

# Occupational Accidents during the Pandemic Process

## Pandemi Sürecinde İş Kazaları

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### ABSTRACT

Purpose of the study; The aim of this study is to investigate the effect of the pandemic process on occupational accidents that health personnel working in a state hospital are exposed to. During the pandemic process, 70 occupational accidents reported to the Provincial Directorate of Social Security regarding occupational accidents experienced by healthcare workers in a state hospital were examined retrospectively. In our study; It was determined that health personnel were exposed to cutting and knife injuries at a rate of 80%, contact with blood and body fluids at a rate of 2.85%, and musculoskeletal injuries at a rate of 14.28% during the pandemic process. It was determined that 24.28% of the health personnel who reported due to occupational accident had an occupational accident in the pandemic service and 12.86% in the vaccination polyclinics. It was determined that health workers were exposed to work accidents at a higher rate due to the increased workload and psychosocial risks with the pandemic process. In order to prevent occupational accidents and injuries, it is necessary to record which situations cause injury, to determine and plan preventive interventions.

**Keywords:** Covid 19, Pandemic, Occupational Accident, Healthcare Worker.

### ÖZET

Çalışmanın amacı; bir devlet hastanesinde çalışan sağlık personelinin maruz kaldığı iş kazalarına pandemi sürecinin etkisinin araştırılmasıdır. Pandemi sürecinde bir devlet hastanesinde sağlık çalışanlarının maruz kaldığı iş kazalarına ilişkin Sosyal Güvenlik İl Müdürlüğü'ne bildirilen 70 iş kazası geriye dönük olarak incelendi. Çalışmamızda; Sağlık personelinin pandemi sürecinde %80 oranında kesici alet ve bıçak yaralanmasına, %2,85 oranında kan ve vücut sıvıları ile temasa, %14,28 oranında kas-iskelet yaralanmalarına maruz kaldığı tespit edildi. İş kazası nedeniyle bildirimde bulunan sağlık personelinin %24,28'inin pandemi servisinde, aşı polikliniklerinde ise %12,86'sının iş kazası geçirdiği belirlendi. Pandemi süreciyle birlikte artan iş yükü ve psikososyal risklerin etkisiyle sağlık çalışanlarının daha yüksek oranda iş kazasına maruz kaldıkları belirlendi. İş kazalarını ve yaralanmaları önlemek için hangi durumların yaralanmaya neden olduğunu kayıt altına almak, önleyici müdahaleleri belirlemek ve planlamak gerekmektedir.

**Anahtar Kelimeler:** Covid 19, Pandemi, İş Kazası, Sağlık Çalışanı.

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## I. INTRODUCTION

Covid-19, or coronavirus disease, is a contagious respiratory disease that affects humans. The disease, which was first discovered in Wuhan city of China's Hubei province in 2019, began to spread worldwide over time, and the World Health Organization declared the coronavirus a pandemic [1,2].

The Covid-19 pandemic process has caused extraordinary conditions in our country as well as all over the world, affecting millions of employees, and experiencing conditions that have not been encountered before in many respects such as new types of work, occupational health and safety. With the epidemic, the economy, production, labor market, social life, law and health areas were adversely affected in society. Health workers, who take an active role in the diagnosis, treatment and monitoring stages of the disease in hospitals, which is one of these working environments, faced the risk of exposure to high viral load and infection due to close contact with infected people. Four exposure levels have been defined according to the risk of exposure of employees to the virus, and according to this classification, healthcare workers are considered the highest risk occupational group for exposure to Covid-19 (SARS-CoV-2) [3-5]. At the same time, they are an important source of transmission of the disease to colleagues, patients, friends and families [6,7]. Due to the coronavirus disease, the increase in the number of patients and working hours in hospitals increases the workload of healthcare professionals. Situations such as increased workload, fatigue, danger, process uncertainty, and stress caused by the fear that they and their families will become infected increase the likelihood of unexpected negative consequences arising from the work of employees [7-11].

