JTS

The Journal of Transdisciplinary Studies, 7(1): 93-102, 2023
https://doi.org/10.22685/JTS.2023.7.1.093

A Study on the Perception of Infection Prevention Education by Aging Education Experts*

Kyung-hee Kang[1], Kwang-Hwan Kim[2], Hyo-Nam Lim[3]

[1]Professor, Department of Dental Hygiene, Konyang University, Korea (dhkhkang@konyang.ac.kr), First Author
[2]Professor, Department of Hospital Management, Konyang University, Korea (kkh@konyang.ac.kr)
[3]Professor, College of Nursing, Konyang University, Korea (hnlim@konyang.ac.kr), Corresponding Author

ARTICLE INFO

Article history:
Received 10 April 2023
Revised 11 April 2023
Accepted 12 April 2023

Keywords:
Education,
Experts,
Infectious Disease,
Prevention,
Well-Aging

ABSTRACT

In this study, it was sought to confirm the importance and level of knowledge necessary for the operation of infectious disease prevention education targeting well-aging education experts, and also analyze various factors for educational activities. The subjects of the study were 85 well-aging education experts who agreed to the study. The survey was conducted from November 2022 through January 2023 through Gallup Korea. The statistical analysis was performed using the SPSS Statistics 25 program. As a result of the study, as for the importance of each item of knowledge on the infectious disease prevention, 'how to prevent infectious diseases' turned out to be the highest at 4.1 points (78.2 points). As for the level of knowledge about the prevention of infectious diseases, the transmission route of infectious diseases and the methods of preventing infectious diseases turned out to be the highest at 3.8 points (69.4 points). As for the educational method of infectious disease prevention education, the mixed form of 'lecture and experience' was responded to be the most appropriate, and the most important component of teaching and learning activities was 'educational content'. The period when infectious disease prevention education is considered necessary turned out to be high in the order of adulthood and adolescence. The results of this study are expected to be used as the basic data for the development of infectious disease prevention education programs for the well-aging education experts.

1. Introduction

Infectious diseases can occur at any age. Their symptoms can range from asymptomatic to respiratory infections, pneumonia, and death in severe cases, and in the elderly, they can progress to severe

* This work was supported by the Ministry of Education of the Republic of the Korea and National Research Foundation of Korea(NRF-2020S1A5C2A04092504)

symptoms after infection compared to younger people, and the fatality rate is also high (Oh, 2020; Kim, 2020). According to the data from the National Statistical Office, Korea is expected to become a super-aged society at 20.3% in 2025, and the UN's 2019 World Population Aging Report (United Nations, 2020) also predicts that the elderly population will increase the most by 2050 for the Republic of Korea. The new infectious diseases such as COVID-19 may reappear and become prevalent, and the possibility of mutations caused by mutant viruses is also predicted. As experienced in the emergency situation of COVID-19, the personal hygiene management to prevent infectious diseases is very important in the Korean society ahead of the super-aging era.

Infectious diseases are among the serious health risks facing the modern society. The knowledge of infectious diseases and individual preventive behaviors in daily life are very important for the prevention and management of infectious diseases (Kim, 2020; Moon, 2020). Infectious diseases affect all population groups, but especially those with low control over stress and In the case of individuals who have difficulties in obtaining information, the risk of being exposed to diseases is significant. People who are vulnerable to stress during an infectious disease have a high risk of developing depression, and psychological sequelae can lead to psychiatric disorders if appropriate measures are not taken (Lee et al., 2020; Zhi et al., 2020; Lee & Ahn, 2020; Jung, 2020; Shin & Baek, 2020). To prevent and manage infectious diseases, it would be necessary to provide appropriate information tailored to the target audience. Infectious diseases can recur at any time, so the need for accurate knowledge of individual infectious diseases and the importance of infection prevention and management responsibilities are required. After the COVID-19 pandemic, many studies on the infectious disease prevention education have been conducted in recent years (Lee, 2020), but there is still a lack of specialized education on infectious diseases tailored to the target audience.

For the professional education on infectious disease prevention tailored to the characteristics of each age group, it would be necessary to investigate and confirm the knowledge and educational needs of educators who teach the infectious disease prevention. Hence, this study aimed to identify the importance and level of knowledge necessary for operating the infectious disease prevention education targeting the well-aging education experts, and analyze various factors for educational activities. The results of the study are expected to be used as the basic data for the development of infectious disease prevention education programs for the well-aging education experts.

