

Realities and Challenges of Healthcare Workers in Kosovo during COVID-19: An Overview in Healthcare Workers

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Abstract

Introduction: Healthcare workers across the world have been raised to the demands of treating COVID-19 patients, potentially at significant cost to their own health and wellbeing. The coronavirus disease 2019 (COVID-19) pandemic has caused an increasing of challenges for healthcare professionals not only in Kosovo but globally. However, the psychological impact and change behavior, of the coronavirus disease 2019 pandemic, among healthcare workers, are still unknown. **Aim:** The purpose of this paper is to know the reality and challenges of healthcare workers in Kosovo during the current COVID-19 outbreak. **Methodology:** This is a cross-sectional, online survey which was conducted from 15 March 2020 to 30 July 2020 on 309 healthcare workers at three hospitals in Kosovo. An online survey questionnaire was used to collect data on participants' characteristics, questions about gel hand sanitizer, disposable gloves, masks, facial protective shields, including questions such as: Do they have any chronic disease? Do they have fear from infection? Were they getting information about COVID-19? Do they have a stress during their work? Do they carry about public health measures and policies? The study protocol was approved by the ethical commission of our university. **Findings:** A total of 309 healthcare workers and medical practices completed the online survey. Most participants were female (n = 233; 75.4%), and live in city (n = 174; 56.3%). Based on their income (n = 250; 80.9%), by having a middle income and (n = 44; 14.2%) low income. Regarding provide services to people with COVID-19, 69.3% of participants were directly with infected patients,

and during this time those who were worried to get infected with coronavirus were 31.4%, who said that they were afraid of becoming infected. The frustration was that if they become infected, the possibility of transmitting the virus to other family members will increase, where 35% stated that they are very scared and extremely scared 21.4%. **Conclusion:** Our study highlighted the importance of taking into consideration the experiences and concerns on front-line staff during pandemic. Factors such as older age, being female, chronic diseases and trainings may protect healthcare workers from fear during pandemic.

Keywords

Health Professionals, Fear of Infection, Challenges, Knowledge

1. Introduction

The COVID-19 pandemic has affected almost every country and territory around the world, and some have been affected much more than others [1]. After the outbreak of COVID-19, a large number of healthcare workers became infected with SARS-CoV-2, accounting for 4% - 11% of confirmed cases [2].

World Health Organization (WHO) declared the COVID-19 as a pandemic, which likely puts healthcare professionals throughout the world in an unprecedented situation. Hospital associated transmission in one of the important routes of spreading this corona virus worldwide [3].

Although this virus is a challenge for the whole world, we have learned about it in many documents, drafted from many organizations and states regarding epidemiology, virology, ways of transmission, risk groups, preventive measures and patient health care [4] [5] [6] [7] [8].

A study conducted in Lithuania best describes what should have been done during the pandemic management, were each hospital had to change the work organization strategy. Through this, it was crucial to learn a lesson, have a vision, pay attention to the preparation and implement a change plan strategy, because clear preventive steps and preparation for various situations contribute to the effective functioning of employees in the organization [9].

According to many studies done around the world, it is said that although social distancing is the most effective way to contain the outspread of this virus, still this was not easy to be implemented for healthcare professionals who required direct contact with COVID-19 patient and put them under a high risk of being infected themselves [10], and their families. They have had to manage higher numbers of patients with high mortality rates in a high-pressure environment. They have dealt with challenges in delivering care with strict infection control in place and not always with adequate personal protective equipment (PPE) [11] [12], and lack of staff preparedness/education, crisis counseling, and family preparedness with social support [13].

Further, healthcare professionals also suffered from insomnia, loneliness, sleep disorder, and mental depression as a result of the workload and related stress [14].

Recent studies emphasize on health professionals that they have faced fears of contracting COVID-19 and passing it onto their loved ones, shortages of personal protective equipment, inadequate support as an individual and healthcare worker [15] [16].

Junior doctors also have concerns about this pandemic halting their education and adding to their training requirements [17] [18]. Additional challenges are faced by frontline doctors who provide services in the hospital emergency departments, COVID-19 and respiratory wards, intensive care units (ICU) and the laboratory while handling potentially infectious COVID-19 material; they are trying to adjust to an entirely new working environment. These fears may contribute to these healthcare workers' mental burden and can be a perfect recipe for moral injury [19].

