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Workplace aggressions on hospital workers: A current and prevalent problem with a high demand for training

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Abstract.
BACKGROUND: Workplace aggressions on hospital workers is a very frequent and under-reported problem.
OBJECTIVE: The novel objective of our study was to analyze the number of workplace aggressions per hospital worker. Other objectives of the study were to analyze the management knowledge and interest in receiving training on aggressions by hospital workers.
METHODS: An anonymous survey was handed out among all professionals in a university hospital.
RESULTS: A total of 1118 anonymous surveys were collected. The responders declared that throughout their working life they had suffered some sort of verbal aggression in the hospital in 766 cases (68.5%) and physical aggression in 393 cases (35.2%). Multiple logistic regression analyses found higher risk of receiving physical and verbal aggression in the nursing category and in the Emergency, Critical Care or Psychiatry Units, and a higher risk of receiving physical aggression in women. The score on the level of personal knowledge regarding the legal, physical, and psychological management of aggressions (score 0–10 for each of the 3 aspects) was 2.91 ± 2.68 in legal management, 2.97 ± 2.77 in psychological management and 2.91 ± 2.76 in physical management. The opinion about the interest of receiving training (score from 0 to 10) on the legal management of hospital aggressions was 8.90 ± 1.72, on psychological management was 8.85 ± 1.78 and on physical management was 8.88 ± 1.78.
CONCLUSIONS: Workplace aggression on hospital workers mainly affects women, the nursing category and the Emergency, Critical Care or Psychiatry Units. Hospital workers showed little knowledge on the topic but a great interest in receiving training.

Keywords: Aggression, violence, health care professionals, workers, hospital, workplace

1. Introduction

Workplace aggression on hospital workers is a very frequent problem with important consequences and is being addressed by different international organiza-

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tions [1, 2]. The negative consequences of workplace aggressions on hospital workers are very diverse, such as physical injuries, psychological disorders, fear to health caring, deterioration in the quality of care provided and the decision by health care workers to leave the health care profession altogether [1, 2].

Aggressions on hospital workers are a very common problem [3–9]. In Canada, 33% of workplace aggressions involve healthcare workers [3]. In the United Kingdom, healthcare professionals, after protection professionals (e.g., police officers) are most at risk of workplace violence [4]. A study in China of 1,656 physicians found that 90% of physicians had been victims of workplace aggressions in the year prior to the survey [5]. A study of 588 nurses in China found that 72% of nurses had been verbally aggressed in the workplace in the year prior to the survey [6]. In a study conducted in Italy with 518 nurses, 90% of nurses were found to have been victims of workplace aggressions in the year prior to the survey [7].

A systematic review on the aggressions on healthcare workers in Spain found that 58%–76% of medical/nursing personnel have been aggressed at some time during their working lives, with an increase in the magnitude of the phenomenon in recent years, that in most cases the aggressors are men, and that the aggressed professionals are mostly women [8]. The Spanish General Nursing Council reported in a survey that 33% of nursing staff had been the victim of a physical aggression, and 69% of verbal aggression in the year prior to the survey [9].

Workplace aggressions on hospital workers need to be studied, as they are rarely reported to management [10–13]. In a study conducted in Saudi Arabia with 213 surveys of medical and nursing staff, it was observed that 75% of physical and 50% of psychological aggressions had not been reported [10]. A study in Iran with 5,874 surveys of medical and nursing staff found that 57% of racial aggressions and 53% of psychological aggressions due to sexual harassment went unreported [11].

The Spanish Collegiate Medical Organization reported that annually between 0.14%–0.26% of collegiate doctors in Spain report an aggression [12]; however, the percentage of aggressed personnel is much higher (58%–76% of physicians/nurses) [8]. The Spanish Health National System reported that annually between 1.3%–1.7% of personnel report an aggression [13]; similarly, the percentage of aggressed personnel is much higher (58%–76% of physicians/nurses) [8]. The number of aggressions on hospital workers recorded in our hospital ranged between 25 and 50 annually according to the data of Occupational Risk Prevention Service (ORPS). ORPS is the hospital service with the set of human and material resources necessary to carry out preventive activities for injuries during work activities in the hospital.

