A Study on Experience of Transition to Online Lecture due to COVID-19 in Nursing Students

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Abstract: The purpose of this study was to provide fundamental data for the effective management of online lectures in the future by investigating the difficulties in online lectures experienced by nursing students during the COVID-19 pandemic. For this purpose, the data were extracted from the experiences of nursing students of the online lecture through focus group interviews, using the classification and analysis scheme proposed by Colaizzi. The subjects were 20 nursing students who experienced the transition from face-to-face lectures to online ones. In the analysis, 17 theme clusters and five categories were extracted: “freely adjustable lecture”, “Decreased learning capability”, “Unmanaged video material”, “Loneliness of learning alone”, and “Difficulty in forming a relationship in school life”. In conclusion, it was found that online lectures conducted to ensure safety from the sudden COVID-19 pandemic had the advantages of flexibility in terms of time and speed, however, students also suffered from negative experiences such as decreased learning capability, absence of instruction equipment, difficulty in communication, and loneliness and solitude. The quality management of video lectures and improvement in communication between teachers and students are required for effective learning in a continuous online lectures in the future and the development of teaching and learning methods to overcome those difficulties are recommended.

Keywords: Nursing Students, COVID-19, Online Lecture, Phenomenology

1. Introduction

The Coronavirus Infectious Disease-19 (COVID-19) had unprecedented worldwide impacts on all aspects including politics, economy, society, culture, and education, thus, new methods have been introduced[1]. Since the face-to-face classes had been restricted due to COVID-19, un-contact (untact) classes were introduced in March 2020, in the form of, depending instructor, real-time online lectures, recorded online lectures, and imposing assignments. With the mitigation of the spread of COVID-19 infection in later times, face-to-face lectures were resumed for a small group of students at some colleges[2]. The representative effect of COVID-19 on college education was to abandon face-to-face education and transition, as an alternative, to online education. Online lectures currently have become an important issue of interest globally as well as domestically due to the worldwide pandemic of COVID-19. Although the e-learning and video lectures were used for face-to-face classes also even before the COVID-19 pandemic, the introduction of untact lectures centered on online instruction nationwide is a significant change in terms of pedagogy and the educational system. In this process, the positive aspects of online lectures were revealed, therefore it is expected the online lecture to be

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applied not only to the era of COVID-19 but also to future education and industrial fields.

On the one hand, however, various problems such as lack of infrastructure (facility and equipment), poor quality of education (lecture) due to low competency of teachers (designers), decreased interaction between teacher and student and among students, and undetermined level of student learning have been found. As a response to the problems encountered in the online course, such as lack of educational equipment, plagiarism, lectures replaced by assignments, and unavailable college facilities, some students demanded the return of tuition[3]. The Korean government, based on excellent infrastructure and networks, has been supporting e-learning policies and associated industries for a long period[4], and, for practical improvement of teaching and learning, multimedia education, e-learning, blended learning, flipped learning, smart education and ubiquitous education have been emphasized[5-7]. Although Korea's IT technology is world-class, the reliance on traditional education methods is still not low because these technological innovations are not effectively applied to the field of education. It is expected, accordingly, for Edutech, which innovates education with technology, to be actively introduced to the education system, motivated by the COVID-19 pandemic[8].

Online education, compared to face-to-face lessons, is based on skills and knowledge related to online, such as computer use, cyber security, and data backup, and the students are allowed to accumulate knowledge regardless of time and space. In addition, online education has the advantage of lower costs. The students are likely to be slacked because external psychological, direct, and indirect constraints are weak, and the performance of learning is much dependent on individual sense of responsibility and will[3].

Ten disadvantages of online lectures reported by college students included an increase in alternate assignments, the poor lecture platform, lack of attendance management, and low resolution of the video, and then they expressed that the overall quality of lectures was low. This seems to be because large-scale online lectures triggered by the COVID-19 pandemic were conducted with a short period of preparation and insufficient planning. In other words, most of the professors, who have no experience related to online lectures and have no technical skills related to online smooth recording, are experiencing difficulties, and they are likely to feel uncomfortable when they stand alone in front of the camera of a laptop in the empty classroom.

