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The Management of Workplace Violence against Healthcare Workers: A Multidisciplinary Approach in an Italian Hospital

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Abstract

Objective: The risk of aggression against healthcare workers (HCWs) is a globally well-known topic. However, many HCWs consider workplace violence (WV) as part of their job and this misconception leads to a broad underreporting. This cross-sectional study aims at providing a descriptive analysis of aggressive acts against HCWs registered in a 34-month period in a paediatric general hospital. We also suggest a model for the assessment of contributing factors related to the development of overt aggression.

Methods: A specific protocol for the management of WV was designed in the hospital with the aim of minimizing the WV risk through combined individual and collective organizational and techno-structural measures. The signaling process of WV is led by multidisciplinary teams which include occupational physicians and a psychologist following the root-cause approach. According to the protocol, each aggressive act is analyzed by the team using the "Modified Overt Aggression Scale" (MOAS), the "General Health Questionnaire-12" (GHQ-12) and the "Short Form-36 health survey" (SF-36). A report is finally prepared to address improvement measures to be implemented in the hospital. In the study a three-domain model of WV is developed considering: 1) assaulted HCWs, 2) attacker-related issues, and 3) environmental context. Contributing factors related to each domain are outlined and univariate analyses are performed to investigate their role in determining overt aggression. Then a multiple linear regression was set using factors previously resulted statistically significant.

Results: A total of 82 aggressive acts were registered in the period. MOAS scores registered a mean value of 3.71 (SD: 4.09). Verbal abuse was the most common form of WV. HCWs professional category, minor psychiatric disorder, emotional role limitation, type of containment used and emotion intensity were significantly associated to overt aggression ($p<0.05$), as well as attacker's role in the hospital ($p<0.05$). The multiple regression analysis confirmed these findings.

Conclusion: Raising awareness on the aggression risk and contributing factors may lead to a relevant improvement of workplace environment and individual workers' health and organization well-being.

Keywords: Aggression; Mental health; Prevention; Psychological well-being; Health promotion; Emotion; Organization

Introduction

Globally, violence is a widespread phenomenon in the workplace. Healthcare is one of the most affected sectors, and the most exposed categories are healthcare workers (HCWs), especially nurses and physicians [1]. American data indicate that about 70% of workplace aggressions occurred in services health or social issues and 10% of HCWs operating in the public sector have suffered violence-related consequences that led to absences from work compared to 3% of HCWs in the private sector. In European countries, 4% of the active HCWs population reported having experienced verbal and physical violence from people outside the workplace such as patients or clients. Data on WV greatly vary across Italian regions, although a high prevalence is recognize. Evidence provided by the Italian Ministry of Health show that WV against HCWs represent almost 9% of the total adverse events reported throughout the national territory. Psychological and verbal abuses such as screams or threats are the leading forms of workplace violence (WV), but also physical attacks may occur.

WV have notable negative effects on employees' health, causing job work overload, decreased job satisfaction, fatigue, and exhaustion, which in turn often lead to high turnover and absenteeism rate. Violent attacks can lead to serious experiences for HCWs, including psychological, physical, organizational, and professional consequences, and cause also a reduction of the organization's performance. In the recent SARS-CoV-2 pandemic period, an increased workload caused high levels of frustration and distress graving on HCWs [2].

Although aggressive events are broadly present, they are still underreported [3]. Consequently, HCWs are not prepared to face violence by colleagues and/or patients. A passive acceptance by HCWs is usual, and aggressions are perceived as a regular component of their work. In this study, we address this trend by reporting a description of data on aggressive acts among HCWs suggesting a model for the assessment of contributing factors related to the development of overt aggression.

