

# Workplace Hazards for Health Professionals

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## ABSTRACT

Workplace hazards are the unwanted outcomes faced by healthcare professionals while working in any healthcare setting. These can be the transmission of infections, chemical hazards, radiation hazards, physical and ergonomic hazards, and psychosocial hazards. A new entry to these hazards is violence against health professionals, which is increasing in most parts of the world. These hazards are putting a lot of pressure on healthcare workers and affecting their work and career as well as disturbing the doctor-patient relationship in some cases. There is a need to know the epidemiology of these hazards so that they can be effectively tackled.

Remedial measures are required some of which can be easily done by employing suitable administrative and engineering methods and strictly implementing workplace standard operating procedures. For others, there should be a change in policies and a change in the mindset of people by creating a fear of the law and speedy prosecution of the offenders involved in violence against health professionals.

This paper covers comprehensive ways of awareness and managing strategies of workplace hazards including violence against health professionals.

**Keywords:** Workplace hazards; medical professionals; nursing professionals; violence against professionals

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## INTRODUCTION

### Types

These can be broadly classified as biological hazards, chemical hazards and physical hazards, including safety hazards and violence against health professionals.<sup>1</sup>

### Biological hazards

#### *Infections*

Biological hazards are quite common hazards and blood-borne hazards are very common in low- and middle-income group countries.<sup>2</sup> HIV, HCB, and HIV can spread by contact or splashes with blood and other body fluids or contact of infected tissue or fluids with broken skin and inappropriate disposal and handling of the used needles. It can also occur by inhalation of surgical smoke, which has biological contents during LASER and electrosurgical units.<sup>3</sup>

#### *Needle stick injuries*

Needle stick injuries pose a threat to the workers.<sup>3</sup> HCV, HCB and HIV transmission are quite significant by needle stick injuries.<sup>4</sup>

#### *Exposure to contaminated material and environment*

Tuberculosis is also a big hazard in such countries in low to middle-income group countries.<sup>2</sup>

Airborne pathogens through water, food and ventilation systems can cause tuberculosis.<sup>4</sup> Severe Acute Respiratory

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Syndrome SARS, Middle East Respiratory Syndrome MERS and H1N1 Influenza can also be caused.<sup>4</sup> Unsafe water used for washing and drinking can cause many health issues. Inadequate sanitation can also be responsible, especially if there is insufficient water for sanitation.<sup>5</sup>

### Chemical hazards

Airborne chemical pollutants in the hospital environment can cause problems with respiratory health. Persons are exposed to antibiotics, cytotoxic drugs, antineoplastic drugs, hormones and aerosols during unpacking and compounding. Hand sanitizers and detergents used to clean hands and floors are exposed to poisoning and allergic reactions.<sup>4</sup> Chemical hazards in hospitals are mainly due to cleaning, disinfecting and sterilizing agents, which are used extensively in hospitals. Reagents and chemicals used in the laboratories are another common source of chemical hazards.<sup>5</sup>

Allergy to chemicals can also cause issues e.g., Latex allergy.<sup>3</sup>

## Physical hazards

### *Safety hazards*

Exposure to electric hazards, mechanical hazards, and extremes of temperatures, Falling due to Tripping and slipping during moving from one place to another,<sup>4,5</sup> There can also be safety hazards when road traffic accidents when the health workers are travelling in ambulances and motorbikes.<sup>5</sup>

Back pain and injuries are quite common due to lifting heavy articles.<sup>3</sup> Musculoskeletal injuries can also be caused due to handling patients while transporting, lifting and repositioning the patients without using proper techniques and equipment.<sup>5</sup>

Noise and ambient temperature differences in the different parts of the hospitals where the workers have to move also pose health hazards to the workers.<sup>5</sup>

## Ergonomic Hazards

Due to faulty design of workstations and repetitive work, their musculoskeletal disorders can occur.<sup>4</sup>

### *Radiation*

Ionizing and non-ionizing radiation can pose hazards.<sup>4</sup> UV and LASERS, a form of non-ionizing radiation, are known to cause harm to health workers. X-rays and radionuclides also cause damage to the workers, especially when the proper precautions are not taken while using these facilities.<sup>5</sup>

