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COMPLEX MEDICAL-PSYCHIATRIC ISSUES (M RIBA, SECTION EDITOR)

Violence Against Physicians in the Workplace: Trends, Causes, Consequences, and Strategies for Intervention

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Abstract

Purpose Violence against healthcare professionals has become an emergency in many countries. Literature in this area has mainly focused on nurses while there are less studies on physicians, whose alterations in mental health and burnout have been linked to higher rates of medical errors and poorer quality of care. We summarized peer-reviewed literature and examined the epidemiology, main causes, consequences, and areas of intervention associated with workplace violence perpetrated against physicians.

Recent Findings We performed a review utilizing several databases, by including the most relevant studies in full journal articles investigating the problem. Workplace violence against doctors is a widespread phenomenon, present all over the world and related to a number of variables, including individual, socio-cultural, and contextual variables. During the COVID-19 pandemic, incidence of violence has increased. Data also show the possible consequences in physicians' deterioration of quality of life, burnout, and traumatic stress which are linked to physical and mental health problems, which, in a domino effect, fall on patients' quality of care.

Summary Violence against doctors is an urgent global problem with consequences on an individual and societal level. This review highlights the need to undertake initiatives aimed at enhancing understanding, prevention, and management of workplace violence in healthcare settings.

Keywords Violence · Physicians · Workplace · Burnout · Psychiatry · Emergency departments

Introduction

The World Health Organization (WHO) defines physical and psychological workplace violence as "incidents where staff are abused, threatened or assaulted 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" [1].

Workplace violence is a worldwide problem with a higher incidence in sectors requiring intense human interactions, of which the healthcare sector is a prominent example. For the World Medical Association, violence against healthcare professionals is "an international emergency that undermines the very foundations of health systems and impacts critically on patient's health" [2]. This is not a new phenomenon, as written in 1892 by the anonymous author of a landmark article on violence against doctors, which at that time seemed to be an infrequent phenomenon "[…] no physician, however

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conscientious or careful, can tell what day or hour he may not be the object of some undeserved attack, malicious accusation, black mail or suit for damages; ‘ for sufferance is the badge of all our race” [3].

During the last years, the number of violent acts against healthcare workers has incredibly increased [4••], although the real dimension is not known because of significant under-reporting [5•]. Recent research points out that as much as 48% of non-fatal workplace violence incidents take place in healthcare settings, and up to 50% of healthcare workers experience some form of violence in their career [6], especially but not only from patients with psychiatric disorders [7, 8•, 9].

In general, healthcare professionals (mainly nurses) have a 16 times increased risk of violence as compared to workers in other sectors and are four times more likely to require time away from work as a result of violence [10], with some more recent data concerning specifically violence against physicians.

While the majority of incidents are verbal, a considerable amount is constituted by physical assault, battery, stalking, or sexual harassment (Table 1). Also, a distinction should be made between affective violence (or defensive violence) which, according to several authors, mobilizes the emotional “fight or flight” response system, towards evading a stimulus that is perceived as a threat; while predatory violence (or intentional, premeditated violence) involves planning a deliberate attack on a target, often one who is the subject of some type of grievance [11].

Aggressions in the workplace have been associated with somatic injuries, but also with psychological consequences, such as burnout, post-traumatic stress disorder, depression, and anxiety. Literature in this area has mainly focused on experiences of violence against nurses (e.g., [12]), while there are less studies on physicians, in whom the secondary emotional distress and burnout are important [13, 14•] and have been linked to higher rates of medical errors and poorer quality of care [15•]. The figures of patient-initiated violence against doctors are globally impressively high, to the point that some authors begin to refer to it as a “viral epidemic” [16], if not a “pandemic” [17].

On this background, the main aim of this narrative review is to focus attention on workplace violence against physicians perpetrated by patients or families, which falls into the wider category of type II workplace violence, referred to as client-on-worker-violence [18]. We examined both the prevalence in different countries (and across specialties) to account for possible culture- or healthcare system-driven differences and prevention and management strategies. As a second aim, we dedicated a section to the current COVID-19 pandemic, to explore whether this unexpected emergency and the associated widespread disinformation and politicization has increased hostile reactions and influenced the patterns of patient-initiated violence against physicians.