The announcement of the state of epidemic made it possible to introduce a number of legal changes, concerning organization of medical personnel's work. Due to the viral nature of the threat, the pandemic particularly affected medical personnel. During the pandemic healthcare workers had many challenges as they are: increased risk of SARS-CoV-2 infection among health care personnel, shortages of personal protective equipment to the work place, shortages of medical personnel due to quarantine and isolation, organization changes including rotational work system, isolation of individual workplaces, organization of COVID departments on the premises of hospitals, referrals to work to other positions or even in other hospitals, changes in the scope of duties and patient profile and the severity of his condition, lack of theoretical and practical preparation for work in conditions of a pandemic, frequently changing guidelines and regulations, the need to use personal protective equipment, caring for patients who are in a bad and rapidly deteriorating condition, and caring for colleagues who also fell ill had an impact on the working conditions of healthcare professionals during the pandemic [20].

All these factors increase the burden of work in healthcare facilities. Limited resources of protective equipment in the health care system, prioritization of the most vulnerable workers, as well as insufficient supply in relation to demand in the most critical moments of the pandemic, mean that not all of the hospital employees had access to highly effective methods of respiratory protection.

The World Health Organization (WHO) and other national and international public health authorities recommend implementing safety protocols for health care workers. Based on many studies according precautions to be implemented by healthcare workers caring for patients with COVID-19 have done in many countries until now. However, basic protective equipment and safety protocols are not always available in many medical institutions dealing with COVID-19 patients. Many medical institutions around the world do not have access to an

appropriate number of human resources and diagnostic/therapeutic protocols to care for admitted and ambulatory patients suffering from COVID-19 [21].

The first reported case of Coronavirus disease (COVID-19) in Kosovo was confirmed on March 13, 2020, in a person who had just returned from Italy and 20-year-old Italian woman which worked for a humanitarian organization in Kosovo [22] [23].

A study from Nebraska found that 63% of air samples proved for SARS-CoV-2 in places like rooms and corridors where infected persons resided [24].

To control the spread of the virus, people who were suspected or confirmed to be ill, should be isolated from other patients and treated by health workers using strict infection control measures. People who have had social contact with symptomatic individuals that were confirmed with SARS-CoV-2 infection, should be monitored by local health care teams [25].

Despite the constant and intensive efforts of health professionals and scientists of various profiles to combat, limit, prevent and eliminate the global pandemic COVID-19, has not been still stopped today and it is continuing to be spread everywhere.

While other countries had a favorable economic situation to cover the cost of the pandemic, this was not a case to Kosovo as a country with low incomes, high unemployment rates versus the youngest population in Europe (average age is 28 years) [26].

Another issue is the fact that we are the last country in Europe to start vaccinating the population and vulnerable groups and this is thanks to the donations made to Kosovo, because only a month ago we managed to buy the first doses of vaccines.

During the pandemic outbreak in Kosovo, we lost doctors from various fields and nurses who died from Sars-CoV 2 infection by patients and many others became infected while working with patients and barely managed to escape.

On the other hand, those who are still close to patients have faced many challenges such as: lack of trainings, lack of staffs, reduced staff, anxiety, fear of infection and transmission of the disease to their families, but also lack of medicines and protective equipment's for health care workers, inadequate equipment and lack of space for the patients with severe symptomatology.

That has happened in many countries to achieve the highest level of effectiveness in the response to the COVID-19 outbreak, they have used strategies and training of health teams to prevent transmission in health care settings [27].

As in many countries globally (USA, Japan, India, South Korea, Spain, Australia, China, France, Germany, Iran, Canada, Italy), doctors and healthcare systems tackling coronavirus, had many challenges at all stages of the pandemic starting with pandemic management, providing medicines for the treatment of infected patients, providing COVID-19 hospitals and even managing dead patients [28].

Fighting the pandemic is ongoing , including the measures coming from Pub-

lic Health, the large number of tests that are done for 24 hours, the proper treatment of patients, recommendations and vaccination of the population.

The purpose of this study was to evaluate the Realities and challenges of health-care workers in Kosovo during the current COVID-19 outbreak.

2. Methods

Doctors and nurses, who are willing and provided treatment at secondary and tertiary levels in Kosovo, during the COVID-19 pandemic, participated voluntarily in this survey.

2.1. Study Design

Study design is a cross-sectional, online survey based on study, administered to healthcare workers in three health care institutions; Regional hospital in Peja, Regional hospital in Gjakova as a secondary level and UCC which is the only tertiary level in Pristina, to participate in this survey from 15 March 2020 to 30 July 2020. The Questionnaire was developed and distributed by using Google Forms.

