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Mental Health of Nurses in Mexico during COVID-19: Aggression, Rejection, and its Impact on Health

Salud mental de enfermeras en México durante el COVID-19: Agresión, rechazo y su impacto en la salud

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ABSTRACT

Aims: Our study aims to measure Nurses' perception of aggression and violence during the COVID-19 pandemic in Mexico. Background: The COVID-19 pandemic has generated physical and emotional strain in all health workers, such as rejection, maltreatment, stress, and anxiety among health workers. Methods: Analytical cross-sectional study, applied virtually through a Google form, to collect sociodemographic, occupational, and clinical details of workers. We applied the Goldberg General Health Questionnaire (GHQ-28), the sample size was 560 nurses from universities, hospitals, and nursing colleges across Mexico. Results: The principal source of aggression against nurses were strangers, increasing symptoms of anxiety and insomnia. Conclusions: The COVID-19 pandemic has exacerbated violence towards and discrimination against health professionals. This work investigated the perception of aggression and rejection towards nursing staff during the pandemic. Implications for Nursing Management: Nursing students, technicians and graduates perceived more aggression than specialist nurses or those with a post-graduate qualification. Among our respondents, we found that younger nurses, who lived in the East of the country, worked in the public sector in clinical or hospital settings, and had contact with COVID-19 patients or had been diagnosed with the virus were more susceptive to this type of violence.

Keywords: COVID-19, psychosocial, violence, discrimination, health personnel.

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RESUMEN

Objetivo: Medir la percepción de las enfermeras sobre la agresión y violencia durante la pandemia de COVID-19 en México. Antecedentes: La pandemia de COVID-19 ha generado tensión física y emocional en todos los trabajadores de la salud, como rechazo, maltrato, estrés y ansiedad. Métodos: Estudio transversal analítico, aplicado virtualmente a través de un formulario de Google, para recolectar datos sociodemográficos, ocupacionales y clínicos de los trabajadores. Se aplicó el Cuestionario de Salud General de Goldberg (GHQ-28), el tamaño de la muestra fue de 560 enfermeras de universidades, hospitales y colegios de enfermería de México. Resultados: La principal fuente de agresión contra las enfermeras, fueron los extraños, aumentando los síntomas de ansiedad e insomnio. Conclusiones: La pandemia de COVID-19 ha exacerbado la violencia y discriminación hacia los profesionales de la salud. Se investigó la percepción de agresión y rechazo hacia el personal de enfermería durante la pandemia. Los estudiantes, técnicos y egresados de enfermería perciben más agresiones que enfermeros especialistas o con posgrado. Encontramos que las enfermeras más jóvenes, que vivían en el este del país, trabajaban en sector público en entornos clínicos u hospitalarios y tenían contacto con pacientes con COVID-19, o fueron diagnosticadas positivas, eran más susceptibles a violencia.

Palabras clave: COVID-19, psicosocial, violencia, discriminación, salud personal.

Background

The COVID-19 pandemic has generated physical and emotional strain for all health workers, added to the many existing stressors in the daily work and activities of nurses. However, the most common stressors may be divided into three categories: difficulty relating to patients, lack of resources, and workload. The COVID-19 pandemic has generated more stress than the three main stressors combined, due to the rejection, maltreatment, stress, and anxiety it has caused for health workers. However, nurses still provide their services daily to a significant number of patients who are sick with the virus. On the other hand, social distancing has consequences for workers' psychological wellbeing, now considered a vulnerable population (Acosta et al., 2002).

It is inescapable that nurses have a duty of care, in other words, they protect life by ensuring the satisfaction of needs, and they are the only permanent carer in the healthcare system. Nurses' steadfastness in the care of the patient subjects them to stressful situations, and they are vulnerable to suffering physical and psychological afflictions. Moreover, when work is predictable, aggressive behaviour from patients and their family members influence the perception of aggression and maltreatment of that health worker (Flores et al., 2010; Kumari et al., 2022).

On the other hand, we can trace the consequences of aggression to the physical and psychological health of the worker. Health workers can present with psychosomatic diseases, lower performance in providing their services, and absenteeism. This is reflected in an observable deterioration in the quality of care a patient receives (Animal Politico, 2020).

Although frequently the aggressive behaviours by patients may harm their recovery process, the nursing staff may be reluctant to commit to these patients due to the anxiety from being hurt physically or psychologically (Ansoleaga, 2015).