Table 1 Type of violence against physicians in the different settings

Physical violence
Physical assaults (e.g., open violent behavior, use of weapons)
Aggression (e.g., kicking, spitting, scratching, hitting, grabbing, biting, throwing objects)
Sexual violence
Harassment
Assault
Intimidation
Verbal remarks
Psychological violence
Verbal abuse
Intimidation behaviour
Verbal threats
Ethnical and racial harassment
Reputation smearing
Mobbing
Bullying

Methods

We searched electronic databases of PubMed and Google Scholar, with various combinations of keywords, [(hospital * OR healthcare OR health* OR doctor * OR physician * OR surgeon *) AND (violence OR aggression * OR harassment)]. Sources of information used for literature search were PubMed, Cochrane Library, Excerpta Medica dataBASE (EMBASE), and PsychINFO. In addition, a manual search was conducted based on literature references. We focused on recent articles in English language from all over the world. Full-text review of the included studies was carried out, and data were extracted on study’s characteristics and outcomes. All the possible disagreements were resolved with consensus in the presence of senior authors (RC, LG).

Results

The analysis of the literature allowed us to extrapolate data that can be separated into the following: (1) epidemiological data regarding the prevalence of violence against physicians, (2) causes and risk factors for violence in these settings, (3) consequences of healthcare related violence, and (4) strategies to prevent or limit violence against physicians.

Epidemiology of Aggression and Violence Against Physicians

Analysis of rates of violence against doctors is limited by the variability of findings and inconsistences in the definition of violence categories (e.g., "verbal aggression," "threats," "physical assault," "battery"), as well as heterogeneity of measures, which may compromise reliability among studies. Therefore, reports of workplace violence against physicians vary greatly, although there is a consensus of high prevalence in critical care services, where rates can reach over 85% [19]. This is especially true for emergency departments (EDs), intensive care units (ICUs), psychiatry, and mental health units (MHUs), which represent worldwide the most frequent theaters of patient-initiated violence [20–22] (Table 2).

North America

In U.S. general hospitals, violence from patients constitutes a serious occupational hazard as confirmed by the Federal Bureau of Labor Statistics reports, outlining that between 2011 and 2013 nearly 75% of 24,000 workplace assaults per year occurred in the healthcare sector (6). These data, however, might reflect only the tip of the iceberg, as it has been found that the actual prevalence of workplace violent incidents was as much as three times that reported by the federal survey, since verbal incidents are not recorded [23]. As mentioned above, violent incidents increase further when focusing on high-exposure settings, including EDs, as confirmed by the American College of Emergency Physicians (5), and MHUs, where rates of workplace physical violence against physicians appear even higher than those in EDs, with 40% of psychiatrists reporting physical assaults over the course of their careers [24].

Europe

In Europe, violence rates against physicians are equally worrisome.

In Germany, data show that about 90% of 831 doctors had faced some form of aggression in their career and about 70% in the previous year [25]. A similar overall prevalence of violence was found among 558 primary healthcare professionals in Bosnia and Herzegovina. Compared to nurses, physicians were more often subjected to humiliation, false allegations, rumors, etc., and among physicians, women experienced verbal violence more often than their male counterparts [26].

In Italy, hospital violence is common [27], especially among psychiatrists, who have been reported at high risk for verbal aggression, injuries, threats with dangerous objects, stalking, and physical aggression [28]. In contrast, Italian ED physicians were reported to experience violence less frequently than other professionals [29]. The risk of death of doctors should be also considered. In a 30-year review of homicides of Italian doctors in the workplace, 21 were registered: in about half of the cases, the perpetrator was not affected by any mental disorders and the killer was one of the doctor's patients; in about one-third, he/she was a patient's relative, and in one-fifth, a patient at first consultation [30•].

In Spain, 2,419 episodes of different forms of aggression against physicians were registered during a 5-year period. The scant denunciation by physicians in Spain contributes, as for the other countries, to the underestimation of the real dimensions of the phenomenon [31].

Asia

In the developing countries, alarming incidents of all forms of violence against doctors have been reported in the last decades, to the point that in some states, safety of doctors has become a critical issue [32, 33]. Globally, India is the "leading country" regarding violence against physicians [34] with data indicating that up to 75% of doctors face some form of violence in their working life [35] and a higher prevalence among physicians with less than 5 years of experience [36–38]. Similar data were reported in Pakistan [39].

