

An Innovative Continuing Nursing Education Program Targeting Key Geriatric Conditions for Hospitalized Older People in China

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A lack of knowledge in registered nurses about geriatric conditions is one of the major factors that contribute to these conditions being overlooked in hospitalized older people. In China, an innovative geriatric continuing nursing education program aimed at developing registered nurses' understanding of the complex care needs of hospitalized older people with common geriatric conditions was conducted and evaluated. The program consisted of didactic sessions focused on evidence-based practice and unfolding case studies designed to simulate the care trajectory of an older person with a hip fracture and key geriatric conditions. Findings from the program evaluations revealed a significant increase in favorable attitudes towards older people and increased knowledge concerning common geriatric conditions. The satisfaction rate ranked by program participants was 90%. The study, therefore, drew the conclusion that effective geriatric continuing nursing education should target participants' learning needs, support evidence-based practice, and engage participants in active learning.

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China is a country that has the largest proportion (21%) of the world's ageing population (United Nations, 2008). China's ageing population has also grown rapidly over the past three decades, resulting from a combination of longevity and the introduction of the one-child policy (Hesketh, Lu, & Xing, 2005; United Nations, 2008). The population aged 65 or over has increased from 4.7% in 1980 to 8.2% in 2010 and is predicted to reach 23.3% by 2050 (United Nations, 2008). This pattern of increase in the ageing population places great pressure on acute care hospitals. In 2009, hospitalized patients aged 60 or over made up 30.4% of the total number of patients (CMOH, 2010). A body of evidence shows that geriatric conditions—such as cognitive impairment, falls, incontinence, malnutrition and pressure ulcers—are highly prevalent in hospitalized older people (Chen, Dai, Yen, Huang, & Wang, 2010; Inouye, Studenski, Tinetti, & Kuchel, 2007). These conditions compound the complexity of acute illness and contribute to adverse outcomes and high mortality (Inouye, Bogardus, Baker, Leo-Summers, & Cooney, 2000). However, geriatric conditions are usually overlooked and left untreated in the acute care setting (Chen et al., 2010; Inouye et al., 2007). Although many other factors contribute to this situation, health professionals' general lack of knowledge about these conditions has been identified as one of foremost factors (Chen et al., 2010; Inouye et al., 2007).

LITERATURE REVIEW

In the literature, geriatric conditions are also referred to as “geriatric syndromes” to describe “clinical conditions in older persons that do not fit into discrete disease categories” (Inouye et al., 2007, p. 780). However, this term was criticized as being poorly defined and focusing too much on medical syndromes while failing to address the psychological-social factors contributing to these conditions (Cigolle, Langa, Kabeto, Tian, & Blaum, 2007; Conroy, Ferguson, Woodard, & Banerjee, 2010). We use the term *geriatric conditions* to embrace holistic approaches in geriatric nursing.

The literature reports that up to 50% of older people had one or more geriatric conditions (Cigolle et al., 2007). Hospitalized older people with geriatric conditions were more susceptible to hospital-acquired complications, contributing to prolonged hospital stays, high expenditures, a high mortality rate, a high readmission rate, and admission to institutionalized care (Conroy et al., 2010; Inouye et al., 2000). The rate of hospital-acquired complications in this age group is up to 38%, five times higher than that in younger patients (Inouye et al., 2000). However, studies also showed that if registered nurses (RNs) were well-prepared to deliver comprehensive care approaches to this group of patients, focusing on removal of modifiable risk factors could significantly reduce the rate of the conditions. Thus, better preparation would improve the care outcomes for hospitalized older people (Lange et al., 2009; Robinson & Weitzel, 2003; Tucker et al., 2006).

