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## Continuing education among Chinese nurses: A general hospital-based study

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### SUMMARY

**Background**—Continuing education (CE) is increasingly critical for nurses to keep abreast of rapid changes in patient care due to advancements in knowledge and technology.

**Objective**—The objective of this study was to explore Chinese nurses' perceptions on continuing education, how best CE practices meet their learning needs, and the motivation and barriers nurses face in completing CE.

**Methods**—A cross-sectional study of 2727 hospital-employed Chinese nurses from ten general hospitals was conducted from September to October 2010. Nurses' perceptions on CE, as well as motivational and preventive factors in CE were assessed.

**Results**—The majority of nurses (97.3%) attended CE activities in the last twelve months. More than 92.2% of the nurses were familiar with the value of CE. Nurses expected CE activities to take place within a five-day period and to consist of 2 h per activity. The major factors that motivate nurses to participate in CE are the desire to gain and update their knowledge of the newest nursing development and procedures, to improve their practical skills and comprehensive qualities, to maintain professional status and to receive an academic degree. Factors that hindered nurses' participation in CE included time constraints, work commitments, a lack of opportunity, cost of the courses and previous negative experiences with CE programs.

**Conclusion**—Chinese nurses considered CE an extremely important measure to further develop their professional competency. Nurses' actual expectations for CE and the motivation and barriers for participation in CE from nurses' individual, family and hospital perspective must be taken into the account in order to make CE programs more effective.

### Keywords

Continuing education; Nurses; Participation; Perception; Expectation; Motivation for CE; Barriers to CE

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### Conflict of Interest

All authors declare they have no conflicts of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the work submitted that could inappropriately influence, or be perceived to influence, their work.

## Introduction

Continuing education (CE) is increasingly necessary for nurses to keep abreast of rapid changes in patient care due to advancements in knowledge and technology (Berings, 2006; Atack, 2003; Gopee, 2001). The importance and relevance of CE to nurses have been emphasized in the literature (Levett-Jones, 2005a, 2005b; Macdonald, 1994). “CE” is a concept also frequently referred to as “continuing professional education”, “life-long learning” or “knowledge translation” (Hegney et al., 2010). Although a variety of definitions exist for “continuing education” (Gallagher, 2007), this paper will define CE as “a process of planned activities based on performance review and setting of explicit targets for good clinical practice with the aim of improving actual quality of patient care” (Bynum et al., 2010). In China, continuing professional development (CPD) is often included in CE.

Currently, most countries including China mandate their nurses’ participation in CE (Flores and Alonso Castillo, 2006; Nursing and Midwifery Board of Australia, 2009). In these countries, each nurse must obtain a specific number of credits within a certain period of time in order to remain credentialed and continue working (Raddatz, 2001; Furze and Pearcey, 1999). In China, there are many shorter learning activities. For Chinese nurses, they can get 1 credit for every 6-hour learning activity. As a result, many nurses enroll in CE activities to meet their credit requirements as much as they do to learn. These mandatory requirements have made defining the purpose and goals of CE an international debate. A published meta-analysis supports a longstanding confidence in CE’s positive effects upon nursing practice (Waddell, 1991).

Despite a mandate for continuing nursing education in China, a Delphi study by Xiao (2010) delineates four barriers to meeting mandatory continuing nursing education (MCNE) in China: 1) inaccessibility of the learning programs; 2) undervalued work-based learning; 3) unequal allocation of resources across healthcare facilities, and 4) demand for additional support from rural and non-tertiary hospitals.

More recently, Wang et al. (2013) describe the fact that while facing a global aging population, nursing resources in China may have specific manpower reserves from which to draw new nurses, yet they also emphasize the threat of insufficient professional capability, and antiquated teaching strategies and materials, which will ultimately limit the future development of nursing practice and nursing as a discipline. Thus, understanding the role of CE in advancing nursing practice becomes a requisite for the required future workforce development described by Wang and colleagues.

