



Needs Assessment for Clinical Practice Education in Undergraduate Nursing Curriculum: A Mixed-methods Approach

Jeongyee Bae¹⁺, Hye-Ryoung Kim², Jina Oh², So Young Shin², Sanghee Kim², Haena Jang², Jeonghyun Cho^{2#}

¹College of Nursing, Institute of Health Science, Research Institute for International Safe Community, Inje University, 75 Bokji-ro, Busanjin-gu, Busan, South Korea

²College of Nursing, Institute of Health Science, Inje University, 75 Bokji-ro, Busanjin-gu, Busan, South Korea

ABSTRACT

This study intends to provide the grounds for improving clinical practice curriculum reflecting the reality and demands of the clinical practice of nursing by identifying the needs of nursing students for clinical practice education and the experiences of clinical practice education perceived by graduates. A convergent parallel mixed-methods design was applied. According to the results of the quantitative study, application of core basic nursing skills based on expertise and skills and cooperation and communication were considered as important, and achievement was also high. According to the results of the qualitative study, it is essential to use such teaching methods like simulation so that students can improve their skill competencies. Additionally, quality improvement of clinical practice instructors was demanded to enhance the quality of clinical practice education. This study is significant because it established the future direction for the development of a clinical practice curriculum to enhance professional competencies for nurses in the future based on the needs of nursing students and graduates. It is necessary to develop an integrated assessment tool to measure achievement as well as develop a clinical practice curriculum.

Key words: needs assessment, clinical practice education, nursing practice competency

Introduction

Background

With the rapid advancement of science and medical technologies in recent days, the global health care environment has been experiencing a substantial transformation. In particular, due to the advent of the 4th industrial revolution, nurses are faced with diverse chal-

lenges including utilization of new information and technologies, adaptation to the rapid changes in the medical field, innovative developments of health care service models, and social responsibility to contribute to promoting public health. Besides, it is expected that in the future, demand for nurses will also increase in the fields of health education and counseling, consulting for medical conflicts, gerontological care services, development of health-related products, nursing device development, and pharmaceutical industry (Kim, *et. al.*, 2019). In this regard, nurses need to consider the

⁺ The 1st Author: Jeongyee Bae, E-mail. jibai@inje.ac.kr

[#] Corresponding Author: Jeonghyun Cho, E-mail. jhcho@inje.ac.kr

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competencies that they have to cultivate health care professionals by reflecting social and technological changes as well as diversification of nursing activity sectors, and in line with the paradigm shift for nursing profession required in the future society, innovation is needed to prepare for such a change in the health care environment.

Nursing education aims at cultivating human resources who have the abilities required in the future society in the context of the rapidly changing health care environment, by focusing on what tasks nursing graduates can perform (Gibbons, *et al.*, 2002). In nursing education, clinical practice education (CPE) refers to a series of integrated processes through which students' clinical practice experience are directly planned and organized, taught, instructed, and assessed based on theory education (Tyler, 1949). Excellent CPE should have a structure which clarifies the knowledge, skills and attitudes that are expected for students to perform, useful educational contents are selected to achieve such objectives, those contents are systematically organized, and the student and the teacher are evaluated by assessing the CPE itself as well (Tyler, 1949).

In many other countries across the globe, nursing is perceived as a useful field of study under which students can learn liberal arts, sociology, science, and technologies from various aspects. Therefore, they are transforming the nursing curriculum so that nursing competencies newly expected in the future society can be considered and realized (Institute of Medicine, 2011). American Association of Colleges of Nursing (AACN), in consideration of the necessity of practice-oriented nursing education, is emphasizing nursing education practice-based competency, performance-based competency, community-focused interdisciplinary approaches (AACN, 2008). Consequently, nursing schools in the US are making joint efforts to develop nursing education curriculum through the activities of the ACCN.

On the domestic front of nursing education, there have been continuous discussions on the competencies that nursing students must acquire by the time of graduation (Ko, *et al.*, 2013; Lee, *et al.*, 2012), raising the necessity of devising improvement plans for nursing education programs. Therefore, Korean Accreditation Board of Nursing Education (KABONE) is presenting specific standards for the improvement of the quality of nursing education, by offering 12 significant academic achievements as the competencies required for nursing students to achieve, including integrated application of nursing based on knowledge, selection and performance of core basic nursing skills depending on the nursing situation of the patient, therapeutic communication, interdisciplinary team cooperative explanation, and clinical reasoning by application of nursing process based on critical thinking (KABONE, 2019). In the field of CPE in Korea, however, such issues are being consistently raised as a considerable shortage of clinical institutions

compared to the number of educational institutions, the lack of qualified instructors for clinical practice, simple contents for clinical practice focusing on observation, and inappropriate evaluation (Kwon & Seo, 2012; Shin, *et al.*, 2017).

