

Note

## Approach and Issues of Basic Nursing Practice under the COVID-19 outbreak

— From the self-evaluation of students for Basic Nursing Practice I —

Hiroko JOBOSHI<sup>1)</sup>, Megumi NAGAMINE<sup>2)</sup>, Kazumi HAGIWARA<sup>2)</sup>,  
Teruko SATO<sup>3)</sup>, Takeshi HOSHINO<sup>4)</sup>, Miho SATO<sup>2)</sup>,  
Yuki HORIGOME<sup>2)</sup>

### Abstract

The learning outcomes and challenges in the practical training program were examined and compared between in 2019 and 2020 in order to obtain the approach of Basic Nursing Practice I and the insights into basic nursing education in face of COVID-19 outbreak.

1. The self-evaluation score in 2020 was  $77.09 \pm 8.13$  (mean $\pm$ SD), which was lower than  $79.92 \pm 10.16$  (mean $\pm$ SD) in 2019.
2. In FY 2020, 124 units (43.8%) of “observe” were freely described by students, accounting for about half of all recording units. The fewest was “explain” at 15 units (5.3%).

Students were able to “observe” and “learn” but were not able to develop our thoughts that means “understanding” such that cannot explain the facts linking them to the prior learning and that we could not deepen our learning due to lack of images.

Students learn more by placing themselves in an actual medical environment and gaining hands-on experience. Therefore, it is important to adjust the training environment so that students can learn in the field even for a short time. Furthermore, the future challenge is to build a system that interactive communication while incorporating learning tools such as the Internet and Virtual Reality.

**Key words:** COVID-19, Basic Nursing Practice, Basic nursing education, learning outcomes, Issues

### I. Introduction

The year 2020 was a year that required changes in various aspects of basic nursing education in response to the global outbreak of COVID-19. In on-site training, clinical placements were suspended nationwide and practice hours were shortened or changed, or switched to on-campus training in order to prevent the spread of infection. According to “Research report on the impact

of COVID-19 on nursing practice training program” conducted by Japan Association of Nursing Programs in Universities, it was reported that changes were made in the contents and methods of practical training in 1289 out of 1483 respondents (86.9%). It was reported that in basic nursing practice, the changes were made in 177 out of 224 (79.0%), and the changes were made more than one month before the training (61.0%), immediately before (7.3%), or during the training

1) Gunma University, Graduate School of Health Sciences

2) Gumma Paz University Department of Nursing Faculty of Nursing

3) Gumma Paz University Research Institute

4) Zenshukai Hospital

(6.2%)<sup>1)</sup>. In order to achieve the objectives of practical training, our university discussed with the training facilities and agreed to make the training possible with changed schedule, shortened hours, and modified contents.

The purpose of on-site training is to apply knowledge and skills to nursing practice settings and to develop the ability to understand with the integration of nursing theory and practice. Basic Nursing Practice I, which is conducted in first year, is the first practice that aspiring students experience after being enrolled in school. Through practical training, students learn about the actual nursing assistance and think about the role of a nurse, which motivates them for continuing learning. First year subjects are mostly liberal arts subjects, and the specialized subjects are “Introduction to Nursing” and “Principles for Practice of Nursing Care”. In these subjects, students learn, through lectures and exercises, human beings as a subject of nursing, health, environment, and the principal concepts of nursing care, as well as the common components in nursing care, such as safety and comfort, infection prevention techniques, communication skills, and environmental adjustment skills, which they will apply to the practice. However, this year, due to the effect of COVID-19, the students who entered the university aspiring for a nurse were unable to attend lectures and exercises as they could have in the past years before the practical training started.

The impact of COVID-19 is expected to be prolonged, and even if it ends, there is a possibility of future outbreak of new infectious diseases. Therefore, we wanted to reports on our changes and approaches in Basic Nursing Practice I under COVID-19, as well as to obtain issues and suggestions for the future of Basic Nursing Practice I .

## II. Aims

This paper reports on our changes and approaches in Basic Nursing Practice I in 2020, and (1) Based on the practical training evaluation sheet, the level of achievement in training objectives (student self-evaluation) by comparing to those of 2019. (2) Students' descriptions

in the free writing space in the practical training evaluation sheet in the practical training were extracted, and clarify for learning outcomes, and with the aim to gain insight into basic nursing education under the COVID-19 outbreak was derived.

## III. Methods

### A. Subject

The subject of this research is the practical training evaluation sheets of the students who took Basic Nursing Practice I in 2020 and 2019.

### B. Methods of research

1. We soed out the changes and approaches in Basic Nursing Practice I conducted in 2020.
2. Based on the practical training evaluation sheet, the level of achievement in training objectives (student self-evaluation) was compared with those of 2019 and analyzed for learning outcomes and challenges.
3. From the students' descriptions in free writing space in the practical training evaluation sheet, “What I could do,” “What I could not do,” in the practical training were extracted. Through 1 to 3, the achievements and issues of the practical training under the COVID-19 outbreak was derived.

### C. Methods of analysis

The self-evaluation of the practical training evaluation sheet for Basic Nursing Practice I in 2020 was categorized and totaled by each evaluation item and compared with that of 2019. The practical training evaluation sheet of 29 items set under six practical training goals. Each item of self-evaluation scores is dealt as quantitative data. Difference of scores dealt as quantitative data between 2020 and 2019 was Mann-Whitney U test due to non-normal distribution of each score. The overall rating is the total score (100 points) obtained by summing the scores of each item. Therefore, after confirming the normality, the mean of each group will be compared by t-test. The significance level was set at less than 5 %. The recording units for “What I could do”, “What I could not do”, “Outcomes” were extracted from

the free writing space of practical training evaluation sheet in 2020, and categorized and named according to the similarity. In order to maintain validity in data analysis, each four faculty members in basic nursing education independently analyzed the data, which were then discussed and examined by all the other researchers.

