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Original Article

Examining advanced nursing practice in Hong Kong and Guangzhou

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ABSTRACT

Objective: There were studies evaluating advanced nursing practice independently in the mainland and Hong Kong Special Administrative Region of China, but there was no attempt to make a comparison of practice between them. This study employed a case study method to examine and compare advanced nursing practice in Hong Kong and Guangzhou.

Method: Purposive sampling method was used to recruit 24 advanced practice nurses (APN) who came from the specialty of medical, surgical and pediatric in Hong Kong and Guangzhou. A questionnaire survey and semi-structured interview were conducted to solicit quantitative and qualitative data for exploring the structure-process-outcome of advanced nursing practice. The structure component explored the factors influencing advanced nursing practice. The process part examined APN role components and illustrations of exemplary advanced nursing practice. The outcomes described outcome indicators that best reflected advanced nursing practice.

Findings: Findings revealed that in the structure domain, APN education and career development, team approach in healthcare, and support from management, physicians and professional associations were important contextual factors for APN development in both cities. For the process domain, participants had at least 80% of their time practicing independently/interdependently and were engaged in APN activities including direct/indirect patient care, research/project work, initiation of staff and patient protocols. All participants demonstrated competencies with impacts on patient, service and profession in their description of exemplary practice. Participants from both cities ranked patient-related outcomes as top indicators for their advanced nursing practice.

Conclusion: This study has revealed that APNs in Guangzhou and Hong Kong shared similar work involvement and impacts and their demonstrated competencies were on par with international counterparts. Continued efforts need to be put in establishing formal APN education, clear clinical career pathway and title protection to empower nurses to provide optimal care to the fullest extent that they are prepared for.

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What is known?

- Advanced nursing practice is a global trend but the pace and extent of its development vary among places.
- Advanced practicing nurses (APN) contribute to patient and service outcomes.

- Factors that contribute and hinder the development of advanced nursing practice exist in the mainland and Hong Kong Special Administrative Region of China.

What is new?

- Both Guangzhou and Hong Kong have demonstrated APN competencies and impacts of advanced practice on par with their international counterparts.
- Similar factors have facilitated and hindered the development of APNs but the pace of development varied between Guangzhou and Hong Kong.

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- Title protection is important for patient safety and empowerment of APNs to provide optimal care to the fullest extent of they are prepared for.

1. Introduction

Advanced Nursing Practice is defined by the International Council of Nursing (ICN) [1] as practice in nursing that extends and expands beyond the basic nursing scope of practice, with integration and application of a broad range of theoretical and evidence-based knowledge. The advanced practice nurses (APN) are educated at master's level, equipped with expert knowledge and clinical competencies in complex decision making. They provide direct and indirect expert care and engage in education and research [1]. Evidence has shown that APNs contribute to patient outcomes including improvement in the quality of life [2], client satisfaction [3,4]; enhancement of access to care [3]; and service outcomes such as the reduction in unnecessary hospitalization [3,5] and prolonged stay [5].

The extent of APN development varies among countries. The ICN Nurse Practitioner/Advanced Practice Nursing Network [6] has estimated that around 70 countries have established or are in the progress of introducing APN role and there are about 70% of hospitals have some form of advanced nursing practice in place around the world [4]. In the mainland and Hong Kong Special Administrative Region of China, advanced nursing practice has been developed rapidly in the last two decades [7,8], in line with the global trends.

Researchers have identified the facilitating and hindering factors for APN development [9]. Factors contributing to its development include increased complexity of patient needs [10], emergence of educational programs for APNs [10–12], development of APN role and scope of practice [11,12], support from administration [13] and other healthcare professionals [10,11] as well as legal protection [10,12]. The factors hindering APN development are: unclear definition of role [14,15], low recognition from the public and other health care professionals [14], a lack of explicit competence framework for APN [16], training not endorsed by governmental organization [17] and without legal protection [18].

The mainland of China also encounters similar pushing and pulling factors mentioned above in developing advanced nursing practice. The similar number of physicians and nurses [15], with a physician-nurse ratio of around 1:1.14 in 2018 [19] together with nonspecific level differentiation between general nurses and APNs [15,18] add to the challenges to introduce APNs in the system. However, in recent years, there are contextual conditions that are conducive to APN development. In October 2016, the central government of China issued a document named 'Healthy China 2030 Strategic Plan' [20], instructing the government at provincial and municipality levels to design and implement healthcare systems that provide accessible, available and affordable healthcare to the people. Since nurses are the key agents at the service front in promoting health for all and in addressing specialty-specific client needs, the national policy provides an impetus to set standards and provide structured programs in building a cadre of specialty advanced practicing nurses [21]. The Development Plan for Nursing in China (2016–2020) [22] stressed the need of comprehensive development of the specialty nursing team, including clear admission criteria, training requirements, and well-defined roles and responsibilities. The mainland of China has started the clinical master programs approved by the Ministry of Education and the provincial education departments in 2011 [7]. These are important steps to develop APNs in the country.

