

# Investigation of Infection Awareness of Physical Therapy Students

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**Abstract: Background/Objectives:** *The purpose of this study was to investigate the perception of infection by physical therapy students before and after practice. The exposure to the hospital infection at the medical institution is a health problem that should be treated with the patient infected not only in the health care of each employee but also in the fact that the personnel engaged in the medical institution can become the infectious agent of the patient as the infectious agent. There have been few researches on infection control in physical therapy students, physical therapists and physical therapy rooms who meet patients for a relatively long period of time or who have a lot of physical contact.*

**Methods/Statistical Analysis :***It surveyed the questionnaire to 4-year physiotherapists, who have gone to practice and who have not gone to practice to find the infection awareness before and after the practice. After the questionnaire was collected, questionnaires about students 'awareness of infection and questionnaires after students' practice were divided and classified. Based on the data, we analyzed and recognized the level of awareness of infection control students in physical therapy.*

**For the research tool, the questionnaire items for this paper were prepared with reference to the Infection Control Guidelines of the Korean Hospital Infection Control Association and the previous questionnaire. Likert scale was used to measure the same level of awareness and the higher the score, the higher the awareness score.**

**Findings:** *There was an increase in the level of awareness of the subjects who responded to the questionnaire before and after the practice, but there was no significant difference in the overall level of awareness.*

**Improvements/Applications:** *It is necessary to study repeatedly for various physical therapy students and additional training is needed to improve the awareness of physical therapy students about hospital infection control.*

**Keywords:** *Physical therapy, Infection awareness, Hospital Infection, Survey research, Questionnaire*

## I. INTRODUCTION

In modern society, despite the constant improvement in the quality of medical care, the medical environment of the hospital has a reality that can not escape from infection[1]. A hospital infection is a hospital acquired infection in the hospital environment or a nosocomial infection with a Greek word meaning hospital. A person who has not been infected at the time of admission or who has not been in a latent period has been admitted to the hospital and has been infected. Whether the outbreak has occurred at the hospital or after the hospital discharge, or from one person to another at the hospital It refers to cross infection and self-infection from one tissue to another[2,3]. The development of new technologies

and medicines due to the development of modern medicine enabled reduction of pain and treatment according to diseases and contributed to life extension. However, an increase in the elderly population and increased use of drugs such as antimicrobial agents, anticancer agents and immunosuppressants weakened the immune system, leading to an increase in the population with high infection risk and an increase in hospital infection[4]. Exposure to hospital infection by staff working at a medical institution is a health problem that should be treated as much as an infected patient, not only in terms of individual health care, but also in the fact that a medical practitioner can become a hospital infection source for patients as an infectious agent .

Hospital infection not only increases the prevalence rate of patients, but also causes delays in recovery, prolongation of hospital stay, burden of medical expenses, etc., resulting in physical and mental suffering. As this affects family and society, the incidence of hospital infection is becoming an important health problem as well as an ethical problem[5]. Since 2004, the Ministry of Health and Welfare has included 'Infection Monitoring System in the field of infection control' and 'Evaluation of Infection Control Activities' in the evaluation of medical institutions. The principle of infection control is to keep all people and environments in the hospital, such as patients, employees, visitors, and the environment, in a state where infection can be minimized. In particular, physiotherapists are likely to be exposed to body fluids or secretions due to their physical contact with the patient, many inpatients receiving physiotherapy are suffering from chronic rehabilitation, impaired physical function due to decreased immunity, and often have open wounds[6].

Recently, the demand for physical therapy has been increasing due to the increase in the aging and chronic diseases. In the case of physical therapy, the contact time between the patient and the physical therapist is long and direct contact through manual therapy or modalities with tools is frequent, which is vulnerable to transmission of infectious diseases[7]. Hospital infection management is a part that requires cooperation of all employees. Hospital infection can be minimized through accurate recognition and practice of medical infection preventive action[8,9]. There is currently a lack of research on infection control in physical therapy room or physical therapists who have been in contact with patients for a relatively long time or who have had a lot of physical contact[10].

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The purpose of this study was to investigate the perception of infection by physical therapy students before and after practice.

## II. MATERIALS AND METHODS

### 2.1 Research Design

The purpose of this study is to investigate the perception of infection by physical therapy students before and after practice. First, we surveyed the questionnaire to 4-year physiotherapists, who have gone to practice and who have not gone to practice to find the infection awareness before and after the practice on table 1. After the questionnaire was collected, questionnaires about students' awareness of infection and questionnaires after students' practice were divided and classified.

Based on the data, we will analyze and recognize the level of awareness of infection control students in physical therapy. After informing the research subjects about the purpose and intention of the research and how to write the questionnaire, they agreed to participate in the research participation agreement, which includes participation in the research by self-disclosure and withdrawal, confidentiality of information, and then proceeded after receiving permission.

**Table 1. Basic data of subjects**

	Pre Practice		Post Practice	
Average age	24.2		24.2	
Year	4		4	
Sex (person)	Male	Female	Male	Female
	31	41	31	41
Infection Training	Yes	No	Yes	No
	72	0	72	0

### 2.2 Experimental Method

For the research tool, the questionnaire items for this paper were prepared with reference to the Infection Control Guidelines of the Korean Hospital Infection Control Association and the previous questionnaire.

Likert scale was used to measure the same level of awareness, and 5 points for 'very important', 4 points for 'important', 3 points for 'normal' and 2 points for 'not important', and 1 point for 'not at all important'.

Therefore, it is interpreted that the higher the score, the higher the awareness score.