#### D. Ethical considerations

We explained to the target students the aims and methods of the research, and that in the practical training evaluation sheet to be analyzed, the part of the description that identifies individuals such as student ID number and name will be deleted, and a number unrelated to their student ID number will be added so that individuals will not be identified. As for the use of the existing practical training evaluation sheet, the subjects were given an option to opt out to assure the opportunity to refuse the enrollment.

### IV. Overview of Basic Nursing Practice I

#### A. Aim and objectives, and evaluation of practical training

The aim and objectives of the training are shown in Table 1. The objectives of the training went through the stages of “Predict,” “Observe,” and “Explain” as action levels. In the “Predict” stage, students studied in advance about the tasks to achieve the action objectives, and “Describe” them on the worksheet.

Then they shared what they had studied with the group and “List” the contents and questions that they would like to learn during the hospital training. The stage of “Predict” took place during the two-day on-campus training prior to the hospital training. In the “Observe” stage, students observed what actually occurred in the hospital training based on what they had predicted in the prior study. In the “Explain” stage, students integrate what they predicted in the prior study and what they observed in the hospital training, and express their own ideas through presentations and reports. The evaluation of the practical training will be graded based on the scores for each stage as in 3 points for “Describe”, 2 points for “List”, 4 points for “Observe”, and 4 points for “Explain,” which are totaled by each

objectives: 1. To learn about the characteristics, functions, and roles of hospitals (13 points); 2. To learn about the professions that make up healthcare teams (13 points); 3. To learn about the environment and healthcare services as a place where healthcare is provided (20 points); 4. To observe people who use hospitals and learn about their characteristics (19 points); 5. To learn about the role of a nurse in hospitals (13 points), and 6. To clarify outcomes and challenges in learning nursing through the objectives 1 to 5 (22 points). The overall rating is the total score (100 points) obtained by adding up the scores of each item.

#### B. Methods of the practical training

##### 1. Group formation

Nineteen to twenty groups were formed with four or five students per group

##### 2. Contents of the practical training

###### 2.1. Preparatory study

Students were instructed to understand the objectives and contents of the practical training based on the guidelines, and explained the necessity and methods of preparatory study. In the preparatory study, students researched in advance on the following specific topics and studied along with the worksheet of Basic Nursing Practice I: “Characteristics and functions of the training hospitals,” “Professions that make up the healthcare team and their activities,” “Hospital environment (physical and human environment),” “Behaviors and characteristics of people who use hospital facilities,” and “Role of a nurse in hospital facilities.

###### 2.2. On-campus training (prior study)

Based on the individual preparatory study, the students had a group discussion on the following training objectives; 1-1, 2-1, 3-1, 4-1, and 5-1, and listed the contents and questions they would like to learn during the hospital training on the worksheet.

###### 2.3. Hospital training

Based on the contents and questions the students would like to learn during the hospital training, the training included practice in ward and observation in each department and in outpatient department.

Table 1 Aims and objectives of the practical training

Aims	To understand the roles and tasks of people who support hospital functions through the practical training in hospital facilities To learn about the environment and services as a place where healthcare is provided from the standpoint of a subject, and deepen their understanding of people with health problems To learn about the actual nursing assistance and think about the role of a nurse, which motivate students for continuing learning.	
Objectives	1. To learn about the characteristics, functions, and roles of hospitals	1-1 Predict the characteristics, functions, and roles of hospitals 1-2 Observe the characteristics of the training hospital through orientation and observation 1-3 Explain the characteristics, functions, and roles of training hospital
	2. To learn about the professionals that make up a healthcare team	2-1 Predict the professionals that make up a healthcare team 2-2 Observe the professionals that make up a healthcare team 2-3 Explain the role of a nurse in a healthcare team
	3. To learn about the environment and healthcare services as a place where healthcare is provided	3-1 Choose the appearance, language, attitude suitable for the hospital 3-2 Predict the environment (physical and human environment) of outpatient department 3-3 Observe the environment (physical and human environment) of outpatient department 3-4 Explain the environment and healthcare services as a place where healthcare is provided
	4. To observe the people who use hospitals and learn about their characteristics	4-1 Predict the characteristics of people who use hospitals 4-2 Observe the people who use hospitals 4-3 Explain the characteristics of people who use hospitals
	5. To think about the role of a nurse through observations of actual scenes of nursing care	5-1 Predict the role of a nurse in hospitals 5-2 Observe the nursing activities in hospitals 5-3 Explain the observed scenes and phenomena and think about the role of a nurse
	6. To clarify the outcomes and challenges in learning of nursing through the objectives 1 to 5	6-1 Engage in an active group discussion on the following objectives: 1-3, 2-3, 3-4, 4-3, and 5-3 6-2 Give a presentation on the content of group discussion 6-3 Find out the outcomes and challenges in learning of nursing through the training

#### 2.4. On-campus training (follow-up study)

Students gave a presentation on what they had learned and what had impressed them during the practical training with regard to the training objectives 1-3, 2-3, 3-4, 4-3, and 5-3.

#### 3. Guidance system of practical training

One faculty member was in charge of guiding the students through the prior study, on-campus training, hospital training, presentation, and evaluation.

### V. Changes in Basic Nursing Practice I in 2020 due to COVID-19

#### 1. Time to start practical training

It was planned in the first week of August in yearly schedule, however it was postponed to the third week of September considering the COVID-19 situation and delays in students' learning.

