Comparing Basic Social Competencies among Nursing Students before and during the Pandemic

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Abstract

Background: Due to the COVID-19 pandemic, the practical curriculum in over 80% of Japanese nursing universities is shorted. The study aimed to clarify the change in basic social competencies among nursing students by comparing their scores before and during the pandemic. **Method:** Retrospective data from 235 responses from 3rd-grade nursing students were analyzed. The data were separated into two groups—158 respondents before-pandemic and 77 respondents during-pandemic. Respondents were asked to complete a measurement scale two months after the beginning of the 3rd-grade module. **Results:** Our results showed the during-pandemic group's averages were higher than the before-pandemic group's. During the pandemic, nursing students using home-based online learning could not self-evaluate accurately because they could not practice in the field. **Conclusion:** Nursing students who were studying during the during-pandemic self-assessed themselves higher than those who were studying during the before-pandemic because they could not compare with the other students, and the results showed that misunderstandings may arise.

Keywords

Basic Social Competencies, Nursing Students, COVID-19, Pandemic, Online Learning

1. Background

Due to the COVID-19 pandemic, the practical curriculum in over 80% of Japanese nursing universities changed, with 80% of institutions forced to modify the style of the practical training, such as shortening the number of days and hours of on-site training and changing to on-campus practical training. 64% of institu-

tions changed the style of practical training from on-site training to remote training. 40% of institutions used some simulator; 76% used some visual learning materials; 25% of institutions had the online teaching of the clinical instructors [1]. Changes in the learning environment due to the decrease in face-to-face classes and problems in forming human relationships that should be acquired as medical professionals have also been highlighted. A survey of Japanese nursing students reported that the motivation for practical training of nursing students declined, particularly regarding the "acquisition of nursing skills necessary for each practical training subject"; 60% of all students answered that this had a slight or considerable impact, and a high percentage of students recognized this impact [2].

Most universities worldwide were changing similarly: face-to-face training of nursing students was suspended temporarily, initiating virtual education. Theoretical virtual courses for nursing can be valuable because students and teachers do not need to wake up early, fear anybody, or be scolded. Learning occurs with less pressure and more comfort. However, remote learning is not a substitute for classroom learning that allows communication and interaction between teachers and students. The need to take the necessary measures to ensure the safety of clinical education and monitor the quality of virtual education for nursing students is vital [3].

We have investigated the fundamental competencies for working the third-grade nursing students annually since 2016. To understand professional nursing competence better, we sought to clarify changing basic social competencies among nursing students by comparing them before and during the COVID-19 pandemic.

2. Literature Review

Since the COVID-19 pandemic, many studies have been conducted on the mental health of nursing students and the impact of joining the nursing profession.

2.1. The Emotional Status of Nursing Students

The emotional status, fear, anxiety, stress, and depression among nursing students were examined during the COVID-19 pandemic [4]-[10]. Anxiety and fear of COVID-19 levels using the sociodemographic form, Beck Anxiety Inventory (BAI), and Fear of COVID-19 scale was high among 234 nursing students [11]. Analyzing the reports of 33 undergraduate nursing students using the inductive thematic saturation method suggested the fear of possible infection in the classroom was not significant. However, students feared clinical settings [4].

Furthermore, nursing students' preparedness, coping strategies and styles, and the influence of coping mechanisms as predictors of stress were examined [12] [13] [14].

The psychological status was investigated among 366 nursing students, the result showed that the score of anxiety was positively correlated with emotional regulation and coping methods [7]. Among 380 nursing students, 170 (45%) did

not attend clinical practicum during the pandemic. Students who did not participate in clinical training scored lower on the Fear of COVID-19 scale but higher on the QOL scale than those who participated [12]. Therefore, nursing professionals in hospitals should pay attention to the psychological status of the nursing students and focus on training in coping strategies and providing psychological support.