Healthcare workers, but also are usually exposed to

traumatic events and often witness the death of patients. During the Covid-19 epidemic, there has been intense and long-lasting exposure to these factors, leading both health and emergency workers to develop the risk of post-traumatic stress disorder (PTSD) or secondary trauma. Research has shown that healthcare workers can develop post-traumatic stress disorder following events such as SARS and MERS outbreaks [12]. Therefore, consistent with Dutheil et al. [13], the ongoing pandemic of Covid-19 is highly likely to also promote stress disorders in HCWs, potentially degenerating into chronic PTSD, as has already occurred in past outbreaks.

Lack of motivation, stress, etc. psychosocial risk factors such as occupational accidents are effective in the occurrence of work accidents, and it is reported that individuals have more work accidents in the presence of all these qualities [14,15].

Occupational accidents that occur in healthcare facilities can harm the health and safety of employees or patients. Injuries caused by sharps, contamination with blood-body fluids, lifting patients and objects, back injuries due to heavy lifting, falling, hitting, tripping, slipping, etc. Conditions such as musculoskeletal injuries, violence, allergic reaction, traffic accident, poisoning due to causes are some of the occupational accidents seen in healthcare workers [16-20].

Since the safe, high-quality effective and efficient delivery of health services depends on ensuring the health and safety of health workers, their working capacity and performance, the issue of health and safety of health care workers is one of the issues that should be given great importance.

For this reason, it is important to examine the working environment and the occupational accidents that occur in this environment. In this study, it was aimed to retrospec-

tively examine the effect of the pandemic process on occupational accidents that health personnel working in a state hospital are exposed to.

#### Research questions

1. Is there a relationship between the introductory characteristics of hospital personnel and occupational accidents?
2. Is there a relationship between the unit worked in the hospital and the occupational accident experienced?

## II. MATERIAL AND METHOD

Descriptive work; it was conducted to analyze the cases related to occupational accidents that health workers in a state hospital were exposed to cross-sectionally between 01.03.2020 and 31.04.2020. Seventy occupational accidents reported to the Social Security Provincial Directorate were included in the study. Data; was obtained by retrospectively scanning the Hospital Management Information System and the occupational accident notification forms used in the institution Hospital staff at the evaluation stage; are grouped as doctors, nurses, midwives, cleaning personnel, health officers, servants, emergency medical technicians, laboratory technicians, and computer operators. The records of occupational accidents (such as slip-fall, sharp-stab injuries, contact with damaged-integrated skin, and splashing on the mucosa) of health personnel were analyzed retrospectively. Gender, marital status, occupational groups, working year, education level, place of injury, the event that caused the injury, the device that caused the injury, and all of the occupational accident records that occurred in the previous two years were evaluated. The data obtained were calculated with the IBM Statistical Package for Social Sciences (SPSS) 23.0 (Chicago, usa, V23) package program. Number and percentage val-

ues were used in the evaluation of the data.

## III. RESULTS

In the study, health workers were exposed to 70 occupational accidents during the pandemic process (March 2020-April 2021).

When the sociodemographic characteristics of the health workers who make up the research group are examined; It was determined that 71.42% were women, 61.42% were married, and 47.14% had a working period of five years or less (Table 1).

It was determined that 58.57% of the health workers who had an occupational accident were associate degree and undergraduate graduates and 47.14% worked as nurses.

In our study; Occupational accidents that health personnel is exposed to during the pandemic process, 80% sharp-stab injuries, 2.85% contact with blood and body fluids, 14.28% musculoskeletal injuries, 1.42% exposure to chemicals, It was found that they were exposed to other accidents (electric shock, etc.) at a rate of 1.5.

Of the health personnel who reported due to occupational accidents, 24.28% were in the pandemic service, 18.58% in the intensive care unit, 14.28% in the emergency service, 15.72% in the mixed services, 12.86% in the vaccination polyclinics, 4.28% It was determined that he had an occupational accident in the hospital gardens and corridors with the rate of

When the device causing the injury is evaluated, the most common tool is the syringe needle (44.28%), followed by injuries with the lancet (15.71%).

