Occupational Health and Safety of Health Care Professionals During Pandemic COVID-19

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Abstract

The study is based on online survey, including the occupational health and safety of health care professionals. The study was conducted in the tertiary health care centres of Chandigarh (UT), India by applying snowball sampling technique. There were 69 health care professional included from different occupational category, i.e. medical staff, paramedical staff, nursing staff and helpers. The study was conducted to underline the different components of occupational health and safety during Covid-19 pandemic. Another scenario of study was to discuss various view points of healthcare professionals on epidemic.

Keywords: *COVID-19, Healthcare professionals, Occupational Health, Prevention, Safety.*

Introduction

Since ancient times, human civilization has been a victim of various types of 'Pandemics' in which millions of the population have lost their lives and money in different countries within few months or years. There is a mention of numerous 'Pandemics' in the history. P*rehistoric epidemic: Circa 3000 B.C., Plague of Athens: 430 B.C., the Black Death: 1346-1353, Cocoliztli epidemic: 1545-1548, Great Plague of London: 1665-1666, Philadelphia yellow fever epidemic: 1793, Flu pandemic: 1889-1890, American polio epidemic: 1916, AIDS epidemic: 1981-present day, H1N1 Swine Flu pandemic: 2009-2010, West African Ebola epidemic: 2014-2016 and Zika Virus epidemic: 2015-present day* and so on are some epitome of a pandemic [1].

The contemporary world confronts with a novel pandemic 'Corona-virus disease 2019 (COVID-19)' which is caused by the virus named 'Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)'. As a matter of fact, the corona-virus is not a new virus and it belongs to the family of 'Coronaviridae' which can infect both animal and human being. The symptom for COVID-19 is considered in the range from mild (dry cough, sore throat and fever) to severe (organ failure, septic shock, pulmonary edema, severe pneumonia and acute respiratory distress syndrome). COVID-19 disease is considered more dangerous for elderly people, infants or small children, pregnant ladies and people with weak immunity or any medical condition, such as diabetes, hypertension, cardiovascular disease and any other chronic or respiratory disease[2-4]. The first case of COVID-19 is reported in the Wuhan City, China in the month of December 2019[2]. The COVID-19 has the capacity to transmit in a community through a personal contact with a person or object infected with the coronavirus[4,5].

Despites of the developed economy and sufficient healthcare facilities, more or less 216 countries encounter health, social and economic crisis with the outbreak of COVID-19 which requires urgent political responses[6]. The government of Italy, China and other countries have adopted the 'national lockdown' to prevent the spread of COVID-19. Restriction on transportation or mobility, massive quarantine, public health measures,

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tourism, public gathering and other economic activities like constraint on retail, trade fairs, event cancellation, etc. is disrupting the production, global supply chain, consumption and stock market[7-8]. This has created numerous economic and social problems for people and country for example, loss of job by five (5) million people in China, production of car suspended in Europe, poor performance of stock market in the UK and German, expected 3% decrease in the GDP of US etc[8]. Along with the social and economic crisis, mortality and morbidity due to COVID-19become a global concern that requires the collaboration among government of different countries and between countries and International agencies like WHO, OCHA (United Nations Office for the Coordination of Humanitarian Affairs), World Bank, etc [2].

According to World Health Organization (WHO, 2020), a total number of 6,194,533 COVID-19 cases were confirmed, including 376,320 deaths worldwide (till 4th June 2020) [6]. According to Ministry of Health and Family Welfare (2020), India stood seventh (7th) in ranking among highest confirmed cases countries with 207,615 number of cases and 5,815 deaths recorded till 4th June 2020. Approximately 294 cases of COVID-19were confirmed in Chandigarh, including about 82 active cases, 214 cured/discharged/migrated cases and 5 deaths (till 4th June 2020)[9].

A total of 6,520,011 confirmed cases of COVID-19 were recorded worldwide, including 384,861 deaths and 3,102,908 recovered cases. About 4,427,362 cases of COVID-19 and 269,834 deaths were confirmed only in top ten (10) infected countries out of them. Approximately 67.90% of globally confirmed cases and 70.11% worldwide deaths were recorded in top ranked ten countries ***(Table 1)***[10]. WHO (2020) considered the outbreak as the Public Health Emergency of International Concern on 30th January 2020 and suggested measures to interrupt the spread of COVID-19 pandemic. These measures were early detection, treating cases, isolation, contact tracing and social distancing[2]. ***Table 1*: Top 10 countries with maximum COVID-19 infected cases**

Table 1: Source: https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1?[10]

Top 10 countries with corona infected cases (till 11:55 pm IST, 4th June 2020)

