-related activities of Advanced Practice Nurses.

The majority of Advanced Practice Nurses had never published a research paper (59.2%) an editorial (83.8%) or been involved in peer review of research papers (91.0%). The survey also showed that participants commonly disseminated their research through poster (46.8%) or oral (48%) only 1–2 times annually. 98.8% of respondents had never been invited to give a lecture. More (32.1%) had been involved in innovation projects for practice though for the majority (29.4%) this only happened 1–2 times per year. This is a disappointing finding, particularly as Advanced Practice Nurses are regarded as highly skilled, with the potential to disseminate good clinical practice.

Finally, the open-ended responses from Section 3 of the questionnaire asked the participants to list any relevant research training courses they had undertaken and also any barriers they perceived to impede on their active engagement in research activity. 170 participants offered responses and of those 90 (52.9%) reported that they had undertaken some research training, the most popular courses being in the fundamentals of quantitative ($n = 19$; 11.2%); and qualitative methods ($n = 18$; 10.6%), epidemiology ($n = 15$; 8.8%) and statistics ($n = 13$; 7.6%). Very few ($n = 4$; 2.4%); had undertaken training in research management (strategic planning) or research administration ($n = 5$; 2.9%).

The greatest barrier to participating in or implementing clinical research studies was reported to be difficulties with time management which was cited by 171 respondents in the open-ended section of the questionnaire followed by lack of mentorship ($n = 35$) and funding ($n = 35$). Lack of motivation was only cited by 12 participants.

24 participants felt that the lack of available current academic literature constituted a barrier to their conducting research. This

finding is of course, exacerbated by the previous discussion on the lack of research publication and dissemination.

5. Discussion

Thailand has reformed its health care system through extensive government efforts to promote a new vision of health and health care services, including the Advanced Practice Nurse role. It is important therefore to understand the nature of the Advanced Practice Nurse workforce and the factors which influence its success in delivering the role. This is the first study to be conducted in Thailand to explore the opinions and perceptions of Advanced Practice Nurses around the factors associated with successful career pathway development. The findings have significance for four main groups: national and local policy makers, the Thai Nursing Council, employers and employees (especially Advanced Practice Nurses).

The study revealed a lack of an identifiable career progression pathway in the Advanced Practice Nurse structure to reflect those Advanced Practice Nurses who are leaders and who have considerable experience in the Advanced Practice Nurse role. Respondents had experience of up to 10 years in the Advanced Practice Nurse role. The study showed variation in the number of days per week that nurses dedicated to the Advanced Practice Nurse role and thus the amount of autonomy achieved in this role. The differences in time spent in Advanced Practice Nurse roles is a cause for concern, and in the absence of national guidelines to support Registered Nurses undertaking their Advanced Practice Nurse role there is a risk to systematic and equitable delivery of care. Wongkpratoom et al. (2010) also identified inconsistencies in implementation of the role and noted that the greatest barriers to Advanced Practice Nurse role development in Thailand were organisational factors (relating to poor administrative functioning) because of the lack of a clearly delineated organisational structures and policies. Hospital leaders are therefore encouraged to provide a clear policy to support Advanced Practice Nurses to achieve and sustain autonomy and to balance the responsibilities across all areas of their role, as effective time management has been shown here to be crucial.

Our findings suggest that a major determinant of the success of career pathways for Advanced Practice Nurses in Thailand is the quality and type of support that they receive. Advanced Practice Nurses found the support they received at institutional level and their own personal characteristics to be most influential in their own career development.

Other factors seen as important for the career pathway development of Advanced Practice Nurses related to the environment, peer networks, institutional (hospitals) and external (government and the Thai Nursing Council) support. Key organisations, particularly

the government organisations (Ministry of Public Health and Nursing Division), nursing organisations and the Thai Nursing Council support Advanced Practice Nurses, have a role in maximising the potential of Advanced Practice Nurses not only in terms of their career pathway but also in terms of providing optimum and innovative patient care through research and evidence-based practice. The findings indicated the need for collaborative working across nurse educationalists, employers and professional bodies in order to ensure alignment in strategies to strengthen and support the development of the Advanced Practice Nurse role and identify and develop a clear career pathway for Advanced Practice Nurses in Thailand.

Some success is evidenced by the lack of geographical differences identified in our study and also that all Advanced Practice Nurses in Thailand graduate with Masters' degrees or equivalent and are guided by the principles and standards of the Thai Nursing Council. Difficulties seem to lie in transferring the education and training into research productivity once in the role and transferring evidence into practice more effectively. Given the expectation of Advanced Practice Nurses to both produce and utilise research evidence there appears to be a gap in current practice. Advanced Practice Nurses did not report to be particularly active in research related activity such as publishing their work and this lack of published data had a negative impact on the use of evidence-based practice by the Advanced Practice Nursing community. Advanced Practice Nurses have a role in raising awareness of the importance of research and in turn demonstrating this by themselves becoming more proactive in publishing which, in turn, normalised these activities for peers. Our study has identified factors which can lead to this lack of productivity on the part of Advanced Practice Nurses, and might discourage others from entering advanced nursing roles, which is particularly significant given the internationally recognised difficulties with nursing recruitment and high turnover.

The study highlighted the need for discussion about how to best develop infrastructure to support the production of research outputs whilst remaining clinically active. This problem is not unique to Thailand, for example similar discussions are currently taking place in England (Jackson and Kane, 2019), Holland (van Oosteven, et al. 2017) and elsewhere. Indeed, strengthening research in nursing constitutes a key theme in the World Health Organization document, Global strategic directions for strengthening nursing and midwifery, 2016–2020 (WHO, 2016). Similarities have been seen in the development of other senior clinical nursing positions such as nurse consultants.