The Health Professional is immersed in the context of risk at work, as they pass most of the day subject to occupational hazards, considered by many of them to be "part of the job". Health personnel have put their own and their families' lives at risk. If this challenge were not enough, the increase in acts of aggression and discrimination towards health staff is evident (Avendaño, 2020). Aggression, maltreatment, rejection, and discrimination towards health workers creates a harmful effect at the individual, social, and occupational levels, affecting performance when attending to patients, besides creating stress, injuries, and sometimes even death (Needham et al., 2005; Pollock et al.,2020).

Painfully, over time, these behaviours towards health workers have been normalised, discrimination has occurred in public spaces, streets, workers' homes and even in treatment centres for COVID-19 patients. Health workers around the world have contracted the coronavirus and, hence, have been viewed as a risk for public health (Madrid Franco et al., 2011). This has generated discrimination towards health workers. Another facet of this psychological attack by members of the public is rejection; refusing to maintain contact with health staff outside of the hospital because they suspect they are infectious. Avoidance gradually transformed into more direct actions such as prohibiting hospital staff from entering supermarkets, grocery stores, lifts or common areas in buildings and health professionals were asked to abandon their apartments (El Tiempo, 2020).

In cities such as New York, the psychological threat posed by health workers as potential vectors of the virus forced doctors and nurses to sleep in their vehicles and not return home. This persecutory and discriminatory attitude and is highly contrasted with the

applause and ovations promoted by the community for a few minutes to signal support for health workers (González, 2020).

Another form of discrimination was evident when medical staff or nurses in surgical scrubs were denied access to public transport towards the hospital. Although the health worker quickly explained that casual clothes were changed for hospital clothes once inside the hospital, the public maintained their rejection, which forced some cities to make exclusive transport or routes available to ensure the mobility of health workers (Galián Muñoz, 2012).

Collecting data published in the Latin-American press, we can see that cases of discrimination or violence against health workers have been recorded in many countries, registering at least 111 cases: Mexico, 40; Columbia, 20; Argentina, 10; Venezuela, 9; Paraguay, 8; Honduras, 4; Panama, 4; Peru, 2; Costa Rica, 1; El Salvador, 1. Almost half (45%) of the cases of discrimination or violence have occurred against women, and 28% against men; 40% against doctors, 40% against nurses and nursing assistants, and 11% against various members of the health team simultaneously (Idoiaga, 2016).

Regarding psychological aggression, it seems that the fear of contracting or transmitting the disease, coexisting with the frontline workers during the pandemic, developed from different elements. The unknown about a new virus, erratic symptoms that to date do not have proven therapeutic strategies. On the other hand, the uncertainty generated by the indeterminate closure of business and the duration of the quarantine measures.

Finally, the permanent threat with acts of anguish through the media and social networks, in some cases with broadcasting indeterminate investigations, have a negative impact on health workers who are already frustrated and consumed by the situation (Jojoa, 2020).

There is also the possibility of contracting infection and/or transmitting it to loved ones, especially in places with irregular availability of the protective equipment necessary to face their care; and at the same time, the anguish of health personnel responsible for

other people, mothers, heads of household, only children, regarding who would be called for their loved ones in case they succumb to the illness (United Nations, 2020).

Emphatically, the representative for the United Nations (UN) in Mexico lamented the increase in aggression towards health personnel who combated the COVID-19 pandemic and drew attention to the vital work that they do. In a press communication, the UN in Mexico calls on the whole population to respect the work of the health professionals and condemns any expression of "hate, intolerance, stigmatisation, and discrimination against those who are today are the front-line responders of pandemic" (United Nations, 2020).

Regarding the psychological impact wrought by the pandemic, isolation may worsen anxiety and mental anguish. Those in quarantine may perceive fatigue, loneliness, anger, shame, guilt, or stigma, motivated in part by the media. Psychological anxiety has been associated with symptoms of post-traumatic stress, financial losses and the risk of unemployment, and negative emotions were intensified further still (Maguire et al., 2018).

Although health staff are familiar with death, witnessing several deaths daily may provoke anxiety and anguish within any human being. Being alongside these patients, accompanying them in their final moments, just as much as it could be a profoundly human moment, can also be exhausting and frustrating (Guerra, 2020).