Sr. No	Countries	Number of Confirmed Cases	Number of Deaths	Number of testing done	Total Population of Countries
1	USA	1,890,947	108,599	18,874,077	330,854,064
2	Brazil	560,737	31,417	930,013	212,442,762
3	Russia	432,277	5,215	11,426,045	145,929,848
4	Spain	287,406	27,128	4,063,843	46,753,443
5	UK	279,856	39,728	4,786,219	67,858,826
6	Italy	233,836	33,601	3,999,591	60,468,295
7	India	216,769	6,088	4,103,233	1,378,937,377
8	Germany	184,228	8,682	4,348,880	83,763,806
9	Peru	174,884	4,767	1,092,646	32,934,728
10	Turkey	166,422	4,609	2,155,349	84,267,248
Total		4,427,362	269,834	55,779,896	2,444,210,397

Data taken on above mentioned time & date, as the data is changing every day so it may vary accordingly with the increase in number of cases

In the absence of a vaccine and optimum treatment for COVID-19, the focus is given on the symptomatic treatment to manage the symptom of the COVID-19 infected patients[3, 11]. Clinical trials are still going on in the development of vaccine for treating COVID-19. This creates a burden of providing treatment to patients infected with COVID-19 and having an adverse effect on healthcare professionals in the global healthcare system[12]. They are at the risk of exposing hazards, such as pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence[13]. There is also a risk of transmission the infection to the family members of healthcare professionals[12]. The first case of infection in healthcare professional was reported in 20th January 2020 while providing care to COVID-19 patients[14].

WHO (2020) considers measures to reduce the risk of infection or hazard exposure among healthcare professionals. Measures like an adequate supply of personal protective equipment (PPE) or other required items for sanitation, screening and treatment of patients; cooperation between management and health workers; compensation, rehabilitation, and curative services; access to mental health and counselling services etc. are considered. Healthcare professionals should follow the protocol of safety while treating patients infected with COVID-19 in the environment of dignity and respect[12].

Literature Review: WHO (2020) gives priority to the safety of health workers during the outbreak of COVID-19. The 'occupational health' services play a vital role in the protection of health workers from occupational hazards which ensure the continuity of healthcare services[15]. The 'Occupational Health and Safety (OHS)' is a sub-discipline of occupational medicine, which has a motive to sustain the mental, physical and social wellbeing of a worker[16]. WHO (2001) defined the 'Occupational Health and Safety' (OHS) as an interdisciplinary activity to reduce occupational diseases or injuries and promote health and safety among workers through risk identification and preventives measures[17]. On the occasion of the 'World Day for Safety and Health at Work' on 28 April, International Labour Organization (ILO, 2020) addresses the need of preventing occupational accidents and disease at workplaces globally during the pandemic COVID-19[18]. Emergency response workers provide essential services which are necessary for the health, safety, and welfare of the community as a frontline response for the outbreak. These workers are healthcare workers, police officers, civil protection personnel, military personnel, and other workers in the area like transportation, fire, electricity, water supply, food, banking, telecommunication, marine services, and administration during an emergency situation[19].

Healthcare professionals, such as doctors, nurses, paramedics and support staff consider as a frontline to provide treatment and care to COVID-19 infected patients in the response of the outbreak of COVID-19[13]. Approximately 12% of the global working population was represented in the domain of healthcare workforce[20]. Healthcare workers function as a multidisciplinary team to ensure equity in the treatment of patients[21]. Nearly 5.6 million healthcare workers are vulnerable to the exposure with disease and injury related to occupation[22]. The occupational disease or injury can be spread among healthcare workers through five routes, such as blood borne (HIV, Hepatitis B and C), droplet (Influenza), airborne (Chickenpox and Tuberculosis), fecal-oral (Rotavirus) and contact route (Scabies, Herpes simplex virus 1 or 2)[23]. More than 890 healthcare workers were infected during the outbreak of Ebola virus among the general public from 2013-2016[24-25].

According to WHO (2020), more or less 35,000 healthcare professionals were infected with corona virus during the outbreak of pandemic COVID-19 (as on 21 April 2020).This number may be larger than the reported cases because of underreporting[26]. According to International Council of Nurses (2020), more or less 90,000 healthcare workers reported to be infected with COVID-19 and more than 260 nurses died due to COVID-19[27]. Between 8% and 38% of healthcare professionals suffer physical and verbal violence as well as social stigma due to their work. Apart from these hazards, they also confront psychosocial hazards, such as fatigue, occupational burnout, distress or declining mental health which affect their health and quality of work. Delay in recognition or suspicion of COVID-19 in patients, working in risky environment, long duty hours and sub-optimal adherence to preventive measures (hand hygiene practices and improper use of PPE) are some of the identified occupational risks for COVID-19 infection among health workers. There are others factors

also, such as insufficient training, inadequate supply of PPE, long exposure with COVID-19infected patients, shortage of staff and resources[26].