As such, other countries are presenting core nursing practical competencies to be obtained in CPE and actively utilizing those competencies to improve nursing practice competencies of nursing students. On the contrary, in Korea, even if efforts are being made to identify the core nursing practice competencies required for the improvement of nursing care quality (Park, *et al.*, 2013), efforts for the advancement of CPE are still insufficient. To develop a useful curriculum for CPE to be effectively adopted in the nursing practice after graduation by integrating knowledge and skills taught at school into core nursing practice competencies, it is necessary to understand student's thoughts and their needs. However, in the reality where there exists a gap between college education and clinical practice, there can be some differences between what nursing students think of CPE without clinical experience and the needs of nurses for CPE who graduated from college and are working in the field. It is necessary to consider the needs both of students and nurses to narrow the gap between college education and clinical situations when developing the curriculum for CPE. Therefore, this study aimed to identify the experiences of CPE perceived by nursing graduates as well as the needs for CPE recognized by nursing students. The results of this study would provide the foundation for the improvement of CPE curriculum reflecting the reality and needs of nursing practice, and offer the basic data for the development of CPE curriculum to enhance practical competencies of professional nurses for the future society.

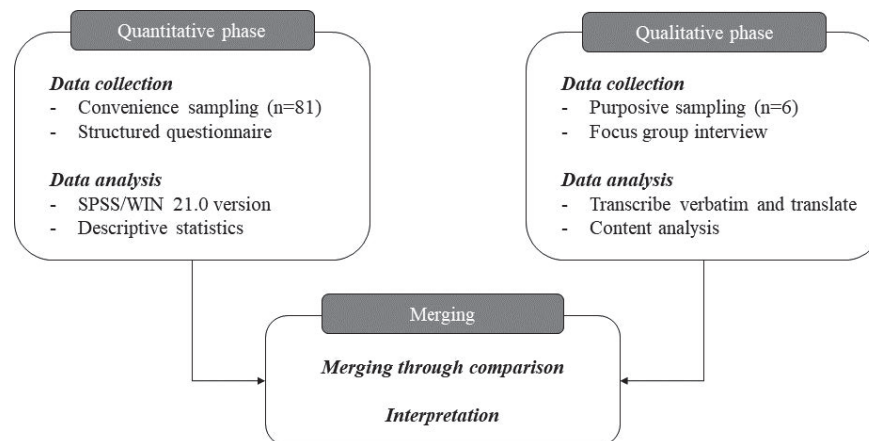
Purpose

The purpose of this study was to identify the experience of CPE and the needs for CPE of the 4th grade students and graduates at one nursing university in order to ultimately enhancing practical competencies of professional nurses in the future society.

Methods

Study design

A convergent parallel mixed-methods design was adopted. It was a single-phase study in that quantitative and qualitative studies



<Figure 1> Graphical presentation of the research design

were conducted concurrently <Figure 1>. A survey method was used for nursing students with no clinical experience as a staff nurse to identify the levels of CPE satisfaction and perceived achievements for nursing education program outcomes. On the other hand, a focus group interview technique was used for nurses with a certain amount of clinical practice to derive the past CPE experiences compared to current nursing practice experiences through interactions among participants.

Quantitative Study

Participants

In this study, 81 4th grade nursing students enrolled at one nursing university located in B metropolitan city participated in the quantitative survey. Among the participants, 72 (88.9%) were females and 9 were males (11.1%). The mean age of participants was 22.62±2.09 (range: 19-32), and 44 (48.8%) participants were 22 years old.

Instruments

This study used a structured questionnaire developed by seven nursing professors who had an experience of nursing education of 8 or more years on average, including a nursing curriculum evaluation committee member of the KABONE. The questionnaire consists of 38 items, including two items on demographic characteristics, 1 item on the overall satisfaction with the CPE curriculum, 18 items on the satisfaction with the CPE curriculum (9 items on the CPE for 3rd graders and nine items on the CPE for 4th graders, respectively), nine items on the achievement for the program outcomes under the current curriculum, and eight items on the

importance of the program outcomes under the next curriculum. All items were composed on a 5-point Likert scale, and it means that the higher the score, the higher the satisfaction or the importance.

Participants experienced CPE in classes of adult, child, and women health nursing in their 3rd year, while they experienced CPE in classes of community health nursing, mental health nursing, and nursing administration in their 4th year. The questions on the satisfaction with CPE curriculum were divided into two sections for 3rd year and 4th year because there were differences in content and composition of the curriculum between hospital and community settings. The current curriculum of the university includes nine program outcomes, but the program outcomes have been modified to eight for the next curriculum. Therefore, the achievement was answered according to the nine program outcomes of the current curriculum and the importance was answered according to the eight program outcomes of the next curriculum.