The deaths of health professionals have been a hard knock to families, as well as health institutions, whose most valuable resources are the healthcare workers themselves that every country is counting on to combat the illness, and it should be the first universal principle to support them in these moments of social risk (González, 2020).

All the above is highly important, considering that while the primary strategy around the world has been to situate people within their homes, health staff prepared for the opposite; that is to say, they prepared for commuting to treatment centres to attend to patients carrying a virus with a very high capacity for transmission (Semana, 2020).

Methods

Cross-sectional analytic study to understand the perception of aggression and violence among Mexican nurses. The study was conducted online through a Google form. The participants were professional nurses or trainee nurses. Nurses were found through Universities, hospitals, and nursing colleges across the country. A total of 560 nurses responded to the call, and four were excluded for answering that they did not want their data used for research purposes. A survey was undertaken to capture sociodemographic, work, and clinical variables, such as: age, sex, civil status, education, workplace, and if the sector was public or private, the state where they lived if they were in contact with COVID-19 patients, or if they had been diagnosed with COVID-19. Additionally, we investigated the perception of aggression or rejection by direct family, colleagues, neighbours, patients, or family members of patients and/or by strangers. The study was conducted during the months of April 2020 to October 2020. Inclusion criteria: Nursing professionals or students, workers, practitioners or social service providers who practice nursing in Mexico and who complete the form; Exclusion criteria: Health professionals from other areas; Elimination criteria: Participants with incomplete questionnaires.

It is important to note that the state where the participant lived was later grouped into 8 regions that divide Mexico: the Northeast (Baja California, Chihuahua, Durango, Sinaloa, Sonora), Northeast (Coahuila, Nuevo Leon, Tamaulipas), West Mexico (Colima, Jalisco, Michoacan, Nayarit), East Mexico (Hidalgo, Puebla, Tlaxcala, Veracruz), North Central (Aguascalientes, Guanajuato, Queretaro, San Luis Potosi, Zacatecas), South Central Mexico (Mexico City, the State of Mexico, Morelos), Southwest (Chiapas, Guerrero, Oaxaca) and Southeast (Campeche, Quintana Roo, Tabasco, Yucatan).

Furthermore, we applied the Goldberg General Health Survey (GHQ-28), validated in Mexico, obtaining an α=0.91. There are four subscales with seven items each: somatic symptoms (α=0.86), anxiety and insomnia (α=0.86), social dysfunction (α=0.86), and depression (α=0.80). The GHQ-28 evaluates the general level of health, tries to differentiate probable psychiatric patients from those considered as potentially normal. It has been employed in epidemiological screening studies to assess mental health at the population

level, young students, older people, pregnant and post-natal women, relatives, and carers of the chronically ill, among others (Solís Camara et al., 2016).

Informed consent and the Goldberg General Health Survey were transcribed to a Google Form and distributed virtually. Answer time did not exceed 10 minutes. We used the Statistical Package for the Social Sciences v21 for the data analysis. To describe the population's sociodemographic characteristics, we obtained frequencies and percentages and median and standard deviation according to the variable type. To find any existing differences between nurses exposed to aggression or violence by others, concerning somatic symptoms, anxiety and insomnia, social dysfunction, and depression, we used the Chi^2 or Fisher's Exact test in case of more than 25% of the boxes having a frequency below 5.

Additionally, those had statistically significant differences with a value $p < 0.05$. We calculated the Odds Ratio (OR). To contrast the sociodemographic characteristics, we used the Student's t-test for independent samples and the Chi^2 or Fisher's Exact test, in this case, realising a post-hoc pair-wise analysis to find precisely where there are differences in tables greater than 2x2 and in this second analysis we calculated the odds ratio (OR).

Regarding ethical considerations, the project was approved by the Committee of Ethics and Research with an approval number of R-2020-1001-078. By answering the survey online, the participants read the informed consent and gave their express permission for their data to be used for research purposes. For this investigation, we followed the basic principles established in the Helsinki Declaration and the General Law on Health Regulations as Relates to Health Research in Mexico [Ley General de Salud en Materia de Investigación para la Salud, MEX-1986-L-3369].