2.2. The Influences of Identity, Attitude, and Sense of Belonging as Nursing Professionals among Nursing Students

The influences of experiences, sense of belonging, and decision-making processes of Japanese nursing students during the COVID-19 pandemic, social distancing, and lockdown were investigated through the virtual interview. All of 49 participants showed a sense of belonging as Japanese citizens and nursing professionals and expressed their desires and missions to upgrade and improve the overall performance of the public health system [15]. 967 nursing students from two public universities completed the online survey. A socio-demographic form and the Coping Strategies used in Crisis Intervention Scale were investigated among 967 nursing students. 44.1% of the students considered their individual resilience sufficient in case of a state of emergency and an acute pandemic [13]. School-related life stress and depression measures were investigated among 266 nursing students and 1938 non-nursing students using an anonymous online survey. Also, follow-up qualitative data were collected to further explore relationships between school-related life stress and depression in 12 nursing students. Nursing students had higher levels of student-life stress but fewer depressive symptoms than students in other academic majors, which implied that they could cope with the pandemic. Social support and belongingness were critical to their academic perseverance as nursing students [16]. A semi-structured interview was conducted among 22 nursing students. Students were cognizant of professional values and their importance and recognized a high level of competence and autonomy in nurses involved with COVID-19 patients [17]. 316 nursing students and 196 graduates were investigated via an online form questionnaire. They felt anxiety and fear related to a high risk of infection. However, they had a high awareness of how to avoid becoming infection carriers. They consequently took preventive measures. Moreover, it influenced students' views on life and death, and the frequency of thinking about the importance of life was significantly higher among students than graduates [18].

The online questionnaires were sent to 456 Nursing students, the results showed that they had a favorable attitude toward the profession and held it in high esteem. However, attitudes toward the nursing profession decreased significantly as anxiety increased [19]. Online questionnaires were conducted among 301 nursing students during the COVID-19 pandemic, it showed that higher depression and anxiety among nursing students decreased health-promoting behaviors, while higher e-health literacy increased health-promoting behaviors [20]. A quasi-experimental research was conducted among 31 nursing students

in the Psychological First-aid Intervention (PFA) group and 33 nursing students in the routine psychological support group. The PFA group had a significant reduction in their psychological distress levels [21]. Online questionnaires on the stress scale were conducted among 415 nursing students. Students with clinical practice fared better than those without regarding their professional identity, while those with high psychological stress had a lower sense of professional identity [22]. Furthermore, 565 nursing students were investigated using a web-based survey during the COVID-19 pandemic, they suggested that nursing educators should strengthen professional identity education and career self-efficacy to improve the sense of professional calling by introducing counseling as required [23].

2.3. The Impact of Remote Learning and Cultivating Student Resilience

The sudden transition to remote learning resulted in several challenges for nursing students and impacted their readiness for practice. 244 students in the nursing department during the national lockdown were investigated via an online questionnaire. Nursing instructors may contribute to lowering student anxiety by maintaining a stable educational framework, providing high-quality distance teaching, and encouraging engagement. Stronger resilience and utilizing humor was associated with significantly lower anxiety levels [5]. 152 nursing students were investigated using a questionnaire about QOL and resilience. It showed that practice readiness requires cultivating resilience and supporting students during the COVID-19 pandemic [24]. 11 nursing students' experiences of the transition to remote learning were investigated using a qualitative descriptive design. The results showed that they demonstrated a remarkable sense of resilience and perseverance. Faculty members need to address student stressors and design remote courses in such a way as to facilitate student engagement and community building [25]. 103 nursing students who transitioned to online and virtual learning platforms explored the perception of preparedness in nursing students through Facebook groups. As school support during the transition increased, comfort in performing nursing skills improved [26].

2.4. The Advantages of Online Learning with Educational Support

The online survey was conducted among 772 nursing students for quantitative data and qualitative data on 540 students. Nursing students also felt alone and isolated from their peers, affecting them personally and academically. They expressed their need for in-person clinical time as essential for their education and knowledge of their jobs after graduation [27]. 291 nursing students were investigated using online forms to explore the methods to deal with future anxiety and stress. While a general dislike of online education exists, some students recognized its advantages as including an increase in available study time, no commute, money saved on transportation and the ability to take care of children

and other family members and pursue their education happily [9].

