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Occupational Injuries Associated with Workplace Violence in an Academic Medical Center

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Abstract

Violence is a major source of workplace injury in the medical profession. Peer reviewed literature is lacking for workers that have injuries through violence from clients who have intellectual disabilities. Literature for hospital security is also lacking. In this study of workplace violence, we compared injuries among the occupational groups at an academic medical center from 2017-2020. We hypothesized that violence will be similar across the years. Occupational injury and illness data was obtained from an academic medical center. The number of violence cases was divided by the total number of injury cases and reported as a percentage. We found that violent incidents only occurred in four units: Business and Finance (housing the security office), College of Dentistry, College of Medicine, and an institute for intellectual disabilities (Facility A). The overall percentage of injuries with reported descriptors for violence by year were 26% in 2017, 33.4% in 2018, 39% in 2019, and 25.7% in 2020. Facility A had the largest percentage of violence per year, with the highest at 86% in 2019. Data suggests that more attention must be given to violence in this academic medical center as it is more than likely higher than this data set suggests.

Introduction

Healthcare is a dangerous profession. The healthcare industry has a higher rate of injury than in general industry (OSHA, 2021). Employees in the healthcare sector are exposed to any number of hazards that the public does not meet. This includes biological, chemical, and radiological hazards (OSHA, 2021). Also, nursing occupations have some of the highest rates of musculoskeletal disorders (Dressinger & Kissinger, 2018).

Violence is a major source of workplace injury in the medical profession. In 2017, healthcare workers were five times more likely to experience violence than the average worker (Pitts & Schaller, 2021). According to the Bureau and Labor and Statistics, healthcare and social service industries have the highest rates of injuries caused by workplace violence (OSHA, 2021). Also, of all industry, there is as much injury from serious violence in healthcare than any other (OSHA, 2021). In 2019, 70% of those individuals that reported workplace trauma from nonfatal violence (in private industry) were from the healthcare and social assistance industry (CDC, 2021).

Occupational injury from violence is a serious and ongoing issue in healthcare systems across the United States. For this reason, violence in healthcare is well described in current literature. Along with the medical injury itself, there could be other negative issues that arise from working in an environment where you may meet violence. There can be psychological damage that can lead to stress, anxiety, and burnout (Mento, et al. 2020). This psychological damage can lead to depression and an increase in worker turnover in the profession (Shi, et al. 2019).

The literature is dedicated to those settings in healthcare that are usually associated with workplace violence: emergency departments, psychiatric settings, or nursing homes (Martinez, 2016. Groenewold, et al. 2018). Indeed, nursing staff, due to the very nature of their work, have a higher risk to being exposed to violence (Groenewold, et al. 2018).

A literature review suggests that it is lacking for workers that have injuries through violence from clients who have intellectual disabilities. However, there is an indication they would be much the same risk as those working in other areas typically thought of as elevated risk. It has been suggested that those with intellectual disabilities may show aggression more than the general population (Brosnan & Healy, 2011). Staff exposed to prominent levels of violence within their clientele may experience the same type of issues as other professions, such as burnout. This, by extension, may mean lower quality services to their clients (Richards, et al., 2009). This would be especially important as the population served may be vulnerable.

Hospital security also is lacking in peer reviewed literature about injury due to violence. One general online search did result in a thesis from a doctoral candidate showing his research found hospital security was thirteen times more likely to encounter violence than nursing staff (Gramling, 2017). is not surprising considering; they are usually a presence within a hospital system to prevent care workers from getting injured. Indeed, according to the Bureau of Labor Statistics' Fact Sheet for Security Guards Injuries, Illnesses, and Fatalities from 2009; of the violent acts that resulted in at least one day away from work, 19.2 percent of those were in healthcare (BLS, 2009). One recent peer reviewed article concluded that yes, violence is common among hospital security. It did also suggest that training and recruitment may lower rates (Albadry, et al. 2020).

Study Design

In this cross-sectional study design of workplace violence, we compared injuries among the occupational groups at an academic medical center from 2017-2020. We hypothesized that violence as a cause of injury and illness among all occupational groups will be similar across all years.

Methods

De-identified occupational injury and illness data from the years 2017-2021 was obtained as an Excel™ spreadsheet from an academic medical center. Since the year 2021 was not complete at the time of this project, it was dropped from the analysis. The spreadsheet provided injury data by unit, described the cause of the injury, and noted if the incident was an Occupational Safety and Health Administration (OSHA) recordable event.

The units included the following: Academic Affairs, Business & Finance, College of Allied Health, College of Dentistry, College of Medicine, College of Nursing, College of Pharmacy, College of Public Health, the research institute, Information Technology, the institute for the developmentally disabled (Facility A), the Child Health Research Institute, and the Chancellor's Office. Violence was determined by looking for key terms. Descriptors were such terms as aggression of patient, bit by client, punched by client, altercation, disruptive patient with a result of injury, restraint, struggle, put in a hold, grabbed hair, stabbed by, fighting security, and combative.