The field of nursing education, since the early 2000s, has introduced internet- and online-based teaching methods for effective learning, and significant results have been reported on their effects of them on self-efficacy, readiness level for self-directed learning, and performance confidence[9-11]. Most of these studies, however, just focused on online lectures addressing a fragmented topic or on the acquisition of core basic nursing skills. The studies on the effectiveness of nursing lectures consisting of only online classes have been limited, though there has been started suddenly due to the COVID-19 pandemic.

There is concern that the situation caused by COVID-19 will continue to worsen in the future. In addition, even after this worldwide COVID-19 pandemic, changes in the perception of university education will be inevitable. Therefore, the purpose of this study was to provide fundamental data for effective management of online lectures in the future by investigating the difficulties in online lectures experienced by nursing students who had an online lectures during the COVID-19 pandemic

2. Method

2.1 Design

This is a phenomenological study that, using focus group interviews, explored the essence of transition into online lecture related to COVID-19 in nursing students. The essence here signifies the core meaning of a phenomenon perceived by those who shared the experiences

2.2 Subjects

The subjects were 20 nursing students (female: n=17, male: n=3) in the 3rd grade at K and S Universities who experienced the transition from face-to-face lectures to online ones. The eligible students were those who 1) can communicate with researchers and have clear and consistent awareness and judgment and 2) understand the purpose of this study and completed the informed consents by themselves (see [Table 1]).

[Table 1] The General Characteristics of the Participants (N=20)

No	Age	Sex	University department	University grade	Leave of absence
1	23	Female	Nursing	3rd	Yes
2	24	Female	Nursing	3rd	Yes
3	24	Female	Nursing	3rd	Yes
4	24	Female	Nursing	3rd	No
5	21	Female	Nursing	3rd	No
6	22	Female	Nursing	3rd	No
7	22	Female	Nursing	3rd	No
8	21	Female	Nursing	3rd	No
9	21	Female	Nursing	3rd	No
10	24	Male	Nursing	3rd	No
11	21	Female	Nursing	3rd	No
12	21	Female	Nursing	3rd	No
13	24	Male	Nursing	3rd	No
14	24	Male	Nursing	3rd	No
15	22	Female	Nursing	3rd	No
16	21	Female	Nursing	3rd	No
17	22	Female	Nursing	3rd	No
18	22	Female	Nursing	3rd	No
19	22	Female	Nursing	3rd	No
20	22	Female	Nursing	3rd	No

2.3 Data Collection

Data were collected from Jul. 1st to Sep. 1st, 2020. Focus group interviews were conducted for two teams in each university's classroom. Team 1 consisted of eight female students, and team 2 consisted of nine female students and three male students. The interviews were conducted one or two times in each team for 2-2.5 hours. The interview was audio-recorded under the permission of the subjects and the interviewee's behaviors, words, expressions, experiences, and feelings during the interview were also recorded and analyzed. Interviews and analysis were within cyclic processes were, the recordings were transcribed and analyzed after each session and, based on them, the contents of the next interview were determined. The main questions in the interview were "What was your experience with online lectures related to COVID-19?", "What makes it difficult in taking online lectures related to COVID-19?", "What did you like about taking online lectures related to COVID-19?"

2.4 Data Analysis

This study adopted Colaizzi's analysis procedure[12] which allowed us to find clear meaning from the statement of subjects and induce the subjects to describe the essence of a phenomenon precisely. The specific analysis steps in this study are as follows: (see [Fig. 1]).