Results

The sociodemographic characteristics of the 556 participants are shown in Table 1. The number of nurses that have perceived aggression or rejection due to COVID-19 from family members were 17 (3.1%), from colleagues 23 (4.1%), neighbours (7.6%), patients or patient's family members 20 (3.6%), and/or by strangers 202 (36.3%). Regarding the result

of Goldberg's General Health Questionnaire (GHQ), 47 (8.5%) of nurses obtained significant scores in the dissemination of somatic symptoms, 117 (21%) in anxiety-insomnia, 27 (4.9%) in social disfunction and 14 (2.5%) in depression.

Table 1. Sociodemographic and clinical characteristics of the sample

	n (%)	**M±DE**
Sex		
Female	445 (80)	
Male	111 (20)	
Age		30.47±9.6
Civil Status		
Married/ Free Union	181 (32.6)	
Divorced/ Separated	34 (6.1)	
Single	338 (60.8)	
Widowed	3 (0.5)	
Education (Nursing)		
Technician/ auxiliary	114 (20.5)	
Post-technical specialism	65 (11.7)	
Student	101 (18.2)	
Undergraduate	209 (37.6)	
Postgraduate	67 (12.1)	
Type of work		
Hospital/ Clinical	226 (44.5)	
Other	282 (55.5)	
Work sector		
Public	296 (68.2)	
Private	138 (31.8)	
Residence (in Mexico)		
Northwest	19 (3.4)	
Northeast	14 (2.5)	
West	363 (65.3)	
East	28 (5)	
Central North	36 (6.5)	
Central South	58 (10.4)	
Southwest	20 (3.6)	
Southeast	18 (3.2)	
In contact with COVID-19 patients		
Yes		
No	218 (39.2)	
	338 (60.8)	
Diagnosed with COVID-19		
Yes	5 (0.9)	
No	551 (99.1)	

Note: n (%) = frequency (percent); M±DE= Mean ± Standard deviation.

When comparing the GHQ dimensions with the results of the concurrent survey for the perception of aggression or rejection among nurses in Mexico, we found statistically significant differences in somatic symptoms, where the source of aggression or rejection was close family and strangers. Furthermore, in the subscale of anxiety and insomnia, aggression or rejection by strangers was the source of stress and insomnia (Table 2).

Table 2. Aggression or rejection perceived by nurses in Mexico and its impact on health, measured by the Goldberg Health Questionnaire

	Somatic Symptoms		**Anxiety and Insomnia**		**Social Dysfunction**		**Depression**	
Aggression or Rejection by:	**Case n(%)**	**No case n(%)**	**Case n(%)**	**No case n(%)**	**Case n(%)**	**No case n(%)**	**Case n(%)**	**No case n(%)**
Close Family								
Yes	4 (8.5)	13 (2.6)	6 (5.1)	11 (2.5)	1 (3.7)	16 (3.0)	0 (0)	17 (3.1)
No	43 (91.5)	496 (97.4)	111 (94.9)	428 (97.5)	26 (96.3)	513 (97)	14 (100)	525 (96.9)
	p=0.047; OR=3.55		p=0.142		p=0.576		p=1.00	
Colleagues								
Si	3 (6.4)	20 (3.9)	5 (4.3)	18 (4.1)	1 (3.7)	22 (4.2)	0 (0)	23 (519)
No	44 (93.6)	489 (96.1)	112 (95.7)	421 (95.9)	26 (96.3)	507 (95.8)	14 (100)	519 (95.8)
	p=0.432		p=1.00		p= 1.00		p=1.00	
Neighbours								
Si	3 (6.4)	39 (7.7)	9 (7.7)	33 (7.5)	4 (14.8)	38 (7.2)	2 (14.3)	40 (7.4)
No	44 (93.6)	470 (92.3)	108 (92.3)	406 (92.5)	23 (85.2)	491 (92.8)	12 (85.7)	502 (92.6)
	p=1.0		p=1.00		p=0.138		p=0.286	

Patients or their family members								
Yes	4 (8.5)	16 (3.1)	6 (5.1)	14 (3.2)	1 (3.7)	19 (3.6)	0 (0)	20 (3.7)
No	43 (91.5)	493 (96.9)	111 (94.9)	425 (96.8)	26 (96.3)	510 (96.4)	14 (100)	522 (96.3)
	p=0.079		p=0.399		p=1.00		p=1.00	
Strangers								
Yes	26 (55.3)	176 (34.6)	56 (47.9)	146 (33.3)	9 (33.3)	193 (36.5)	5 (35.7)	197 (36.3)
No	21 (44.7)	333 (65.4)	61 (52.1)	293 (66.7)	18 (66.7)	336 (63.5)	9 (64.3)	345 (63.7)
	p=0.005; OR=2.34		**p=0.004; OR=1.84**		p=0.740		p=1.00	