#### 2. Aims and objectives, and contents of practical training (Table 2)

There were no changes in the aims and objectives of the practical training. For the hospital practical train-

ing, the entry to the outpatient department was prohibited as a measure to prevent the spread of COVID-19. The students watched the videos created by the hospitals to supplement the lost practice hours. The videos included "Introduction of certified nurse specialists and certified nurses," "Introduction of the structure and equipment in hospitals and wards," "Introduction of the tasks of a nurse in the wards," "Introduction of the departments," and "Introduction of outsourcing. They received lectures from the director of nursing department and the head nurse in charge of education on "the roles and functions of university hospitals and nursing department" and "introduction of each department and attitude for student nurses. Then the 19 groups were divided into two teams, A and B. Team A had a training by observation in a ward. One supervisor was assigned to each ward and carried out the following training programs: "To explain the overview and characteristics of the ward by the head nurse or supervisor," "To follow the ward and nurse station, and "To shadow a ward nurse". Afterwards, the students had a 30-minute reflection session with a supervisor. Team B had taken an observation tour in each department and an orientation in the outpatient department until last year. How-

Table 2 Schedule and contents of the practical training

Date	July 30	September 14	September 15	September 16	September 17	September 18				
	On-campus	Day 1 (on-campus)	Day 2 (on-campus)	Day 3 (hospital)	Day 4 (on-campus)	Final day (on-campus)				
AM	<ul style="list-style-type: none"><li>• Roll call</li><li>• Health check</li><li>• Orientation</li></ul>	<ul style="list-style-type: none"><li>• Roll call</li><li>• Health check</li><li>• Orientation</li><li>• Check prior study</li><li>• Group work</li></ul> <p>1. Share the prior study within group and have a discussion on the training objectives 1 to 5</p> <p>2. Discuss the points and questions that you would like to further learn in the hospital practice beyond the prior study, and write them on the conference form</p>	<ul style="list-style-type: none"><li>• Roll call</li><li>• Health check</li><li>• Group work</li></ul> <p>1. Share the prior study within the group and have a discussion on the training objectives 1 to 5</p> <p>2. Discuss the points and questions that you would like to further learn in the hospital practice beyond the prior study, and write them on the conference form</p>	<table><tr><td>Team A <i>Practical training in ward</i></td><td>Team B <i>Practical training in departments and outpatient department</i></td></tr><tr><td><ul style="list-style-type: none"><li>• Explanation on overview and characteristics of ward by the head nurse or instructor</li><li>• Observation in ward and nurse station</li><li>• Shadowing a ward nurse</li><li>• Discussion</li></ul></td><td><p>Viewing the introduction of each department on video</p><ul style="list-style-type: none"><li>• Certified nurse specialist, certified nurse</li><li>• Structure and equipment in hospital and ward</li><li>• Nurse's tasks</li><li>• Introduction of each department</li><li>• Outsourcing</li><li>• Discussion</li></ul></td></tr></table>	Team A <i>Practical training in ward</i>	Team B <i>Practical training in departments and outpatient department</i>	<ul style="list-style-type: none"><li>• Explanation on overview and characteristics of ward by the head nurse or instructor</li><li>• Observation in ward and nurse station</li><li>• Shadowing a ward nurse</li><li>• Discussion</li></ul>	<p>Viewing the introduction of each department on video</p> <ul style="list-style-type: none"><li>• Certified nurse specialist, certified nurse</li><li>• Structure and equipment in hospital and ward</li><li>• Nurse's tasks</li><li>• Introduction of each department</li><li>• Outsourcing</li><li>• Discussion</li></ul>	<ul style="list-style-type: none"><li>• Roll call</li><li>• Health check</li><li>• Share the experiences of the training within the group, have a group discussion on the impressions and learnings you had through the training objectives 1-5, and select a theme for the presentation.</li></ul>	<ul style="list-style-type: none"><li>• Roll call</li><li>• Health check</li><li>• Presentation session</li></ul>
	Team A <i>Practical training in ward</i>	Team B <i>Practical training in departments and outpatient department</i>								
<ul style="list-style-type: none"><li>• Explanation on overview and characteristics of ward by the head nurse or instructor</li><li>• Observation in ward and nurse station</li><li>• Shadowing a ward nurse</li><li>• Discussion</li></ul>	<p>Viewing the introduction of each department on video</p> <ul style="list-style-type: none"><li>• Certified nurse specialist, certified nurse</li><li>• Structure and equipment in hospital and ward</li><li>• Nurse's tasks</li><li>• Introduction of each department</li><li>• Outsourcing</li><li>• Discussion</li></ul>									
PM				<table><tr><td>Team A Practical training in each department and outpatient department</td><td>Team B Practical training in ward</td></tr><tr><td colspan="2">Question and answer session</td></tr></table>	Team A Practical training in each department and outpatient department	Team B Practical training in ward	Question and answer session		<ul style="list-style-type: none"><li>• Preparation for the presentation</li><li>1. Prepare the materials</li><li>2. Decide the roles</li><li>3. Set up the site</li></ul>	<ul style="list-style-type: none"><li>• Organize the record of the training</li><li>• Write a report</li><li>1. What you have learned in Basic Nursing Practice I</li><li>2. Communication required in nurses</li></ul>
Team A Practical training in each department and outpatient department	Team B Practical training in ward									
Question and answer session										

ever as entry to the outpatient department was prohibited, they instead watched videos and summarized what they learned via video. In the afternoon, teams A and B were switched. There were no changes to the on-campus training (prior and follow-up study).

