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Article

Tracking Workplace Violence over 20 Years

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Abstract: Violence against healthcare workers (HCWs) is a widespread, underreported and inadequately prevented problem. Only a few companies have efficient systems for assessing the extent of the phenomenon. In 2005, the health surveillance service of a public health company introduced a system that monitored violence experienced by HCWs by means of three items from the Violent Incident Form (VIF), integrated with departmental in-depth analyses using the participatory ergonomics group technique. In 2005, the annual rate of physical assaults was 8.2%, that of threats 12.0%, while the harassment rate was 19.6%. Over the past twenty years of observation (2005-2024), the percentage of workers who reported experiencing a physical attack in the previous year at their periodic medical examination, has fluctuated between 5.8% and 11.1%, except for the years 2020 and 2021 when, during the COVID-19 pandemic, the rate was 3.9% and 3.2%, respectively. During the same pandemic period, the annual threat rate that ranged from 9.4% to 20.1%, dropped to 7.7%, while the prevalence of harassment, that was between 13.5 and 19.6, fell to 7.2%. HCWs believe that (i) limiting visitor access (ii) a better balance of the demand for services and (iii) a better attitude towards HCWs were the causes of the reduced rate of violence during the pandemic. Recording the violence experienced during health surveillance is an economical, reliable and sustainable risk assessment method.

Keywords: health surveillance; aggression; threat; harassment; risk assessment; participatory methods; COVID-19; prevention; longitudinal study; occupational epidemiology; methodology

1. Introduction

Workplace violence (WV) against healthcare workers (HCWs) is a long-standing, under-reported [1–5] and poorly understood phenomenon. The complex panorama of WV includes physical assaults as well as verbal and psychological violence [6]. These types of violence can manifest themselves as bullying [7], mobbing [8], incivility [9–11], discrimination [12], sexual harassment [13], and stalking [14]. The perpetrators are principally patients, especially in cases where they are under the influence of drugs or affected by mental illnesses and cognitive deficits, but they can also be visitors and relatives [15–18]. Colleagues or superiors are responsible for a non-negligible amount of WV; this so-called "lateral" form of violence is the least spontaneously reported [19–21]. Although the consequences of WV may result in obvious physical injuries of varying severity, or even lead to murder [22–25], those that trigger the emotional involvement of the victim are often the most persistent and harmful [26]. A systematic review found that in HCWs there is a recurring association.

(resulting mostly from medium-quality research) between physical violence and poor mental health as well as potential connections between psychological violence and poor mental health and sick leave [27]. WV can induce or aggravate anxiety [28–30], depression [31–34], suicidal ideation [35], burnout [36–38], post-traumatic stress disorder [39,40], sleep problems [41–43], headaches [44,45], musculoskeletal disorders [46–48] stress [49–53], poor compassion [54], poor workability [55], absenteeism [56], presenteeism [57], high employee turnover rates [58–60], decreased productivity [61] or worsening of the quality of care [62]. Longitudinal studies have shown that WV causes distress and poor social support, which in turn increase the risk of experiencing WV [63,64].

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Although WV is so relevant and widespread, the problem is understudied [65] and lacks a universal definition [6]. The same occurs with workplace bullying where the definition of the phenomenon "is in the eye of the beholder" [66]. A similar terminological uncertainty also exists over mobbing and incivility, which are commonly considered synonyms for bullying, and civility, which is the antonym [67]. In brief, WV is a subjective issue since what is considered "violence" by one employee may be viewed as lower-level antagonism by another [68]. This kind of terminological uncertainty greatly hinders comparisons between different samples, systematic reviews and meta-analyses, and makes it difficult to correctly interpret the problem and propose appropriate solutions. However, from the point of view of occupational medicine, WV is only important if the employee considers it to be so. For this reason, we preferred to focus on the subjective factor by asking the worker if he/she had been the target of violence. Those who did not report cases of violence in their confidential interview with the occupational doctor evidently believed that what happened was not important for their health and their work.