Nota: n(%)= frequency and percent; p= p value; OR= Odds Ratio

With respect to the sociodemographic characteristics, we did not find differences by sex or civil status. We did find statistically significant differences by education, age, location, and sector, residence, nurses in contact with COVID-19 patients and diagnosed with COVID-19 (Table 3).

Table 3. Comparison of the perception of aggression or rejection by sociodemographic characteristics

	Aggression and rejection by									
	Close Family		**Colleagues**		**Neighbours**		**Patients or Patient's Family**		**Strangers**	
	Yes	**No**	Yes	**No**	Yes	**No**	Yes	**No**	Yes	**No**
	n (%) / M±DE		**n (%) / M±DE**		**n (%) / M±DE**		**n (%) / M±DE**		**n (%) / M±DE**	
Sex										
Male	2 (1.8)	109 (98.2)	7 (6.3)	104 (93.7)	8 (7.2)	103 (92.8)	5 (4.5)	106 (95.5)	44 (39.6)	67 (60.4)
Female	15 (3.4)	430 (96.6)	16 (3.6)	429 (96.4)	34 (7.6)	411 (92.4)	15 (3.4)	430 (96.6)	158 (35.5)	287 (64.5)

	p=0.545		p=0.191		p=0.877		p=0.570		p=0.418	
Civil Status										
Married/ Free Union	2 (1.1)	179 (98.8)	9 (5)	172 (95)	10 (5.5)	171 (94.5)	4 (2.2)	177 (97.8)	61 (33.7)	120 (66.3)
Divorced/ Separated	2 (5.9)	32 (94.1)	1 (2.9)	33 (97.1)	4 (11.8)	30 (88.2)	1 (2.9)	33 (97.1)	14 (41.2)	20 (58.8)
Single	13 (3.8)	325 (96.2)	13 (3.8)	325 (96.2)	28 (8.3)	310 (91.7)	15 (4.4)	323 (95.6)	126 (37.3)	212 (62.7)
Widowed	0 (0)	3 (100)	0 (0)	3 (100)	0 (0)	3 (100)	0 (0)	3 (100)	1 (33.3)	2 (66.7)
	p=0.176		p=0.890		p=0.457		p=0.466		p=0.817	
Education										
Technical/ auxiliary (CTA)	1 (0.9)	113 (99.1)	1 (0.9)	113 (99.1)	8 (7)	106 (93)	3 (2.6)	111 (94.4)	52 (45.6)	62 (54.4)
Specialism and post-technical (EPT)	3 (4.6)	62 (95.4)	3 (4.6)	62 (95.4)	1 (1.5)	64 (98.5)	1 (1.5)	64 (98.5)	30 (46.2)	35 (53.8)
Student (E)	2 (2)	99 (98)	5 (5)	96 (95)	12 (11.9)	89 (88.1)	3 (3)	98 (97)	31 (30.7)	70 (69.3)
Undergraduate (L)	10 (4.8)	199 (95.2)	12 (5.7)	197 (94.3)	20 (9.6)	189 (90.4)	10 (4.8)	199 (95.2)	72 (34.4)	137 (65.5)
Postgraduate(P)	1 (1.5)	66 (98.5)	2 (3)	65 (97)	1 (1.5)	66 (98.5)	3 (4.5)	64 (95.5)	17 (25.4)	50 (74.6)
	p=0.263		p=0.249		**p=0.028** **Post hoc: EPT vs E (p=0.015, OR=8.629); EPT vs L (p=0.033, OR=6.772)**; E vs P (p=0.014, OR=0.112); L. vs P (p=0.030, OR=0.143).		p=0.772		p=0.016 Post hoc: CTA vs E (p=0.025, OR=0.528); CTA vs L (p=0.049, OR=0.627); CTA vs P (p=0.007, OR=0.405); EPT vs E (p=0.044, OR=0.517); EPT vs P (p=0.013, OR=0.397).	
Work										
Hospital/ Clinic	13 (5.8)	213 (94.2)	15 (6.6)	211 (93.4)	21 (9.3)	205 (90.7)	11 (4.9)	215 (95.1)	102 (45.1)	124 (54.9)
Other	4 (1.4)	278 (98.6)	6 (2.1)	276 (97.9)	18 (6.4)	264 (93.6)	8 (2.8)	274 (97.2)	90 (31.9)	192 (68.1)