302 Nursing students, 1st-3rd grade, had remote lectures for 3 months. Nursing students reported their desire for face-to-face lectures and difficulty in completing learning tasks. Nevertheless, after establishing a learning rhythm, they experienced less stress, felt safe from infection, could present their opinions, and had generally favorable attitudes [28]. 173 nursing students during the COVID-19 lockdown were investigated to explore the influence of coping mechanisms. High resilience and family functioning levels were associated with a 2- to 2.4-fold lower risk of stress, anxiety, and depression. In contrast, strong spiritual support was associated with a two-fold lower risk of depression. As the pandemic evolved, it was pointed out that fostering these coping mechanisms might help students to maintain their psychological well-being [14].

Zhi suggested that students' self-learning ability should also be trained in school. Self-learning modules could help nursing students enhance their clinical nursing competency, and educational institutes must include a self-learning section in their teaching practices [22]. 375 nursing students who attended simulation sessions (SBL) were investigated using the online form. The results showed that SBL is a useful teaching strategy to enhance their self-awareness, self-confidence, clinical performance, and efficiency in performing procedures with gender consideration. Especially female students had more positive perceptions toward SB [29]. 98 2nd-grade nursing students experienced the remote learning method utilizing simulated patients and surrogate students. Remote training was helpful for simulated clinical practice incorporating a realism of their relationship with simulated patients [30].

188 college students were investigated after remote physical education classes. Research shows that remote sports classes improve working persons' fundamental competencies, with students responding that such improved their "ability to work," "ability to identify issues," "planning skills," "creativity," "communication skills," and "attentive listening skills," after rather than before class [31].

3. Objective

We aimed to clarify changes in basic social competencies among nursing students by comparing their scores before and during the COVID-19 pandemic.

4. Materials & Method

Retrospective data was gathered from 3rd-grade nursing students at a West Japanese university who entered the nursing department from 2014 to 2020 for 235 respondents (2014; 41, 2015; 40, 2016; 42, 2017; 35, 2019; 42, 2020; 35). There were no inclusion or exclusion criteria, it couldn't gather the data of students who entered in 2018 because of the pandemic.

We conducted a survey two months after they started the 3rd-grade module each term. The data were separated into two groups—158 respondents were surveyed in 2016-2019, before the impact of the COVID-19 pandemic (*before-*

pandemic). Next, 77 respondents were surveyed in 2021-2022 during the COVID-19 pandemic (*during-pandemic*). The *before-pandemic* respondents received the standard (traditional) module: face-to-face lectures and clinical practice for three weeks. The *during-pandemic* respondents received an online module and remote clinical practice.

All respondents were asked to complete a measurement scale comprising the Basic Social Competencies for Nursing students (BSCNs) and the Definition of Nursing Professional and Attitude for learning (DNPA; 6 items) measures. BSCNs consisted of 13 items based on the 12 items of the Fundamental Competencies for Working Persons (FCWP), developed by the Ministry of Economics in Japan and based on ethical competency [32]. DNPA consisted of 6 items developed originally by the author.

The 12 FCWP items were associated with competency elements (independence, force of action, ability to execute, problem-finding ability, planning ability, creativity, transmission power, listening ability, flexibility, situational awareness, discipline, ability to control stress) and utilized for some surveys clarifying the competencies of nursing students [33] [34] [35]. The 6 DNPA items were: "I can explain what nursing is," "I can explain what kind of profession a nurse is," "I can explain what kind of profession a public health nurse is," "I can use my current learning in the future," "I can study on my own in addition to classes," and "I am willing to learn for my future goals."

4.1. Data Analysis

The data were statistically analyzed. Each questionnaire item was rated on a 4-point Likert scale (*agree, slightly agree, slightly disagree, disagree*) and recorded in Microsoft Excel (Microsoft Corporation, Santa Rosa, CA). For the questionnaire, preliminary tests (n = 50) were conducted to assess item consistency (Cronbach's α = 0.821). Each point average was compared with both respondent groupings ("before-pandemic" and "during-pandemic"). The BSCNs and DNPA results were correlated and compared with each group utilizing the Mann-Whitney U and Kruskal-Wallis tests, respectively, with SPSS Ver. 29 (IBM, Chicago, IL).