Hong Kong is a much smaller place and the public medical

service is mainly delivered through the Hospital Authority (HA). It implies that any change in HA would result in influences on Hong Kong at large. In 1993, the first group of clinical nurse specialists was introduced in HA [23]. The title of clinical nurse specialist was subsumed under the generic work title of APN in 2003. The career ladder in the clinical specialty was further developed, introducing the position of nurse consultant (NC) to include a level above APN in 2008 [21,24]. The clinical career ladder is developed in parallel with the management stream, resulting in an explicit career development structure for the registered nurses to be promoted to APN or NC in the clinical track [4].

There were studies evaluating advanced nursing practice in Hong Kong [24–26] and the mainland of China [9,15,27] separately, but there was no attempt to make a comparison between these two places. This study endeavored to employ a case study method to examine and compare advanced nursing practice in Hong Kong and Guangzhou. The city of Guangzhou was chosen because it is near to Hong Kong and she has similar ethnic background and economic development. The close professional networking between Hong Kong and Guangzhou since 2000 also makes the two cities more comparable.

2. Participants and methods

This research employed a case study approach which helps to explore a phenomenon in specific context. In this study, the phenomenon is work of APNs. Each of the APNs recruited in Hong Kong and Guangzhou was treated as an individual case. Gillham [28] elaborated that in the primary case study approach, sub-methods such as interviews, documents and work samples can be employed to collect data relevant to the case. In this study, we have employed interviews using structured questions and open-ended questions and validated the interview data with the documents such as staff/patient protocols and service models furnished by the informants.

2.1. Participants

Participants from Hong Kong were recruited by referral from the Hong Kong Academy of Nursing (HKAN), while APNs from Guangzhou were identified through referrals by the Guangdong Nurses Association (GNA). Both HKAN and GNA have substantial number of memberships practicing at advanced nursing practice level in their respective specialty colleges. Purposive sampling was used, that is, participants were selected based on their particular knowledge of the phenomenon [29].

Miles, Huberman & Jackson [30] suggested the inclusion of a minimum of five "richly researched" cases from each subsettings when in-depth information is obtained for each case. A total of 24 APNs, with 12 each from Guangzhou and Hong Kong representing the specialties of medical, surgical, and pediatric nursing, were involved in this study. The specialties for medicine and surgery represented adult nursing, and pediatric specialty represented child nursing. Data collection and analysis were done concurrently, and saturation of data [31] was reached with the number of subjects.

The participants from Hong Kong had to fulfill criteria to be admitted as ordinary members of the specialty colleges under HKAN, which included: a) holder of a master degree in nursing or health-related discipline; b) registered for at least 6 years; c) worked in the related specialty for at least an accumulation of 4 years; d) have participated in specialty nurse training; and e) demonstrated competence at advanced nursing practice level. The selection criteria for the participants in Guangzhou were equivalent to those in Hong Kong. There happened to be an exercise in

Guangzhou, in collaboration with HKAN, to select and certify their advanced practice specialty nurses using the Hong Kong criteria. This certifying panel helped confirm the eligibility of participants from Guangzhou.

2.2. Data collection

Data collection took place in November to December 2018. A questionnaire with structured and open-ended questions soliciting quantitative and qualitative data was developed for this study. It was adopted from previous studies on advanced nursing practice in Hong Kong [24,26] and was refined based on the PEPPA-Plus framework to help ensure that the questionnaire contained the essential components of structure, process and outcome of advanced nursing practice [32]. The questionnaire consisted of four parts. The first part contained items on demographic data, including age, gender and job title. The other three parts solicited information related to 'structure', 'process', and 'outcome' of APN practice. The 'structure' part examined factors that influenced the implementation of APN roles. The participants were invited to discuss factors that facilitated and hindered their advanced nursing practice through an interview. The 'process' part had a structured part that explored the APN role components, percentage of independent/interdependent/dependent practice and participants' involvement in therapeutic practice behavior. Coupled with the structured items, the participants were asked to provide an exemplary case illustrating their work as an APN. In the 'outcome' part, participants were asked to select and rank the key outcome indicators that best reflected their work based on a list of outcome indicators compiled from previous APN studies [24,26]. The components of the data collection together with the analysis approaches are outlined in Table 1.