Continuing education continues to be firmly embedded within the field of healthcare (Nursing and Council, 2008; Department of Health, 2006a; Xiao, 2008). Progressively more Chinese nurses have come to realize the importance of continuing education in maintaining their practice. Since outcomes of education are greatly related to learners’ interests and expectations, CE programs/activities should be closely aligned with nurses’ needs and expectations (Hayajneh, 2009). However, the current CE programs/activities, especially mandatory continuing education (MCE), are not well designed to promote the real value of MCE and satisfy nurses’ expectations (Pei and Wang, 2011).

The motivation to enroll in CE programs/activities, as well as the experiences nurses have had in previous similar programs, greatly influences the effectiveness of CE. Earlier studies have addressed and analyzed these same issues (Tame, 2011; Chong et al., 2011; Flores and Alonso Castillo, 2006). Findings showed that the most prominent factors motivating nurses to enroll in CE were their desire to upgrade their professional skills and knowledge, to remain current in their professional practices and to improve their ability to serve the

patients (Muthu, 2006; Kristjanson and Scanlon, 1989; Waddell, 1993). In addition, a study of 164 nurses reported that the support of supervisors, the availability of suitable CE programs and the encouragement of their peers were the main motivating factors encouraging them to engage in CE (Glass and Todd-Atkinson, 1999). In 2006, Lai added nurses' needs to comply with their hospital's policy and to meet their recommended statutory requirements as additional motivating factors. Conversely, the factors, such as time constraints imposed by jobs or families and inconvenient transportation, rank highly among the reasons that hinder nurses participating in CE (Hegney et al., 2010; Zhang, 2009).

Although nursing education is increasingly becoming a part of higher education in China, most of the nurses still complete their basic education in diploma programs (Xu et al., 2011). To prepare the nursing workforce to cope with the challenges that arise in the rapidly-changing healthcare environment, China instituted MCE programs, which require nurses to obtain at least twenty-five CE credits a year (Chinese Ministry of Health, 2000). However, studies found that most Chinese registered nurses (RNs) had difficulty meeting their credit requirements (Zhang, 2009). Defining the barriers Chinese nurses face in completing CE and the best practices for meeting nurses' CE needs remain unclear (Zhang, 2009).

Therefore, based on a multi-center large sample of nurses working in general hospitals, this study examines Chinese nurses' participation in and perceptions of CE, identifies their expectations for CE practice and explores the motivation and barriers they face in completing CE. This study will assist nursing managers and CE designers in developing evidence-based CE policy and effective CE programs and activities. Understanding how to meet nurses' CE needs will ultimately promote their uptake of new knowledge and technologic advancements resulting in improved nursing practice and quality of patient care.

## Methods

### Design

A quantitative cross-sectional survey was designed to explore the attitudes and perceptions of Chinese nurses regarding the attributes of current CE practice and the major factors that affect their participation in these educational offerings.

### Sample and Procedure

The sample was drawn from nurses working in general hospitals. A multi-stage, stratified random cluster sampling was used. First, cities in China were divided into four groups according to geographical regions. Second, two or three cities were randomly selected in every geographical region. Third, one general hospital was randomly selected in every selected city. In all, ten general hospitals were randomly selected from September to October 2010. Then, ten departments, including four internal-medicine departments, four surgical departments and two other departments (selected from ophthalmology, otolaryngology, traditional Chinese Medicine, Invasive Technology Department, et al.), were randomly selected on the basis of the number of health clinic departments. Of all the hospital-employed nurses within the ten selected departments in each hospital, registered nurses (RNs) aged 18 years or older and with at least one year's working experience were recruited for the survey. In China, some students attend technical secondary schools for diplomas in nursing after middle school. For these students, nursing education begins at 14 or 15 years of age, thus if they were younger than 18 years of age at the time of the survey they were excluded. Exclusion criteria also included: nurses who were on maternity leave, study leave or long term medical leave.