The design of the questionnaire was done by specialists in Public Health, in Pristina, participants were able to complete the survey only once and were allowed to terminate the survey at any time they desired. The survey was anonymous and confidential and there was not any criteria for selecting health care workers, but they completed the questionnaires voluntarily.

The study protocol was approved by the ethical commission of University of Gjakova and special permission from each hospital. The procedures of this study were fully complied with the provisions of the Helsinki Declaration regarding research on human participants.

Material used for this study was taken from Scientific Journals, National Institute of Public Health in Pristina (Ministry of Health, Kosovo), European Center for Disease Prevention and Control (CDC), WHO.

2.2. Participants

We recruited 309 health care workers, from Hospitals in Gjakova, Peja and Pristina.

2.3. Data Collection Tools and Measurements

There were purposely selected the 3 public hospitals in Kosovo, (Peja, Prizren and Pristina hospitals). Researchers at each hospitals sent the online survey link to the contact health staff and practitioners via email.

A three structured questionnaire was developed to evaluate participant's challenges and reality regarding knowledge and attitude during COVID-19 outbreak. The study questionnaire comprises three sections. Section 1, had Demographic information of the responders. Section 2 comprises questions about gel hand sanitizer, disposable gloves, masks, facial protective shields, including questions such as: do they have any chronic disease, do they have fear from infection, were

they getting information about COVID-19, do they have a stress during their work, do they carry about public health measures and policies. In line with this, participants circled a number of times that how often they wash their hands, in general using five-point Likert scales. For “in general” the scale ranged from “never” (0) to “often” (4).

Section 3 comprised two items designed to evaluate participant’s perceptions about training in the workplace (10-point Likert scale; 0 = no training, 10 = training), risk from infection, protection from infected patients, disinfections, and if they were infected, what symptoms they had.

2.4. Statistical Analysis

The Statistical Package for the Social Sciences software (SPSS version 21.0) was used for data analysis (IBM Corporation, 2012). Frequencies (n) and percentages (%) were used to summarize categorical variables, and continuous variables are summarized with mean standard deviation. The t-test analysis was used to show significance difference between the groups of health workers.

3. Results

Kosovo went into lockdown with social distancing policies, which was implemented across the population in an attempt to reduce the transmission of COVID-19 and the burden on the healthcare system. Health system in secondary and tertiary level

Strategies to address workforce gaps included: the redeployment of staff, the reintegration of recently retired staff into the active workforce, and early graduation of medical students.

Preventive measures include physical or social distancing, quarantining, and ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face. The use of face masks or coverings has been recommended in public settings to minimize the risk of transmissions.

All hospitals in Kosovo have suspension of all non-urgent elective surgeries for 3 months, and diverted resources from other health issues to free up health workers in order to treat those who were affected by COVID-19. This may present risks to patients suffering from other illnesses.

While certain groups of the population such as the elderly, the chronically ill, and marginalized groups make up the largest percentage of morbidity and mortality from SARS-Cov 2 in Kosovo.

Unfortunately, until this period we have also lost many doctors and nurses infected with COVID-19, who are mainly unable to serve infected patients in hospitals.

Demographic Characteristics

A total of 309 healthcare workers and medical practices in three hospitals in Kosovo, completed the online survey. All participants worked in urban areas,

reflective of the areas of high blanket deprivation in the region. Most participants were female (n = 233; 75.4%), and live in city (n = 174; 56.3%). Based on their income (n = 250; 80.9%), have middle incomes and (n = 44; 14.2%) and low incomes (**Table 1**).

Healthcare professionals have concerns primarily about their relative's health, but they also bear the burden of emotional contact with COVID-19 patients. In addition, they are also under occupational overload due to staff shortages, and lack of personal protective equipment. Medical personnel are also afraid of organizational changes concerning themselves (e.g., referral to work in other hospitals transforming their ward into a COVID ward, fear of losing their current workplace). These fears are caused not only by the fear of getting sick, but also from working in a completely different working conditions and the fear of the possibility of adaptation to new conditions with limited information and training support in a new job.

The possibility of infecting yourself or your loved ones is one of the factors that influence the level of anxiety among healthcare workers. Regarding provide services to people with COVID-19, 69.3% of participants were directly with infected patients, and during this time, and 31.4% of them were afraid of being infected with coronavirus. The reason for the fear was that if they become infected, the possibility of transmitting the virus to other family members will be increased, where 35% stated that they are very scared and 21.4% stated that they are extremely scared.