Older patients with an acute disease are more likely to present with a typical symptoms such as delirium or other geriatric conditions (Conroy et al., 2010; Inouye et al., 2007). The way in which the pathophysiological mechanism of various organs reacts to acute illness contributes to the altered reactions in acute illness (Conroy et al., 2010; Hunter, McMillan, & Conway, 2007). The delirium that affects up to 56% of hospitalized older patients is frequently seen in older people infected by acute urinary tract infection (Inouye et al., 2007). Moreover, a single geriatric condition may be the result of multiple risk factors (Conroy et al., 2010; Inouye et al., 2007). The falls that impact 30%–40% of older people could be caused by a combination of decreased mobility,

unsafe environments, neglect, elderly abuse, and inadequate management of polypharmacy (Conroy et al., 2010; Inouye et al., 2007). These clinical features are particularly challenging to RNs' clinical reasoning and critical thinking in their quest to recognize, prevent, and manage geriatric conditions. It is believed that unreported geriatric conditions are very high. Up to 70% of hospitalized older people suffering delirium went undocumented (Inouye et al., 2007).

Studies identified shared risk factors for multiple geriatric conditions (Chen et al., 2010; Inouye et al., 2007). Based on a review of the literature, Inouye et al. (2007) identified that five common geriatric conditions—including pressure ulcers, incontinence, falls, functional decline, and delirium—share four risk factors. These risk factors are older age, cognitive impairment, functional impairment, and impaired mobility. The assumption of shared risks was tested via a cross-sectional survey undertaken by Chen et al. (2010). A population-based study in the United States revealed that at least 25% of older people had multiple geriatric conditions. Therefore, in order to avoid fragmental care, it is strongly suggested that health professionals should aim to target these multiple geriatric conditions at one time. This can be done via an integrated method of care rather than by merely targeting a single condition (Inouye et al., 2000; Tucker et al., 2006).

There is a social dimension in the care of older people with geriatric conditions. These people are highly dependent on care providers to maintain dignity, activities of daily living (ADLs), and quality of life (QoL). Workload issues for RNs caring for this group of patients should address this and ensure that staffing and resources are adequate in these care settings (Inouye et al., 2007; Tucker et al., 2006). Moreover, studies revealed that beliefs and attitudes towards older people strongly shape health professionals' behaviors in care delivery and were directly related to the quality of care of older people (Billings, 2006; Jacelon, 2002). Ageist attitudes and practice were associated with discrimination in accessing care and resources, thereby denying older peoples' rights, care needs and autonomy (Billings, 2006). In Neville's (2008) study, nurses holding ageist attitudes failed to recognize delirium, but treated delirium-associated behaviors as normal—disparagingly labelling them a second childhood. Educational intervention is viewed as one way to change health professionals' beliefs and attitudes in their care of older people (Lee, Hoerr, Weatherspoon, & Schiffman, 2008; Shue et al., 2005).

Outline of the Major Barriers Affecting the Care of Hospitalized Older People in China

At least three barriers were reported in the care of hospitalized older people in China: (a) the lack of educational preparation for RNs in geriatric nursing; (b) an extremely low patient/nurse ratio; and (c) the underdevelopment of healthcare care services to support implementation of discharge plans (Chinese Ministry of Health [CMOH], 2005; Chinese National Committee on Aging [CNCA], 2007; Xiao, 2010). The majority of RNs hold a secondary education certificate enabling them to practice at a technical level (CMOH, 2005; Xiao, 2010). Gerontological content has yet to be integrated into the nursing curriculum (Wan, Yu, & Kolanowski, 2008; Wu, et al., 2009). Although RNs in China are required to attend Continuing Nursing Education Programs (CNEPs) to gain reregistration, most programs were provided in a conventional manner that neither targeted nurses' real learning needs nor engaged them in active learning (Xiao, 2006).

