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Original Article

Current State of Pain Resource Nurse (PRN) Programs and Experiences of PRNs in China

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ABSTRACT

Background: Since the 2010s, the Pain Resource Nurse (PRN) program and similar programs have been introduced in Chinese hospitals. However, the status of the PRN program and nurses' experiences in these programs remain unclear.
Aims: The aim of the study was to identify the factors related to PRN programs and explore PRNs' experiences being part of the program.
Design: A combination of descriptive cross-sectional and qualitative methods was used in the study.
Settings: Thirty-two hospitals in the eastern, central, and western regions of China.
Participants/Subjects: Twenty-four PRNs who had been PRNs for 6 months or more.
Methods: A purposive sample of 32 hospitals from eastern, central, and western regions of China carried out a PRN or similar program for more than 1 year with at least five bedside nurses from different nursing units were enrolled in the descriptive cross-sectional study. The questionnaire was designed by Brown's advanced nursing practice framework theory. A total of 24 PRNs who had been PRNs for 6 months or more participated in the interview by convenience and purposive sampling.
Results: The mean number of PRNs in a program was 30.12 ± 17.93 (range 5-74). The role of the PRN was broader compared with that of bedside nurses, and it included pain management, training, and education. The most common reason for hospitals to establish PRN programs was to improve the quality of pain management (n = 28, 87.5%). Administrative support (n = 28, 87.5%) was a major supportive factor for PRN programs and lack of physician support (n = 28, 87.5%) was a barrier. Although all hospitals provided training, those with knowledge assessments after training indicated a significant improvement in the desired PRN functions compared with those that did not ($p < .05$). Personal interviews revealed that the reasons for becoming a PRN varied and included considering PRN as a career opportunity, personal interest, passively accepting the designation, and being a PRN temporarily. The positive professional experiences of being a PRN included an increased sense of self-worth and accomplishment and growth in a specialty, whereas the negative experiences included frustration with the work environment and resignation because of extra workload.
Conclusions: The hospital survey results indicated that the PRN program in China is still in the early development stage. The PRN interviews suggest that being a PRN involves both positive and negative experiences.

Nurses play a pivotal role in effective pain management and spend more time with patients than any other health care professionals (Grant, Ferrell, Hanson, Sun, & Uman, 2011). They are responsible for pain assessment, intervention, and evaluation of pain management interventions, which are essential for positive patient outcomes. Nurses' attitudes and knowledge regarding pain management and active involvement in pain management treatment planning are crucial to the quality of pain management care.

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The City of Hope, a clinical cancer center in the United States, developed a pain management course for staff nurses in 1992 titled the Pain Resource Nurse (PRN) Training Program (Ferrell, Grant, Ritchey, Ropchan, & Rivera, 1993). Its overall goal was for every nursing unit to have one staff nurse who had been trained and would function as a resource and role model for nursing assessment and interventions in pain management. Since 1992 the PRN program has gradually gained popularity in the United States and other countries, such as Canada and South Korea (Grant et al., 2011). Studies have confirmed that the implementation of a PRN role significantly improved nurses' attitudes and knowledge regarding pain and encouraged nurses to play an active role in pain management (Ellis et al., 2007; Holley, McMillan, Hagan, Palacios, & Rosenberg, 2005; McCleary, Ellis, & Rowley, 2004; McMillan, Tittle, Hagan, & Small, 2005).

Patients' pain management has recently garnered substantial attention in China with the release of new guidelines and regulations. In 2010 the "Expert Consensus on Adult Postoperative Pain Management" was released (Chinese Medical Association of Anesthesiology, 2010); in 2011, the "Detailed Rules for Implementation of Accreditation Standards for Level III Comprehensive Hospitals" recommended pain management and continuous improvement be part of the accreditation standards (Ministry of Health of China, 2011a). In the same year, the "Accreditation Standards for Good Pain Management Ward" were first established by the National Health and Family Planning Committee of the People's Republic of China (Ministry of Health of China, 2011b). These two documents were issued by the central government to guide pain management. The former recommended pain management and continuous improvement as accreditation standards, whereas the latter focused on the cancer department to guide the establishment of a multidisciplinary team and standards for cancer pain assessment, treatment, and patient education and the procedure for telephone follow-up with discharged patients. However, unrelieved pain remains very common among hospitalized patients in China. It was reported that 46.4% of cancer patients and 58.3% in early postoperative patients experienced pain, higher than the rates in Western hospitals (Song et al., 2014; Sun, Zhang, & Gao, 2013).

The PRN program has emerged in China. It was first reported in 2013 that a PRN program had been established in 2009 at a hospital in the eastern part of China (Tong, Liu et al., 2013; Tong, Ye et al., 2013). It was concluded that the application of the Precede–Proceed Model promoted PRNs' professional behaviors and improved the quality of pain management nursing (Tong, Ye et al., 2013). Meanwhile, similar programs such as the Pain Management Network Model and Cancer Pain Management Team were also implemented in China (Hu, Mao, Wang, & Zhu, 2012; Zhao, Xu, & Jin, 2016). These differently named programs claimed similar outcomes, wherein the nurses played an important role in pain management, and the establishment of the program improved the quality of pain management nursing.