Because it is so commonplace, employees frequently accepted WV as a normal occurrence or an essential component of their jobs [69–73]. The idea that WV needs to be addressed has arisen only recently in the scholarly literature. Finnish researchers began to include WV among the causes of stress in HCWs only at the end of the 1980s [74], and it took several years before the first data on compensation for assaults and insurance costs appeared in official statistics [75]. Studies derived from the health surveillance of workers in healthcare companies emerged much later, at the beginning of this century, especially in Italian research [76–83], since the authors of scientific publications preferred to conduct studies on aggregate, national or supranational data, rather than examine the situation of individual working situations [84–93]. This type of study provided an overall vision of the phenomenon and the general characteristics potentially manifested in each category of workers but was of limited use in interpreting local situations and preparing suitable prevention measures. Unfortunately, not all companies have occupational epidemiology services capable of effectively assessing these situations. The lack of local data means that risk assessments of WV in healthcare companies are often based on information that refers to totally different conditions. Even worse, risk assessment is often conducted using unvalidated algorithms that provide utterly unreliable results [94]. Since this situation is undoubtedly dangerous for the safety and health of employees and for the repercussions it has on the quality of care, simple and economical methods of monitoring the extent of the phenomenon need to be devised in order to avoid underreporting of the problem and stimulate worker participation. Recommendations on risk assessment and the management of WV call for the development of participative, nondiscriminatory, and systematic strategies [95].

Italy is currently among the few nations in the world that compels employers to evaluate the likelihood of violence, take steps to prevent it, and shield employees from its consequences [96]. In 2007, the Italian Ministry of Health issued a Recommendation [97] which invited all hospital and outpatient facilities to develop prevention programs after analyzing events and work situations. Although many years have passed since the Recommendation was endorsed, it is still not being universally applied in healthcare. All over the world health organizations are required to conduct violence assessments as part of The Joint Commission's accreditation guidelines [98].

In this study we set out to describe observations conducted over the last 20 years in a public health company where the frequency of violent events was measured during health surveillance. The aim of the study is to gain a more detailed knowledge of the phenomenon, ascertain the possible existence of trends and interpret their causes in order to develop and improve control measures. A secondary objective of this study is to illustrate the method used to monitor violence and discuss its advantages and limitations.

2. Materials and Methods

In Italy, workers who are exposed to occupational risks are subjected to mandatory health surveillance in the workplace. This surveillance involves carrying out medical examinations (usually annual) and conducting investigations designed to promptly identify early changes produced by occupational exposure to risk factors. Health surveillance is mandatory but can also include health

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promotion activities. Traditionally our university has always combined promotion with prevention by integrating health promotion projects in health surveillance. Although participation in these projects is not obligatory, it is generally very high (over 85%) [99].

In the company where this research was conducted, we started to analyze violent incidents in 1999 using the Violent Incident Form (VIF), a tool specifically created for this purpose by Arnetz [100]. This tool uses an operational definition of violence that encompasses verbal aggression and threats. The questions are: "*1. Over the past 12 months have you experienced a physical assault during working hours? ('physical assault' means an attack, with or without weapons, that may or may not cause physical harm); 2. Over the past 12 months have you been subject to a threat during working hours? ('A threat' refers to the intention of causing physical harm). 3. Over the past 12 months have you been subjected to harassment during working hours? ('harassment' means any annoying or unpleasant act (words, attitudes, actions) that creates a hostile work environment)*". If the worker gives an affirmative answer, he/she is asked to describe the episode by identifying the circumstances, perpetrator, event, and consequences.

Initially, the questionnaire was used within the company to define cases of violence that had been officially reported. However, it soon became clear that the number of reports was very low and limited to the most dramatic incidents, especially if the perpetrator was unknown. One of the authors of this study (NM), in his capacity as Clinical Risk Manager, started to compile anonymous questionnaires, but response remained numerically irrelevant. Consequently, to meet prevention requirements and legal indications, in 2005 he began to systematically monitor the violent events that had occurred among workers by asking them the three aforementioned questions during their periodic medical examinations.

Furthermore, the inspections that the occupational doctor carries out in the various sectors of the company were always integrated by involving Participatory Ergonomics Groups (GEPs) [101] in which the workers described the production cycle, identified its shortcomings and proposed solutions. During these meetings the workers discussed the WV problem in their department. Furthermore, participants in GEP meetings were invited to complete the VIF questionnaire online.