During the pandemic, health staff and practitioners obtained all information about coronaviruses via the Internet (n = 147; 47.6%) and social media (n = 117; 37.9%) (**Table 2**).

Table 1. Participants' characteristics.

Variable	Total (309)	
	Frequency (%)	Mean ± SD
Age, year		
Min: 15 - Max: 65	309 (100%)	30.06 ± 12.33
Gender		
Men	76 (24.6)	1.72 ± .431
Women	233 (75.4)	
Residence; where do u live?		
City	174 (56.3)	1.56 ± 0.497
Village	135 (43.7)	
Consider your outcome		
Low income	44 (14.2)	1.91 ± 0.497
Middle income	250 (80.9)	
High income	15 (4.9)	

Table 2. Staff fears of infection with the COVID-19 virus, while working with patients as well as worries about infection of their family members.

If you are a health worker, have you provided services to people with COVID-19?		
Yes	214 (69.3)	1.69 ± 0.462
No	95 (30.7)	
During the last months how worried have you been not to get infected with coronavirus?		
Not at all	56 (18.1)	2.72 ± 1.19
A little	80 (25.9)	
On average	97 (31.4)	
A lot	47 (15.2)	
Extremely	29 (9.4)	
How worried were you about your family or relatives getting infected with the coronavirus?		
Not at all	12 (3.9)	3.51 ± 1.13
A little	57 (18.4)	
On average	66 (21.4)	
A lot	108 (35.0)	
Extremely	66 (21.4)	
Where do you get information about the pandemic?		
TV	28 (9.1)	4.24 ± 1.18
Radio	2 (0.6)	
Newspaper	5 (1.6)	
Social media	117 (37.9)	
Internet	147 (47.6)	
Family members	10 (3.2)	

The COVID-19 pandemic has increased stress level for people around the world, especially for health care professionals who are the most exposed to the coronavirus.

In terms of stress and anorexia in the workplace, 13.6% participants responded that they have no stress at all, 32.4% in average and 11.3% of them stated that they have extremely stress during COVID-19 outbreak. According to this 30.4% on average had anorexia (**Table 3**).

Table 4 of T-test analysis between health workers who provide services for patients with Covid-19 and those who didn't in those variables: 1) Washing hands with soap and water; 2) Use hand hygiene products; 3) Keep the mask outdoors; 4) Keep gloves outdoors; 5) Shake hands when you meet; 6) Keep distance over 2 m from others; 7) Avoid crowded schedules and places; 8) Carefully touch the door handles, elevator buttons, etc.

T-test analysis has shown some significant difference between the group of health workers who said (Yes) they worked with a patient with COVID-19 and the group of health workers who said (No) they didn't work with a patient with COVID-19 in those variables:

Table 3. How stressful have the isolation measures been for you and during this time did you have anorexia?

How stressful have the isolation measures been for you?		
Not at all	42 (13.6)	
A little	64 (20.7)	
On average	100 (32.4)	2.97 ± 1.19
A lot	68 (20.0)	
Extremely	35 (11.3)	
Have you had anorexia in recent months or have you eaten more than usual?		
Not at all	85 (27.5)	
A little	83 (26.9)	
On average	94 (30.4)	2.36 ± 1.08
A lot	40 (12.9)	
Extremely	7 (2.3)	

Table 4. T-Test analysis.

	N	Mean	DS	t	df	p
Hand washing with soap and water						
Yes	91	2.89	0.314	0.532	297	0.595
No	208	2.86	0.486			
Use hand hygiene products						
Yes	91	2.84	0.419	2.06	297	0.039
No	208	2.70	0.604			
Keep the mask outdoors						
Yes	91	2.58	0.715	2.76	297	0.006
No	208	2.30	0.839			
Keep gloves outdoors						
Yes	91	1.64	1.13	-1.07	297	0.282
No	208	1.78	0.984			
Shake hands when you meet						
Yes	91	0.956	0.976	-2.87	297	0.004
No	208	1.32	1.02			
Keep distance over 2 m from others						
Yes	91	2.34	0.763	3.39	297	0.001
No	208	1.98	0.919			
Avoid crowded schedules and places						
Yes	91	2.31	0.778	1.23	297	0.219
No	208	2.18	0.919			
Carefully touch the door handles, elevator buttons, etc.						
Yes	91	2.51	0.720	1.60	297	1.09
No	208	2.33	0.954			

Use hand hygiene products—T test has shown significant difference between group who said Yes (mean 2.84 ± 0.41) and the group who said No (mean 2.70 ± 0.60) regarding of using hand hygiene product, where as it can be seen the group of health workers who said Yes have a better score, $t = 2.06$, $p = 0.039$.