	p=0.007; OR=0.236		p=0.011; OR=0.306		p=0.221		p=0.231		p=0.002; OR=0.570	
Work sector										
Public	14 (4.7)	282 (95.3)	18 (6.1)	278 (93.9)	24 (8.1)	272 (91.9)	11 (3.7)	285 (96.3)	117 (39.5)	179 (60.5)
Private	1 (0.7)	137 (99.3)	2 (1.4)	136 (98.6)	10 (7.2)	128 (92.8)	6 (4.3)	132 (95.7)	61 (44.2)	77 (55.8)
	p=0.045; OR=0.147		p=0.032; OR=0.227		p=0.756		p=0.752		p=0.356	
Residence										
Northwest	1 (5.3)	18 (94.7)	1 (5.3)	18 (94.7)	1 (5.3)	18 (94.7)	0 (0)	19 (100)	7 (36.8)	12 (63.2)
Northeast	0 (0)	14 (100)	1 (7.1)	13 (92.9)	0 (0)	14 (100)	0 (0)	14 (100)	3 (21.4)	11 (78.6)
West	9 (2.5)	354 (97.5)	11 (3)	352 (97)	26 (7.2)	337 (92.8)	7 (1.9)	356 (98.1)	124 (34.2)	239 (65.8)
East	0 (0)	28 (100)	2 (7.1)	26 (92.9)	4 (14.3)	24 (85.7)	3 (10.7)	25 (89.3)	13 (46.4)	15 (53.6)
North Central	2 (5.6)	34 (94.4)	2 (5.6)	34 (94.4)	2 (5.6)	34 (94.4)	3 (8.3)	33 (91.7)	11 (30.6)	25 (69.4)
South Central	2 (3.4)	56 (96.6)	3 (5.2)	55 (94.8)	5 (8.6)	53 (91.4)	4 (6.9)	54 (93.1)	31 (53.4)	27 (46.6)
Southwest	2 (10)	18 (90)	2 (10)	18 (90)	2 (10)	18 (90)	2 (10)	18 (90)	6 (30)	14 (70)
Southeast	1 (5.6)	17 (94.4)	1 (5.6)	17 (94.4)	2 (11.1)	16 (88.9)	1 (5.6)	17 (94.4)	7 (38.9)	11 (61.1)
	p=0.265		p=0.274		p=0.751		**p=0.016 Post hoc: West vs East(p=0.028, OR=6.103)**		p=0.115	
Contact with COVID-19 patients										
Yes	11 (5)	207 (95)	17 (7.8)	201 (92.2)	22 (10.1)	196 (89.9)	14 (6.4)	204 (93.6)	101 (46.3)	117 (53.7)
No	6 (1.8)	332 (98.2)	6 (1.8)	332 (98.2)	20 (5.9)	318 (94.1)	6 (1.8)	332 (98.2)	101 (29.9)	237 (70.1)
	p=0.029; OR=0.34		**p≤0.001; OR=0.214**		p=0.069		p=0.004; OR=0.263		p≤0.001; OR=0.494	
Diagnosed with COVID-19										
Yes	1 (20)	4 (80)	1 (20)	4 (80)	0 (0)	5 (100)	1 (20)	4 (80)	5 (100)	0 (0)
No	16 (2.9)	535 (97.1)	22 (4)	529 (96)	509 (92.4)	42 (7.6)	19 (3.4)	532 (96.6)	197 (35.8)	354 (64.2)
	p=0.144		p=0.191		p=1.00		p=0.168		**p=0.006; OR=2.797**	

Age	26.65± 4.3	30.59± 9.6	30.09± 8.4	30.35± 9.6	28.07± 7.9	30.66± 9.7	29.45± 6.8	30.5± 9.7	28.74± 7.2	31.45± 10.6
	p=0.002		p=0.180		p=0.092		P=0.629		p≤0.001	

Note: n(%) = frequency (percent), M±DE= Median ± standard deviation, p= p value, OR= Odds Ratio, CTA= technician/auxiliary, EPT = post-technical specialist, E= Student, L= Undergraduate, P= Postgraduate.

