

Changes in the Job Commitment and Social Interaction Anxiety among Occupational Therapist working in Long Term Care Hospital through the COVID-19 Vaccination

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ABSTRACT

Purpose of the study is to analyze the changes in job commitment and social interaction anxiety among occupational therapists working in a long term care hospital through the COVID-19 vaccination. The subjects were 30 occupational therapists working in a long term care hospital who have been vaccinated for COVID-19. They were vaccinated with AstraZeneca vaccine by KCDC's COVID-19 Vaccination Guideline and the changes of job commitment and social interaction anxiety was assessed. The assessment of job commitment was used by Job Commitment Scale and the assessment of social interaction anxiety was used by Korean ver. of Social Interaction Anxiety Scale. As the results, the results of job commitment showed no statistically significant difference and the results of social interaction anxiety showed the statistically significant decrease. The COVID-19 vaccination contributes for the occupational therapists working in long term care hospital to change in social interaction anxiety and the additional consideration should be need to induce the job commitment with COVID-19 vaccination.

Keywords

COVID-19 vaccination, Job commitment, Long term care hospital, Occupational therapist, Social interaction anxiety

1. Introduction

Coronavirus disease-19(COVID-19) is a new type of acute respiratory infection that has spread throughout China after being first reported in Hubei Province, China in December 2019 [1]. The main symptoms of COVID-19 have been reported to be cough, fever, dyspnea, myalgia, arthralgia, and increase fatigue, accompanied by gastrointestinal symptoms and loss of smell and taste [2]. In addition, it also has been reported that these symptoms persist even after recovery, and are accompanied by sputum, sore throat, headache, hemoptysis, nausea, and diarrhea [3]. These have been led to death in severe cases, depending on the individual's characteristics, and sever as a serious threat throughout daily life [4].

Accordingly, various efforts has been made worldwide to deal with COVID-19, focusing on the development and inoculation of the most core vaccine among them [3]. This vaccine indicates a vaccine developed for the prevention of COVID-19, which was spread worldwide in 2020 and led to long term Pandemic [5]. COVID-19 vaccine has the principle that antigenic component of the vaccine that enters the body stimulates immune cells to produce neutralizing antibodies that can eliminate the virus via B cells. Therefore, when the COVID-19 virus invades the body, it plays a role in removing the virus [6].

To date, there are 120 vaccines being developed worldwide, of which the vaccine introduced in Korea are Pfizer, Moderna, and AstraZeneca [6]. Currently, the government is promoting Pfizer and AstraZeneca vaccination in the first quarter on February 26, 2021 among them, the AstraZeneca vaccine was inoculated to elderly group facilities such as long term care hospital

and nursing homes for those under the age of 65 years old and workers [7]. As side effects of COVID-19 vaccination, fatigue, headache, and fever has been reported in about 8 % of the vaccinations and 2 cases of transverse myelitis were reported [5]. However, there have not yet been any worrisome side effects caused by vaccination [6].

Job commitment means that one becomes cherishing job at the center of one's life with the concept of immersing oneself in one's job and forming a sense of unity and attachment [8]. It induces active participation in one's job allowing it to be psychologically assimilated and actively engaged in the job [9]. However, it exhibits a characteristic that can be affected in response to an increase in psychological problems such as stress, and when negative changes occur, such as health problems or environmental changes, job commitment is reduced [8]. The COVID-19 Pandemic has significantly caused changes in the job performance of occupational therapists working in the long term care hospital and, accordingly, due to the hospital closure, various problems related job performance such as restriction on job performance, were also caused [10]. In addition, the secondary burden is increasing, such as supporting infectious prevention projects along with the unstable atmosphere in the hospital and due to these problems, a decrease in job commitment is considered.

Social interaction anxiety indicates the anxiety that occurs in the process of social interaction with others, and this caused not only in the situation in the interaction with others, but also in situation meeting strangers and have conversations with the opposite sex [11]. This can occur when one's conversation look boring or stupid, does not act well, or does not show an appropriate response during the interaction, and can also be caused by fear of being ignored in this process [12]. This acts to modify interaction plans and goals in response to the reaction of the other person, inducing them to pay attention to the reaction of others and modify their behavior [11]. COVID-19 infection have the characteristics of being infected by direct contact with others and droplets of others, limiting their interaction with others. Under these conditions, considerable anxiety has been evoked in the interaction with others [13]. Accordingly, the number of people who complain of anxiety has increased significantly [1].

With the approaching of a super-aged society, the number of the elderly using the long term care hospital for them is increasing rapidly [14]. Under these circumstances, the number of occupational therapists working there also is increasingly rapidly [15] and their roles are considered to be important [16]. Occupational therapists working in the long term care hospital for the elderly are the professionals in the treatment and education using the occupational activities to enable the elderly using the hospital to perform their activities of daily life independently and actively participate in their community [15]. They make an effort to improve the quality of life in the elderly's daily life by applying the therapeutic activities, such as cognition and activities of daily living training and swallowing disorder intervention [16].