However, the samples in the studies of PRN or similar programs were obtained from single hospitals, making it difficult to compare and analyze PRN programs comprehensively across different hospitals. In general, there are only a few studies of PRN or similar programs, and no studies were found to compare PRN programs from different hospitals. The state of PRN programs in Chinese hospitals is not well known. Moreover, because PRN is a new role for nurses in China, few studies have explored in depth the experiences and perceptions of being a PRN in China. Therefore the objectives of this study were to describe the current state of PRN programs and the experience of being a PRN in China. A survey was used to investigate the current state of PRN programs, and personal interviews were conducted to examine the experience of being a PRN. We believe the results of this study have implications for further development of the PRN program in China.

Methods

Part 1: Investigation of PRN Programs

Design and Sample

In 2016 an online pain management nursing program funded by the International Association for the Study of Pain was offered in Mainland China via public social media WeChat accounts named Pain and Palliative Care Alliance and Nursing Notes. More than 2,500 health professionals, most of whom were nurses, participated in this free online program. Each trainee was asked to complete a simple questionnaire regarding basic information about the PRN program in his or her own hospital and whether he or she was the leader of the PRN program.

Hospitals participating in the online program were approached for this study. Part 1 (Investigation of the PRN program) adopted convenience and purposive sampling. The inclusion criteria were that the hospital had carried out a specific pain management program (PRN or similar program) for more than 1 year with at least five bedside nurses from different nursing units trained to be pain management experts who initiated unit-based activities related to pain management nursing. The trainees of the online program were from 51 hospitals, but only 33 hospitals met the inclusion criteria. All 33 hospitals had assigned the leader of the pain management program to attend the free online program. The 33 leaders voluntarily completed the PRN program survey. Therefore, even though 2,500 trainees from 51 hospitals participated in this online program, this study included only 33 eligible participants from 33 hospitals that met the inclusion criteria.

Procedure

This study was approved by the Ethics Review Board of our university. Before taking part in the study, information about the study was provided by telephone and mail to each participant (the leader of the pain management program of each hospital in the sample), who was asked to sign an informed consent form. Participation in the study was voluntary; signed informed consent forms were secured, and all information was confidential. Questionnaires were issued via mail; respondents were instructed to return the completed questionnaire anonymously. Anonymity was guaranteed by having a person not associated with the research team to receive the mail and gather the survey data.

Instrument

Hu et al. (2012) reported that a PRN team was established, trained, and worked under the framework of advanced practice nurses at a Chinese hospital. Guided by Brown's (1998) advanced nursing practice framework theory, the study survey was developed. In addition to demographic information, the questionnaire contained four parts, matching four main concepts of Brown's (1998) theory: environment, role legitimacy, advanced practice nursing, and outcomes. According to Brown's framework, "environment" refers to the multiple contexts in which advanced practice nursing is carried out, including society, local health care conditions, professional nursing, and the advanced practice community. Review of the Chinese literature indicated that PRN or similar programs were enacted within the hospital context (Hu et al., 2012; Tong, Liu et al., 2013; Tong, Ye et al., 2013; Zhao et al., 2016). Therefore this study focused on hospital environments for PRN programs. For the second part of the survey, the data gathered included education and professional rank of PRNs as well as selection, training, and financial compensation for PRNs to explore

"role legitimacy." In China, nurses are professionally ranked as primary, intermediate, or advanced, and the primary and advanced ranks have junior and senior subranks. "Advanced practice nursing" is the third concept in Brown's theory (1998), and in the third part of the survey, data gathered focused on the scope of PRNs. The evaluation criteria of outcomes of PRN programs in Chinese hospitals were not consistent (Hu et al., 2012; Tong, Ye et al., 2013; Zhao et al., 2016) and prevented determining which programs were more effective. Thus in the final section of the survey a simple question was used to investigate whether implementation of a PRN program had achieved the desired effect in the sample hospital.

The survey comprised three types of questions: open, closed, and choice (including multiple choices and single choice). The last option of each multiple-choice question was "others," where respondents were asked to provide additional information. The survey was modified through pilot testing of three nurses. The expert content validity of the survey was 0.97.

Part 2: Investigation of Experiences of Being a PRN

Sample

To examine the experiences of being a PRN, a second survey was conducted. The sample was obtained by convenience and purposive sampling. Inclusion criteria were nurses who had been PRNs for 6 months or more in the 32 sample hospitals used in Part 1 of this study. No more than one PRN from each hospital could complete the survey. The sample size was determined by saturation of information; that is, the recruitment of participants ceased when no new information was obtained. Each participant was asked to sign an informed consent form before enrollment in the study; participation was voluntary, and confidentiality was maintained with all data. In addition, participants were assured they could withdraw from the study at any time. A total of 24 PRNs participated in the study.

Interview

Based on the literature review and a deep understanding of the PRN program, the interview outline was designed to include descriptive and explanatory questions: "How did you become a PRN?" "What was the feeling and experience of being a PRN?" "Why did you have such feelings and experiences?" Semistructured interviews were conducted by telephone at appointed times and were audio-taped. A designated member of the research team trained in interviewing skills conducted the interview. The interviewer encouraged the interviewees to express their views freely and fully. Each participant was interviewed for 60-90 minutes. Two sets of educational pain management PowerPoint slides were e-mailed to each interviewee to compensate them for their time.