Subramanian et al. (2017) discussed the reasons for occupational disease and injury among healthcare workers, such as lack of experience, lack of awareness and ignorance about polices. Constant awareness activities could promote protective measures among healthcare workers against infection or injury[28]. Ngatu et al. (2017) underscored the requirement of strengthening the health care system and advancing the occupational safety equipments in health setting[25]. Auta et al. (2017) also emphasized the shortage of staff and the requirement of training among healthcare workers to promote OHS[24]. In the context of COVID-19, various strategies are underlined to reduce the risk of occupational exposure among healthcare workers. These are an identification of high risk activities, training, precaution, efficient disposal system, and management of occupational exposed healthcare workers and the service of counselling[26]. WHO (2020) has a concern to supply adequate PPE or other materials, provide training, availability of sufficient human resources, employment injury benefits (compensation, rehabilitation, and curative services), access mental health services and psychosocial support for health workers [9, 11].

The present study aimed at describing the 'Occupational Health and Safety' in healthcare setting and at outlining the viewpoints of healthcare professionals on different concerns related with pandemic during the outburst COVID-19.

Method and Material

The study adopted the cross sectional and descriptive research design. In this study, an online survey was conducted in order to avoid the risk of spreading the infection during COVID-19. The participants of the study were healthcare professional in the tertiary healthcare centres of Chandigarh (UT), India. A questionnaire was developed with the help of Google form which comprised of both open ended and closed ended set of questions. Using a snowball sampling technique (non-probability sampling), the questionnaires were sent and study conducted via E-mail, social media and telephonic interviews. The duration of data collection was 10 day from 18th May 2020 at 12 noon (IST) and closed on 27th May 2020 at 12 noon (IST). Out of 107 healthcare professionals, the 69 (64.5%) participants gave their consent and participated in the study.

The questionnaire comprised of three sections: The *first section* delineated the socio-demographical profile of the participants. The *second section* encompassed the existing circumstances in the healthcare setting and described the exposure of occupational hazards that healthcare professionals confronted due to the outbreaks of COVID-19. The *third section* illustrated the viewpoint of healthcare professionals towards different aspects of the pandemic COVID-19.

After the collection of data, the Ms-excel sheet was used for data recording and coding. The sheet imported to the platform of IBM SPSS (Statistical Package for Social Sciences) version 20, employing T-test, Karl Pearson's correlation and Spearman's correlation, Reliability test, Cronbach's Alpha test. The confidence interval was 95% included and less than 5% was considered statistically significant. The format of 5-point Likert scale was used to describe Opinion {ranging from Strongly Disagree (1) to Strongly Agree (5)} and Level of satisfaction of participants on different components of COVID-19{ranging from and Strongly Dissatisfy (1) to Strongly Satisfy (5)}. The data were computed using descriptive statistical analysis, such as measures of central tendency (mean, median and mode), dispersion measures (standard error and standard deviation) and association measures (correlation). Percentages, frequency tables, cross tabulation and a discussion as another example of descriptive analysis was also applied to encapsulate and display the data.

Results and Discussion

The study was conducted among n=69 (100%) health care professionals, 30 (43.5%) Male and 39 (56.5%) Female (*Mean=1.57 SD=0.499, SE mean= 0.060, T=26.037 Skewness=1.060, SE Skewness=0.289*). There were 24 (34.8%) medical staff, 33 (47.9%) para-medical staff, 05 (7.2%) nursing staff and 07 (10.1%) helpers of tertiary care setting of Chandigarh (*Mean=, 1.93, SD=0.913, SE mean=0.110, T=17.544)*. Among them 45 (65.2%) were post-graduates, followed by 15 (21.7%) graduates, 08 (11.6%) had secondary level education and only 01 (1.4%) was Ph.D. degree holder, (*Mean=2.57, SD=0.717, SE mean=0.086,*

T=29.719). The *mean age was 35.13, Median=32 Mode=30, SD=8.992*, SE mean=1.082, T=32.454, and the maximum respondents were belonged to 30-34 years of age category i.e. 23 (33.3%), followed by 17 (24.6%) were 25-29 years of age group, 10 (14.5%) were 35-39 years of age group, 06 (8.7%) were 50-54 years of age group, 03 (4.3%) were above 55 years 02 (2.9%) were ≤ 24 years and 08 (11.6%) were from 40 to 49 years of age group respectively. The results calculated statistically and it was significant *P value ≤ 0.05.*