In an annual report, the data collected during routine medical examinations and information emerging from the GEPs were brought to the attention of the company management, the company prevention and protection service and the workers' safety representatives, thereby contributing to risk assessment and the preparation of WV control measures.

The study was conducted in accordance with the Declaration of Helsinki and national laws governing the collection of this kind of data. No ethical opinion is required before collecting medical history data during mandatory medical examinations. At the end of the check-up, after reading the personal risk booklet, the worker declares that what is reported in his/her medical history corresponds to what was declared at every point and that he/she has not withheld information regarding previous or ongoing pathological events. Moreover, he/she also confirms receiving information concerning the meaning of the health surveillance performed and its results, the assessment of suitability for the specific job (the worker is given a copy), and the possibility of appealing against it to the Supervisory Body within the deadline of thirty days. Finally, the worker expresses consent to the management and electronic processing of his/her personal data on the part of the doctor for statistical or scientific purposes, even after the end of the health surveillance period. By signing the personal health document, the worker also agrees to the collective anonymous publication in accordance with the Code on the protection of personal data (Law Decree 30/6/2003 n.196) and the principles of the ICOH code of ethics for occupational health operators [102] and on occupational medicine confidentiality principles (Legislative Decree 19/9/1984 n. 626, and Legislative Decree 9/4/2008 n. 81). Furthermore, all health promotion projects were submitted to the competent institutional reviewer boards (Università Cattolica del Sacro Cuore, Fondazione Policlinico Agostino Gemelli, Territorial Ethics Committee) in the years ranging from 2005 to 2024

3. Results

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The prevalence rates of workers who declared during periodic medical examinations experiencing at least one physical assault, threat or episode of harassment in the previous year are shown in Table 1.

Table 1. Prevalence of physical aggressions, threats and harassment in the 2005-2024 period.

Year	Physical assaults %	Threats %	Harassment %
2005	8.2	12.0	19.6
2006	8.7	12.4	19.2
2007	9.2	12.8	18.6
2008	11.1	12.9	18.0
2009	9.2	12.3	19.6
2010	9.9	12.6	13.5
2011	8.3	15.5	15.9
2012	8.7	12.4	14.1
2013	8.4	20.1	18.7
2014	8.8	18.8	17.4
2015	9.0	15.5	14.7
2016	7.5	14.2	13.6
2017	6.2	12.3	15.8
2018	6.2	12.0	13.4
2019	5.8	16.4	13.9
2020	3.9	11.2	9.2
2021	3.2	7.7	7.2
2022	5.8	13.2	12.9
2023	6.9	12.7	12.9
2024*	7.5	14.4	14.9

[1] in the period between 1 January and 30 June 2024.

In 2005, the annual prevalence of physical assaults was 8.2%. Between 2005 and 2016 the average percentage of workers attacked was more than 9%. In other words, in the first decade of observations, more than one in 11 workers had been physically assaulted at least once a year. Since 2016 there has been a reduction in the percentage of workers reporting physical attacks (from 7.5% to 6.2%). However, in the three-year period 2016-2018, one worker in 15 declared having been physically attacked in the previous year. The pandemic resulted in a significant reduction in the percentage of workers who experienced attacks: the rate fell to 3.9% in 2020 and 3.2% in 2021; in the two-year period, fewer than one in 30 workers were assaulted. Unfortunately, the end of the pandemic period coincided with an increase in the percentage of those who were physically attacked. In 2022, physical violence rose to 5.6%, in 2023 to 6.9%, and in the first semester of 2024, the physical violence rate rose again to that of 2016 (7.5%).

Twelve percent of workers reported having been threatened in 2005. The rate of employees reporting threats remained high in the following years, reaching peaks of over 20%. Between 2005 and 2019 the average rate was over 14%, meaning that one in seven workers had been threatened at least once in the previous working year. Also in this case, the pandemic outbreak coincided with a fall in threats. In 2022, the threat rate halved (7.7%), but the end of the pandemic coincided with a rapid increase in attacks. In 2024, more than 14% reported having been threatened at work.

The prevalence of workers who reported experiencing harassment at work (19.6% in 2005) remained consistently high, with an average of 16% in the first 15 years of observation. Only during the pandemic were significantly lower values reported (9.2% and 6.2%), but frequency quickly rose to values comparable to pre-pandemic ones.