The questionnaire was validated using an expert panel comprising four members, two from Hong Kong and two from Guangzhou. The experts were asked to confirm if the items in the questionnaires were valid and relevant to the practice of APNs in the context where they practice. All items had an item content validity index (I-CVI) of 1 and the scale content validity index (S-CVI) was also 1, which indicated total agreement. The experts suggested semantic changes, such as naming of job titles relevant to the mainland of China.

Table 1
Data collection description, method and analysis.

	Description	Method	Analysis (Data category)
Background Information	Demography: - Age - Gender - Specialty - Length of specialty - Job title - Highest education level	Questionnaire (6 items)	Descriptive analysis (Quantitative)
Structure	Factors facilitating or hindering the establishment of advanced nursing practices	Interview (2 open-ended questions)	Inductive content analysis (Qualitative)
Process	1. Dimensions of roles: - Role components - Percentage of dependent/interdependent/independent practice - Referral - Consultation - Diagnostic and therapeutic practice behavior 2. An exemplary case illustrating APN work, with provision of supplementary document validating case description.	Questionnaire (5 items)	Descriptive analysis (Quantitative)
Outcome	APN outcome indicators	Interview (1 open-ended question) Questionnaire (12 items)	Deductive content analysis (Qualitative) Descriptive analysis (Quantitative)

2.3. Data analysis

Table 1 shows the analysis approaches according to the data category. All quantitative data were organized using descriptive analysis displaying means, frequency counts and percentage. The qualitative data collected through interviews were analyzed using inductive content analysis [33] for the factors influencing implementation of APN role and deductive content analysis for APN exemplary case analysis. The inductive approach allowed the organization of the data into themes which provided a means for describing the phenomenon. The deductive approach involved categorization of the data by coding in correspondence to identified categories [33]. All interviews were transcribed verbatim. The transcribed text was read and scrutinized by two independent coders (CKC and SLW) who put the texts with similar meaning together. For the inductive analysis, these similar content were categorized into themes. The lead researcher (FKYW) participated in the process in confirming the themes derived, explored the discrepant views and facilitated deliberation among the team to arrive at the final coding through consensus. For the deductive analysis, the exemplary cases were analyzed using HKAN APN competence framework. The realization of the competence was demonstrated in three aspects of impacts: patient impacts, service impacts and professional impacts [24]. Each APN informant was a case, and the data provided by each case would be compared and contrasted to seek for similarities and differences in the analysis.

2.4. Trustworthiness

The trustworthiness of a qualitative content analysis is presented by its credibility, confirmability, dependability and transferability [34]. In this study, credibility was ensured by determining interview questions based on previous studies and framework to obtain rich data. Confirmability was ensured by the questionnaire validated by an expert panel, and the data interpreted by multi-researchers. Multiple coders were employed to independently code the transcriptions and team discussion in providing a sound interpretation of the data. An audit trail was kept, which showed how the data were collected, recorded and analyzed. Clear selection criteria of participants strengthened dependability which referred to stability of data collected at different time and conditions. The explicit participants'

characteristics also supported transferability of the results to other contexts [34].

2.5. Statement of ethical approval

Informed consent was obtained from all participants and supplement information sheets with details of the study were provided to the participants. Single room was provided and only the researcher was present with the participant during the interview. All the information provided by the participants was kept confidential and anonymous. No personal name was mentioned in the client case provided by the participants. Ethical approval was obtained from the Human Subjects Ethics Sub-committee, The Hong Kong Polytechnic University (reference number: HSEARS2018510002).

3. Results

3.1. Demographic data

Twenty-four APNs, 12 from Hong Kong and 12 from Guangzhou, participated in the research. The demographics of the 24 participating APNs are summarized in Table 2. Among the 12 participants from Hong Kong, they had been in the specialty for an average of 15 years. Eleven were in the job title of APN, while one was in the post of ward manager. As for the participants from Guangzhou, they had been in the specialty for an average of 12 years. The majority of them were in the job title of head nurse. Others were in the job title of nursing team leader, specialty nurse or nurse.