Data Analysis

Data were analyzed using the Statistical Program for Social Sciences (SPSS) Version 17.0 for Windows (SPSS Inc., Chicago, IL, USA). Descriptive statistics for demographic data were presented as frequencies and expressed as mean (standard deviation). To evaluate whether region, level of hospital, voluntarily being a PRN, assessments after training course, and financial compensation influenced the desired effect of the PRN program, χ^2 testing was used. A p value of $< .05$ was considered statistically significant.

For the PRN experience interview, all the audio-recorded materials were transcribed verbatim by the authors within 24 hours. The transcriptions were proofread independently by two other investigators who compared the tapes to the transcripts to ensure consistency and accuracy. In addition, the researchers sent the transcriptions to the participants for review to ensure the accuracy of the information (Bryman, 2008).

The content of the interviews was analyzed using an inductive approach. Following Berg's (2007) method of content analysis, two authors read all written transcripts several times to grasp the overall content. Next, text units were identified by reading sentence by sentence, marking words, sentences, or whole paragraphs and making notes in the margin. Each text unit generated a few codes by which the units were compared, and those that appeared closely related were grouped into preliminary themes.

Results

Part 1: Investigation of the PRN Programs

Basic Information About the PRN Program

Among the 33 eligible hospitals, 32 completed and returned the questionnaires (97%). These 32 hospitals were from 12 provinces of China: Hubei, Zhejiang, Jiangsu, Jilin, Chongqing, Guangxi, Guangdong, Henan, Anhui, Shanxi, Sichuan, and Yunnan. Twenty hospitals (62.5%) were located in the eastern region of China, seven (21.9%) in the central region, and five (15.6%) in the western region. Level III hospitals accounted for 93.8% (n = 30) and level II accounted for 6.2% of hospitals (n = 2); 24 (75%) were general hospitals, and 8 (25%) were specialized hospitals. The first PRN program was established in 2007, but in the recent years the programs proliferated, with seven (21.9%) hospitals establishing PRN programs in 2013 and 2014 and eight (25%) hospitals established PRN programs in 2015 (Table 1).

The PRN programs had various names, including Team for Pain Nursing (n = 13, 40.6%), Team for the Study of Pain Nursing (n = 3, 9.4%), Professional Team for Pain Nursing (n = 2, 6.2%), and others (n = 14, 43.8%) such as Salon for Pain Nursing and Admittance Group of Pain Nursing. The mean number of PRNs among the surveyed hospitals was 30.12 ± 17.93 (range 5-74).

Hospital Environmental Factors Influencing PRN Programs

Multiple-choice questions were used to collect data regarding hospital environment factors influencing PRN programs (Table 2). The reasons for or background of the establishment of PRN programs varied among hospitals, with 28 (87.5%) intending to improve the quality of pain management, 13 (40.6%) aiming to get a higher score on the governmental health administration accreditation, 28 (87.5%) simply imitating models of other professional

Table 1
Demographics of Hospitals Surveyed

Characteristics	Hospitals (%) (n = 32)
Location	
Eastern region	20 (62.5%)
Central region	7 (21.9%)
Western region	5 (15.6%)
Level	
Level III	30 (93.8%)
Level II	2 (6.2%)
Type	
General hospital	24 (75%)
Specialized hospital	8 (25%)
Year PRN program was established	
2007	1 (3.1%)
2009	2 (6.2%)
2010	1 (3.1%)
2011	3 (9.4%)
2012	3 (9.4%)
2013	7 (21.9%)
2014	7 (21.9%)
2015	8 (25%)

PRN = pain resource nurse.

Table 2
Hospital Environmental Factors of PRN Programs

Items (Multiple-Choice Questions)	Hospitals (%) (n = 32)
Reasons or background of establishment of PRN program	
To improve the quality of pain management	28 (87.5%)
To get a higher score of accreditation survey by the government	13 (40.6%)
To imitate models of other professional teams	28 (87.5%)
To follow other hospitals' models of PRN programs	22 (68.8%)
Supportive resource for PRN program	
Administrators of hospital and nursing division levels	28 (87.5%)
Administrators of nursing unit level	22 (68.8%)
Surveys	12 (37.5%)
Good Pain Management Ward	5 (15.6%)
Level III Hospital	3 (9.4%)
Painless Ward	4 (12.5%)
PRNs' support and active participation	10 (31.3%)
Patients and their families	9 (28.1%)
Challenges	
Lack of support from doctors	28 (87.5%)
Lack of pain nursing practice standards	20 (62.5%)
PRNs' insufficient knowledge of pain management	19 (59.4%)
Lack of support from patients	9 (28.1%)
Lack of support from administrators of hospital and nursing division	9 (28.1%)
Poor management of PRN programs	9 (28.1%)
Lack of support from staff nurses	8 (25%)
No supportive policy from the government	7 (21.9%)
Difficulty in conducting nursing research	5 (15.6%)
No prescriptive authority	2 (6.3%)

PRN = pain resource nurse.

teams, and 22 (68.8%) simply following other hospitals' models of PRN programs.