Data Collection

A survey was conducted with 81 4th grade students on Oct. 14, 2019. One of the researchers explained the purpose and methods of the survey, and the students voluntarily decided whether or not to participate in this study. The participants anonymously answered the questionnaire, and put the completed ones in a sealed box. It took approximately 25 minutes for the participants to complete the questionnaire.

Data Analysis

The study results were analyzed with descriptive statistics by using IBM SPSS window 25.0 program.

<Table 1> General characteristics of the focus group interview

(N=6)

No.	Year of graduation	Age	Education level	Hospital type	Clinical career (months)	Overall satisfaction for the curriculum
1	2019	23	Bachelor's degree	Tertiary	7	4
2	2019	25	Bachelor's degree	Tertiary	7	2
3	2016	26	Bachelor's degree	Tertiary	7	3
4	2016	25	Bachelor's degree	Tertiary	43	3
5	2016	28	Bachelor's degree	Tertiary	43	4
6	2016	27	Master course	General	43	3

Qualitative Study

Participants

Six nurses, who graduated from one nursing university mentioned above and were working at a university hospital, participated in the qualitative study. To select those who can vividly describe the experience of CPE as a nursing student; the participants were selected from the nurses who had graduated from university less than four years ago and with the selected participants, a focus group interview was conducted.

Among the participants, four graduated in 2016, while two graduated in 2019. Currently, 5 of them are working at a tertiary hospital, and 1 of them is working at a general hospital. All of them were bachelor's degree holders. The mean age was 25.67 ± 1.75 , and as for the total period of clinical experience, it was seven months for 3 of them, while 43 months for the other 3 (<Table 1>).

Research Questions

To develop interview questions for the improvement of CPE curriculum in nursing, seven nursing professors had two prior meetings, and first, the overall satisfaction with the curriculum of the university was asked with a 5-point Likert scale question. The list of questions was prepared so that the CPE experience of nursing graduates can be well described.

The interview was started with the question, "Were you satisfied with the overall CPE curriculum?" and to figure out participants' experience in detail, additional questions were raised including, "Were you satisfied with the CPE institution? Please describe any characteristics or your experience regarding the CPE for each institution", "Were you satisfied with the composition and contents of CPE (period of CPE, number of students per group, clinical practice assignments, clinical practice contents, and evaluation methods) for 3rd and 4th graders?", "Were you satisfied with the instructional guidelines by the type of clinical practical instructor (professor in charge, lecturer, clinical practice instructor)?", "Do you believe that the experience of CPE is appropriate for achieving new program

outcomes (8th program outcome)?", "Among them, what do you think are the program outcomes that can be achieved through CPE?", "If so, how do you think we can achieve those objectives (educational contents and methods), and "What efforts will need to be made by the nursing department to improve the CPE curriculum in the future?"

Data Collection

A focus group interview was conducted in the manner that one researcher explained the purpose and methods of the study to the participants and obtained written consent from them for participation in the research and recorded the interview. Two researchers and six participants sat round in a quiet lecture room and had an interview. One researcher carried out the interview, and the other researcher was responsible for recording, transcribing, and assistance with the interview. The interview was performed in the order of introduction where how the interview would go on was explained and participants were introduced to each other (10 minutes), interview (80 minutes), and wrap-up (10 minutes).

Data Analysis

Data were analyzed using the conventional content analytic method. Interviews were audio-recorded and transcribed verbatim. The process went through the iterative line by line reading, coding, categorizing, and analyzing. Throughout the entire analysis process, the research team continually discussed and refined codes and categories.

Results

Quantitative Study

Satisfaction with Clinical Practice Curriculum

Participants' overall satisfaction with the CPE recorded the aver-

<Table 2> Satisfaction with clinical practice curriculum

(N=81)

Classification	M±SD	
	Training for 3 rd Graders	Training for 4 th Graders
Overall Clinical Practice Curriculum	2.98±0.89	
Clinical Practice Curriculum by Grade	3.12±0.79	3.11±0.96
Composition of Clinical Practice Subjects	3.37±0.69	3.30±0.89
Duration of Clinical Practice Education by Subject	3.26±0.81	3.21±0.91
Appropriateness of Clinical Practice Assignments	2.98±0.86	3.07±0.87
Number of Students Per Clinical Practice Group	3.55±0.77	3.60±0.78
Appropriateness of Clinical Practice Education Evaluation Method	3.39±0.81	3.48±0.76
Clinical Practice Instruction by Professor	3.29±0.82	3.46±0.79
Conference Instruction by Professor	3.20±0.85	3.60±0.82
Instruction by Clinical Practice Instructor	3.09±0.89	3.57±0.79