2. Research Method

2.1 Subjects of the study

The subjects of the study were the well-aging education experts aged 19 years or older who were aware of the research purpose and research ethics and agreed to the survey. The number of study subjects was calculated to be 85 people using G*Power 3.1.5, with a significance level of .05, power of .95, and effect size of .15. The survey was conducted through Gallup Korea from November 2022 to January 2023. The online recruitment notices were posted on

the Gallup Korea website, and the subjects who understood and agreed to the purpose of this study filled out a research consent form online, while the questionnaire was conducted in a self-entry format.

2.2 Data analysis

The statistical analysis was performed using the SPSS Statistics 25 program. The general characteristics of the subjects were analyzed by calculating frequency and percentage, and frequency analysis was performed using the average and standard deviation for the importance and level of knowledge on the infectious disease prevention. The competitive advantage areas and areas for improvement were derived by conducting IPA (Information Process Analysis) analysis, which determines the priority of improvement by cross-analyzing the importance and level of knowledge on the infectious disease prevention.

3. Research Results

3.1 Importance of each category of knowledge on the infectious disease prevention according to general characteristics

As for the importance of each item of knowledge on the infectious disease prevention according to general characteristics, 'how to prevent infectious diseases' scored the highest with 4.1 points (78.2 points), as shown in Table 1. It turned out that the importance of 'infectious disease prevention methods' was 4.2 points (79.3 points) for women, 4.6 points (89.3 points) for those in their 50s or older, 4.5 points (86.9 points) for doctoral graduates, and 4.3 points (81.6 points) for those working at educational institutions and lifelong learning institutions, and 4.5 points (87.5 points) for those serving for 20 or more years.

Table 1. The importance of each item in knowledge about preventing infectious diseases

(n=85, unit: %, point)

Classification	n	%	Characteristics, Symptoms		Transmission Routes		Prevention Methods		Diagnosis, Testing Methods		Procedures for Cases		Treatment Methods	
			5	100	5	100	5	100	5	100	5	100	5	100
Gender														
Male	3	3.5	3.7	66.7	3.3	58.3	3.0	50.0	3.0	50.0	3.3	58.3	2.7	41.7
Female	82	96.5	4.0	74.1	4.1	77.7	4.2	79.3	3.9	71.3	4.0	76.2	3.9	71.3
Age														
Under 20s	35	41.2	3.7	67.9	3.9	73.6	3.9	71.4	3.7	66.4	3.8	70.0	3.7	66.4
30s	24	28.2	4.0	76.0	4.1	78.1	4.3	81.3	4.0	74.0	4.2	79.2	4.0	75.0
40s	12	14.1	4.1	77.1	4.3	81.3	4.2	79.2	3.9	72.9	4.1	77.1	3.8	70.8
50s and over	14	16.5	4.3	82.1	4.2	80.4	4.6	89.3	3.9	73.2	4.3	82.1	3.9	71.4