3.2. Structure

Several major themes influencing the development of advanced nursing practice were identified, and these themes were shared by the participants from both cities. They were APN education and career development, team approach in health care and support from management, physicians and professional association. The themes are elaborated as follows.

3.2.1. APN education and career development

Participants from both Hong Kong and Guangzhou stated that having formal APN education and a clear career structure with well-defined nursing specialty areas were essential for APN development. The Hong Kong participants mentioned that training

Table 2
Demographic data.

Demographic	Hong Kong (n = 12)	Guangzhou (n = 12)
Age, years, Mean ± SD	40.3 ± 5.1	37.7 ± 4.4
Gender		
Male	2	0
Female	10	12
Specialty		
Medicine	5	3
Surgery	4	4
Pediatrics	3	5
Experience in the specialty, years, Mean ± SD	15.4 ± 5.1	12.1 ± 5.6
Job title		
Advanced practice nurse (APN)	11	–
Ward manager	1	–
Head nurse	–	9
Nursing team leader	–	1
Specialty nurse	–	1
Nurse	–	1
Highest education level		
Master's degree	12	12

was an important element for them to equip themselves as APNs. The education program should be at postgraduate level and accredited by an authorized body. The Guangzhou participants remarked that there was a lack of accreditation system and no organized training programs for APNs in the mainland of China. The participants asserted that the availability of continued education at postgraduate level with specialty-based curricula was essential for recognition, as revealed in the following quote.

“... master courses organized by the university ... something related to the clinical would be more appropriate ... or some other courses that were organized by the international association, after the completion, one can be granted the specialist title, such as enterostomal therapist ... this can ensure the title earned would be recognized by the working organization or other counterparts.” (HKS3, L811-827)

The participants also identified the need for an explicit clinical career structure, to enable nurses who were equipped with the demonstrated competence for career advancement and be remunerated for the APN role. Participants from Hong Kong mentioned that the Hospital Authority did have a series of training to prepare nurses for advancement. Whereas in Guangzhou, participants expressed that there was a lack of career pathway to guide their development to advanced level. Participants from both cities expressed that learning and working experiences helped to build them up professionally from basic to advanced level. A Hong Kong participant explained:

“The department or the Hospital Authority standardized all the training for nurses so you can follow. You can be expected to receive training when you have certain years of experience in the specialty, such as specialty training when you have 3 years' experience and management training when you have more than 5 years' experience. This is really useful for nurses to prepare ourselves.” (HKS1, L205-208)

The unclear definition of specialty area in nursing sometimes hindered APN development. One participant from Guangzhou said:

“As for gynecology nursing, the specialty is dominated by obstetrics in the mainland of China. Although obstetrics and gynecology are usually mentioned in one specialty, actually they are two specialties of different nature. There was neither committee nor workgroup for gynecology nursing. This hindered the development of the specialty [of gynecology nursing].” (GZS3, L145-150)

A similar issue was raised by an APN whose specialty was adolescent nursing in Hong Kong. She explained that adolescent nursing was a sub-specialty in pediatric nursing but the number of specialists was too small to introduce a standardized development plan for this group of specialty nurses.

3.2.2. Team approach in healthcare

The advocate of a team approach in healthcare provided opportunities for nurses to take on roles that could highlight the value of advanced practice. The team approach referred to collaboration within the nursing team as well as with other healthcare team members.

Within the profession, participants from both cities expressed that the differentiation of levels of nursing practice facilitated the demonstration of autonomous practice of APNs with a unique role, such as acting as a specialty case manager or running the nurse

clinic independently. The leveling of nursing practice also highlighted the role of the APN as an expert, as described by a Guangzhou participant in their three-level ward round:

“The first level is the case nurse, who would hand over cases at change of shift. The second level is the daily ward round jointly conducted by the case nurses and ward-in-charge. The case nurses could seek advice from the in-charge when they encounter problems during their daily round. The third level is the ward round together with me [as an APN]. During the round, we can discuss nursing care problems that the ward-in-charge had difficulty in solving.... It is a good way for me to let all the nurses in the specialty know what needs to be taken note of when caring for a complex case.” (GZM4, L304–309)

Inter-professionally, nurses worked most closely with physicians as well as physiotherapists, occupational therapists, speech therapists, and social workers. Participants in Hong Kong said that they acted as coordinators in the multidisciplinary team, to call for meetings to review the complicated cases. The nurses would contribute to setting up of care goals from the nursing perspective during the multidisciplinary ward round. Guangzhou participants shared similar experience but the collaboration tended to be more with the physicians rather than other team members, as illustrated below:

“We do ward round together with physicians. The physicians usually would discuss the patients’ treatment plan with us. And when we spot some problems, we would voice out during the ward round. For example, when we see a patient who is at risk of nutrition deficiency, we would voice out during the ward round and suggested the physicians to refer the case to the dietitian. And they will discuss with the dietitian for the further management.” (GZM3, L111–116)

3.2.3. Support from management, physicians and professional association

Participants from both cities emphasized that support from management of their work organizations was essential for realizing advanced practice in nursing. Participants from Hong Kong regarded management in their work organizations positive in facilitating their practice while Guangzhou participants on the other hand felt that the support from their work organizations for the APN role could be strengthened.

Participants from both cities mentioned that they could adjust medication or order diagnostic tests with restrictions and required endorsement from the physicians. A participant from Guangdong explained,

“We do not have such authority [in prescription of diagnostic tests nor adjustment in medication regime freely]. We can only do patient assessment and make suggestions to the physicians. The final decision still lies with the physicians.” (GZM4, L178–180)

Outside the work organization, professional associations were identified as a nurturing platform for advanced practice. In Hong Kong, HKAN was mentioned, and in Guangzhou there was no naming of a particular association but in general professional associations played a key role in providing training, sponsorship and set directions for development of the profession. A Hong Kong participant elaborated:

“The Academy [HKAN] gathered a group of professional fellows and provided a platform for nurses to set up guidelines and protocol

which focused on specialty nursing practice. ... It also provided a channel for us to discuss issues, such as nursing autonomy, authority and standard of practice. In the Academy, we can think out of the box of the Hospital Authority [the employing organization].” (HKS4, L451–463)

3.3. Process

The findings on the structured questions on process of care are displayed in Table 3. For the amount of time spent per role component, the Mann-Whitney *U* test showed that there was a significant difference between the time spent on direct client service with the APNs in Hong Kong had a higher percentage than their counterparts in Guangzhou (HK 45.0% vs. GZ 20.0%, $U = 32.0$, $P = 0.020$). On the other hand, Guangzhou nurses spent more time in attending meetings (HK 14.0% vs. GZ 7.5%, $U = 28.5$, $P = 0.010$) and research/project work (HK 5.0% vs. GZ 10.0%, $U = 34.5$, $P = 0.028$) when compared to the Hong Kong nurses. No significance was noted between the two groups on their level of dependence at work, with 90% or more of their work being independent or interdependent with other healthcare team members. APNs from both cities played a key role in initiating client and staff protocols but had neither privilege in initiating diagnostic tests, prescribing medications nor patient admissions. There was limited practice for a few APNs to adjust medications or initiate therapies.

The exemplary cases provided by the participants in both cities demonstrated the domains of APN competencies proposed by HKAN. Here below is an account of the case description that helps illustrate the realization of the APN competencies, consolidated into three aspects of impacts: patient impact, service impact and professional impact.

3.3.1. Patient impact

Both participants from Hong Kong and Guangzhou demonstrated competence and practices in managing complex client situations. A Hong Kong participant said,

“Being a cancer case manager (CCM), I have to manage a case independently. For example, if there is a newly diagnosed colon cancer patient, I need to arrange various diagnostic tests, such as colonoscopy and CT scan, and on the other hand, I need to explain the procedures to the patient ... or otherwise, he would not collaborate with us When there are results [from the tests], I have to explain the plan for treatment to the patients and guide them step by step with prompt follow up arrangement.” (HKS1 L242–250)

Likewise, a Guangzhou participant shared her experience in managing complex cases in ward setting:

“There was a little baby in our neonatal unit, inserted with a peripherally inserted central catheter (PICC) for more than a month. ... one day I noted that the baby’s upper arm swelled and found the PICC was dislocated in the x-ray film. There was difficulty in removing the catheter because of the swelling ... I consulted different specialties from surgery and radiology trying to figure out the cause and possible solutions ... After reviewing the related history, I found that the swelling was caused by inappropriate dilution of the electrolyte supplement ... I then informed the doctor and applied wet dressing and physical mobilization to the patient. The swelling was then relieved gradually and the PICC was removed safely after three days.” (GZP4, L158–167)

Table 3

Comparison between the two groups on role components, role dependence and therapeutic practice behavior.