[Fig. 1] Colaizzi's Analysis Procedure

2.5 Ethical Considerations

The subjects of this study were given explanations about the purpose and meaning of the study, and the importance of cooperation, and were allowed to voluntarily decide whether they participate in the study. They were notified that subjects' anonymities were warranted in the course of the study, that data is not used for any purpose other than research, that audio-recorded material is immediately discarded after completing the study, and that the subjects have the right to withdraw their participation at any time if they wish. The researchers tried to protect the privacy of information providers. In addition, before enrollment, the informed consents explaining detail about the purpose and process of the study and subjects' rights were provided to them and information providers' written signatures were obtained on the informed consents. Subjects were provided with some gifts to appreciate their participation.

2.6 Rigidity & Reliability

To enhance the rigidity of this study, it followed the truth value, neutrality, consistency, and applicability presented by Guba and Lincoln[13]. The truth value was sought by sending and confirming the outcomes described and analyzed to subjects. Neutrality was sought by excluding prior understanding of this study and personal prejudice. The consistency of the study was established by making the process and result of the study to be verified by a nursing professor who had extensive experience in qualitative research and did not participate in this study. As a measure to increase the applicability of the study.

2.7 Status of Researcher

The author, as a nursing professor, taught students, completed qualitative research courses in

graduate school, and performed verbal or poster presentations on qualitative methodology, which contributed to enhancing the research capability of a qualitative one. The author, particularly, received a master's degree in phenomenology and a doctor's degree in ethnography and the validity and reliability to function as a research tool by being trained and developing proficiency in research methodology under the control of qualitative research experts.

3. Results

3.1 Meaning of Experience in Transition to Online Lecture related to COVID-19 in Nursing Students

134 constructs were extracted from the data, and they were classified into 52 themes, which were further classified into 17 theme clusters, and, finally, five categories were derived through systematic conceptualization. Five categories derived from online learning experience were “freely adjustable lecture”, “Decreased learning capability”, “Unmanaged video material”, “Loneliness of learning alone”, and “Difficulty in forming a relationship in school life” (see [Table 2]).

[Table 2] Meaning of Experience in Transition to Online Lecture related to COVID-19 in Nursing Students

Category	Theme Cluster	Theme
Freely adjustable lecture	Freedom in time management	Taking lectures freely regardless of time and space
		Effect use of time saved for commuting time.
		Effectiveness in time management
		Concentration in lectures due to enough sleep.
	Safe and fair lecture	No problem related to equity
		Online lecture safe from infection
	Effective performance of the online lecture	Video of actual instruction deriving excellent concentration
		Video lecture with the actual gesture
		Video lecture on effective revise
		Lectures watched up close
		Quiz assignment to hint at the type of question
		Lectures needed no supplementation.
	Adjustable lecture	The opportunity of re-learning through replay
		Adjustable speed of the lecture
Decreased learning capability	Online lecture without liveliness	Depressed mood compared to fact-to-face lecture
		Difficulty in concentrating on the online lecture
		Online lectures without liveliness found in a face-to-face lecture
	Vanity after lecture	Embarrassed lecture leaving no achievement
		Decreased amount of learning
		No sincerity for attending the lecture
	Difficulty in maintaining concentration	Lectures preventing from concentration
		Limitations due to communication using the only verbal clue
		Surrounding situation preventing from concentration
	Difficulty in self-directed learning	The burden of self-directed learning
		The habit of missing additional learning after the lecture
	Unavailable feedback	Inconvenience due to difficulty in instant question
		Impossibility of immediate feedback
Unmanaged video material	Unmanaged video lecture	Sound problem
		Unrecognizable lecture materials are seen in the video.
		Difficulty in understanding even with repeated watching
		Low quality of online lecture with muttering