Classification	n	%	Characteristics, Symptoms		Transmission Routes		Prevention Methods		Diagnosis, Testing Methods		Procedures for Cases		Treatment Methods	
			5	100	5	100	5	100	5	100	5	100	5	100
Education Level														
Associate's Degree	6	7.1	3.3	58.3	3.8	70.8	3.7	66.7	3.3	58.3	3.7	66.7	3.3	58.3
Bachelor's Degree	42	49.4	3.8	70.8	4.0	73.8	4.0	76.2	3.6	66.1	3.9	71.4	3.7	66.7
Master's Degree	16	18.8	4.2	79.7	4.2	79.7	4.1	76.6	4.1	76.6	4.2	79.7	4.0	75.0
Doctorate Degree	21	24.7	4.2	79.8	4.3	83.3	4.5	86.9	4.1	78.6	4.3	83.3	4.1	77.4
Place of Work														
Government, Local Authorities	4	4.7	3.8	68.8	3.8	68.8	3.8	68.8	3.5	62.5	3.5	62.5	3.5	62.5
Medical Institutions, Health Centers	45	52.9	3.9	72.8	4.0	75.6	4.1	77.8	3.7	68.3	4.0	73.9	3.7	67.8
Educati5onal Institutions, Lifelong Learning Centers	34	40.0	4.1	77.2	4.3	81.6	4.3	81.6	4.1	76.5	4.3	81.6	4.1	76.5
Etc.	2	2.4	3.0	50.0	3.0	50.0	3.0	50.0	2.5	37.5	2.5	37.5	2.5	37.5
Length of Employment														
Less than 3 years	25	30.6	3.8	68.9	4.1	77.1	3.9	72.7	3.7	67.1	4.0	74.9	3.7	67.7
3 years or more but less than 5 years	15	17.6	3.7	68.3	3.9	73.3	3.9	73.3	3.5	63.3	3.8	70.0	3.5	61.7
5 years or more but less than 10 years	16	18.8	4.1	76.6	4.1	76.6	4.3	82.8	4.0	75.0	4.0	75.0	3.9	71.9
10 years or more but less than 15 years	10	11.8	4.2	80.0	4.3	82.5	4.4	85.0	4.2	80.0	4.5	87.5	4.3	82.5
15 years or more but less than 20 years	6	7.1	4.0	75.0	4.2	79.2	4.2	79.2	4.0	75.0	4.2	79.2	4.2	79.2
20 years or more	12	14.1	4.3	81.3	4.2	79.2	4.5	87.5	3.9	72.9	4.1	77.1	3.9	72.9
Average			4.0	73.8	4.1	77.1	4.1	78.2	3.8	70.6	4.0	75.6	3.8	70.3

3.2 Level of knowledge by category of knowledge on the infectious disease prevention according to general characteristics

As for the extent of knowledge on the prevention of infectious diseases according to general characteristics, 'path of transmission of infectious diseases' and 'methods of prevention of infectious diseases' scored the highest at 3.8 points (69.4 points), as shown in Table 2. It turned out that the importance of 'transmission route' and 'prevention of infectious diseases' was 3.8 points (70.4 points) and 3.8 points (70.1 points) for women, 4.0 points (75.0 points) and 4.1 points (77.1 points) for those in their 40s, and 4.1 points (77.4 points) and 4.2 points (81.0 points) for doctoral graduates, and 3.9 points (72.1 points) and 3.9 points (73.5 points) for those who working at educational institutions and lifelong education institutions, and 4.1 points (77.1 points) and 4.1 points (77.1 points) for those who have served for more than 20 years.

Table 2. The level of knowledge for each item in knowledge about preventing infectious diseases

(n=85, unit: %, point)

Classification	n	%	Characteristics, Symptoms		Transmission Routes		Prevention Methods		Diagnosis, Testing Methods		Procedures for Cases		Treatment Methods	
			5	100	5	100	5	100	5	100	5	100	5	100
Gender														
Male	3	3.5	3.0	50.0	2.7	41.7	3.0	50.0	3.0	50.0	3.3	58.3	2.7	41.7
Female	82	96.5	3.7	66.5	3.8	70.4	3.8	70.1	3.6	65.2	3.6	65.5	3.5	62.2
Age														
Under 20s	35	41.2	3.5	62.9	3.7	68.6	3.6	65.7	3.6	64.3	3.6	65.7	3.4	60.7
30s	24	28.2	3.5	62.5	3.6	65.6	3.6	65.6	3.3	57.3	3.5	61.5	3.3	58.3
40s	12	14.1	4.0	75.0	4.0	75.0	4.1	77.1	4.1	77.1	4.0	75.0	3.7	66.7
50s and over	14	16.5	3.9	71.4	3.9	73.2	4.1	78.6	3.7	67.9	3.5	62.5	3.6	64.3
Education Level														
Associate's Degree	6	7.1	3.8	70.8	3.8	70.8	4.0	75.0	3.7	66.7	3.7	66.7	3.8	70.8
Bachelor's Degree	42	49.4	3.4	58.9	3.6	66.1	3.5	63.1	3.3	58.3	3.5	61.9	3.3	56.5
Master's Degree	16	18.8	3.7	67.2	3.7	67.2	3.8	68.8	3.6	65.6	3.6	64.1	3.4	60.9
Doctorate Degree	21	24.7	4.1	77.4	4.1	77.4	4.2	81.0	4.0	76.2	3.9	72.6	3.8	69.0
Place of Work														
Government, Local Authorities	4	4.7	3.8	68.8	3.8	68.8	3.8	68.8	3.8	68.8	3.8	68.8	3.5	62.5
Medical Institutions, Health Centers	45	52.9	3.5	63.3	3.8	68.9	3.7	67.8	3.5	62.8	3.6	64.4	3.4	61.1
Educational Institutions, Lifelong Learning Centers	34	40.0	3.8	70.6	3.9	72.1	3.9	73.5	3.7	68.4	3.7	67.6	3.5	63.2
Etc.	2	2.4	2.5	37.5	2.5	37.5	2.5	37.5	2.5	37.5	2.5	37.5	2.5	37.5
Length of Employment														
Less than 3 years,	25	30.6	3.6	64.1	3.8	69.7	3.7	68.3	3.6	62.8	3.7	67.7	3.4	60.0
3 years or more but less than 5 years	15	17.6	3.5	63.3	3.8	70.0	3.7	68.3	3.6	65.0	3.6	65.0	3.3	56.7
5 years or more but less than 10 years	16	18.8	3.3	57.8	3.6	64.1	3.6	65.6	3.3	56.3	3.4	60.9	3.4	59.4
10 years or more but less than 15 years	10	11.8	4.0	75.0	4.0	75.0	4.2	80.0	4.0	75.0	3.7	67.5	3.8	70.0
15 years or more but less than 20 years	6	7.1	3.8	70.8	3.8	70.8	3.8	70.8	3.7	66.7	3.7	66.7	3.7	66.7
20 years or more	12	14.1	4.1	77.1	4.1	77.1	4.1	77.1	3.9	72.9	3.8	68.8	3.7	66.7
Average			3.6	65.9	3.8	69.4	3.8	69.4	3.6	64.7	3.6	65.3	3.5	61.5

