VIOLENCE AND STIGMA EXPERIENCED BY HEALTH-CARE WORKERS IN COVID-19 HEALTH-CARE FACILITIES IN THREE CITIES OF PAKISTAN

THE UNIVERSITY OF LAHORE

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LIST OF ABBREVIATIONS

COVID-19	Coronavirus disease
DMS	Deputy Medical Superintendent
ER	Emergency Room
HCiD	Health Care in Danger
HCWs	Healthcare Workers
HDU	High Dependency Unit
ICU	Intensive care unit
IDIs	In-dept Interviews
ICRC	International Committee of the Red Cross
PI	Principal Investigator
SOP	Standard Operating Procedure
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

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FOREWORD

The emergence of COVID-19 pandemic has brought forth an altogether new and daunting set of realities. Humanity is faced with a monumental challenge of historic proportions and the ensuing upheavals have spared no sector of human life. Of particular concern for humanitarian actors like the International Committee of the Red Cross (ICRC) are fragile contexts already beset with violence where communities and systems remain particularly vulnerable to the overwhelming human and economic costs of the COVID-19 pandemic and a potential shift in global focus.

Health-care workers remain at the forefront of the efforts to grapple with the challenges posed by the COVID-19 pandemic and to steer the global community to a new and safer normal. While it is heartening, and rational, to see the outpouring of respect for health-care workers in many parts of the world, it is particularly dismaying that events of violence against health-care workers and facilities responding to COVID-19 continue to be reported.

Safeguarding health care against violence is imperative for safe and efficient delivery of, and access to, health-care services. We at the ICRC believe in greater respect and protection of health care. This belief and respect lies at the very foundation and genesis of the ICRC and the Red Cross and Red Crescent Movement.

In 2011, the ICRC together with its partners from the International Red Cross and Red Crescent Movement initiated the Health Care in Danger (HCiD) Initiative. Under the HCiD initiative, the ICRC has engaged in humanitarian diplomacy with States, multilateral organizations, and other stakeholders to make health care safer.

In Pakistan, the HCiD Initiative commenced in 2014. With emphasis on consolidating evidence-based practices, stimulating local agility and sustainability of processes, the ICRC has been able to forge partnerships and working relations with local health-care authorities, public health institutions, medical academia, health-care facilities and civil society. This approach has given us an insight into the issue of violence against health care and helped us come up with some tangible measures for its protection. The success of these ICRC supported initiatives stems from contextual relevance of the interventions crafted in collaboration with local experts and the receptiveness of health-care authorities.

The current report exploring the magnitude and determinants of violence and stigma experienced by health-care workers in COVID-19 health-care facilities in three cities of Pakistan is a continuation of the ICRC's efforts to develop deeper understanding of the dynamics of violence against health care. This nuanced understanding is pivotal for the development and implementation of effective practical measures, relevant policies and legislation for protection of health-care workers. We are hopeful that the findings of this report will contribute towards safeguarding health care in Pakistan and strengthen the response to COVID-19 pandemic.

We are thankful to the academics, research teams and administration of APPNA Institute of Public Health (Jinnah Sindh Medical University, Karachi), Institute of Public Health and Social Sciences (Khyber Medical University, Peshawar), and University of Lahore for conducting the study. We are grateful to the administrators of health-care facilities who permitted and facilitated data collection. We are also highly indebted to all the health-care workers who consented to participate in the study and shared their experiences to make this report possible.

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SUMMARY

BACKGROUND

The emergence of COVID-19, the resulting deaths and the strict isolation protocols of managing the cases and dealing with deaths in the COVID-19 outbreak have made the health-care workers (HCWs) vulnerable to encountering events of verbal and physical violence against them. The purpose of this study was to determine the magnitude of violence experienced by HCWs working in COVID-19 health-care facilities in three cities of Pakistan, learn from their experiences and identify interventions that can help in protecting HCWs.

METHODOLOGY

This was a mixed methods study with a concurrent triangulation design (QUAL-QUAN).

A cross sectional survey was conducted with 356 HCWs including doctors, paramedics and laboratory technicians in 24 COVID-19 health- care facilities in three provincial capital cities of Pakistan, i.e. Karachi, Lahore and Peshawar. In each city, HCWs from 8 health-care facilities, 4 in public sector and 4 in private sector, were approached. 15 HCWs (5 doctors, 5 paramedics and 5 laboratory technicians) were surveyed in each unit. Only those HCWs were included who had worked for at least 15 days in COVID-19 isolation ward or intensive care unit or screening and diagnostic laboratory. A structured questionnaire was used to obtain information on frequency of violence experienced, it`s nature, causes and consequences. Data was entered and analyzed on SPSS version 20.

To explore the experiences of HCWs regarding violence and stigma associated with treating COVID-19 patients and its psychosocial effects, eighteen in-depth interviews (IDIs) were conducted with doctors and laboratory technicians. In all 12 IDIs were conducted with doctors in the 3 cities and 6 IDIs were conducted with laboratory technicians. To explore the positive and negative perceptions of community, 9 IDIs were conducted, i.e. 3 in each city, with the general public and 6 IDIs were conducted with persons accompanying the admitted patients in COVID-19 isolation units and intensive care units. The IDIs were recorded online. Coding of the transcripts was done manually by two independent experts and consensus was reached after discussion on major themes and subthemes. Thematic content analysis was done. Six broad themes were derived from data including description of violence, reasons of violence, response to violent events, effects of violence, coping mechanism and recommendations. The study was approved by ethical review committees of the three partnering universities.

RESULTS

Overall 41.9% HCWs reported having experienced some form of violence in the last two months. More commonly experienced forms of violence included verbal (33.1%), being falsely accused (12.9%), being stigmatized (12.4%) while less commonly reported forms included physical violence (6.5%), being threatened (6.2%), damage to facility (1.7%) and being shown a weapon (0.6%). According to experiences of the interviewees, the major cause of violence was the misconception spread on social media that COVID-19 was a concocted conspiracy and people are being unnecessarily tested and admitted.

Besides the misperceptions, the reasons of violence were categorized as issues related to patient shifting and admission, issues related to patient care and issues related to service outcomes. **Among the issues related to patient shifting and admission**, most important was that people were not aware of where to take the patient/suspected case of COVID-19. Besides

that, another factor that agitated the people was reaching the hospital and being refused for admission during the peak days of the outbreak. The **issues related to patient care** were further categorized into issues arising due to patient behavior and quality of care. Among the issues related to patient and attendant behavior, some general factors included impatience to wait, overcrowding the facility, interference in care and emotional concerns about the patient. Specific behavioral reasons related to COVID-19 included resistance to compliance with extremely strict patient access and infection prevention/control protocols in the hospitals. The general factors related to quality of care included delay in care due to high burden and low resources, unavailability of beds and medicines, mistakes in care and poor communication between HCWs and attendants of patients. Moreover, confusion on treatment protocols, reluctance of HCWs to spend time with COVID-19 patients to protect themselves, and lack of periodic updates on patient condition due to high burden further exacerbated the situation.

Finally, the issues related to service outcomes were also categorized into issues arising due to patient behavior and quality of care. Among the issues related to patient and attendant behavior, emotional reaction to death or sudden collapse of the patient was the most common. Specific reasons related to COVID-19 were demands of attendants to hand over dead body immediately and to not mention COVID-19 as cause of death. Similarly, among reasons related the quality of care, due to high burden of patients, there were complains of premature discharge of the patients to make space for new patients and delays in test reports of patients.

A very high proportion of HCWs remained super-alert (86.2%), remained worried about family (82.3%), felt stressed and disturbed (64%) and felt scared and threatened (49.2%). Family concern and pressure to quit job or take temporary leave was a major effect expressed in qualitative IDIs. The interviewees expressed how they coped with psychosocial stress by keeping an empathic and selfless attitude, focusing on their job and getting inspired from their seniors.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made to protect HCWs from violence in COVID-19 health-care facilities.

1. First, to build trust between HCWs and service users, the existing myths of HCWs deliberately infecting patients and killing them for monetary benefit need to be dispelled. This can be achieved through mass media campaigns focused on dispelling the myths.

2. Second, to address issues related to patient shifting and admission, there is a need of focused dissemination of information on help-lines in case someone needs COVID-19 related consultation. Portal of complains, in case helplines do not respond, can also help in keeping a check on helpline response. It is imperative to improve coordination of ambulance services with COVID-19 care units so that aggression arising due to refusal of admission by hospital due to patient-overload is avoided. Further, financial barriers of admission and treatment costs in private care facilities need to be removed by special health insurance to low income populations.