Methods

Hospital Protocol for the Management of Workplace Violence Against HCWs (MWVaH protocol)

Over the past four years, a specific protocol for the management of WV against HCWs (MWVaH protocol) has been implemented in the paediatric general hospital. The procedure involves the reporting

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by the worker (or his/her supervisor) of the assault suffered using a digital platform for sentinel events independently accessible online by all hospital employees. Entry of the description of the assault event automatically generates a report that is analysed by a multidisciplinary team of the Health Directory, which includes occupational physicians and a psychologist. The team prepares an ad hoc structured interview with the assaulted worker to investigate the matter further, using the root cause analysis approach. Details are acquired regarding the form of aggression experienced (physical, verbal, against objects, and against self), factors that may have contributed, outcomes of the event, and containment interventions taken using the structured "Modified Overt Aggression Scale" (MOAS). The consequences to the health worker are focused on through the administration of a clinical questionnaire consisting of the "General Health Questionnaire-12" (GHQ-12) and "Short Form-36 health survey" (SF-36) scales investigating mental and general health, respectively. Critical issues found in the management of the episode are then identified and consequently improvement actions are finally proposed to minimize the risk of WV.

Study design

A cross-sectional study has been set to analyse characteristics of the aggression acts reported by HCWs in the hospital in a 34-month period from March 2019 to December 2021. Informed consent was obtained from all the participants.

The analysis of WV recorded in the hospital was conducted in two steps: (1) the evaluation of aggressive acts registered in the hospital according to the proposed model of WV in healthcare settings, (2) the evaluation of contributing factors to overt aggression.

The Evaluation of Aggressive acts: the Development of a three-Domain model of WV in Healthcare Settings

A detailed description of aggressive acts was performed using the "Modified Overt Aggression Scale" (MOAS), Italian version , which provided the level of aggressive acts. The scale consists of four questions investigating the four forms of aggression (verbal, against objects, against self, and physical) ranged on a 5-point Likert scale (0-4) from "no aggression manifested" to the worst possible scenario (e.g. "repeatedly or deliberately threatens violent actions against others or himself so as to obtain money or sexual services" for verbal aggression). Partial scores resulted using weighting factors for each questions: (1) verbal aggression (scored from 0 to 4, weighting factor: 1); (2) aggression towards objects (scored from 0 to 8, weighting factor: 2); (3) self-afflicted violence (scored from 0 to 12, weighting factor: 3); (4) physical aggression (scored from 0 to 16, weighting factor: 4). The total score is computed as the sum of partial scores and is ranged from 0 to 40; the higher the score the worse the aggressive act.

An in-depth evaluation was proposed by exploring the following three domains:

(1) assaulted HCWs, regarding age, sex, professional category, role in the organization, mental health, general health and objective and subjective factors;

(2) attacker-related issues, investigating the role of attackers in the hospital and the characteristics of the hospitalization-related features;

(3) environmental context, concerning spatial and temporal distribution of aggressive episodes.

The psychological insight of the assaulted HCWs

Age, sex, and occupational data regarding professional category (e.g., nurses, physicians, others) and role in the organization (e.g., managerial or executive) were outlined for the assaulted HCWs. The psychological insight of the assaulted HCWs was explored in terms of consequences that the aggression mental and general health. The "General Health Questionnaire-12" (GHQ-12) identifies the change in the normal psychic functioning towards personality disorders and the adaptation patterns associated with distress due to new stressful phenomena [4]. Each question is ranged on a 4-point Likert scale, with a total score ranging from 0 to 36 points; the higher the score the lower the mental health; we assumed scores over 21 as needing intervention.

The "Short Form-36 Health Survey" (SF-36) is a self-administered questionnaire aimed to quantify general health status and measure the health-related quality of life. The structure comprehends eight subscales regarding physical functioning (10 items), limitations due to physical health (4 items), physical pain (2 items), general health perception (5 items), vitality (4 items), social activities (2 items), limitations due to emotional problems (3 items), and emotional well-being (5 items). The last item differently assesses the change in health status compared to the previous year. Each item is ranged on a 5-point Likert scale, and each subscale is then scored on a 0-100 scale considering a weighted sum of items [5]. The higher the score, the better the perceived health; subjects with scores equals or higher than 60 were considered having good general health, otherwise insufficient.