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The information collected with the three questions administered during health surveillance was added to the more extensive information collected during the workplace inspections and the Participatory Ergonomics Groups open to all workers in each department.

According to the workers who participated in the departmental Groups, the reduction in aggression during the pandemic period was mainly due to the filtering of access. All those who wished to enter the healthcare areas had to prove that they were not infectious, and this involved carrying out tests or providing a vaccination certificate. Moreover, the procedure also envisaged verification of the real need to gain access. On the contrary, patients and accompanying visitors had previously been able to indiscriminately enter rooms that were too small to accommodate them and where no one was available to provide information.

Apart from these administrative shortcomings, during the pandemic, many people limited their own access to health areas because they preferred to avoid or postpone non-urgent or non-essential access. Workers in the outpatient departments and those in the surgical areas were the ones who particularly noticed that the lower demand allowed them to work better, with less time pressure and an absence of queues.

In general, the fear of contracting infection led to a reduction in close contact between healthcare workers and patients, even in hospital wards. Workers acknowledged that this reduced the occasions on which workers could be subjected to attacks by patients who were not in full possession of their mental faculties.

Finally, workers reported that in the early stages of the pandemic their work was regarded with great respect by the population, and this reduced the possibility of uncivilized behavior on the part of patient visitors and relatives. However, as the pandemic continued, the reduction in contact between patients and their relatives increased the latter's anxiety and gradually people began to fear that the hospital staff were not doing their best. A worsening of opinion towards the health sector was intertwined with fear of vaccinations and medical therapies, thus fueling a state of distrust that provided fertile ground for controversy and criticism often leading to verbal or physical aggression. The aforementioned crowded conditions in which anxious patients and/or their relatives faced long queues also often led to explosive situations. In some cases, lone workers were left with the impossible task of providing information for the patients or visitors confronting them. A clear example of this was the triage nurse in the emergency room who was frequently attacked for this reason. The workers suggested the company set up a service designed to inform patients of company policies and procedures and the purposes of what was being done.

Overall, HCWs believed that (i) limiting visitor access (ii) a better balance of demand for services and (iii) a better attitude towards health workers were the causes of the reduction in the rate of violence. They were concerned that when restrictions ended and visitor access was no longer controlled, relatives and patients would soon recreate the previous situation.

4. Discussion

This study reports the results of a prolonged monitoring of physical, verbal and psychological aggression against HCWs in a public health company using an innovative method based on the collection of information during health surveillance. An analysis of data collected over 20 years demonstrated a significant reduction in assaults during the COVID-19 pandemic. The trend in violence rates and the characteristics of the method used are discussed below.

4.1. Analysis of the Trend in Violence and Measures for Prevention

Before making this analysis, we must consider that in the public health company observed, the systematic recording of cases of violence led in 2005 to the adoption of an anti-violence policy and the implementation of risk containment measures. However, for many years, the measures adopted in the company to control the risk of physical violence failed to produce a significant outcome. A decline in the percentage of workers complaining of physical attacks was not observed until a dozen years later, but the number still remained quite high, especially in the psychiatric care and emergency/first aid departments, i.e., the ones at greatest risk. Paradoxically, the rate of physical

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attacks diminished during the pandemic when the perpetrators were almost exclusively patients who were not in full possession of their mental faculties.

Workers witnessed both a reduction and a resurgence in assaults as restrictions put in place during the pandemic were relaxed. We examined in greater detail the causes that had led to the paradoxical reduction in WV during the pandemic by recording the opinions of workers during the Participatory Ergonomics Groups organized in each department. Workers attributed the decrease in attacks during the COVID-19 pandemic mainly to the filtering of access to work areas that had limited the presence of visitors and relatives. Another reason indicated for the reduction in WV during the pandemic was the lower demand for services that produced an optimal ratio between staff and patients, thereby improving the quality of care. Moreover, during the very first phase of the pandemic, the general appraisal of healthcare workers on the part of the population further reduced the causes of conflict.

