

# Awareness of Healthy Life and Mental Health of Nursing College Students Before and After the COVID-19 Outbreak with the Involvement in Sports Activities

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## Abstract

This study analysed the awareness of healthy life and mental health among college nursing students, both before and after the COVID-19 outbreak. Additionally, their participation in sports was examined. This study aimed to compare two types of results based on the analysis conducted. A total of 982 individuals took part in a survey examining the awareness of healthy living, mental health, and interest in sports activities among nursing college students in Korea. This included 492 students surveyed before the COVID-19 outbreak and 490 individuals surveyed after the outbreak. The study's findings were as follows: First, there were notable disparities in awareness of a healthy lifestyle pre- and post-the COVID-19 pandemic. This includes the importance placed on leading a healthy life, the level of interest in maintaining one's health, the perceived usefulness of health-related information, an overall understanding of what constitutes a healthy lifestyle, and engagement in sports activities. Furthermore, notable variations were observed in the sub-factors of mental health, namely emotional health, social health, psychological health, and overall mental health. Second, the level of awareness regarding a healthy lifestyle varied significantly across different grade levels prior to the COVID-19 outbreak. Notably, the upper grades (3rd and 4th graders) exhibited a significantly higher level of awareness compared to the 1st and 2nd graders. The level of mental health varied significantly across different grade levels, with higher grades showing a higher degree of mental well-being. This correlation can be attributed to increased participation in sports. Third, there were no notable variations in the awareness of healthy living and mental health following the COVID-19 outbreak across different grade levels. The research findings will provide valuable data to support the development of nursing college students into professional nurses. This data will enhance their understanding of healthy living and mental well-being, as well as encourage their participation in sports.

**Keywords:** Psychological Health, College Student, Healthy Life, Mental Health, Sports Involvement, COVID-19.

## 1. Introduction

In recent times, there has been a rapid transformation in social and economic conditions due to the emergence of the 4th industrial revolution era and the future society. In early 2020, a novel infectious disease known as COVID-19 emerged globally, impacting college students who often experience stress, anxiety, reduced creativity, and depression. During the transitional phase of social and economic development into adulthood, the impact of COVID-19 has led to a complete shift away from in-person classes at universities. As a result, students are now required to complete assignments online, with their physical mobility and movement severely restricted (Son et al., 2020). In the field of nursing, it is crucial to establish direct and personal relationships for effective service delivery through interpersonal interactions, particularly during college.

To prioritise both physical and mental well-being, it is crucial to prioritise our own health before tending to the well-being of others. This (Jardon & Choi, 2022) can be

accomplished by engaging in healthy activities such as sports. Given their stage of development, college students often exhibit a sense of invincibility, leading to a lack of enthusiasm for healthy lifestyles and activities such as sports and other health-conscious behaviours. Consequently, a decline in health occurs, leading to poor well-being and potential long-term health complications in adulthood. College students studying nursing gain a heightened understanding of health and mental well-being. They also learn to adapt to various environments and engage in activities like sports during their college experience, which is crucial for their future career as nurses (Huang et al., 2020).

During the COVID-19 pandemic, nursing students faced challenges in their journey towards maturity and self-actualization. The environment made it difficult to engage in health-promoting activities, such as sports, and hindered their ability to fulfil their developmental tasks as future nurses (Gao et al., 2021). During the college years, students experience significant changes, particularly in the current challenging circumstances caused by COVID-19.

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Nursing students have been found to face greater psychological and emotional distress compared to students in other majors. Unlike students in other fields, they need to be mindful of maintaining a healthy lifestyle and engaging in physical activities to support their mental well-being. This is because they are required to attend both theoretical classes and clinical practicum focused on healthcare (Savitsky et al., 2020). Furthermore, it is crucial for individuals to actively engage in sports activities to promote their overall physical and mental well-being.