Health care organizations are categorized into three levels: tertiary, secondary, and primary (Xiao, 2010). Tertiary hospitals are final referral hospitals for patients. They are located in urban

areas and generally have better-educated RNs compared to most of the secondary and primary hospitals in townships and rural areas (Xiao, 2010). A severe shortage of RNs was identified across all levels of hospitals, and the shortage was viewed as a barrier to the achievement of quality patient care. A study on hospital services undertaken by the Chinese Ministry of Health identified that the ratio of RNs to beds in acute care hospitals was 0.33: 1, which did not quite meet the required ratio of 4:1 (CMOH, 2005). Due to work overload of the hospital RNs, 95% of patients' ADLs were provided by their relatives (CMOH, 2005). In addition, as they tend to be strongly influenced by Confucianism, relatives of older people are willing to provide ADLs to display their filial piety in these care settings (CNCA, 2007). The high involvement of patients' relatives in hospital settings challenges RNs to demonstrate competencies in communicating, collaborating with, and supervising these informal carers.

As caring for older people has been viewed as a family's responsibility in China, care services funded by governments for older people to live in communities—such as home care, rehabilitation, and nursing homes—are consequently underdeveloped (Wan et al., 2008; Wu et al., 2009). Older people who have lost their ability to self-care usually live with and are cared for by their adult children, relying mainly on female members to provide ADLs at home. The one-child policy, along with the rapid industrialization-generated internal migration, are changing the family structure and weakening the long-standing practice of filial piety (CNCA, 2007; Wan et al., 2008). In 2009, the number of older people living in an empty nest situation had increased significantly and has now reached a previously unheard of 50% in both city and rural areas (CNCA, 2007; Wan et al., 2008). These social trends challenge RNs' objective of discharging hospitalized older people to home environments.

The lack of education and training was identified as a major obstacle in meeting the complex care needs for acutely ill older people in the United States (Palmer et al., 2008; Robinson & Weitzel, 2003), where nursing education and care resources are much richer than those in China. Moreover, traditional CNEPs have quite severe limitations in preparing RNs with the clinical reasoning and critical thinking needed when delivering care to older people with complex care needs; therefore, programs that simulate real patient care are strongly recommended (Page, Kowlowitz, & Alden, 2010; Palmer et al., 2008). There are different categories of simulations. These include high-fidelity simulation using SimMan, low-fidelity simulation as used in problem-based learning activities, or case studies (Page et al., 2010). Despite China's demands for well-educated RNs in the care of hospitalized older people with geriatric conditions, few studies have been conducted to examine just how to effectively prepare RNs via CNEPs. It is, therefore, anticipated that this study will inform both education and practice of a way in which to improve the care of older people.

METHODS

Outline of the Program

The purpose of this pilot study, conducted and evaluated in China, was to develop RNs' understanding of the often complex care needs of hospitalized older people with common geriatric conditions. This is the first phase of a substantial research project entitled Research on a Systematic and Standard Approach to Continuing Nursing Education in Geriatric Nursing.

The study is funded by the Chongqing Municipal Government and aimed at developing diverse learning approaches—such as CNEPs, online learning and self learning materials—for RNs caring for older people. This project was codeveloped by academics from Chongqing University and Flinders University. With a population of 28.59 million, Chongqing is one of several highly industrialized regions situated in the southwest of China. It is one of four municipal regions directly under the jurisdiction of the central government. The proportion of the population aged 60 or over had reached 12% in 2008, ranking the Chongqing region, of all China's 31 regions, as possessing the third highest proportion of ageing population (CMOH, 2010).

A one-day geriatric CNEP (eight hours) is usually provided annually by the Geriatric Nursing Committee (GNC) of the Chongqing Nursing Association. However, the annual program was provided in a conventional way (i.e., lecturers' slide shows) without actually exploring the participants' learning needs. Upon the successful award of a research grant, the project team and the GNC members worked together to redesign the annual program. Prior to the program, the members of GNC surveyed previous program participants by asking them to list topics they would like to be included in the program. The top five topics included common geriatric conditions: falls, pressure ulcers, incontinence, cognitive impairment, and malnutrition.