M=mean; SD=standard deviation

age of 2.98±0.89 on a 5-point scale (<Table 2>). Among the satisfaction with the CPE curriculum for 3rd graders, the “satisfaction with the overall CPE curriculum” was 3.12±0.79 on average. Among the satisfaction with the subjects of CPE for 3rd graders, the “number of students per CPE group” was the item that recorded the highest average score of 3.55±0.77, while the “appropriateness of clinical practice assignments” was the item that recorded the lowest average score of 2.98±0.86. The average score of the satisfaction for the appropriateness of CPE evaluation methods for 3rd graders was 3.39±0.81. Among the satisfaction by the type of CPE evaluation methods for 3rd graders, the item of “clinical practice instruction by the professor in charge” was the item whose average score was the highest at 3.29±0.82, while the item with the lowest score was the “instruction by the clinical practice instructor” at 3.09±0.89 points.

From the satisfaction with the subjects of CPE for 4th graders, the average score of the “satisfaction with the overall CPE curriculum” was 3.11±0.96 on a 5-point scale. From the satisfaction with the CPE subjects for 4th graders, the item of the “number of students per CPE group” showed the highest average score of 3.60±0.78, while the lowest average score was reported by the item of the “appropriateness of the clinical practice assignments” at 3.07±0.87 points. Satisfaction with the appropriateness of the CPE evaluation methods for 4th graders recorded 3.48±0.76 points on average. From the satisfaction by the type of CPE evaluation methods for 4th graders, the item of the “conference instruction by the professor in charge” showed the highest average score of 3.60±0.82, while the item of the “clinical practice instruction by the professor in charge” recorded the lowest average score of 3.46±0.79.

Achievement of Program Outcomes

This university currently sets nine program outcomes for the nursing curriculum. Among the nine program outcomes, what has

the highest achievement at self-assessment is the PO4 item of “The student can identify his/her role in resolving health issues and cooperate within the health care team,” with the average score of 3.81±0.69 out of a 5-point scale. The second items were PO3 of “The student can form a relationship with the patient, family, and medical team, and provide nursing by applying functional communication skills,” followed by PO1 item of “The student can apply the core basic nursing skills following the nursing situation based on professional knowledge and skills.” The participants recorded the lowest achievement with PO9 item of “The student can actively identify changes in domestic and overseas health care policies and systems” (<Table 3>).

Importance of Program Outcomes under the Next Curriculum

The university that participated in this study; currently sets nine program outcomes under the current nursing curriculum, but it set eight program outcomes for the next curriculum. To identify opinions of the students who are currently studying at the university for the eight program outcomes to be applied to the nursing curriculum in the future, questions on the importance of each program outcome were made. In the item that asked about the order of importance, what showed the highest frequency, which was ranked 1st by the participants, was PO1 of “The student can perform comprehensive nursing under the demands of the patient based on nursing expertise,” and the item with second highest frequency was PO2 of “The student can communicate and cooperate with the patient, healthcare providers, and community members,” followed by PO6 of “The student can protect the patient from hazards arising from the nursing situation and perform protective nursing for the patient.” The item which was least selected by the participants as the most important one was PO5 of “The student can implement social responsibilities in compliance with the nursing professional standards and the legal

<Table 3> Achievement of program outcomes under the 7th curriculum (N=81)

PO	Program Outcome	M±SD
PO1	The student can apply core basic nursing skills following the nursing situation based on expertise and professional skills.	3.75±0.62
PO2	The student can perform active self-led learning activities to resolve expected nursing problems.	3.62±0.71
PO3	The student can build a relationship with the patient, family, and health care team, and provide nursing by applying functional communication skills.	3.79±0.72
PO4	The student can identify his/her role to resolve health issues and cooperate within the health care team.	3.81±0.69
PO5	The student can choose and exert appropriate leadership for a specific nursing situation.	3.48±0.76
PO6	The student can apply the nursing process through critical thinking and clinical reasoning and perform evidence-based nursing.	3.57±0.70
PO7	The student can understand nursing professional standards and legal and ethical standards and apply them to nursing practice.	3.57±0.70
PO8	The student can perform nursing research based on the understanding and improvement of scientific methods for improving the quality of nursing.	3.54±0.87
PO9	The student actively identifies the changes in domestic and overseas health care policies and systems.	3.06±0.99

<Table 4> Importance of program outcomes under the next curriculum (N=81)