High prevalence rates of both physical and psychological violence against physicians have been documented in Chinese hospital settings, where aggressive episodes appear rising over time [40••], including murder of physicians [41], although accurate statistics are lacking [42•, 43–47]. China is also the theater of a culture-based phenomenon known as *Yi Nao*, literally defined as "health care disturbance," which is perpetrated by gangs with a designated leader who threatens and assaults hospital professionals, damage equipment, and prevent normal medical activities. The most frequent aim of *Yi Nao* is to force hospitals to reduce medical care costs. *Yi Nao* has increased tenfold over the years with 118,000 Yi Nao incidents across the country just in 2015 [48••].

High rates of violence against physicians have been reported in Turkey (more than 70% of specialty physicians reported some form of violence) [49, 50]; in Palestine, on both West Bank and Gaza Strip EDs, especially among younger personnel [51]; in Israel [52]; in Jordan [53]; in Syria [54]; and in Iraq [55, 56]. Data showed however, as in other countries, that only 16.4% of assaulted workers reported the violent acts to the authority because of the perception of uselessness and fear of negative consequences [57].

Table 2 Primary studies of prevalence of workplace violence in different areas of the world

Authors and year	Country	Healthcare setting	Number of participants	Main findings
American College of Emergence Physicians 2018	USA	EDs	> 3,500 physicians	47% physically assaulted; 60% of them in the previous year
Ferri et al. 2016	Italy	General hospital	745 HCPs	45% exposed to violence; 12% of them physicians
Vorderwülbecke et al. 2015	Germany	Primary care	831 physicians	91% exposed to violence in their career; 73% in the previous year
De Jager et al. 2019	Belgium	Hospital and community	3726 physicians	37% exposed to violence in the previous year; 33% verbal, 30% psychological, 14% physical, 10% sexual
ONAM Workgroup 2018	Spain	Private and public hospital and community	2419 physicians	Of 2419 physicians reporting some form of violence, 51% were men. Primary care most interested area (54%). Public sector most affected (89%)
Jatic et al. 2019	Bosnia Herzegovina	Primary care	558 HCPs 181 physicians	Overall violence prevalence: 90.3% Physicians more exposed than nurses to indirect physical violence
Sharma et al. 2019	India	Tertiary care hospital	295 HCPs	53% of junior residents and 61% senior residents exposed to verbal violence Physical violence mostly against residents with less than 5-year experience
Jain et al. 2021	India	General hospital	307 residents	86% exposed to violence. 94% of episodes: verbal Most frequent reason: patient's death
Kaur et al. 2019	India	Hospital and community	617 physicians	77% exposed to violence in their career
Singh et al. 2019	Uttar Pradesh	General hospital	305 residents	69.5% exposed to violence; 70% verbal; 47.2% physical; 20% threats
Ahmed et al. 2017	Pakistan	Primary care	524 physicians	85% exposed to mild, 62% to moderate, 38% to severe violence in the previous year
Fang et al. 2020	Northern China	General hospital	884 physicians and 537 residents	73% of physicians and 24.8% of residents exposed to psychological violence; 10.9% of physicians and 1.5% of residents exposed to physical violence in previous year
Tian et al. 2020	China	General hospital	934 physicians	16% exposed to physical violence; 50% to emotional violence; 30% to threats; 19.1 to verbal sexual harassment; 7.8% to sexual assault
Cheung et al. 2020	Macau	Hospital and community	107 physicians	38.3 exposed to verbal violence; 3.7 to physical violence; 12.1% to bullying; 3.7 to sexual harassment; 3.7 to racial harassment
Kaya et al. 2016	Turkey	EDs	112 physicians	76.6% exposed to violence

Table 2 (continued)