Keep the mask outdoors—T test has shown significant difference between group who said Yes (mean 2.58 ± 0.71) and the group who said No (mean 2.3 ± 0.83) regarding keeping the mask outdoor, where as it can be seen the group of health workers who said Yes have a better score, $t = 2.76$, $p = 0.006$.

Shake hands when you meet—T test has shown significant difference between group who said Yes (mean 0.976 ± 0.97) and the group who said No (mean 1.32 ± 1.02) regarding of shaking hands when they meet, where it can be seen the group of health workers who said No have a better score, $t = -2.87$, $p = 0.004$.

Keep distance over 2 m from others—T test has shown significant difference between group who said Yes (mean 2.37 ± 0.76) and the group who said No (mean 1.98 ± 0.91) regarding of keeping the distance over 2 m from others, where it can be seen the group of health workers who said Yes have a better score, $t = 3.39$, $p = 0.001$.

In the question whether they knew how to protect health workers during the pandemic, we used the Likert scale.

The tool consists of 7 items evaluated on a 4-Point Likert Scale with 1 = “I do not agree at all”, 2 = “undecided”, 3 = “I agree” and 4 = “I totally agree”. From 309 participants’ 37.9% of them agree that they know how to protect themselves from infection, 51.1% Agree, 4.2% they don’t agree at all and 6.8% of them are undecided (**Figure 1**).

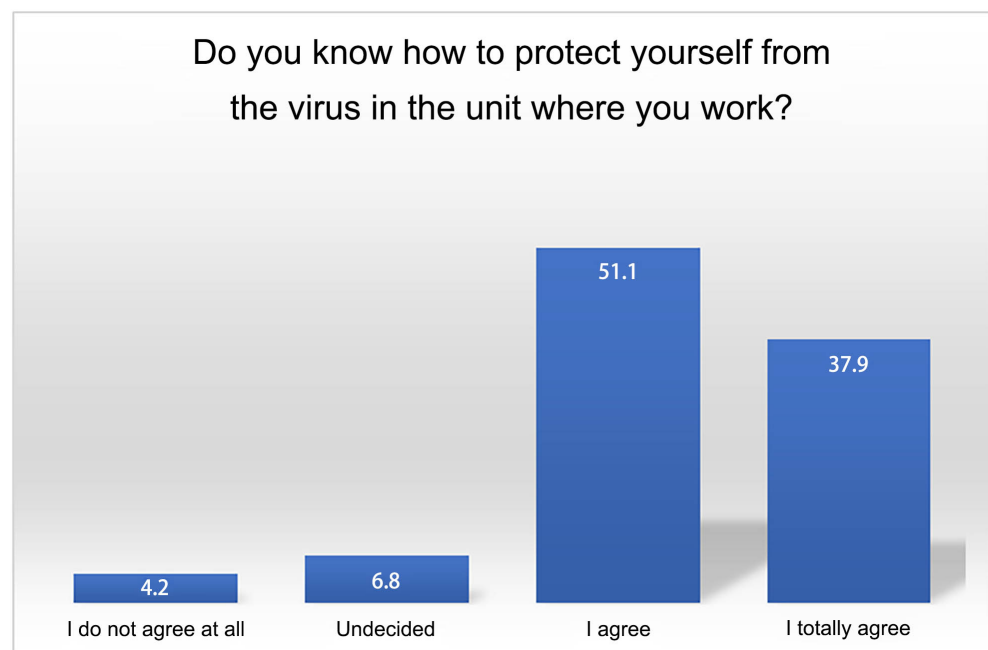


Figure 1. Do you know how to protect yourself from the virus in the unit where you work?

4. Discussion

In 2020, the COVID-19 pandemic had a major impact on both the health and economic well-being of people around the world, especially health professionals, and its detrimental impact continues today.

According to WHO working paper every health system had to face the burden of COVID-19 and had to take responsibility for its prevention and treatment. As the pandemic nears its third year, the health and well-being of healthcare workers remain a growing concern for multiple stakeholders, as does, more worryingly, the unmeasured level of excess deaths in healthcare workers attributable to COVID-19 [29].

