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Exploring the roots of violence in last year medical students (interns) in Ecuador.

Explorando las raíces de la violencia en estudiantes de medicina de último año (internos) en Ecuador.

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Abstract: Background: Medical interns are frequently victims of a hierarchical system, suffering various forms of abuse, ranging from psychological harm to sexual threats and physical assault. Objective: Determine the prevalence of violence and identify the factors that contribute to it in medical interns. Methods: Cross-sectional survey study with 161 participants. The survey "Workplace Violence in The Health Sector Country Case Studies Research Instruments Survey Questionnaire 2003" was used. Results: 59% have suffered some type of violence, 87.3% psychological violence, 3.1% physical violence and 9.4% both types of violence. In psychological violence, verbal aggression was the most prevalent (76.6%). Health personnel are the main source of violence, in psychological violence it was nursing (32.2%) and in physical violence, senior doctors (41.6%). In both types of violence, the majority perceives it as an everyday event. The cause of violence lies in the behavior of the aggressor due to abuse of authority (31%) and stress in 27%. Only 18.1% know the policies to confront violence. Most do not report the incident mainly due to fear. Conclusion: Violence towards medical students manifests itself in different ways and emanates from hierarchical positions, this can have consequences on the professional and emotional development of future doctors.

Keywords: Violence; workplace violence; medical students; medical education; hierarchy.

Resumen: Antecedentes: Los internos de medicina frecuentemente son víctimas de un sistema jerárquico, sufriendo diversas formas de abuso, que van desde daño psicológico hasta amenazas sexuales y agresiones físicas. Objetivo: Determinar la prevalencia de la violencia e identificar los factores que contribuyen a la misma en los internos de medicina. Métodos: Estudio transversal de encuesta con 161 participantes. Se utilizó la encuesta "Workplace Violence in The Health Sector Country Case Studies Research Instruments Survey Questionnaire 2003". Resultados: El 59% ha sufrido algún tipo de violencia, un 87.3% violencia psicológica, 3.1% violencia física y 9.4% ambos tipos de violencia. En la violencia psicológica, la agresión verbal fue la más prevalente (76.6%). El personal de salud es la principal fuente de violencia, en la psicológica fue enfermería (32.2%) y en la física, los médicos de mayor jerarquía (41.6%). En ambos tipos de violencia, la mayoría lo percibe como un evento cotidiano. La causa de violencia radica en el comportamiento del agresor debido al abuso de autoridad (31%) y estrés en un 27%. Apenas el 18.1% conoce las políticas para afrontar la violencia. La mayoría no reporta el incidente debido principalmente al miedo. Conclusión: La violencia hacia los estudiantes de medicina se manifiesta de diferentes formas y emana de posiciones jerárquicas, esto puede traer consecuencias en el desarrollo profesional y emocional del futuro médicos.

Palabras clave: Violencia; violencia laboral; estudiantes de medicina; educación médica: jerarquía.

1. Introduction

Medical education has the responsibility of providing students with the indispensable knowledge and experience and must adapt to the demands of public health, maintaining the environment that fosters autonomy and adequate professional performance (1). The rotating internship is the final stage in medical training (final year) and includes the integration of knowledge, activities practices, collaborative and closeness with health personnel such as doctors, residents, colleagues, nurses, auxiliary services, patients and their families (2). Medical interns require an educational and work environment conducive to optimal performance in their hospital responsibilities; However, they are often victims of a poorly established system, suffering various forms of abuse, ranging from psychological harm to sexual threats or even physical assault.