Based on the survey, a systematic literature review, analysis of the current care challenges, and available educational resources pertaining to the care of older people in acute care hospitals, the team developed learning objectives and five didactic sessions plus the unfolding case study to achieve these objectives. Didactic sessions were mainly focused on evidence-based practice in the care of hospitalized older people with five geriatric conditions (see Table 1). The unfolding case study was designed to simulate the major hospital care trajectory of an older woman with a hip fracture caused by a fall at home. She had also developed multiple geriatric conditions and hospital-acquired complications (see Table 2). The principles used to guide the design of the unfolding case study, as introduced by Glendon and Ulrich (1997), were applied in our program. The unfolding case study was printed into two versions: one for participants that included the case scenario and focused questions, and one for facilitators that included the main points to be discussed for each question. Two facilitators were assigned to each group and there were three groups in the discussion.

Evaluation of the Program

The evaluation design was based on assumptions that the program would improve participants' attitudes towards older people and especially their knowledge around the care of hospitalized

TABLE 1
Outline of the Program

<i>Topics</i>
1. Outline of safety issues associated with hospitalized older people with geriatric conditions
2. Skin care for older people with incontinence and preventive strategies for pressure ulcers
3. Nutritional care for hospitalized older people and the care of older people with tube feeding
4. The care of hospitalized older people with dementia
5. Falls prevention for hospitalized older people
6. Unfolding case study: The care of a patient with a hip fracture, geriatric conditions and hospital-acquired complications

TABLE 2
Main Points of the Unfolding Case Study

STAGE ONE: WITHIN GROUP DISCUSSIONS

Wang Shuhua (Granny Wang, as people usually call her in her neighborhood), an 85-year-old widow, was admitted to an orthopedic ward of the Municipal Hospital for a left hip fracture caused by a fall at home. She was diagnosed as having dementia two years ago and was already under medications for her dementia. She lived with her oldest son and daughter-in-law and was able to walk and care herself before the fall. On day three when RN-in-charge Li Ping attended an observation, Granny Wang told her that someone tried to kill her and that she wanted to see her husband. She also showed behaviors of hiding food in her pockets. Li Ping noted Granny Wang was pale, sweating, breathless, and incontinent.

Focused Questions

Each group was assigned three different questions focused on how to (a) recognize and assess delirium; (b) analyze the possible causations of delirium and the change of vital signs; (c) communicate with the patient, relatives, and doctors; and (d) how to prioritize care.

STAGE TWO: DISCUSSIONS IN PAIR AND SELECTED PRESENTATIONS

Granny Wang developed pneumonia and urinary incontinence. She was under urinary catheter, IV Ampicillin Sodium 3 g three times per day, and oral Diclofenac Potassium (analgesia) 50 mg three times per day, and Donepezil (for dementia) 5 mg per day. Granny Wang's oldest son and daughter-in-law took turns to stay with her and help with the ADLs. On day six, when RN Li Ping attended a routine observation, she found that Granny Wang's pulse was 112/min (baseline 78/min) and was irregular. Li Ping smelled an offensive odor and found that the catheter was out and Granny Wang was wet. She also noted that Granny Wang had a 1 cm × 0.5 cm superficial ulcer on the sacral area with redness around it. Granny Wang's daughter-in-law told Li Ping that Granny Wang had had a very poor appetite since admission.

Focused Questions

Each pair discussed same questions focused on (a) the side effects of various medications; (b) urinary tract infection and incontinence management; (c) pressure ulcer prevention, and (d) nutritional care.

STAGE THREE: DISCUSSIONS WITHIN THE GROUP AND BETWEEN GROUPS

Granny Wang finally recovered from these complications and had a hip replacement. She was ready to be discharged. Her son and daughter-in-law worried that she may fall again and asked Li Ping how to prevent falls.

Focused Questions

Each group was required to write down the main points of a discharge plan then pass the plan to the other two groups to modify it. Patient education on fall prevention, person-centered dementia care, safety issues and how to use community nurses as resources were the main points of the discussions.

older people with geriatric conditions. A one-group pre- and postprogram test of attitudes and knowledge was undertaken. In addition, participants were asked to rank their level of satisfaction with the program, to comment on the program, and to suggest changes for any future programs.