Some studies have explored the possible association between the risk of hospital workers aggression and sex, professional category, and hospital unit. Some studies showed higher hospital aggressions in women [14–17], nursing care category [18–21], Emergency Units [22–25], Critical Care Units [26, 27] or Psychiatry Units [28–30]. Different surveys show that hospital aggressions are underreported because hospital workers accept violence as part of their normal workday and do not consider incidents without physical injury as an aggression [31–34]. Hospital aggression training programs aimed at hospital workers are necessary to improve knowledge of hospital aggression management [35–43]. Different causes and risk factors have been associated with these aggressions [44, 45].

Previous research on hospital workers aggressions lacks information about individual workers and management's attitudes, particularly in unique settings such as university hospitals. Previous studies on aggressions on university hospital workers reported the percentage of workers who experience any workplace aggression. However, the number of workplace aggressions per university hospital worker was not reported.

The novel objectives of our study were to analyze the number of workplace aggressions per hospital worker as well as hospital management's knowledge and interest in receiving training about such aggressions. We believe that it is necessary to study this aspect to better describe and quantify the problem in university hospitals. Having a clearer and quantified understanding on aggressions experienced by university hospital workers would allow preventive measures to be taken.

2. Methods

2.1. Ethical considerations

A cross-sectional study using an anonymous survey collected between June and October 2022. The study was conducted in Hospital Universitario de Canarias with the approval of the Ethics Committee (CHUC_2022_67). The requirement of written informed consent to participate in the study was

exceptionally waived because the confidentiality of personal data was guaranteed by the own characteristics of this study. The anonymous survey was distributed among all professional categories and all hospital units and was answered by 1118 workers (approximately 18% of the total workers of our hospital).

2.2. Variables

The variables collected in the anonymous survey were the following: sex, age, professional category, hospital unit, personal history, and number of physical and verbal aggressions in the hospital throughout your working life, and opinion about whether their hospital aggressions have been increased in the last 2 years compared to previous years. The score on the level of personal knowledge regarding the legal, physical, and psychological management of aggressions (score 0–10 for each of the 3 aspects) and the interest of receiving training over legal, psychological, and physical management of hospital aggressions (score 0–10 for each of the 3 aspects).

2.3. Statistical analysis

Continuous variables are presented as medians and interquartile ranges, and categorical variables as frequencies and percentages. The Wilcoxon-Mann-Whitney test was used to compare continuous variables between hospital workers who have or not have suffered an aggression at work. The Chi-square test was used to compare categorical variables between the groups that responded to the survey. Multiple logistic regression analyses were performed to determine the possible association between the characteristics of the aggressed hospital worker and hospital aggressions; and to estimate the clinical impact of the prognostic variables, odds ratios (OR) and their 95% confidence interval (CI) were reported. *P*-values <0.05 were considered statistically significant. Statistical analysis was performed with SPSS 17.0 (SPSS Inc., Chicago, IL, USA).

3. Results

3.1. Aggressions

A total of 1118 anonymous survey were collected. The hospital workers who responded belonged to the following professional category: 642 (57.4%) nursing care (NC), 328 (29.3%) medical care (MC), 20 (1.8%) other care (OC) and 128 (11.4%) non-care (NonC). The hospital staff who responded belonged to the following hospital units: 387 (34.6%) Emergency, Critical Care or Psychiatry units (ECP), 308 (27.6%) clinical assistance units (CAU), 265 (23.7%) surgical assistance units (SAU), 34 (3.0%) diagnostic assistance units (DAU) and 124 (11.1%) non-assistance units (NonAU). Of them, 808 (72.3%) were female and 310 (27.7%) were male. The mean age of the respondents was 35 (25–45) years, and the full age range was 22–64 years.