Several supportive resources of PRN programs were reported. PRN programs in 28 hospitals (87.5%) were supported administratively at both hospital and nursing division levels and 22 (68.8%) at the nursing unit level. Surveys were identified as supportive resources in 12 (37.5%) hospitals, such as the Good Pain Management Ward (n = 5, 15.6%), level III hospitals (n = 3, 9.4%) surveys, and the Painless Ward survey (n = 4, 12.5%). Additionally, PRNs' support for and active participation in the program in 10 (31.3%) hospitals and support from patients and their families in 9 (28.1%) hospitals were identified as supportive factors.

The development of the PRN program also faced challenges. The most common was lack of support from doctors (n = 28, 87.5%), followed by lack of pain management nursing practice standards (n = 20, 62.5%), PRNs' insufficient knowledge of pain management (n = 19, 59.4%), lack of support from patients (n = 9, 28.1%), lack of support from administrators of hospital and nursing divisions (n = 9, 28.1%), poor management of PRN programs (n = 9, 28.1%), and lack of support from staff nurses (n = 8, 25%). The least common challenges included having no supportive policy from the government (n = 7, 21.9%), difficulty in carrying out nursing research (n = 5, 15.6%), and having no prescribing authority (n = 2, 6.3%).

Education Background, Professional Rank, Selection Process, Training, and Financial Compensation for PRNs

In the 32 hospitals, there were a total of 964 PRNs, 391 (40.6%) of whom possessed college diplomas, 568 (58.9%) bachelor's degrees, and 5 (0.5%) master's degrees. There were 192 (20%) PRNs in primary-junior rank, 468 (48.5%) in primary-senior rank, and 304 (31.5%) in intermediate rank. Years of work experience ranged from <3 years to >10 years, with the greatest being in the ≥3 years but <5 years group (Table 3).

About half (n = 17, 53.1%) of the hospitals assigned nurses to be PRNs without their volunteering, whereas the other half (n = 15, 46.9%) selected the best applicants based on their daily performance (n = 12, 80%) or their professional ranking score (n = 3, 20%; Table 4).

Table 3
Educational Background and Professional Rank of PRNs

Items	PRNs (%) (n = 964)
Educational background	
College diploma	391 (40.6%)
Bachelor's degree	568 (58.9%)
Master's degree	5 (0.5%)
Rank	
Primary-junior rank	192 (20%)
Primary-senior rank	468 (48.5%)
Intermediate rank	304 (31.5%)
Work experience	
<3 years	205 (21.3%)
≥3 but <5 years	376 (39%)
≥5 but<10 years	362 (37.6%)
≥10 years	21 (2.1%)

PRN = pain resource nurse.

All 32 hospitals surveyed organized training courses for PRNs. Information regarding training methods for PRNs was collected. All hospitals arranged hospital-based experts to give lectures to PRNs. More than half of the hospitals (n = 22, 68.8%) invited outside-hospital experts to give lectures to the PRNs, some (n = 15, 46.9%) provided PRNs the opportunities to attend academic conferences, and 6 (18.8%) PRNs went to more advanced hospitals to attain knowledge (Table 4).

A total of 25 (78.1%) hospitals carried out a knowledge assessment after the course (Table 4); all of them (n = 25, 100%) carried out knowledge assessments, and 4 (16%) added additional clinical practice examinations. None of the 32 hospitals officially appointed (recognized) PRNs, but 20 (62.5%) issued an appointment notice for PRNs within the nursing division. Only 3 hospitals (9.4%) offered any financial incentive to PRNs.

Role Scope of PRNs

Compared with bedside nurses, the role scope of PRNs was extensive in the 32 hospitals (100%) in four aspects: education, quality improvement, development of educational materials, and research. Information regarding role scope of PRNs was collected via a multiple-choice question (Table 5). Additional educational responsibilities of the PRNs in these hospitals included giving lectures on nursing units (n = 32, 100%), organizing teaching rounds (n = 9, 28.1%), and leading case discussions (n = 8, 25%). PRNs initiated quality improvement (QI) activities on pain nursing

Table 4
Selection Progress and Training for PRNs

Items	Hospitals (%) (n = 32)
Selection of PRNs	
Without voluntary registration	17 (53.1%)
With voluntary registration	15 (46.9%)
On daily performance	12 (80%)
According to score ranking	3 (20%)
Training methods (multiple-choice question)	
Lectures given by in-hospital experts	32 (100%)
Lectures given by outside-hospital experts	22 (68.8%)
Academic conference	15 (46.9%)
Learning at more advanced hospitals	6 (18.8%)
Knowledge assessment after training	
No	7 (21.9%)
Yes	25 (78.1%)

PRN = pain resource nurse.