		The difference in the quality of lecture
		Limitation in delivering contents of lecture
	Difficulty in using computer	Tiredness due to watching the screen
		Limitations due to the absence of the device
		Difficulty due to server error
	Unfamiliar online system	Failure in submitting assignments due to unfamiliarity with the online system
		Failure in attendance due to unfamiliarity with the online system
The loneliness of learning alone	The loneliness of learning alone	Loneliness due to difficulty in sharing with a friend.
		Feeling that only one can't understand.
		Failure in being regarded as a student by family members
	Becoming indolent	Becoming indolent with the times
		Delayed watching of lectures
		Burdensome due to learning alone
Difficulty in forming a relationship in school life	Difficulty in communication with peers	Difficulty in communication with peers in doing a group activity
		A returning student who should communicate with unfamiliar peers through SNS
		Difficulty in forming a relationship with peers
	Difficulty in communication with teachers	Difficulty in communication with teachers
		Difficulty in recognizing teachers at off-line
		Feeling bad since teachers can't check the learning level of students
	Burdensome for peer relationships through the internet	Burdensome in contacting unfamiliar friends
		Instability for the peer relationship through the internet

3.2 Meaning Structure of Experiencing Online Lecture related to COVID-19 in Nursing Students

3.2.1 Category I _ Freely adjustable Lecture

Theme Cluster I-1. Freedom in time management

The subjects in this study, while experiencing the transition to online lectures due to the sudden COVID-19 outbreak, were found to be satisfied with the fact that they can take online lectures regardless of time and place and they have freedom in managing time such as sleeping during commuting.

I went to the Han River and took a lecture and it was great. I sometimes paused the video and just watched the Han River or watched a lecture while eating chicken. From the professor's point of view, my behaviors may seem a little weird, but the continual change of the place itself was a refreshing and very good one (Subject #1).

It was good because I watched the lecture at a more free and comfortable place and it was possible to watch the lecture at my family home though I live apart from family (Subject #13).

The commuting time was reduced, so I was able to manage my time freely (Subject #12).

Theme Cluster I-2. Safe and fair lecture

The subjects in this study felt that offline lectures were unfair because the contents of the lectures were different from other classes, but were satisfied with the online lectures in that the same contents are delivered to every class. They were satisfied with, above all, the fact that it was safe from the infection with COVID-19.

Students who did not receive information from the other class had the disadvantage of lack of information compared to the students who received it, but in the untacted lecture, all students took the

lecture of the same recording, so it was good that there was no problem of equity (Subject #4).

In the face-to-face lecture, both dorm students and home-based students could be late to lecture for several reasons and families had concerned about it, but in the online lecture, it was nice to have no such concerns (Subject #2).

Theme Cluster I-3. Effective performance of the online lecture

The subjects in this study felt that the recorded lecture helps maintain concentration to lecture, that, while when they sat in the back seat it was hard to see the lecture materials, but there was no such problem, and that there was no need for a supplementary lecture.

In that lecture on maternity, when the teacher explained about maternity and delivery, I was able to concentrate better and have fun because I heard the explanation about the breathing method with the teacher filling the screen full (Subject #6).

In the face-to-face lecture, those who sat in the back seat had difficulties in observing materials and following explanations, but in the online lecture, there were no such problems thus I was able to focus more on learning (Subject #10).

Because of the supplementary lecture, I sometimes skipped lunch, and one day was full of lectures without break. But this online lecture cleared such problems (Subject #5).

Theme Cluster I-4. Adjustable lecture

The online lectures were effective based on the opportunity of re-learning through re-listening and adjustable lecture speed, indicating that it has the character of adjustability.

In the face-to-face lecture, the contents I missed were obtained through asking peers or left unknown, but in the online lecture, it was good for me to watch the parts that were missed or in which I had an interest (Subject #11).

I have the opportunity to watch the parts that I want to learn again, I felt that I had a higher level of understanding of the content than that in the face-to-face lecture (Subject 14).

It was nice to be able to watch slowly and thus understand the statements spoken by the professors with fast speaking (Subject #5).

3.2.2 Category 2 _ Decreased learning capability

Theme Cluster II-1. Online lecture without liveliness

The subjects in this study disappointed that, unlike the face-to-face lectures where teachers tell the students their clinical experiences thus being a lively lecture, the online lecture made the atmosphere to be gloomy and they could not remember the contents due to the monotonous delivery.