3.3 IPA analysis of importance and level of knowledge for each item of knowledge on the infectious disease prevention

Figure 1 demonstrates the results of IPA (Information Process Analysis) analysis, which determines the priority of improvement by cross-analyzing the importance and level of knowledge of each item among knowledge on the infectious disease prevention. The 'procedures for handling suspected

or confirmed infectious diseases' had a high level of importance, but a low level of knowledge, and were identified as areas of focus for improvement. The 'paths of transmission of infectious diseases' and 'Methods for preventing infectious diseases' were both of importance and level of knowledge. 'Characteristics and symptoms of infectious diseases', 'treatment methods of infectious diseases', and 'diagnosing and testing methods of infectious diseases' were classified as areas of competitive advantage due to their low importance and level of knowledge.

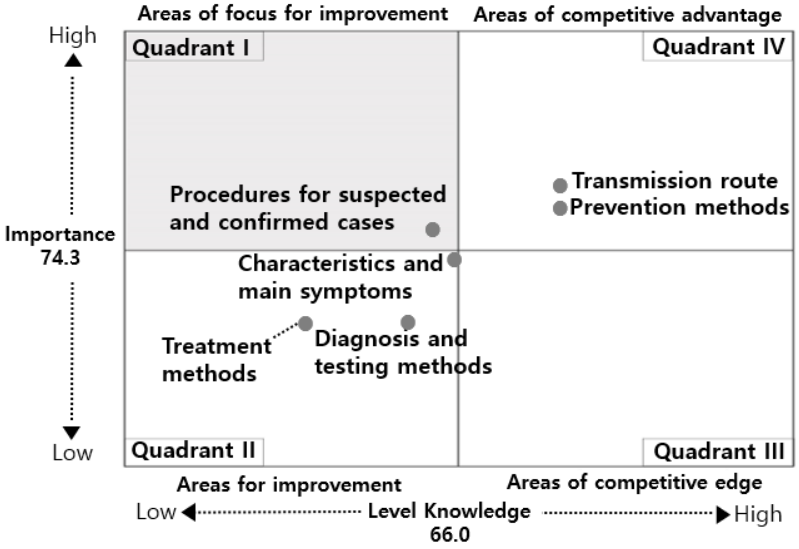

Fig. 1. IPA analysis of the importance and knowledge level of each item in knowledge

3.4 When the infectious disease prevention education is necessary

As a result of confirming the period when infectious disease prevention education is considered necessary, 'adulthood (67.1%)' had the highest response rate, followed by 'adolescence (61.2%)' and 'middle age (32.9%)', as shown in Table 3. In the case of those in their 20s or younger (77.1%) and those in their 40s (75.0%), the response rate of "adulthood" was higher than that of other age groups.