## VI. Results

### A. Subject of research

As for the use of the existing practical training evaluation sheet, the subjects were given an option to opt out to assure the opportunity to refuse the enrollment. There were no refusals to participate. The subject was the practical training evaluation sheets of 91 students in 2020 and those of 85 students in 2019.

### B. The status of achievement in the training aims and objectives

#### 1. Evaluation of the level of achievement in the training objectives (Table 3・4)

The student self-assessment total scores in 2020 were  $77.09 \pm 8.13$  (mean  $\pm$  SD) and those in 2019 were  $79.92 \pm 10.16$  (mean  $\pm$  SD) ( $p=0.043$ ). There were significant differences in ten items between 2020 and 2019. In the objective 2 “To learn about the professions that make up a healthcare team,” there was a significant difference in 2-2 “List specific contents and questions you would like to learn about the professions that make up a healthcare team” ( $p=0.001$ ).

In the objective 3 “To learn about the environment and healthcare services as a place where healthcare is provided”, there was a significant difference in the following four items: 3-3 “Study in advance and describe the environment (physical and human environment) of the outpatient department” ( $p=0.000$ ); 3-4 “List the specific contents and questions that you would like to learn about the environment (physical and human environment) of the outpatient department” ( $p=0.003$ ); 3-5 “List the specific places, subjects, methods to observe and the points to consider during observation” ( $p=0.000$ ); 3-6 “Observe the environment (physical and human environment) of the outpatient department through orientation and observation” ( $p=0.001$ ). In the objective 4 “To observe people who use the hospital

Table 3 Comparison of self-evaluation total scores for Basic Nursing Practice I in 2020 and 2019

	1) n=91		2) n=85
	Mean	SD	p-value
2020 <sup>1)</sup>	77.09 $\pm$	8.13	0.43*
2019 <sup>2)</sup>	79.92 $\pm$	10.16	

T-test \* $p<.05$

and learn about their characteristics,” there were significant differences in three items: 4-2 “List the specific places, scenes, and actions that you would like to observe in the outpatient department” ( $p=0.000$ ); 4-3 “List the specific places, scenes, and actions that you would like to observe in the ward” ( $p=0.000$ ), and 4-4 “Observe the behaviors and situations of people who use outpatient care” ( $p=0.000$ ). In the objective 5 “To think about the role of a nurse in hospitals,” there were significant differences in two items: 5-2 “List the specific contents and questions you would like to learn about the role of a nurse and nursing activities in hospitals” ( $p=0.016$ ), and 5-3 “Accompany a ward nurse and observe nursing activities” ( $p=0.003$ ).

#### 2. Evaluation based on the free writing space in the student self-evaluation section (Table 5)

We analyzed what the students stated in the free writing space in the evaluation sheet for “What I could do” and “What I could not do. There were 169 recording units for “What I could do”, and 114 for “What I could not do.” The descriptions of “What I could do” and “What I could not do” were sorted into the following criteria: 49 recording units in “Prior study” (17.4%); 69 in “Discuss and List” (24.3%); 124 in “Observe” (43.8%); 15 in “Explain” (5.3%), and 26 in “Attitude” (9.2%). The descriptions for “What I could do” contained 24 recording units in “Prior study” (8.5%), 40 in “Discuss and List” (14.1%), 84 in “Observe” (29.7%), 5 in “Explain” (1.8%), and 16 in “Attitude” (5.7%). The descriptions of “What I could not do” contained 25 recording units in “Prior learning” (8.9%), 20 in “Discuss and List” (10.2%), 40 in “Observe” (14.1%), 10 in “Explain” (3.5%), and 10 in “Attitude” (3.5%).

Looking at the descriptions in the following items in “Observe”: “Understanding of the characteristics of hospitals and the environment of outpatient depart-



Table 4 Comparison of self-evaluation scores for Basic Nursing Practice I in 2020 and 2019