4.2. Ethical Considerations

Before the survey, the study's purpose was explained to the respondents, who provided informed consent. They were assured of participant anonymity.

5. Results

By comparing the results of the DNPA and BSCNs with each group, five DNPA items showed significant differences; the averages of the *before-* and *during-pandemic* groups were 2.99 and 3.24, respectively. Seven BSCNs items showed significant differences; the averages of the *before-* and *during-pandemic* groups were 2.93 and 3.18, respectively. (See Table 1)

The *during-pandemic* group obtained higher averages than the *before-pandemic*

Table 1. Comparison of points of each item with each group.

Definition of Nursing Professional and Attitude for learning (DNPA)	Average		Provability Value[a]	Significant difference **p < 0.01 *p < 0.05
	Before-pandemic	During-pandemic		
I can explain what nursing is	3.06	3.23	0.039	*
I can explain what kind of profession a nurse is	3.26	3.56	0.000	**
I can explain what kind of profession a public health nurse is	2.37	2.73	0.000	**
I can use my current learning in the future	3.23	3.19	0.954	
I can study on my own in addition to classes	2.92	3.43	0.000	**
I am willing to learn for my future goals	3.10	3.32	0.010	**
Average	2.99	3.24		
Basic Social Competencies for Nursing students (BSCNs)				
Independence	2.92	3.16	0.007	**
Force of action	2.72	2.87	0.123	
Ability to execute	2.94	3.05	0.198	
Problem finding ability	2.91	2.99	0.376	
Planning ability	2.72	2.96	0.007	**
Creativity	2.50	2.49	0.999	
Transmission power	2.73	2.77	0.488	
Listening ability	3.46	3.69	0.007	**
Flexibility	2.94	3.61	0.000	**
Situational awareness	2.96	3.44	0.000	**
Discipline	3.32	3.82	0.000	**
Ability to control stress	2.87	3.09	0.062	
Ethics	3.18	3.45	0.001	**
Average	2.93	3.18		
Total Average	2.95	3.20		

Note: a = Mann-Whitney U test.

group on 17 items. However, seven items showed no significant difference. Furthermore, the averages for two items for the *before-pandemic* group were higher than those of the *during-pandemic* group: "I can use my current learning in the future" and "creativity." The correlation of the BSCN and DNPA items showed several significant differences between the *before-* and *during-pandemic* groups. The *before-pandemic* group's responses showed more significant differences than the *during-pandemic* group's. The responses of *during-pandemic* group showed similarity. (See Table 2)

Table 2. The comparison of significant differences of DNPA and BSCNs items (Kruskal-Wallis test).

	DNPA items											
	I can explain what nursing is		I can explain what kind of profession a nurse is		I can explain what kind of profession a public health nurse is		I can use my current learning in the future		I can study on my own in addition to classes		I am willing to learn for my future goals	
BSCNs items	Before-pandemic	During-pandemic	Before-pandemic	During-pandemic	Before-pandemic	During-pandemic	Before-pandemic	During-pandemic	Before-pandemic	During-pandemic	Before-pandemic	During-pandemic
Independence	0.002**	0.287	0.002**	0.855	0.353	0.162	0.001**	0.003**	0.002**	0.113	0.002**	0.059
Force of action	0.019*	0.342	0.017*	0.023*	0.979	0.596	0.000**	0.417	0.030*	0.004**	0.002**	0.025*
Ability to execute	0.000**	0.405	0.000**	0.090	0.026**	0.214	0.000**	0.005**	0.000**	0.061	0.002**	0.022*
Problem finding ability	0.006**	0.673	0.000**	0.127	0.116	0.986	0.001**	0.135	0.059	0.491	0.000**	0.442
Planning ability	0.164	0.722	0.041*	0.221	0.217	0.233	0.032*	0.012*	0.001**	0.016*	0.016*	0.061
Creativity	0.231	0.075	0.038*	0.513	0.090	0.222	0.178	0.070	0.032*	0.713	0.106	0.263
Transmission power	0.011*	0.748	0.017*	0.990	0.277	0.112	0.000**	0.204	0.018*	0.354	0.285	0.095
Listening ability	0.441	0.136	0.160	0.001**	0.050*	0.180	0.006**	0.113	0.043*	0.012*	0.002**	0.023*
Flexibility	0.279	0.025*	0.031*	0.003**	0.060	0.176	0.067	0.389	0.490	0.002**	0.014*	0.151
Situational awareness	0.148	0.376	0.002**	0.043*	0.185	0.800	0.005**	0.054	0.025*	0.006**	0.001**	0.050*
Discipline	0.011*	0.537	0.010**	0.660	0.000**	0.139	0.001**	0.015*	0.329	0.077	0.003**	0.096
Ability to control stress	0.024*	0.683	0.166	0.451	0.150	0.268	0.857	0.141	0.064	0.026*	0.387	0.005**
Ethics	0.194	0.492	0.023*	0.004**	0.011*	0.686	0.593	0.267	0.130	0.137	0.202	0.215
**P < 0.01	3	0	5	3	2	0	8	2	3	3	7	1
*P < 0.05	4	1	6	2	2	0	1	2	5	3	2	4
The total number of significant difference	7	1	11	5	4	0	9	4	8	6	9	5