The ethics committee of Chongqing Municipal Health Bureau (CMHB) approved this study. Participants had enrolled in the annual continuing education program voluntarily and were given options whether or not to participate in the program evaluation. By submitting pre- and post-questionnaires voluntarily, they indicated their consent to participate. By means of a letter of introduction to the project, guarantees of the confidentiality of their replies were ensured.

Participants

There were 64 participants registered in the 2010 annual program. All of them consented to participate in the program evaluation, and they all completed the pretest questionnaire. However, only 53 participants completed the posttest questionnaire, as some of them had to leave early from the program in order to catch the last bus for their return home. One pretest questionnaire

was incomplete; therefore, the final number of participants in the evaluation was 52, which was an 81.3% return rate.

Data Collection

A Chinese version of Kogan's Attitude Toward Older People scale that had been validated in a Chinese cultural context by Yen and colleagues—who had granted us permission to use it (Yen et al., 2009)—was employed to test RNs' attitudes towards older people. The Kogan's Attitude Scale is a 6-point Likert scale with 1 to 6 representing *strongly disagree* to *strongly agree* responses to 34 items that included statements of both negative attitudes (17 items) and positive attitudes (17 items). Each didactic session-provider was required to develop four questions with multiple choice answers for the pre- and posttest of knowledge. They also provided standard answers to assist the project team in marking the test. There were 20 questions used in the pre- and posttest of knowledge. Participants were required to complete the pretest questionnaire and submit it to the research assistants prior to the program commencement if they consented to participate in the evaluation. At the end of the program, participants received the posttest questionnaire along with a separate sheet containing four predetermined levels of satisfaction: very satisfactory, satisfactory, undecided, and unsatisfactory. Spaces left on this sheet for participants to comment freely on the program and to suggest changes for future programs.

Data Analysis

Data were entered by a research assistant into PASW (Predictive Analysis Software) version 18 for descriptive and inferential statistic analysis then checked by a research team member. Scores on the negative statements of attitudes towards older people were reversed in order to obtain a total score of attitudes. After the reversion, a higher score from the total attitude score, the positive attitude score, and the negative attitudes were representative of an improved attitude towards the older people. All interval and ratio data were assessed to identify whether they showed normal distribution. The results of the assessment informed the selection of a paired *t* test (for data with normal distribution) or paired Wilcoxon test as nonparametric data for two related samples using Kolmogorov-Smirnov test. Using pretest data, multiple regression was utilized to identify whether age, working experience, and knowledge (independent variables) were associated with participants' attitudes towards older people (a dependent variable). Content analysis was used to examine answers to open-ended questions.

RESULTS

The analysis of demographic data revealed that all participants were female with an average age of 34 years and an average nursing-work experience of 14 years. All of them worked in medical and surgical wards in acute care hospitals and had experience in the care of older people. The majority of them held a tertiary education diploma in nursing (equal to the associate's degree in the United States) and worked full-time in a tertiary healthcare organization. Demographic information on the participants is provided in Table 3.

TABLE 3
Demographic Characteristics of Participants

<i>Categories</i>	<i>No. of participants (%)</i>	<i>Age by mean (range)</i>	<i>WE by year (range)</i>	<i>Qualification No. (%)</i>
Secondary organization	23 (44.2)	34.7 (25–50)	15.0 (1–33)	Dip. 20 (87.0) Bachelor 3 (13)
Tertiary organization	29 (55.8)	33.4 (24–50)	13.4 (1–29)	Dip. 13 (44.8) Bachelor 15 (51.7) Master 1 (3.4)
As a whole group	52 (100)	34.0 (24–50)	14.1 (1–33)	Dip. 33 (63.5) Bachelor 18 (36.6) Master 1 (1.9)

Note. WE = work experience, Dip = diploma.

Attitudes Towards Older People

The paired *t* test was utilized to compare the pre- and postprogram attitudes, were classified as the total attitudes score, the total negative attitude score, and the total positive attitude score, as these attitudes data showed the normal distribution ($p > .05$) (see Table 4). Results revealed a significant increase in the total attitudes score from 149.8 to 155.5 ($t = -2.132$, $p = .038$) and the total negative attitude score from 74.1 to 78.2 ($t = -2.386$, $p = .021$) after the program. Even though the total positive attitude score had increased from 75.2 to 77.3, the change was not statistically significant ($t = -.829$, $p = .411$) (see Table 5).