1) n=91 2) n=85

	2020 <sup>1)</sup> Mean	2019 <sup>2)</sup>	2020 <sup>1)</sup> Median (Range)	2019 <sup>2)</sup> Median (Range)	U value	p-value
<b>1 To learn about the characteristics, functions, and roles of hospitals (13 points)</b>						
1-1 Study in advance and describe on the characteristics, functions, and roles of hospitals (3 points)	2.52	2.58	3 (1-3)	3 (1-3)	0.78	0.434
1-2 List the specific contents and questions you would like to learn about the characteristics, functions, and roles of hospitals (2 points)	1.67	1.79	2 (1-2)	2 (1-2)	1.90	0.058
1-3 Observe the characteristics, functions, and roles of hospitals (4 points)	3.33	3.27	3 (2-4)	3 (1-4)	0.47	0.635
1-4 Explain in detail the characteristics, functions, and roles of the training hospital by connecting what you had studied in advance with what you observed in the hospital (4 points)	3.10	3.07	3 (1-4)	3 (1-4)	0.29	0.771
<b>2 To learn about the professions that make up a healthcare team (13 points)</b>						
2-1 Study in advance and describe on the professions that make up a healthcare team and their activities (3 points)	2.80	2.81	3 (2-3)	3 (1-3)	0.53	0.594
2-2 List the specific contents and questions you would like to learn about the professions that make up a healthcare team (2 points)	1.53	1.76	2 (1-2)	2 (1-2)	3.27	0.001**
2-3 Observe the professions that make up a healthcare team and their activities through orientation programs and observation in each department (including ward and outpatient department) (4 points)	2.91	3.06	3 (1-4)	3 (0-4)	1.64	0.100
2-4 Explain in detail the role of a nurse in a healthcare team by connecting what you had studied in advance with what you observed in the hospital (4 points)	3.02	2.92	3 (1-4)	3 (1-4)	1.01	0.314
<b>3 To learn about the environment and healthcare services as a place where healthcare is provided (20 points)</b>						
3-1 Think about and describe the appearance, language, and attitude that is appropriate for a nurse (2 points)	1.84	1.87	2 (1-2)	2 (1-2)	0.66	0.511
3-2 Choose the appearance, language, and attitude that is suitable for healthcare setting (3 points)	2.67	2.71	3 (2-3)	3 (0-3)	1.10	0.273
3-3 Study in advance and describe the environment (physical and human environment) in the outpatient department (3 points)	2.15	2.53	2 (1-3)	3 (1-3)	3.91	0.000***
3-4 List the specific contents and questions you would like to learn about the environment (physical and human environment) in outpatient department (2 points)	1.54	1.75	2 (1-2)	2 (1-2)	2.96	0.003**
3-5 List the specific places, subjects and methods that you would like to observe, and the points to consider during observation (2 points)	1.37	1.73	1 (1-2)	2 (1-2)	4.51	0.000***
3-6 Observe the environment (physical and human environment) in the outpatient department through orientation programs and observation (4 points)	2.88	3.27	3 (1-4)	3 (2-4)	3.25	0.001**
3-7 Explain the environment and services as a place where healthcare is provided from a patients standpoint by connecting what you had studied in advance with what you observed during the training (4 points)	2.92	3.04	3 (1-4)	3 (1-4)	1.18	0.237
<b>4 To observe people who use hospitals and learn about their characteristics (19 points)</b>						
4-1 Study in advance and describe the characteristics of people who use hospitals (3 points)	2.37	2.31	2 (1-3)	2 (1-3)	0.58	0.564
4-2 List the specific places, scenes, and actions that you would like to observe in outpatient department (2 points)	1.43	1.75	1 (1-2)	2 (1-2)	4.35	0.000***
4-3 List the specific places, scenes, and actions that you would like to observe in ward (2 points)	1.52	1.78	2 (1-2)	2 (1-2)	3.58	0.000***
4-4 Observe behaviors and situation of people who use outpatient care (4 points)	2.38	2.96	2 (0-4)	3 (1-4)	4.21	0.000***
4-5 Observe the living environment and behaviors of hospitalized patients (4 points)	3.19	3.14	3 (1-4)	3 (0-4)	0.15	0.883
4-6 Explain in detail the characteristics of people who use hospitals by connecting with what you had studied in advance and what you observed during the training (4 points)	2.99	2.93	3 (1-4)	3 (0-4)	0.31	0.754
<b>5 To think about the role of a nurse in hospitals (13 points)</b>						
5-1 Study in advance and describe the role of a nurse in hospitals (3 points)	2.66	2.69	3 (1-3)	3 (1-3)	0.61	0.544
5-2 List specific contents and questions you would like to learn about the role of a nurse and nursing activities in hospitals (2 points)	1.59	1.76	2 (1-2)	2 (1-2)	2.42	0.016*
5-3 Accompany ward nurses and observe their nursing activities (4 points)	3.54	3.20	4 (1-4)	3 (1-4)	3.00	0.003**
5-4 Explain in detail the role of a nurse by connecting what you had studied in advance with what you observed during the training (4 points)	3.10	2.96	3 (1-4)	3 (1-4)	1.29	0.198
<b>6 To clarify the outcomes and challenges in learning of nursing through the objectives 1-5 (22 points)</b>						
6-1 Listen carefully to the others' opinions, express your own opinions, and take an active role in practical training (5 points)	3.98	4.06	4 (2-5)	4 (2-5)	0.67	0.504
6-2 Give a presentation on what you learned from the practical training in an easily understandable way (5 points)	3.71	3.78	4 (2-5)	4 (2-5)	0.72	0.469
6-3 Think about and describe logically the challenges associated with "communication skills required for a nurse", as well as "the role of a nurse" (6 points)	4.19	4.20	4 (3-6)	4 (1-6)	0.26	0.791
6-4 Describe logically the problems and solutions in learning nursing through the training (6 points)	4.21	4.24	4 (3-6)	4 (1-6)	0.22	0.827

Note: Difference of each training student' self-evaluation scores dealt as quantitative data between 2020 and 2019 was significant ( $p < 0.05$ ) with Mann-Whitney U test due to non-normal distribution of each score.

Mann-Whitney U test \* $p < 0.05$  \*\* $p < 0.01$  \*\*\* $p < .001$

Table 5 “What I could do” and “What I could not do” from students descriptions in free writing space