In online lectures, the teachers tended to deliver only the contents that they had planned, so it seems that the contents of their clinical experience were less than that in the face-to-face lecture (Subject 4).

In the face-to-face lecture, the professor's expression, tone, and action are remembered together with the contents, so the contents of the lecture and the jokes are related and remembered, but there is no such connection in the online lecture, so there are probably a lot of things that I just carelessly watch, so it seems that I am watching a new lecture when I see the second time (Subject #4).

It seems to be less effective than explaining while giving examples like in the face-to-face lecture (Subject #1).

Theme Cluster II-2. Vanity after lecture

The subjects in this study regretted that their learning efficiency was lower despite more tension and attention in online lectures, and they were disappointed in their appearance in the online lecture, which had less learning than face-to-face classes, and participated in class without sincerity.

I was more nervous and serious than I did in the face-to-face lecture, but there wasn't much memorable content because the efficiency was low. It was the same in practice. So I had a regrettable semester (Subject #4).

In my case, the amount of learning was less than that in the non-face-to-face lecture. And in the group assignment, as in the face-to-face class, there was a problem in communication with team members so I was stressed a lot. So, I think a face-to-face lecture is better (Subject #3).

There was an experience of dealing with the attendance assignments carelessly since the obligation to take lectures is less than before (Subject #6).

Theme Cluster II-3. Difficulty in maintaining concentration

The subjects in this study reported that they did not need to be polite as in face-to-face lectures while taking online lectures, so they were exposed to distractive items such as mobile phones, family, or pets, keeping them from concentration.

In face-to-face lectures, I have to be polite to the professor, so I don't do anything like using a cell phone, and I have the will to stay alert and focus on listening even when I am sleepy, but in online lectures that I watch at home, it seemed that I did many other things while playing the lecture (Subject #6).

Some professors use a mouse in the video, but some do not. If they say "this is....that is..so..." in only words without any gesture, we have no clue to find what they were saying (Subject #4).

My younger brother knocked on the door repeatedly, so I couldn't concentrate. I took the online lectures mainly at dawn when he was sleeping (Subject #7).

Theme Cluster II-4. Difficulty in self-directed learning

The subjects in this study had difficulty in managing their watching online lecture and, unlike face-to-face lectures where they had time to review the contents, they had no such time, preventing them from self-directed learning.

In the face-to-face lecture, teachers say that "Attend from 9:00 to 6:00. If you do not, the attendance check will be failed." So there is a concept that we are forced to take lectures from 9 o'clock and do something within a pre-determined time, but at home, No one care for me, a college student, and I have to do everything purely with my own will, but it was difficult for me in terms of personality (Subject # 7).

When I listened to the online lecture, I felt like I finished all the tasks I need to do that day and felt a sense of accomplishment, so I did not need to study additionally (Subject #6).

Theme Cluster II-5. Unavailable feedback

The subjects in this study were found to have felt regret for the situation they could not ask questions immediately while watching online lectures and feedback on the parts they did not understand was not feasible.

In the face-to-face lecture, I could ask immediately about what I did not understand but I couldn't do that in the online lecture, making me disappointed (Subject #19).

In the face-to-face lecture, I could seek feedback about what I did not understand but in the online lecture, it was regrettable to rewind the video until I find what I had missed (Subject #7).

3.2.3 Category III _ Unmanaged video material

Theme Cluster III-1. Unmanaged video lecture

The subjects in this study had difficulty watching the lecture because some contents were omitted and there was a problem with sound and they felt frustrated with the lecture method of reading the

textbook as it is. They reported a significant quality gap among lectures and were regretting no one was charged for managing the quality.

There have been various problems including difficulties in watching teachers' voices due to too small or loud volume, the contents omitted during the editing process, and interruption of the internet due to many users (Subject #12).

There was a little difficulty in making learning materials and videos. I used tablet PPT and when there was sound or a table on the screen, it was a little difficult to place the lecture and PPT together and to shift between them because it was difficult to read the text of the PPT and the lecture (Subject #1).