3. Third, to address issues related to patient care, various institutional practices need to be adopted. HCWs should be trained in communication skills and de-escalation skills and information desks on process of admission and waiting time should be introduced. Innovative ways like allowing video calls to facilitate admitted-patient and attendant contact can also build the confidence of service users. Further, to regulate their behaviors, fines on violation of access-restriction and infection-

prevention SOPs can also be introduced. To improve the quality of care, monitoring of work burden and maintaining acceptable patient-HCW ratios to avoid delays in care should be top priority. Periodic needs assessment of facilities (medicines/beds/tests) required shall be made to forecast any upsurge required in near future. HCWs should also be trained on updated treatment protocols and providing periodic update to patients` attendants to minimize their anxiety.

4. Fourth, to address issues related to service outcomes, HCWs should be trained on breaking bad news and communication of protocols of handing over dead body.

5. Finally, response to any untoward incident can be improved by introducing alarm bells, safe exits and enhancing security and surveillance

INTRODUCTION

The COVID-19 pandemic originated in late 2019 (1). There have been over 61.8 million cases and over 1.4 million deaths reported globally since then (2). The virus has brought the world to almost a standstill, confining people in many parts of the world to their homes and isolation. Globally, the high infectivity of the virus has troubled all health systems. The most developed of health systems have struggled with human resources, beds, equipment and diagnostics owing to extremely high burden of cases and fatalities (3). The stress of getting infected and stigma of working in a potentially infectious environment has affected the mental health of health-care workers (HCWs) negatively (4). HCWs are at the forefront of the response against the COVID-19 pandemic and are dealing with a new and unusual challenge making them psychologically vulnerable to reduced work performance (5).

In countries like Pakistan with meagre resources and overburdened health system, COVID-19 poses major public health challenges for the community, all professions and policy makers (6). The Covid-19 crisis has hit harder at the health-care front as there is already a growing distrust of public in the health-care system. While in various contexts an outpour of public support towards the HCWs has been observed, reports on violence and discrimination against HCWs continue to emerge in low-resource contexts.

Because of a proliferation in number of cases and deaths and the strict isolation protocols of managing the cases and dealing with deaths, the HCWs are also vulnerable to encountering events of verbal and physical violence against them (7,8). An already stressed HCW due to tough nature of job and social stigma is faced with another challenge of dealing angry attendants who lack understanding and knowledge of protocols of treating a highly infectious disease and handing over a dead body.

No focused study has investigated the issue of violence against HCWs providing COVID-19 care. Only a few commentaries have highlighted this issue in peer reviewed journals (9-11). The purpose of this study was to determine the magnitude of violence experienced by HCWs working in COVID-19 care facilities in three cities of Pakistan, learn from their experiences and identify interventions that can help in protecting HCWs.

STUDY OBJECTIVES

- To determine the magnitude and determinants of violence against HCWs in the past two months in COVID-19 care facilities in three big cities of Pakistan.
- To explore the experiences of HCWs regarding violence and stigma associated with treating COVID-19 patients and their psychosocial effects
- To explore the positive and negative perceptions of the people accompanying patients and the community regarding COVID-19 including procedures of screening and management of COVID-19 suspects and patients

METHODOLOGY

This was a mixed methods study with a concurrent triangulation design (QUAL-QUAN).

QUANTITATIVE SURVEY

A cross sectional survey was conducted with HCWs including doctors, paramedics and staff working in screening and diagnostic laboratories in public and private COVID-19 care facilities in three provincial capital cities of Pakistan, i.e. Karachi, Lahore and Peshawar. This was a collaborative project between the International Committee of the Red Cross, APPNA Institute of Public Health (Jinnah Sindh Medical University) Karachi, Institute of Public Health and Social Sciences (Khyber Medical University) Peshawar and University of Lahore.

In each city, HCWs from conveniently selected 8 health-care facilities, 4 facilities in public sector and 4 facilities in private sector, were approached. 15 HCWs (5 doctors, 5 paramedics and 5 laboratory technicians) were surveyed in each unit. A total of 360 HCWs were included, i.e. 120 from each city.

The list of doctors and paramedics working in the selected units was developed by obtaining their email addresses and contact numbers from their peers. Due to the high workload in their job and high number of refusals, all of them were invited online or through phone and those consenting to participate were interviewed. Only those HCWs were included who had worked for at least 15 days in COVID-19 isolation ward or intensive care unit or screening and diagnostic laboratory.

A structured questionnaire was used to obtain information on frequency of violence experienced, its nature, causes and consequences. Questionnaire was adopted from previous survey done on violence against HCWs at national level by the principal investigator (Annexure 1). Section 1 obtained information on demographic and occupational characteristics of the participant including age, gender, workplace, designation and years of experience. Section 2 gathered information on any form of violence experienced in the last two months, e.g. number of events, nature of the events, reasons and perpetrators. Violence was defined as experience of any event of verbal violence or physical violence or facility damage, false accusation or stigma. Recall period of last two months was based on high burden of COVID-19 patients in Pakistan in the months of May and June. Section 3 inquired about psychosocial effects of violence on HCWs. It included 11 variables which are as follows:

1. Feel scared and threatened
2. Felt stressed and/or disturbed
3. Felt angry and/or frustrated
4. Felt demotivated or disheartened
5. Remained super alert
6. Felt like quitting job
7. Committed frequent errors at job
8. Remained worried about family
9. Sleep was affected
10. Appetite was affected
11. Relationship was affected

The structured questionnaire was translated in national language Urdu. Data was collected by trained data collectors. The training of the data collectors was conducted by Principal Investigator (PI) and Co-PI and was held at venues facilitated by academic partners in Peshawar and Lahore. All trainings were conducted online. The questionnaire is attached as Annexure 1.

Data collection was allocated on daily basis with data collectors given set of sites already planned by project leads in the three cities. The filled questionnaires were checked for completeness and errors. If any errors and inconsistencies were identified the forms were given back to the data collectors for correction. Data was entered and analyzed on SPSS version 20.

STATISTICAL ANALYSIS

Demographic and job characteristics were summarized as percentages for qualitative variables and means and standard deviations for quantitative variables. Frequencies and percentages of overall violence and their types experienced and witnessed were also computed. Reasons of last events of all types of violence experienced and witnessed by HCWs were summarized as frequencies and percentages. The relationship of different factors including age, gender, work experience, type of hospital, place of posting, cadre of HCWs, number of days worked in COVID-19 care facility and psychosocial effect index with experience of physical violence, verbal violence, being falsely accused and being stigmatized were analyzed using multivariate logistic regression. Adjusted odds ratios with 95% confidence intervals were computed to express the relationships. Principal component analysis was done to generate psychosocial effect index categorized as low, medium and high reducing the eleven items mentioned above.

QUALITATIVE METHODS

To explore the experiences of HCWs regarding violence and stigma associated with treating COVID-19 patients and their psychosocial effects, in-depth interviews (IDIs) were conducted with doctors and laboratory technicians. In all 12 IDIs were conducted with doctors in the 3 cities and 6 IDIs were conducted with laboratory technicians after which point of saturation was reached. All the HCWs interviewed were included if they had experienced some form of violence in the last two months. To explore the positive and negative perceptions of community, 9 IDIs, i.e. 3 in each city, were conducted with the general public and 6 IDIs were conducted with persons accompanying the admitted patients in COVID-19 isolation units and intensive care units after which point of saturation was reached.

The IDIs were conducted online by three trained research fellows who had been trained in qualitative research and had previous experience of conducting IDIs. All the participants were formally approached and informed consent was obtained from all participants. All participants were informed about the aims and objectives of the interview and the process of the interview. The interview guide was developed by the project team and was tested during the training of the data collectors. The interview guides are attached as Annexure 2

The IDIs were recorded online, transcribed in Urdu and later translated in English. The data was analyzed using thematic content analysis by two independent experts in qualitative research. Each IDI time ranged from half an hour to 1 hour.

Coding of the transcripts was done manually by two independent experts and consensus was reached after discussion on major themes and subthemes. Thematic content analysis was done. Six broad themes were derived from data including description of violence, reasons of violence, response to violent events, effects of violence, coping mechanism and recommendations. The final analysis was shared with all the stakeholders.

ETHICAL CONSIDERATIONS

The study was approved by ethical review committees of the three partnering universities. Informed consent was sought from all participants. The respondents were informed of the study objectives and participation in the study was voluntary. The identities of all individuals and institutions have been kept anonymous and confidential.