Being aware of and participating in sports can be highly beneficial in this regard. With the recent impact of COVID-19, our attention has shifted towards the importance of both physical and mental health. However, the emphasis on activities that promote a healthy lifestyle in the physical aspect has been lacking (Laurier, Pascuzzo, & Beaulieu, 2021). In addition, the COVID-19 pandemic has had a significant impact on nursing college students. The prolonged absence of clinical practice and quarantine measures have resulted in increased stress levels and hindered their career development. Consequently, their mental well-being has been negatively affected (Gao et al., 2021). As per research, nursing majors often encounter a more rigid hierarchical structure and academic environment compared to other majors. This can lead to heightened emotional, social, and psychological challenges (Mulyadi et al., 2021). Therefore, it was necessary to implement certain calming elements such as engaging in healthy and creative activities, such as sports, in order to reduce the build-up of negative emotions among nurses (Ai et al., 2021).

Therefore, considering the prominent issue arising from the consequences of COVID-19, this study aims to examine the correlation between mental health factors and the level of awareness among nursing students at various grade levels. The study will utilise different parameters to assess the students' engagement in healthy activities, particularly sports, both before and after the outbreak of COVID-19.

To achieve the intended goal, a quantitative approach was used in this study. The participants were nursing students from various grade levels in Korea. The purpose of the study was to gather fundamental data to guide students in their development of nursing skills. Additionally, the study aimed to emphasise the benefits of sports involvement and its impact on the nursing profession through empirical research.

## 2. Literature Review

Understanding and showing interest in living a healthy life involves being self-aware of one's thoughts and emotions. It also requires recognizing the importance of a healthy lifestyle and determining whether health information is

beneficial (Mirahmadizadeh et al., 2020; Patelarou et al., 2021). Mental health is not solely defined by the absence of mental disorders but rather as a state of happiness (Mirahmadizadeh et al., 2020). Social, psychological, and emotional health are just a few examples of the many factors that affect mental health. In the literature, there is a debate surrounding the term psychological health, which is often discussed alongside the concept of psychological well-being. Psychological health is seen as encompassing two main categories: the hedonic perspective, which emphasizes happiness, positive emotions, and life satisfaction; and the eudaimonia perspective, which focuses on the meaningfulness of life and self-actualization (Wissing & Temane, 2008).

Furthermore, the social health of an individual encompasses their relationships and connections with others, such as individuals, groups, and communities. It also includes the frequency of their involvement and interaction with neighbors or other members of society (Lin et al., 2023). In addition, emotional health encompasses maintaining a healthy balance between positive and negative emotions and evaluating one's overall life satisfaction (Keyes, 1998; Langeland, 2020). Extensive research has revealed a wealth of studies and empirical evidence highlighting the significant impact on mental health across various age groups and societal demographics. One particularly noteworthy consequence is the detrimental effect on mental health and its associated factors (Shahyad & Mohammadi, 2020).

The COVID-19 pandemic has had a profound impact on human history. In response to this significant health challenge, the medical field has been greatly mobilised, drawing support from society and its own resources to effectively combat the virus (Qureshi & AlRajhi, 2020). In the medical field, nurses play a crucial role in interacting with patients. During the Covid pandemic, they had to quickly adapt and enhance their skills to effectively handle new and unexpected tasks. Initially, this posed a significant challenge for nurses, making the training of new nurses of utmost importance (Li & Qu, 2021). Besides its impact on the practical field, the COVID-19 pandemic has presented significant challenges in the training of new and aspiring nurses. The implementation of lockdown measures and restrictions on movement has hindered educational activities (Dziurka et al., 2022).

The absence of adequate training opportunities has resulted in significant psychological and mental distress among nursing students. This distress is particularly pronounced among senior-level students, who experience heightened levels of anxiety, tension, and emotional disturbance because of the potential loss they face (Aslan

& Pekince, 2021). During times of restricted movement and increased stressors related to education and career development, frontline nurses experienced reduced levels of psychological and emotional stress. They also reported decreased social interaction due to limited mobility and higher levels of anxiety (Özdemir, Özyürek, & Kılıç, 2023). Further, a study examined the relationship between stress levels and grade levels among student nurses, considering socioeconomic and academic factors. The findings revealed that students in higher grades, specifically those in their 3rd and 4th year, experienced higher levels of stress and anxiety regarding their career development, likely due to the impact of COVID-19. Conversely, students in their initial academic years reported relatively lower stress levels (Mussi et al., 2020). During periods of significant psychological or mental distress, it is crucial to have alternative methods or strategies to redirect our thoughts away from negativity. It is also important to cultivate an understanding of the significance of mental health (Drigas & Papoutsis, 2020).