I understand most of them, but there were some things that I could not understand even if I watched them repeatedly (Subject #12).

Some professors read the book from start to finish as it is. I hope that they communicate to us the important parts that only they know and that there will be improvements in that direction (Subject #8).

The difference in lecture quality among lectures is significant. I think some should control this (Subject #8).

Since I saw the PPT using a laptop computer, I had no difficulty checking the contents of the lecture, but I had difficulty understanding the intention of the professors because I could not see their facial expressions (Subject #20).

Theme Cluster III-2. Difficulty in using computer

The subjects in this study reported problems of reduced concentration due to eye strain in a situation where they had to use a computer to take lectures, difficulty in taking lectures due to the absence of a computer in a sudden hospitalization, and interruption of the computer server.

There was a pain in the eye and it got tired sooner so I felt lower concentration (Subject #6).

I was hospitalized suddenly and I was hospitalized in the emergency room, so I couldn't bring things like a computer, and the next day came without a cell phone charger, but my parents couldn't come to the hospital, so I couldn't take the lecture. Online lecture seems to have a disadvantage in that it is difficult to hear them when the device is not ready (Subject #4).

It was not a good experience because the E-campus server was frequently broken and it was difficult to take lectures. (Subject #19).

Theme Cluster III-3. Unfamiliar online system

The subjects in this study reported problems of failure in submitting assignments due to server error and, unlike face-to-face lectures where attendance is recognized when attending school, failure in attendance due to problems with the online system.

There are many cases of errors when receiving assignments online or checking attendance, especially with assignments, I had to upload a file and click the submit button but I did not click so there was a problem that the assignment was not submitted from the professor's point of view (Subject #4).

There was a problem that I could not submit assignments because the period for submitting attendance assignments differs among professors and sometimes the period was changed. And even while taking classes, I sometimes failed in checking attendance because of other things (Subject #6).

3.2.4 Category IV _ Loneliness of learning alone

Theme Cluster IV-1. The loneliness of learning alone

The subjects in this study experienced loneliness while watching lectures alone at home and experienced a loss of motivation due to the thinking that only him/herself could not understand the

contents of the lecture. In addition, even though they were students, others are likely not to recognize them as students.

When I go to school, I feel the atmosphere that it is time to study with my friends and share information, but now since I watch the online lecture alone at home, I feel a little bit lonely (Subject #1).

In face-to-face classes, we have conversations such as 'I don't know about this part' or 'don't you think it is difficult?', however, when I listened alone, I thought, 'How foolish I am' and 'maybe only I could not understand them' and I'm alone, so motivation disappeared (Subject #6).

My grandmother was sick, so someone had to go to her house, but the family tells me 'I think you are not busy so you go there' and leaves the housework to me. I'm also taking classes, but from the perspective of other people, I'm not taking classes. I must also take classes and take homework. They should know it (Subject #5).

Theme Cluster IV-2. Becoming indolent

The subjects in this study reported they developed a habit to delay watching lectures because they could watch them whenever they want to do and regretted that they became indolent since they only take lectures in a boring atmosphere

It seems that I became somewhat indolent because there was no schedule or timetable by which I should abide (Subject #12).

The downsides of online lectures are that students keep putting off lectures because of the idea that they can listen at any time, that some content is difficult to watch, and that Internet access may not be good because many people connect simultaneously (Subject #13).

It seems boring and exhausting because I just listened to the lecture and took notes repeatedly (Subject #1).

3.2.5 Category V _ Difficulty in forming a relationship in school life

Theme Cluster V-1. Difficulty in communication with peers

The subjects in this study were uncomfortable and frustrated with the process of performing group tasks through SNS, and returning students had difficulties in working on group tasks through the internet with peers who did not know each other.

It is more convenient to do group tasks while meeting at school and talking to each other, but now we have to contact through Kakao-talk, and it's very frustrating if I can't contact them. I think these are the downsides of online lectures (Subject #1).