Table 3. The life stages when infectious disease prevention education is needed

(n=85, unit: %, multiple)

Classification		n	Infancy and Childhood	Adolescence	Adulthood	Middle Age	Elderly Age	Old Age
Gender	Male	3	33.3	66.7	66.7	33.3	0.0	0.0
	Female	82	23.2	61.0	67.1	32.9	22.0	22.0
Age	Under 20s	35	8.6	54.3	77.1	25.7	11.4	17.1
	30s	24	33.3	62.5	58.3	29.2	20.8	12.5
	40s	12	41.7	75.0	75.0	58.3	41.7	41.7
	50s and over	14	28.6	64.3	50.0	35.7	28.6	28.6

Classification		n	Infancy and Childhood	Adolescence	Adulthood	Middle Age	Elderly Age	Old Age
Length of Employment	Less than 3 years	26	11.1	46.1	74.6	34.0	22.6	25.5
	3 years or more but less than 5 years	15	20.0	46.7	66.7	13.3	6.7	6.7
	5 years or more but less than 10 years	16	37.5	75.0	62.5	31.3	18.8	12.5
	10 years or more but less than 15 years	10	30.0	80.0	50.0	40.0	30.0	40.0
	15 years or more but less than 20 years	6	50.0	83.3	83.3	66.7	50.0	50.0
	20 years or more	12	25.0	58.3	58.3	41.7	25.0	16.7
Total		85	23.5	61.2	67.1	32.9	21.2	21.2

3.5 Components of teaching and learning activities and educational method for the infectious disease prevention education

During the infectious disease prevention education, it turned out that the most important component of teaching and learning activities was ‘education content (55.3%)’ with the highest response rate, followed by ‘education method and form (29.4%)’ and ‘instructor (8.2%)’, as shown in Table 4. In the case of those in their 30s (66.7%) and those in their 50s or older (64.3%), the response rate for ‘education content’ turned out to be higher than that of other age groups. It turned out that the most appropriate education method for infectious disease prevention education was ‘lecture + experience (43.5%)’ with the highest response rate, followed by ‘on-site lecture (29.4%)’ and ‘cyber education (14.1%)’, as shown in Table 5. In the case of those in their 40s (66.7%) and those in their 20s and younger (48.6%), the response rate of ‘lecture + experience’ was higher than that of other age groups.

Table 4. The most important components of instructional activities in education

(n=85, unit: %)

Classification		n	Content	Methods and Formats	Instructor	Time and Place	Facilities
Gender	Male	3	66.7	0.0	33.3	0.0	0.0
	Female	82	54.9	30.5	7.3	6.1	1.2
Age	Under 20s	35	45.7	34.3	5.7	14.3	0.0
	30s	24	66.7	20.8	12.5	0.0	0.0
	40s	12	50.0	41.7	8.3	0.0	0.0
	50s and over	14	64.3	21.4	7.1	0.0	7.1
Length of Employment	Less than 3 years	26	37.3	39.9	17.0	5.9	0.0
	3 years or more but less than 5 years	15	60.0	33.3	0.0	6.7	0.0
	5 years or more but less than 10 years	16	68.8	12.5	6.3	6.3	6.3
	10 years or more but less than 15 years	10	60.0	30.0	10.0	0.0	0.0
	15 years or more but less than 20 years	6	33.3	50.0	16.7	0.0	0.0
	20 years or more	12	75.0	16.7	0.0	8.3	0.0
Total		85	55.3	29.4	8.2	5.9	1.2

Table 5. The most appropriate teaching method in education

(n=85, unit: %)