Authors and year	Country	Healthcare setting	Number of participants	Main findings
Oğuz et al. 2020	Turkey	Paediatric clinic	75 physicians	56% exposed to violence in the previous year. 8.8% incidents physical. Physicians more exposed than other HCPs
Çevik et al. 2020	Turkey	Hospital and community	948 physicians	83% exposed to violence in their career. 72% verbal
Hamdam et al. 2015	Palestine	EDs	142 physicians	88% exposed to verbal violence and 29% to physical violence in the previous year
Nevo et al. 2017	Israel	Hospital and community	145 physicians	59% exposed to verbal violence and 9% to physical violence in the previous year
Shafran-Tivka et al. 2017	Israel	General hospital	230 physicians	27% exposed to verbal threats; 74% to other forms of verbal violence in the previous 6 months
Mohamad et al. 2021	Syria	General hospital	1226 residents	85% exposed to violence in the previous year
Alhamad et al. 2021	Jordan	General hospital	969 physicians	63% exposed to violence in the previous year. 62% verbal;6% physical; 32% non specified
Al Amazi et al. 2020	Saudi Arabia	General hospital	351 HCPs	59% of physicians exposed to violence. Physicians the most exposed HCPs
Kasai et al. 2018	Myanmar	General hospital	196 physicians	8.7% exposed to verbal violence and 1% to physical violence in the previous year
Elamin et al. 2021	Sudan	General hospital	387 physicians	50.4% exposed to in the previous year. 92% verbal
Seun-Fadipe et al. 2019	Nigeria	General hospital	99 physicians	44.4% exposed to violence in a 7-month time span
Akami et al. 2019	Nigeria	Psychiatric hospital	30 physicians	29% exposed to physical violence in the previous year. 73% in their career
Olashore et al. 2018	Botswana	Psychiatric hospital	10 physicians	40% exposed to violence in their career

EDs emergency departments, *HCPs* healthcare professionals, *ONAM* National Observatory of Aggression to Physicians

Africa

In Africa, there is still paucity of research [58]. In a cross-sectional study carried out in 2020 in Sudan [59], 50% of doctors reported they had been victims of some form of violence (mainly verbal violence and, as for other countries, among younger doctors). A Nigerian study showed similar findings among physicians in general [60] while the prevalence of physical violence against mental health professionals showed that 33% of the doctors report physical assaults in the previous 12 months and 73% in their whole career [61]. Slightly lower but still significant figures were reported in Botswana [62].

Violence Against Physicians in the COVID-19 Period

After the WHO declaration of the novel coronavirus disease (COVID-19) secondary to the SARS-CoV2 virus, as an international public health emergency [63], data were presented regarding the high risk for frontline clinicians to be exposed to negative consequences, including infections, fatigue, anxiety, depression, emotional exhaustion, burnout, and also workplace violence [64, 65, 66•]. Although, initially, physicians and nurses were celebrated as heroes, there is evidence of increased violence against health professionals associated with the COVID-19 pandemic [67••].

This is not a new phenomenon, since historically, likelihood of attacks from patients and/or families becomes higher as clinicians need to implement unwelcome yet essential prevention and control measures, such as quarantining patients, or banning family visits, both of which may disrupt communications between staff and patients/families.

Studies carried out in different countries, such as Brazil [68], Egypt [69], Jordan [70], and Canada [71], showed that key correlates of COVID-19-related workplace violence (including being beaten, threatened, and verbally offended), along with working in MHUs or EDs, were the following: being involved in direct care of infected patients; having infected family/friends/colleagues; not having children or partners; and a high workload. Similar data were reported in India and Pakistan [72, 73] Iraq [74], Mexico [75], and Peru [76], but not in Israel where at least at the beginning of the pandemic, there was a general decrease of violent incidents in comparison to the corresponding period in 2019 [77].

According to the World Medical Association, the figures of violence vary from country to country. [78]. However, although violence rates are higher in conflict zones and developing countries, the phenomenon does not spare high-income, industrialized, and peaceful countries, such as France, the UK, Australia, and the USA [79, 80].

Causes and Consequences of Violence Against Physicians

The development and implementation of effective workplace violence prevention programs that account for risks faced by physicians require the assessment of causes, risk factors, and consequences of violence against physicians.

Causes

There are several causes and risk factors favoring violence against physicians. Some include professional and individual physician-related factors; some are related to communication and doctor-patient relationship issues; some are related to the patients and their personal or clinical condition; finally, a complex intertwining of social, organizational, and political factors should be also considered [81, 82•] (Table 3).