When the number of work accidents during the pandemic period is compared with the same periods compared

to previous years, 2018-2019; Between the years 2019-2020 and 2020-2021, 45, 50 and 70 work accidents occurred, respectively, and it was determined that most work accidents occurred during the pandemic period.

**Table 1:** Socio-demographic characteristics of occupational accidents and their distribution according to the application period (n: 70)

Characteristic	n	%
<b>Gender</b>		
Women	50	71.42
Male	20	28.58
<b>Marital status</b>		
Married	43	61.42
Single	27	38.58
<b>Title</b>		
Doctor	1	1.43
Nurse	33	47.14
Midwife	7	10
Cleaning Staff	21	30
Health officer	2	2.86
Employee	1	1.43
Emergency Medical Technician	1	1.43
Laboratory Technician	1	1.43
Clinical support	2	2.86
Computer Operator	1	1.43
<b>Educational Status</b>		
Elementary	13	18.57
High School	16	22.86
Associate Degree	6	8.57
Undergraduate	35	50
<b>Professional Year</b>		
0-5 years	33	47.14
6-10 years	10	14.28
11-20 years	15	21.43
> 20 years	12	17.15
<b>Work Place</b>		
Inpatient Service	11	15.72
Intensive Care	13	18.58
Emergency Service	10	14.28
Pandemic Service	17	24.28
Vaccination Clinic	9	12.86
Hospital Garden	3	4.28
Hallway	3	4.28
Other *	4	5.72

\* Polyclinic, workshop, laboratory, laundry

Healthcare workers face many dangers and risks arising from the nature of their work. Changing hospital and

working conditions during the pandemic period, the increase in the demands of patients from hospitals, the increasing workload and the fear of contracting the disease cause stress on healthcare workers. In addition to causing some physical and psychological problems on body systems, stress can also cause negative effects such as decreased productivity of employees, decreased quality of work and increased occupational accidents [21].

Sharp injuries occur frequently among healthcare workers, and nurses experience more injuries than other workers [22-25].

In our study, occupational accidents were found at a higher rate in female health workers (71.42%) than in male health workers (28.58%). We think that the rate of female employees is high because nurses are the occupational group most interested in bloodletting and patient care in hospitals and the majority of nurses in our country are women.

In the study of Erol et al., it was found that most of the health workers came into contact with blood and body fluids, the majority of those who came into contact were nurses, and the most common form of contact was with sharps [26].

In our study, the reasons why the health workers who had the most occupational accidents were nurses; We think that the number of patients per person is high, they do their jobs in a hurry, they do business with the stress of covid 19 contamination both for themselves and for those around them due to the pandemic.

In the study of Diktaş et al., in which occupational accidents experienced by healthcare workers during the pandemic period were examined, the rate of occupational accidents in nurses was found to be high, similar to our study [27]. Performing more interventional procedures

such as blood tests during the pandemic period may explain that this risk is higher in the nurse group.

Despite regular training and precautions, needle sticking is still in the first place in the literature as an injury tool [28,29]. In our study, it was found that the most frequent contact with blood and body fluids was as a result of sharp-penetrating injuries, in line with the literature. According to the literature, 32% of injuries occur with disposable syringe needles, 19% with suture needles, and 12% with winged steel needles [30].

In the Davas study, 26.5% reported exposure to sharps injuries in the last year, while this rate was determined as 80% in our study [31]. In a study conducted in Korea, the rate of injury with a sharp object within 1 year was reported as 79.7% [32]. The data of our study is compatible with the literature.

In this study, it was found that employees were frequently injured by injector needles. In the study of Getahun et al., injector needles were found to be responsible for the highest rate (47.2%) of stab wounds [33]. On the other hand, Gholami et al. found that syringe needles reported the highest frequency of injuries [34]. We think that the reasons for the high rate are the widespread use of needles in all areas of health services, the increase in the workload due to the pandemic, and the inclusion of both employees and the public in the vaccination process.