A factor analysis of the management of aggressive acts put in place by assaulted HCWs was performed considering two factors:

- Objective factor: type of containment enacted (e.g., verbal, physical, verbal and physical);
- Subjective factors (perceptions) in terms of immediate behavioural strategy intended to reduce possible consequences of the aggressive event and emotions felt (e.g., anger, frustration, fear, disappointment, sadness, and injustice) and their intensity at the time of the aggression.

Attacker-Related Issues

For profiling attacker were considered two areas:

- The attacker's role in the healthcare organization (e.g., caregiver, patient, colleague);
- the characteristics of the hospitalization, exploring age of the recovered patients, duration of hospitalization, and reason for admission (e.g., acute situation or relapse, chronic illness care); performed surgical operation.

Environmental context

Spatial and temporal distributions of aggressive episodes were registered in terms of hospital setting where the aggression occurred and time of the day. Operative units where classified in four categories, regarding high-complexity/long-term units (e.g., intensive care units, child neuropsychiatry, neurorehabilitation), emergency admission units (e.g., emergency department), ordinary admission units (e.g., cardiology, surgery units), and outpatient units (e.g., dentistry, blood collection centre). Temporal distribution was considered according to work shift of the assaulted HCW into three categories (e.g., morning, afternoon and night).

Statistical Analyses

The descriptive analysis of aggressive acts and demographics characteristics of the population of assaulted HCWs were set up using mean and standard deviation for continuous variables (e.g., assaulted HCW's age, questionnaire's scores, hospitalization length) and frequency for categorical variables (e.g., assaulted HCW's sex, professional category, immediate behavioural choices and emotions, attacker's role, age of the recovered patients, reasons for hospitalization, hospital setting, time of the day, and improvement actions suggested). The relationship between the three domains in the escalation process to overt aggression was independently evaluated using univariate analysis of variance considering MOAS score as dependent variable and data on assaulted HCWs, attacker-related issues, and environmental context as independent variable. Then, variables resulted significantly predictive were included in a multiple linear regression model.

Results

Descriptive Analyses of Aggressive acts Registered in the Hospital

The form of Aggressive acts and their Evaluation

A total of 82 aggressions have been registered in the period. In 58.5% of aggressive episodes more than one HCW was involved. MOAS scores registered a mean value of 3.71 (±4.09). Among the four forms of violence, verbal abuse was the most common. The occurrence and correspondent MOAS scores of the four forms of WV is shown in Table 1.

The Assaulted HCWs' Perspective in WV Management

Overall, assaulted HCWs were 44.77±10.09 aged; they were mainly females (n=68, 82.9%). They were mainly nurses (n=56, 68.3%), followed by physicians (n=20, 24.4%); other professional categories including technicians, socio-sanitary workers and administrative personnel accounted for the 7.2% (n=6). HCWs had mostly an executive role (n=71, 86.6%). According to the GHQ-12 scores, 15 assaulted HCWs (18.3%) had a psychological impairment requiring intervention; a psychological support at the workplace was chosen in 5 of them. Insufficient general health was registered in 16 subjects (19.5%). Mean scores of the administered questionnaires are shown in [Table 2]. According to the MWVaH protocol, all adverse events were reported to the Health Directory within the next 24 hours. Moreover, a report of injury at work was made to the competent National Insurance Institute for Accident at Work in two cases and in one case a legal complaint was executed. Overall, only one HCW reported an effective management of the event.

Objective factorial analysis of the management of aggressive episodes put in place by assaulted HCWs showed that verbal actions were sufficient in most of the situations (92.9%), whilst physical containment was necessary in four cases, and both verbal/physical containments were implemented in two cases. Subjective factor analysis of the management showed that immediate behavioural strategy consisted in the early detection of the attacker (70.7%), followed by the communication techniques (24.4%) and the efficient surveillance system (15.9%). HCWs reported to have experienced strong emotions at the time of the aggression. Anger and frustration were the mostly referred (47.6%), as well as fear (36.6%); other perceptions regarded disappointment (14.6%), sadness and injustice (3.7%) [Table 3].