Program Outcome (PO)	Rank 1	Rank 2	Rank 3
	n (%)		
PO1 The student can perform comprehensive nursing following the demand of patient based on nursing expertise.	35(42.7)	11(13.4)	8(9.8)
PO2 The student can communicate and cooperate with the patient, healthcare provider, and community members.	14(17.1)	17(20.7)	13(15.9)
PO3 The student can choose and apply leadership to adjust and resolve problems in the nursing field.	8(9.8)	8(9.8)	14(17.1)
PO4 The student can apply evidence-based nursing through an information system and research activities suitable for the nursing situation.	7(8.5)	14(17.1)	12(14.6)
PO5 The student can perform social responsibilities in compliance with nursing profession standards and legal and ethical standards for nursing practice.	3(3.7)	7(8.5)	9(11.0)
PO6 The student can protect the patient from hazards arising from the nursing situation and perform protective nursing for the patient.	12(14.6)	18(22.0)	11(13.4)
PO7 The student can consistently assess and improve nursing outcome provided from nursing practice.	8(9.8)	9(11.0)	9(11.0)
PO8 The student can understand cultural diversity and practice sharing for the health and wellbeing of global citizens.	5(6.1)	6(7.3)	1(1.2)

and ethical standards of nursing practice” (<Table 4>).

Qualitative study

Needs for skill-centered CPE based on the nursing practice

Before the focus group interview, the overall satisfaction score for the nursing curriculum of the university was 3.17 points on average (<Table 1>). In the interview, participants expressed that skill-centered CPE such as OSCE was helpful. Meanwhile, participants reported that they had not fully learnt communication skills, which are non-skill competency, although those skills are much necessary for nurses in that communication skills affect not only professional characteristics of nurses but also their organizational culture, saying that those skills should be taught in the clinical practice curriculum for undergraduate students.

Participants expressed different opinions regarding CPE institutions.

Mostly in the case of CPE institutions located in Seoul, CPE was conducted mainly with observation, and in such an environment, it was hard for students to participate in nursing practice directly. On the contrary, at institutions in Busan, they could directly perform nursing, but there existed an atmosphere where nurses could not teach anything to students due to hectic work load. Besides, participants responded that the environment of recently established CPE institutions was good, expressing that the physical environment for practice is also essential.

“Hospital A was impressive because, despite many other issues, I could at least perform nursing, such as vital signs and blood sugar test on my own.” (P3)

“Sometimes, they give students too many assignments because they are so busy, and they also disrespect students, making me think that such an environment is not suitable for teaching.” (P2)

“In the case of hospital B, it had up-to-the-date facilities,

and I liked the clean environment. So, I think hospital B is preferred for a career.” (P1)

It was reported that in the case of the clinical practice schedule, changing practice place weekly was inefficient, and that evening-day duty shift (i.e., when the day shift was scheduled immediately after completing the evening shift in previous day) was particularly hard for students. Despite this type of schedule is not recommended in the clinical field nowadays, there still remains minimally in the undergraduate program in order to compromise the circumstance of the hospitals such as the unit capacity to educate nursing students. As for clinical practice contents, it was told that clinical practice should be provided focusing on core nursing skills and students need to learn how to use the machines that are used in the practice.

“I think practice duration needs to be at least two weeks. Because practice duration is short, evening-day duty was sometimes assigned due to conference. So it was hard for me because I came home late and there was not enough time to prepare for the assignments for the next day, and I could not take a rest.” (P4)

“After I get a job and started working as a nurse, I got embarrassed because I didn’t know how to use EKG, Infusion pump, Ventilator, etc., so I wish I had learnt how to use them in undergraduate curriculum. I believe that it will be great to provide opportunities for nurses who are currently working in the practice to nursing students, or it will be also great to use video educational materials that are actually used in the practice for CPE for students.” (P5)

As for teaching methods, participants reported that spending much time in preparing for the conference was inefficient, and in case of practice places with unique settings such as the operating room, it would be appropriate to teach specific contents according to those settings. Also, it was suggested as necessary to teach students to enforce their nursing skill competencies by using simulation and other methods at university. It was also proposed to offer the opportunity for students to acquire information of clinical practice through exchanges and interactions with nurses. Concerning evaluation methods, participants also expressed that evaluation standards felt subjective and superficial, and there need to be evaluation methods following the characteristics of each unit.

“I don’t know whether the case study gives any help for me to work as a nurse. I have a memory of being scared as a new nurse because I didn’t know how to understand the patient, so rather than case study, it would be much helpful to make students learn how nurses actually understand the patient.” (P3)

“In the situation where it is getting more and more hard for students to participate in nursing practice in the field directly, I think simulation classes where I participated in the last moment as a 4h grader was very effective. It would be better to offer more simulation classes.” (P6)

“I always wondered whether evaluation of CPE by the clinical practice instructor was properly conducted or not. In many cases, I thought that the instructor did not fully understand students.” (P7)

Gaps between development and application of program outcomes

Participants presented opinions concerning four program outcomes concerning CPE. First, they said that it is hard to implement holistic nursing because too many patients are assigned in general wards (PO1). For leadership, it was said that they could learn leadership in the way of performing assigned roles in simulation classes (PO3). In the case of evidence-based nursing, it was reported that they should be required to perform nursing based on research, but it lacks practicability (PO4). And they said that CPE needs to be provided in the manner that nurses can obtain legal and ethical standards and skilled in the practice. (PO5).