Table 5
Scope of Practice of PRNs

Scope of Practice of PRNs (Multiple-Choice Question)	Hospitals (%) (n = 32)
Giving lectures on nursing units	32 (100%)
Organizing teaching rounds	9 (28.1%)
Leading case discussion	8 (25%)
Initiating QI activities on pain nursing practice	24 (75%)
Designing health education materials for patients	22 (68.8%)
Designing training materials for staff nurses	10 (31.3%)
Conducting nursing research	8 (25%)

PRN = pain resource nurse; QI = quality improvement.

practice at units in 24 (75%) hospitals. PRNs designed health education materials for patients (n = 22, 68.8%) and training materials for other staff nurses (n = 10, 31.3%). Research on pain management nursing was conducted by PRNs from eight (25%) hospitals.

Outcomes of PRN Programs

Twenty-five hospitals (78.1%) answered "yes" to the question about "whether implementation of the PRN program achieved the desired effect." It was found that assessments after the training course significantly improved the desired function of the PRN program ($p < .05$; Table 6).

Part 2: Investigation of Experiences of Being a PRN

All the PRNs interviewed (n = 24, 100%) were from level III hospitals; 16 (66.7%) were from hospitals in the eastern region of China, 7 (29.1%) were from the central region, and 1 (4.2%) was from the western region. Twenty-two (91.7%) had bachelor's degrees, and two (8.3%) possessed master's degrees. There were four (16.7%) PRNs with primary-senior rank and 20 (83.3%) with intermediate rank. Of the 24 PRNs interviewed, three (12.5%) had ≥5 but <10 years of working experience, eight (33.3%) had ≥10 but <15 years, six (25.0%) had ≥15 but <20 years, and seven (29.2%) had ≥20 years.

Experience of Being PRNs

From the content analysis of the interviews, three themes (motivation, positive emotions, and negative emotions) emerged regarding the experience of being a PRN. Subthemes were further developed.

Theme 1: Motivation to Become a PRN

Considering the role of PRN as an opportunity for career development. For some participants, becoming a PRN meant having more opportunities to attain specialized knowledge and skills regarding pain management nursing, expand role scope, and enhance career development.

> Case 3: "I am a nurse with 3 years of work experience. After becoming a PRN, I got more opportunities to attain knowledge and skills about pain nursing and practiced better in caring for pain patients. The experience is beneficial to my future career development, such as becoming an advanced practice nurse, nursing educator, or head nurse. Therefore, I actively signed up to be a PRN."

Driven by an interest. Some nurses reported they became PRNs because they wanted to find a practical way to reduce pain for patients. This interest might have been initiated by their life experience or clinical nursing practice.

> Case 5: "I had a surgical operation when I was a child. I felt extremely painful at that time. I had a great interest in pain nursing when I was a nursing student, and it increased when I observed patients who suffered from pain clinically. PRN is a new role in our country, and I think it will have bright prospect in the near future."

Passively accepting the designation. In some hospitals, bedside nurses were also assigned to various nursing professional teams involuntarily, such as peripherally inserted central catheter and wound care teams. As one of these teams, the assignment of pain nursing was passively accepted by nurses.

> Case 7: "In our unit, except the head nurse and nurse educator, almost all the experienced bedside nurses have multiple roles in various nursing professional teams. Therefore, when the PRN program was initiated, the head nurse said that it was my turn to be the PRN, and I was hesitant to refuse."

Becoming PRN temporarily. Some PRNs reported that because of the shortage of staff nurses, bedside nurses were overburdened with clinical work; therefore the head nurse had difficulty appointing a PRN for the nursing unit. As a result, some bedside nurses became PRNs on a temporary basis.

> Case 10: "I am a nursing educator, and my work time is more flexible than other nurses. I am just a PRN temporarily. The head nurse told me that she would arrange other nurses to take my position as soon as we have enough hands."

Theme 2: Being a PRN Generated Positive Professional Feelings

Sense of self-worth and accomplishment. Most of the respondents expressed that in addition to their daily clinical work as bedside nurses, they also worked actively as PRNs. Their effective work as PRNs was acknowledged by other nurses, physicians, and patients.

> Case 9: "When colleagues could not solve complicated problems, such as dealing with an alarm on a patient-controlled

Table 6
Correlation between the Desired Effect of PRN Program and Knowledge Assessments after Training (n = 32)

	Whether the Desired Effect was Met		χ^2	p
	Yes	No		
Knowledge assessments				
Yes	21	4	4.937	.026*
No	3	4		

PRN = pain resource nurse.
* Statistically significant ($p < .05$).

analgesia pump, they would turn to me for help. They regarded me as an expert of pain nursing."

Case 16: "Doctors approve of my role as a PRN too. The director of my department asked me to give a lecture on pain management for several beginner physicians."

Case 21: "With the support from the head nurse, I drafted the policies and procedures regarding pain assessment and patient education. Now, pain nursing practice in our unit is more standardized than before. It makes me have a sense of accomplishment."

Growth of specialty. A majority of the respondents claimed that after taking a PRN training course and practicing in a clinical setting, their pain management knowledge and skills increased dramatically, and their professional competency improved as well.

Case 6: "Before the training course, I only got 10 points out of 100 in the test of pain knowledge, and I did not even have a lot of common knowledge about pain nursing. But now, if I give the same test again, I will score full marks."