Among physician-related factors, lack of communication skills and empathy, unkindness, and negative or hurtful comments clearly predispose the patient's reaction. Also, physician younger age, inexperience, gender (i.e., female), and not knowing how to de-escalate and when and how to escape are part of the problem. Regarding the interpersonal doctor-patient relationship, dissatisfaction with prescriptions and treatment methods, disagreement with doctors, and unawareness of own body language are frequent initiators of violence.

Table 3 Factors increasing the risk of occupational violence in health care settings (from Kumari et al., modified)

Workplace and policy issues	Patient factors	Physicians factors	Doctor-patient relationship	**Sociocultural issues**
-Poor demarcation between staff-only area and patient area -Overcrowded, uncomfortable, or noisy waiting rooms -Poor access to exits, poor lighting, blind spots without surveillance -Unsecured furnishings which could be used as weapons -Poor policies and work practices including understaffing, cutting staff resources, no investment in staff training, or development of guidelines -Increased bureaucracy	-Medical causes (e.g., delirium, intoxication, substance abuse) -Psychosocial stressors -Previous negative experiences with healthcare -History of violence -Psychiatric disturbances including personality disorders -Interpersonal style of control or dominance -Poor impulse control -Family conflicts	-Lack of staff training in communication skills, treatment of conditions associated with violent behavior, de-escalation techniques -Working alone -Limited experience -Poor control on one's own emotions (e.g., anger, anxiety, frustration) -Emotional exhaustion, burnout, or psychological distress symptoms	-Patients: frustration, perception of not being respected, not being listened to, or being treated unfairly -Increased waiting times -Physicians: detachment and interpersonal frictions -Poor customer services	- Poverty, unemployment, and social marginalization - Language barriers - Cultural differences - Reduced respect for authority, negative media messages - Population density, especially in metropolitan areas - Violence as a way to receive attention

Working with health authorities to implement policies and guidelines for the prevention and management of violence (e.g., education programs, specific procedures, and guidelines)

Among patient factors, personality traits predisposing to aggression, history of violence, the influence of drugs and alcohol, confusion states, high levels of stress, and accumulation of negative life events reduce the threshold to aggression. Also, long waiting time for diagnostic examinations, treatments, and physician consultation may increase dissatisfaction, with risk of irritability, aggressivity, and, eventually, escalation to violent behaviors.

As far as organizational factors are concerned, certain settings (as said, EDs, MHUs), lack of resources and of staffing (e.g., staff reduction for budget reasons), and poor workplace conditions (e.g., architectural design of location, uncomfortable physical conditions of the rooms) are correlated to an increased risk of violence [83]. Also, action on the hospital administration to solve several problems (e.g., lack of support for staff, reduced interest for the staff mental health, burnout, and other psychological job-related complications; lack of violence-prevention programs, staff empowerment, and shared governance) is important, although data about the efficacy of intervention are contrasting not showing [84•] or showing [85•] positive effects.

A special topic has to do with "political" factors that can create conflicts in the population through confusing messages. From one side, politicians (and political parties) tend to announce and proclaim the effectiveness and efficacy of the healthcare system and the powerful investment in public health; on the other side, there is no country where the funds to the healthcare system are cut by the governments, with reduction of resources and a negative influence of on the quality of care. This can cause the request by citizens to have a perfect service fixing all problems, while in reality, what they have to face is characterized by limits and the deficits of the system itself (e.g., long waiting lists to receive attention; burned-out staff).

A further political implication has been made evident in COVID time when the public policy stances taken by healthcare organizations, including physicians or groups of physicians, can place physicians into the crosshairs of highly charged, divisive, controversial political struggles and in turn can increase the likelihood of affective and predatory violence. Specific examples of "politically motivated" or "politically related" violence against physicians might include the following:

- Escalating confrontations over masks, vaccination status, arguments with patients demanding care using medications that lack scientific support for treatment of COVID, and refusal of acute care for COVID due to patient's disbelief in COVID
- Physician burnout in the face of dealing with the frontline consequences of these political divides, leading to diminished reserve and greater risk of arguments with patients resulting in affective violence
- Increased targeting of physicians who perform abortions in the wake of increased controversy about legal changes related to abortion rights, as has recently occurred in the USA
- Increased targeting of physicians working in gender reassignment in the context of increased controversy about gender identity issues

Lastly, culturally and socially, a negative attitude towards healthcare providers has to do with a social stance of unlimited expectations of health and longevity and the implicit belief that technologic progress has given to medical science a curative solution for all the health problems. As a result, both individual patients and society may present a splitting mechanism towards doctors, with an intense de-idealization when the reality is that invulnerability and immortality are not part of the world and that a number of health problems cannot be "fixed" (according to the often forgotten message that medicine, as the science of the human, cures sometimes, relieves often, but should comforts always) [86].