WHO (2020) considered the consistent and correct practice of hand hygiene, sanitation, cleaning surfaces and proper bio-waste management as an essential practice to prevent the spread of corona virus among healthcare professionals, patients and their caregivers in the health setting[29]. Correspondingly, this study also found significant changes in the hospital, particularly in hygiene and sanitation practices during the outburst of COVID 19. The more focus was emphasised on the sanitization practice in the hospital premises. Out of total 249 multiple response sets, the 56 participants *{20 (8%) medical staff, 25 (10%) para-medical staff, 04 (1.6%) nursing staff and 07 (2.8%) helpers, SD=0.394}* responded to this. The 64 participants *{24 (9.6%) medical staff, 29 (11.6%) para-medical staff, 05 (2%) nursing staff and 06 (2.4%) helpers, SD=0.261}* observed the second change in the hospital staff i.e. they were more inclined towards personal hygiene practice. The 51 participants *{17(6.8%) medical staff, 25 (10%) para-medical staff, 04 (1.6%) nursing staff and 05 (2%) helpers, SD=0.442}* observed the change in the habit of cleaning their accessories for e.g. cell phone, pen, watch, keys, glasses, etc., among the hospital staff. The 38 participants *{11(4.4%) medical staff, 19 (7.6%) para-medical staff, 04 (1.6%) nursing staff and 04 (1.6%) helpers, SD=0.501}* observed the reduction in the habit of spitting here and there by patients inside and outside the hospital premises. The 33 participants *{12 (4.8%) medical staff, 14 (5.6%) para-medical staff, 03 (1.2%) nursing staff and 04 (1.6%) helpers, SD=0.503}* observed the habit of changing the clothes frequently after going back to home from duty. The 07 participants *{01(0.4%) medical staff, 05 (2%) para-medical staff and 01(0.4%) helpers, SD=0.304}* observed that people following the social distancing, avoiding crowded places, wearing a masks at public places and even also following at workplaces. While checking the reliability of responses it was statistically significant, the *P value ≤ 0.05*.

Out of total n=69 (100%) participants, 52 participants (75.4%, *SD=0.434, Skewness=1.204, SE Skewness=0.289*) responded that the working hours and burden was increased during this pandemic, because the only 33% staff attendance was allowed every day during the lockdown to maintain the physical distancing at workplace. Out of total 69 (100%) participants, the 37 (53.6%, *SD=0.502, Skewness=0.149, SE Skewness=0.289*) attended the Covid-19sensitization training. Out of total 69 (100%) participants, the 36 (52.2%, *SD=0.503, Skewness=0.89, SE Skewness=0.289*) had performed the Covid-19screening duty. The data were calculated statistically and it was significant, the *P value ≤ 0.05*. The study of Wang et al. (2020) also found that phenomena, such as long exposure to the large number of infected patients, pressure of treatment, work intensity and lack of rest could increase the risk of infection among healthcare professionals during pandemic COVID-19[30].

Out of total 266 multiple response sets, the participants responded that they had applied the following protective measures to protect themselves from Covid-19in the hospital, such are as 58 (21.8%, *SD=0.369*) responded that they frequently clean their hands with soap and alcohol based hand sanitizer, followed by the 61 (22.9%, *SD=0.323*) avoid touching door handles, walls, switches on public places, etc., 24 (9%, *SD=0.480*) adopted wearing mask, 43 (16.2%, *SD=0.488*) used mask and gloves both, 24 (9%, *SD=0.480*) used PPE kit during duty, and 56 (21.1%, *SD=0.394*) replied that the maintained social distance at work place. The results were calculated statistically and it was significant, the *P value ≤ 0.05.* Similarly, Feng et al. (2020) found that the use of medical mask among healthcare professionals became a ubiquitous. PPE should be rationally used in healthcare settings and supply chains should be effectively managed. WHO (2020) estimated that 89 million medical mask, 76 million gloves, 1.6 million goggle could be used in each month. It also called to increase the production of protective equipment, including face mask at 40%[31-32].

While performing duty, around 17 (24.6%) participants replies 'YES', 32 (46.4%) participants

replied 'NO' and 20 (29%) participants replied to 'NOT SURE' regarding the contact with COVID infected patients. Around 07 male & 10 female health workers (*04 medical staff, 10 para-medical staff, 01 nursing staff and 02 helpers*, *T=23.052, SD=0.736*) came into contact with Covid-19 suspected or confirmed cases. According to World Economic Forum (2020), 1 out of 10 healthcare professionals are likely to get infected with coronavirus while treating COVID-19 infected patients in some countries[33]. Delay in recognition of COVID-19 patients, lack of skill in dealing with this pathogen, exposure to large patients and lack of PPE and preventives measures are some reason for vulnerability of healthcare professionals[26, 33].