What I could do						What I could not do									
	Recording unit	Category	Recording unit	Subcategory	Recording unit		Recording unit	Category	Recording unit	Subcategory	Recording unit				
Prior study	24 (8.5%)	Preparation for self-directed training	24	Independent self-study	17	Prior Study	25 (8.9%)	Insufficient prior self-study	15	Insufficient prior study	15				
				Acquisition of knowledge from independent self-study	5			Difficulty facilitating study due to the lack of image	10	Inability to get a picture of the characteristics of outpatient department	3				
				Motivation for training	2					Inability to get a picture of the characteristics of people who use hospitals	1				
										Inability to get a specific image of learning	6				
Discuss and List	40 (14.1%)	Effective discussion	25	Expressing opinions in group discussion	10	Discuss and List	29 (10.2%)	Ineffective discussion	22	Inability to express opinions	13				
				Sharing knowledge and information	10					Inability to have active discussions	6				
				Clarifying questions	5					Unclear and unorganized questions	2				
		Further learning and acquisition of new challenges	15	Embodying learning	12					No leadership skills	1				
				Supplementing the insufficient learning extracted from group discussions	3			Awareness of insufficient study from group discussions	7	Awareness of insufficient self-study	7				
Observe	84 (29.7%)	Understanding of the characteristics of hospitals and the environment of outpatient department	15	The characteristics, functions, and roles of hospitals (orientation)	8	Observe	40 (14.1%)	inability to understand the characteristics of hospitals and the environment of outpatient department	19	Unable to observe outpatient department	10				
				Observing the outpatient department and its environment (orientation)	7					Unable to observe the characteristics and functions of hospitals	4				
		Understanding the environment of inpatient care	11	The characteristics of hospitalized patients	3					Inability to deepen the understanding due to lack of observation of actual practice	21	Inability to deepen learnings due to the lack of observation of outpatient care	20		
				The environment of ward	8			Inability to understand the reasoning behind the nursing activities	1						
		Understanding of the nursing activities and the role of a nurse	46	The actual nursing activities (nursing techniques, assistance for independence, and safety)	10										
				Communication skills	6										
				Understanding and empathic response to subjects	5										
				Specific roles of a nurse	17										
				Interests in nursing	7										
		Understanding of interdisciplinary cooperation	13	The actuals and collaboration in team medicine	13										
		Explain	5 (1.8%)	Logical explanation by connecting knowledge with practice	5			Documenting the contents of learning and observation	3	Explain	10 (3.5%)	Inability to explain logically by connecting knowledge with practice	3	Inability to describe what was learned	3
								Explicit language	2				7	Inability to explain by connecting prior study with observation	7
Attitude	16 (5.7%)	Positive and earnest attitude	16	Self-directed actions (asking questions・observation)	11	Attitude	10 (3.5%)	Passive attitude	10	Inability to express opinions	10				
				Earnest attitude (note taking, greeting, grooming)	4										
				Cooperativeness	1										

ment” the students stated I could learn about the characteristics, functions, and roles of the hospital through the orientation, and I could not observe the outpatient department, but I could learn about the healthcare services for patients via videos and explanations. With regard to “Understanding the environment of inpatient care” and “Understanding of the nursing activities and the role of a nurse,” I could understand the characteristics of hospitalized patients and their lives in the hospital; I could accompany the nurses and learn in detail about their role in caring for patients and families; I could think profoundly why this care was necessary by shadowing the nurse and receiving explanations.

### 3. Outcomes of the practical training (Table 6)

There were 52 recording units of “Outcomes” indicated in the free writing space. Result of analysis, 12 subcategories, 3 categories were elicited. The following expressions in *Italic* indicate the recording units, in single quotation marks the subcategory, and in quotation marks the category.

The students stated in free writing space: *I was able to deepen my thoughts by exchanging opinions and exposing to new ideas in group work based on prior study; It was difficult to join the discussions without prior study. I realized the importance of prior study; and I was able to deepen my learning by actually observing what I had studied in advance.* According to these de-



scriptions, they were able to recognize ‘the importance of prior study’ and to ‘clarify the challenges,’ as well as “to deepen their learning by integrating knowledge and actual activity.”

In addition, they were able to “build the skills required for nurse,” such as ‘communication skills to develop a conversation,’ ‘observation skills,’ ‘vocabulary for clear explanation,’ and ‘patient-centered care,’ and they “build the ideal image of a nurse.”

## VII. Discussion

### A. Modified content of practical training and its impact on achievement of the training aims and objectives

#### 1. Hospital training

As a measure to prevent the spread of COVID-19 infection, the observation in the hospital and outpatient department was cancelled. Although the students had an opportunity to learn to some extent via orientation program and videos, they were not able to see with their own eyes the structure of hospital and outpatient department, the healthcare services, and the actuals of outpatient. Therefore, the students’ understanding of the structure of outpatient department, the patients receiving outpatient care, the professions that make up a healthcare team, and the interdisciplinary teamwork was insufficient. As in the saying “Seeing is believing”, hands-on experience is a shortcut to utilizing knowledge. Therefore, even in the case of a restricted entrance into hospitals like this time, it may be possible to achieve the training objectives by developing an online system that allows interactive communication between students and hospitals to learn the structure and characteristics of the hospital, patient behavior in consultation, and the activities of the outpatient department. On-site training is not just about seeing and hearing activities, but also offers the learning only attainable among people in the shared setting<sup>2)</sup>. Therefore, it is vital to coordinate with hospitals to create learning opportunities for students to experience the clinical setting.

During the training in a ward, despite for a short period

of time, the students were able to see actual nursing care by observing and shadowing the nurses in the ward. In addition, it can be said that the students deepened their understanding of the role of a nurse by asking directly a nurse the questions on the list they had prepared in advance and receiving explanations of the reasoning behind a nursing care. However, in terms of outsourcing bed-making, the students understood it allows nurses to concentrate on nursing care, while some thought it was not a job for nurses in the first place. We assume that the students focused on the act of bed-making and did not fully understand its original purpose, which was a part of nursing techniques to provide a safe and comfortable healthcare environment. This point needs to be supplemented in the reflection session and the scheduled on-campus exercises.

#### 2. Evaluation of the level of achievement in the training objectives

Of ten items with significant differences, six belonged to “List”. During the two-day on-campus training prior to the hospital training, some students were reluctant to participate in group discussions. We assume that this was because the students who had done the prior study but were not confident were reluctant to participate in a group discussion, thus the group dynamics did not work. The achieved scores in the following items were low, as it is likely because observation in the outpatient department was prohibited: 3–6 “Observe the environment (physical and human environment) of outpatient department through orientation and observation,” and 4–4 “Observe behaviors and situations of people who use outpatient care.” In contrast, the score was higher this year than last year in 5–3 “Accompany a ward nurse and observe nursing activities.” It is assumed that this is because, as a reaction to a loss of opportunity to observe the outpatient department, accompanying award nurse and observing nursing activities left strong impressions on students and affected their level of satisfaction.