Medicine is a hierarchical discipline, where the appearance of violence or abuse, HE associate to the stress and situations emotional of burden labor (3). In America Latina, HE have documented various publications that show an alarming level of workplace violence directed towards medical students. In Peru in 2019, Sierra-Córdova and collaborators demonstrated a marked inclination towards workplace violence directed at inmates, with resident doctors being the main source of said violence (4). In Mexico, a national survey conducted in February 2021 that included 2,458 medical students, described that 40% of them reported having experienced sexual harassment or violence during their training (5). Mejía and collaborators in 2022 carried out a cross-sectional study in several Latin American countries with the purpose of investigating the factors associated with mistreatment in medical students. Their conclusions showed that 9.7% of students had experienced some type of violence throughout their career, with psychological violence being the most prevalent (6). These data reveal the vulnerability of the health system and the prevailing need to standardize the educational system, implementing measures that safeguard the labor rights and well-being of medical students.

It is crucial to highlight that violence is a public health problem that also affects medical students and manifests itself in various forms. This situation makes the hospital environment a hostile and inappropriate place for excellent medical training and high-quality professional development. The objective of this study was to determine the prevalence of violence and identify the factors that contribute to it in medical interns.

2. Methods

Cross-sectional study based on a written survey, applied to two cohorts of internal (September 2018-August 2019 and May 2019-April 2020). The surveys were carried out from June 15 to August 31, 2019, in a teaching hospital located in the city of Cuenca (Ecuador), to inmates who met the inclusion criteria of being rotating in an in-hospital service and who wanted to participate. in the study. The sampling calculation was carried out for analytical studies, with a total population of 350 inmates, confidence level of 95%, precision 5%, prevalence 15% (7), which gave a sample size of 126 participants, 20 were added % of losses, obtaining a total of 157. The variables under study covered aspects as the age, gender, orientation sexual, state civil, place of origin, the existence of disabilities, the perception of situations of violence, and knowledge about policies designed to confront violence in the hospital environment.

The survey "Workplace Violence In The Health Sector Country Case Studies Research Instruments Survey Questionnaire 2003" (8) was used, which was adapted to Spanish; Furthermore, due to the characterization of the population studied, demographic questions were used partially to resemble conditions and situations of medical interns. Subsequently, the instrument was validated through a pilot test, with the aim of making the questions understandable and applicable; This pilot was carried out with a group of thirty medical interns who developed their teaching-care practices in a hospital center different from the one studied, but with similar characteristics and during the same academic periods; This yielded a positive result with a Cronbach's alpha of 0.7, with sufficient reliability to be applied to the sample. Next, the survey was applied, the information collected was analyzed in terms of frequencies, percentages and risks.

Statistical analysis.

The data were transcribed and coded in SPSS, version 22.0; Frequency, percentages and measures of central tendency were obtained. Dichotomization of variables was performed to obtain risks (OR with 95% CI) and statistical significance was defined at $p < 0.05$.

Ethical aspects

The protocol was approved by an ethics committee recognized by the Ministry of Public Health of Ecuador, with the code (2019-085EO-M), informed consent was obtained, the surveys were anonymous and voluntary, without collecting data that could identify participants and confidentiality and exclusive use of them for the research were guaranteed; there was no remuneration for completing the surveys.

3. Results

The survey was completed by 161 students, with 70.8% of respondents in the age range of 22 to 24 years, with an overall average age of 24.17 years. Women represented 59.6% of the participants, 98.1% identified as heterosexual, 95.6% self-identified as mestizo, 87.6% were single, 80.7% came from the mountain region and 0.6% had a disability (table 1).

Perception of violence (table 2)

It was found that 95 participants (59%) have suffered some type of violence during the time they have completed the boarding school program; Of these, 87.3% suffered psychological violence, 3.1% were victims of physical violence, while 9.4% experienced both. guys of violence. In how much to the services where mainly HE perceive Violence was in internal medicine (45%), followed by surgery (23.7%).

Psychological Violence

It was observed that verbal aggression was the most prevalent type of violence with 76.6%, followed by bullying and harassment which represented 16.8%; It is worth noting that 3.7% reported experiencing sexual harassment. Regarding the source of aggression, nursing staff accounted for 32.2%. Furthermore, an overwhelming majority of those affected (90.2%) perceived violence as an everyday event, and 69.5% considered that it could be preventable. In relation to the reactions of those violated, it was observed that 40.7% chose not to have any reaction or decided to share their experience with someone they trusted. (34.8%). Is important stand out that a 3.2% of the affected required medical treatment. However, 84.7% did not report the incident, mainly due to fear (36.3%) or that they did not consider it useful (24.8%). These have led to some consequences, such as psychological symptoms (31.8%).