Classification		n	Lecture + Experience	On-site Lecture	Online Education	Workshop	Distribution of Materials	Meeting and Seminar
Gender	Male	3	0.0	66.7	33.3	0.0	0.0	0.0
	Female	82	45.1	28.0	13.4	4.9	4.9	3.7
Age	Under 20s	35	48.6	22.9	11.4	5.7	5.7	5.7
	30s	24	29.2	37.5	12.5	8.3	8.3	4.2
	40s	12	66.7	16.7	16.7	0.0	0.0	0.0
	50s and over	14	35.7	42.9	21.4	0.0	0.0	0.0
Length of Employment	Less than 3 years,	26	56.6	14.7	14.4	8.5	3.0	3.0
	3 years or more but less than 5 years	15	53.3	26.7	13.3	0.0	6.7	0.0
	5 years or more but less than 10 years	16	25.0	37.5	18.8	6.3	6.3	6.3
	10 years or more but less than 15 years	10	40.0	50.0	0.0	0.0	10.0	0.0
	15 years or more but less than 20 years	6	33.3	33.3	16.7	16.7	0.0	0.0
	20 years or more	12	50.0	25.0	16.7	0.0	0.0	8.3
Total		85	43.5	29.4	14.1	4.7	4.7	3.5

4. Considerations and Conclusion

During the epidemics of infectious diseases such as COVID-19, the need for physical health care and the development of programs that can overcome the fear of infectious diseases is emphasized (Kim & Choi, 2016; Lee et al., 2020; Tessler et al., 2020). For the prevention of infectious diseases, the individual preventive behaviors and knowledge in daily life, such as social distancing, wearing masks, and washing hands, are very important (Williams et al., 2020). It is recommended that personal hygiene such as body and clothing cleanliness in daily life is effective in preventing infectious diseases and important in maintaining health (Park & Sook, 2020; Oh, 2020).

In this study, it was sought to confirm the importance and level of knowledge necessary for the operation of infectious disease prevention education targeting the well-aging education experts, and also analyze various factors for educational activities. As for the level of knowledge on the infectious diseases, ‘how to prevent infectious diseases’ turned out to be the highest. It was thought that the high level of knowledge was demonstrated on ‘how to prevent infectious diseases’ given the recent pandemic of new infectious diseases such as MERS and COVID-19, and the education on prevention and basic hygiene has been actively conducted online and through the mass media at the national level (Choi & Lee, 2019). The level of knowledge on the ‘methods for treating infectious diseases’ and ‘procedures for handling suspected or confirmed infectious diseases’ was relatively low, which is thought to be a result of the low level of knowledge on the specialized and detailed infectious diseases.

As a result of the IPA analysis that determines the priority of improvement, the ‘procedures for suspected or confirmed infectious diseases’ have a high level of importance but a low level

of knowledge, appearing as the areas of focus for improvement, and the 'infectious disease diagnosis and test methods', 'was identified as an area for improvement because both the importance and level of knowledge were low. In a previous study conducted on the general adults aged 19 or older, the need for education on preventing infectious diseases ranked first on how to treat infectious diseases, and second on suspected and confirmed infectious diseases as reported (Kang et al., 2021).

As for the educational method of infectious disease prevention education, the mixed form of 'lecture and experience' was responded to be the most appropriate, and the most important component of teaching and learning activities was 'educational content'. The period when infectious disease prevention education is considered necessary turned out to be high in the order of adulthood and adolescence. Infectious diseases can occur at any age, and the elderly are very vulnerable to infectious diseases compared to the other age groups. Hence, it would be necessary to increase the level of knowledge on the infectious disease prevention from adolescence, and the increased knowledge will have a positive effect on individual infection control activities. Since the elderly are vulnerable to infectious diseases, considering the difficulty of education during epidemics of infectious diseases, it would be necessary to implement specific and practical educational programs to prevent infectious diseases from the adolescence and operate them regularly.

The results of this study are expected to be used as the basic data for the development of infectious disease prevention education programs for the well-aging education experts. Future studies ought to consider additional analysis of the multivariate factors of the educational needs.

Conflicts of Interest

The authors declare no conflict of interest.

References

Choi, Y. E., & Lee, E. S. (2019). A Study on Knowledge, Attitude, Infection Management Intention & Educational needs of New Respiratory Infectious Disease among Nurses who unexperienced NRID(SARS & MERS). *Journal of the Korea Academia-Industrial cooperation Society, 20*(2), 721-731. DOI: 10.5762/KAIS.2019.20.2.721

Jung, N. H. (2020). Occupational Therapy Student's Experience of Interruption of Fieldwork Practice due to COVID19: Phenomenological Study. *Journal of the Korea Academia-Industrial cooperation Society, 21*(9), 473-479. DOI: 10.5762/KAIS.2020.21.9.473