After came into contact, 02 male & 02 female (*01 medical staff, 02 para-medical staff, and 01 helper*, *T=4.544, SD=0.795*) discussed with family, colleagues, friends, etc., 05 male & 04 female (*01 medical staff, 05 para-medical staff, 01 nursing staff and 02 helpers*, *T=4.391, SD=0.685*) consulted to the health care professionals, around 04 male & 09 female (*03 medical staff, 08 para-medical staff, 01 nursing staff and 01 helpers*, *T=4.384, SD=0.577*) was also quarantined with medical advice, and 05 male & 03 female (*03 medical staff, 03 para-medical staff, and 02 helpers*, *T=4.413, SD=0.709*) among them took decision for self-isolation. The results were calculated statistically and it was significant, the *P value ≤ 0.05.*

As a frontline support, many health care professionals faced the occupational hazards during working Covid-19pandemic. Various studies (Pfefferbaum & North, 2020; Rana et al., 2020; Shanafelt et al. 2020) found that healthcare professionals were more vulnerable for emotional and mental distress during the outbreak of COVID-19. Reasons, such as, risk of exposure, longer working hours, concern about family members, scarcity of PPE and other resources, economic loss, stigma associated with quarantine and involvement in difficult decisions on resource allocation were identified[34-36].

Table: 2 Occupational hazards faced by health care professionals (Multiple response set).

Occupational Hazards (Table 1)	N	Percent
Pathogen exposure	26	17.9%
Psychological distress	39	26.9%
Fatigue	14	9.7%
Occupational burnout	14	9.7%
Stigma	12	8.3%
Physical violence	5	3.4%
Psychological violence	9	6.2%
Long working hours	19	13.1%
Not any	7	4.8%
Total	145	100.0%

The participants faced the one or more occupational hazard while working, around 39 (*26.9%, T=23.867, X^2=1.174, SD=0.499*) had psychological distress during performing duty, followed by 26 (17.9%, *T=27.622, X^2=4.188, SD=0.488*) faced pathogen exposure, 14 (9.7%, *T=36.849, X^2=24.362, SD=0.405*) faced fatigue, 14 (9.7%, *T=36.849, X^2=24.362, SD=0.405*) occupational burnout, 12 (8.3%, *T=39.728, X^2=29.348, SD=0.382*) faced stigma, 09 (6.2%, *T=45.777, X^2=37.696, SD=0.339*) faced psychological violence, 19 (13.1%, *T=31.838, X^2=13.928, SD=0.450*) worked for long hours, 07 (4.8%, *T=36.849, X^2=24.362, SD=0.405*) not faced any occupational hazard and 05 (3.4%, *T=51.854, X^2=43.841, SD=0.304*) faced physical violence (***Table 2)***. The results were calculated statistically and it was significant, the *P value ≤ 0.05.*

In order to support frontline healthcare professionals, Government of India in collaboration with academia developed the *Arogya Setu App* in the month of April 2020. It can help in tracing the Covid-19cases and also provides the necessary information, updates, alerts, etc., to the users related with Covid-19. The app incorporates mix responses, such as positive and negative[37].As per the study conducted, out of 69 (100%) respondents only 55 (*79.7%, T=24.66, Mean=1.20, SE Mean=0.049,*

SD=0.405, Skewness=1.511) had downloaded the *Arogya Setu App.* According to the Arogya Setu App, approximately 12.87 crore people downloaded the app[38]. The usage frequency (*T=9.991, Mean=1.93, SE Mean=0.193, SD=1.603, Skewness=0.431*) of app by respondents as follows, Once in a day 24 (34.8%), Twice in a day 04 (5.8%), Often use 11 (15.9%), Once in a week 12 (17.4%) and Not using 04 (5.8%)**.** The results were calculated statistically and it was significant, the *P value ≤ 0.05.*

The Government of India recognises that the outbreak of communicable diseases like COVID-19 can create fear and anxiety among general public due to misinformation about virus and fake news, which is further responsible for prejudice, social isolation and stigma against frontline workers, such as healthcare workers, police and sanitary workers[39]. The government, media, doctor, police, celebrities and other stakeholders have been continuously making an appeal to avoid public gathering among the general public. Despites of this, the attitude of people is indifferent towards preventive measures and the incidence of ignoring the significance of social distancing is found[40]. Along with government initiatives, there is also a need of a responsible citizen, healthcare professionals, other frontline workers, essential service providers and support of family and society in order to counter these problems in the outburst of COVID-19[39].