Respondents stated that they had suffered verbal aggression in 766 cases (68.5%) and physical aggression in 393 cases (35.2%) during their working life. Statistically significant differences in sex, professional category and hospital unit were found in the comparisons between respondents who did or did not suffer physical aggression (Table 1) and ver-

Table 1
Characteristics of hospital workers with and without physical aggression (PA)

	Total	PA non	PA yes	*P*-value
Gender – *n* (%)				<0.001
Male	310	238 (76.8)	72 (23.2)	
Female	808	487 (60.3)	321 (39.7)	
Professional category – *n* (%)				<0.001
Nursing care	642	299 (46.6)	343 (53.4)	
Medical care	328	298 (90.9)	30 (9.1)	
Other care	20	17 (85.0)	3 (15.0)	
Non-care	128	111 (86.7)	17 (13.3)	
Hospital Unit – *n* (%)				<0.001
Emergency, critical or psychiatry unit	387	149 (38.5)	238 (61.5)	
Clinical assistance unit	308	249 (80.8)	59 (19.2)	
Surgical assistance unit	265	194 (73.2)	71 (26.8)	
Diagnostic assistance unit	34	27 (79.4)	7 (20.6)	
Non-assistance unit	124	106 (85.8)	18 /14.5)	
Age (years) – median (*p* 25–75)	35 (25–45)	35 (25–45)	35 (25–45)	0.29

bal aggression (Table 2) during their working life; however, there were no significant differences in age in any of the comparisons. Multiple logistic regression analysis found that women receive more physical aggressions than men, nursing than other professional categories, and emergency, critical care or psychiatric professionals than other hospital units (Table 3).

The number of aggressions was 10 or higher in 284 of the surveys (25.4%) regarding verbal aggressions and in 91 (8.1%) surveys in respect to physical aggressions. It was not possible to describe the total number of physical and verbal aggressions since in some surveys the item of number of aggressions was not reported as a number but as a message that expressed a large number (such as "infinite", "uncountable" or "daily"); this fact occurred in 85 (7.6%) surveys regarding verbal aggressions and in 22 (2.0%) surveys regarding physical aggressions. A total of 360 (32.2%) cases believes verbal aggressions have increased in the last 2 years compared to previous years, and 135 (12.1%) cases believe physical aggressions have increased in the last 2 years.

3.2. Management knowledge and interest

The score on the level of personal knowledge regarding the legal, physical, and psychological management of aggressions (score 0–10 for each of the 3 aspects) was 2.91 ± 2.68 for legal management, 2.97 ± 2.77 for psychological management and 2.91 ± 2.76 for physical management. The opinion on the interest in receiving training (score from 0 to 10) about legal management of hospital aggressions was 8.90 ± 1.72, about psychological management was 8.85 ± 1.78 and about physical management was 8.88 ± 1.78.

Table 2
Characteristics of hospital workers with and without verbal aggression (VA)

	Total	VA non	VA yes	*P*-value
Gender – *n* (%)				<0.001
Male	310	123 (39.7)	187 (60.3)	
Female	808	229 (28.3)	579 (71.7)	
Professional category – *n* (%)				<0.001
Nursing care	642	130 (20.2)	512 (79.8)	
Medical care	328	151 (46.0)	177 (54.0)	
Other care	20	15 (75.0)	5 (25.0)	
Non-care	128	56 (43.8)	72 (56.3)	
Hospital unit – *n* (%)				<0.001
Emergency, critical or psychiatry unit	387	62 (16.0)	325 (84.0)	
Clinical assistance unit	308	128 (41.6)	180 (58.4)	
Surgical assistance unit	265	89 (33.6)	176 (66.4)	
Diagnostic assistance unit	34	22 (64.7)	12 (35.3)	
Non-assistance unit	124	51 (41.1)	73 (58.9)	
Age (years) – median (*p* 25–75)	35 (25–45)	35 (25–45)	35 (25–45)	0.54

Table 3
Multiple logistic regression analysis to predict the risk of receive physical aggression