Data Analysis

We calculated the overall percentage of injuries from violence across four continuous years (2017-2020). We also calculated the percentage of injuries by unit. It was decided not to

use any ambiguous descriptions. An example of this would be “a scratch to the arm,” with no clear terms showing there was patient interaction.

We also computed the number of violent incidents that caused days away from work or restriction from the job, and those that were OSHA recordable incidents.

Results

Shown below in Table 1 is the cumulative number of injuries per year along with the number of cases that had violent type terms in their descriptions. The percentages of violence varied slightly by year, with 26% in 2017, 33.4% in 2018, 39% in 2019, and 25.7% in 2020.

Table 1: Percentage of Violence Among Injuries 2017-2020				
	2017	2018	2019	2020
Total Injuries	257	275	279	214
No. Violence Reported	66	92	109	55
Violence in %	26.0	33.4	39.0	25.7

Of the incidents that had violence reported, in 2017 there were six employees that had at least one day away from work or had job restriction. In 2018, there were three employees that had at least one day away from work or job restriction. In 2019, there were four employees that had at least one day away from work or job restriction. In 2020, there were four employees that had at least one day away from work or had job restriction.

We found that the number of violent incidents occurred in four units. Those were Business and Finance, the College of Dentistry, the College of Medicine and Facility A (Table 2). Of these, the largest number of violence was in Business and Finance, with a total of 173 incidents, and Facility A, with a total of 275. In Business and Finance, all the descriptors that met criteria for violence were in the security department. The College of Dentistry had one

incident of violence in four years. The College of Medicine had two incidents of violence over the four-year period.

Table 2: Percentage of Violence Among Units 2017-2020					
	UNIT	2017	2018	2019	2020
No. Injures					
	B & F	52	56	37	28
	COD	11	8	9	6
	COM	102	101	94	104
	Facility A	54	72	101	48
No. Violence Reported					
	B & F	28	32	20	15
	COD	0	0	1	0
	COM	0	2	0	0
	Facility A	37	59	88	41
Violence in %					
	B & F	54.0	57.0	54.0	54.0
	COD	0	0	11.0	0
	COM	0	2.5	0	0
	Facility A	69.0	82.0	87.0	85.0

Shown in Table 3 is the percentage of Occupational Safety and Health (OSHA) recordable injures that had violence in their descriptions. In Business and Finance in 2017, of the fifteen that were recorded on the OSHA 300 log, three (20%) were from violent acts. In 2018 16 of the 31 (51%) were from violence. In 2019, 8 of the 16 (50%) were from violence and in 2020 13 of the 21 (62%) were from violence. In Facility A, five of the 14 (36%) recordable incidents were due to violence in 2017. In 2018 16 of the 27 (78%) were from violence, in 2019 8 of the 48 (88%) were from violence and in 2020 all five (100%) recordable incidents were from violence.

Table 3: OSHA Recordable due to Violence 2017-2020					
	Unit	2017	2018	2019	2020
No. Recordable					
	B & F	15	31	16	21
	COD	5	7	4	2
	COM	82	68	50	13
	Facility A	14	27	48	5
No. Violence Reported					
	B & F	3	16	8	13
	COD	0	1	0	0
	COM	0	1	0	0
	Facility A	5	21	42	5
Violence in %					
	B & F	20.0	52.0	50.0	62.0
	COD	0	14.0	0	0
	COM	0	1.5	0	0
	Facility A	36.0	78.0	88.0	100.0

Discussion

When analyzing the data, questionable cases were removed from consideration. These cases were not obvious for violence. One example was “patient spit blood, exposure to face and eyes.” Since this case was in the College of Medicine, it could have simply been accidental. Other examples of this would be “scratch on collarbone near neck” or “scratches and broken skin on right arm and hand; faint bruising on right forearm; tender and dull pain in right hand and forearm as well as immediate tingle sensation the time of occurrence up the right arm.” Although this last example was suspected to be from violence, it did not specifically state patient or client contact. Also, in at least one case, the unit and department did not match. For reasons such as this, the numbers may be lower than they should be. In the years 2018 and

later the column marked description of injury added patient/client encounter in addition to descriptors such as needlestick or laceration. This could drop that ambiguity in the future, if necessary.

There was difficulty in organizing the data since there are three means of identifying the case, other than specific employee information (which was missing), or case number. Those were: the unit, the department, and the job title. To have each case listed as such may seem excessive, but for any injury trends it would be necessary to pinpoint specific departments or job descriptions so that training and education could take place. For this project, the decision was made to use unit to group information since all violent incidents appeared to be relegated to four units.

The percentage of injuries by year were 26% in 2017, 33.4% in 2018, 39% in 2019, and 25.7% in 2020. The unit with the most injury/illness in total, the College of Medicine, had only two incidences with violent descriptors. That unit's major source of injury was finger stick and blood borne exposure type injury. One item to also note from Table 1 is that, although the trend increases steadily from 2017 to 2019, it does drop again in 2020. This is more than likely from a decrease in clientele/patients in 2020 due to Coronavirus (Covid-19).

