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Violence on doctors. An observational study in Northern Italy

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Parole chiave: Violenza nei luoghi di lavoro; Italia; medici; prevalenza; fattori di rischio

Summary

Background: *Violence in the workplace is now universally recognized as a significant global public health issue and is one of the most serious issues affecting the healthcare sector.* **Objectives:** *To assess the prevalence of workplace violence.* **Methods:** *We performed a multicenter cross-sectional study using an anonymous questionnaire submitted to doctors from Northern Italy. The survey investigates socio-demographic information, the number of years of work in the health sector and the physical and verbal aggressions that occurred in the workplace in the last 12 months.* **Results:** *The sample consists of 4545 healthcare workers, of whom 2603 (57.27%) are females. The mean age of the sample is 49.79 years (SD ± 12.63). The risk of being victim of physical aggression at work in the last 12 months is significantly associated with the following independent variables: male gender (aOR 2.09, 95% CI 1.51-2.88), work in the public sector (aOR 2.57, 95% CI 1.72-3.85), being victim of verbal aggression at work in the last 12 months (aOR 22.52, 95% CI 10.97-46.20), work in the operational units of the Medical area (aOR 2.36, 95% CI 1.33-4.21) and the Territorial area (aOR 1.97, 95% CI 1.04-3.74).* **Discussion:** *The prevalence of violent behaviour is difficult to assess, because violent incidents are underreported or unreported. The results of the study suggest that increased awareness is necessary to develop effective control strategies at individual, hospital and national levels.*

Riassunto

«Violenza sui medici. Uno studio osservazionale nel nord Italia». **Introduzione:** *La violenza sul luogo di lavoro è un problema globale di salute pubblica ed è una delle questioni più gravi che interessano il settore sanitario.* **Obiettivi:** *Lo scopo di questo studio è quello di valutare la prevalenza degli episodi di violenza sul luogo di lavoro.* **Metodi:** *Il disegno dello studio è di tipo trasversale multicentrico ed è stato utilizzato un questionario anonimo sottoposto ai medici delle strutture sanitarie del nord Italia. Il questionario indaga su informazioni socio-demografiche, sul numero di anni di lavoro nel settore sanitario e sulle aggressioni fisiche e verbali avvenute sul luogo di lavoro negli ultimi 12 mesi.* **Risultati:** *Il campione è composto da 4545 operatori sanitari, di cui 2603 (57,27%) sono femmine. L'età media del campione è di 49,79 anni (DS ± 12,63). Il rischio di essere vittima di aggressioni fisiche sul lavoro negli*

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ultimi 12 mesi è significativamente associato alle seguenti variabili indipendenti: genere maschile (aOR 2,09; 95% IC 1,51-2,88), lavoro nel settore pubblico (aOR 2,57; 95% IC 1,72-3,85), essere stato vittima di aggressioni verbali negli ultimi 12 mesi (aOR 22,52; 95% IC 10,97-46,20), lavorare nelle unità operative di area medica (aOR 2,36; 95% IC 1,33-4,21) e territoriale (aOR 1,97; 95% IC 1,04-3,74). **Discussione:** *La prevalenza di comportamenti violenti è difficile da stimare, poiché gli episodi sono spesso sottostimati o non segnalati. I risultati dello studio suggeriscono che è necessaria una maggiore consapevolezza per sviluppare strategie di controllo efficaci a livello individuale, ospedaliero e nazionale.*

Background

Violence in the workplace is now universally recognized as a significant global public health and is one of the most serious issues affecting the healthcare sector (19, 25). The global interest of this topic has led the WHO to draft a plan dedicated to the prevention of this matter (26). The National Institute of Occupational Safety and Health (NIOSH) defines workplace violence as "any physical aggression, threatening behavior or verbal abuse against people who are carrying out their work" (17). Violent behavior can be of a different nature. Indeed, Pinar et al. (20) make a distinction between physical violence and verbal violence, defining the first as "being hit, slapped, kicked, pushed, suffocated, caught, bitten, physically assaulted or otherwise subjected to physical contact that has the intent to hurt or damage". The same authors always define verbal violence as "the use of language in order to intimidate, frighten or harm. It means a person who screams, uses bad words, insults or uses other words to command or injure someone else". Healthcare personnel are particularly exposed to this type of risk. The US Bureau of Labor Statistics (a government statistical agency that collects, processes, analyzes and disseminates essential statistical data to the American public) estimates a non-fatal aggression rate of 9.3 per 10,000 for hospital operators as compared to 2 per 10,000 in workers in private sector industries (24).