The current study shows that fear of COVID-19 in Kosovo is a valid and reliable for researching the fear among health care workers and practitioners. Factors such as older age, being female, chronic diseases and trainings may protect healthcare workers from fear during pandemic.

The possibility of transferring medical staff to another workplace and organizational changes in hospitals by changing hospitals or departments into COVID-19 ones has a negative impact in the staff, especially among people inexperienced in working in similar positions. Lack of experience along with a lack of appropriate training causes uncertainty and fear among the transferred medical staff, not only due to the increased risk of COVID-19 but also in the interest of patient safety.

Specific duties and obligations of different type of healthcare professionals should be clearly defined, such as: the probable harms of treatments, competing obligations deriving from worker's and taking into consideration the risk level of the working environmental and the state budget.

The World Health Organization reported that one in ten health workers is infected with coronavirus in some countries [30].

The UK government announced that retired healthcare professionals would be brought out of retirement to help during the COVID-19 crisis. This led to concerns that they could be at a higher risk for severe COVID-19 illness [31].

Shortcomings of personal protective equipment have been reported from several countries. In China, inadequate staff training, shortage of PPEs, reduced understanding of PPE uses and confuses PPE guidance have resulted in infections and deaths among healthcare workers [32] [33].

From previous study which was done in our institution, with medical students, it was found that fear and isolation measures have been stressful for them, because they were not equipped with protective equipment, they did not have proper training on how to deal with infected patients and often did not know how to apply protective measures [34].

Accurate, reliable and trustworthy data and information is an essential resource in times of crisis, such as that created by COVID-19. This includes both the dissemination of information about the virus and measures to contain it, and ensuring that any collection of personal data—in particular health data—complies

with data protection standards.

Increased risk of SARS-CoV-2 infection among health care personnel, shortages of personal protective equipment to the workplace, shortages of medical personnel due to quarantine and isolation, organization changes including rotational work system, isolation of individual workplaces, organization of COVID departments on the premises of hospitals, referrals to work to other positions or even in other hospitals, changes in the scope of duties and patient profile and the severity of his condition, lack of theoretical and practical preparation for work in conditions of a pandemic, and frequently changing guidelines and regulations.

From another previous study which it has been done with citizens from municipality of Prizren and Gjakova, assistance provided by health professionals to deal with the pandemic, has improved the mental state of citizens, where majority of them have experienced anxiety and stress disorders at the time of COVID-19 onset [35].

Similar to our study, a study from China found that majority of participants were female (96.6%), married (63.9%) and more than 97% of participants were working in hospitals [35].

From many studies done in many countries of the world it is said that outbreaks of recognized contagious illnesses such as COVID-19 which highlight the risk of safety problems for healthcare providers and nurses. For this reason, it is rightly said that manpower shortages during infectious disease outbreaks may be caused by uncertainties regarding life threatening infection source and real cases of infection among healthcare staff [36].

Similar to our study on Health professionals in Latin America, they founded that they had access to the following items; gel sanitizer (95%), disposable gloves (91.1%), and disposable masks (83.9%) [37].

Exceptional efforts have been made by healthcare workers in Kosovo, to apply most effective safety measurements to protect their health in workplace. We can presume that organizational support could contribute to employee well-being, their physical and mental health, perception of safety and management in health care and to refer public health policies.

5. Conclusion

Protecting healthcare workers is a public health priority. The study highlights an overview regarding challenges faced by healthcare workers during COVID-19 pandemic in Kosovo. The experiences of healthcare workers during COVID-19 are not unprecedented. We found that insufficiency of medical staff as well as medical equipment in our hospitals, was common and resulted to increased workload. We found that almost all healthcare workers continue to work, despite a lack of information, personal protective equipment, trainings and several worries and concerns such as the infection risk of their family and consequences on their functional ability. Interventions to prevent and treat mental health distress in healthcare workers need to be developed and the effectiveness and acceptabil-

ity should be carefully evaluated.

6. Limitation

This was a descriptive cross-sectional study, therefore, inference on causation could not be established. In addition, this was an online survey; representativeness of healthcare workers in three hospitals in Kosovo. We conclude that the healthcare professionals need to be supported with adequate resources for both physical and mental health. While workloads need to be lessened, a proper coordination and access to information during this public health emergency should be put in practice to ensure quality healthcare services.

Further studies need to evaluate healthcare workers experiences in dealing with COVID-19 pandemic in all hospitals in Kosovo.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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