In terms of the post-hoc analysis by education, students, and those with a degree in nursing were those who presented had a greater risk for the perception of violence and/or rejection by neighbours. For the perception of violence and/or rejection by strangers the at-risk-groups were those with a technical or auxiliary background, and nurses with a post-technical specialism. In terms of location and the perception of violence and rejection by patients and their family members, differences were found between the West and East, with the East having greater risk.

Discussion

Violence and discrimination towards health professionals is a sad reality that has become more acute since the COVID-19 pandemic began. Our aim in this study was to investigate the perception of aggression and rejection towards nursing staff due to the pandemic, finding that it was mainly from strangers, impacting mental health, mainly through symptoms of anxiety and insomnia. Nursing students, both technical and degree level, presented with a greater perception of rejection or aggression than those with a specialism or post-graduate degree. Younger people, those who were in the East of the country, public sector workers in clinics and hospital, those that had contact with COVID-19 patients, or had also been diagnosed were more sensitive to this type of violence.

Discrimination, stigmatisation, and/or violence that is externalised with health workers presents a new situation, with multiple challenges. Where preceding situations exist, New ones arise, connected to the historical moment that the world is going through, and forcing us to think of new approaches and strategies to reach the greatest number of people possibly sick with COVID-19. It has been shown that healthcare professionals, as part of their own work, are at high risk of contamination from COVID-19 (Senuzun Ergün & Karadakovan, 2005; Hernández-Hernández et al., 2023).

In Mexico, it is estimated that up to 20% of cases are health professionals. In this context, and accompanied with uncertainty and misinformation, there has been an increase in fear and violence towards these professionals. Therefore, the excessive workload due to the rise in infections in the population and the need for social isolation to avoid infecting family members are not the only stressors on these professionals. Rejection and social discrimination, even physical violence against healthcare workers has made them prone to physical exhaustion, fear, anxiety, depression, post-traumatic stress disorders, sleep problems, among other negative health impacts (Agredo, 2020; Bitencourt et al., 2021).

At the Nanfang Hospital in the Medical University of South China, researchers found a depression prevalence of 50.7%, anxiety 44.7%, insomnia 36.1%, and symptoms related with stress in 73.4% of a sample of doctors.

Considering that not all respondents work in clinical or hospital environments, nor had they perceived aggression or rejection, the percentages are not as high as those reported in the literature. However, filtering out only those who had perceived aggression, specifically by strangers, physical symptoms reach up to 55.3%, anxiety and insomnia 47.9%, social disfunction 33.3%, and depression 35.7%, evidencing the psychological impact that these acts generate among nurses.

Regardless of the function that the professional performs, be that doctor, nurse, technician, the lived experiences of discrimination in their daily lives are the same: on public transport, in supermarkets, and even in their places of residence they are victims of intense stigmatisation, that on various occasions has materialised as physical and verbal aggression. Cases of violence and discrimination of healthcare worker victims may be caused by the public's fear of contagion (Animal Politico, 2020).

Regrettably, this type of behaviour, are often not denounced, the rhetoric revolves around highlighting that there is a general acceptance that workplace violence exists and that it forms an intrinsic part of the work of professionals in the healthcare system, as mentioned previously. Unfortunately, the psychological consequences for health workers is a topic of great impact, at both the national and global levels, that generates traumas as the biopsychosocial level of the victim.

Violence at work is all those incidents in which personnel suffer abuse, threats, or attacks in the circumstances related to their work, that implicitly or explicitly puts security, wellbeing, or the worker's health at risk. The World Health Organization (WHO) reported that almost 25% of all the incidents of violence discussed here occur in the healthcare system. It is evident that there have always been aggressions that violate the rights of healthcare workers; a situation that has intensified in COVID-19 pandemic times; which is why in response, the UN made a statement calling for respect and condemnation of the situation (WHO, 2006).

Typically, the family is considered the principal source of social support. Unfortunately, intrafamily violence has increased globally due to the COVID-19 pandemic (International Labor Organization [ILO], 2002). In our study, only a small percentage of nurses reported having perceived rejection or discrimination by a family member, with significant differences in somatic symptoms. Some authors have argued that the family could perceive professionals as a health risk. We should consider that the mental health of the family is also affected, increasing the stress, fear, and exhaustion response (WHO, 2002).