All hospital workers are exposed to the risk of violence, but the risk is higher for personnel who have direct contact with psychiatric patients, while nurses and doctors represent the most exposed categories, and the emergency and psychiatry departments are the most-at-risk settings for violence (16). A recent meta-analysis shows that across occupations, nurses had the highest exposure to any form of violence, followed by physicians and other healthcare professionals, and that no differences were found for gender (15). Exposure to violence affects the health of victims. In the medical staff, exposure to verbal and psychological violence in particular is associated with emotional exhaustion and depersonalization which are manifestations of burnout syndrome, and this has been demonstrated by cross-sectional and meta-analytical studies (7,12). In Italy the annual prevalence of cases of violence is estimated between 48.6% to 65.9% in health workers (11, 23). As for the nature of violence, verbal threat was the most common form, three to six times higher than physical violence (11, 23). In the study of exposure to violent behavior, it must be taken into account that many of the experiences related to these manifestations are underreported (8). Indeed, several episodes of violence remain underestimated due to the low propensity to report incidents of violence to supervisors or safety managers (5,12, 21).

From this perspective, initiatives such as the 3-day "Marathon of Prevention", held in Palermo (Sicily) under the patronage of the Provincial Health Authority and Medical Regulatory Authority (in Italian, Ordine dei Medici) of Palermo developed in the context of Hackathon Health Technology Assessment - Never Stop Learning (9), can be very effective for:

- Planning and implementation of structural and organizational measures to reduce the risk of aggressive behaviors and acts of violence against health workers.
- Acquisition of knowledge and skills by healthcare professionals to evaluate, prevent and manage such events.

Objectives

The purpose of this multicenter cross-sectional study is to assess, through a survey, the prevalence and perpetrators of workplace violence and explore the role of hospital organizational characteristics and health promotion efforts in reducing hospital violence among doctors.

Methods

We performed a multicenter cross-sectional study using self-completion questionnaires on line. The survey was opened on July 1st, 2018 and closed on October 31th, 2018.

An anonymous online questionnaire (developed using Google forms®) has been submitted to doctors registered in the mailing list of some Medical Regulatory Authorities at provincial level in Italy (OMCeO in Italian). The questionnaires included a section that explained the nature and purpose of the study and a consent form. The recruitment was on a voluntary basis and informed consent was provided by (or obtained from) all participants. We preserved the privacy and anonymity of the HCWs involved in the study: all data collected was stored anonymously in a computerized database; the file was protected by password, only known to the researchers. Lastly, at the beginning of the questionnaire we placed an introductory message containing information about the aims of the study and the research team. The survey lasted no more than 5-10 minutes.

We developed the questionnaire based partly on existing questionnaires (13). The internal consistency index (reliability) calculated by Cronbach's α (alpha) is 0.7345. The questionnaire included an introduction with socio-demographic information, number of working years in the health sector and Operative Unit of work and a second part investigating types of violence perpetrated in the workplace (verbal and physical aggression) at work in the last 12 months. We have also investigated on who was responsible for violence and what reaction there were afterwards. In the study we have included physicians from Northern Italy working in the following regions: Liguria, Piedmont, Emilia Romagna, Friuli Venezia Giulia, Tuscany, Lombardy, Veneto, Trentino-Alto Adige, Valle d'Aosta. According to the Operative Unit where they work, the answers were categorized into:

1) "Medical area" (if Allergology and clinical immunology, Cardiology, Dermatology and venereology, Hematology, Endocrinology, Gastroenterology, Geriatrics, Respiratory diseases, Infectious diseases, Sports medicine, Community medicine, Physical medicine and rehabilitation, Internal medicine, Nuclear medicine, Nephrology, Neonatology, Neurology, Child Neuropsychiatry, Oncology, Pediatrics, Psychiatry, Radiotherapy, Rheumatology, Nutrition Sciences, Intensive Care and Cardiological Sub-intensive);
2) "Surgical area" (if Cardiac Surgery, Digestive Surgery, General Surgery, Maxillo-Facial Surgery, Pediatric Surgery, Plastic and Reconstructive Surgery, Thoracic Surgery, Vascular Surgery, Gynecology and Obstetrics, Neurosurgery, Odontostomatology, Ophthalmology, Orthopedics and Traumatology, Urology);
3) "Service/laboratory area" (if Pathological anatomy, Anesthesia and resuscitation, Clinical biochemistry, Pharmacology, Medical genetics, Hygiene and preventive medicine, Occupational medicine, Forensic medicine, Microbiology and virology, Clinical pathology, Radiodiagnostics, Medical toxicology);
4) "Territorial area" (if Emergency Medical Service, Continuity of care, General medicine);
5) "Other" (if not included in the previous categories).

Statistical analysis

For all qualitative variables absolute and relative frequencies have been calculated. A multivariable logistic regression was performed, considering it as a dependent variable "Have you ever been a victim of physical aggression at work in the last 12 months? Yes", in order to evaluate the role of the variables of the questionnaire, specifically, all the variables of table 1 have been included in the multivariable logistic model. The statistical significance level chosen for all analyzes was 0.05. Results are expressed as adjusted Odds Ratio (aOR) with 95% Confidence

Intervals (95% CI). The results were analyzed using the STATA statistical software version 14 (22).