Process of care	Hong Kong (n = 12)	Guangzhou (n = 12)	P
Amount of time spent per role component, %, Median (IQR)			
Role components ^{a,b}			
Direct client service	45.0 (38.0)	20.0 (29.0)	0.020
Indirect client service	20.0 (10.0)	20.0 (13.0)	0.443
Staff development	10.0 (14.0)	20.0 (5.0)	0.242
Meetings	7.5 (5.0)	14.0 (10.0)	0.010
Research/project work	5.0 (9.0)	10.0 (10.0)	0.028
Miscellaneous	5.0 (5.0)	6.5 (7.0)	0.887
Role dependence level ^{a,b}			
Independent	55.0 (39.0)	60.0 (30.0)	0.291
Interdependent	27.5 (38.0)	30.0 (30.0)	0.630
Dependent	10.0 (20.0)	5.0 (10.0)	0.178
Therapeutic practice behavior, n (%)			
Initiate new medication	0 (0)	0 (0)	
Adjust prescribed medication	1 (8.3)	0 (0.0)	
Initiate therapy	2 (16.7)	1 (8.3)	
Initiate diagnostic tests	0 (0)	0 (0)	
Admission privileges	0 (0)	0 (0)	
Staff protocols initiated	6 (50.0)	10 (83.3)	
Client pamphlets and/or protocols initiated	8 (66.7)	10 (83.3)	

Note: ^a The sum of percent of Role components and Role dependence is out of 100%; ^b Mann-Whitney *U* was computed to compare the two groups with *P*-value based on Exact Sig. [2*(1-tailed Sig.).]

Participants from both cities demonstrated practices in addressing patients' psychological and informational needs, in addition to the physical aspects. They built up rapport with patients and their family members and provided therapeutic intervention accordingly. A participant from Hong Kong shared that,

"I am the one who communicate or give education to the patients and their family most of the time ... I encountered a patient's family member who felt very stressed and cried whenever she saw the physiotherapist, who tried to teach her how to perform some daily care on the patient ... I tried to talk to her and found that she felt overwhelmed when she envisaged taking care of the patient at home ... After talking to her several times, I took over the role and taught her on those skills [for home care taking into account of her anxiety as a care-taker]. The mother successfully learned how to perform those daily care for her son." (HKP1, L310-319)

3.3.2. Service impact

Participants from Hong Kong demonstrated competency in this domain by providing and receiving the referral for consultation and acting as a key coordinator in the multidisciplinary team. Similarly, participants from Guangzhou made good use of the communication technology for picking up consultation in following up the needs of the patients, with an example described below:

"Sometimes as requested by some physicians, in order to help those patient groups in need such as parents of medulloblastoma, they [the physicians] would put me into patient support [WeChat] groups, and then I can readily answer their questions or provide them with some health education materials." (GZM2, L296-298)

Participants from Hong Kong carried out continuous quality improvement projects and helped to set guidelines and protocols within their specialties. Similarly, participants in Guangzhou worked as a team leader of the hospital quality control circle to safeguard safety and quality of nursing care within the related specialty. Furthermore, participants from Hong Kong and Guangzhou exhibited competency in this domain by employing innovative measures to enhance service outcome. A participant from Guangzhou mentioned that she invented a gadget that has

facilitated her nursing care:

"I invented a moxibustion gadget. In the past, if I need to perform moxibustion on patients, I need to burn the moxa sticks one by one. With this gadget, I can now do it four by four. It greatly improves efficiency. The investigation team was led by me. I coordinated the nurses and Chinese medicinal practitioners on the investigation. I am now applying a patent for my gadget." (GZM4, L363-L368)

3.3.3. Professional impact

In the domain of professional impact, a participant from Hong Kong explained how she provided guidance to her junior staff:

"Our junior nurses seldom use evidence to guide practice, that is, they don't usually think of why they need to do certain things. They usually would just get the job done. Then it is our responsibility to bring the culture of evidence-based practice to the ward. ... I usually teach them about the rationale and the evidence which supported the guidelines, rather than just reading the guideline to them one by one." (HKM5, L252-258)

Participants from Guangzhou mentioned that they were involved in different researches. A participant from pediatric specialty gave an example on the research about mini-cex below:

"It (mini-cex) is a tool assessing clinical skills, attitudes and behaviors in a clinical setting. This study has been finished and a manuscript was published. Also, I have been involved in a study about the relationship between the sub-optimal health of our nursing staff and their workload and work nature. This study can help us understand more about our colleagues and provide support accordingly." (GZP2, L359-L366)