Since I returned to school this semester, there were no students I had close to, but I was suddenly invited to a chat room without meeting them, so it was a very difficult process for me to have to do a group task while talking with those whom I don't know (Subject #4).

It was a pity that we couldn't get together to do something, so even when we were doing a group task, there was no opportunity to get a little stronger in the process (Subject #1).

Theme Cluster V-2. Difficulty in communication with teachers

The subjects in this study, as they communicated with the professor by e-mail, felt a feeling of being exhausted while waiting for the professor's reply and experienced difficulties in forming relationships with professors they had never met. In the face-to-face lecture, there was further explanation based on the responses of the students, but there was no such process in the online lecture.

I usually contact the professor by an e-mail. Some professors reply immediately, but other professors have not read for a long time. In this case, I am worried, 'I'm afraid there is a problem with my grade' But I can't e-mail again because it seems to be impolite behavior. But after long waiting, I

eventually contact the professor through the personal contact information. In conclusion, problems with communication with the professor put me under too much stress (Subject #4).

When I was walking through the hallway during this exam, I didn't know he was the professor of the course I took because I had never seen him, but as he passed by, I became to know he is the professor after hearing his voice (Subject #4).

In the face-to-face lecture, the professors explained additionally to us based on our responses, but in the online lecture, such a process is impossible though it has the advantage of replaying to fill the parts that I had missed (Subject #9).

Theme Cluster V-3. Burdensome for peer relationships through the internet

The subjects in this study felt some burden in forming companionship through the Internet and experienced anxiety that they could be alienated from their friends.

It was burdensome and uncomfortable for me to contact suddenly someone I wasn't familiar with, share opinions, and ask questions (Subject #5).

Honestly speaking, I was nervous. They were close to each other, but I was a stranger so I worried and thought 'What if they don't tell me something that makes them dissatisfied?' and 'What should I do if they do the task excluding me?' That was because we have no chance to meet (Subject #4).

4. Discussion

The subjects in this study experienced the transition to online lectures designed to ensure safety from the sudden COVID-19 outbreak, and various types of educational programs are provided through online lectures. Accordingly, the university also introduced online lectures to provide lectures to students. Since there is no reliable prediction about when COVID-19 will be eliminated, online education will become more important and research on its effectiveness is urgent. A phenomenological study using focus group interviews was conducted to explore the nature of the experiencing the transition to an online lecture related to COVID-19 in nursing students who watched a recorded lecture. This study, through this process, intended to suggest the direction for effective online lectures by investigating the difficulties perceived by students. The main results of this study were compared with those of previous studies that have reported the effects of online education programs on various subjects although direct comparison is difficult because there has been no domestic study that investigated the effectiveness of online lectures in nursing students.

The positive side of the online lecture experience due to the sudden COVID-19 outbreak included that the students watched lectures regardless of time and place, that they have the freedom to manage time such as sleeping during a commute, and students were particularly satisfied with the fact that it was a safe teaching method from infection with COVID-19. It was found that they were also satisfied with the opportunity of re-learning through repeated watching and with the function of controlling the lecture speed. The recorded online lecture, as such, had a positive effect on the students with the convenience of time management and repeatability of lecture contents. It was reported, however, that learners in the beginner had a remarkable preference for recorded lectures, indicating the need to consider, in future online lectures, students' grades and levels.