Engaging in physical activity is recommended as an effective strategy for reducing stress, promoting mental health, and leading a healthy life. Physical activities such as exercise, sports, and various athletic pursuits have been extensively studied and analysed from multiple perspectives; the integration of exercise and sports activities, under proper supervision, can enhance happiness, alleviate stress, and mitigate the negative impact of stressors caused by COVID-19.

Additionally, maintaining a consistent schedule of workouts and sports activities promotes social interaction, social health, and psychological well-being. By combining these factors, individuals can achieve a healthy lifestyle and improve their mental health (Ai et al., 2021). Furthermore, research has emphasised the importance for organisations and institutes to adopt effective coping strategies. This includes raising awareness about the significance of a healthy lifestyle, implementing strategies to reduce stressors, and utilising innovative methods such as digital support for training and communication. Additionally, incorporating supportive activities within the work environment can encourage improvements in the health and mental well-being of nurses and other medical staff (Htay et al., 2021).

From the nursing domain, a study has shed light on the nutrition and exercise habits of nursing students. The study revealed concerning levels of anxiety, stress, and depression among student nurses, as well as a lack of attention to healthy eating and exercise behaviours due to the COVID-19 pandemic (Özden & Parlar Kilic, 2021). Provide clear and academic recommendations to enhance

student nurses' understanding of the significance of a balanced diet, nutritious eating habits, regular exercise, physical activity, and effective stress management during the COVID-19 pandemic. In addition to the COVID phase, research has consistently shown the value of regular exercise and participation in healthy sports or physical activities as a means to reduce stress, anxiety, and negative behaviours (Jugl, Bender, & Lösel, 2023).

To effectively mitigate the stress and negative impacts of COVID-19, it is crucial to prioritise mental health and a healthy lifestyle. This can be achieved by promoting sports, exercise, and physical activities among student nurses. Numerous studies have highlighted the significant role of sports activities in maintaining optimal health (Liao et al., 2023). The study examines the awareness of healthy life and mental health among student nurses in Korea before and after the COVID-19 outbreak. It analyses various scholarly evidence to investigate this topic, specifically focusing on the students' grade level.

### 3. Research Methodology

#### 3.1. Strategy and Population

The study employed a descriptive statistical analysis technique and a quantitative research methodology to investigate the issue of mental health among nursing students in Korea. The nursing students were chosen as the target population for this study, as it aligns with the research objective. The participants consisted of university students who were studying nursing at 4-year universities in both metropolitan areas such as Seoul and Gyeonggi-do, as well as non-metropolitan areas. The study examined the background variables of college students majoring in nursing who were enrolled in both metropolitan and non-metropolitan four-year universities. Tables 1 and 2 provide information on the study subjects' background.

**Table 1**

*Research Subject: Before COVID-19.*

	Division	Number	Percentage
Gender	Male	215	43.6
	Female	277	56.4
Grade	1	141	28.7
	2	117	23.8
	3	113	23.0
	4	121	24.5
Region	Non-metropolitan	252	51.2
	Metropolitan	240	48.8
	Total	492	100.0

**Table 2***Research Subject: After COVID-19.*

	Division	Number	Percentage
Gender	Male	221	45.1
	Female	269	54.9
Grade	1	130	26.5
	2	123	25.1
	3	115	23.4
	4	122	25.0
Region	Non-metropolitan	249	50.8
	Metropolitan	241	49.2
	Total	490	100.0

### 3.2. Research Tool

We conducted a thorough review of both domestic and international research papers on health, wellness, and quality of life. The purpose was to validate the items of our research tool, specifically focusing on the awareness of healthy life among college students majoring in nursing. The content validity was confirmed by three nursing professors with Ph.D. degrees on two different occasions. The overall reliability was Cronbach's  $\alpha$  .905, which appeared as a reliable tool, and consisted of 8 items on a Likert 5-point scale ranging from 'not at all (1 point) to very much (5 points)'. This tool is as follows (Table 3).