The Attacker-Related Issues

In 71 cases, the caregiver was responsible for the aggressive act (86.4%), whereas patients were involved in 7 events (8.6%); peer aggressions occurred in 4 cases (4.9%). Factors related to the hospitalization showed that hospitalized patients were 9 years aged on average (SD: 5.9 years) and the mean duration of hospitalization was 54.79 days (SD: 110.84 days). Reasons for admission mostly regarded acute situations (67.1%), while the residual part were due to chronic illnesses (32.9%). In 17.1% of cases, a surgical operation was performed during the hospitalization period.

The Environmental Context of Registered WV

The most part of aggressions occurred during day shifts (72.2%). High-complexity and long-term units were the most interested settings

Table 1: Occurrence and MOAS scores of the four forms of WV (in order of frequency).

Form of aggression	Frequency n (%)	Mean±SD	Range
Verbal aggression	76 (92.7)	1.91±1.09	0-4
Physical aggression	21 (25.6)	1.54±3.07	0-12
Aggression against objects	12 (14.6)	0.46±1.19	0-4
Aggression against self	2 (2.4)	0.17±1.01	0-6
MOAS total score (points)	82 (100.0)	3.71±4.09	0-26
Notes: MOAS: Modified Overt Aggression Scale; SD: standard deviation.			

Table 2: Questionnaire scores on mental and general health.

Scale	Range	Mean±SD
GHQ-12	1-26	12.15±7.10
SF-36 total score	31-97	76.25± 17.84
subscale 1 - physical activity	35-100	91.35±15.00
subscale 2 - physical role limitation	33-100	84.92±21.64
subscale 3 - physical pain	32-100	79.81±24.31
subscale 4 - general health	40-97	70.73±14.61
subscale 5 - vitality	15-100	58.46±21.95
subscale 6 - social activities	0-100	72.35±27.90
subscale 7 - emotional role limitation	0-100	83.19±28.81
subscale 8 - mental health	16-100	69.23±21.25
Notes: GHQ-12: General Health Questionnaire-12; SD: standard deviation; SF-36: Short Form-36 Health Survey.		

Table 3: Factor analysis of WV management by the assaulted HCWs.

Factor			Frequency n (%)	Mean ±SD
Objective factor	Type of containment	Verbal	76 (92.9)	-
		Physical	4 (4.3)	-
		Verbal and physical	2 (2.9)	-
Subjective factors	Immediate behavioural actions	Early detection of the attacker	58 (70.7)	-
		Communication techniques	20 (24.4)	-
		Surveillance system	13 (15.9)	-
		Securing of the attacker	9 (11.0)	-
		Presence of colleagues	8 (9.8)	-
		Presence of superiors	3 (3.7)	-
	Emotions	Anger	39 (47.6)	-
		Frustration	39 (47.6)	-
		Fear	30 (36.6)	-
		Disappointment	12 (14.6)	-
		Sadness	3 (3.7)	-
		Injustice	3 (3.7)	-
		Intensity of any emotion (0-5)	82 (100.0)	3.6±1.5

(48.8%) followed by ordinary admission units (23.2%) and emergency admission units; outpatients units were less involved (11.0%).

The Evaluation of Contributing Factors to Overt Aggression

Univariate analyses evidenced that professional category, the presence of minor psychiatric disorder, the emotional role limitation, type of containment used to counteract the aggressive act and emotion intensity were HCWs factors able to contribute to over aggression. Attacker's role was also a contributing factor, whereas no environmental factors can predict overt aggression.