The survey was conducted from September to October 2010. The questionnaires, with self-addressed envelopes, were given to the hospital nurses' officer or manager of the Nursing

Administration Unit in the ten general hospitals. The trained officer or nurse's manager distributed the questionnaires to the recruited nurses. After receiving brief, uniform instructions, nurses completed the questionnaires and returned them in an envelope to a designated person in the hospital. The designated person mailed the completed questionnaires from that hospital to the authors.

### **Ethical Issues**

The study was approved by the Institutional Review Board of the Fourth Military Medical University. Hospital visits were made to explain the objectives of the study. All of the randomly sampled nurses were informed of the study's purpose and told that participation would not affect their work. The nurses were assured that the data would be treated confidentially and their identity, as well as the identity of their institutions, would not be disclosed in the final report or in any publications. Anonymity was assured in the survey by providing each nurse with a study ID number known only to the study investigators. Participation was voluntary and written consents were obtained from the participants.

### **Instruments**

The participants were given a self-administered questionnaire. This questionnaire was developed from a literature search of available measures related to CE (Zhang, 2009; Lai, 2006; Muthu, 2006) with considerable attention to clear and unambiguous items. Prior to conducting the study, the questionnaire was reviewed by a panel of six experts drawn from nursing school and hospital faculties with at least five years of teaching experience in CE. The questionnaire was then pilot tested on a group of 30 RNs not involved in the actual study. Participants were asked to identify any items they had difficulty answering, and to specify the length of time it took to complete the questionnaire.

The final questionnaire included 30 items that consisted of three parts: demographic information of the participants; their participation in, perceptions on and expectations for CE; and factors that motivate or hinder nurses' participation in CE practice. Of all items, those related to the ways to obtain CE credits and, factors that motivate or hinder nurses' participation in CE practice, nurses' expectations for CE activities, suitable time and evaluation of CE programs or activities were multiple choice questions, the remainder were single-choice ones. The reliability of this questionnaire was analyzed by a Cronbach's alpha quotient. The questionnaire had good internal reliability with a Cronbach's alpha of 0.91.

### **Statistical Analysis**

All completed questionnaires were assigned a study number. Double data entry was performed by two independent professional data-entry workers using EpiData Version 3.1. Computer and manual checks ensured accurate data coding. Statistical analyses were performed using the software package SPSS 17.0. Categorical data was reported as frequencies, and the continuous data as means with standard deviations.

## **Results**

### **Sample Demographic Characteristics**

A total of 2800 nurses from the ten randomly selected general hospitals were invited to participate in the study, and 2753 completed the questionnaire. Twenty-six nurses were not able to complete the questionnaire for an effective response rate of 97.4% (2727/2800).

All the participants (100%) were female. The mean age was 26.3 years (SD = 3.8, range = 19–46). The mean experience of nursing care was 7.2 years (SD = 3.9, range = 1.0–28). Table 1 includes the demographic characteristics of the participants.

### Nurses' Perception on and Participation in CE

A total of 97.3% of nurses had attended CE activities in the last twelve months, and 86.8% had obtained the required CE credits. The percentage of nurses who knew about credit requirements and the methods for implementation of CE was 92.8% and 96.5%, respectively. More than 92.8% of nurses thought CE was necessary and important, and 92.2% considered CE helpful. The main ways to obtain CE credits were CE activities and other related programs held in nurses' own hospitals. Table 2 presents nurses' perception on and participation in CE.

### Factors That Motivate or Hinder Nurses' Participation in CE Practice

Table 3 shows the related factors that influence nurses' participation in CE practice. More than 60.3% of nurses thought that the five most important factors that motivated them to participate in CE were to update their knowledge, to improve their skills in clinical practice, to improve the quality of their comprehension, to obtain the knowledge necessary to achieve professional status and to raise their level of scholarship. The five most important factors that hindered them from participating in CE were time constraints, work commitments, lack of opportunity to attend CE, the cost of the courses and negative experiences with CE programs such as inexperienced teachers and a lack of order in the classroom.