**Table 3***Awareness of Healthy Life.*

Sub factor	Number	Cronbach's $\alpha$
Understanding of healthy life	2	0.912
Interest in a healthy life	2	0.907
The need for a healthy life	2	0.917
Whether health information is helpful for a healthy life	2	0.931
Total	8	0.905

**Table 5***Comparative Analysis of Awareness of Healthy Life before and after COVID-19.*

Sub-factor	Classification	N	M	SD	t	p
Understanding of healthy life	Before COVID-19 outbreak	492	3.34	1.537	-5.337	0.000
	After COVID-19 outbreak	490	3.85	1.484	-5.338	0.000
Interest in a healthy life	Before COVID-19 outbreak	492	3.50	1.370	-5.223	0.000
	After COVID-19	490	3.98	1.528	-5.222	0.000
The need for a healthy life	Before COVID-19 outbreak	492	3.22	1.723	-10.939	0.000
	After COVID-19 outbreak	490	4.25	1.167	-10.947	0.000
Whether health-related information helps you live a healthy life	Before COVID-19 outbreak	492	3.44	1.618	-9.403	0.000
	After COVID-19 outbreak	490	4.28	1.137	-9.410	0.000
Awareness of a healthy life	Before COVID-19 outbreak	492	3.37	1.169	-9.601	0.000
	After COVID-19 outbreak	490	4.09	1.169	-9.601	0.000

This tool is a Korean adaptation of the Mental Health Continuum Short Form (MHC-SF), a measurement tool used to assess mental health. It was developed by Keyes and Annas (2009). This tool consists of a total of 14 items on a Likert 6-point scale ranging from 'not at all (0 points) to very much (5 points)', and the overall reliability was Cronbach's  $\alpha$  .920. The following (Table 4) shows overall.

**Table 4***Mental Health Parameters.*

Sub factor	Number	Cronbach's $\alpha$
Emotional health	3	0.912
Social health	5	0.931
Psychological health	6	0.925
Total	14	0.920

### 3.3. Data Collection Strategy

The researcher conducted the test in November 2019, prior to the COVID-19 outbreak, and in November 2021, following the outbreak. 500 copies were distributed and tested directly before and after the outbreak of COVID-19. Prior to conducting the tests, the subjects were provided with a clear explanation of the purpose, and all tests were carried out in an anonymous manner. Following the collection of data, a total of 492 data points were gathered in 2019 prior to the COVID-19 outbreak. Additionally, 490 data points were collected in 2021 after the outbreak. These data sets were then processed using SPSS 25.0 for statistical analysis. The statistical processing method involved conducting an independent sample t-test, one-way analysis of variance (ANOVA), and post hoc test Scheffé.

## 4. Analysis and Results

Prior to the COVID-19 pandemic, there was a comparative and analytical examination of the understanding and promotion of a healthy lifestyle.



Tables 5 and 6 demonstrate a significant statistical difference in the levels of awareness regarding a healthy lifestyle and mental health before and after the onset of COVID-19 ( $p < 0.001$ ). Table 5 highlights the importance of a healthy lifestyle, the usefulness of health-related information, and the awareness of maintaining good health. These factors received an average score of 4 or higher following the COVID-19 pandemic. As a result of the COVID-19

outbreak, it has been confirmed that there was a higher level of awareness regarding healthy living after the outbreak compared to before. In contrast, Table 6 reveals that the outbreak of COVID-19 resulted in a decrease in the average scores for emotional, social, and psychological health, all falling below 3 points. Research findings indicate a notable decline in the mental well-being of nursing students in response to the COVID-19 pandemic.