Knowledge about the Care of Older People with Geriatric Conditions

A paired Wilcoxon test for nonparametric data was utilized to compare the pre- and postscore of knowledge as these data showed a nonnormal distribution ($p < .05$) (see Table 4). Results indicated a significant increase in the score of knowledge, from 13.5 to 15.3 ($z = -3.727$, $p < .0005$) (see Table 5).

TABLE 4
Test of Normality Using Kolmogorov-Smirnov test ($df = 52$)

<i>Categories</i>	<i>Statistic value</i>	<i>p value</i>
Age	0.109	.17
Working experience	0.085	.20
Pretest of the total attitudes score	0.067	.20
Posttest of the total attitudes score	0.055	.20
Pretest of negative attitudes score	0.100	.20
Posttest of negative attitudes score	0.097	.20
Pretest positive attitudes score	0.088	.20
Posttest of positive attitudes score	0.096	.20
Pretest of knowledge score	0.147	.007*
Posttest of knowledge score	0.164	.001*

* $p \leq .05$ indicates nonnormal distribution.

TABLE 5
Comparisons of Pre- and Postattitudes and Knowledge

<i>Categories</i>	<i>Mean</i>	<i>SD</i>	<i>t or Wilcoxon</i>	<i>p</i>
The total attitudes score pretest	149.8	18.7	$t = -2.132$.038
The total attitudes score posttest	155.5	16.4		
Score of negative attitudes pretest	74.1	12.6	$t = -2.386$.021
Score of negative attitudes posttest	78.2	12		
Score of positive attitudes pretest	75.7	10.4	$t = -0.829$.411
Score of positive attitudes posttest	77.3	11.3		
Score of knowledge pretest	13.5	2.5	$z = -3.727$	<.0005
Score of knowledge posttest	15.3	1.9		

TABLE 6
Factors Associated with Attitudes towards Older People

<i>Predictor variables</i>	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>t</i>	<i>p</i>
(Constant)	93.607	29.543		3.169	.003
Age	2.628	1.178	.944	2.231	.030
Working experience	-1.390	1.007	-.585	1.379	.174
Knowledge scores	-1.002	0.982	-.132	1.021	.312

Overall $R^2 = .201$; adjusted $R^2 = .151$; $F = 4.023$ (3, 48); $p = .012$.

Factors Associated with Attitudes Towards Older People

In the regression model, only age was statistically significant ($t = 3.169$, $p = .030$) (see Table 6). The results revealed a positive correlation between age and attitudes towards older people. The older the nurse, the more positive the attitude towards older people.

Comments on Programs From Participants

The satisfactory rate, which included very satisfactory and satisfactory, was 90% with 10% participants ranked as undecided. Generally, participants' comments were short and categorized into the following: (a) The program is highly relevant to my practice; (b) The case and examples given in the program are very useful for me to think about how to improve patient care; and (c) Teachers are very knowledgeable and are excellent in using teaching strategies. Participants' suggestions for future programs included (a) Future programs should give more time to discuss real patient care cases and examples; (b) Future programs should introduce more evidence-based practice and advanced knowledge in geriatric nursing; and (c) The time for the program is too tight and future programs should extend to more than one day.

DISCUSSION

The demographic information from this cohort of participants raised two concerns: the absence of RNs from primary hospitals, and the absence of RNs with a secondary education certificate.

The majority of older people in China live in rural areas because 80% of the population in China resides in rural areas (CMOH, 2008; CNCA, 2007). Rural residents mainly rely on local hospitals for medical treatment due to a low rebate from the newly-developed medical insurance entitled National Rural Cooperative Medical Scheme (CMOH, 2008). In 2009, the total hospital admission to primary hospitals was 38.7 million patients who shared 45.6% of total hospital admissions (or 84.88 million patients) in that year (CMOH, 2010). The rural areas had a larger proportion of RNs holding a secondary education certificate (68.7%), than those in the urban areas (45.6%) (CMOH, 2010).