## Psychosocial hazards

Long working hours for health professionals pose a risk to psychological stability. The imbalance of work and family life is affected. There can be mental health issues, in the form of depression as well as physical health issues, e.g. low back pain<sup>4</sup> shift work and time pressure to finish the allotted jobs in time, especially when there is a shortage of workers.<sup>5</sup>

### *Burnouts*

Work stress of working for long hours can cause damage to the health.<sup>3</sup> It is common in middle-income countries<sup>2</sup> and violence too can lead to burnout<sup>6</sup> and this relationship is quite significant.<sup>7</sup>

## Violence against health professionals

“Workplace violence is defined as an aggression when staff members are abused, intimidated or attacked in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being or health.”<sup>6</sup>

Violence can also be during robberies and theft of addictive painkillers.<sup>4</sup> Violence can also be from mentally ill persons, especially in Alzheimer’s care units.<sup>8</sup> Violence can also be from patients, their relatives and friends and sometimes there can be mob violence.

## Prevalence of violence

In a study done in 30 countries with 61,800 health professionals, physical violence against health professionals was seen in 19.33% of cases per year.<sup>9</sup> In the study conducted in five European countries, 54% of participants were exposed to non-physical violence, 20% were exposed to physical violence and 15% were exposed to both types of violence. In 185 participants, had watched the violence.<sup>10</sup> In a study done from 2013-2023, the prevalence of violence was from 45.6 to 90%.<sup>11</sup> while in another study, it was from 18.5 to 84.5%.<sup>12</sup>

In another study in Brazil published in 2021, 88.9% of participant nurses faced workplace violence.<sup>13</sup> In one of the meta-analysis studies consisting of 253 studies, 61.9% of workers reported exposure to violence at workplaces.<sup>14</sup>

In one of the studies in China, it was present in 56.4% of cases studied in one year.<sup>15</sup> In a study done in Africa, it was observed from 9 to 100% but was the highest in South Africa 54 to 100%, whereas in Egypt, it was from 59.7 to 86.1%.<sup>16</sup>

During COVID-19, this violence increased.<sup>12</sup> During COVID-19 workload of healthcare workers increased and this led to increased violence against healthcare professionals globally. Violence was observed in 47% of cases in this systematic review and meta-analysis consisting of 17 studies.<sup>17</sup> In India too, violence against health workers increased during COVID-19.<sup>18</sup>

## Geo-political and different settings

It is more common in North American and Asian countries.<sup>14</sup> In America, it was 58% during COVID, and in Asia, it was 44%.<sup>17</sup>

Violence against healthcare professionals usually occurs in all types of settings: primary, secondary and tertiary care settings.<sup>19</sup> But Primary health care settings are more prone to violence as they are front-line workers and it occurs all over the world.<sup>11,12,19</sup>

In one of the Brazilian studies, it was concluded that violence mainly occurred in the workplace of healthcare workers. When the aggressors were close to the healthcare workers, violence occurred both in private places and public places. In the case of aggressors being strangers, violence occurred at public places.<sup>20</sup>

It is more common in the emergency departments,<sup>6,14,21,22</sup> psychiatric departments<sup>6,14,22</sup>, geriatric departments<sup>6</sup> and intensive care units as compared to other places.<sup>22</sup>

## Persons involved in violence

Amongst all the health professionals, it is more against the doctors and nurses.<sup>14</sup> It was most against the doctors 68% during COVID.<sup>17</sup> It is also common against dentists.<sup>23</sup>

Nurses amongst these are front-line workers, so they are most exposed to violence at workplaces.<sup>24,25</sup> It was confirmed In a study done in the emergency with the involvement of 55.7% of nurses.<sup>21</sup>

In the emergency wards, physicians assaulted were 36.5% in numbers.<sup>12,21</sup> In India, most persons involved are junior and senior residents.<sup>22</sup>



Instigators of the violence were mainly family persons to the extent of 52%. Instigators in 27% of cases were patients and in 21% of cases, instigators were friends and other relatives.<sup>21</sup> and in another study, these were found in patients and their relatives and coworkers<sup>16</sup> and neighbors.<sup>12</sup>