**Table 6**

*Comparative Analysis of Mental Health Before and After COVID-19 Outbreak.*

Sub-factor	Classification	N	M	SD	t	p
Emotional mental health	Before COVID-19 outbreak	492	3.83	1.024	17.437	.000
	After COVID-19 outbreak	490	2.38	1.527	17.423	.000
Social mental health	Before COVID-19 outbreak	492	3.55	1.289	8.848	.000
	After COVID-19 outbreak	490	2.79	1.400	8.846	.000
Psychological mental health	Before COVID-19 outbreak	492	3.77	1.484	10.579	.000
	After COVID-19 outbreak	490	2.71	1.641	10.577	.000
Mental health	Before COVID-19 outbreak	492	3.72	1.116	14.392	.000
	After COVID-19 outbreak	490	2.63	1.248	14.389	.000

Below, we will discuss the analysis of awareness and mental health in relation to healthy living, both before and after the COVID-19 outbreak. The results were presented by

analysing descriptive statistics and conducting a one-way ANOVA on perceptions of healthy life before and after the outbreak of COVID-19, categorised by grade.

**Table 7**

*Awareness of Healthy Life by Grade Before COVID-19 Outbreak: Descriptive Statistics.*

Grade	Understanding of Healthy Living		Interest in a Healthy Life		The Need for a Healthy Life		Whether Health-Related Information Helps You Live a Healthy Life		Awareness of a Healthy Life	
	M	SD	M	SD	M	SD	M	SD	M	SD
1	3.07	1.60	3.31	1.41	3.04	1.75	3.23	1.62	3.18	1.12
2	3.13	1.55	3.34	1.36	3.09	1.75	3.27	1.71	3.19	1.19
3	3.67	1.43	3.58	1.39	3.44	1.69	3.65	1.54	3.58	1.14
4	3.52	1.48	3.79	1.28	3.48	1.69	3.65	1.57	3.61	1.17
Total	3.34	1.54	3.50	1.37	3.25	1.73	3.44	1.62	3.38	1.17

**Table 8**

*Awareness of Healthy Life by Grade Before COVID-19 Outbreak: One-way ANOVA (ANOVA).*

Sub-factor	SS	df	MS	F	p	Scheffé
Understanding of healthy life	Inter-group	31.161	3	10.387	4.492	0.004
	Within-group	1128.418	488	2.312		3,4 > 1,2
	Total	1159.579	491			
Interest in a healthy life	Inter-group	18.781	3	6.260	3.385	0.018
	Within-group	902.468	488	1.849		3,4 > 1,2
	Total	921.249	491			
The need for a healthy life	Inter-group	19.619	3	6.540	2.210	0.086
	Within-group	1444.127	488	2.959		
	Total	1463.745	491			
Whether health-related information helps you live a healthy life	Inter-group	19.923	3	6.641	2.559	0.064
	Within-group	1266.248	488	2.595		
	Total	1286.171	491			
Awareness of healthy life	Inter-group	20.947	3	6.982	5.238	0.001
	Within-group	650.577	488	1.333		3,4 > 1,2
	Total	671.524	491			

According to the findings in Table 7, there was an observed increase in the average score of seniors' awareness of a healthy life prior to COVID-19 as their age increased. Furthermore, based on the findings from Scheffé's post-

test in Table 8, it is evident that there exists a significant disparity in the comprehension, interest, and awareness of a healthy lifestyle between students in 1st grade and those in the 2nd, 3rd, and 4th grades ( $p < 0.05$ ).