“Holistic nursing would be hard to implement in general wards where many students are being hospitalized, but an application could be rather restricted to some wards such as intensive care units where a small number of patients, be it 2 to 3 patients.” (P3)

“Too many assignments are given to students during CPE. Therefore, in reality, nursing intervention is first conducted to complete the assignments by the deadline, and then evidence for that is offered later. As a result, it is not evidence-based nursing, but it becomes the approach where nursing is provided, and we find evidence therefor.” (P2)

“If you look in program outcomes, there are some parts where students obtain legal and ethical standards and skills, but it seems that it is not properly educated at university. In particular, it would be better to include issues such as patient safety, legal and ethical standards, and specific responses in the orientation session for CPE.” (P1)

Discussion

Today’s health care environment requires nurses who can profi-

ciently perform nursing work, and in nursing education accordingly, the importance of CPE, as well as theory education, is being emphasized. Through CPE, nursing students learn the roles of nurses and the nursing skills, experiencing the clinical practice, while obtaining clinical practice competencies to identify and respond to the needs of the patient (Oh & Kim, 2018). This study was conducted to collect the overall opinions of nursing students and graduates of the university regarding the operation of clinical practice curriculum and provide the basic data for improving the clinical practice curriculum based on the suggestions for improvement of program outcomes. Therefore, based on the results of this study, we were able to identify the issues of clinical practice curriculum, improve program outcomes and have a discussion thereon.

Clinical Practice Curriculum

In this study, the overall satisfaction of nursing students recorded 2.98 points on average on a 5-point scale, and the mean satisfaction score of graduates for the curriculum of the university was 3.17 points. This result is lower compared to the result of a study which reported that nursing students evaluated the appropriateness of CPE as 3.33 points on a 5-point scale, although it did not use the same research tool as used in this study (Chung, *et al.*, 2015). Among the satisfaction items for the CPE for 3rd and 4th graders, the item of "Instruction by the clinical practice instructor" was assessed as the lowest. Such a result is considered as partly attributable to the fact that the educational role of the chief nurse in the clinical practice is not effectively transmitted to nursing students, and the necessity of qualitative improvement of instructors in CPE was raised. Parsh (2010) said that the role of the clinical instructor is vital in maximizing the clinical experience of students in CPE (Parsh, 2010). Whang (2006) also pointed out that the clinical practice environment where the clinical practice instructor can give modeling and positive feedback to nursing students is more important than anything (Wang, 2006). Accordingly, it is required to develop continuing education programs for nursing education and CPE to secure competent clinical practice instructors. In addition to such qualitative improvement of teaching ability of clinical practice instructors, it is necessary to create a practice environment within the institution where CPE can be planned and implemented given the current situation where the chief nurse is performing his/her work assigned by the hospital and serving as the clinical practice instructor at the same time.

Graduates reported that the skill-centered CPE and the opportunities to perform nursing work on their own in the course of nursing education were beneficial for them to achieve their current

work as a nurse, and they also said that it is needed to learn how to use and operate the equipment that are used in the clinical practice. A study that was conducted in the US suggested educational contents for CPE for nursing students (Ard & Valiga, 2009), reporting that supervision of students' nursing performance (administration, intravenous therapy, and wound care) made up the most significant portion at 68.6%, followed by helping students to synthesize clinical information and assessment results at 48.8%, raising questions to students' questions or clinical situation of the assigned patient at 36.6%, and providing feedback to clinical practice assignments, reports, or records at 29.8%, showing some differences from the clinical practice contents in Korea. Also, they are very similar to what students and graduates demand, and it seems that our CPE should go in that direction in the future. Recently, in the clinical practice, the rights of patients are being emphasized and therefore, the direct performance by nursing students are allowed only in a very restricted scope. In this regard, it will be necessary for universities and CPE institutions to cooperate in searching for ways to increase opportunities for nursing students to experience directly performing nursing work.

Meanwhile, under the situation where opportunities for nursing students to directly perform clinical practice assignments on patients are restricted, as the alternative to such a case, participants proposed to enhancing skill competencies of students by using simulation classes at university. Simulation-based education has been reported to enhance communication skills with a patient, family, and health care professionals by using scenarios related with various clinical practice while improving not only critical thinking but also clinical performance competencies through debriefing (Birch, *et al.*, 2007; Kim & Park, 2013; Lee & Choi, 2011). By offering opportunities for students to experience such situations that they cannot experience in the clinical practice as high-risk nursing activities or nursing activities handling emergency and critical patients, it can contribute to increasing practical competencies of students. Specifically, it would be necessary to operate such courses as integrated practice education or comprehensive practice education for last-year students by developing simulation education using standardized patients.