	Odds ratio	95% confidence interval	*P*-value
Age (years)	1.005	0.991–1.018	0.49
Sex female vs. male	1.618	1.140–2.298	0.01
Professional category			
NC vs. MC	10.645	7.069–16.031	<0.001
NC vs. OC	6.031	1.741–20.887	0.005
NC vs. NonC	6.958	4.035–11.999	<0.001
Hospital unit			
ECP vs. CAU	6.579	4.630–9.346	<0.001
ECP SAU	2.110	1.776–2.506	<0.001
ECP vs. DAU	1.789	1.342–2.387	<0.001
ECP vs. NonAU	1.698	1.479–1.949	<0.001
SAU vs. NonAU	1.453	1.085–1.949	0.01

NC: nursing care, MC: medical care, OC: other care, NonC: non-care, ECP: Emergency, Critical Care or Psychiatry unit, CAU: clinical assistance unit, SAU: surgical assistance unit, DAU: diagnostic assistance unit, NonAU: non-assistance unit.

Table 4
Multiple logistic regression analysis to predict the risk of receive verbal aggression

	Odds ratio	95% confidence interval	*P*-value
Age (years)	1.009	0.996–1.021	0.17
Sex female vs. male	1.342	0.997–1.805	0.052
Professional category			
NC vs. MC	3.180	2.365–4.277	<0.001
NC vs. OC	11.744	4.173–33.046	<0.001
NC vs. NonC	2.991	1.966–4.550	<0.001
MC vs. OC	3.407	1.192–9.742	0.02
NonC vs. OC	3.115	1.025–9.434	0.045
Hospital unit			
ECP vs. CAU	3.571	2.500–5.102	<0.001
ECP vs. SAU	1.645	1.364–1.984	<0.001
ECP vs. DAU	2.101	1.629–2.710	<0.001
ECP vs. NonAU	1.375	1.221–1.548	<0.001
CAU vs. DAU	1.629	1.116–2.381	0.01
SAU vs. DAU	3.802	1.773–8.130	0.001
NonAU vs. DAU	2.414	1.082–5.383	0.03

NC: nursing care, MC: medical care, OC: other care, NonC: non-care category, ECP: Emergency, Critical Care or Psychiatry unit, CAU: clinical assistance unit, SAU: surgical assistance unit, DAU: diagnostic assistance unit, NonAU: non-assistance unit.

4. Discussion

In 1118 anonymous surveys, we found that our hospital workers have suffered throughout their working life some form of verbal aggression in the hospital in 68.5% of cases and some form of physical aggression in 35.2% of cases. The high percentage of physical of verbal aggressions found in study is in consonance with data from other published studies [5–9]. Another interesting finding was that hospital aggressions were very frequent, not only due to the number of positive responses, but also for the high number of physical or verbal aggressions that were reported in the surveys as a message ("many", "daily", "uncountable" or "infinite").

The number of hospital aggressions recorded in the Occupational Risk Prevention Service of our hospital ranged between 25 and 50 annually. Therefore, hospital aggressions are a scarcely recorded problem in our hospital considering the rate of hospital workers who reported having suffered an aggression. This finding conforms to the findings of other studies that concluded that these aggressions are underreported [10–13].

We found that women, the nursing care category, and the Emergency, Critical and Psychiatry Units were risk factors for physical or verbal aggression. These findings are consistent with the findings of other studies that showed higher hospital aggressions in women [14–17], the nursing care category [18–21], Emergency Units [22–25], Critical Care Units [26, 27] or Psychiatry Units [28–30]. Another interesting finding was that 32% and 12% of responders thought that their verbal and physical aggressions had increased in the last 2 years, respectively. Therefore, we believe it is recommendable to study this issue in more depth, especially in health centers with Emergency, Critical Care or Psychiatry Units, such as university hospitals, non-university hospitals, psychiatric hospitals, primary care health center with emergencies.

Hospital aggressions are underreported. Several surveys have found that hospital workers accept violence as part of their normal workday and do not consider incidents without physical injuries as aggressions [31–34]. Another interesting finding was that the opinion of survey responders on their low knowledge on the legal, psychological, and physical management of hospital aggressions, and their great interest in receiving training in these aspects. Therefore, we believe it is necessary to implement training programs on hospital aggressions to hospital workers [35–37]. Positive results of these programs have been published, reporting an improved knowledge on the management of hospital aggressions [38–42] and even a reduction in the rate of hospital aggressions [43].