RESULTS AND DISCUSSION

DEMOGRAPHIC AND JOB CHARACTERISTICS OF STUDY PARTICIPANTS

Data was collected from 360 participants and final analysis was done on data of 356 participants, excluding 4 participants with missing information. The mean age of the participants was 30.17 years, with 61.2% males and 38.8% females (Table 1). Data was almost equally distributed between the three cities, public and private hospitals, place of posting and nature of job. Almost two thirds (59.6%) had experience of <5 years.

Table 1: Demographic and Job characteristics of study participants (n=356)

	% (f)
Age in years	**Mean=30.17 SD=5.94**
21-29	59.8% (213)
30 and above	40.2% (143)
Gender	
Male	61.2% (218)
Female	38.8% (138)
City	
Karachi	32.3% (115)
Peshawar	34.6% (123)
Lahore	33.1% (118)
Hospital	
Public	51.7% (184)
Private	48.3% (172)
Place of Posting	
Isolation Ward	40.4% (144)
Intensive Care Unit	32.0% (114)
Diagnostic Laboratory	27.5% (98)
Nature of Job	
Doctors	37.4% (133)
Paramedics	35.1% (125)
Lab Workers	27.5% (98)
Work experience in years	
1-4	59.6% (212)
5-9	21.3% (76)
10 and above	19.1% (68)
Number of days worked in COVID care facility	
15-29	28.9% (103)
30-44	30.1% (107)
45-59	41.0% (146)

MAIN TYPES OF VIOLENCE EXPERIENCED

Almost half of the HCWs were worried about experiencing physical or verbal violence (figure 1). Overall 41.9% reported having experienced some form of violence in the last two months (Table 2a). More commonly experienced forms of violence included verbal violence (33.1%), being falsely accused (12.9%), being stigmatized (12.4%) while less commonly reported forms included physical violence (6.5%), being threatened (6.2%), damage to facility (1.7%) and being shown a weapon (0.6%). Table 2b shows that similar types of violence witnessed and experienced were reported in the qualitative interviews with HCWs.

A doctor in a public-sector hospital reported that when she announced the death of a patient due to COVID-19, the attendants pushed her and grabbed the collars of male doctors. Similarly, a night-duty doctor from Peshawar's leading hospital reported an incident of the death of an 18 year old boy due to COVID-19 and his attendants` response as, "*the attendants arranged some goons who came with weapons and forced into our ward and pointed the gun at me to hand over the body immediately".* An in-charge doctor from COVID-19 testing facility at Karachi was threatened when a test report was delayed as, "*I am calling media in here and what kind of a doctor are you? I am going to tarnish your reputation on media".* A phlebotomist from Peshawar expressed, *"when a patient's tests came positive, he became so violent that he destroyed the windows of the facility".*

Events of stigma were also frequently reported by HCWs. A doctor from Lahore recalled an incident in which he was mocked by his colleagues in this way, *"Doctor! You work in a COVID-19 unit, maybe you have brought a gift for us"*. Another doctor from Peshawar complained, *"My test results were negative, even then my family did not allow me to enter home".*

No focused studies on HCWs working in COVID-19 are available to compare these figures with other countries. However, these findings are consistent with a recently published large scale multi-city surveys in Pakistan and Turkey **(12,13).** However, it should be noted that this survey is based on only two months recall while the large-scale surveys quoted above had recall periods of six months and one year respectively. It is likely that frequencies of experiencing violence could have been much higher given longer recall time in this study. The multivariate logistic regression also shows that HCWs who spent higher number of days in COVID-19 care facilities were significantly more likely to experience both physical and verbal forms of violence.

Figure 1: Proportion of HCWs worried about experiencing violence working in COVID-19 health-care facilities

Table 2a: nature of violence experienced by HCWS working in covid-19 health-care facilities in the last two months (n=356)

NATURE OF VIOLENCE EXPERIENCED	
Verbal Violence	33.1% (118)
Falsely Accused	12.9% (46)
Stigma	12.4% (44)
Physical Violence	6.5% (23)
Threat	6.2% (22)
Damage to Facility	1.7% (6)
Shown Weapon	0.6% (2)
Any Form of Violence	41.9% (149)

Table 2b: Nature of violence reported in Qualitative IDIs by HCWs

HOSPITAL WORKERS (n=12)	LAB. WORKERS (n=6)
Verbal Violence • Shouted at (11) • Abused (9)	Verbal Violence • Shouted at (5) • Abused (6)
Falsely Accused of: • Killing patient (10) • Selling dead bodies (2) • Worsening condition (1) • Infecting the patient (6) • Unnecessary admission (2) • Poor care(4)	Falsely Accused of: • Killing patients (2) • Selling dead bodies (1) • Unnecessary testing (1) • Poor care (2) • False positive report (2)
Stigmatized for working in COVID-19 facility (9)	Stigmatized for working in COVID-19 facility (5)
Physical Violence • Grabbed/Pushed (5) • Beaten (2) • Thrown things at (1)	Physical Violence • Grabbed/Pushed (3) • Beaten (3) • Thrown things at (1)
Threatened/Harassed (6) • Uploading videos on social media • Forcefully took away the body	Threatened/Harassed (5) • Uploading videos on social media • Complain to higher-ups • Forcefully entered the facility
Damage to facility • Furniture and equipment (1)	Damage to facility • Threw furniture (2) • Broke gate (1) • Facility windows (1)
Shown weapon (1)	Shown weapon (2)

MAIN REASONS AND PERPETRATORS FOR THE LAST EVENT OF DIFFERENT TYPES OF VIOLENCE EXPERIENCED IN THE LAST TWO MONTHS

Table 3a shows the reasons and perpetrators of physical violence experienced by HCWs. The three most common reasons included emotional reaction to death (30.4%), dissatisfaction with quality of care and treatment (17.4%) and unwillingness to admit the patient (13%). Less common reasons included concern about critical patient, inability to pay charges, demand of quick reporting, attendant not following access restriction policies and unavailability of medicines. Attendants (87%) were the main perpetrators followed by patients (13%).

Table 3b shows the reasons and perpetrators of verbal violence experienced. The four most common reasons included emotional reaction to death (30.4%), concern about critical patient or sudden collapse of patient (16.1%), delay in care (11.9%) and unwillingness to admit the patient (10.2%). Less common reasons included dissatisfaction with quality of care and treatment, attendant not following access restriction policies, unavailability of medicine, inability to pay charges, demand of quick reporting, demand of immediate handover of dead body, and mistake in dosage or sampling. Attendants (88.1%) were the main perpetrators followed by patients (11.9%).

Table 3c shows the reasons and perpetrators of being falsely accused which included worsening the condition of patient (52.2%), doing unnecessary admissions or tests (23.9%), giving wrong treatment (17.4%), giving false positive report (4.3%) and overcharging for care (2.2%). Attendants (87%) were the main perpetrators followed by patients (13%). Similar reasons of being falsely accused were also reported in IDIs

Table 3d shows the reasons and perpetrators of stigma experienced by HCWs. The HCWs were either stigmatized for working in COVID-19 care facility (81.8%) or getting infected on duty (18.2%). Friends and neighbors (56.8%) were the main perpetrators followed by colleagues (25%) and family relatives (18.2%).

Out of the six events of facility damage caused by attendants of patients, four happened due to death of patient and remaining two due to concern about critical patient and sudden collapse of patients. Only two events of being shown weapon were reported which happened due to unwillingness to admit the patient and mistake in sampling.

Figure 2 highlights the cycle of violence against HCWs derived from qualitative interviews with HCWs and persons accompanying the patients.

According to experiences of the interviewees, the root cause of violence was the misconception spread on social media. A resident doctor from a private hospital in Peshawar expressed, *"There was one news that went viral that the doctors in COVID-19 treatment units are giving poisonous injections to kill patients. Even my own relatives were of the point of view that we are intentionally admitting patients and are paid for falsely admitting them".* He further expressed that since the protocols of meeting the patient were very strict, this created further doubts in the minds of people that something is being hidden from them. The misperception created distrust in HCWs and there was reluctance of people to undergo screening test or admit the patients to COVID-19 care units to avoid social stigma or being victimized.

A night duty doctor in a hospital in Peshawar expressed this reluctance in the following way, *"A university professor who brought his old aged mother to the hospital was recommended COVID-19 test on the basis of her history in response to which he started to shout abusively and blame us for unnecessary testing".* Another young doctor from Lahore expressed, *"When one of our patients was recommended admission, ten people gathered around and took the patient back to home forcefully".* A COVID-19 testing facility in-charge shared, *"When our screening team went to screen the contacts of a positive patient, they were told that they had gone there to get their household labelled and get them disregarded by their neighborhood"*

Despite the positive role of media in spreading the awareness on preventive measures, the myths related to COVID-19 could not be successfully erased out of the minds of community. One of the attendants of patients expressed, "*People think that COVID-19 pandemic is a game and conspiracy*".