### 2.3 Analysis method

The normal distribution test was performed to find out the normal distribution of each test group. Paired sample test was performed for the comparison between the before and after practice groups. In addition, an independent two-sample test was conducted to determine the difference in each group. Statistical analysis was performed using SPSS version 22.0.

## III. RESULTS AND DISCUSSION

### 3.1 Pre practice group

Of the 72 subjects, 31 were males, 41 were females, and the average age was 24.2. There were 0 people who had previously completed infection education on table 1.

The items of each item are as follows.

1. The item should be cleaned immediately after use.

2. The instruments used for infected patients should be separated and treated separately.

3. Disinfection and contamination products should be separated.

4. Wash hands before contact with infected patient's secretions.

5. Wash hands after contact with secretions from infected patients.

6. Wash hands before touching the affected immune system.

7. Wash your hands before touching the wound area.

8. Wash hands after touching the wound area.

9. Wash with flowing soap and detergent for 10-15 seconds.

10. Keep the catheter or tube from kinking.

11. The urine bag is always below the bladder.

Basically, there are some knowledge about infections, so all items are high on table 2.

**Table 2. The level of Infection Awareness before practice**

Q.	Period	Average	Standard Deviation	P -value
1	before	4.53	.839	.001*
	after	4.83	.504	
2	before	4.78	.610	.083
	after	4.86	.484	
3	before	4.79	.473	.019*
	after	4.89	.358	
4	before	4.74	.712	.167
	after	4.81	.597	
5	before	4.79	.627	.182
	after	4.88	.373	
6	before	4.69	.597	.182
	after	4.74	.556	
7	before	4.79	.442	.007*
	after	4.89	.358	
8	before	4.31	.988	.000*
	after	4.88	.373	
9	before	4.82	.539	.159
	after	4.88	.442	
10	before	4.81	.597	.159
	after	4.89	.358	
11	before	4.44	.785	.000*
	after	4.86	.454	

Q=question, \*p<.05

### 3.2 Post practice group

First of all, all items were rated at least 4 on Likert scale.

Especially, 1, 3, 7, 8, and 11 showed a significant difference in perception between before and after the practice on table 2.

There was a significant difference in the items to be cleaned immediately after use compared to before the practice. (p<.005)

There was a significant difference in the items to be distinguished between the disinfection item and the contaminated item compared to before the practice. (p<.005)

There was a significant difference in items to wash hands before touching the wound area as compared with before the practice. (p<.005)



There was a significant difference in items to wash hands after touching the wound area as compared with before the practice. ( $p < .005$ )

There was a significant difference between items that urine bags should always be below the bladder compared to before the practice. ( $p < .005$ )

Students did not realize that medical equipment should be cleaned immediately after use because they thought it would be clean, but they knew that they had to disinfect immediately after practice. Also before the practice, there were many students who saw the same concept of contaminated goods and disinfected products. Although the students know a lot about the importance of hand washing, they did not know the importance of hand washing before touching the wound area. And the awareness of the importance of hand washing after listening to and learning from the physiotherapists greatly increased after the students went out of practice and before touching the wound area in the hospital. Many students did not realize that the urine bag should always be below the bladder before practice

For these reasons, there were significant differences in perceptions before and after the training compared to the other items.

Except for the above items, there was no significant difference because of the high level of awareness before the training.

After this study, we further investigated the perception of infection by physical therapists and analyze the difference between infection awareness and practice level, and analyze the factors influencing practice level according to cognitive level, In addition to providing data to increase interest and practice in infection control, it is expected helpful to improve the environment of physical therapist and physical therapy room.

#### IV. CONCLUSION

The purpose of this study was to investigate the perception of infection by physical therapy students before and after practice. The results were as follows: 31 male and 41 female students in Seongnam area E university.

First, none of the students received pre - infection education before going to clinical practice.

Second, there was a significant difference in perception between before and after the practice.

This study is a preliminary study for the students before the research on infection awareness of physical therapists so it is limited to students in physical therapy.

Based on this, we propose the following.

1. It is necessary to study repeatedly for various physical therapist.
2. Additional training is needed to improve the awareness of physical therapist about hospital infection control.

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#### REFERENCES

1. Lim HJ. Influence of the infection control's recognition level of a dental hygienist on a practice degree. [Master's thesis]. [South Korea]: Chung-ang University; 2009.
2. Kim YM. Study on operational strategy for hospital infection control activities. [Master's thesis]. [South Korea]: Yonsei University; 2005.
3. Kim JS. Hospital Infection. SoomoonSa. 1988.
4. Cho HS. A Study on the Level of Recognition and Performance of the Clinical Nurses about the prevention of Nosocomial Infection [Master's thesis]. [South Korea]: Soon chunhyang University; 2013.
5. Cho WS. Perceived importance and activated performance of nurses for the prevention of nosocomial infection [Master's thesis]. [South Korea]: Soon chunhyang University; 1988.
6. Park KY. Han DY. A comparison and analysis of the compliance, knowledge and safe environment of standard precautions for infection prevention among physical therapists in general hospitals and rehabilitation hospitals. Journal of Korean Data Analysis Society. 2012;14(1) 271-81.
7. Kim JS. Awareness and performance of physical therapists on nosocomial infection. The Korea Contents Society. 2008;8(11) 180-202.
8. Song MS. A study on the awareness and practice of the nurse's on the nosocomial infection. [Master's thesis]. [South Korea]: Dankook University; 2000.
9. Park MJ. Recognition and practice level of hospital infection control among medium and small hospital nurse. [Master's thesis]. [South Korea]: Inha University; 2006.
10. Park KY. Han DY. Awareness and Compliance on the nosocomial infection control and factors influencing the compliance among physical therapist. Journal of Korean Data Analysis Society. 2011;13(4) 1893-904.