Table 1. Sociodemographic characteristics (n=161).

Variable	Frequency	Percentage
Age		
22-24 years	114	70.8
25-27 years	43	26.7
>28 years	4	2.4
Gender		
Man	65	40.3
Women	96	59.6
Sexual Orientation		
Heterosexual	158	98.1
Homosexual	1	0.6
Bisexual	2	1.2
Self-identification ethnic		
Half Blood	154	95.6
Indigenous	2	1.2
White	4	2.4
Afro-descendant	1	0.6
Civil status		
Single	141	87.6
Married	fifteen	9.3
facto union	5	3.1
Origin		
Coast	23	14.2
Mountain range	130	80.7
East	8	4.9
Disability		
Yes	1	0.6
No	160	99.3

Physical violence

All participants who experienced this type of violence did not report the use of a weapon or object. The most common source of aggression was health personnel, especially senior doctors (41.6%). 75% of those abused perceive violence as an everyday event and 83.3% consider it preventable. 38.8% had no reaction and 38.8% told someone close to them. 91.6% did not report the incident, mainly due to fear (33.3%).

Factors for violence (table 3)

The dichotomization of variables was carried out in order to evaluate the relationship between belonging to a minority group or the presence of a disability and the probability of suffering violence. The results revealed that none of these variables exhibited statistical significance. The aim was to know, from the students' perception, what factors they consider to influence the presence of violence. After the respective analysis, it was found that the main cause was abuse of authority (31%), followed by stress on the part of the victim with 27% (figure 1).

Regarding knowledge about policies to confront violence, only 29 participants (18.1%) know them. Two predominant aspects were identified as main measures to reduce

violence: communication, respect, camaraderie and the importance of denormalizing violence and training on appropriate procedures and places for reporting it (figure 2).

4. Discussion

The present study shows an elevated prevalence of violence perceived among medical students who are in their final year of training, during their care-teaching practices in the hospital environment. Specifically, 59% of the participants acknowledged having experienced at least one type of violence, a figure that is similar to the findings obtained in the cross-sectional research carried out by Duan and collaborators in 2019, in which a percentage of the 66.1% of violence in the workplace among health personnel, object of study (9).

In the analysis of violence in this study, a high prevalence of psychological violence was observed, reaching a percentage of 87.3% of the registered cases. Followed by the combination of psychological and physical violence and, ultimately, a percentage of physical violence of 3.1% was identified. Sun and collaborators in 2022 showed that 38% of the participants had reported experiencing psychological violence, a figure very far from our reality (10). Mambrey and collaborators, in 2023, identified percentages of verbal violence in Germany, which reached 60%, higher than those reported in China, although lower than those recorded in the present study (11). In this study, no physical violence with a weapon or object was found in any of the cases, unlike a study in China carried out by Xing and collaborators in 2015, in which more than half of the physical attacks were with some type of weapon (12).

The main type of psychological violence was verbal aggression with a 76.6%; similar values were found in a cross-sectional study applied to doctors in tertiary hospitals in China, by Sun and collaborators in 2017, in which verbal aggression was 76% (13). Senior doctors such as residents, treating physicians or teachers were identified as the primary perpetrators of physical violence. On the other hand, in the case of the psychological violence, the main perpetrator was the nursing staff. In a survey applied to Iranian students by Aliafsari and collaborators in 2022, it was found nursing staff as the main perpetrator of violence (14). In another study applied to doctors in an academic trauma center in the United States, residents were the main aggressors (15), coinciding with the results found in this study.