Followed by these misperceptions, the reasons of violence have been categorized as issues related to patient shifting and admission, issues related to patient care and issues related to service outcomes.

Among the issues related to patient shifting and admission, most important was that people were not aware of where to take the patient/suspected case of COVID-19. Although helplines and special care units were established, and their information disseminated, most of the focus of popular media was on awareness on infection prevention rather than informing people about whom to call and where to go to seek care leaving a gap in awareness of people about how to deal with symptomatic suspect in their families. There were also complains of helplines not responding to calls of the people as expressed by a patient`s attendant, *"I called 3 COVID-19 care units to inquire about bed availability but none of them attended the call"*. Some complains of ambulances not having emergency equipment were also expressed. Lack of emergency equipment in ambulances has also been previously reported as one of the major reasons of violence experienced by ambulance workers **(14, 15).** Besides that, another factor that agitated the people was reaching the hospital and being refused for admission during the peak days of the outbreak. This shows that there was a gap in coordination of ambulance services with COVID-19 care facilities on availability of beds.

An incident was reported by a trainee doctor of a public hospital of Karachi regarding lack of coordination between ambulances and facilities as, "*The staff of ambulance were not aware about where the patient had to be taken, they had first gone to a private hospital where they didn't find bed, and then to ER (Emergency Room) of our facility, from where they were referred to ICU (Intensive Care Unit), that's why patient's attendants were irritated."* One of the attendants complained, *"The ambulance took us here and there but no facility was willing to admit the patient"*. While admissions and tests were not charged in public hospitals, interviewees also complained about high costs of admissions and tests in private facilities which frustrated them. One of the attendants said, "*The private hospitals do not even attend your patient until you deposit their charges".*

The **issues related to patient care** were further categorized into issues arising due to patient behavior and quality of care. Among the issues related to patient and attendant behavior, some general factors that have also been previously reported in literature were reported including impatience to wait, overcrowding the facility, interference in care and emotional concern about the patient (**12, 16**). However, specific behavioral reasons due to COVID-19 included resistance to compliance with extremely strict patient access and infection prevention/control protocols in the hospitals. One of the doctors from Peshawar complained, *"When we stopped them to meet their patient physically, they shouted and abused* us". A lab technician from Karachi also stated, *"When I told a suspect that he cannot sit here without mask, he started to shout at me"*

The general factors related to quality of care reported were quite similar to the ones reported in previous studies including delay in care due to high burden and low resources, unviability of beds and medicines, mistakes in care and poor communication between HCWs and attendants of patients **(17-21).** However, it is assumed that these factors were compounded during the peak months of the outbreak due to the tremendously increased burden on an already weak health system. Moreover, confusion regarding treatment protocols, reluctance of HCWs to spend time with COVID-19 patients to protect themselves, and lack of periodic updates on patient condition due to high burden further exacerbated the situations.

One of the attendants from Peshawar said, *"I could feel that the doctors were avoiding to spend time with COVID-19 patients as they were concerned about getting the infection from them".* An

attendant from Lahore raised the point of lack of communication on patient progress, *"We did not get any information about the patient, we did not know what is going on, and this made us restless".* Another attendant from Karachi also complained about the doctors` confusion regarding proper line of treatment, "*They would just experiment with the patient, give steroids one day and try antibiotics the other day, it looked as if they had no clear treatment plan*".

Finally, the issues related to service outcomes also were categorized into issues arising due to patient behavior and quality of care. Among the issues related to patient and attendant behavior, emotional reaction to death or sudden collapse of the patient was the most common which is also a highly reported reason in previous studies as well **(12, 19, 21).** However, specific reasons in COVID-19 care units were demands of attendants to hand over dead body immediately and to not mention COVID-19 as the cause of death. People generally wanted to avoid the strict burial protocols of deaths due to COVID-19. Therefore, they resisted that their departed souls be denied the routine burial rituals. A doctor from one of the public-sector hospitals in Peshawar on being asked about issues with the SOPs of handing over dead body informed, *"The attendants of a deceased COVID-19 patient created chaos by yelling and throwing chairs of waiting area because they wanted to take the body immediately as they feared the community will otherwise not attend the funeral of the deceased."*

Similarly, among reasons related to the quality of care, due to high burden of patients, there were complains of premature discharge of the patients to make space for new patients and delays in test reports of patients which led to aggression and some events of violence. One of the attendants from Peshawar complained, *"They were just sending patients home quickly to accommodate others and not giving any instructions at the time of discharge".* Another attendant from Lahore expressed, *"The report that was supposed to be coming in 24 hours came after 3 days".*

Table 3a: Main reasons and perpetrators of experiencing physical violence (n=23)

	OVERALL (n=23)	**DOCTORS (n=10)**	**PARAMEDICS (7)**	**LAB WORKERS (6)**
Reasons				
Emotional reaction to death	7 (30.4%)	4	3	0
Dissatisfied with quality of care and treatment	4 (17.4%)	2	2	0
Not willing to admit patient	3 (13%)	1	1	1
Concern about critical patient	2 (8.7%)	1	1	0
Inability to pay charges	2 (8.7%)	0	0	0
Demand of quick reporting	2 (8.7%)	0	0	2
Stopped attendants to see the patient	2 (8.7%)	2	0	2
Unavailability of tests/medicine	1 (4.3%)	0	0	1
Perpetrators				
Attendants		20 (87%)		
Patient		3 (13%)		

Table 3 b: Main reasons and perpetrators of experiencing verbal violence (n=118)

	OVERALL (n=23)	DOCTORS (n=10)	PARAMEDICS (7)	LAB WORKERS (6)
Reasons				
Emotional reaction to death	22 (18.6%)	8	14	0
Concern about critical patient/sudden collapse	19 (16.1%)	15	4	0
Delay in care (shifting/test/admission/report/discharge)	14 (11.9%)	4	6	4
Not willing to admit patient	12 (10.2%)	7	1	4
Dissatisfied with quality of care and treatment	10 (8.5%)	4	6	0
Stopped attendants to see the patient	10 (8.5%)	5	5	0
Unavailability of tests/medicine/bed	9 (7.6%)	3	2	4
Inability to pay charges	9 (7.6%)	1	0	8
Demand of quick reporting	6 (5.1%)	1	0	5
Demanded immediate handover of dead body	4 (3.4%)	2	2	0
Mistake in dosage/sampling	3 (2.5%)	1	0	2
Perpetrators				
Attendants	104 (88.1%)			
Patient	14 (11.9%)			

Table 3 c: Main reasons and perpetrators of being falsely accused (n=46)

	OVERALL (n=23)	DOCTORS (n=10)	PARAMEDICS (7)	LAB WORKERS (6)
Reasons				
Worsening the condition of patient	24 (52.2%)	16	8	0
Unnecessary admission/tests	11 (23.9%)	4	2	5

Giving wrong treatment	8 (17.4%)	7	1	0
Giving false positive diagnosis	2 (4.3%)	2	0	0
Overcharging	1 (2.2%)	0	0	1
Perpetrators				
Attendants	40 (87%)			
Patient	6 (13%)			

Table 3 d: Main reasons and perpetrators of experiencing stigma (n=44)