Another example of professional implications can be illustrated by an account of a participant from Hong Kong who showed his critical observation on the high turnover rate in his department:

"The turnover rate is very high. It is not only occurring in our department, but also in the whole hospital. A good way to retain our staff is by providing continuous training arrangements. Hence, I

have arranged a training pathway for nurses of different seniority ... This started last year. I look forward to seeing the result of this pathway.” (HKS4, L496–L499)

A participant from medicine in Guangzhou gave an example how she identified learning needs of the nurses when reviewing the clinical nursing notes:

“When reviewing the clinical nursing notes, I found that nurses had a problem in handling patients with hypoglycemia ... This raised my interest in thinking about why this happened and how this problem can be solved.” (GZM1, L580–596)

3.3. Outcome

The participants from Hong Kong and Guangzhou selected similar indicators that they felt could best reflect their service outcomes (see Table 4). The top seven key indicators that were selected by over 50% of the participants were: patient safety, client satisfaction, caring of the carer, symptom management, activities of daily living, complication prevention, and length of hospital stay.

4. Discussion

This comparative study has revealed similarities and differences of APN work and development between Guangzhou and Hong Kong. APNs from both cities have demonstrated APN competencies and impacts of advanced practice on par with their international counterparts. There are similar factors that have facilitated and hindered the development of APNs but the pace of development varied between these two places. Hong Kong has introduced postgraduate nursing education and developed a career pathway for nurses to pursue clinical advancement much earlier than the mainland of China. In the mainland of China, there was no work title for advanced practicing nurses but in the last decade the national policy has issued an explicit stance advocating the development of specialized and advanced nursing practice. Neither places have title protection for APNs though nurse leaders have made attempts to exert influence on policy makers to drive legal protection for the practice of advanced nursing.

The APNs in both Guangzhou and Hong Kong demonstrated competencies shared by the international counterparts, including Australia [35], Singapore [36], Spain [37], Canada and United States [4]. All APNs involved in the provision of comprehensive and complex client management, education and research, supporting the system as a professional leader in developing policies and

setting protocols and guidelines [35]. These nurses enjoyed a relatively high autonomy with at least 88% of their role being independent or interdependent. However, the APNs from Guangzhou tend to spend more time in research project and less on direct patient care compared to those in Hong Kong. It maybe because research is counted as one of the key criteria for promotion of nurses in the mainland of China, but this is not a requirement for Hong Kong nurses. The reason for Guangzhou nurses in this study to have reported less direct patient care was that 75% of the informants were in the position of a head nurse while 91% of the Hong Kong informants held a position titled ‘Advanced Practice Nurse’. The position of head nurse will occupy the informants with more time in management, as reflected in the findings that the Guangzhou nurses spent significantly more time in meetings.

The impacts of advanced nursing practice involve three spheres of influence in bringing about positive outcomes in healthcare, which are client care, organization/health service system and professional nursing practice [24,38]. Findings in this study revealed that the APNs from both cities regarded client-related outcomes, including patient safety, symptom management, complication prevention, caring of carers and client satisfaction as top outcome indicators of their work. The contribution to the system such as length of hospital stay and readmission rates were listed as important indicators for their performance but were ranked at a lower order.

The development of advanced nursing practice is to optimize the use of nursing strength to their fullest extent that nurses are equipped with [1]. Hong Kong has introduced postgraduate nursing education and developed a clinical career pathway for nurses who chose to pursue advancement in clinical settings in the mid-nineties [39]. This has expedited the development of specialty nursing at a higher level of practice. In the mainland of China, nursing was only upgraded to a first-level discipline in 2011 and there was no specific job titles in advanced practice nursing [39]. Currently, there are over 4 million nurses in the mainland of China, and the education of nurses is enhancing with over 100 master level programs and 27 doctorate degree programs. With better education, the nurses are ready to assume responsibilities in extended roles of professional practice [40]. All the participants in this study possessed a master’s degree and demonstrated their competencies in advanced nursing practice. These participants reflected that there was no clear career pathway in delineating their expert roles. The work titles, particularly the participants from the mainland of China, carried the title of ‘nursing officer’ which did not reflect their level of expertise in clinical practice. Bryant-Lukosius & Martin-Misener [41] argued that clearly articulated career pathways in the APN role is an important strategy to support nursing practice development. The retention of these nursing talents eventually contribute to the improvement of quality of care and patient health outcomes [24,41].