This data set only has those cases that would fall under the academic institution. It does not have data that would be in the medical center that works closely with this institution. So, missing from this data would be the doctors and nurses who work closely with the security office and may meet violence, such as those in the emergency or psychiatric departments.

Table 2 shows where the most violence by unit was. Facility A had the highest percentages between the four units with 69% in 2017, 82% in 2018, 87% in 2019, and 85% in 2020. Of note is an increase in violence by percentage from 2017 versus later years. Strictly by count, 2019 had a higher number of cases than any other year. This may have been from an increase in client behavior issues, staffing changes (and therefore a change in reporting) or it may also have been a change in the reporting procedures at the facility.

Number two in injury from violence was the Business and Finance unit. Specifically, the security department that is in this unit had all the descriptors for violence. These percentages were stable throughout the four-year time span with 54% in 2017, 57% in 2018, 54% in 2019, and 54% in 2020. One thing to note from this table is that in the year 2020, the number of injuries had reduced by half from that of 2017 and 2018, but the percentage of violence was still 54%. This is of interest because ancillary departments that were unnecessary during the year in which Coronavirus (Covid-19) had fewer staff (and patients) than usual. This department still experienced a high percentage of violence.

The two units with the least violence reported were the College of Dentistry, with one report and the College of Medicine, with two reported in the four-year span. The case in the College of Dentistry was from an individual with intellectual disability. One of the cases from the College of Medicine was during a psychiatric evaluation. The other was to an office associate that had a patient enter their office.

Table 3 illustrates a comparison of OSHA recordable cases with violence. When referring to reportable cases, it is meant that any injury (or illness) that results in death, one or more days away from work, restriction at work, loss of consciousness, transfer to another job, or

medical treatment beyond first aid will be reported to OSHA (Goetsch, 2011). This table shows an increase in the percentage of recordable cases that had violence in the description over the four years. This is especially true with Facility A. In 2017, only five of the fourteen incidents that were OSHA recordable had violence in their description, but by 2019, forty-two of the forty-eight recordable incidents had violence in their description. This may also be from either a change in clientele, change in staffing, or from a change in the policy of reporting.

What is missing from all these numbers is the threat of violence. According to the National Institute of Occupational Safety and Health, occupational violence is not just physical assault, but also the threat of violence or verbal abuse (CDC, 2021). Since this data set only has injury and illness data, that information from employees that may feel threatened is missing. It is also possible it excludes incidents that employees chose not to report for reasons that are their own. To find these numbers, further study would need to be done. This may include training staff to voluntarily report any verbal abuse or violent act, however minor, through a yearly survey. The 2014 American Nurses Association's Health Risk Appraisal Survey suggests that 21% of the registered nurses and nursing students that took part reported being assaulted, and over 50% had been verbally assaulted (OSHA, 2021). Verbal abuse that medical staff experience could correlate with the incidents experienced by the security office. It would be helpful to know so that staff could have continuous de-escalation training.

Also, what is missing from this is the number of specific employees that are reporting. In other words, are these different employees or are the same individuals that are experiencing violence. Although violence may be inevitable for these two units, it may be better suited to know if specific employees repeatedly experienced violence and why. A question that would

need to be asked is whether it was inevitable, or could that employee be coached to reduce the cases of violence. Since there is nothing showing that the injury is happening repeatedly to one or more employees, it is uncertain.

It is difficult to suggest specific interventions since the researcher does not have access to the standard operating procedures of either department. One suggests that when working with the intellectually disabled a risk assessment should be done with each client to determine low and elevated risk factors. This includes the environment that the individual will be in. It should be assessed for hazards such as objects in the room as well as noise and light levels (Daraiseh, et. al, 2016). It is also suggested that personal protective equipment be used such as Kevlar sleeves (Daraiseh, et. al, 2016). At least one case described being bitten through the sleeve, so it is possible that Kevlar sleeves are not widely in use.

There is a paucity of peer reviewed articles related to interventions geared toward security personnel. OSHA's Guidelines for Preventing Workplace Violence for Healthcare and Social Service Workers does have a comprehensive list of recommendations for the prevention of violence in healthcare settings. On that list are engineering controls such as silent alarm systems, strategic exit routes, metal detectors and surveillance systems (OSHA 2021).

Chung, et al (2020), suggests that the use of security dogs be given more attention in de-escalating violent behavior in patents. It also suggests that the appearance of security in the situation may escalate the problem rather than de-escalate it. So, using security dogs may be a practical choice to avoid violent behavior in medical center settings.

Conclusion

This study highlighted workplace violence at an academic medical center. Security officers and behavioral specialists were the most injured through violence.

Public Health Competencies

1. MPH4: Interpret results of data analysis for public health research, policy, or practice.
 - a. This will be done through analysis of the occupational injury and illness data set which has been provided to me.
2. EOHMPH7: Employ measures to control workplace injury and illness including engineering, education, regulations, incentives, and best practices.
 - a. This will be done by providing the results of the analysis with injury rates and the outcomes of those injuries as well as the literature review.
3. EOHMPH8: Examine information sources and public health indicators in occupation and environmental health.
 - a. I will be researching current occupational injury data through reliable sources.

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