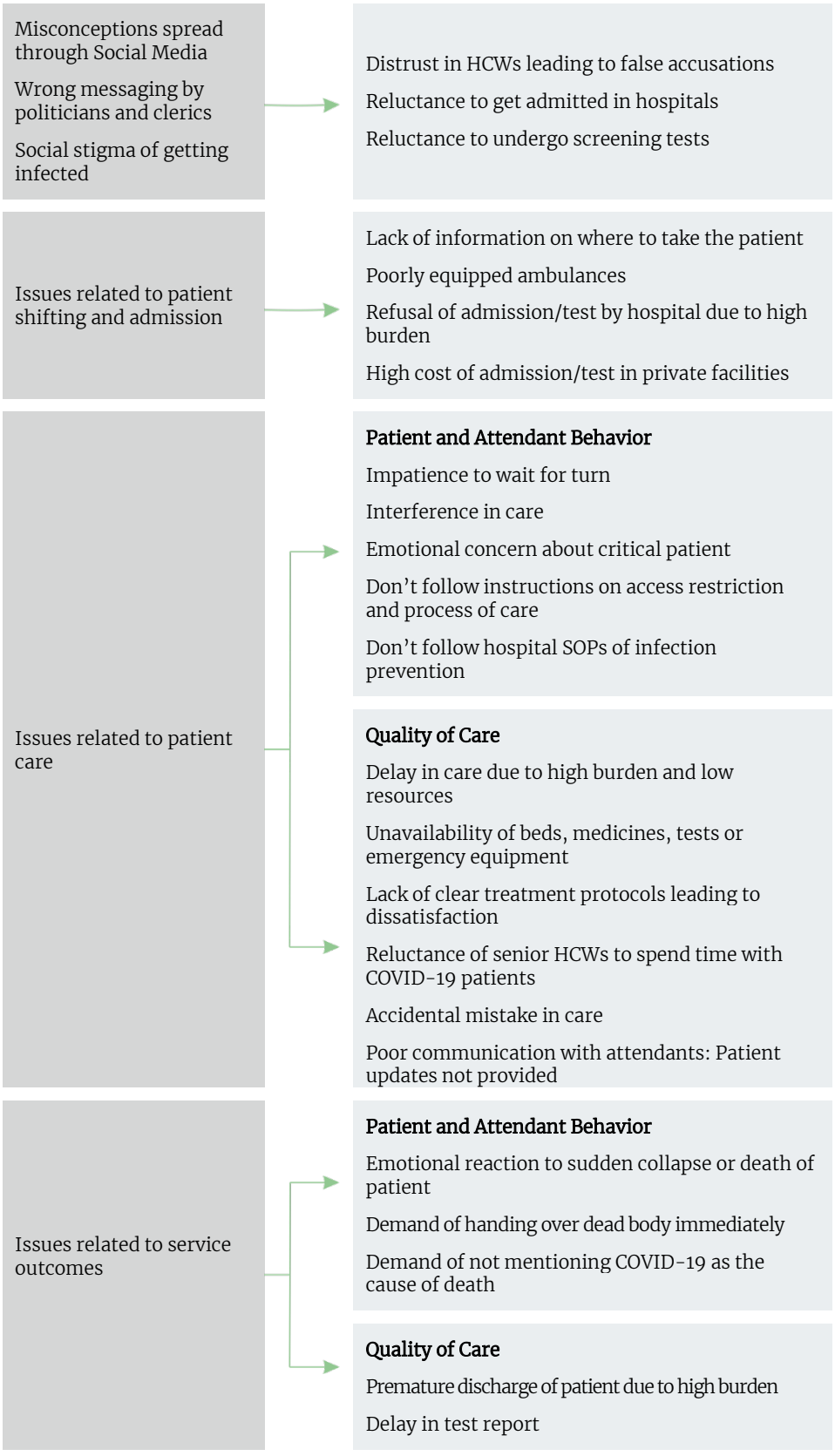
	OVERALL (n=23)	DOCTORS (n=10)	PARAMEDICS (7)	LAB WORKERS (6)
Reasons				
Working in COVID Facility	81,8% (36)	13	15	8
Got infected with COVID	18.2% (8)	3	4	1
Perpetrators				
Friends and neighbors	25 (56.8%)			
Colleagues	25% (11)			
Family and relatives	8 (18.2%)			

Table 3e: Reasons of violence reported in Qualitative Interview by HCWs

HOSPITAL WORKERS (n=12)	LAB WORKERS (n=6)	PATIENT ATTENDANTS (n=6)
Misconceptions at societal level spread through social media • Doctors deliberately infecting patients (5) • Doctors killing patients (11) • Unnecessary admissions (3) • Unnecessarily put patients on ventilator to increase the bill (2) • COVID-19 is a drama/conspiracy (4) • Wrong messaging by politicians/clerics (1)	Misconceptions at societal level spread through social media • COVID-19 is a drama (1) • Doctors deliberately infecting patients (2) • Doctors killing patients (4) • Unnecessary tests for patients of other conditions (1) • Labs give false positive result (3) • Sell dead bodies (1)	Misconceptions at societal level spread through social media • COVID-19 is a drama/conspiracy (2) • Doctors give poisonous injections (1) • Blame doctors for death of patient (1)

• Unnecessary tests for patients of other conditions [1]		
Refusal for admission or referral to other hospital [4] Reluctance to admit patients in hospital [4] High cost of care/tests [1]	Refusal for admission or referral to other hospital [1] Reluctance to admit patients in hospital [2] Not willing to undergo test [1] Not willing for testing of household members during contact tracing [1]	Lack of information on where to take patient [5] Refusal for admission or referral to other hospital [3] Lack of facilities in ambulance [1] High cost of admission in private facilities [3] Not willing to undergo test [1] High cost of tests in private Labs. [2]
Overcrowding/attendants not following restriction on meeting the patient [6] Impatience to wait for treatment [1] Interference in treatment [2] Attendants not following SOPs of infection prevention [2] Concern about critical patient [2]	Attendants not following restriction on meeting the patient [2] Impatience to wait for test [3] Not following SOPs of infection prevention [1] Concern about critical patient [1]	Don't understand process of admission and testing [2] Overcrowding/attendants not following restriction on meeting the patient [2] Attendants not following SOPs of infection prevention [4]
Dissatisfaction with treatment/unclear treatment protocols/ disruption in treatment [5] Delay in care due to high burden and low human resources [1] Lack of communication between doctors and attendants [1]	Accidental trauma while taking swab [3] Delay in treatment/tests/ reports [4] Misplaced sample [1]	Non-availability of beds/tests/medicine [5] Dissatisfaction with treatment/unclear treatment protocols/ disruption in treatment [5] Delay in care/Long waiting time [3] Lack of communication between doctors and attendants/No updates on patient progress [5] Reluctance of doctors to examine/spend time with the patient [2] Frequent rotation of doctors [1] Misplaced sample [1]
Emotional reaction to death [6] Demand of handing over dead body immediately [6] Sudden collapse of patient [1]	Emotional reaction to death [2] Demand of handing over dead body immediately [3] Demand of not mentioning COVID as cause of death [1]	Premature discharge of patient [2] Delay in discharging the patient [2] Delay in test results [2]

Figure 2: Cycle of violence against HCWs working in COVID-19 care facilities



RESPONSE OF VICTIMS AND INSTITUTIONS TO EVENTS OF VIOLENCE

The response to events of violence were categorized as barriers for effective response, immediate event management, and policy changes to prevent the events in future. The immediate event management included efforts by victims to counsel and calm down the perpetrators followed by help from seniors or internal security in uncontrolled situation or external security in more severe situations. Some victims even had to run away and move to safe place to protect themselves or shut down the main gate to prevent high influx of people. A doctor in a public hospital of Karachi informed about an incident, *"As about 100 to 150 people gathered around and started abusing the doctors, we had to move our doctors to a safe room inside and another gate in between was locked up".*

Barriers identified by interviewees included lack of security, slow response of security, lack of training of HCWs to manage violence and lack of attendant-restriction policy. Similar barriers have also been reported in previous studies **(16, 22).**

Learning from their diverse experiences, some HCWs reported policy changes in their institutions that helped them in curtailing the events of violence. Some attempts were made at regulating the behavior of patients and attendants by introducing access-restriction policy, enhanced internal security and stationing police at facility during the peak days of the outbreak. At one of the public sector health facility of Karachi, a resident doctor informed regarding security measures taken after initial acts of violence against HCWs, *"The police mobile was stationed at the facility for 24 hours after the aggressive incident and police stayed on the ICU floor."* Other attempts focused on improving quality of care by increasing availability of medicine and plasma, enhancing testing capacity, appointing designated manager to update attendants on patient condition, and allowing video calls to attendants to interact with patients.

A surgeon from private medical institute in Peshawar informed that they had an incident of physical and verbal violence because attendants were not allowed inside the COVID-19 ICU due to infection-control protocols. He stated, *"So after that incident we started counselling the attendants, regularly updating them regarding patient's condition and treatment given. Also, we let attendants and patient to connect through video calls".* With the passage of time and evidence on low chances of infection spread through dead bodies, the protocols of handing over the dead body were also speeded up. To keep the HCWs motivated, some institutions also disseminated emergency numbers to HCWs, separated entry and exit for HCWs and patients, and gave special allowance to them.