When asked about the organization of their work, healthcare workers were fully convinced that limiting visitor access is a measure that should be universally implemented not only during emergencies. This belief is endorsed in the literature. Field studies demonstrate that unrestricted access to working areas, the lack of security guards and police officers, or the limited intervention on their part, are among the causes of WV [103]. To prevent WV in hospital settings, recommended measures include regulating visitor flow, monitoring access, communication initiatives and training in conflict management and lifesaving [104,105]. Another universal violence prevention measure advocated in the literature is the provision of enough staff to adequately deliver services without time pressure. According to the workers, a better balance of the demand for services and the ability to provide them would be a major deterrent against incivility, because it would eliminate the main cause of grievances that relatives, visitors and users have towards the healthcare institution. Previous studies indicated that staff shortage could be among the causes of WV, together with third party misunderstanding of health policy [106,107]. In our study, HCWs also attributed the reduction in WV to a better appraisal of their work in the early stages of the pandemic. They pointed out that the perception (present in the early stages of the pandemic) that HCWs were striving to improve the health of the population, should always be present during the daily activities of the health service. Studies have already indicated that public attitude towards medical staff has an important influence on violence. Many HCWs believe that unfavorable public opinion may be linked to an increase in violence [108]. A study has shown that a percentage of people justify violence, and those who support and excuse violent behavior against medical staff are also more inclined to act aggressively [109].

Prompt identification of potentially aggressive patients could be useful in limiting cases of violence [110]. HCWs are generally thought to need specific training in recognizing and counteracting WV. However, there is almost negligible or poor evidence that interventions focusing on the perpetrator of aggression result in a reduction of WV [111]. In relationships with potentially aggressive patients, training in behavioral skills has been shown to be more efficacious than traditional methods for improving staff performance and competence [112]. To be effective in promoting a safe environment, staff competence must be combined with supportive leadership [113]. However, a systematic review showed that although education and training can enhance personal knowledge and good attitudes, the latter does not necessarily have an impact on workplace hostility directed toward healthcare staff [114]. A more complex response to WV is needed on the part of health institutions. Warshawski et al. [115] suggested that to reduce WV, policy makers should implement preventive measures such as hiring more medical and nursing staff, providing workshops on handling violence, launching campaigns against violence in healthcare settings, and enforcing suitable punitive measures against attackers. This opinion seems to be generally accepted because only an integrated strategy on several levels is likely to reduce WV as was demonstrated by an experience we conducted over many years in a psychiatric rehabilitation facility [116]. Unfortunately, there are few examples in the literature of the successful application of such measures.

Because the COVID-19 pandemic put healthcare to the test all over the world, even topics such as WV that were previously of little interest have received attention. Hundreds of studies have reported the presence of episodes of violence against HCWs. The fact that most of these studies were

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cross-sectional, usually had no control group, and failed to provide any reference to the previous state of affairs, made the results difficult to interpret. Even some systematic reviews and meta-analyses merely reported that WV was prevalent during COVID-19 without indicating whether it was increasing, decreasing or stable compared to the pre-pandemic era [117,118]. However, other reviews observed an increase in the WV rate between the mid-and late-pandemic phase [119,120], and another synthesis study that included pre-post data, confirmed that there was a reduction in violence rates during the pandemic compared to the previous situation [121].