The rate of the 4-point Likert scale (*agree* to *disagree*) of DNPA and BSCNs for each item is shown in **Figure 1** and **Figure 2**. The respondents' rate of selecting *agree* for "I can explain what kind of profession a nurse is" between the *before-* and *during-pandemic* groups were 28.5% and 55.8%, respectively. The respondents' rates of choosing *agree* for "I can study on my own in addition to classes" were 13.9% and 48.1%, respectively. The respondents' rates of agreement for "flexibility," "situational awareness," "discipline," and "ethics" for the *before-pandemic* group were 19.7%, 17.8%, 41.8%, and 27.8%. In contrast, for the *during-* group, they were 62.3%, 48.1%, 84.4%, and 50.6%, respectively. Those items related to both groups had significant differences between them (p < 0.01).

The BSCNs items of "force of action," "ability to execute," "problem finding ability," "creativity," "transmission power," and "ability to control stress" had no significant differences between each group. (See **Table 1**)

6. Discussion

Our results show that the *during-pandemic* group scored higher than the *before-*

DNPA of Before pandemic (n=158)

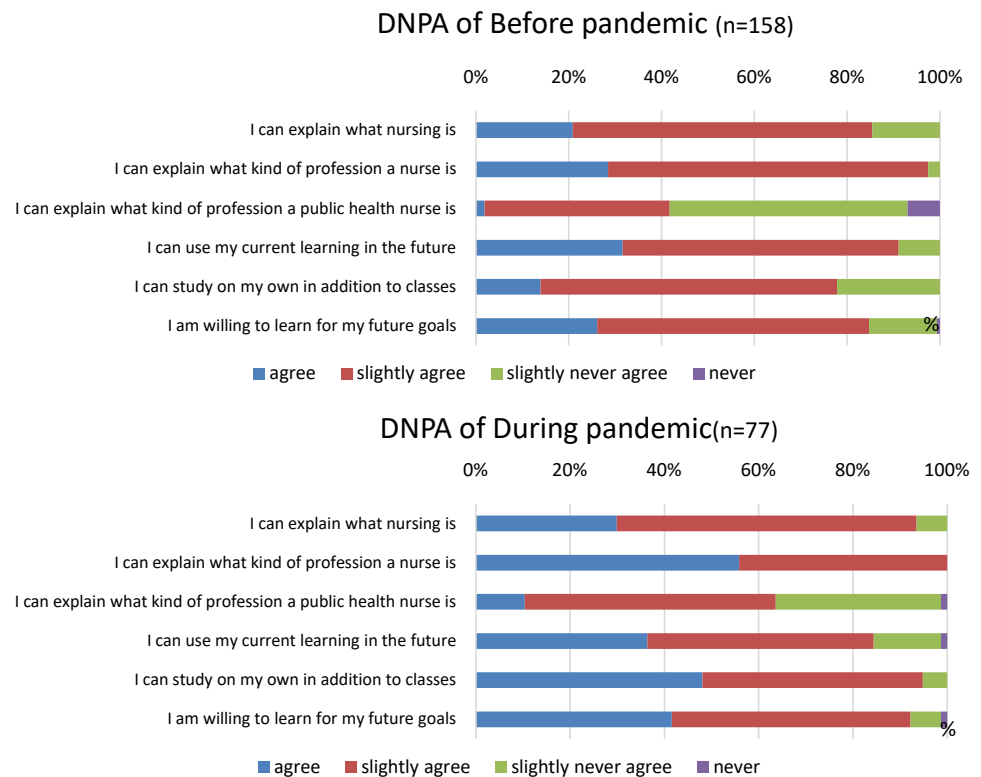

DNPA of During pandemic(n=77)

Figure 1. Comparison for the rate of DNPA for each item.

group. The *during-pandemic* respondents' group rate, without practical on-site training, regarding the "I can explain what kind of profession a nurse is" item was better than the *before* group's. Similarly, the average scores of