Table 4: Response to events of violence

HOSPITAL WORKERS (n=12)	LAB WORKERS (n=6)
Barriers for effective response	**Barriers for effective response**
Lack of security (3) Poor security response (1) Lack of training to manage violence (2) Events neglected by management (1)	No attendant restriction policy (1)
Event management	**Event management**
Counseled the perpetrator (12) Warned the perpetrator (1) Moved to safe place (3) Shut down main gate (1) Called for help Administration/Senior faculty (5) Security (6) Police (5)	Counseled the perpetrator (5) Ignore/Don't react (1) Moved to safe place (1) Shut down main gate (1) Called for help Administration/Senior faculty (3) Security (4) Police (2)

Policy changes	Policy changes
• Introduced access restriction policy [1] • Enhanced internal security [4] • Police stationed at facility [2] • Increased availability of medicine and plasma [2] • Enhanced testing capacity [1] • DMS appointed to update attendants on patient condition [1] • Allowed video calls to interact with patients [1] • Emergency numbers given to HCWs [1] • Separated entry and exit for HCWs and patients [1] • Recording reasons of violence [1] • Special allowance to motivate HCWs [2]	• Enhanced internal security [1] • Police stationed at facility [2] • Allowed attendants to meet patients with preventive SOPs [1] • Helpline created for security purpose [1] • Protocols of dead body handover changed [1]

PSYCHOSOCIAL EFFECTS OF VIOLENCE ON STUDY PARTICIPANTS

Table 5a shows psychosocial effects of violence on study participants. A very high proportion of HCWs remained super-alert (86.2%), felt stressed and disturbed (64%) and felt scared and threatened (49.2%). Similarly, a high proportion of the interviewed HCWs also expressed these psychological effects (table 5b). A doctor in a private hospital in Lahore expressed, *"I felt very disheartened and tired, I stopped fighting this, I almost agreed to all the accusations and used to say that ok, you are right! (With a feeling of sorrow)".* However, only one fourth felt demotivated (26.7%) and about one-tenth reported feeling like quitting their jobs (13.8%) and committing errors at job (10.7%). These are also quite similar to the findings of qualitative IDIs in which only a few mentioned feelings of quitting job or the stress effecting their job performance. An HCW in a private hospital in Lahore stated, *"Social life was diminished, and the accusations from public had caused low spirit".*

A very high proportion remained worried about family (82.3%) while sleep, appetite and personal relationships of around one third were reportedly affected. Family concern and pressure to quit job or take temporary leave was also a major effect expressed in qualitative IDIs. A female doctor from a public hospital of Lahore stated, '*Family was like that I should resign because it was very tiring, stressful and not secure".* Another doctor from a private hospital in Peshawar stated, '*My family got stressed as they used to hear and see on media about the violence and accusations against HCWs, they used to ask to quit and come back home."*

Almost half of interviewees expressed how they coped with psychosocial stress by keeping an empathic and selfless attitude, focusing on their job and getting inspired from their seniors. A medical officer from a public-sector hospital from Karachi expressed, *"We have a 55 year old professor who is asthmatic. However, she used to work with COVID patients selflessly. She always made us feel positive and never left us alone".* Another doctor from a public sector hospital of Peshawar coped with the stress as, *"For me, staying positive, keeping busy with work and studies has been the coping mechanism"*

Table 5 a: Psychosocial effects of violence (n=356)

Felt scared/threatened	49.2% (175)
Felt stressed/disturbed	64% (228)
Felt angry/frustrated	36% (128)
Felt demotivated about profession	26.7% (95)
Remained super alert	86.2% (307)
Felt like quitting job	13.8% (49)
Committed errors at job	10.7% (38)
Remained worried about family	82.3% (293)
Sleep was affected	39.3% (140)
Appetite was affected	34.8% (124)
Relationships were affected	40.4% (144)

Table 5b: Psychosocial effects of violence and coping mechanism reported in IDIs by HCWs

HOSPITAL WORKERS (n=12)	LAB WORKERS (n=6)
Effects	
Felt scared (3) Felt tense and stressed (10) Felt depressed/hopeless (8) Felt demotivated/disheartened (8) Felt tired (1) Felt discriminated (2)	Felt scared (4) Felt tensed and stressed (2) Felt depressed (2) Felt demotivated/disheartened (2) Felt embarrassed (1)
Family pressure to quit/take leave (5) Disturbed sleep	Family pressure to quit/take leave (3)
Felt like quitting job (1) Care of other patients affected (2)	Felt like quitting job (1) HCWs quit their jobs or took leave (2)
Coping Mechanism	
Gym (1) Spending time with family (1)	
Watching comedy programs (1) Talking to friends with similar experiences (4) Empathize with patient condition/keep selfless attitude (6) Looking at seniors working selflessly was inspiring (1) Focus on studies (2) Focus and keep busy in work (2)	Empathize with patient condition/keep selfless attitude (2) Motivated self to remain strong (1) Focus and keep busy in work (1)

Predictors of violence against HCWs working in COVID-19 facilities

Table 6 shows the findings of multivariate logistic regression analysis on adjusted relationship of different groups of HCWs with four main types of violence experienced.

Age and work experience did not show any significant relationship with any form of violence experienced although positive trends were observed for the more experienced. This could be due to the fact that senior HCWs were more involved in decision making and interaction with COVID-19 suspected cases and patients. Previous studies have also shown mixed results on relationship of work experience and violence with some reporting positive association (14, 18, 23) while others reporting negative association (17, 24, 25).

Females were significantly less likely (OR=0.29; 95% CI=0.08-0.97) to experience physical violence and the trend was also negative for verbal violence. This is consistent with findings of studies in Asian and African countries (26-28). However, one study from Italy has shown positive association of female HCWs with facing aggression (29).

The occurrence of events was strikingly similar in both public and private facilities. Previously, public facilities have reported higher occurrence of violence in comparison to private facilities in Pakistan (12, 14) owing to better facilities and security policies in private sector facilities. However, high burden and costs of COVID-19 care in private facilities may have neutralized this effect in this study.

In comparison to HCWs of Karachi, HCWs in cities of Lahore and Peshawar showed significantly less likelihood of being falsely accused. Similarly, negative trends which were statistically insignificant were also observed for verbal and physical violence. On the contrary, Lahore and Peshawar showed positive trends with experience of stigma.

Unsurprisingly, events of verbal violence (OR=2.11; 95%CI=1.01-4.41) were experienced significantly highly by HCWs working in intensive care units compared to HCWs in diagnostic labs. The other three forms of violence also showed positive trends but were statistically insignificant. Literature also reports higher occurrence of violence in emergency settings (23, 30, 31)

Doctors and paramedics showed positive trends with all forms in comparison to laboratory workers and the relationship was statistically significant for doctors (OR=4.27; 95%CI=1.69-10.75) for being falsely accused. This again can be explained by the fact that doctors were more directly involved in decision making and interaction with COVID-19 suspected cases and patients.

Understandably, higher number of days in the last two months worked in COVID-19 care facilities were significantly positively associated with experiencing verbal violence and showed positive trends for experiencing the other three forms of violence.

Finally, HCWs with high psychosocial effect Index score were also significantly more likely to experience verbal violence, physical violence and false accusation and also showed positive trend of experiencing stigma as compared to those with low score. Previous studies have also reported negative effects of violence leading to psychological disturbance (32), exhaustion and intention to quit (33) and high stress and sleep disturbance (34).

Table 6 Relationship of different groups of HCWs with different types of violence (n=356)

	VERBAL VIOLENCE OR (95% CI)	PHYSICAL VIOLENCE OR (95% CI)	STIGMA OR (95% CI)	FALSELY ACCUSED OR (95% CI)
Age in years				
21-29 (n=213)	1.00	1.00	1.00	1.00
30 and above (n=143)	1.08 (0.57-2.06)	0.51 (0.14-1.83)	1.18 (0.46-3.03)	0.65 (0.23-1.77)
Gender				
Male (n=218)	1.00	1.00	1.00	1.00
Female (n=138)	0.68 (0.39-1.19)	0.29 (0.08-0.97)•	1.22 (0.56-2.66)	0.92 (0.42-1.99)
City				
Karachi (n=115)	1.00	1.00	1.00	1.00
Peshawar (n=123)	0.80 (0.44-1.46)	0.46 (0.15-1.40)	2.21 (0.89-5.51)	0.36 (0.15-0.88)•
Lahore (n=118)	0.77 (0.42-1.40)	0.30 (0.08-1.07)	1.95 (0.76-5.03)	0.36 (0.15-0.85)•
Hospital				
Public (n=184)	1.00	1.00	1.00	1.00
Private (n=172)	0.96 (0.59-1.57)	1.09 (0.44-2.72)	0.67 (0.33-1.38)	1.06 (0.52-2.16)
Place of Posting				
Diagnostic Laboratory (n=98)	1.00	1.00	1.00	1.00
Isolation Ward (n=144)	1.28 (0.61-2.67)	0.99 (0.24-3.99)	2.06 (0.71-5.97)	0.75 (0.21-2.68)
Intensive care unit (n=114)	2.11 (1.01-4.41)•	1.80 (0.39-5.65)	1.82 (0.60-5.45)	2.53 (0.79-8.08)
Nature of Job				
Lab workers (n=98)	1.00	1.00	1.00	1.00
Doctors (n=133)	1.63 (0.93-2.87)	1.24 (0.43-3.55)	1.35 (0.57-3.20)	4.27 (1.69-10.75)
Paramedics (n=125)	1.23 (0.69-2.21)	0.91 (0.29-2.79)	1.77 (0.76-4.11)	1.48 (0.52-4.15)
Work experience in years				
1-4 (n=212)	1.00	1.00	1.00	1.00
5-9 (n=76)	1.40 (0.72-2.72)	1.41 (0.40-4.99)	1.08 (0.40-2.87)	1.66 (0.58-4.76)
10 and above (n=68)	1.01 (0.43-2.36)	1.63 (0.31-8.58)	1.28 (0.41-4.01)	3.21 (0.91-11.34)