The pandemic was a complex experience for the healthcare workforce and the world population. The rapid evolution of the epidemic and the frantic search for solutions meant that working conditions in hospitals changed several times. Consequently, the relationship between HCWs and other parties and the risk of WV also changed continuously. In the first wave, lack of knowledge about the new disease and how to treat it, the shortage of personal protective equipment, and the high mortality rate, meant that fear for one's own health and that of one's loved ones was dominant. Lockdown limited contact between the population and healthcare personnel. HCWs who had unprotected contact with infectious patients suffered from anxiety and sleep disturbances [122–127]. In the COVID-19 hub centers, HCWs suffered mainly from an excessive workload and compassion fatigue [128], while the population considered them heroes [129–132], or at least expressed gratitude and a favourable opinion. As time passed, the second and third pandemic phases saw HCWs increasingly fatigued due to a high work overload. Depression and burnout in HCWs worsened [133], and the reduction in contact between staff and patients' relatives worsened relationships and the quality of care [134,135]. Trust in HCWs waned and they were increasingly criticized and isolated [136–138], even outside the hospital. Criticism, discrimination, and WV caused HCWs to experience psychological distress and ultimately, depressive symptoms [139]. The availability of vaccines brought a gradual easing of restrictive measures, but improvements were slow and the workload for those dealing with COVID-19 remained excessive for a long time. Cases of burnout increased in COVID-19 hub centers, and many quitted their jobs [140]. Relationships with visitors and relatives became critical and contacts were increasingly strained [141]. Alongside an increase in social violence during the COVID-19 pandemic, violence against HCWs also became more prevalent [142]. During the fourth phase, HCWs found themselves treating numerous anti-vaxxers [143–145] who were sometimes aggressive towards them [146]. All these variations certainly influenced the risk of WV and were not easy to express in a systematic review that did not take prospective evolution into account. However, on the whole, the studies in the literature confirm that the WV trend during the pandemic was similar to the one we observed, and the causes of WV reported by workers in this public health unit are concordant with those reported by workers elsewhere in the world.

4.2. Analysis of the Violence Monitoring Method

Monitoring violence during workers' periodic medical examinations offers many advantages and a few weaknesses. It entails posing only the first three questions of the VIF to workers during their routine medical examination to identify the percentage of those who have experienced assaults. The workers who give affirmative answers may be invited by the doctor to provide further information and possibly to complete the entire questionnaire. The decision to ask only three questions was due to the need to make the duration of the examination compatible with production needs and the obligation to investigate all occupational risks during a single check-up. In this way there was only a modest time commitment, and no demands were placed on workers who had not been attacked. It is important to remember that by applying the VIF in this way, the outcome represents the annual prevalence of workers who have undergone violence, not the frequency of violent episodes. We know from the literature that the extent of WV exposure differs greatly from country to country as well as study location, practice settings, work schedules and occupation, but is generally high, especially in psychiatric and emergency departments, and among nurses and physicians [16]. Studying WV prevalence within a health company allows you to follow its evolution over time and also compare different departments, occupational categories, and types of service.

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In our opinion, one of the advantages of this type of study is the fact that the conversation with the doctor does not expose the worker to the unwanted consequences that some fear when formal complaints are addressed to the company or the police authority. Fear of victimization [147], a non-supportive culture, and the lack of an efficient and user-friendly reporting system [5] are among the commonest causes of non-reporting. Interviewing all workers offers another advantage since it guarantees that none of them will go unheard. If a worker does not report experiencing any violent incident in the previous 12 months, this means that what happened was of no significance.

The subjective nature of the reports we sought could be considered a disadvantage. However, all the reports can be verified by examining the official reports available for the previous year. We deliberately asked about experiences of workplace violence during the preceding 12 months in order to compare self-reporting with official incident reports from the same period. Over the entire observation period, the number of cases reported during medical examinations was always much higher than those recorded as workplace incidents or referred to the authorities. In fact, most of the attacks were reported only to the supervisor and this generally prevented the news from reaching top management, whereas with the system we adopted, the latter was always promptly informed.

The VIF questionnaire focuses exclusively on reporting events in which the worker was personally involved and does not consider the witnessing of episodes of violence, even though it is known that witnessing violence without being a victim can also damage an employee's health [148–150] and may have social consequences that cause violence to appear normal, thus increasing the intention to use verbal or even physical violence [151]. Since WV is a criminal offence and anyone who witnesses an episode of violence is required by law to report it, even if they were not the victim, we decided to exclude this type of assessment. The sole question we asked concerning employees' experiences with violence at work was whether they had ever been the subject of assault. Hospital policy requires employees to report any known violent episodes to a supervisor. The policy actually states that any "known incident of violence" should be reported; it does not specify that an employee has to be the actual target of violence before reporting the violent episode.

Recall bias was a possible confounder of this study. Considering that occupational medical examinations are mostly annual, we decided to concentrate on the workers' experience over the previous 12 months to help them remember whether the episode actually occurred after the previous periodic examination and therefore needed to be reported. This could prevent experiences of violence being reported more than once. The one-year recall period is the most frequently used in retrospective studies of violence; in this way it coincides with routine reports on the working environment which must be made every year by the occupational doctor and the person responsible for the prevention and protection from risks.