Consequences

Violence incidents bear consequences that go further than the moment of exposure, both on a physical and, sometimes most importantly, on a psychological and moral basis, with a potential influence not only on the individual but also on

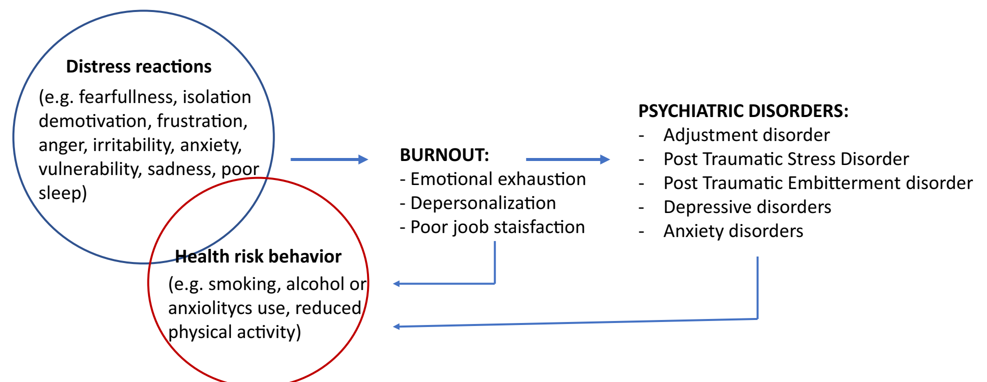

Fig. 1 Consequences of exposure to violence incidents

their family and social relationships (*spillover effect*). In addition, repeated episodes of aggression, or a major traumatic one, may dramatically erode patient-physician trust and lead to poorer health outcomes [87•, 88] (Fig. 1).

In this regard, loss of occupational performance has been reported as the most common result of exposure to violence, with changes in attitudes and decision making and increase of defensive medicine behavior (e.g., excessive prescriptions of drugs and investigations, inappropriate referrals, and consultation requests) [89, 90].

Solid data document that physicians who faced violence are at a great risk to develop psychological problems, such as depression, insomnia, post-traumatic stress symptoms with flashbacks, avoidance and hypervigilance, intense fear episodes, and anxiety, leading to deterioration of quality of life, absenteeism, and, in extreme circumstances, decision to quit the medical profession. Loss of self-esteem and feelings of shame, along with a sense of lowered safety and defeat, can occur as long-term sequelae of cumulative minor violence exposures or of a major dramatic episode. These consequences have been shown significantly higher in cases of physical violence or sexual harassment than in cases of verbal abuse and more in women than in men [91]. Both verbal and physical violence, however, impacted on subjective sleep quality, tobacco consumption, headache, eating disorders, and lifestyle deterioration, with psychological distress partially mediating the relationship between work-related violence and health damage [92, 93•, 94].

Burnout symptoms (i.e., emotional exhaustion, depersonalization and detachment in the relationship with patients, demotivation, and loss of job satisfaction) are statistically more frequent in physicians subjected to verbal and physical violence [95•, 96].

A further form of psychological reaction in physicians' victims of violence could be embitterment and its psychopathological form, defined post-traumatic embitterment disorder (PTED) [97••]. Unlike PTSD, PTED is characterized by the fact that the event is experienced as unjust, as a personal insult, and as a violation of basic beliefs and values, with a predominant sense of embitterment and emotional arousal when reminded of the event, as the key core psychological components of the disorder. Also, mood impairment; downheartedness unspecific somatic complaints; phobic symptoms; social withdrawal; reduction of energy, motivation, and drive; and increase in irritability with possible aggression towards oneself and others can be present While studies have been conducted about these clinical conditions in the workplace, more data are needed regarding embitterment and PTED secondary to violence against physicians [98].