Number of days worked in COVID care facility				
15-29 (n=103)	1.00	1.00	1.00	1.00
30-44 (n=107)	2.91(1.48-5.69) ••	2.47 (0.56-10.81))	0.80 (0.20-2.19)	0.71 (0.27-1.83)
45-59 (n=146)	3.01 (1.56-5.79) ••	3.80 (0.93-15.48)	3.80 (0.93-15.48)	1.55 (0.65-3.65)
Psychosocial Effect Index				
Low (n=119)	1.00	1.00	1.00	1.00
Medium (n=119)	2.00 (1.08-3.70) •	1.57 (0.40-6.16)	1.88 (0.77-4.55)	1.35 (0.51-3.56)
High (n=119)	2.60 (1.42-4.76) ••	3.41 (1.01-11.52)	1.84 (0.76-4.47)	2.84 (1.15-7.00) •

STRENGTHS AND LIMITATIONS

As per our literature review, this is the first study which has investigated the reasons and effects of violence against COVID-19 workers in a developing country. The mixed methods approach provides a rich information based on experiences of violence during the peak days of the outbreak in a developing country. The inclusion of persons utilizing the services along with HCWs also brings in conflicting perspectives of provider and user together.

Limitations of this study include convenience sampling, which reduces the overall generalizability. However, the main focus of the study was on gaining an in-depth understanding of the problem. Second, in response-based studies, there is always a chance of under-reporting and over-reporting bias. Chances of wish bias in which respondents tend to report the events which they think are important cannot be ruled out also. However, since the recall period in this study was only two months, it is likely that the incidents reported would have a minimum memory bias. Furthermore, all participants were fully assured of anonymity and confidentiality of their personal and institutional identities which would have encouraged them to share the true picture.

RECOMMENDATIONS

Although infection rates had come down in Pakistan for a few months, threat of a second wave and peak in the winter season remains. Therefore preparing for prevention of possible upsurge of events of violence should be a top priority to keep the HCWs motivated. These recommendations may also be applied in similar developing countries where infection rates are currently high. The recommendations are based on cycle of reasons of violence derived from qualitative analysis in Figure 2. Figure 3 summarizes the set of interventions needed to protect the HCWs in COVID-19 care facilities.

First, to build trust between HCWs and COVID-19 health-care service users, the existing myths of deliberately infecting patients and killing them for monetary benefit need to be dispelled. This can be achieved through mass media campaigns focused on dispelling the myths. These campaigns should be facilitated by influential figures in society shaping the general public opinion. Regulation of social media to remove the content spreading myths will also minimize the erosion of community`s trust in health care.

Second, to address issues related to patient shifting and admission, there is a need of focused dissemination of information on help-lines in case someone needs COVID-19 related consultation. Portal of complains, in case helplines do not respond, can also help in keeping a check on helpline workers. It is imperative to improve coordination of ambulances services with COVID-19 care units so that aggression arising due to refusal of admission by hospitals is avoided. Further, financial barriers of admission and treatment costs in private care facilities need to be removed through special health Insurance to low income populations.

Third, to address issues related to patient care, various institutional practices need to be adopted. To control the irresponsible behavior of service users, HCWs should be trained in communication skills and de-escalation skills and information desks on process of admission and waiting time should be introduced.

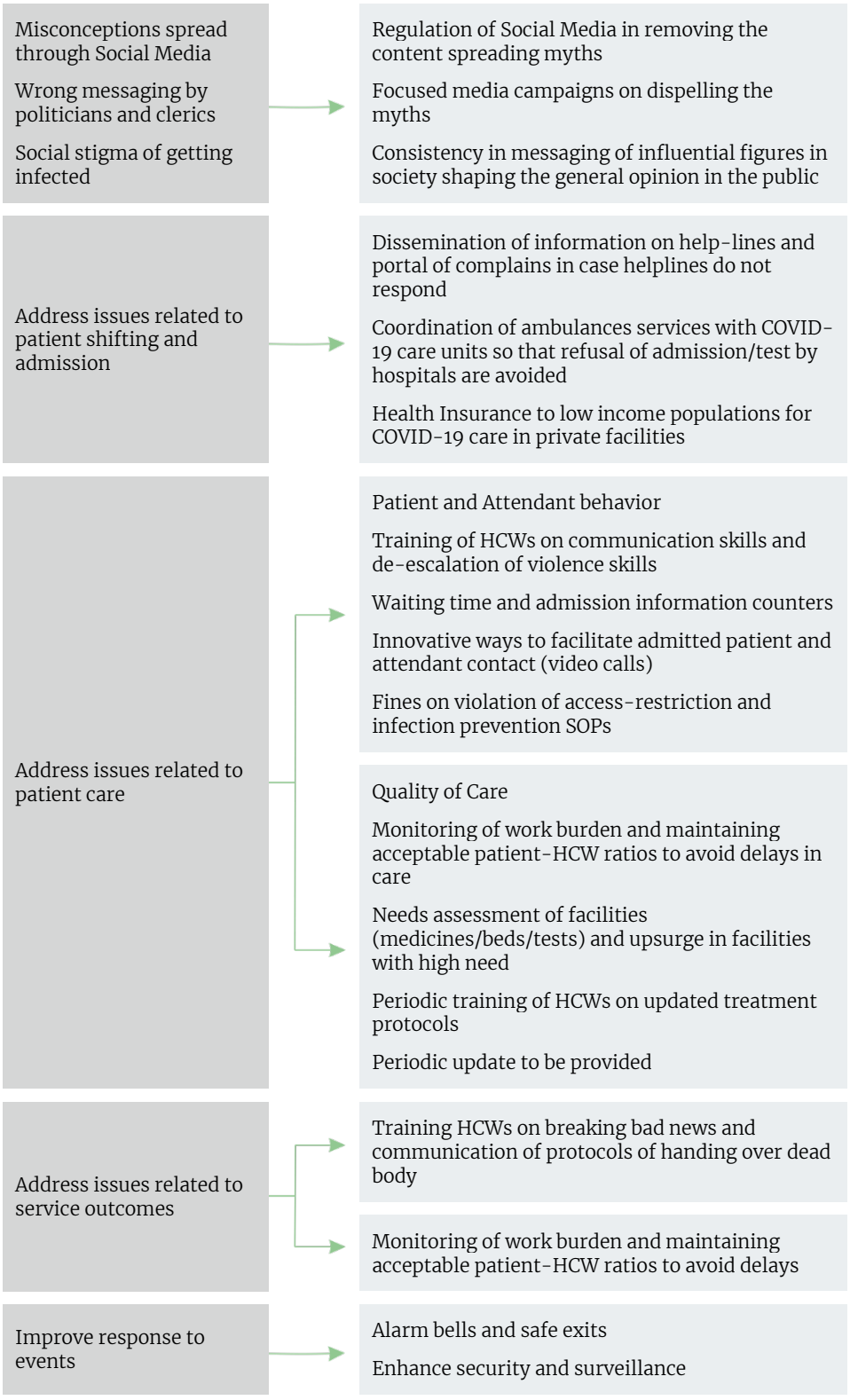
Innovative ways like allowing video calls to facilitate admitted patient and attendant contact can also build the confidence of service users. Further, to regulate their behaviors, fines on violation of access-restriction and infection-prevention SOPs can also be introduced. To improve the quality of care,

monitoring of work burden and maintaining acceptable patient-HCW ratios to avoid delays in care should be top priority among all hospital policies. Periodic needs assessment of facilities (medicines/beds/tests) should be conducted to forecast any upsurge required in near future. HCWs should also be trained on updated treatment protocols and providing periodic update to patients` attendants to minimize their anxiety.