On the other hand, in the face-to-face lecture, the teachers delivered their own clinical experience, making the lecture lively, but in the monotonous online lecture, the students experienced lectures that are boring and leave nothing. They also regretted that the learning efficiency was lower in online lectures despite more tension and attention. In addition, they felt regretful about situations where they could not concentrate and ask questions immediately, as in the face-to-face lecture. Though it is difficult to compare directly because of differences in lecture themes, a study[14] that investigated the

effectiveness of online Korean lectures reported that 50% of students reported decreased understanding of the lecture contents and another study[15] on the perception of the learners in online Korean lecture found that they prefer online lectures in grammar and listening classes but not in speaking and writing, supporting the results of this study. These problems are maybe because, while the online lectures used email and SNS as a supplementary method of question and answer, the professors may miss some questions and there may be a difference in response time to the students. It may be because, in addition, the provision of materials such as photographs, videos, pictures, and professors' clinical experiences was limited. It is necessary, therefore, to diversify the Internet and equipment environment and to present more rich supplementary and activity resources to improve the learning efficiency of students[14].

Unlike face-to-face learning, learning in an online environment is conducted through a medium between learners and instructors located in an independent space and time. It has been shown, therefore, that separate learning preparation and competency are required and cognitive strategies, motivations, and skills appropriate to the new learning environment should be prepared[16].

The subject in this study, who watched recorded online lectures, reported difficulties because of omitted contents, unclear sound, and lack of computer skills to be used in watching a lecture and thus submitting assignments. In this regard, the Investigation on the Relationships among Students' e-learning Readiness, Teaching Presence and Learning Effects in an Online Learning Environment study reported that, for the learner to learn successfully and systematically, e-learning should be ready and prepared, and the teaching presence perceived by the learners should be high. The e-learning readiness level means the capability to utilize ICT and psychological readiness and the teaching presence means that the presence of the teacher perceived by the learner improves the systematic execution of classes, communication promotion, learning promotion and inspection, teaching content, and sense of instructor's presence[16]. The negative situation in the environmental aspect, therefore, is expected to lead to a call for continuous improvement in the physical aspect and the quality management of lectures to overcome it.

The learning affection, a guide of cognitive learning in a teaching-learning situation and a part of logical thinking, promotes balance and harmony in learners' behavior, helps them identify what is important in learning, adjusts the learning situation to ensure that learning is performed excellently, and plays a role of controlling and managing learning situation[17]. In this study, the loneliness of learning alone and the solitude in forming a relationship in school life were suggested as disadvantages of online lectures. Students feel a sense of loneliness while watching lectures at home alone, and experience a loss of motivation when they think that, if there is unintelligible content, only they cannot understand it. The students regretted that a habit of procrastinating to watch lectures is developed and they became indolent while seating and just watching the lecture. They also felt inconvenience and frustration in the process of working on group tasks only through SNS, had difficulties in communicating with peers, and were concerned that they would be left alone among their friends. They communicated with the professor only through e-mail, which made the formation of a relationship with the professor who they had never seen in person to be difficult. This result is consistent with a study that reported induction of another feeling in online lectures other than face-to-face ones, due to a feeling of isolation and anxiety from asynchronous communication, and anger and frustration due to the system environment[18], a study that reports frustration and loneliness perceived by learners in online lecture due to learning environment different from face-to-face one (online teaching-learning method, interaction between instructors and learners, and lack of sufficient feedback)[19], and a study, after analyzing the structural relationship between the quality of offline and online classes, learning emotions, and learning outcomes in college, that reported that the content of classes and interaction factors had a significant effect on the overall learning emotions[20]. It is recommended, therefore, to perform studies on the composition and delivery method of lecture

contents to improve students' understanding of lecture contents. In addition, it is necessary to develop various learning methods including ICT and teaching methods that enhance student-student, student-professor interaction, and a mixed teaching method with face-to-face classes.

5. Conclusion

This is a phenomenological study that, using focus group interviews, explored the essence of transition into online lecture related to COVID-19 in nursing students. This study investigated nursing students' experiences with online classes that emerged suddenly due to the COVID-19 outbreak and are expected, based on the results, to provide basic data for establishing an online lecture environment and teaching and learning strategy. However, this study may have limitations in generalizing the results of the study in other groups because it applied a self-report method using structured questions for nursing college students who experienced one semester of online lectures. A follow-up study is recommended, therefore, to expand the subjects and compare the results with those of this study.

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