While performing the Covid-19 related duty, there were 20 (29%) respondents faced misconduct or stigma, 46 (66.7%) didn't face any misconduct or stigma, 03 (4.3%) didn't wanted to disclosed (*T=27.695, Mean=1.75, SE Mean=0.063, SD=0.526, Skewness=-0.215*). After facing the misconduct or stigma during performing duty, 10 (14.5%, *T=4.899, Mean=0.43, SE Mean=0.089, SD=0.737, Skewness=1.366*) respondents discussed with colleagues and higher authorities, 02 (2.9%, *T=5.1798, Mean=0.55, SE Mean=0.106, SD=0.883, Skewness=1.028*) took legal action against misconduct or stigma, and 13 (18.8%, *T=4.859, Mean=0.39, SE Mean=0.081, SD=0.669, Skewness=1.474*) tried to explained about their duties and responsibilities to violators. The results were calculated statistically and it was significant, the *P value ≤ 0.05.*

Around 08 (11.6%, *SD=0.675, Skewness=-0.486, Median=02, Mode=02*) health care professionals accepted that the post Covid-19infected patient visited to the department for other chronic disease treatment, 30 (43.5%) responded that they had 'No Idea' and 31 (44.9%) replied to 'No'. When Post Covid-19patient visited to the departments of participants, they had took various safety steps, such as follows, 04 (5.8%) took necessary safety precautions, 02 (2.9%) done screening for initial symptoms, 01 (1.4%) treated the patients with proper safety protocols and 01 (1.4%) propagated the telemedicine option (*SD=0.704, Skewness=3.826*). While attending the chronic disease patients in emergency and special OPD's, around 37 (53.6%, *SD=0.502, Skewness=0.149, Median=01, Mode=01*) of respondents accepted that if patients coming for treatment, they had sent the patients for Covid-19screening first. Nearly around 59 (85.5%, *SD=0.355, Skewness=2.062, Median=01, Mode=01*) participant accepted that their department followed the proper protocol, while attending the patients.

The personal opinion of respondent ***Table 3*** about Covid-19lockdown situation was measured on Likert Scale, Reliability test applied to check the validity of scale, *Cronbach's Alpha Test=0.935, Grand Mean=3.92, and it was significant P value ≤ 0.05.*

Table 3: The personal opinions of respondents about the situation during Covid-19 lockdown

Covid-19 an occupational disease for health care professionals			
Likert Scale	N	Percent	SD=1.223, Median=4.00
Strongly disagree	04	5.8	
Disagree	10	14.5	
Neutral	13	18.8	
Agree	21	30.4	
Strongly agree	21	30.4	
Total	69	100.0	
Healthcare professionals are more vulnerable for the exposure of corona virus			

Cont... **Table 3: The personal opinions of respondents about the situation during Covid-19 lockdown**

Likert Scale	N	Percent	
Strongly disagree	04	5.8	SD=1.098, Median=4.00
Disagree	02	2.9	
Neutral	10	14.5	
Agree	25	36.2	
Strongly agree	28	40.6	
Total	69	100.0	
Did the government have taken the decision of lock-down timely?			
Likert Scale	N	Percent	
Strongly disagree	04	5.8	SD=1.196, Median=4.00
Disagree	09	13.0	
Neutral	09	13.0	
Agree	26	37.7	
Strongly agree	21	30.4	
Total	69	100.0	
The government had rightly taken the decision of increasing the lock-down			
Likert Scale	N	Percent	
Strongly disagree	03	4.3	SD=1.098, Median=4.00
Disagree	04	5.8	
Neutral	12	17.4	
Agree	23	33.3	
Strongly agree	27	39.1	
Total	69	100.0	
COVID-19 has increased the economic burden of the country			
Likert Scale	N	Percent	
Strongly disagree	03	4.3	SD=1.105, Median=4.00
Disagree	04	5.8	
Neutral	11	15.9	
Agree	22	31.9	
Strongly agree	29	42.0	
Total	69	100.0	
Frequency of using digital technology for payment should be increased			
Likert Scale	N	Percent	
Strongly disagree	03	4.3	SD=1.007, Median=4.00
Disagree	02	2.9	
Neutral	11	15.9	
Agree	30	43.5	
Strongly agree	23	33.3	
Total	69	100.0	
General public should follow safety measures to reduce the number of COVID-19			
Likert Scale	N	Percent	
Strongly disagree	05	7.2	SD=1.271, Median=5.00
Disagree	06	8.7	
Neutral	05	7.2	
Agree	17	24.6	
Strongly agree	36	52.2	
Total	69	100.0	

Cont... **Table 3: The personal opinions of respondents about the situation during Covid-19 lockdown**