Fourth, to address issues related to service outcomes, HCWs should be trained on breaking bad news and communication of protocols of handing over dead body.

Finally, response to any untoward incident can be improved by introducing alarm bells, safe exits and enhancing security and surveillance.

Figure 3: Interventions needed to break the chain of Violence against HCW's providing COVID care



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ANNEXURE 1

INFORMED CONSENT FORM

TITLE OF THE STUDY:

Frequency and determinants of violence and stigma experienced by HCWs working in COVID-19 Isolation units, ICUs and laboratories in three cities of Pakistan- A mixed methods study

PRINCIPAL INVESTIGATOR:

Dr. Shiraz Shaikh

INTRODUCTION:

We are conducting a research to determine the magnitude and causes of violence against health-care workers in COVID-19 isolation units, ICUs and laboratories in three cities of Pakistan. We would like to invite you to join this research study.

PURPOSE OF THIS RESEARCH STUDY:

This study is aimed at assessing the problems and threats faced by health-care professionals while carrying out their duties in COVID-19 isolation units, ICUs and laboratories and to devise a strategy to ensure their safety.

PROCEDURE:

The process will include filling a questionnaire in which you will be asked questions about violence experienced by you. It will take around 25-30 minutes to complete this questionnaire

POSSIBLE RISKS OR BENEFITS:

There is no risk involved in this study except your valuable time. You will not get any monetary incentive for participating in the study.

RIGHT OF REFUSAL TO PARTICIPATE AND WITHDRAWAL:

You are free to choose to participate in the study. You may also withdraw any time from the interview. You may opt not to answer any question with which you are not comfortable.

CONFIDENTIALITY:

The information provided by you will remain confidential. Nobody except the Principal Investigator will have access to it. Your name and identity will also not be disclosed at any time. However, the data may be seen by ethical review committee and may be published in journal and elsewhere without giving your name or disclosing your identity.

AVAILABLE SOURCES OF INFORMATION:

If you have any further questions, you may contact Principal Investigator, APPNA Institute of Public Health, Jinnah Sindh Medical University on following phone number 02135215571**.**

AUTHORIZATION:

I have read and understood this consent form. I undertake that the importance and methods of the research study have been explained to me and I voluntarily agree to participate in it after knowing all the terms and conditions. I understand that my consent does not take away any legal rights in case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable federal, state, or local laws.

Participant's name (printed or typed): _____

Date: _____

QUESTIONNAIRE

SECTION 1: DEMOGRAPHIC AND OCCUPATIONAL INFORMATION

S. NO	QUESTION	OPTION	SKIP PATTERN	ANSWER
1.	Age (years)			
2.	Gender	1. Male 2. Female		
3.	City	1. Karachi 2. Peshawar 3. Lahore		
4.	Name of hospital/lab.			
5.	Type of hospital	1. Public 2. Private		
6.	Place of posting in the hospital	1. COVID-19 Isolation Ward 2. ICU/HDU 3. Screening/ Diagnostic laboratory		
7.	Cadre	1. Doctor 2. Paramedic Staff 3. Lab Technician		
8.	Designation			
9.	Years of work experience			

SECTION 2: QUESTIONS ON EXPERIENCE OF VIOLENCE AND ITS EFFECTS

S. NO	QUESTION	OPTION	SKIP PATTERN	ANSWER
10.	In the last 2 months; how many days have you worked in the COVID-19 Isolation Unit/ICU/Lab?	___Days		
11.	I am worried that I will experience workplace physical violence while performing my duties as a health-care worker in the COVID-19 Isolation unit/ICU/Lab?	☐ Yes ☐ No		
12.	I am worried that I will experience workplace verbal violence while	☐ Yes ☐ No		

	performing my duties as a health care worker in the COVID-19 Isolation unit/ICU/Lab?			
13.	In the last 2 months, have you experienced any incident of verbal or physical violence at the COVID-19 Isolation unit/ICU/Lab?	☐ Yes ☐ No	Skip to Q: 15 if the answer is No	

14. Information of events experienced in the last 2 months

	Nature of Event	No of times each event was experienced	Reason of last event	Perpetrator of last event
a.	**Physical Violence** Tick all that apply ☐ Beaten(hit/slapped/kicked) ☐ Pushed/Manhandled ☐ Thrown things (shoes/stone)			
b.	**Verbal Violence** Tick all that apply ☐ Shouted at ☐ Abused			
c.	**Threatened/Harassed/Forced**			
d.	**Shown weapon**			
e.	**Fired at/Attacked with weapon** ☐ Stick ☐ Gun ☐ Knife or any sharp object			
f.	**Felt stigmatized for working in the COVID-19 isolation unit**			
g.	**Falsely accused**			
h.	**Damage to Facility** Tick all that apply ☐ Furniture ☐ Equipment			
i.	**Any other** (specify)			

15. Psychosocial effects of working at covid-19 unit/ICU/lab. Please tick all that apply

a.	Feel scared and threatened	☐ Yes	☐ No
b.	Feel stressed and disturbed	☐ Yes	☐ No
c.	Feel angry and frustrated	☐ Yes	☐ No
d.	Feel demotivated about profession	☐ Yes	☐ No
e.	Remain super-alert	☐ Yes	☐ No

f.	Feel like quitting job	☐ Yes	☐ No
g.	Commit frequent errors at job	☐ Yes	☐ No
h.	Remain worried about family	☐ Yes	☐ No
i.	I feel I can't sleep as well as usual	☐ Yes	☐ No
j.	I feel my appetite is not the same as it used to be	☐ Yes	☐ No
k.	I feel my relationships are affected	☐ Yes	☐ No

16. Experience of burnout of HCWs

a.	Do you feel worn out at the end of your work day as a health-care worker at COVID-19 unit/ICU/lab?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
b.	Are you exhausted in the morning at the thought of another day at work as a health-care worker at COVID-19 unit/ICU/lab?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
c.	Do you feel that every working hour as a health-care worker at COVID-19 unit/ICU/lab is tiring for you?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
d.	Do you sometimes wonder how long you will be able to continue working with your employer(s) because of working at COVID-19 unit/ICU/lab?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
e.	Is your work as a health-care worker at COVID-19 unit/ICU/lab emotionally exhausting?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
f.	Does your work as a health-care worker at COVID-19 unit/ICU/lab frustrate you?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
g.	Do you feel burnt out because of your work as a health-care worker at COVID-19 unit/ICU/lab?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always
h.	Do you feel that you give more than you get back when you work with your employer(s) at COVID-19 unit/ICU/lab?	☐ Never ☐ Seldom ☐ Sometimes	☐ Often ☐ Always

17. Overall, how satisfied are you with your present job?

☐ Very dissatisfied

☐ A little dissatisfied

☐ Moderately satisfied

☐ Very satisfied

ANNEXURE 2

Interview Guide for Qualitative data collection from HCWs

- Have you experienced or witnessed any event of violence due to working in COVID-19 Isolation unit?
- Why do you think such events are happening? (Probes: Gaps in screening, management, admission, management, discharging the patient, handing over dead body)
- Have you experienced any event of being stigmatized due to working in COVID-19 Isolation unit?
- Why do you think such events are happening?
- How has your life changed after becoming a part of the response to this Pandemic? How has it changed your work life? Describe the support from your hospital administration?
- How has it effected your family and social life? Describe the support from your family and friends?
- What would you recommend HCWs on how to better cope with violence experienced due to this pandemic?
- What are your suggestions for government, hospital administrations and society for creating a safe and secure environment for HCWs in this pandemic?

Interview Guide for Qualitative data collection from persons accompanying the patient

- Are you happy with response of health-care organizations to the pandemic?
- What are the problem areas in seeking care for COVID-19 pandemic? What are your concerns regarding HCWs, hospitals and procedures related to admission, treatment and discharge?
- How can we improve the response (state/health-care organizations/HCWs) to this pandemic? How can we ensure that HCWs are respected and motivated to perform their duty with passion?

Interview Guide for Qualitative data collection from community members

- What are your perceptions about COVID-19 pandemic?
- Are you happy with response of health-care organizations to the pandemic?
- What are the problem areas in seeking care for COVID-19 pandemic? What are your concerns regarding HCWs, hospitals and procedures related to admission, treatment and discharge?
- How can we improve the response to this pandemic? How can we ensure that HCWs are respected and motivated to perform their duty with passion?