National report on aggressions to physicians in Spain 2010–2015: violence in the workplace—ecological study

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Abstract
Objective: Aggressions against health staff is a phenomenon that is not widely studied worldwide. To date, there is no national study analyzing this situation in Spain. Our objective is to describe and analyze aggressions to physicians of the whole Spanish territory in the period 2010–2015, through an observational analytical study by conglomerates (ecological) with all aggressions to physicians identified by the 52 official medical associations of Spain over 6 years of study.

Results: There were 2419 aggressions on physicians, 51% on men. Primary care is the area that concentrates more incidents (54%) and the public sector is the most affected (89%). A third of the assaults were concentrated on professionals aged 46–55 years old. Cumulative incidence decreased from 20 aggressions × 10,000 physicians in 2010 to 15 × 10,000 physicians in 2015. The importance and seriousness of the problem of aggressions against physicians is verified through notifications to the registry. The collection method is different from others based on surveys, and therefore the figures are significantly lower than other studies. The scant denunciation by attacked physicians in Spain makes deceiving the real dimensions of the phenomenon.

Keywords: Aggression, Physician–patient relations, Workplace violence

Introduction
Aggressions against physicians is a problem of growing interest in research, which has been poorly prioritized in healthcare systems. To date and knowledge of the authors, there is no regulated study in Spain that analyzes this situation and its trend at national level in recent years. The number of related international studies is limited, most of them are old, without evidence of a prospective analysis of the phenomenon and with disparate results, which may well be the indirect reflection of the characteristics of different health care systems and organizations, or of the particular situation of each country [1].

Our objective is to contribute to the current state of knowledge of this problem in Spain and serve as a reference in the European region.

Until 2015 there are very few published studies related to this phenomenon in our society [20]. In 2015 a survey of physicians in Barcelona [2] described how 44% of the professionals surveyed stated that they had been victims of some form of verbal aggression. Another regional survey, this time carried out in Aragon and Albacete to 1845 health professionals concluded that up to 64% of the sample had suffered aggressions of different magnitude, and 5% acknowledged having been attacked on multiple occasions [3].

Main text
Methodology
The study has an observational design, and analyzes both the set of cases accumulated in 6 years, and its
longitudinal evolution. It collects all the aggressions on physicians registered by the National Observatory of Aggressions to Physicians (ONAM) of the CGCOM from 1st January 2010 to 31st December 2015. The population under study (N = 2419) is composed of all physicians whose aggressions were registered by the 52 Official Medical Associations of Spain during this period. Each Medical Association reports its aggressions to the ONAM in a grouped manner, describing the scope of the professional practice in which they occur and the sociodemographic and professional characteristics of the physicians assaulted in each period. Considering that the general report of the ONAM is based on reports by clusters, the present study is ecological. The evaluation was anonymised.

**Aggressions**

We consider as an aggression each of the cases comprising physical or psychic attacks, insults or threats, which is communicated by the affected physicians to their respective Medical Association. We consider cluster, the report of aggressions of each Association to the ONAM. We have not excluded any of the detected aggressions.

**Other variables**

The information of the professionals assaulted on gender, age groups, type of professional exercise, presence of injuries, generation of (paid) sick leave (SL), reception of support/guidance by the company, presentation of a complaint, presence of previous aggressions and presence of material damages, and the information of the aggressor on personal background and profile, were obtained from the Annual Reports of the ONAM. The severity of injuries was categorized into ranges (< 35, 36–45, 46–55, 56–65, ≥ 66 years).

The type of professional practice was categorized as public and private. The scope of the aggression was categorized as primary care (GP practices), hospital, primary care emergencies (out of hours and domiciliary care), hospital accident-emergencies services, and others. The aggressor’s personal history was categorized as drug addiction, psychiatric, organic disease and others. The profile of the aggressor was categorized as a scheduled patient, unscheduled patient, center user and family member. The other variables were dichotomized (yes/no) according to their presence or absence: personal injury, generation of temporary incapacity for work, reception of support/guidance by the company towards the physician attacked, presentation of a complaint, presence of previous aggressions and presence of material damages.

**Statistical analysis**

The descriptive analyses were based on frequency distribution and were performed on the total of aggressions observed in the study period. In the frequency analysis of each variable, only have been excluded the aggressions with lost data. For the accumulated incidence of aggressions, we used the number of assaults recorded each year, among the total number of collegiate doctors in the same period. \( P \) values were calculated using Pearson Square Chi or Fisher’s Exact Test. All statistical analyses were performed using Stata software (version 11.1) [4].