An advantage of the assessment organized in this way is that results are periodically communicated to the employer and other figures who deal with health and safety at work. Employees who verbally report an aggression to their supervisors may be meeting their reporting obligations, but top management may not receive these informal reports in time to make policy decisions. Only with the facts at hand can a hospital system or other healthcare organization develop prevention plans.

The systematic collection of information during medical examinations reveals a higher number of violent events than those obtainable from official sources. Considering the phenomenon of underreporting in WV, it must be assumed that this method also leaves many episodes unreported. The likelihood that the three types of events investigated by the VIF questions will be reported varies: physical assaults are well remembered, especially if the protagonist is not a patient; the same goes for threats, whereas harassment is often not deemed important enough to report. In fact, we sometimes observe that harassment is reported less frequently than threats, which is strange considering that threats are generally associated with other forms of incivility and harassment. Apparently, workers who reported physical violence or the threat of physical harm did not find it necessary to also report harassment.

The method of using the first three questions of the VIF to collect workers' experience of WV during health surveillance proved to be economical, sustainable and accessible. Workers had no

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difficulty in providing the requested information and the health surveillance activity was in no way burdened by this request since it was always performed during annual health promotion activities.

As in all occupational medicine activities, proof that the questions have been administered to all workers in the same way is guaranteed only by using written questionnaires. For this reason, in the health company studied, the three VIF questions were included in the questionnaires used annually for health promotion activities. The doctor was thus able to analyze the data on violence in the same way as he/she analyzed the other data obtained from health surveillance, all of which by law must be presented in an annual report to the employer, the person in charge of prevention and company protection, and workers' representatives responsible for safety. The very basic information that is the subject of this article was brought annually to the attention of the parties interested in prevention and contributed to determining safety measures. As we have seen, the pandemic had the paradoxical effect of reducing aggression towards medical staff and this could be useful for understanding the organizational measures that might reduce the risk of WV under normal conditions.

The limited information collected via the first three questions of the VIF was integrated with two more essential elements. The first, which consisted of the responses of the workers collectively questioned during the participatory ergonomics groups held in each department at the end of the occupational doctor's routine medical examination, provided the qualitative data that we presented on the causes of the reduction in attacks during the pandemic. The second entailed inviting workers to fill out the entire VIF questionnaire online in order to describe the most relevant events of which they had been victims. This part of the investigation provided information regarding the circumstances and consequences of individual violent events that were not the subject of this study. These data which illustrated the different circumstances of the attacks, the characteristics of the perpetrators, the distribution of violence in the different health company departments or occupational categories and the consequences on the physical and mental health and behavior of the workers have been the subject of previous publications [76,77,152].

4.3. Advantages and Weaknesses

One of the strengths of this study is that it was a longitudinal investigation conducted over a 20-year period with an innovative method. However, it also has some weaknesses: performing the study in a single public health company limited the possibility of extending what was observed to other situations, even if the literature indicates that conditions may be similar in other healthcare companies. Another weakness lies in the fact that the respondents were limited only to those who participated in health promotion activities. Nevertheless, it is better to obtain data from a small number of workers rather than have a lack of information resulting from the underreporting of WV.

5. Conclusions

The implementation in 2005 of a system for monitoring WV perpetrated against workers in a public health company by means of three VIF questions administered during periodic medical examinations enabled us to analyze the trend in relation to attempts to control this phenomenon. It also revealed that during the COVID-19 pandemic the percentage of workers who experienced violence dropped sharply and subsequently returned to pre-pandemic levels. When interviewed with the GEP technique on the causes of this paradoxical improvement, workers indicated that control of access to work areas, providing adequate staffing for service demands and the then prevailing favorable attitude of public opinion towards the medical profession were protective factors against violence. Recording WV during health surveillance proved to be an economical, reliable and sustainable risk assessment method. Collecting the opinions of workers in participatory ergonomics groups conducted in the workplace and obtaining individual responses via the VIF questionnaire regarding the perpetrators, circumstances and consequences of violent acts provided overall knowledge of this phenomenon that may be of use for developing a policy of well-targeted and effective prevention.

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