The lock-down should increase to further more days			
Likert Scale	**N**	**Percent**	***SD=1.264, Median=4.00***
Strongly disagree	02	2.9	
Disagree	17	24.6	
Neutral	11	15.9	
Agree	16	23.2	
Strongly agree	23	33.3	
Total	**69**	**100.0**	
Online training or teaching is one of the best alternative for education			
Likert Scale	**N**	**Percent**	***SD=1.096, Median=4.00***
Strongly disagree	02	2.9	
Disagree	10	14.5	
Neutral	15	21.7	
Agree	25	36.2	
Strongly agree	17	24.6	
Total	**69**	**100.0**	
Hygiene practice should be followed in a long term approach			
Likert Scale	**N**	**Percent**	***SD=1.069, Median=5.00***
Strongly disagree	03	4.3	
Disagree	02	2.9	
Neutral	09	13.0	
Agree	18	26.1	
Strongly agree	37	53.6	
Total	**69**	**100.0**	
Physical distancing is an effective measure to prevent communicable diseases in future			
Likert Scale	**N**	**Percent**	***SD=0.991, Median=5.00***
Strongly disagree	02	2.9	
Disagree	01	1.4	
Neutral	12	17.4	
Agree	17	24.6	
Strongly agree	37	53.6	
Total	**69**	**100.0**	

The satisfaction level of respondents ***Table 4*** about the situation lockdown during the Covid-19 pandemic, it was measured on Likert Scale. Reliability test applied to check the validity of the scale, *Cronbach's Alpha Test=0.808, Grand mean=3.23 and it was significant P value ≤ 0.05.***Table 4: The satisfaction level of participants about the situation during Covid-19 lockdown**

Maintenance of social distance during lock-down by public			
Likert Scale	**N**	**Percent**	***SD=1.194, Median=3.00***
Strongly dissatisfy	08	11.6	
Dissatisfy	20	29.0	
Neutral	14	20.3	
Satisfy	21	30.4	
Strongly satisfy	06	8.7	
Total	**69**	**100.0**	

Cont... **Table 3: The personal opinions of respondents about the situation during Covid-19 lockdown**

Supply of sanitation products			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	02	2.9	***SD=0.964, Median=4.00***
Dissatisfy	11	15.9	
Neutral	13	18.8	
Satisfy	37	53.6	
Strongly satisfy	06	8.7	
Total	**69**	**100.0**	
Regularity of PPE kit			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	08	11.6	***SD=1.138, Median=3.00***
Dissatisfy	16	23.2	
Neutral	17	24.6	
Satisfy	24	34.8	
Strongly satisfy	04	5.8	
Total	**69**	**100.0**	
Number of testing for COVID-19			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	10	14.5	***SD=1.207, Median=3.00***
Dissatisfy	19	27.5	
Neutral	14	20.3	
Satisfy	21	30.4	
Strongly satisfy	05	7.2	
Total	**69**	**100.0**	
Behaviour of general public towards corona warriors			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	04	5.8	***SD=1.141, Median=3.00***
Dissatisfy	18	26.1	
Neutral	17	24.6	
Satisfy	21	30.4	
Strongly satisfy	09	13.0	
Total	**69**	**100.0**	
Government's strategies on issues			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	12	17.4	***SD=1.243, Median=3.00***
Dissatisfy	16	23.2	
Neutral	14	20.3	
Satisfy	22	31.9	
Strongly satisfy	05	7.2	
Total	**69**	**100.0**	
Aarogaya Setu App is helpful for public in updating about COVID-19			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	04	5.8	***SD=0.980, Median=3.00***
Dissatisfy	10	14.5	
Neutral	32	46.4	
Satisfy	17	24.6	
Strongly satisfy	06	8.7	
Total	**69**	**100.0**	

Role of forces in maintaining the situation			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	02	2.9	***SD=1.014, Median=4.00***
Dissatisfy	04	5.8	
Neutral	18	26.1	
Satisfy	25	36.2	
Strongly satisfy	20	29	
Total	**69**	**100.0**	
Role of media in entertainment or spreading awareness during lockdown			
Likert Scale	**N**	**Percent**	
Strongly dissatisfy	06	8.7	***SD=1.198, Median=4.00***
Dissatisfy	05	7.2	
Neutral	14	20.3	
Satisfy	26	37.7	
Strongly satisfy	18	26.1	
Total	**69**	**100.0**	

The respondents had given some valuable suggestions during the study considering the situation of Covid-19 lockdown. The suggestions were given by the various health care professionals of different categories. Around 33 (47.8%) suggested that it was necessary to ensure occupational health and safety of health care workers, 12 (17.4%) suggested that the burden of patients should be reduced, 8 (11.6%) suggested that the preparedness for treating Covid-19 patients with adequate testing and screening, 04 (5.8%) the lockdown should be unlocked step-by-step, 07 (10.1%) suggested that the alternative treatment should be encouraged, 08 (11.6%) suggested that the awareness and training should be encouraged, 31 (44.9%) suggested that the safety measures and precaution should be strictly followed by the general public, 01 (1.4%) suggested to increase the health care budget and 06 (8.7%) suggested to developed the infrastructure for future.