Case 8: "Not only did I give lectures on pain management but also gave presentations on training course for nurses of the entire hospital. The role of PRN had empowered me greatly with competence."

Case 11: "I successfully applied for a research program about patient education on pain management. Although the research program was just within the hospital, I had never thought that this chance would come to me before. Having been a PRN for 2 years, I have greatly developed my specialty of pain management."

Theme 3: Being a PRN Generated Negative Professional Feelings

Frustration caused by work environment. Poor multidisciplinary cooperation, misunderstanding, and insufficient support from the hospital upset PRNs. Some complained that they were discredited or dismissed by clinicians from other disciplines.

Case 2: "Doctors' attitudes toward pain management are negative, and they are always reluctant to use painkillers. Only nurses care about the patients in pain. We spend lots of time on pain assessment and patient education, but our commitment alone cannot improve the quality of pain management effectively."

Some hospitals did not attach importance to pain management, and the PRN program was used as means to get a higher score during the accreditation survey of the Good Pain Management Ward. After completion of the survey, the PRN program effectively ceased to function.

Case 4: "In preparation for the survey, we did a lot of work. But after the survey finished, regular meetings of PRNs were not held for a long time. We did not have much work to do as PRNs. PRN remained in its name only."

In some hospitals the nursing department did not support the PRN program with regular training or lecturing, which made PRNs feel helpless.

Case 15: "Although in our hospital the head nurse of oncology department organized the PRN program, there have been few training courses and activities. I just attended one lecture or two. No one guides or supports my work."

Resignation because of extra work. Unlike the head nurse or nurse educator, who have more flexible time arrangements to carry out QI programs or training for staff nurses, a PRN would have to spend extra time to provide pain nursing care to patients in addition to the routine nursing workload.

Case 1: "Our hospital's PRN program works well, and we are required to take part in a training course once a month in our off-duty time. My annual paid vacation only has 5 days, and I do not know how long I can insist on being a PRN."

Case 22: "The head nurse arranged for me to carry out a QI program of pain management at our unit. I spent a lot of time collecting data and making plans. Although the head nurse arranged one day as compensation for me to collect data, I still spent much of my off-duty time writing the report for the QI program. Similar things happened sometimes. Although dedication was admired, I was not very happy to do extra work in my off-duty time."

Discussion

PRN Programs in China

Basic Information on PRN Programs in China

This study might be the first of its kind to investigate the status of establishment and development of a PRN program in mainland China. The results indicate that a PRN program was established not only in hospitals in the eastern area with a developed economy (n = 20, 62.5%) but also in the less developed central (n = 7, 21.9%) and western region hospitals (n = 5, 15.6%). According to the Hospital Classification Management Rules issued by the Ministry of Health of China, hospitals were divided into three levels. Level III hospitals provide more specialized medical services and have a pivotal role in medical education and scientific research. Level II hospitals offer less specialized medical services and limited teaching of health professionals, and level I hospitals only carry out basic medical care in certain communities. The results indicate that PRN programs are more likely to be carried out in higher level hospitals, and the highest-level hospitals had most of the PRN programs (level III: n = 30 [93.8%] and level II: n = 2 [6.2%]).

The first PRN program was established in 2007 in China, 14 years after Ferrell's first report in 1993 in America. However, the PRN program in China has grown quickly, from 9.4% in 2011 to 25% in 2015, likely because of the first release of the Detailed Rules for Implementation of Accreditation Standards for Level III Comprehensive Hospitals (Ministry of Health of China, 2011a) and the Accreditation Standards for Good Pain Management Ward (Ministry of Health of China, 2011b). The present survey also revealed that the purpose of establishing PRN program in 13 hospitals (40.6%) was to get higher scores on an accreditation survey by the governmental health administrative department.

Although in western countries PRN is a specific, commonly recognized title in the field of pain management nursing, this survey found a variety of titles in China, such as "team for pain nursing" (n = 13, 40.6%) and "team for the study of pain nursing" (n = 3, 9.4%). Practically, the structure and function of these pain

management nursing programs were similar to the PRN program initiated by the City of Hope, and nurses in the programs were representative nurses from different nursing units, their level of knowledge in pain management improved after training (Ferrell et al., 1993), and they played an important role in the nursing unit (Paice, Barnard, Creamer, & Omerod, 2006). Although not confirmed, it is possible that PRN-type programs in Chinese hospitals might have been established spontaneously without outside influence.

Working Environment, Role Legitimacy, Scope of Practice of PRNs, and Outcomes of PRN Programs

Studies have found that in China, PRN or similar programs were enacted within the hospital context (Hu et al., 2012; Tong, Liu et al., 2013; Tong, Ye et al., 2013; Zhao et al., 2016). To explore the environment of the PRN program, we looked at supportive resources and challenges in the hospital range. The results reveal that the supportive factors were mainly from administrators at the nursing division (n = 28, 87.5%) and nursing unit levels (n = 22, 68.8%). Although improving the scores on the accreditation survey was not a direct supportive factor for PRN programs, nurses' essential role in pain management seems to have resulted in the development of PRN programs in 12 hospitals (37.5%). “PRNs’ support” and “active participation in PRN program” were identified as supportive factors for PRN program in only 10 hospitals (31.3%). The recruitment of PRNs was concerning because more than half the hospitals (n = 17, 53.1%) simply assigned nurses as PRNs without voluntary application or selection based on professional performance. This suggests that nurses in Chinese hospitals may not want to become PRNs. It may also be attributed to the traditional Chinese culture of deference to leadership; that is, some nurses are willing to become PRNs, but they passively wait for the assignment from nurse managers.