**Results**

During the study period, there were 2419 aggressions on doctors in Spain, 50.8% on men and 49.2% on women. The great majority of the aggressions were detected in the public exercise (88.7%). 37.3% of incidents were concentrated in the age group 46–55 years. Table 1 shows the frequency distribution of the main characteristics of the population.

**Cumulative incidence**

The cumulative incidence of aggressions against physicians in the period studied shows a significant tendency to decrease \( (P_{trend} < 0.0001) \), observing a cumulative incidence of 20.2 assaults per 10,000 physicians in 2010 and 15 assaults per 10,000 physicians in 2015 (no significant differences between men and women).

**Aggressions by area**

Primary care concentrated more than half of the cases (53.9%), followed by the hospital and Accident and Emergency Services (23.6%).

**Severity of injuries**

Almost a fifth of the assaults on professionals during the study period were associated with personal injuries. Up to 12% of all attacks resulted in a SL. In 1 out of every 10 cases, material damages occurred and almost 8% of the physicians attacked had suffered prior attacks (Table 1). In a gender-stratified analysis of the aggressions recorded in 2015, no statistically significant differences were found in the proportion of physical and psychological injuries among men and women (Table 2).

**Aggressor profile**

Only 7 out of 10 aggressions are done by the patient; the others are generated by a relative or companion. Regarding the aggressor’s antecedents, we found that 13% of aggressors had a history of psychiatric
Table 1 Characteristics of the studied population 2010–2015

| Characteristics                          | Distribution |
|------------------------------------------|--------------|
| Gender (n = 2401), %                     |              |
| Men                                      | 1219 (50.8)  |
| Women                                    | 1182 (49.2)  |
| Type of practice (n = 2342), %           |              |
| Public                                   | 2078 (88.7)  |
| Private                                  | 264 (11.3)   |
| Age groups (n = 1809), years (%)         |              |
| ≤ 35                                     | 254 (14.0)   |
| 36–45                                    | 494 (27.3)   |
| 46–55                                    | 675 (37.3)   |
| 56–65                                    | 353 (19.5)   |
| ≥ 66                                     | 33 (1.8)     |
| Area (n = 1523), %                       |              |
| Primary care                             | 1267 (53.9)  |
| Hospital                                 | 341 (14.5)   |
| Out-of-hospital emergency rooms          | 225 (9.6)    |
| Hospital emergency room                 | 215 (9.1)    |
| Other areas                              | 303 (12.9)   |
| Aggressor background (n = 1385), %       |              |
| Toxicomany                               | 108 (7.8)    |
| Psychiatric                              | 184 (13.3)   |
| Organic disease                          | 169 (12.2)   |
| Unknown                                  | 924 (66.7)   |
| Aggressor profile (n = 1859), %          |              |
| Scheduled patient                        | 604 (32.5)   |
| Non scheduled patient                    | 451 (24.3)   |
| Center user                              | 274 (14.7)   |
| Relative or companion                    | 530 (28.5)   |
| Personal injuries (n = 2346), %          |              |
| Yes                                      | 465 (19.8)   |
| No                                       | 1881 (80.2)  |
| Sick leave (n = 2154), %                 |              |
| Yes                                      | 263 (12.2)   |
| No                                       | 1891 (87.8)  |
| Company support (n = 1697), %            |              |
| Yes                                      | 544 (32.1)   |
| No                                       | 1153 (67.9)  |
| Formal complaint (n = 2283), %           |              |
| Yes                                      | 1655 (72.5)  |
| No                                       | 628 (27.5)   |
| Previous aggressions (n = 2179), %       |              |
| Yes                                      | 168 (7.7)    |
| No                                       | 2011 (92.3)  |
| Material damage (n = 2043), %            |              |
| Yes                                      | 213 (10.4)   |
| No                                       | 1830 (89.6)  |

Values are expressed as absolute numbers and weighted percentages for categorical variables.
In our data, gender was not a differentiating factor in the incidence of aggressions, as described by multiple studies [11–16]. However, in the analysis of differences by gender and type of aggression, there are studies such as that by Miedema et al. describe a higher frequency of sexual harassment-related aggressions among women than among men (60.7% vs 30.5%, P < 0.01) [17].

Although it has not been possible to calculate the rates of aggression by age group due to the absence of records, as it would have been necessary, it may be useful to make some comments on the distribution of age frequencies among the aggressed physicians. The age group with the highest proportion of recorded attacks was between 46 and 55 years old, a range higher than that described in other Spanish studies (30–43 years) [14–16, 18, 19]; but closer to the most affected ages described in international studies: Canada (44 years) [17], Australia (45–54 years old) [20] and Germany (55 years old) [17]. That is, our results support the hypothesis that the profile of the physician attacked is not necessarily a young physician with little experience as other authors have suggested [15, 21].