### Nurses' Expectations for CE

Table 4 illustrates the nurses' desired structure for CE programs/ activities. More than 43.1% of nurses thought that the five most favorable CE activities were short-term training, special lectures, further study in their specialty, clinical teaching rounds and seminars. Over 40% of the respondents also selected case discussions, simulated training and academic meetings as favorable methods for obtaining CE. Nurses expected CE programs/activities to take place during a period of five days or less and to consist of 1 to 2 h per activity. In other words, rather than full-day CE offerings, nurses expected multiple, one to two hour activities but within a five day period rather than over a longer interval between offerings. A total of 68.1% and 50.0% of nurses indicated that they preferred case discussion or outcomes assessed by charge nurses as the means for evaluating the effects of CE activities, respectively.

## Discussion

It is an accepted fact within healthcare disciplines that professional practitioners must participate in CE (International Council of Nurses, 2008). China implemented MCE in 1996. Although it has been internationally debated whether MCE motivates one to learn for competence or simply to meet credit requirements (Pei and Wang, 2011), this study showed that 97.3% of nurses participated in CE activities over the course of the year. It is a distinct possibility that these numbers are the result of Chinese nurses continuing to recognize the inherent value of CE since it became mandatory. The motivating factors such as council and organization requirements and re-licensure were also emphasized in previous studies (Zhang, 2009; Gallagher, 2007; Shen, 1998). Similar to previous findings (Nolan et al., 1995), the current study found that more than 92.8% of nurses understood and appreciated the value of CE and the credit requirements. These findings reveal widespread support for CE among Chinese nurses in general hospitals.

With the development of economic and healthcare reforms in China, the healthcare system is being transformed from a centralized system to a decentralized one (Wang, 2001). These external forces of change have significantly influenced CE. Huge deficiencies in RNs' competencies, such as an obsolete knowledge structure and their unfamiliarity with the new techniques in nursing, have been identified and are viewed as barriers to the further reform

of healthcare organizations (Chen, 2005). Our findings showed that 92.2%–92.8% of nurses recognized the necessity, importance and helpfulness of CE. A total of 86.8% of nurses surveyed could meet the CE credit requirements. In regard to the main avenues for nurses to obtain CE credits, 60.5%–79.3% of nurses participated in CE activities held in their own hospitals. Because outside CE programs require fees for registration, transportation and study leave, only 43.3% of nurses could participate in such programs. In the selected general hospitals, only 61.3% of the nurses surveyed were satisfied with their current CE. These findings suggest that CE programs/activities in China should be further improved in the future.

The current study revealed that the five most important factors that motivated nurses to participate in CE were to update their knowledge, to improve their skills in clinical practice, to improve their comprehensive qualities, to obtain the knowledge necessary to achieve professional status and to raise their academic degree. Similar findings were also found in previous studies (Chong et al., 2011; Lai, 2006; Levett-Jones, 2005a, 2005b). In contrast to research that lists meeting the requirement for re-licensure and fulfilling organizational needs as the main motivating factors (Gallagher, 2007; Lai, 2006), this study found that nurses more typically enrolled in CE programs to improve the quality of their comprehension and to raise their academic degree. Although the education level of nurses has been growing gradually in recent years (Zhang et al., 2010), there continue to be a large proportion of nurses who have the desire to improve their education level and professional status. A survey conducted in 181 hospitals found that the nursing staff mainly held secondary diplomas from their initial nursing education in China (Xu et al., 2011). The low academic qualifications of the nursing sample in this study may explain those desires.