In both physical and psychological violence, the victims classified these acts as daily and not as an isolated event; data that coincides with the study by the authors Messiaen and collaborators in 2021, where it was observed that German students cataloged to the violence as something by it that all they must pass in this profession (16). In Saudi Arabia, Alnofaiey and collaborators, in 2022, showed that the acts violent events are repeated more than 5 times in a year to the same participant (17), suggesting that violence against health personnel has become normalized worldwide.

The main reactions they presented to the violent act were doing nothing or tell someone they trusted. These results coincide with what was found by Sheikhbardsiri and collaborators in 2022, in the study applied to health personnel in Iran (18).

It was observed that more than 75% did not report these violent events. The values are very similar to those found in the study carried out in France, with medical students and young doctors in whom it was evident that less than 10% of them attended to a organ responsible for report it happened (16). The main Causes The reason for not reporting the violence was fear, and then considering that reporting would be useless; Similar reasons

were found in a study in Tehran in 2018, in which the main reason for not reporting an act of violence was considering it useless (19).

More than half of those surveyed reported having consequences after the violence, being the bad relations interpersonal the major for the that they suffered of physical violence and psychological symptoms for those who experienced psychological violence. In a study conducted in 2022, it was found that the main consequences were being alert, feeling frustrated, and feeling disturbed (20).

Interns perceive abuse of authority and stress as the main contributors to violence, a perception very similar to that found in a cohort study in Norway that had recently graduated young doctors as participants; In this work, it was found that workload, stress and an inefficient work environment are the main predisposing factors of workplace violence (21).

When analizing if they knew the policies related to combat violence, it was observed that only 18.1% knew about these policies. Ince et al. in 2019, found that the most of the participants surveyed they had insufficient knowledge about the policies or codes used to combat cases of violence (22).

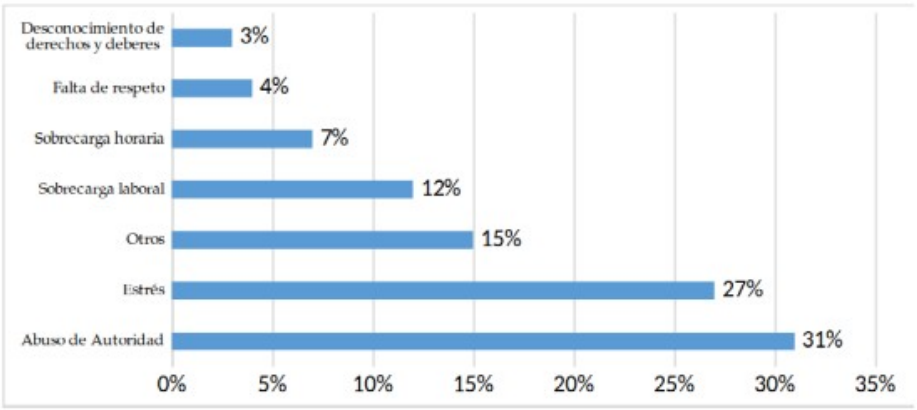

Figure 1. Factors that contribute to the violence, according to the victims

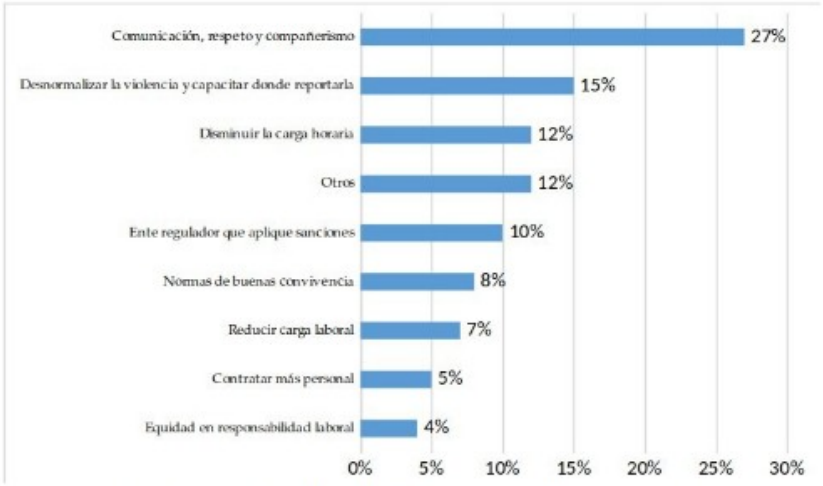

Figure 2. Measures for reduce the violence, according to the victims.