Discussion

Aggression is a universal behavioural trait among animals used as a mechanism to establish the power on someone or to defend from a perceived threat [6]. Aggressive acts are a visible expression of a misalignment of the relationship between individual characteristics and the environmental context. In healthcare settings, the essential trigger lives in the relationship between healthcare personnel and users. Our findings showed that the escalation process to overt aggression is influenced by the two dimensions of this human relationship, regarding on the one hand HCWs' professional category, psychological well-being, perception of emotion intensity and consequent emotional role limitation and on the other hand the user's role in the hospital.

The impact on the emotional role in health professionals categories can generate symptoms of exhaustion by lowering the level of employees' health, thus starting a vicious cycle which mines the organizational climate. Horizontal aggression can increase too based on the level of dissatisfaction, work overload, fatigue, and burnout. According to the Siegrist's model of work-related stress, effort-reward imbalance in the workplace can generate distress and frustration in workers. Subsequently further consequences may be experienced at behavioural level (e.g., laziness), emotional level (e.g., anger, fear), psychological level (e.g., mood disorders, burnout), and physical level (e.g., headache, heart pounding) [7]. Although a major prevalence of female workers in the health sector, our results confirm a gender difference related to WV with females have higher risk than males [8].

A specific feature of the world of paediatric care concerns the relationship between the patient's family and HCWs. This figure is connected to the wear and tear of the caregiver: the complexity of the patient and the length of hospitalization are critical elements to be considered. WV triggering factors include prolonged waiting time and inadequate communication as well as organizational and ergonomic criticalities [9]. Relationships experienced by HCWs with patients and their caregivers (e.g., family members) may have a significant impact on aggressions. Our results confirmed that verbal aggressions are more common than physical aggression.

Several occupational factors may influence the occurrence of violence acts in the workplace, such as organizational and structural issues, regarding miscommunication and poor environmental design. In addition, night shifts was found to be a risk factor of aggression, due to poor lighting and limited visibility; conversely, in our sample population the most part of aggression occurred during day shifts. Although the emergency department notably face a high prevalence of WV [10], a general underreporting is confirmed in our sample. Moreover, our evidence shed light on the great frequency of aggressive acts in high-complexity units, which have higher risk of WV due to the presence of multiple organizational specificity in our paediatric general hospital. This phenomenon is probably caused by the wear and tear on the family caregiver of patients suffering from chronic illnesses. In fact, the caregiver burden may result from the constant assistance required by chronic patient in need of complex treatment.

Despite the poor sample, which is the main limitation of our study, our domain analysis may help understanding the aetiology of aggressive acts, which can aid HCWs in the prevention and management of WV. Further studies are needed to gather systematic evidence of this phenomenon. However, the assessment of risk factors, addressing underreporting of violent episodes, and implementing WV management initiatives are successful organizational mitigation strategies, as suggested in the literature [11]. Workplace health promotion programs focused on participative approach and employee engagement (e.g., psychological support, relaxation techniques and yoga/mindfulness courses in healthcare may prevent work-related stress and preserve HCWs from the development of physical and mental fatigue [12].

In the recent years, a growing interest for preventing psychosocial risks has been observed, regarding the development of strategies to

increase protective factors related to mutual social support networks and the development of coping skills. Many aspects have been addressed to tackle WV in healthcare settings with the aim of improving the quality and safety of care and helping the clinical risk management [13]. The development of targeted company policy for the prevention of WV, safety training programs for WV management, courses on communication techniques for early recognition of potential aggressive and violent behaviours have been produced [14], as well as procedures for reporting and procedures to activate medical, psychological and legal support after an episode of violence [15].

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contributions

SZ, GD, FDF, AS, MRV, VC, MR, MDS, GB and RRDP conceived the idea of the study and were responsible for the design of the study. RRDP and GB performed data analysis, then SZ, GD, FDF, AS, MRV, VC, MR, MDS contributed to the interpretation of the results. The initial draft of the manuscript was prepared by GB and RRDP, and then circulated repeatedly among all authors for critical revision. All authors read and approved the final version of the manuscript.

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