Although it was a short practical training, the students were able to learn the actual nursing activities, multidisciplinary cooperation, and characteristics of hospitalized patients by accompanying the nurses, which led to

Table 6 “Outcomes” from students descriptions in free writing space

Category	Recording unit	Subcategory	Recording unit	Example of students description
Deepen learning by integrating knowledge and actual activity	34	Importance of prior study	3	<ul style="list-style-type: none"> <li>• It was difficult to join the discussions without prior study. I realized the importance of prior study</li> <li>• I could deepen my thoughts by exchanging opinions and exposing to new ideas in group work based on prior study</li> </ul>
		Clarify and resolve the questions	6	<ul style="list-style-type: none"> <li>• I could achieve my goals by extracting my own questions from the prior study and observing them in the practical training.</li> <li>• I could resolve my questions and gain new knowledge through practical training.</li> <li>• I could deepen my learning by actually observing what I had studied in advance.</li> </ul>
		Clarify the challenges	10	<ul style="list-style-type: none"> <li>• Through the valuable experience of seeing the actual site, I could see my future tasks.</li> <li>• Through observing actual nursing care, I birthed my own will and new ideas about the role of nurses.</li> <li>• The practical training aroused my desire to learn more about various things in detail.</li> <li>• I could think about what I need in my future university life.</li> <li>• I would like to use what I learned in my practical training and work on future exercises and practical training.</li> </ul>
		Integrating knowledge and actual activity	15	<ul style="list-style-type: none"> <li>• I could think deeply about the differences by comparing what I had researched in advance with what I had learned from the observation at the hospital.</li> <li>• Through practical training, I could feel what I learned in class three-dimensionally.</li> <li>• I could deepen my learning through group discussion and asking nurses my questions and observing nursing care.</li> <li>• By exchanging opinions in group work, I could come into contact with new ideas and deepen my thoughts.</li> </ul>
Build the skills required for nurse	12	Communication skills to develop a conversation	4	<ul style="list-style-type: none"> <li>• Effective communication is necessary to provide patient comfort and satisfactory care.</li> <li>• It is my issue to acquire communication skills that to spread the conversation.</li> </ul>
		Vocabulary for clear explanation	3	<ul style="list-style-type: none"> <li>• It is necessary to explain in a way that other people can understand using specific content and examples.</li> <li>• I couldn't explain well, so I thought I needed to improve my vocabulary.</li> </ul>
		Observation skills	2	<ul style="list-style-type: none"> <li>• It is necessary to acquire observation skills for appropriate behavior.</li> <li>• I would like to improve my observation skills.</li> </ul>
		Problem solving skills	1	<ul style="list-style-type: none"> <li>• It is necessary to keep studying to solve the problems that I noticed in the practical training.</li> </ul>
Build the ideal image of nurse	6	Leadership	1	<ul style="list-style-type: none"> <li>• I strongly felt that I had to acquire the ability to take leadership.</li> </ul>
		Personal appearance	1	<ul style="list-style-type: none"> <li>• I would like to pay attention to greetings and appearances in my life.</li> </ul>
		Discovering the ideal image of nurse	4	<ul style="list-style-type: none"> <li>• I could clarify what kind of nurse I should aim for.</li> <li>• I could work hard to get closer to the ideal nurse image.</li> <li>• I could discover a new role for nurses that is different from the image of nurses I had imagined.</li> </ul>
		patient-centered care	2	<ul style="list-style-type: none"> <li>• I felt the need for nursing care that was close to the patient.</li> <li>• Seeing nurses who actually communicate with patients made me want to become a nurse who can be close to patients.</li> </ul>

the formation of their ideal image of nurses.

This was probably because the experience in the hospital practice enabled them to gain an actual image of the nursing profession, which led to active learning by taking a proactive attitude as a student nurse.

### 3. Evaluation on students' descriptions in free writing space

The most common descriptions in the free writing space were 124 recording units of "Observe" (43.8%), which accounted for about half of all recording units. As it is said that nursing begins and ends with "observation," "observation" has a great significance for nurses in performing their roles.

Looking at the descriptions in the following items in "Observe": "Understanding of the characteristics of hospitals and the environment of outpatient department" the students stated *I was able to learn about the characteristics, functions, and roles of the hospital through the orientation*, and *I was not able to observe the outpatient department, but I was able to learn about the healthcare services for patients via videos and explanations*, which were rather to be categorized in "Learn." With regard to "Understanding the environment of inpatient care" and "Understanding of the nursing activities and the role of a nurse," the students expressed with the words such as "understand" or "think," as they described: *I could understand the characteristics of hospitalized patients and their lives in the hospital; I could accompany the nurses and learn in detail about their role in caring for patients and families; I could think profoundly why this care was necessary by shadowing the nurse and receiving explanations*. The students acquired knowledge, or reached the level of "Learn" via orientation and videos on what they had studied in advance. Moreover, as they gained actual experiences through accompanying a nurse, observing nursing care, and directly asking questions, they may have progressed from the level "Learn" to "Understand." It is also noteworthy that there were many comments on interdisciplinary teamwork which is crucial in activities of healthcare team. It is difficult to get a picture of their activities only with classroom knowledge. However, it is assumed that taking clinical lectures and

observing the activities in cooperation with rehabilitation therapists or pharmacists in the wards, and the interdisciplinary conferences resulted in the students' better understanding of the significance and necessity of the cooperation in a healthcare team.