Table 2. Perception of Psychological Violence and Violence Physical

Variable	Psychological Violence		Physical Violence	
	Frequency n=92	Percentage	Frequency (n= 12)	Percentage
Type of aggression (more than one response)				
Verbal aggression	82	76.6	-	-
Harassment and harassment	18	16.8	-	-
Sexual harassment	4	3.7	-	-
Racial Harassment	2	1.8	-	-
Others	1	0.9	-	-
Assault with a weapon or object	-	-	0	0
Assault without weapon or object	-	-	12	100
Source of assault (further of a answer)				
Patients and relatives	27	12.6	4	16.6
Companions	33	15.4	1	4.1
Senior doctors	41	19.1	10	41.6
Nursing staff	69	32.2	5	20.8
Auxiliary services personnel (laboratory, radiology, pharmacy)	44	20.5	4	16.6
Perception of frequency of violence				
Isolated event	9	9.7	3	25
Everyday event	83	90.2	9	75
Violence prevention				
Was preventable	64	69.5	10	83.3
It was not preventable	28	30.4	2	16.6
Reaction to violence (more than one response)				
Defensive attitude	31	20.3	4	22.2
He told it to someone	53	34.8	7	38.8
Seeking help	6	3.9	0	0
None	62	40.7	7	38.8
Need for medical treatment				
Yes	3	3.2	1	8.3
No	89	96.7	eleven	91.6
Reported the incident				
Yes	14	15.2	1	8.3
No	78	84.7	eleven	91.6
Reasons for no reporting the incident (more of a answer)				
He considered it normal	12	9.3	2	11.1
Lack of time	twenty	15.5	4	22.2
Fear	3. 4	36.3	6	33.3
Shame either culpability	4	3.1	1	5.5
No knew where do it	24	18.6	1	5.5
Did not find it useful	32	24.8	4	22.2
Others	3	23	0	0
Consequences of violence (more than one answer)				
Symptoms: psychological	42	31.8	2	12.5
Symptoms: physical	22	16.6	2	12.5
Increase or use of substances	6	4.5	2	12.5
Poor work performance	6	4.5	1	6.2
Bad interpersonal relationships	27	20.4	4	25
None	29	21.9	5	31.2

Table 3. Factors associated with violence

Risk factor	Violence n=95	Non-violence n=66	OR (95% CI)	p value
Gender				
Women	58	38	1.15 (0.60-2.18)	0.39
Man	37	28		
Sexual orientation				
Not heterosexual	3	0	-	0.20
Heterosexual	92	66		
Ethnic self-identification				
Historically excluded social group	2	1	1.39 (0.12-15.74)	0.63
Not excluded	93	65		
Origin				
Region different from the place of study	17	14	0.80 (0.36-1.78)	0.71
Mountain range	78	52		
Disability				
Yeah	0	1	-	0.41
No	95	65		

5. Conclusions

- Violence towards medical students is present in various ways, and this is mainly exhibited by health personnel who occupy higher-ranking positions; This violence can have consequences on the professional and emotional development of the future doctor.

- We must create spaces for teaching, empathy, trust, always in an ethical and respectful manner, learn to listen and remove the barriers of a poorly established hierarchy. There is no reason to wait to take care of the most valuable thing about medical schools, which is the students.

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Contributions of the authors: realization of the protocol (GA, KP, VB, D.S.), harvest of data (GA, KP) analysis and results (GA, KP, VB, DS), preparation and review of the article (GA, KP, VB, JA, DS).

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