Kang, K., Park, A., Lim, H., Hwang, H., & Kim, K. H. (2021). Convergence research on education needs for prevention and control of infectious diseases. *Journal of the Korea Convergence Society, 12*(4), 95-103. DOI: https://doi.org/10.15207/JKCS.2021.12.4.0

Kim, J. S., & Choi, J. S. (2016). Midle East respiratory syndrome-related knowledge, preventive behaviours and risk perception among nursing students during outbreak. *Journal of Clinical Nursing, 25*(17-18), 2542-2549. DOI: 10.1111/jocn.13295

Kim, S. H. (2020). A Study on the Actual Condition of Food Hygiene Safety Awareness, Food

Hygiene Attitude, and Personal Hygiene Control of Male and Female college students in South Chungcheong Province. *Journal of the Korea Academia-Industrial cooperation Society, 21*(8), 546-556. DOI: 10.5762/KAIS.2020.21.8.546

Kim, Y. B. (2020). Infectious disease prevention and personal hygiene education: Focusing on the handwashing education. *Korean Journal of Health Education and Promotion, 37*(4), 59-69. DOI: 10.14367/kjhep.2020.37.4.59

Lee, D. H., Lim, J. Y., & Kang, H. S. (2020). The Emotional Distress and Fear of Contagion Related to Middle East Respiratory Syndrome(MERS) on General Public in Korea. *The Korean Journal of Psychology: General, 35*(4), 355-383. DOI: 10.22257/kjp.2016.06.35.2.355

Lee, G. C., & Ahn, J. (2020). College Nursing Students' Experiences of COVID-19 Pandemic. *Journal of the Korea Academia-Industrial cooperation Society, 21*(12), 142-152. DOI: 10.5762/KAIS.2020.21.12.142

Lee, M. H. (2020). Knowledge and Education Needs Related to Multidrug Resistant Organisms Infection Control among Small and Medium Size Hospital Nurses. *Journal of the Korea Academia-Industrial cooperation Society, 21*(4), 463-470. DOI: 10.5762/KAIS.2020.21.4.463

Moon, J. Y. (2020). A Study on the Importance and order of priority of the Major control item for DMSMS by using AHP analysis. *Journal of the Korea Academia-Industrial cooperation Society, 21*(10), 48-54. DOI: 10.5762/KAIS.2020.21.10.48

Oh, H. S. (2020). Systemic Review of Social Contacts of Person to Person Spread of Infections. *Journal of the Korea Academia-Industrial cooperation Society, 21*(2), 85-93. DOI: 10.5762/KAIS.2020.21.2.85

Oh, J. K. (2020). Effect of Elderly People's Health Promotion Program on Physical, Physiological and Psychological Parameter for in Senior Center Participation of the Elderly. *Journal of the Korea Academia-Industrial cooperation Society, 21*(2), 133-144. DOI: 10.5762/KAIS.2020.21.2.133

Park, K. H., & Sook, K. (2020). Comparison of Droplet Infection Prevention Activity and Knowledge of Cough Etiquette among Nursing Hospital Workers. *Journal of the Korea Academia-Industrial cooperation Society, 21*(3), 360-369. DOI: 10.5762/KAIS.2020.21.3.36

Shin, S. H., & Baek, O. J. (2020). A Convergence Study on the Relationship between Impact of Event, Health Beliefs and Adherence to Self-Care Guideline for COVID-19. *Journal of the Korea Convergence Society, 11*(10), 337-348.

Tessler, H. A., Choi, M. R., & Kao, G. (2020). The anxiety of being Asian American: Hate crimes and negative biases during the COVID-19 pandemic. *American Journal of Criminal Justice, 45*(4), 636-646. DOI: 10.1007/s12103-020-09541-5

United Nations (2020). *World Population Ageing 2019*. Department of Economic and Social Affairs, New York.

Williams, L., Rasmussen, S., Kleczkowski, A., Maharaj, S., & Cairns, N. (2015). Protection motivation theory and social distancing behaviour in response to a simulated infectious disease epidemic. *Psychology, health and medicine, 20*(7), 832-837. DOI: 10.1080/13548506.2015.1028946

Zhi, X. et al. (2020). Investigation and analysis of psychological stress and professional identity of nursing students during COVID-19 pandemic. *Indian Journal of Experimental Biology, 58*(6), 426-432.