Conversely, the five most important factors preventing nurses from participating in CE were found to be time constraints, work commitments, lack of opportunity to attend CE, cost of courses, and negative experiences with CE programs. The findings are consistent with the results of previous studies (Chong et al., 2011; Hegney et al., 2010). Time constraints and work commitments were the major factors that hindered nurses in general hospitals from participating in CE. The prominence of these factors could also be directly related to the serious shortage of nurses in China (Shi et al., 2005; Zhang et al., 2010), which has not only created rigid working hours, but also affected their supervisor's ability to release staff to attend CE offerings during normal work hours (Gould et al., 2007). In such settings, lack of participation in CE was based on issues originating from the nurses' individual, their employer or, sometimes, both (McWilliam, 2007). Similar to other published research, this study found that lack of organizational and/or familial support was factors hindering nurses' participation in CE. That is, as extrinsic motivational forces, encouragement from the nurses' employing organizations and families could help provide them with additional motivation to continue their education.

This study also found that the cost of courses, negative experiences with CE programs, outdated content and teaching methods affected Chinese nurses' decisions to participate in CE. Although proponents for advancement of nursing practice have appealed for the adequate provision of continuing and specialist education opportunities since the implementation of MCE, the credit requirements of such programs have delayed their development in China (Xiao, 2006). Flexible, diverse and competence-based learning programs in CE can prepare the nursing workforce to more appropriately cope with the challenges that arise from a rapidly-changing healthcare environment (Xiao, 2008; Nursing and Council, 2002). However, many previously-developed CE programs have failed to involve nurses as active learners. Instead, by treating nurses as passive participants in the learning process (McWilliam, 2007), and requiring them to pay for CE, CE programs/activities have consistently failed to meet the needs of their learners (Gould et al., 2007;

Munro, 2008). These findings suggest that further research regarding the actual cost, value, efficiency and effectiveness of CE offerings should be undertaken. Additionally these findings indicate the need for an important mandate where managers of healthcare systems and hospitals collaborate to explore low-cost or free CE programs/activities to encourage higher attendance at nursing CE offerings. By improving active participation across institutions, nurses would ultimately increase their level of practice competency and optimize patient outcomes.

When asked what type of structure and teaching methods they would prefer in CE programs or activities, most nurses (51.8%–68.6%) identified short-term training, special lectures, further study in their specialty area and clinical teaching rounds as their preferred methods. Nurses expected those programs or activities to last five days or less and to consist of 1 to 2 h per activity. They also indicated that they would like the direct effects of CE to be evaluated by charge nurses or through case discussions. These findings point toward a consistent desire among nurses for CE to help them improve their knowledge of and skills in nursing practice without affecting their normal work schedules.

Some limitations of this study should be considered. The sample of nurses was randomly recruited from ten general hospitals of China. However, nurses are the most geographically-distributed discipline within the health workforce. To a certain extent, participation in CE may be influenced by work settings. Further studies on CE among nurses in community and specialized hospitals should be carried out in the future.

Despite these limitations, our study does have important strengths. This is the largest study to explore perceptions on, expectations for, and motivation and barriers of, CE among Chinese nurses. It is a multi-center study among nurses in general hospitals, which provides important data on the CE of Chinese nurses that can be contrasted with the literature from different countries and diverse cultures. Furthermore, the study provides important information for effectively planning and implementing future CE programs/activities by identifying nurses' preferences for the delivery strategies and learning methods that are most likely to meet their needs in advancing nursing practice. Learning activities such as structured interdisciplinary rounds with case studies may provide cost effective ways of delivering mandatory continuing education requirements while enhancing group cohesion in the practice environment. Although our respondents acknowledged the value of CE they also expressed cost, time constraints and lack of opportunity as barriers to participation. These findings also shed light on the potential need to offer shorter more frequent CE offerings rather than the traditional full-day and multiple-day workshops that are often used but difficult to schedule.

## Conclusion

This study shows that nurses consider CE an extremely important measure to maintain and further develop their clinical practice competencies. However, nurses' actual expectations for CE and the motivation and barriers for participation in CE that come from nurses' individual, family and organizational perspective must be taken into the account in order to make CE programs more effective in the future.

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**Table 1**

Demographic characteristics of the participants (N = 2727).