However, they provide the services that are physically close to the clients due to a decrease in cognitive level and physical function, mental confusion, and communication problems and the level shows much high characteristics [17]. In addition, they directly stimulate the clients' body in the rehabilitation process and also show much high frequency of applying the stimulation [18]. These are performed in a highly dense hospital environment, where contact and interaction with others, such as other doctors, nurses, and clients' parents occurs frequently [17]. These job

characteristics and circumstances are considered as a factor to effect on the increase the risk and anxiety of infection with COVID-19 Pandemic. In addition, it also could be considered that could easily cause spread by others.

Accordingly, reported most studies was focused for the vaccine development [6][19-20] and various studies related to the vaccination process have also been reported [21-23]. However, the studies related vaccination subjects have not yet been reported, and there are no studies reporting the subjects' changes after the COVID-19 vaccination. Thus, the purpose of this study was aimed to provide the basic information about the analysis of the changes in job commitment and social interaction anxiety among the occupational therapists working in long term care hospital through the COVID-19 vaccination.

2. Methods

2.1 Study subjects and period

Subjects were 30 occupational therapist working in the D long term care hospital in D city in Korea. The criteria of subjects' selection were as follows: Only an individual who is 1) a normal person working in the long term care hospital as an occupational therapist, 2) the vaccination subject through the instruction of the COVID-19 vaccination by the Korea Venters for Disease Control and Prevention (KCDC) 3) not taking any antipsychotic medication affecting directly on the performance and behavior in the assessment process, and 5) a person to consent voluntarily the participation in this study after understanding the purpose and methods of this study

Prior to the participation in this study, the sufficient information about the purpose and methods of this study was provided for the potential subjects and then explained to understand these. Accordingly, after these process, subjects were allowed to participate in this study voluntarily. The consent of the participation in this study was offered by writing. This study was performed for 8 weeks from April 1 to May 31 in 2021 according to the consideration of the COVID-19 vaccination process. .

2.2 Study procedures

Based on the study's purpose, to analyze the changes in the job commitment and social interaction anxiety through the COVID-19 vaccination, the single group experiment study design and pre-post analysis within a group were applied. The COVID-19 vaccination was performed by the instruction of KCDC [7] and this was conducted by the doctors and nurses in charge of COVID-19 vaccination working in the D hospital.

According to the consideration of COVID-19 Pandemic, the assessment process of job commitment and social interaction anxiety was performed by online survey individually. This process was conducted by an occupational therapists who are the researcher in this study. Prior to these process, the sufficient explanation about the purpose and methods of the each assessment was offered for the subjects.

2.3 COVID-19 vaccination

COVID-19 vaccination for the study subjects was conducted sequentially from March 1 according to the instruction of KCDC at the injection room in the hospital. The vaccination was conducted by the doctors and nurses in charge of COVID-19 vaccination and AstraZeneca-Oxford ChAdOx1 nCoV-19 vaccine was inoculated. Prior to the COVID-19 vaccination, the sufficient information about the COVID-19 vaccination was provided for the study subjects and then, the questionnaire related in COVID-19 infection was conducted. After these process, the education about the adverse reactions after COVID-19 vaccination was provided for them. This education consisted of the symptoms that may appear as adverse reactions, actions according to the symptoms and appropriate coping strategies. Considering the dominant hand of study subjects, 0.5 mL dose of vaccine was inoculated on the triceps of the upper arm on the opposite side of the dominant hand [7].

2.4 Job commitment assessment

To measure job commitment, Job Commitment Scale (JCS) was used. JCS was developed in 1982 by Kanugo [24] and then JCS was translated into Korean based on the Lee [25]'s study. JCS is a sensitive tool to measure the level of job commitment. JCS is consisted of 8 items and it is an assessment as a self-reported survey. The each items of JCS are performed by 5 points Likert scale from 1 to 5 points. The total score of JCS is from 8 to 40 points, and the higher score indicates the higher level of job commitment [25]. The Cronbach's α was showed at .87 in the development process [24] and the Cronbach's α in this study was showed at .90.

2.5 Social interaction anxiety assessment

To measure social interaction anxiety, Korean ver. of Social Interaction Anxiety Scale (K-SIAS) was used. K-SIAS was developed in 1988 by Mattick& Clarke [26] and then K-SIAS was translated into Korean based on the Kim [27]'s study. K-SIAS is a sensitive tool to measure the level of social interaction anxiety occurring in the activities of daily living. K-SIAS is consisted of 19 items and it is an assessment as a self-reported survey. The each items of K-SIAS are performed by 5 points Likert scale from 0 to 4 points. The total score of K-SIAS is from 0 to 76 points, and the higher score indicates the higher level of social interaction anxiety [27]. The Cronbach's α was showed at .92 in the development process [26] and the Cronbach's α in this study was showed at .91.