nursing students lacking experience in clinical training were significantly higher than those who had it for 62 of the 66 items [36]. However, they may have been unable to realistically evaluate this aspect because they could not practice in the field.

Furthermore, the *during-pandemic* group's responses showed a few differences for each item. Whereas the "force of action," "ability to execute," "problem finding ability," "creativity," "transmission power," and "ability to control stress" items had no significant differences between each group.

Yavaş Çelik (2021) reported that nursing students' social competencies were associated only with adaptation to staying at home during the pandemic [37]. Additionally, Natarajan (2022) reported that students had low social presence and satisfaction levels with emergency remote teaching [38].

Lastly, Miyamoto (2022) reports that metacognitive learning strategies during the one-year of online learning among first-year nursing students yielded similar responses except for 1 of the 23 items: "I know my strengths and weaknesses," where the value was significantly lower. These reports suggest that nursing students who participated in online learning at home have difficulty self-assessing effectively because they cannot compare with others [39].

Matsumori (2021) reports that nursing education methods promoting professional socialization in nursing students include self-learning, online media,
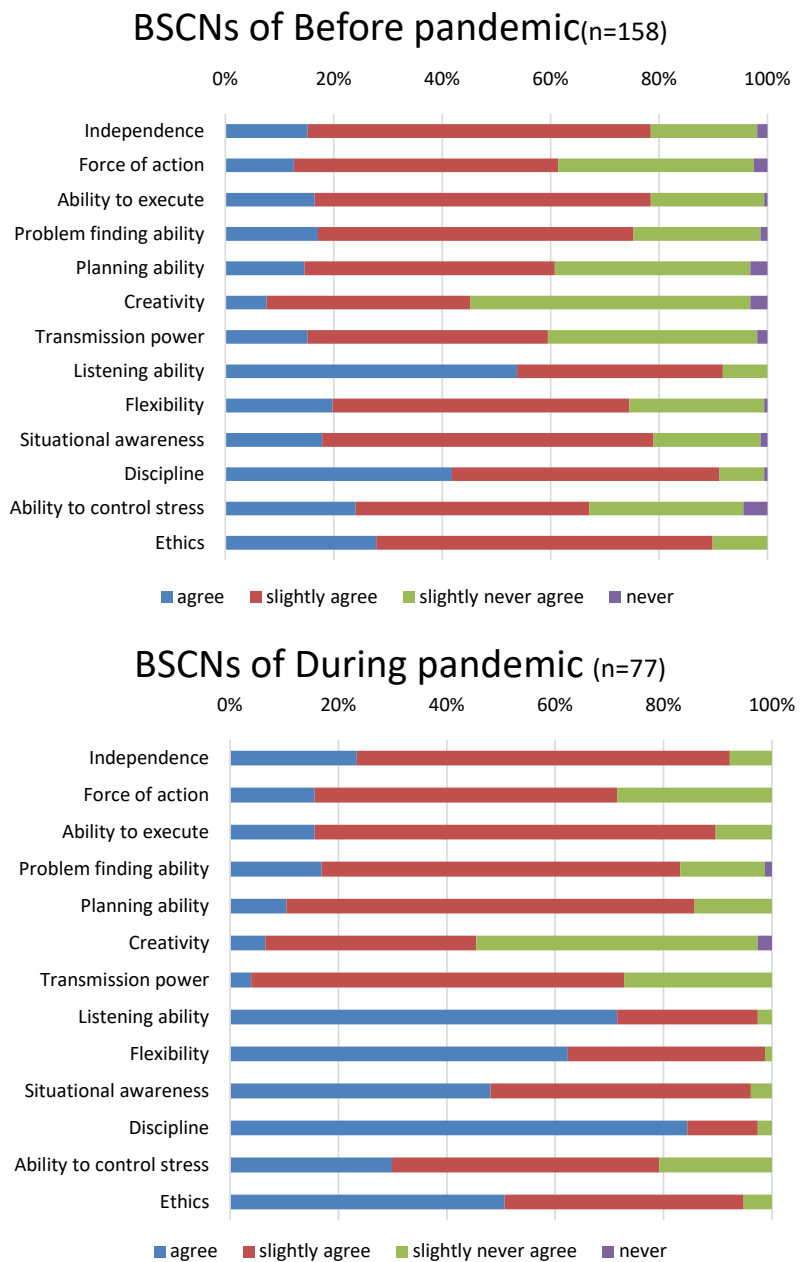
BSCNs of Before pandemic(n=158)