For "What I could not do", many students wrote: *I cannot move on learning because I could not see the actual situations in outpatient department*. Another characteristic reason why they had difficulty with progressing their prior study lies in their description: *I cannot get a picture of the characteristics of outpatient department*. Since few students had a experience of seeing a doctor in university hospitals, their image of outpatient departments was based on their limited experiences in clinics. As they could not picture an outpatient department in university hospitals, explanation alone might not be sufficient for their understanding.

Looking at the item "Prior study" in relation to "Discuss and List," it showed that the students had studied enough in advance independently and shared in group work what each had learned. In addition, they were able to clarify their questions and have effective discussions while gaining new knowledge. As the group work also made them aware of lack of self-study, they reflected on themselves and engaged in further study.

Conversely, it indicated that those who stated "What I could not do" had insufficient prior study, so they were not able to express their own ideas, resulting in ineffective discussions. One possible reason was that the students had little chance to socialize or to exchange information during the period of self-isolation that had lasted until the training started, despite the assignments for prior study had been presented at the time of initial orientation and they had tried to get their assignments done. Although there was a difference in sense of accomplishment between "I could do" and "I could not do," the students used some tools for "research" and it is assumed that they were able to acquire new knowledge through independent study. There were only 15 recording units (5.3%) related to "Explain" for both "What I could do" and "What I could not do." In this practical training, "Explain" requires the ability to connect the knowledge acquired in lectures and prior study with the phenomena they saw and heard during the

training, and to express what they think. Since “Explain” requires the ability to express one’s opinion in an easily understandable way, one is expected to have his/her other self to read what one has written over again. Saito says that writing is a process of dialogue with one-self<sup>3)</sup>. When students “Explain”, they recall their own actions on-campus and in-hospital training and put them into words by developing their thoughts, however it is assumed that it was difficult for the first-year students to explain logically with their limited vocabulary and daily life experiences. However, logical thinking and writing are important elements for students who become a nursing professional. Logical thinking is a way of thinking that organizes things in a systematic and consistent manner. However, young people nowadays tend to be less confident of expressing their thoughts and phenomena in concrete terms and be inconsistent in their writing, due to the incorrect use of conjunctions and their limited vocabulary. The future issue is to develop students’ ability to listen, talk, think, and express, and to enhance their logical thinking skills for better interactive communication.

### VIII. Conclusion

The learning outcomes and challenges in the practical training program were examined and compared between in 2019 and 2020 in order to obtain the actuals of Basic Nursing Practice I and the insights into new basic nursing education in face of COVID-19 outbreak.

1. The self-evaluation score in 2020 was  $77.09 \pm 8.13$  points (mean  $\pm$  SD), which was lower than  $79.92 \pm 10.16$  (mean  $\pm$  SD) points in 2019.
2. There are significant differences in ten items, 9 of which are lower in FY2020, but only “accompanying the nurse to observe nursing activities ( $p=0.003$ )” was higher in FY2020.

3. In FY 2020, 124 recording units (43.8%) of “observe” were freely described by students, accounting for about half of all recording units. The fewest was “explain” at 15 recording units (5.3%).

Through the orientation and the tour, we were able to “observe” and “learn,” but we were not able to develop our thoughts that means “understanding” such that we cannot explain the facts linking them to the prior learning and that we could not deepen our learning due to lack of images. Students learn more by placing themselves in an actual medical environment and gaining hands-on experience. Therefore, it is important to adjust the training environment so that students can learn in the field even for a short time. Furthermore, the future challenge is to build a system that enables viewing of the situation in situ and interactive communication while incorporating learning tools such as the Internet and Virtual Reality.

### Declaration of Competing Interest

None.

### References

- 1) Preliminary report on the results of the survey on the impact of COVID-19 on nursing practice. Retrived 2021, from Japan Association of Nursing Programs in Universities Web site: <https://www.janpu.or.jp/2020/12/11/17860/>
- 2) Shiomi M., Hosokawa R., Taira K. Teaching practice II for public health nurse course at Kyoto University under COVID-19 epidemic. *The Japanese Journal of Public Health Nurse*. 2020, Vol.76, No.11, 922–925.
- 3) Takashi S. *Communication Skills*. Tokyo: Iwanami Shinsho. 2004.

## COVID-19流行下の基礎看護学実習の取り組みと課題

—— 基礎看護学実習Ⅰにおける学生の自己評価から ——

上 星 浩 子・長嶺めぐみ・萩 原 一 美  
佐 藤 晶 子・星 野 健・佐 藤 美 保  
堀 込 由 紀

### 要 旨

COVID-19流行下における基礎看護学実習Ⅰの取り組みと2020年度の学生の自己評価表を2019年度と比較し、学習成果や課題について検討した。

- 1) 2020年度の自己評価点は $77.09 \pm 8.13$  (mean $\pm$ SD) 点、2019年度の $79.92 \pm 10.16$  (mean $\pm$ SD) 点に比し低かった。
- 2) 2020年度の学生の自由記述では「観察する」124記録単位 (43.8%) で全記録単位の約半数を占めていた。最も少なかったのは「説明する」15記録単位 (5.3%) であった。「観察する」「知る」ことはできたが、事前学習と結びつけることやイメージができず、学びが深まらないなど「理解する」という思考の発展までは至らなかった。学生は実際の医療環境に身を置き、体験をすることで学びが深まる。よって短時間でも臨地で学ぶことができるよう実習環境を調整することが重要である。さらにインターネットやVRなどの学修ツールを取り入れながら、双方向的なコミュニケーションができるシステムを構築することが今後の課題である。

キーワード：COVID-19、基礎看護学実習、看護基礎教育、学習成果、課題