Results

The sample consists of 4545 healthcare workers, of whom 2603 (57.27%) are females and 1942 (42.73%) are males. The mean age of the sample is 49.79 years (SD±12.63). 100% of the sample is composed of subjects of Italian nationality. Physicians have been grouped according to their department: Medical area, the most represented (34.96%), Territorial area (24.99%), Surgical area (14.90%), Service/laboratory area (13.58%), other (11.57%). The average number of years working in the health sector is 21.85 (DS±12.73); 56.57% work in the public sector. 3.94% have suffered physical violence in the last 12 months, 51.53% have suffered verbal violence in the last 12 months (see table 1).

Among the 179 physicians who declared to have been victims of physical violence in the last 12 months, 78% said they had suffered violence from a patient, 23% from a patient's relative, 7% from a superior, the 4% from colleagues. After suffering physical violence 53% said that he/she reported the incident to the superior, 45% asked for police intervention, 22% had no reaction (for more details see table 2). Among the 2342 physicians who declared to have been victims of verbal violence in the last 12 months, 58% said they were subjected to verbal violence from a patient, 59% from a patient's relative, 11% from a superior, 13% from colleagues; after suffering verbal violence 32% say that he/she reported the incident to the superior, 13% asked for police intervention, 61% had no reaction (for more details see table 2).

Table 3 shows adjusted Odds Ratio (aOR). A multivariable logistic regression model was used based on 4541 observations. Each independent variable has been adjusted for all the other independent variables. The analysis shows that the risk of being victim of physical aggression at work in the last 12 months is significantly associated with the following independent variables: male gender (aOR 2.09, 95% CI 1.51-2.88, p<0.001); work in public sector, (aOR 2.57, 95% CI 1.72-3.85, p<0.001); being victim of verbal aggression at work in the last 12 months (aOR 22.52, 95% CI 10.97-46.20, p<0.001); work

Table 1 - Description of the sample

		N	%
Gender	Female	2603	57.27
	Male	1942	42.73
Operative Unit where you work	Medical area	1589	34.96
	Surgical area	677	14.90
	Service/laboratory area	617	13.58
	Territorial area	1136	24.99
	Other	526	11.57
Do you work in the public or private sector?	Private	1974	43.43
	Public	2571	56.57
Have you been a victim of verbal assault over the past 12 months?	No	2203	48.47
	Yes	2342	51.53
Have you been a victim of physical assault over the past 12 months?	No	4366	96.06
	Yes	179	3.94
Age*	Mean and standard deviation	49.79±12.63	
Number of working years in the health sector**	Mean and standard deviation	21.85±12.73	

*Based on 4545 observations
**Based on 4541 observations

Table 2 - Who was responsible for violence (or Who used violence)? What reaction did you have then? (Multiple answers possible)

	N	%
Responsible for verbal violence		
Patient	1357	57.94
Relative of a patient	1384	59.09
Colleague	298	12.72
Superior	255	10.89
Other	70	2.72
Reaction after verbal violence		
No reaction	1425	60.85
I asked for police intervention	300	12.81
I reported the incident to the superior	752	32.11
I reported the incident to the risk manager	97	4.14
I asked to be transferred	29	1.24
I asked for compensation for damage	7	0.30
Responsible for physical violence		
Patient	140	78.21
Relative of a patient	42	23.46
Colleague	7	3.91
Superior	13	7.26
Reaction after physical violence		
No reaction	40	22.35
I asked for police intervention	80	44.69
I reported the incident to the superior	95	53.07
I reported the incident to the risk manager	38	21.23
I asked to be transferred	10	5.59

in the operational units of Medical area (aOR 2.36, 95% CI 1.33-4.21, p=0.003), Territorial area (aOR 1.97, 95% CI 1.04-3.74, p=0.037) and Other (aOR 2.78, 95% CI 1.45-5.30, p=0.002).