**Table 9**

*Mental Health by Grade Before COVID-19 Outbreak: Descriptive Statistics.*

Grade	Emotional Health		Social Health		Psychological Health		Mental Health	
	M	SD	M	SD	M	SD	M	SD
1	3.61	0.94	3.30	1.22	3.52	1.47	3.47	1.04
2	3.72	1.09	3.39	1.34	3.53	1.56	3.55	1.20
3	4.07	0.94	3.80	1.27	3.89	1.52	3.92	1.12
4	3.98	1.06	3.78	1.27	4.19	1.29	3.98	1.03
Total	3.83	1.02	3.55	1.29	3.77	1.48	3.72	1.12

**Table 10**

*Mental Health by Grade Before COVID-19 Outbreak: One-Way ANOVA (ANOVA).*

	Sub-factor	SS	df	MS	F	p	Scheffé
Emotional health	Inter-group	17.562	3	5.854	5.740	0.001	
	Within-group	497.657	488	1.020			3,4>1,2
	Total	515.219	491				
Social health	Inter-group	25.275	3	8.425	5.202	0.002	
	Within-group	790.431	488	1.620			3,4>1,2
	Total	815.706	491				
Psychological health	Inter-group	38.581	3	12.860	6.019	0.000	
	Within-group	1042.632	488	2.137			4>1,2,3
	Total	1081.213	491				
Mental health	Inter-group	24.823	3	8.274	6.882	0.000	
	Within-group	586.743	488	1.202			3,4>1,2
	Total	611.566	491				

According to the findings in Table 9, the average mental health score of the upper grades was higher than that of the lower grades prior to the COVID-19 outbreak. In Table 10, the findings from Scheffé's post-test indicate that there were significant differences ( $p < 0.05$ ) in emotional health, social health, and mental health among the 1st, 2nd, and

3rd graders. There was a notable distinction in psychological health between the 4th grade and the 1st, 2nd, and 3rd grades, with a statistically significant difference ( $p < 0.05$ ). Analysis was conducted to compare the level of awareness regarding a healthy lifestyle in the aftermath of the COVID-19 pandemic.

**Table 11**

*Awareness of Healthy Life by Grade After COVID-19 Outbreak: Descriptive Statistics.*

Grade	Understanding of Healthy Living		Interest In a Healthy Life		The Need for A Healthy Life		Whether Health-Related Information Helps You Live a Healthy Life		Awareness of a Healthy Life	
	M	SD	M	SD	M	SD	M	SD	M	SD
1	3.99	1.47	4.26	1.43	4.54	0.78	4.54	0.84	4.33	1.02
2	3.65	1.66	3.75	1.71	4.31	1.04	4.31	1.05	4.00	1.24
3	3.71	1.47	3.98	1.45	4.16	1.28	4.17	1.24	4.01	1.20
4	4.08	1.27	3.96	1.48	4.03	1.40	4.12	1.29	4.05	1.17
Total	3.85	1.48	3.98	1.53	4.25	1.17	4.28	1.14	4.09	1.17

The average score of all grades in the awareness of a healthy life after the COVID-19 outbreak was higher

than before COVID-19 outbreak, as shown in Table 11. Furthermore, the findings from Scheffé's post-test in

(Table 12) indicate a significant statistical difference between the 1st grade and the 2nd, 3rd, and 4th grade in terms of the importance of a healthy life and the impact of health information on one's well-being ( $p < .05$ ). It is

evident that freshmen studying nursing and residing on campus possess a strong understanding of the importance of maintaining a healthy lifestyle through the utilisation of health-related resources.

**Table 12**

*Awareness of Healthy Life by Grade after COVID-19 Outbreak: One-way ANOVA (ANOVA).*

	Sub-factor	SS	df	MS	F	p	Scheffé
Understanding of healthy life	Inter-group	16.226	3	5.409	2.478	0.061	
	Within-group	1060.899	486	2.183			
	Total	1077.124	489				
Interest in healthy life	Inter-group	15.304	3	5.101	2.201	0.087	
	Within-group	1126.298	486	2.317			
	Total	1141.603	489				
The need of a healthy life	Inter-group	16.697	3	5.566	4.168	0.006	
	Within-group	648.927	486	1.335			1>2,3,4
	Total	665.624	489				
Whether health-related information helps you live a healthy life	Inter-group	12.745	3	4.248	3.336	0.019	
	Within-group	618.980	486	1.274			1>2,3,4
	Total	631.725	489				
Awareness of a healthy life	Inter-group	8.610	3	2.870	2.113	0.098	
	Within-group	660.005	486	1.358			
	Total	668.615	489				