The ratio of RNs to the population is 1.39: 1,000 in China and 0.65: 1,000 in nonurban areas where most secondary and primary hospitals are situated (CMOH, 2010). It remains most unlikely that health care organizations in these areas will release RNs to attend programs in capital cities. Findings from this study strongly suggest that accessible geriatric CNEPs, such as self-directed learning packages, online programs, and mobile programs delivered by trained trainers for nurses from rural areas—as reported in the literature (Barba & Fay, 2009; Kowlowitz, Davenport, & Palmer, 2009; Palmer et al., 2008)—should be considered in the Chinese context.

The mean score of the total attitudes pretest (150.2) is higher than those reported by Yen et al. (2009) in the Taiwan study (mean score = 144.3). The score was also higher than those by Hweidi and Al-Obeisat (2006) in the Jordanian study (mean score = 110.6). As the participants in our study were all RNs with experience in the care of older people, while those participating in the other two studies were nursing or medical students, our findings point to the positive impact of work experience with older people seen in the RNs' attitudes towards older people. Such a positive impact has been reported in the literature before (Lee et al., 2008; McLafferty & Morrison, 2004; Shue et al., 2005). The high score identified in the Chinese culture seems to support the idea that Confucianism, which strongly promotes filial piety, has a positive influence on people's attitudes towards older people, considering that all participants in our study were females who usually play a key role in the care of older family members (Pan, Edwards, & Chang, 2009).

Although there is still discussion in the literature whether the acquisition of knowledge in the care of older people is affected by health professionals' attitudes towards older people (Conroy et al., 2010; Hweidi & Al-Obeisat, 2006), our study found no association between attitudes and knowledge. This may result from a combination of sampling bias and the small sample size. However, our study supports previous studies that identified age as being positively associated with positive attitudes towards older people (Hweidi & Al-Obeisat, 2006). The positive association identified in our study may be due to the blend of work experience with older people both in the workplace and at home. As our study did not explore these participants' personal experience in caring for their older family members, we were unable to analyze these influences separately, but we recommend these issues for future studies. These findings may have implications for the selection of mentors and preceptors for junior RNs and nursing students in their learning concerned with geriatric nursing. Such implications result from the fact that professional socialization plays a crucial part in influencing the young generation's view of the care of older people (McLafferty & Morrison, 2004).

Discussions on effective geriatric CNEPs in the literature revealed these elements: targeting highly demanded learning needs, alignment between learning objectives and the subject matter, effective teaching and learning to enhance learning, feedback to learners, and a supportive

learning environments (Barba & Fay, 2009; Lange et al., 2009; Palmer et al., 2008; Wallace et al., 2006). Unlike traditional annual CNEPs that are usually presented as slide-show topic lectures decided by the topic providers, our program targeted participants' learning needs by prompting them to identify what they need to learn. The subjective matter of these identified learning areas was carefully examined via a literature review on evidence-based practice and analysis of the current challenges faced by RNs at a local level. Despite didactic sessions via lectures barely being conducted as interactive learning, we found them quite effective for teachers disseminating information of evidence-based practice in a short time and with a large group of participants. We provided handouts that outlined the most important points of the program so that participants could review the content after a program. As learning materials in geriatric nursing are scarce in China, we planned to develop online learning resources that will include the didactic session for those who are unable to attend a live program in the near future.