2.6 Statistical analysis

The collected data were coded and then analyzed using SPSS version 23.0. Descriptive statistics were used to analyze the general characteristics of study subjects. To analyze the changes in the job commitment and social interaction anxiety, Paired T-Test was used. The significant level was set to 0.05.

3. Results

3.1 General characteristics of study subjects

The results of the general characteristics of study subjects showed as follows (Table 1). Study subjects were 30 occupational therapists working in the long term care hospital. In the age of the study subjects, their average age showed 26.60 years and separately, male showed 29.00 years and female showed 25.00 years. In the sex of them, 12 male (40.0%) and 18 female (60.0%) were included respectively.

The average working period of study subjects showed 28.00 months with 4 (13.3%) from 1 to 12 months, 20 (66.7%) from 13 to 24 month, and 6 (20.0%) over 25 month. The average number of patients treated per day was 14.33 patients, all of which were found to treat from 13 to 16 patients per day.

Table 1. General characteristics of study subjects (n=30)

Age (years)		Sex (n, %)		Working period (months)		Patients per day (n)	
Items	Mean±S.D						
Male	29.00±3.81	Male	12(40.0)	Mean±S.D	28.00±32.16	Male	18.86±2.04
Female	25.00±1.28	Female	18(60.0)	1-12	4 (13.3)	Female	19.00±1.85
Total	26.60±3.23			13-24	20 (66.7)		
				25 above	6 (20.0)		

3.2 The results of job commitment

The results of job commitment were showed as follows (Table 2). The results of job commitment showed the decrease at 1.47 average points from 22.73 average point before COVID-19 vaccination to 21.47 average points after COVID-19 vaccination. Accordingly, the results showed that there was no statistically significant difference. Thus, according to the COVID-19 vaccination, the changes in job commitment was not showed.

3.3 The results of social interaction anxiety

The results of social interaction anxiety were showed as follows (Table 2). The results of social interaction anxiety showed the decrease at 4.55 average points from 35.73 average point before COVID-19 vaccination to 31.18 average points after COVID-19 vaccination. Accordingly, the results showed the statistically significant difference at the 95% significant level ($t=2.755$, $p=.012$). Thus, according to the COVID-19 vaccination, the decrease in social interaction anxiety was showed.

Table 2 Results of job commitment and social interaction anxiety

Variables	Pre (Mean±S.D)	Post (Mean±S.D)	T	P
Job commitment (points)	22.73±4.53	21.47±6.82	1.742	.092
Social interaction anxiety	35.73±8.51	31.18±10.95	2.755	.012*

(points)
*
p<0.05

4. Discussion

After the first outbreak of COVID-19 in South Korea on January 19, 2020, the number of infected cases has been exceeded over 11,541 as of June 2, 2020 and COVID-19 is reported to be more infectious than the 2015 Middle East respiratory syndrome (MERS) [28]. Globally, the number of infected patients continues to grow over 2 million, and the number of deaths rate also is increasing [29]. Under these conditions, infected new patients with COVID-19 are continuously occurring, and the medical staffs to manage them are increased [30]. These increase of medical staffs could inevitably increase exposure to infection, depending on the characteristics of the highly pathogenic infection, and could significantly increase its risk [31]. These contribute to increase the level of stress and social interaction anxiety related in the COVID-19 infection and isolation among them.

Various previous studies pointed out the potential of deterioration for psychological and health conditions among the medical staffs who maintain close contact with highly pathogenic infected patients in hospital and they suggested that these psychological burdens need to be evaluated and confirmed [32-33]. Currently, the support measures and policies being implemented in South Korea are only focused on COVID-19 patients, and there is still a lack of research for medical staff and psychological problem of them [28]. Accordingly, this study was performed to find the contribution on the changes in the job commitment and social interaction anxiety among the occupational therapists working in the long term care hospital through the COVID-19 vaccination. From these, this study has the clinically significant in the conditions where the COVID-19 pandemic is considered in the global disaster crisis.

As results of social interaction anxiety through the COVID-19 vaccination, the decrease of social interaction anxiety showed and there showed statistically significant difference after the vaccination. These results were supported from the various previous studies. COVID-19 vaccination is an important response to prevent COVID-19 infection by forming antibodies in the body to actively block COVID-19 infection [6]. A study by Shin [34] reported that COVID-19 vaccinated subjects have higher self-efficacy and beliefs for their health and non-vaccinated subjects. These results suggested that COVID-19 vaccination can act as a factor to improve the self-efficacy and health beliefs among the study subjects. Thus, it is judged that the Shin [34]'s study could be used as a basis to support the reduction of social interaction anxiety in this study's subjects.