Lack of support from doctors was the most common challenge for PRN programs (n = 28, 87.5%). Interprofessional cooperation is vital to pain management, and physicians play an important role because patients tend to be more willing to accept advice from doctors than from nurses (Zhu, Liu, Li, & Zheng, 2013). Furthermore, nurses must involve physicians when patients experience severe pain because nurses do not have prescriptive authority. According to Ladak et al. (2013), many physicians have negative attitudes about pain management, and PRNs advocating for pain relief often resulted in conflict with doctors. Other barriers to the PRN program were the lack of operational standards (n = 20, 62.5%) and low knowledge level of PRNs (n = 19, 59.4%). This suggests that changing the attitudes of doctors, establishing standards, and strengthening training might be necessary to advance PRN programs in Chinese hospitals.

In Brown's framework (1998), role legitimacy for advanced practice nursing included graduate education, certification, and licensure. In China there is a lack of certification required for advanced practice nursing; therefore, in this study, role legitimacy of PRNs was reflected by educational background, professional ranking, and training of PRNs. In the 32 hospitals surveyed, 391 PRNs (40.6%) had college diplomas, 568 (58.9%) had bachelor's degrees, and 5 (0.5%) had master's degrees. The prevalence of bachelor's degree holders among PRNs in the surveyed hospitals was much higher than that of all registered nurses (10.5%) in China (Ministry of Health of China, 2013). In 2012, according to the Ministry of Health of China (2013), nurses with primary-junior rank accounted for 42.6% of the total nurses, whereas those with the primary-senior and intermediate ranks accounted for 26% and 21.1%, respectively. In this study, 20% of the PRNs were in the primary-junior rank, 48.5% in the primary-senior rank, and 31.5% in the intermediate rank. The proportions of the primary-senior and intermediate PRNs were much higher than those of the national levels. In addition, the percentage of those with more than 10 years of work experience was 2.1% in the PRNs surveyed, whereas the national percentage was 53.1%. The data suggest that because the majority of the PRNs' educational level and professional rank were higher and their working years were shorter, nurses with higher educational level and professional rank but less experience were more likely to become PRNs in China.

It was found that all PRNs from various hospitals received training, which is in accordance with the literature (Ferrell et al., 1993; Paice et al., 2006). The results of the survey suggest that lectures for PRNs given by in-hospital experts were not considered sufficient by 22 hospitals (68.8%) that invited outside experts to give lectures. PRNs from 15 hospitals (46.9%) attended academic conferences, and those from 6 (18.8%) went to more advanced hospitals to attain more knowledge. At the completion of the PRN training course, 78.1% (n = 25) of the hospitals carried out written tests to assess the level of knowledge in pain management nursing.

In China, when a nurse is promoted, he or she receives an official appointment and corresponding increase in salary; however, the results indicated that no PRNs (n = 964) in this survey received official appointment notices, and only three (9.4%) hospitals provided a small incentive payment. It may be concluded the PRN is not an independent role in Chinese hospitals, which is consistent with the literature (Ferrell et al., 1993).

According to Brown's framework (1998), “advanced practice nursing” includes scope, clinical care, competencies, managing health care environments, and professional involvement in health care discourse. In this study the scope of the PRN role was explored. It was found that PRNs had a wider scope of duties than did bedside nurses in all 32 hospitals. The additional duties included training other nurses (n = 32, 100%), initiating QI activities (n = 24, 75%), and designing health education materials for patients (n = 22, 68.8%) and training materials for other staff nurses (n = 10, 31.3%). These results are similar to other reports in the literature (Grant et al., 2011; McCleary et al., 2004). It was found from Grant's survey (2011) that the percentage of PRNs' employment positions increased after taking on the PRN role, with the percentage of nurse practitioners increasing from 3.9% before to 9.6% after and that of clinical nurse specialist changing from 9.4% to 10.2% (Grant et al., 2011). Although the role of nurse practitioner is not well developed in China, considering the current role development of PRNs, we suggest that PRNs might be sort of a pioneering form of advanced practice nurses in China.

Paice et al. (2006) found that PRN programs led to organizational change because of the QI work carried out by the PRNs. In the present study, although QI activities were carried out in most of the hospitals surveyed, the impact of QI has not yet been evaluated.