According to the results of our study, the main professional targets of hospital aggressions are women, nurses and professionals in the Emergency, Critical Care or Psychiatry Units. Therefore, special attention should be paid to university hospitals since in these health centers have students, residents, and staff, and that they are the hospital units with the highest risk

of aggressions on hospital workers. To reduce aggressions in hospitals, several measures could be taken: 1) reduce aggressions by male patients on female professionals, 2) protect female professionals from these aggressions, 3) prepare pre-professionals (i.e., students and residents) about this reality before they enter the field, and 4) raise awareness of the problem among hospital managers and pre-health educational centers.

4.1. Limitations and future research

We must recognize some limitations in our study. We conducted a survey on aggressions throughout the working life; and it was not possible to describe the total number of aggressions because in some surveys the item of number of aggressions was not reported as a number but as an expression that represented a large number. However, this limitation also inadvertently provided words to describe the problem qualitatively instead of simply quantitatively: respondents' messages added some richness to understanding hospital workplace aggression as "daily," and for some "uncountable". Other limitation was that the profile of the aggressor (sex, age, and other characteristics) was not recorded.

Another limitation was that the survey was carried out in a single university hospital; therefore, more studies are necessary to know if the results of our study are generalizable to other type of health care centers. However, this limitation also provided us more specific information about this problem in university hospitals. In addition, different causes and risk factors have been associated with these aggressions [44, 45]; however, another limitation of our study was that due to the high number of aggressions suffered, it was difficult to know the causes and risk factors. Finally, different negative consequences have been reported in hospital workers due to occupational aggressions [1, 2]; another limitation of our study, however, was that we did not study them.

Despite the limitations of our study, we believe that these findings on the high number of reported and unreported aggressions, the low level of knowledge and the high level of interest in receiving training on aggressions could motivate further research on this problem. For future research on hospital aggressions, we recommend studying the problem in different health care centers (university and non-university hospitals, psychiatric hospitals, primary care health centers) to determine whether the results are generalizable to different centers, conducting the surveys more frequently (e.g., annually) to ensure that the number of aggressions per worker and their details are not forgotten, and adding questions with free-form commentary to facilitate the expression of the details of the aggressions.

If a survey is proposed to analyze long-term aggressions (i.e., in previous working life) we would recommend more qualitative research in view of the results obtained in our study (respondents' messages as "daily" and "uncountable"). If a survey were proposed to analyze short-term aggressions (i.e., in the last 6 or 12 months) it might facilitate hearing the full stories of the victims to better illustrate the problem. Other aspects to research are the profile of the attacker (sex, age, and other characteristics), the negative consequences for hospital workers, and the knowledge on aggressions and the interest in receiving training by hospital workers. We believe that the implementation of our future research ideas would help to describe and quantify the problem more accurately and to direct prevention and training actions to the professional groups at greatest risk of aggressions on hospital workers.

5. Conclusions

Workplace aggressions on hospital workers is a prevalent problem today. This problem mainly affects women, the nursing category and the Emergency, Critical Care and Psychiatry Units. Hospital workers expressed little knowledge and great interest in receiving training on the legal, psychological, and physical management of hospital aggressions. Therefore, different approaches are needed to reduce aggressions on hospital workers, specifically in female nurses and health centers with Emergency, Critical Care or Psychiatric Units.

Ethical considerations

A cross-sectional study through an anonymous survey collected between June and October of 2022. The study was carried out in Hospital Universitario de Canarias with the approval of the Ethics Committee (CHUC_2022_67).

Informed consent

The requirement of written informed consent for participate in the study was exceptionally waived due

to that the confidentiality of personal data was guaranteed by the own characteristics of this study. The anonymous survey was distributed among all professional categories and all hospital units.

Conflict of interest

The authors declare that they have no conflict of interest.

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