Recently, people are paying more and more attention to increasing the quality of CPE, and the clinical learning environment (CLE) is being emphasized as an essential factor to determine the quality of CPE (Song & Kim, 2013). CLE is a holistic concept that affects the CPE results of nursing students (Chan, 2001), meaning a network of things that interact with one another in the clinical environment including the attitude of the nursing manager, atmosphere, and the relationship between staff and students. This interaction affects nursing students in acquiring nursing skills and knowledge while playing an essential role in preparing for CPE and having systematic

skills and confidence in performing their roles (Chan, 2001; Midgley, 2006). Therefore, the KABONE should devise the measures to evaluate the attitude and qualification of the clinical practice instructor, and the atmosphere of the clinical practice environment as part of the CLE. Moreover, regular meetings on CPE and consultations need to be held to establish a close network with professors and particularly with CPE institutions so that under the CLE, nursing students can be well trained and skilled, and develop critical problem-solving ability.

Measures for Improvement of Program Outcomes

The KABONE, the institution responsible for controlling the quality of nursing education in Korea, sets the program outcomes for each nursing education institutions by reflecting university vision, teaching objectives, core competencies, community characteristics, and changes in health care environment, and based on them, it recommends nursing education institutions to operate educational courses consistent with the teaching objectives and core competencies (KABONE, 2019). Program outcomes refer to minimum abilities and qualifications that students should obtain by completing nursing education courses, meaning specific skills that students must acquire by graduation (KABONE, 2019).

In this study, nursing students highly evaluated achievement of program outcomes in relation with cooperation, communication and core basic nursing skills, and the application of core basic nursing skills based on expertise and skills was also ranked high in terms of importance. The results are consistent with the result of the study by Bae & Park (2013), which reported high achievement in the order of cooperative relationship between professional fields, therapeutic communication skills, and performance of core basic nursing skills (Bae & Park, 2013), and they are also consistent with the results of most of the previous studies which reported high achievement for items to which therapeutic communication skills and core basic nursing skills were applied (Cho, *et al.*, 2014; Jung & Lee, 2017; Nam, 2018). Moreover, Nam (2018) reported the same result after surveying the priority of program outcomes of nursing professors and clinical practice instructors. Such results are considered as the positive outcome of operating nursing education programs based on practice as well as the improvement of perceptions of nursing students on nursing education accreditation and evaluation.

Besides, nursing students thought of holistic nursing, cooperation, and protective nursing for the patient as necessary, while they considered program outcomes for nursing profession standards and legal and ethical responsibilities for nursing practice as least

important. In the case of graduates, on the contrary, they evaluated acquiring legal and ethical standards and skills in the clinical practice as important, displaying some differences in opinion between students and graduates. It is believed that nursing students do not directly face situations related with legal and ethical standards as they are trained under the supervision of the clinical practice instructor, while nurses realize the importance of those standards as they are implementing social responsibilities following legal and ethical standards for nursing practice. In one study from Finland, students who had to deal with ethical dilemmas in their practical trainings had higher ethical judgment and resorted to principle-based thinking more often than students who did not (Auvinen, *et al.*, 2004). This finding indicates that nursing education may significantly influence students' ethical competencies. In consideration that the purpose of nursing education is to cultivate professional nurses who can provide qualitative nursing services (Lee, *et al.*, 2012), and that nursing education institutions have social responsibility to guarantee the quality of nursing competencies required to nurses (Ko, *et al.*, 2013), it is necessary to reflect the reality and demands of the clinical nursing practice in developing nursing curriculum. Therefore, more efforts should be made at the level of undergraduate curriculum to make nursing students understand nursing professional standards and legal and ethical standards for nursing practice, and recognize the importance of social responsibilities accordingly.

In the study on the development of CPE program outcomes, nine core nursing competencies were set including data-collecting ability, basic nursing ability, communication ability, critical thinking ability, educational ability, leadership, nursing management ability, attitude toward professional development and ability to practice, and ability to handle ethical and legal issues (Nam, 2015). In this study, achievement and importance of basic nursing ability and communication ability were evaluated as high, while those of nursing management ability was evaluated as relatively lower. As graduates reported that they could develop leadership in simulation training, it is required to search for the ways to enhance leadership through the positive teacher-student, student-student relationships in in-school training and develop more diverse teaching methods. Also, it is believed to be necessary to support and encourage students so that they can recognize themselves as the providers of CPE and have a more active attitude for CPE.