Item	n	%
Technical title		
Professor of nursing	19	0.7
Associate professor of nursing	46	1.7
Nurse-in-charge	330	12.1
Nurse Practitioner	971	35.6
Nurse	1361	49.9
Marital status		
Married	1325	48.6
Single	1381	50.6
Separated/divorced	14	0.8
Basic professional education		
Diploma in nursing	1214	44.5
Advanced diploma in nursing	1151	42.2
Bachelors degree	362	13.3
Final professional education		
Diploma in nursing	148	5.4
Advanced diploma in nursing	1457	53.4
Bachelors degree	1103	40.4
Masters degree	19	0.8

**Table 2**

Nurses' perception on and participation in CE (N = 2727).

Item	n	%
Know about the method of implementation of CE		
Yes	1674	61.4
A little	957	35.1
No	96	3.5
Know about credit requirements		
Yes	904	33.1
A little	1627	59.7
No	196	7.2
Be satisfied with CE		
Agree	1671	61.3
Neither agree nor disagree	957	35.1
Disagree	99	3.6
Meeting the credit requirements		
Yes	2367	86.8
No	360	13.2
Necessity of CE		
Agree	2542	93.2
Neither agree nor disagree	170	6.2
Disagree	15	0.5
Importance of CE		
Agree	2531	92.8
Neither agree nor disagree	185	6.8
Disagree	11	0.4
Helpfulness of CE		
Agree	2514	92.2
Neither agree nor disagree	178	6.5
Disagree	35	1.3
Main way to obtain credits		
CE activities held inside one's own hospitals	2163	79.3
Related programs held inside hospitals	1651	60.5
CE programs held outside hospitals	1181	43.3

**Table 3**

Factors that motivate and hinder nurses' participation in CE (N = 2727).

Item	n	%
Motivation factors		
Update knowledge	2336	85.7
Improve skills in clinical practice	1989	72.9
Improve quality of comprehension	1920	70.4
Obtain knowledge to achieve professional status	1901	69.7
Raise the level of scholarship	1645	60.3
Improve scientific research abilities	1215	44.6
Improve clinical decision	1211	44.4
Obtain credits to renew the license	1190	43.6
Fulfill requirement for promotion	1171	42.9
Adhere to hospital policy	1133	41.55
Boost self-esteem	514	18.8
Do as the same as peers	191	7.0
Hindrane factors		
Time constraints	1874	68.7
Work commitments	1601	58.7
Lack of opportunity	1324	48.6
Cost of courses	1214	44.5
Negative experiences with CE programs	1041	38.2
Out-dated contents	1034	37.9
Lack of organization support	223	27.4
Irrelevant programs	733	26.9
Lack of information about CE	724	26.5
Inexperienced teachers	666	24.4
Lack of family support	665	24.4
Out-dated teaching methods	550	20.2
Without aim	390	14.3

**Table 4**

Nurses' expectations for CE (N = 2727).

Item	n	%
Activities of CE		
Short-term training	1871	68.6
Special lectures	1797	65.9
Further study in specialty	1691	62.0
Clinical teaching rounds	1413	51.8
Seminars	1174	43.1
Case discussion	1157	42.4
Simulated training	1155	42.4
Academic meeting	1094	40.1
Nursing business rounds	1053	38.6
Practical communication	1005	36.7
Academic report	950	34.8
Online learning	893	32.7
Self-study	720	26.4
Knowledge contest	688	25.2
Suitable time for participation in CE		
Work time	681	25.0
Personal time	397	14.5
Combination of both	1649	60.5
Appropriate duration of CE program		
<5 days	1109	40.7
5–10 days	927	34.0
10–15 days	365	13.4
15 days–1 month	326	11.9
Appropriate duration of CE activity		
1 h	1128	41.4
2 h	1469	53.9
>3 h	130	4.7
Evaluation of CE programs or activities		
Case discussion	1856	68.1
Evaluated by charge nurses	1362	50.0
Panel discussion	942	34.5
Questions answered	932	34.2
Quiz randomly	657	24.1
Write valuable experience	564	20.7