According to Brown's theory (1998), “outcomes” are defined by the persons or systems affected, including patient outcomes, health care system outcomes, professional nursing outcomes, and individual practitioner outcomes. Previous literature reported that the evaluation criteria for PRN program outcomes were not consistent across hospitals (Hu et al., 2012; Tong, Ye et al., 2013; Zhao et al., 2016), making it difficult to determine which were better. In an effort to evaluate PRN program outcomes, we asked “whether implementation of a PRN program achieved the desired effect.” Through single-factor analysis of region, level of hospital, being a volunteer PRN, knowledge assessments at completion of training course, and receiving financial compensation, we found that the PRN program achieving the desired effect was significantly associated with having knowledge assessments at the completion of the training course ($p < .05$). This suggests that rigorous training followed by knowledge assessment may lead PRNs to understand and retain pain management nursing knowledge. This knowledge and skill acquisition related to pain management may empower nurses

to provide pain relief more easily, which is central to nursing care (Ferrell et al., 1993). Based on this information, we suggest that routinely conducting knowledge assessments after training courses might be an important step in the development of PRN programs in Chinese hospitals.

Experiences Being a PRN in China

No study was found to report on the experiences of PRNs in China. Because PRN is a relatively new nursing role in Chinese hospitals, this study focused on how bedside nurses became PRNs and their experiences as PRNs. All the PRNs interviewed (n = 24, 100%) were from level III hospitals, and most (n = 16, 66.7%) were from hospitals in the eastern region. Most of them had bachelor's degrees (n = 22, 91.7%) and primary-senior rank (n = 20, 83.3%).

This study identified various factors that influenced the motivation for nurses to become PRNs. Some participants indicated that becoming a PRN provided more training opportunities, broadened their scope of practice, and promoted career development. This was reflected in all PRNs attending additional training courses and functioning as educators and some carrying out QI activities and nursing research. Others reported that becoming a PRN was not their choice. In some hospitals, almost all low-ranking nurses had multiple roles in various nursing professional teams arranged by the nurse managers. These assignments, including PRNs, were determined by seniority. Alternatively, some nurse managers arranged for nurses who had more flexible time arrangements to become PRNs temporarily. The results of the study indicated that being assigned to the PRN role occurred in more than half of the hospitals (n = 17, 53.1%). From the survey results, the reasons for nurses not volunteering to become PRNs may be attributed to lack of an official job appointment, extra responsibilities, and meager or no financial compensation.

For some PRNs, the professional experience was quite positive because of an increased sense of self-worth and professional growth. PRNs helped their colleagues solve problems, improved the quality of pain management, and received recognition from doctors, head nurses, bedside nurses, and patients, which is consistent with the literature (Holley et al., 2005; McCleary et al., 2004). McCleary et al. (2004) found the roles of Canadian PRNs included coaching, facilitating good pain management, monitoring and evaluating practice, and providing feedback. Holley et al. (2005) concluded that American PRNs gained recognition as experts and increased effectiveness in pain management, which influenced and reinforced their professionalism. Positive professional experiences seem to promote professionalism in PRNs, which effectively reinforces their professional conduct as PRNs.

Other PRNs in this study reported negative experiences that led to their intention to resign. These interviewees reported frustration about not receiving support from the hospital administration or the PRN leader and about embarrassing clinical situations. Additionally, some PRNs reported that the intention to resign was because they had to use off-duty time to participate in training and perform additional PRN-related duties. Similar findings were reported by other researchers (Holley et al., 2005; Ladak et al., 2013; McCleary et al., 2004). Ladak et al. (2013) concluded that the challenge of PRNs' integration into the interdisciplinary team contributed to role conflict for PRNs. Holley et al. (2005) reported that interviewees indicated that negative, judgmental, and uncaring attitudes of colleagues toward patients in pain undermined PRNs' expertise and discouraged their enthusiasm at work.

Limitations

This study has several limitations. First, convenience sampling was used, and the sample size of the quantitative study was small, which limits the generalizability of the results. Second, all PRNs interviewed were from level III hospitals, again limiting the generalizability of the results. Third, the PRNs were interviewed by telephone; therefore, data about nonverbal communication, such as expression, gesture, tone, and intonation, were not collected.

Implications for Nursing

There are several implications for promoting the development of PRN programs in Chinese hospitals. Hospitals and nursing departments should provide more support to PRNs. Some strategies for this include providing an official appointment and corresponding financial incentive, compensation for PRNs' off-duty work, encouraging peer support among PRNs, and creating an organizational culture of quality pain management. These supportive strategies may also inspire PRNs' support of and active participation in the PRN program. Hospital administrators and leaders of PRN programs should encourage multidisciplinary collaboration, advocate for a culture of high-quality pain management, and promote physician support for the PRNs. Standards of practice for pain management nursing should be developed, and more ongoing education and training should be provided to PRNs. Education is more effective to improve pain management care when combined with standards of practice because knowledge is reinforced with standardized pain management nursing practice. Consistent use of knowledge assessments after training courses should be considered because this may improve the effectiveness of the PRN program.

Conclusions

In this study the present state of PRN programs in Chinese hospitals and the experiences of being a PRN were explored and evaluated. The hospital survey results indicated that the PRN program in China is still in the early development stage. The PRN interviews suggested that being a PRN involves both positive and negative experiences. Implications for the future development of PRN programs in China include the need for support from hospital administrations, nursing departments, physicians, and other staff nurses. Financial compensation must also be considered as an effective mechanism to support PRNs and PRN programs in China.

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