Discussion

The incidence of violent behaviour is difficult to assess, because violent incidents are underreported or unreported. Several studies indicate that violent behaviour against healthcare workers has serious consequences for the professionals involved, as well as for the wider healthcare system (4). The results of this study are based on 4545 subjects, representing one of the largest studies conducted among physicians aimed to evaluate the risk factors associated to violence. The sample was balanced in terms of gender and no differences were found considering the Units of employment. The scale of the phenomena is also remarkable, previous studies conducted in different countries highlighted a proportion of physical violence against HCWs ranging from 14% to 56% (14, 18). The findings of our study showed a lower percentage of HCWs were victims of physical violence (179 subjects, representing about 4% of the sample). Nevertheless, in this survey, HCWs generally seem to be vulnerable to any of the types of violence, even though verbal abuse was highly reported. Furthermore, having been victim of physical violence is statistically associated with several factors, such as gender (16). In our sample, male HCWs are at higher risk of violence, compared to female. This data is inagreement with other researches conducted in Northern Italy, where both male nurses and male physicians were highly attacked (16). Another important factor associated with having been victim of violence, in our sample, was the sector of professional experience. Indeed, HCWs working in the public sector were at higher risk to be victim compared to colleagues who are working in the private sector. Probably, the differences behind these data should be traced to specific policies against physical workplace violence in their clinical settings. Nevertheless, Ayranci previously reported a higher proportion of physical violence in the public compared to the private sector, in Turkish hospitals (3). Moreover, our results confirmed that the type of operative unit where the professionals work is associated with the risk of violence (2). Indeed, Surgical area, Service/laboratory area and Territorial area were less at risk of workplace violence compared to Medical area. This may probably be due to the different type of doctor-patients interaction. Probably, in Medical area the doctors spend more time with patients, due to the chronic pattern of diseases, and this might be associated with a more intimate and interactive relationship (6). It is interesting to notice that, in our sample, HCWs who were victims of physical violence were also victims of verbal violence. In particular, 2342 professionals were victims of verbal attack, of which 171 were victims both of verbal and physical violence. In other words, more than half of the sample were victims of verbal ag-

Table 3 - Multivariable logistic regression. Each independent variable is adjusted for all the other independent variables. Based on 4541 observations

		Have you ever been a victim of physical aggression at work in the last 12 months? Yes		
Independent variable		aOR	C.I 95%	p-value
Number of working years in the health sector	As the unit increases	0.99	0.95-1.03	0.634
Age	As the unit increases	1.02	0.98-1.07	0.352
Gender	Female	1		
	Male	2.09	1.51-2.88	<0.001
Operative Unit where you work	Surgical area	1		
	Medical area	2.36	1.33-4.21	0.003
	Service/laboratory area	1.66	0.84-3.26	0.142
	Territorial area	1.97	1.04-3.74	0.037
	Other	2.78	1.45-5.30	0.002
Do you work in the public or private sector?	Private	1		
	Public	2.57	1.72-3.85	<0.001
Have you been a victim of verbal assault over the past 12 months?	No	1		
	Yes	22.52	10.97-46.20	<0.001

gression during their work time. This proportion is in accordance with previous results (2); however, this represents a very high proportion of aggressions that might undermine the wellbeing of the HCWs and their ability to take care of patients. In fact, previous studies found a straight association between having been victim of aggression and physiological implications for the victims. Al-Omari et al. (1) reported that the majority of physicians surveyed in their study tried to avoid thinking or talking about the abuse, one third were worried by disturbing memories of the violence, and lastly, the same proportion was disturbed by being super-alert. The state of perceiving themselves as on guard is also highlighted by the fact that HCWs who were victims of physical violence during the last 12 months were those who knew the company procedures to prevent / manage violence, and those who considered useful to set up company procedures to prevent/manage violence, in a statistical significant manner (10). Before generalizing our results, some limitations need to be taken into account. The questionnaire was self-reported and social-desirability bias or recall-bias cannot be excluded; another limitation is that the questionnaire has no validation in the Italian context. Further, because the sampling was based on the snowball method, it was not possible to calculate the invited physicians, and for this reason, it was not possible to estimate the response rate. Furthermore, the enrolment was on a voluntary basis and it could be responsible for oversampling of physicians victims of violence. However, the percentage of respondent victims was lower compared to previous studies, and for this reason we can exclude this potential bias. Other important strengths are that the questionnaire used was previously validated and anonymous (13).

Moreover, the sample size was very high.

This study demonstrates that physical violence against physicians is an existing problem also in Northern Italy. Further research is essential to identify specific factors associated with environmental and patients' characteristics and the epidemiology of aggression and violence against HCWs.

Verbal and/or physical violence against physicians is a common phenomenon in the health system. Our findings highlight the prevalence of physical violence experienced by HCWs and factor and

associated factors. Although it does not represent a specific psychosocial risk for health workers, attention to these workers has increased over time. Exposure to workplace violence is in fact capable not only of undermining the worker's health but also of lowering the level of organizational well-being. From this perspective, preventing episodes of workplace violence could improve the degree of health both on an individual and on an organizational level. It is necessary to identify and implement preventive tools such as acting both on an organizational level through specific company policies and on an individual level, aiming at training the individual, providing him with specific strategies to deal with episodes of violence. In Italy there are no standardized and widespread strategies to prevent the phenomenon while the involvement of the public sector would require urgent measures. Further research is needed to clarify the short and long-term health consequences of health workers exposed to violence and to understand how best to intervene to reduce HCWs exposure to workplace physical violence.

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