Table 2 Comparison of the aggressions to physicians by area and gender 2015

| Area                  | Men     | Women   | P value | Total  |
|-----------------------|---------|---------|---------|--------|
| PCa (%)               | 90 (50.3) | 103 (56.6) | NSd | 193 (58.3) |
| Hospital (%)          | 34 (19.0) | 32 (17.0) | NSd | 66 (18.3) |
| PUCCb (%)             | 15 (8.4) | 20 (11.0) | NSd | 35 (9.7) |
| HERc (%)              | 19 (10.6) | 9 (4.9) | NSd | 28 (7.8) |
| Other areas (%)       | 21 (11.7) | 18 (9.9) | NSd | 39 (10.8) |

Values are expressed as absolute numbers and weighted percentages for categorical variables

Table 3 Identified causes of aggressions to physicians in Spain 2010–2015

| Cause related to the aggression                                      | 2010 N (%) | 2011 N (%) | 2012 N (%) | 2013 N (%) | 2014 N (%) | 2015 N (%) | Total N (%) |
|---------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|-------------|
| Discrepancies with healthcare                                      | 99 (31.3) | 166 (39.3) | 113 (35.5) | 93 (32.1) | 81 (30.8) | 98 (35.8) | 650 (34.5) |
| No prescription of desired medicine                                | 38 (12.0) | 56 (13.3) | 44 (13.8) | 33 (11.4) | 25 (9.5) | 29 (10.6) | 225 (11.9) |
| Waiting time                                                        | 36 (11.4) | 37 (8.89) | 35 (11.0) | 34 (11.7) | 34 (12.9) | 37 (13.5) | 213 (11.3) |
| Personal discrepancies                                             | 31 (9.8) | 25 (5.9) | 34 (10.7) | 25 (8.6) | 30 (11.4) | 42 (15.3) | 187 (9.9)  |
| Related to work incapacity                                         | 21 (6.6) | 24 (5.7) | 19 (6.0) | 22 (7.6) | 15 (5.7) | 8 (2.9) | 109 (5.8)  |
| Medical reports that are not in accordance with the patient’s requests | 23 (7.3) | 17 (4.0) | 11 (3.5) | 25 (8.6) | 13 (4.9) | 15 (5.5) | 104 (5.5)  |
| Disagreement with the functioning of the centre                    | 13 (4.1) | 16 (3.8) | 13 (4.1) | 11 (3.8) | 12 (4.6) | 12 (4.4) | 77 (4.1)   |
| Other causes                                                       | 55 (17.4) | 81 (19.2) | 49 (15.4) | 47 (16.2) | 53 (20.2) | 33 (12.0) | 318 (16.9) |
| Total                                                              | 316        | 422        | 318        | 290        | 263        | 274        | 1883 (100) |

We describe the sample size in each period. Values are expressed as absolute numbers and weighted percentages for categorical variables.
important to maintain and develop research on this phenomenon.

Achieving the intervention of legislative and executive authorities, as it is already happening in Spain, for the recognition of the health professional as an authority [25, 26], can be the long way to go through other environments where the frequency of these events is increasing.

Limitations

- Although the ONAM reports have a national character, as authors we are aware that the cases of aggressions reported to medical associations usually coincide with cases of greater severity, so that there may be an important under-registration of aggressions of less severity that never get to be reported by the professionals involved, being that the main limitation of our work. For our analysis, this can lead us to underestimate the real magnitude of the problem, justifying the low incidences found, lower than those described by other authors. That fact therefore limits the validity of the data provided and invites cautious interpretations of the results.
- As authors, we would like to point out that this is the first analytical study to explore ONAM consolidated information throughout Spain, and although its results are not directly comparable with other studies related to methodological differences, the analysis provides relevant data on the characteristics and typology of the aggressions to physicians, and constitutes a Spanish and European referent for future investigations.

Abbreviations

ONAM: Observatorio Nacional de Agresiones a Médicos (National Observatory of Aggressions to Physicians); SL: sick leave.

Authors’ contributions

The authors listed in the article have collaborated collectively in the production of this study. All authors read and approved the final manuscript.

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Competing interests

The authors declare that they have no competing interests, since it is promoted from the Medical Colleges with their own resources, to identify the magnitude of a problem, such as aggressions at work, which affects its members.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Consent for publication

Not applicable.

Ethics approval and consent to participate

The data come from registered records of incidents of aggressions produced to doctors during a period of time.

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