At this time when clinical practice curriculum is being developed in conjunction with the development of integrated nursing curriculum, this study has its significance in that it established the future direction for the development of clinical practice curriculum to develop professional competencies for nurses in the future by identifying the CPE experiences of nursing students and graduates and their needs for CPE. The results of this study will contribute to

encouraging more research on the development of clinical practice curriculum in connection with a performance-based integrated nursing curriculum, and to achieving nursing education objectives through effective and efficient operation.

This study has some limitations that should be mentioned. The sample for this study may not be representative for several reasons. First, the subjects of this study included nursing students and graduates from only one university, which may limit the generalizability of the findings. Second, as this study included nurses working in hospital settings, the perspectives of nurses working in community health care settings were not taken into account. Further research with more representative sample in diverse settings is needed to have rich information regarding CPE.

Conclusion

The focus of this study is to provide the grounds for improving clinical practice curriculum reflecting the reality and demands of the nursing clinical practice by identifying the needs of nursing students for CPE and the experiences of CPE perceived by graduates. According to the results of this study, nursing skill-centered CPE was helpful for nurses in working in the practice and was highly evaluated in terms of achievement and importance. Moreover, in the current situation where educational opportunities for nursing students to directly perform CPE contents on patients, there existed high demand for education to enhance skill competencies of students by using such teaching methods as a simulation at university. To improve the quality of CPE, qualitative improvement should be achieved as well through enhanced teaching competencies of clinical practice instructors and systematic teaching systems. In the future, it is required to develop valid clinical practice curriculum and contents for achieving program outcomes needed in nursing practice, and it is also required to develop an integrated assessment tool to measure the achievement of clinical practice curriculum in connection with theory education courses.

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Jeongyee Bae (jibai@inje.ac.kr)

She received her B.S. and M.S. from Seoul National University and her Ph.D. from Ewha Womans University. She is a professor of the College of Nursing at Inje University, in which she has taught since 1996. She is currently chair of Inje University Research Institute for International Safe Community, director of International Safe Community Research Center of Busan Metropolitan City and Busan Seo-gu Mental Health Center. She is also working as a policy advisor to the Korean Ministry of the Interior and Safety and the chairman of the Korean Association for Crisis and Emergency Management. Her interesting subject and area of research and education are injury prevention and safe promotion, the promotion of mental health, PTSD and health informatics. She has been involved in undertaking 80 government-invested projects in cooperation with the National Research Foundation of Korea, Ministry of health and Welfare, Ministry of Education, Ministry of the Interior and Safety and Busan Metropolitan City. He has published 167 articles in journals and written 80 co-author books.

Hye-Ryoung Kim (nurhrk@inje.ac.kr)

She received her Ph.D. from Yonsei University. She is a professor and currently dean of the College of Nursing at Inje University. She is also working as a chair of Korean Gerontological Nursing Society and a vice chair of the Korean Association of Gerontology and Geriatrics. Her interesting areas of research are gerontological health nursing and chronic disease management.

Jina Oh (ohjina@inje.ac.kr)

She received her Ph.D. from Ewha Womans University, Korea in 2001. She is a professor of the College of Nursing at Inje University, in which she has taught since 2001. She is the director of the Institute of Health Science and the project manager of Official Development Assistant Project since 2019. Her interesting subject and area of research and education is pediatric nursing and teaching-learning strategies. She has published about 120 in international and domestic journals and written and translated 30 books.

So Young Shin (syshin@inje.ac.kr)

She received her B.S. from Inje University, Korea, M.S. from Pennsylvania State University and Ph.D. from University of California San Francisco, U.S.A. She is a professor at College of Nursing, Inje University, in which she has taught since 2013. Her area of research and education is gerontological health nursing, cognitive impairment, dementia care, chronic disease management, pain & symptom management, health education, and nursing education.

Sanghee Kim (iris0409@inje.ac.kr)

She received her Ph.D. in nursing science from Kosin University, Korea in 2005. She is a professor of the College of Nursing at Inje University, in which she has taught since 2014. Her interesting subject and area of research and education is crisis & critical management, fundamentals of nursing.

Haena Jang (hnjang@inje.ac.kr)

She received her Ph.D. from Seoul University, Korea in 2018. She is a professor of the College of Nursing at Inje University and teaches nursing administration. Her interesting areas of research are nursing education, patient safety, and communication in healthcare.

Jeonghyun Cho (jhcho@inje.ac.kr)

She received her Ph.D. in nursing science from Korea University, Korea in 2013. She is a professor of the College of Nursing at Inje University and teaches adult health nursing. Her interesting areas of research are nursing education, health promotion, case management, and medical-aid system.