Studies on the causes of work accidents have revealed different results about the relationship between work experience and work accident. Most of the studies have revealed that the frequency of occupational accidents is higher among inexperienced workers than among experienced workers [35]. In other words, as work experience increases, exposure to work accidents decreases. In our study, those who were most exposed to occupational accidents were

those with 0-5 years of professional experience (47.14%). Professional inexperience is accepted as a factor that causes accidents. The accident rate is higher in inexperienced employees who have just started a job, and as the seniority and accordingly the experience increase, the tendency and habit of the employees towards that job is higher. [36,37].

Considering the effect of marital status on the occurrence of occupational accidents; married people were more exposed to work accidents (61.42%). Although it has been stated in some studies that marriage causes a decrease in accident rates, sometimes marriage can also cause an increase in accident rates. Situations such as an unhappy marriage, a marriage that is about to end, serious health problems of one of the family members, and the anxiety of contaminating the covid 19 disease can cause people's mental and physical balance to deteriorate and their interest in work to decrease. These mental and physical imbalances have consequences such as motivation disorders and increased inattention on people. These cause an increase in occupational accidents [38].

In the study of Yaşar and Gür, which investigated the rate of occupational accidents and occupational diseases in health workers during the pandemic period, it was found that the rate of work accidents was low, unlike our study [39]. We think that the reason for this is the low number of employees who participated in the survey in their studies.

Due to the increase in the number of inpatients with the diagnosis of covid 19 in the hospital where the research was conducted, the inpatient services were transformed into a pandemic service. When an evaluation is made according to the place where the work accident occurred, it is seen that the most work accidents are in the pandemic services. Factors such as increased workload, fear of con-

tamination from patients, and fatigue have increased the rate of work accidents in these services. Given that more interventional procedures, such as blood tests, are performed, especially during the pandemic period, this may explain that this risk is higher in the pandemic services.

Moreover; in the Circular dated 7.5.2020 and numbered 2020/12 of the General Directorate of Retirement Services of the Presidency of the Social Security Institution, "Considering that the Covid-19 virus is a contagious disease, provision is required for the insured who are exposed to the epidemic and apply to health service providers. required" was stated. With this Circular, the Social Security Institution evaluated the insured people exposed to Covid-19 within the scope of "sickness insurance", not "work accident and occupational disease insurance".

Therefore, in the data studied, health workers who contracted the disease were not included in the scope of work accident.

Within the framework of the conditions written in the Law No. 5510, the Insured's contracting the Corona virus while he is at the workplace should be considered as a work accident [40].

#### IV. CONCLUSION

Occupational health and safety are of increasing importance in today's working life.

The main purpose of occupational health and safety, the goal of creating a safe working environment for employees, has ceased to be a matter of concern only to the working individual, but has become an issue that needs attention to ensure efficient production and service safety, and to ensure social welfare and peace. In this respect, important issues that affect the lives of societies in every aspect and transform working life in a negative way are occu-

pational accidents and occupational diseases. Societies have started to make efforts to minimize workplace accidents and occupational diseases. Because the cost that arises as a result of work accidents and occupational diseases affects and harms both the employee, the employer and society in general.

Considering the increased workload and psychosocial effects in the occurrence of occupational accidents in healthcare workers with the pandemic process, this study suggests the following:

The reasons for the high incidence of sharps and puncture injuries can be considered as the hard work of healthcare professionals, haste due to the high patient circulation, and long working hours. Also, the vaccine is an important milestone in the fight against the virus that causes Covid-19. However, the effort to vaccinate large numbers of people who need to be vaccinated in a variety of settings may increase the risk of needle sticks among vaccination site workers. In our study, a high rate of needle sticking was detected in the first months of vaccination.

Providing solutions for the biological risks that healthcare professionals face most, focusing on reducing the risk of infection and the use of safe tools;

Providing psycho-social support to health personnel

Preventing monotony and providing ergonomic measures to increase motivation

Work shift planning, especially among those working in areas such as emergency and intensive care

Reviewing the measures to prevent musculoskeletal injuries caused by slips, crashes and falls, which are the second most common cause of employees to receive resting reports.

In health institutions where Covid-19 cases are man-

aged, a risk assessment should be made or renewed, especially the biological risks to the working environment, the infection control measures are taken should be evaluated, and employee health and safety measures should be taken with a proactive approach.

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