### Types of violence

Violence of different types was observed, ranging from physical, sexual, and verbal to psychological.<sup>6,13,16</sup> Physical violence, though not a major part of this violence, still was 24.4% where, whereas 42.5% had non-physical violence exposure, out of which verbal abuse was 57.6%.<sup>14</sup> It can be from shouting to bullying as well as threatening.<sup>23</sup> Cyberbullying is also increasing against health professionals by video recording of the facilities and incidents in the health care facilities and misusing these videos.<sup>26</sup> Usually, it is psycho-verbal violence. When the aggressors were people close to the victim, the violence was usually physical.<sup>20</sup> Psychosocial hazards in the form of burnouts and physical violence are common in low to middle-income group countries.<sup>2</sup>

Chemical hazards and ergonomic hazards are also there.<sup>2</sup>

In another study done in the emergency wards, verbal abuse was the leading type of violence up to the extent of 72% and physical assault was observed in 18% of cases.<sup>21</sup> In another study, verbal abuse was from 46.9% to 90.3% and the least common was sexual abuse 2-17% (11), but women were more prone to sexual harassment<sup>19</sup> which was also observed in Africa.<sup>16</sup>

In a study done in Brazil, verbal abuse is the leading format (38%) followed by mobbing (25.4%), physical violence (11%), sexual harassment (9.1%) and 5.4% reported racial discrimination.<sup>13</sup>

Sometimes, in extreme cases, healthcare workers have been killed due to violence against them.<sup>(26)</sup> In India, a big movement erupted against this type of violence after a female doctor was raped and killed at the workplace.<sup>27</sup>

### Causes of violence

In low socioeconomic countries, hazards are more common as there is less investment in the prevention of hazards.<sup>2</sup>

Violence is more noticed when services are not proper due to the insufficiency of equipment, or there is a shortage of working personnel<sup>6</sup>, due to which there may be long queues in the waiting areas, which are usually overcrowded.<sup>26</sup>

Poor infrastructure in public hospitals, as compared to private hospitals, is also a big reason for violence against doctors.<sup>22</sup>

When prognosis or details are not properly communicated to the service takers or their friends or relatives, there is a miscommunication and is observed as the cause of violence.<sup>6,22</sup>

Substance abuse and intense emotions make a person more vulnerable to committing violence against health professionals.<sup>28</sup>

Media also plays a big role in the causation of violence against health professionals by creating a negative image of

health professionals.<sup>22</sup>

### Impact and Consequences

Workplace violence can result in negative outcomes, which can be physical as well as cognitive, behavioral and emotional. They feel insecure and angry and have a guilty feeling.<sup>6</sup>

Workers may feel depressed, angry, and demoralized, with loss of self-esteem and after the incidence of violence, may have Post Traumatic Stress Disorder [PTSD].<sup>26</sup>

Usually, workers are not satisfied with their careers if they face violence.<sup>15, 19</sup>

By violence quality of work may be impaired and in extreme cases, affected individuals may quit the work or jobs.<sup>23</sup> Service to the patients and their families suffer due to this violence.<sup>20</sup>

Violence against doctors is considered “an international emergency that undermines the very foundation of the health system and impacts critically on the patient’s health” by the World Medical Association.<sup>29</sup>

### Reporting of cases

In a study done in Europe in 505 cases, incidences were not reported and in 70% of cases, no actions were taken after the incidences in cases of violence.<sup>10</sup>

Underreporting of the incidences was one of the main reasons for repeating violence at a particular place, as reporting was not considered effective.<sup>11</sup>

### Prevention

To prevent infection, toxicity and allergies, better engineering facilities e.g., segregating different facilities, Exhaust hoods and ventilating systems. Safety measures while handling waste management will also help in the reduction of ill effects. PPE also helps in safeguarding working persons. Marked exits can help in cases of chemical exposure.<sup>4</sup>

Occupational Safety and Health Administration [OSHA] has advised to take Universal precautions to prevent infection by blood, other body fluids and human tissues.<sup>30,31</sup>

To prevent needle stick injuries, recapping the needle should be avoided and it should be disposed of in sharp containers.<sup>32</sup>

For HBV immunization of health workers should be considered.<sup>32</sup>

PPE should be considered for the safety of the workers wherever required.<sup>32</sup>