**Table 13**

*Mental Health by Grade after COVID-19 Outbreak: Descriptive Statistics.*

Grade	Emotional Health		Social Health		Psychological Health		Mental Health	
	M	SD	M	SD	M	SD	M	SD
1	2.15	1.54	2.63	1.54	2.49	1.65	2.42	1.35
2	2.39	1.55	2.83	1.34	2.57	1.59	2.60	1.15
3	2.47	1.50	2.85	1.34	2.86	1.63	2.73	1.25
4	2.50	1.52	2.85	1.40	2.91	1.68	2.75	1.23
Total	2.38	1.53	2.79	1.40	2.71	1.64	2.63	1.25

**Table 14**

*Mental Health by Grade after COVID-19 Outbreak: One-Way ANOVA (ANOVA).*

	Sub-factor	SS	df	MS	F	p	Scheffé
Emotional Health	Inter-group	8.663	3	2.888	1.241	0.294	
	Within-group	1131.284	486	2.328			
	Total	1139.947	489				
Social Health	Inter-group	4.108	3	1.369	.697	0.554	
	Within-group	954.388	486	1.964			
	Total	958.496	489				
Psychological Health	Inter-group	15.341	3	5.114	1.910	0.127	
	Within-group	1300.992	486	2.677			
	Total	1316.333	489				
Mental Health	Inter-group	7.974	3	2.658	1.714	0.163	
	Within-group	753.750	486	1.551			
	Total	761.723	489				

The data presented in Table 13 indicates a notable decline in mental health following the COVID-19 outbreak across all grade levels. Furthermore, based on Scheffé's post-test in Table 14, it was found that there was no statistically significant difference between grades ( $p > 0.05$ ). The findings indicated a notable decrease in mental health

levels among nursing college students of all grades following the COVID-19 outbreak. It is evident that the emotional, social, and psychological health levels of nursing major college students were below the average score of 3 points. This confirms the low level of mental health among these students.

## 5. Discussion and Conclusion

### 5.1. Discussion on the Study Findings

The study has made efforts to examine the awareness of healthy living and mental health among college students majoring in nursing in Korea, as well as their participation in sports activities. It has highlighted several key findings. The level of awareness regarding healthy living and mental well-being underwent a noticeable shift following the outbreak of COVID-19. Prior to the COVID-19 pandemic, the level of awareness regarding the importance of maintaining a healthy lifestyle among college students studying nursing was average. Significant disparities were identified prior to the onset of the COVID-19 pandemic and after it. The results suggest an increase in awareness of a healthy lifestyle, encompassing disease treatment, exercise, physical and sports activities, social engagement, and eating habits. College students, typically in their 20s, exhibit lower levels of interest in health compared to the general adult population. They tend to perceive themselves as healthier and prioritise engaging in healthy and physical activities. Furthermore, the effectiveness of preventing a COVID-19 outbreak is closely tied to an individual's understanding of and commitment to a healthy lifestyle, as well as their level of knowledge and information about the virus (Gao et al., 2021). Engaging in sports and physical activities can also serve as preventive or defensive measures. Furthermore, it is worth noting that the COVID-19 outbreak has had a noticeable impact on mental health, with nursing students experiencing increased feelings of loneliness and difficulty in forming connections with others. However, amidst these challenges, there has been a positive shift in the awareness of leading a fulfilling life. Decreased mental well-being leads to an amplified self-critical mindset and diminished appreciation for life as a whole (Patelarou et al., 2021). It is crucial to identify and understand the mental health level and characteristics of nursing students to implement a tailored approach. This is because nursing students experience a higher level of emotional labour after graduating from university, as they care for patients and serve their guardians. Compared to other occupational groups, they face increased job stress due to the pressure of dealing with patients' lives (Nadeem et al., 2021). It is important to identify factors that can enhance the mental health and promote a healthy lifestyle among college students majoring in nursing. A specialised approach should be explored for this purpose. Additionally, it is worth noting that the 3rd and 4th graders demonstrated significant personal growth during their transition into young adulthood, managing to maintain a