A study of MERS vaccination by Jung et al. [35] reported that the vaccination is much important as a preventive actions that could control the epidemic of the new influenza like the epidemic prevention system and these reported to contribute to reducing the anxiety level of infectious disease. Actually, they reported that in the early stage of the infection pandemic, there are uncertainties about the characteristics of infection, treatment methods, and preventive methods, and the level of the anxiety shows high. However, they reported that the risk of infection and the level of the anxiety decrease after the vaccine begin to be administered. Kim et al. [36] reported that the vaccination contribute to reduce the high mortality and morbidity of acute respiratory

disease infection and these act to reduce the fear and the anxiety level of patients and caregivers, and medical staff working in long term care hospital.

Based on these studies, through COVID-19 vaccination among the occupational therapy working in long term care hospital, it is judged that these results of social interaction anxiety this study have clinical significance and these vaccination positively contribute to act the reduction of the anxiety level. However, in the case of Kim et al. [36]'s study, they reported that despite appropriate vaccination, vaccination could cause unexpected side effects which occur in various ways depending on the individuals. Accordingly, in clinical setting, confusion and the anxiety exist. Thus, continuous consideration should be needed in the level of the anxiety among occupational therapists through the COVID-19 vaccination. In addition, it is necessary to consider whether the changes in social interaction anxiety is sustained through COVID-19 vaccination by additional research and analysis.

As results of job commitment through COVID-19 vaccination, the results of job commitment showed no statistically significant difference after COVID-19 vaccination among the study subjects. These results are judged as the job characteristics of occupational therapists who frequently have close contact and interaction with their client, clients' parent and other medical staffs and who have directly physical contact with their clients. In addition, there characteristics cause infection to others, and there is a risk of spreading the infection. Accordingly, it is judged that there was no statistically significant changes in the results job commitment.

In the study by Park et al. [17], they reported that occupational therapists working in long term care hospital perform the intervention frequently in close contact with their body due to the clients' low levels of cognitive and physical function, decreased levels of consciousness and alertness, and limited skills of communication and social interaction. In addition, they reported that these physical closeness could increase the risk of COVID-19 infection and psychological anxiety and limit the performance of actual duties. Han et al. [18] reported that occupational therapists show the occupational characteristics to stimulate their clients' body to learn proper behaviors in the process of cognitive and dysphagia rehabilitation. In these process, they suggested that the exposure to droplets is increased. In particular, depending on the therapeutic process, oral stimulation may be applied directly, which increases the sensitively and the anxiety, and the fear of infection.

Due to the COVID-19 pandemic, the elderly hospitalized in long term care hospital were classified as a vulnerable group with a high risk if infection. Accordingly, in the case of the hospital, after the group infection of COVID-19 began, the visits to inpatients were restricted due to hospital closure [37]. According to the study by Lee and Youn [10], they reported that the closure measures from the COVID-19 pandemic in the hospital led to changes significantly in the job contents and performance of duties among the occupational therapist working the hospital and the additional duties are added for the prevention of epidemics. In particular, they explained that these conditions and atmosphere in the hospital cause the psychological changes such as anxiety and reduced the scope and contents of behaviors among the occupational therapists. Based on these study's reports, it is judged that it was prevented to induce the job commitment. Thus, based on this study's results, along with COVID-19 vaccination, additional consideration

should be needed to allow the occupational therapists working in long term care hospital to immerse themselves in their duties.

The study limitations were as follows. First, this study was performed by applying the single group study design through the COVID-19 vaccination. Accordingly, it is judged that it is difficult to determine that there is a difference in the level of job commitment and social interaction anxiety compared to non-vaccinated subjects. Based on this study's results, the further studies to analyze the difference in the job commitment and social interaction anxiety between the vaccinated and non-vaccinated subjects should be needed. Second, this study was performed by applying the pre-post analysis between variables through the COVID-19 vaccination. Accordingly, it is judged that it is difficult to determine whether these changes persist even after COVID-19 vaccination. Based on this study's results, the further studies to determine the continuous changes in the variables among the subjects through the COVID-19 vaccination should be conducted. Finally, additional studies should be conducted to analyze the effects and casual relationship of the changes in job commitment and social interaction anxiety among the occupational therapist working in long term care hospital through the COVID-19 vaccination.

5. Conclusions

The purpose of this study was to provide the basic information about the analysis of the changes in job commitment and social interaction anxiety among the occupational therapists working in long term care hospital through the COVID-19 vaccination. As the results, in the result of job commitment, there was no statistically significant difference after the COVID-19 vaccination. In the contrast, the results of social interaction anxiety showed the decrease and the statistically significant difference showed after COVID-19 vaccination. COVID-19 vaccination is contributed to positive changes in the social interaction anxiety among the occupational therapists working in the long term care hospital and with COVID-19 vaccination, the additional consideration should be needed to induce the job commitment among them. .

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