The unfolding case study created a new learning space in which participants could exercise how they would apply evidence-based practice in a patient care context in an interactive and peer-supported learning environment (Page et al., 2010; Palmer et al., 2008). The design input of multiple geriatric conditions and hospital-acquired complications in the case enabled participants to recognize these multiple risk factors of geriatric conditions, and integrated care approaches that would target the multiple conditions and multiple risk factors at the same time. The learning strategies used in the case study, such as group discussions, discussions in pairs, critiquing each other's work, as well as selected presentations and immediate feedback from facilitators, significantly changed the CNEPs from teacher-centered and passive learning (Xiao, 2006) to learner-centered and active learning. The group discussions are able to generate group synergy by which they may be able to identify new ideas and thoughts that they had been unable to achieve by means of individual-based learning. For example, the discharge plan developed and critiqued by the three groups was a product of team work and an exercise in critical thinking and effective communication. As such, it was a much more comprehensive plan than they had been accustomed to developing. But while the unfolding case study does have the advantages of engaging participants in an in-depth analysis of these quite complex clinical situations, it does have limitations in the development and assessment of participants' psychomotor skills, which are usually employed in the care of critically ill older people, such as administering medication and observing side effects when this is undertaken via means of a simulated patient. High fidelity simulation should be considered if the learning objectives cover these areas and the resources are available.

Studies showed a high prevalence of common geriatric conditions in older people. Cognitive impairment was a most common condition and affected up to 56% of hospitalized older people (Inouye et al., 2007). As dementia is a major contributor to cognitive impairment in hospitalized older people (Inouye et al., 2000; Sendelbach & Guthrie, 2009), and it is prevalent in China (Access Economics, 2006), we decided to incorporate into the program an element of dementia care as one of our didactic sessions and build the unfolding case study to reinforce the care of hospitalized older people with dementia and delirium. The number of people with dementia in China was 5.54 million in 2005, which meant that one quarter of the world's dementia sufferers lived in China (Access Economics, 2006). This group of patients were most vulnerable to pressure ulcers, falls, functional incontinence, and malnutrition. These problems are due to the interruption of their usual care as these patients were admitted from nursing homes or their own homes to hospital settings, and further complicated by additional communication difficulties

(Inouye et al., 2000; Robinson & Weitzel, 2003). As older people in China with dementia are usually cared for by family carers at home, and the sudden change of environment due to admission is one factor to trigger delirium, RNs are particularly required to include family carers in the development and implementation of a care plan. This is made even more crucial considering the fact that family carers are almost always already highly involved in the ADLs of hospital settings in China (CMOH, 2005; Wan et al., 2008). Family carers could even be a reliable, informal workforce to support RNs in carrying out interventions used to remove the more modifiable risk factors of delirium such as daily orientation with regard to the time and location, putting hearing aids and spectacles on, and maintaining their patients' routines and habits via a person-centered approach—as introduced in the literature (Edvardsson, Fetherstonhaugh, & Nay, 2010; Rosenbloom-Brunton, Henneman, & Inouye, 2010; Tucker et al., 2006). Successful interventions largely rely on therapeutic relationships, collaboration, and good communication with family carers (Rosenbloom-Brunton et al., 2010). We used the unfolding case study to assist participants in recognizing any barriers to building RN-family carer collaboration and how to overcome these barriers through problem solving and effective communication.

The discharge plan is a particularly challenging issue for RNs, considering the underdevelopment of rehabilitation care, community care, and long-term care for older people in China (Wan et al., 2008; Wu et al., 2009). As family carers play a crucial role in implementing the discharge plan and the complex care needs for older people with geriatric conditions, we built discharge as one of the main aspects in the unfolding case study. This was done in order to facilitate participants in recognizing the challenges the family carers faced and how to support them and advocate on behalf of them for development of new services. Ideally we should encourage any RNs working in the tertiary and secondary hospitals to form a channel of communication with RNs from the primary hospitals, because they play a key role in the delivery of care services to home care. Due to the absence of RNs from the program, we were unable to achieve this outcome, but we suggest that future programs include this learning component.

CONCLUSION

Through our practice on redesigning, implementing, and evaluating an innovative CNEP, we came to the conclusion that an effective geriatric CNEP should target the more highly demanded learning needs for RNs, analyze the challenges they face, then identify evidence-based practice in these areas in both a national and international context. Due to sampling bias and contextual based study, findings from this study may differ from other learning sites.

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