typical college experience despite the challenges posed by the COVID-19 pandemic. Amidst the COVID-19 pandemic, students in their first and second years' experience a significant period of personal growth as they transition from adolescence to early adulthood. These students possess a keen awareness and curiosity about leading a healthy lifestyle, as they have selected a major that focuses on healthcare and infectious diseases and have been residing in a college environment. While acknowledging the importance of health information, it appears that the level of mental health is comparatively lower among third and fourth graders. During the initial year of college, students encounter a fresh set of challenges. However, due to the impact of COVID-19, they face difficulties in effectively managing the various personal and social obligations that arise from their interactions with fellow students (Arslan, Yildirim, & Zangeneh, 2022; Dziurka et al., 2022). To enhance overall well-being, it is imperative for universities to implement a comprehensive program aimed at regularly monitoring and addressing the mental health needs of incoming students.

### 5.2. Conclusion of Research

This study examines the impact of COVID-19 on the perception of healthy life and mental health among nursing students in Korea. It analyses data collected before and after the outbreak to understand their involvement in physical and sports activities for maintaining a healthy lifestyle and mental well-being. The study utilised empirical findings from quantitative data collected from 492 nursing students across four different grade levels in both metropolitan and non-metropolitan areas of Korea. The empirical findings from the collected data indicate significant differences in awareness levels, mental health, and the involvement of various factors in mental health awareness. This is followed by the involvement in physical and sports activities. Furthermore, the study revealed notable variations in awareness levels based on grade level. Additionally, it highlighted a significant disparity in awareness levels between students involved in sports and those who were not, particularly among higher grade students, when comparing pre- and post-COVID times.

### 5.3. Significance of the Study

The study focused on examining the level of awareness regarding healthy living and mental well-being among nursing students. It provides guidance on the correct path. Pre-nursing college students who major in nursing can pursue a fulfilling career as nurses after graduation. By doing so, they can prioritise their own well-being, effectively manage stress, enhance their emotional, social, and psychological health, and actively engage in physical



activities and sports. Additionally, they play a crucial role in improving the mental health of the patients and families under their care.

Improving the ability to care for others can be achieved by prioritising one's own physical and mental well-being, as well as actively participating in sports and physical activities. This study examines how the perception and concept of health among college students majoring in nursing have been impacted by the COVID-19 pandemic. It provides evidence of the negative effects of COVID-19 on nursing students and explores the effectiveness of sports as a coping mechanism for this stressor. Regarding education, this material can be utilised to expand nursing students' awareness and understanding of healthy living, as well as methods to promote and enhance mental health through physical activities or sports.

#### 5.4. Limitations of the Study

Several limitations have been encountered during this research. This study focused solely on factors related to the prediction of mental health awareness levels. However, it should be noted that there was no empirical model available for further clarification. In addition, this study focused solely on the participation of nursing students in physical and sports activities, without conducting a comprehensive examination of their level of involvement in sports.

Furthermore, this study did not focus on specific research variables such as mental health or various sports activities like athletics, gymnastics, and yoga. Instead, it drew implications based on a combination of different factors.

#### 5.5. Recommendations Based on Limitations.

There are several methods to expand the context of conducted research. Future researchers may explore the significance of nurses and other medical students' participation in sports and physical activities to reduce stress levels, both in general and specifically during the COVID-19 pandemic. In addition, conducting an empirical investigation using a rigorous empirical model can make a valuable contribution to the existing literature and enhance the availability of more reliable information. Furthermore, future research can explore the correlation between sports participation and mental health and overall well-being. The study can further explore the demographic and geographic context to demonstrate the overall understanding, trends, status, and awareness of mental health and its sustainability.

#### Acknowledgements

This work was supported by the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2023S1A5A8080998)

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