Similarly, the study of Wang et al. (2020) suggested that there should be increased in capacity; management of patients, visitors and staff; a separation of staff as per their duty in the care of COVID-19 infected patients and other patients; used of alternative source of communication and treatment like social media and telemedicine; training; adequate use of PPE; and consistent use of mask and gloves. Apart from these, the modification of infrastructure, process of infection prevention strategies and clinical recommendation could be effective in the preparation for the pandemic. These could be indispensable to optimize the quality of care provided to COVID-19 patients as well as to prevent the risk of transmission among healthcare professionals and other patients[41]. Shanafelt et al. (2020) consider the need to address the concern of healthcare professional, provide training, reduce the risk of infection, acknowledge the limitation of healthcare professionals as human and provide holistic support. These can be proved effective measures in the reduction of anxiety among healthcare professionals[36].

The participants also had given their personal opinions about the current situation during Covid-19pandemic. Around 31 (44.9%) said that the safety measure should be practiced after a specific interval in daily life but not only in the emergency situation, 13 (18.8%) gave opinion towards the spread of awareness and understanding the epidemic situation in regular life, 04 (5.8%) gave opinion that the supply of safety material shouldn't be interrupted and ensured the availability of equipment regularly, 04 (5.8%) strongly said the lockdown should be increased and it shouldn't be uplifted so soon, 10 (14.5%) said that it should be strict restrictions on tourism and mobility and 16 (23.2%) said the government should ensure the safety of healthcare workers and other public or government.

Limitation: The study could not help in determining the causal relationship and inference due to adoption of cross sectional and descriptive study. The study was limited to those healthcare professionals having a Smartphone, an email id and access to internet. Repeated requests were made to participants for completing the questionnaire. Participants could be annoyed with investigators by repeated requests. There was a chance of biasness in the selection of sample and low rate of

responses with the use of web-based survey method. Finally, the findings could not be generalized to a larger population due to the sample size of the study.

Conclusion: The agenda 2030 Sustainable Development Goal 8 (8.8), recognized the significance of OHS to promote safe working environment for all workers in the sustainable society[42]. Despites of international commitment of ILO, WHO and other organizations, many workers report the undue risk in the workplace. Healthcare workers are considered the frontline of any epidemic because they spread treatment and prevention to the community. The most recent pandemic Covid-19 put pressure on healthcare services[43]. This study endeavours to delineate different components of OHS in the healthcare setting during the outburst Covid-19 as well as underscores the viewpoints of healthcare professionals on various concerns related with pandemic. The Covid-19 is a new pandemic to the world, so there was no treatment protocol developed, as well as no immunization available, no medicine available and only symptomatic treatment is followed in every country. Mostly preventive measures are following by the general population, like wearing masks & gloves, frequent hand wash or use of alcohol based sanitizer, avoiding crowded places, physical distancing and other.

According to this study, healthcare professionals observed the various changes at their workplaces, e.g. the sanitization practice is following more than earlier and people are become much aware about personal hygiene. The working hours are increased and people are become much responsible at work places as well as their home. In the hospitals, the trainings were organized to sensitize the staff about safety or precautionary measures. These days most of the people are adopting digital services e.g. payment of bills, online classes or training, telemedicine, and etc. The *Arogaya Setu App* was developed by Government of India for corona updates, but according to the participants, the *Arogaya Setu App* requires to modifiy and many other services may include in this application.

It is significantly proved that by following the safety or precautionary measures most of the staff members are still safe and even though they performed the screening duty safely for Covid-19. In some hospitals the Emergency Services, including Oncology OPD, Obstetrics' OPD, and Neonatology OPD are functioning. It has greater chance that the Covid-19 infected suspects may visit to these emergency departments. Is thermal screening enough to identify the positive Covid-19 cases? So, that the preventive measure should be strictly followed by healthcare professionals and it is the duty of concerned department to enforce the safety protocols strictly. The impact of this pandemic may reduce if every country, every professional, every citizen works together effectively. During the Covid-19 epidemic, there are many limitations observed, such are as follows, there is a need to increase the health budget, researches should be more initiated, social media should be controlled in such kind of emergency as it may use for spreading fake news, much focus on recruiting the health care staff as well as building up the new hospital should be the target, and it was observed that the labour class or migrants were highly exploited in this pandemic but now government suggesting the states to arrange the employment for them at their places like MNREGA. Lastly, people should change their personal attitude towards the Covid-19 and follow the precautionary methods to stay safe till the discovery of treatment and vaccine.

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Ethical Clearance: This is not institutional based study or not belongs/represents to any particular institute. So, the ethical clearance is not applicable.

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