Prevention and Management of Workplace Violence in Healthcare Setting

Although most incidents can be avoidable, studies on violence against physicians have been designed to quantify the problem, and few have described experimental methods to prevent such violence. Three recent critical reviews of the literature documented moderate evidence that integrated prevention programs might decrease the risks of patient-initiated violence [99•]. These programs incorporate at least two different areas of intervention, based on the most frequent causes of violence, including both organizational and the healthcare staff levels (Table 4).

First Level of Intervention

A first level of action concerns the organizational area, from simple interventions to more specific ones. Excessive waiting time for care and clients' disinformation about the reasons for waiting has been documented as a key factor kindling violence, along with lack of violence prevention measures, and lack of drugs or needed services is responsible for at least 15% episodes. Therefore, leaflets, clear information about the possible problems in the daily organization, and attention to comfort are part of these procedures. Hospitals which offer more comfortable physical conditions (e.g., private rooms with an air-conditioning system, or television) show lower rates of patient-initiated violence towards physicians (violence inhibitors). In facilities where procedures and culture of reporting are lacking, violence episodes occur significantly more frequently than in those where reporting

Table 4 Possible interventions for physicians exposed to violence

Training and education on violence prevention (e.g., communication skills, non-violent crisis interventions, de-escalation techniques) and treatment (e.g., use of tranquilizers, restrains) tailored for physicians
Correct attention to high-risk patients (e.g., patients with drug or substance intoxication, confusion); correct interpretation of signs of aggressivity
Enhanced security measures in the clinical settings (e.g., help or panic buttons, direct telephone lines to security and police), safety environment (e.g., lighting, mirrors, cameras)
Development of safety standards within healthcare facilities (e.g., protocols, mandatory reporting of events, zero tolerance of violence (violence is not part of the job!)
Timely response after violence against physicians (e.g., debriefing, psychological assessment, and/or psychiatric treatment)

systems are effective [100••, 101•]. The issue of underreporting of violent incidents is extremely important and can be caused by several reasons which should be carefully examined in order to make the whole care system more aware. With respect to this, one reason for physicians and nurses to not report violence against them is because of previous experience of no action taken (e.g., administration tending to minimize these phenomena to protect the image of the institute; tendency to accept that violence is part nurses' and physicians' work environment); fear of the consequences (e.g., further threats or wish to revenge from the perpetrator if legal reports are made, worry or guilt feelings to have done mistakes in the relationship with the patient); and lack of management support (e.g., tendency to consider this as a problem of the single individual as a scapegoat, rather than a problem of the system) [15•]. Prompting healthcare professionals to always report incidents in a non-judgmental way and disseminating a policy based on protecting the staff (e.g., "violence is not part of the job" initiative in the USA) [6] increase the chances to make violence prevention programs more effective. More specific infrastructure changes, including high-security systems, cameras, alarm systems, improved lighting, rapid access to police, or hospital security, are a necessary part of the organization of healthcare systems, both in clinics and hospitals.

At organizational level, it is also necessary to consider changes in politics, culture, and society, in both the hospital and the media communication, which plays a key role in the public perception of the healthcare system. Political factors, such as the presence or absence of an effective public healthcare system, are another variable at stake: patients' and families' heightened anxiety about the disease and finance difficulties in sustaining the cost of healthcare are an important component of violence initiation.

Second Level of Intervention

A second area of intervention targets physician-related risk factors of violence and aims at promoting behavioral changes. In general, an inappropriate staff attitude can account for up to 20% of cumulative rates of physical and verbal aggression episodes in ICUs [102, 103]. Tailored training initiatives in self-awareness, communications skills, de-escalation techniques, improvement of staff-patient, and inter-staff relationships are necessary. After a violent aggression, debriefing, regular follow-up sessions, and psychological support should be performed with the aim to acknowledge and reassure not only the victim, but also the entire staff. A tense and unempathetic working atmosphere, dissatisfaction, and feelings of distress or fear, burnout, and low-quality interactions with colleagues are, in fact, further risk factors of violence exposure in physicians. The recognition of the difference between interventions to prevent or mitigate acts of affective violence versus predatory violence is also important.. Therefore, in the healthcare system, in the prevention of predatory violence, one of the most important concepts is that individuals who perpetrate such violence usually exhibit a variety of behavioral warning signs amidst numerous risk factors for targeted violence in the lead up to the ultimate act of violence. Thus, the capacity to recognize warning signs of violence and how to deal with should be part of training. Of course, an adequate number of staff personnel should be warranted, since not only the quality of training but also the necessary number of resources is important if a correct and complete response to patients' needs is the aim of the system.