BSCNs of During pandemic (n=77)

Figure 2. Comparison of the rate of BSCNs each item.

extracurricular elements, and clinical practice. However, socialization processes differed in that first-year students without sufficient practical training tend to have ideological answers, while fourth-year students tend to have practical answers due to their education. Thus, the process requires support from instructors and mentors [40].

A survey of new nurses revealed that the self-evaluation of their nursing skills was higher than that of other nurses with clinical experience. Moreover, new nurses' self-evaluation decreased significantly after 12 months compared to when they entered the workforce in Japan [36]. Hence, nursing students that stayed home during the COVID-19 pandemic had high self-assessment. There-

fore, when nursing students without practical experience in clinical settings face such situations, they might experience stress or reality shock. Therefore, supporting nursing students during the pandemic related to clinical settings is essential. This support should address stress and reality shock. In addition, it should foster professional identity by promoting an understanding of their situational experiences.

Furthermore, nursing students and faculty similarly experienced trauma from the COVID-19 pandemic. Research has proposed a trauma-informed approach to nursing education, providing active coping skills and safe learning spaces [41]. Woo (2022) proposes pro-social behavior promotion in the nursing curriculum and health-related risk communications since they are important predictors of influence. *Risk communication* is the mutual sharing of accurate information about societal risks regarding specific organizations [42]. Narrative and care poetry are effective therapeutic tools. They facilitate reflection and promote the nursing students' emotional awareness [8]. Misunderstandings among students and nursing educators may arise in the absence of face-to-face communication due to pandemic behavioral limitations and confinement. Therefore, pursuing meaningful information and research regarding the mental, physical, and social impacts of long-term stress for nursing students and educators is essential. This training should promote mutual understanding using various communication tools.

7. Conclusion

This study aimed to clarify the changing basic social competencies among nursing students by comparing their scores before and during the COVID-19 pandemic. Retrospective data were analyzed from 235 3rd-grade nursing student respondents. The data were separated into two groups—one before the impact of COVID-19 (*before-pandemic*, n = 158) and the other during the COVID-19 pandemic (*during-pandemic*, n = 77). A survey was administered two months after they started the 3rd-grade module each term. Our results show that the average of the *during-pandemic* group was higher than the *before-pandemic* group. However, there was a possibility that nursing students during the pandemic could not realistically self-evaluate because they could not practice in the field. Moreover, nursing students with home-based online learning self-assess ineffectively because they cannot compare themselves with others. Our results further show that misunderstandings may arise among students and nursing educators due to pandemic behavioral limitations and confinement. Supporting nursing students is essential, especially regarding research into mental, physical, and social impacts of long-term stress on nursing students and educators, including promoting mutual understanding utilizing various communication tools.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this study.

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