One suggestion is to introduce the development of a systematic record of Advanced Practice Nurse productivity using portfolios, establishing research and evidence-based practice centres at the local/regional level, conducting research and nursing care using evidence-based practice. A similar system exists in other settings such as in the United Kingdom where all registered nurses must revalidate their registration every three years – by reflecting on and producing evidence of their activities.

Although participants identified a lack of time and resources to enable them to conduct research, the participants also recognised the significance of research in their nursing practice. It would be helpful if hospital policy could be adjusted to support Advanced Practice Nurses and to give them time to conduct research and establish research teams, because research supports problem-solving and clinical analysis, which is connected to better patient outcomes (Donnelly, 2005). Thus, it is an important issue for policy makers to review.

Good governance by employers concerned with implementation of the Advanced Practice Nurse role must be based on consistent expectations of the level of practice required to deliver services, and this is best achieved through nationally agreed standards laid out in policies and strategies. The Thai government requires Ad-

vanced Practice Nurses to perform in both clinical and academic arenas, to create nursing innovations and to conduct research. Similarly, the Thai Nursing Council has established national standards for licensure and examination of all Advanced Practice Nurse programmes, including directives to promote standards in professional nursing. This program is a positive step towards improving the progression of a career pathway for Advanced Practice Nurses and to upgrading Advanced Practice Nurses who wish to remain in clinic and advance their practice, rather than enter academia and could constitute one way to retain Advanced Practice Nurses in clinical settings.

Advanced Practice Nurses are frontline health care team members, and they must drive as well as respond to the evolution of health systems, influencing change in health care policy (Goudreau and Smolenski, 2018) which includes from hospital to international level. With a clearer understanding of the root cause of career pathway development, initiatives to address the current situation of Advanced Practice Nurses in Thailand have been introduced. Improving the support for career pathway development has now become a priority for the Thai Nursing Council and the government. This has international relevance as similar developments are now being seen elsewhere. In the UK for example, there is a big drive to support the combination of clinical and academic careers through for example the establishment of significant national funding opportunities of nurses and other health care professionals to develop their research skills whilst remaining in clinical practice (Jackson and Kane 2019).

This study notes that currently Advanced Practice Nurses in Thailand are not sufficiently supported to achieve a successful professional career pathway. Advanced Practice Nurses in Thailand represent the future frontline of progress in professional nursing practice. As is acknowledged internationally (Heale and Reick Buckley 2015; Bryant-Lukosius et al. 2017; de Araújo Olímpio et al. 2019), there is a need to clarify and define the role of Advanced Practice Nurses in order to prevent confusion, about variability in nursing roles, titles and expectations (Laurent et al., 2009) which may hinder effective contribution to practice (McHugh and Lake 2010). It is also important to strengthen the support offered to Advanced Practice Nurses. Advanced Practice Nurse roles are increasing internationally and there is evidence to show the association between enhanced levels of competency and a positive impact on patient care, satisfaction (Clarke and Aiken 2003; Rothberg et al., 2005) and safety (McDonnell et al., 2015). However, structures to support the career pathway are still in a process of development. Lloyd-Jones (2005) showed that role ambiguity is one of the most important factors which hinders or facilitates the implementation of advanced nursing roles. This problem could lead to the loss of nursing roles because of unclear Advanced Practice Nursing boundaries. Policy makers need to consider the fact that the process for implementing and evaluating Advanced Practice Nurse roles is as complex and dynamic as the role itself.

Advanced Practice Nurses must also work to develop a unified Advanced Practice Nurse identity and establishing consistent role descriptors and gaining support from peer networks, engaging in teamwork, and gaining environmental, institutional and external support in order to develop their professional career pathway.

It would be helpful to have a unified Advanced Practice Nursing identity in order to raise the profile of the Advanced Practice Nurse career pathway within the nursing profession. Advanced Practice Nurses in Thailand are pushing the boundaries not only in professional nursing practice, but also through career progression pathways. It would be helpful to clarify professional boundaries through an agreed career framework which should be applied consistently across Thailand with the support of Thai Nursing Council. It can be said that Advanced Practice Nurses in Thailand continue

to be viewed as strategic performers in the nation's healthcare efforts for progression and that they aspire to expand their scope of practice while remaining within clinical areas. This aspiration is important and infrastructure for their career progression is needed to prevent them moving to other fields such as lecturing or management in the future.

The most salient finding of this study is the critical need for coordination between policy and practice to bridge the theory-practice gap pertaining to Advanced Practice Nurses, which is the chief recommendation for both policy makers as employees and the Thai Nursing Council.

Supporting the career pathway development of Advanced Practice Nurses in Thailand in the 21st century requires new support structures and national links to be established. The findings indicate that the uncertainty of the current situation for Advanced Practice Nurses in terms of support for their career pathway development requires Thailand to try to establish a policy for planning Advanced Practice Nursing career pathway development by providing clear regulations and standards along with specific processes for Advanced Practice Nurses to follow.

6. Study limitations

Although the number of Advanced Practice Nurses in this study provided a good representation of Advanced Practice Nurses across Thailand (response rate to the survey - 90%), it was a cross-sectional design which can offer only a snapshot of views within a given timeframe. Causal links are difficult to definitively identify and only the views of Advanced Practice Nurses are represented. Future research of an in-depth analysis of the opinions of policy makers is recommended. However, the research does have the potential for wide transferability across a range of other countries where many nurses also work as Advanced Practice Nurses.

CRedit authorship contribution statement

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary materials

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