Last, as previously said, training and intervention should focus on the tendency of physicians not to report the aggression. Being victims of violence (therefore a bad act) when doing one's own profession of care (therefore a good act) is a cause of sense of injustice that can cause not only burnout (i.e., emotional exhaustion, poor personal accomplishment, detachment towards patients) but demoralization and embitterment. Programs revolving around a "zero tolerance" policy that seeks to share a workplace culture of awareness and safety, "see something, say something – then we can do something [to stop something bad from happening]", will help the doctor to work through his/her possible sense of guilt or shame and victimization.

Discussion

This review examined violence against physicians from a multifaceted point of view, highlighting the complexity of a phenomenon whose roots are to be found in intertwined cultural, societal, and organizational factors. A worldwide widespread and disturbing pattern of violence towards physicians is in fact occurring, and the medical profession, dignified and valued in the past, seems to be losing not only its sacredness, but even its reputation [104].

Finding a solution to invert this trend is not an easy task, and the few studies that have focused on interventions to reduce violence against physicians have highlighted the unlikelihood of finding a simple, one-size-fits-all approach, since the problem is multidimensional and extremely complex.

A major obstacle appears to be the underestimation of the phenomenon. As said, a number of doctors subjected to violence do not report the incident, and a high percentage of those who report decide to not proceed nor undertake any legal action, frequently considering any acting useless.

The absence of standard procedures for reporting violence and the lack of any encouragement to disclose violence events play a further deterrent role. Many hospitals have neither structured policies/procedure to prevent and

manage violent abuses by patients, nor comprehensive training programs on workplace violence. In this light, physicians' safety appears to assume a lower priority compared with patient safety, and even when present, programs are designed and conceived for patient safety—not worker safety—as the primary goal.

In the paucity of data that define effective steps to prevent violence against physicians, approaches to the problem should be undertaken at various levels. Legislators should consider effective consequences for violence against healthcare workers as a special class of offense; incident reporting procedures should be adopted, and physicians are encouraged to overcome fear of stigmatization and violence acceptance culture. Training programs and the implementation of cost-effective, evidence-based solutions should be ensured.

Our review shows some limitations. First, results presented here are drawn from a literature synthesis and therefore share the limits of the original research, such as the risk of under-reporting, the lack of homogeneity in the definition of violence, and the fact that nearly every study was based on voluntary retrospective surveys, an approach that risks both selection and recall bias. Another important element concerns the subjectivity of physicians, as the interpretation of the episodes of aggression can vary among the victims. A further consideration is that there is not a unique tool (e.g., questionnaire, interview, checklist) used to evaluate the phenomenon in the included studies. Thus, while the impact of violence can be measured by using traditional symptomatic scales to measure depression, anxiety, PTSD, or PTED, the development of specific measures for violence is necessary [105].

Conclusion

Violence against physicians is an urgent global problem with consequences on an individual and societal level. Physicians' deterioration of quality of life, burnout, and traumatic stress are linked to physical and mental health problems, with poor job performance, low organizational commitment, and turnover intentions which, in a domino effect, fall on patients' quality of care.

In this light, it appears crucial that, like all other workers, healthcare workers have the right to safety at work acknowledged. Further research should be particularly focused on detecting evidence-based strategies of the prevention and management of violence against physicians under a multidisciplinary perspective.

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Declarations

Conflict of Interest Rosangela Caruso, Tommaso Toffanin, Federica Folesani, Bruno Biancosino, Francesca Romagnolo, Michelle B. Riba, Daniel McFarland, Laura Palagini, Martino Belvederi Murri, Luigi Zerbinati, and Luigi Grassieach declare no potential conflicts of interest. Michelle Riba is an editor of Current Psychiatry Reports but did not review this article or make editorial suggestions regarding accepting or rejecting this article. She receives royalties or a stipend from Springer, Guilford, Cambridge, American Psychiatric Press Inc., and Current Psychiatry Reports. Luigi Grassi has received royalties for books from Springer and personal fees from EISAI and ANGELINI for scientific consultancy outside the submitted work.

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