Policy support helps to drive professional advancement and in turn the profession can facilitate the realization of national goals. When the ‘Healthy China 2030 Strategic Plan’ [20] was released by the central government, health bureaucrats at provincial and municipality levels readily responded. For example, in an attempt to provide accessible, available and affordable healthcare to people, Health Commission of Anhui Province [42] has tried out the first pilot scheme in the country for prescription right for nurses to support nurses to provide chronic disease management and primary healthcare to people in the community. The nurse leaders in the country see the need to seek legal support for empowering nurses in extended practice and ensuring safety of the clients. A nurse representative at the National Committee of the Chinese People’s Political Consultative Conference (CPPCC) has submitted a proposal on piloting the nurse practitioner system. The responses

Table 4
Key outcome indicators of APN practice chosen by APNs.

Key indicators reflecting service outcomes*	Hong Kong	Guangzhou
	(n = 12)	(n = 12)
Patient safety	12	12
Client satisfaction	12	11
Caring of the carer	11	11
Symptom management	10	12
Activities of daily living	10	9
Complication prevention	9	11
Length of hospital stay	8	6
Readmission rate	3	3
Nurse clinic attendance rate	2	2
Waiting time for first attendance	1	3
Emergency room attendance rate	1	0

Note: *Can choose more than one.

were positive, with a written reply from the National Health Commission in July 2019, committing to conduct specific research to examine international development and integrate practice specific to the Chinese context [43]. In Hong Kong, the Nursing Council of Hong Kong [44] has begun a scheme of 'Voluntary Scheme on Advanced and Specialized Nursing Practice', with the support of HKAN in composing the competencies of advanced practice nursing and different nursing specialties. The voluntary scheme is aimed to pave the way for setting up a statutory registration system in the long run.

International development of advanced nursing practice provides benchmark for national development, on specific areas such as scope of practice, education requirements and regulatory acts [24,41]. As reflected in the findings, the participants stressed that continued professional education was essential to prepare them for the APN role. This is also echoed by nurses in other countries [45]. Though education is necessary, education alone is not sufficient. Proper titling and explicit professional career ladder in recognizing the APN role can empower the nurses equipped with the required competencies to perform to their optimal extent. A study showed that the nursing position and grade on the professional career ladder were stronger predictors of APN activities, when compared to specialist education and experience [37]. The protection of title is a key measure to link the work capacity to proper recognition, and then education program can be planned accordingly to educate nurses to equip with the set of competencies in alignment with advanced nursing practice [24]. Support from local governments can provide a regulatory environment that would protect the safety of the patients and the quality of professional practice and its indemnity [36].

5. Limitation and recommendations for future studies

The generalizability of this study's results may be limited to only the three selected specialties, confining to advanced nursing practice in Hong Kong and Guangzhou. Quantitative data were only obtained from 24 APN participants with purpose sampling. Further research can be carried out in other specialties involving more places, with a larger sample size. The self-reporting nature of the data collection on the role dimensions and expected outcomes is another limitation of this research. In future study, the self-reported data can be validated with information from direct observations and review of clinical notes. The patient perspective is missing in this study. The involvement of key stakeholders as informants can strengthen the credibility of the data.

6. Conclusion

This study has revealed that advanced nursing practice is a global trend in meeting the increasing complex needs of patients, and nursing in China is developing on par with international practices. The continued development and retention of talents within the nursing profession are essential to maintain quality healthcare workforce. There is adequate evidence demonstrating impacts of advanced nursing practice on patients, system and the profession. This study, in concurrence with studies elsewhere, repeatedly point to the needs to establish structured APN education to equip nurses with the required competencies and to construct a clear career pathway for nurse advancement in the clinical ladder. The protection of title is important using regulatory measures for patient safety and empowerment of APNs to provide optimal care to the fullest extent of they are prepared for. This study has confirmed the competencies and contribution of the APNs in both the cities of Guangzhou and Hong Kong. Policies at municipal and national levels have facilitated the development of advanced

nursing practice. Continued efforts need to be put in establishing formal APN education and protection of titles to support the optimal contribution of nurses in healthcare services.

CRedit author contribution statement

Chun Ki Chun: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Validation, Visualization and Writing - original draft. **Frances KY. Wong:** Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Supervision, Validation, Visualization and Writing - review & editing. **Shao Ling Wang:** Data curation, Formal analysis and Writing - review & editing. **Weiju Chen:** Project administration in Guangzhou and Writing - review & editing.

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Declaration of competing interest

The authors declare that there is no conflict of interest.

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Appendix A. Supplementary data

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