In one of the studies in Brazil, 90% of participants felt that violence against nurses could have been prevented by using suitable measures that were not taken.<sup>13</sup>

All the possible protective measures should be utilized to prevent violence against health workers and there should be workplace violence policies and all the workers should know about these policies.<sup>23</sup> These policies should be culture-based and non-discriminatory. These should be gender-based and participative and all successful mitigation strategies should be included.<sup>22</sup>

All measures should be taken for the safety of the health workers and proper funding should be provided for these measures. If these measures are not taken it will negatively impact the health delivery system worldwide.<sup>33</sup>

In one of the systematic reviews involving 26 studies, training of nurses to educate and skill them, workplace violence reporting system, and multicomponent interventions should be utilized.<sup>24</sup> Training of health workers has been emphasized in another review.<sup>28</sup>

Actions by administrators of institutions and governments can help in the reduction of several cases of violence against health professionals. Leaders and advocates can also play a big role in the reduction of violence against health professionals.<sup>28</sup>

Increasing security measures can also help in the reduction in cases of assault.<sup>28</sup>

Better patient-doctor relationships can always mitigate this problem.<sup>28</sup>

Communication devices, panic buttons, alarm systems, and video surveillance of work areas can help in preventing violence against health professionals. Well-trained security personnel can also help in the reduction of violence.<sup>4</sup>

A good working ambiance, good social support, good mutual support and proper working duration play a good role in mitigating violence and burnout.<sup>7</sup>

Good engineering control in the form of barrier protection, and metal detectors can help in the reduction of violence.<sup>26</sup>

### Post-incident Procedures

Appropriately reporting the cases and taking action after the incidence may help in the reduction of the incidences.<sup>10</sup>

Post-exposure prophylaxis with antiviral drugs should be considered in needle injuries. It reduces the risk of HIV by 80%.<sup>32</sup>

Health workers become super alert after incidences of violence.<sup>10</sup>

All the assistance should be provided to the involved employee. Counseling should be provided to all cases involved in the crisis. There should be a debriefing session to relieve the stress due to the critical incident. Professional organizations and Non-governmental organizations should provide support to the involved employees.<sup>26</sup>

## MATERIAL & METHODS

Google Scholar was searched with keywords and 34 relevant articles were selected. Papers not available in English were excluded.

## DISCUSSION

Hazards in the hospital, if not taken care of properly, will affect the productivity of the health care institutions.<sup>1</sup>

The majority of the hazards are biological hazards, which are about 48%,<sup>2</sup> but other hazards should not be ignored.

Healthcare institutions should adopt OSHA measures and plans to prevent hazards in such units. This will help in the reduction of the hazards due to handling chemicals in the

hospitals and performing jobs that can be dangerous.<sup>31</sup>

Not meeting the huge expectations of patients and their relatives and friends is also a cause of violence.

The incidence must be reported to the higher authorities as well as to the police as per the protocol of the institution.

35% of doctors feel unsafe while working at their place of work.<sup>34</sup> This is a serious matter and it is going to affect the patient-doctor relationship and services to the patients are going to be jeopardized by this effect.

In case of injuries, these should be promptly treated, employees should be properly counselled and a debriefing session must be held to decrease the stress of the concerned employees.

Collaborative efforts are needed to reduce workplace hazards.<sup>26</sup>

## CONCLUSION

Workplace hazard prevention protocols should be prepared in each institution depending upon the occurrence of the hazard data and this protocol should be followed strictly. Universal measures should always be adopted for the reduction of hazards at workplaces. In some units where violence is expected more security of the employees should be specially taken care of. If violence occurs in a hospital, such cases should always be reported to the police. A standard operating procedure should be available in each institution for such incidences, which should be well circulated to all the employees and this protocol should be followed to minimize the damage to the persons and property. Sufficient funds should be provided for the security of the manpower employed in a healthcare institution. Entry of visitors to the hospitals should be regulated. CCTV cameras, panic buzzers and trained security persons can help to handle the situations quickly. All the employees should be given self-defense training. Communication skills are very important and all employees should be given training for good communication for the reduction of violence against health professionals.

## CONFLICT OF INTEREST

There is no conflict of interest

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