In this sense, our findings show that those nurses that work in clinical or hospital environments, principally in the public sector, and that have been in contact with COVID-19 patients, perceive more aggression or rejection from their family. On the other hand, various studies have indicated that the mental health of younger or student participants has been more severely impacted (ILO, 1998). Additionally, teenagers and young adults have been considered a vulnerable group for acts of intrafamilial violence during the pandemic for COVID-19 (Estryn-Behar et al., 2008).

However, we did not find any study that indicated that younger health professionals or students in health are more likely targets of aggression or rejection than older participants, and much less that this type of acts are within the family or generated by some other specific sources. There is a gap in the research that needs to be explored. Based on our findings, strangers are the principal source of aggression and rejection perceived by nurses in Mexico, generating somatic anxiety-insomnia symptoms. In accordance with

other studies (United Nations, 2020), hospital workers are most affected, especially those who are in contact with COVID-19 patients or have been diagnosed (Farrel et al., 2005). Healthcare professionals may be a target of greater stigmatisation, and that mass enforced quarantine may cause mass hysteria, anxiety, and anguish, due to factors such as the sense of being trapped and the loss of control, intensified if there are financial losses, greater perception of risk, and of course disinformation (Jackson et al., 2002).

In the case of students, psychological impact linked to themes such as source of income, future employment, or their place of residence or compared against those that already have a job has been reported. We hypothesise that these hierarchical and economic disadvantages, such as uncertainty towards the future and lack of experience could make student nurses a target for discrimination and assault in Mexico, as many of them are economically dependent, travelling on public transport, and are subordinate or restricted in clinical areas. Again, this is a research and intervention gap during the pandemic (Kackin et al., 2020).

On the other hand, the nurses evaluated have also perceived discrimination or rejection from work colleagues, patients, and family members of patients. The variables that have been significant by relating them with this source of violence is that they work in the public sector, they work directly with COVID-19 patients, and we found differences by a residential area, being those that live in the East of the country the most affected in this respect (Kang et al., 2020).

It has been reported that some healthcare workers, not involved with COVID-19 patients, have been discriminatory towards providers of frontline medical staff and if they are, through behaviours such as talking negatively about them or disapproval of eating in the same cafeterias. They also reported that nurses who care for other colleagues during the pandemic may increase the anxiety of personnel in the hospital with respect to their competency and abilities, making them more vulnerable mentally. The fear of finding oneself in situations such as these, adding to the misinformation and the social panic that it has generated, could explain the discriminatory and rejection behaviours between colleagues (Labrague & De los Santos, 2020).

In the case of violence by patients and family members has been studied for several years pointing to patients and visitors as principal instigators. During the SARS pandemic, health professionals were more prone to stigmatisation, it was reported that 54% of nurses evaluated in their study affirmed that they had been exposed to non-physical violence, and 20% had been exposed to acts of physical violence in the workplace. Something similar was reported, where 12.8% of nurses in their sample experienced discrimination in the workplace, and 28.3% of nurses experienced harassment by patients or members of the public. Furthermore, it has been argued that healthcare workers may find it extremely difficult to treat alarmed, uncooperative, panicked, and stigmatised COVID-19 patients, possibly generating apathy and abstinence among healthcare professionals (Pappa et al., 2020).

This study did not find differences between the perception of discrimination and violence by sex or civil status, despite the UN (2020) having included a gender perspective on the prevention measures and security during the pandemic, or, both characteristics are a risk factor for psychological malaise.

Furthermore, it has been indicated that we should consider the economic burden due to the costs related with increased rotation, absenteeism, medical and psychological attention, low labour satisfaction, and a decrease in morale and the resulting quality of care that arises when nurses admit that they tend to avoid patients who have been or could be violent.

Conclusions

The COVID-19 pandemic has exacerbated violence towards and discrimination against health professionals.

The nurses evaluated have also perceived discrimination or rejection from colleagues, patients, and the family members of patients.

We corroborated an existing relationship between violence and perceived discrimination by workers in the public sector, who work directly with COVID-19 patients, or who live in East Mexico.

Nurses perceived some form of violence or discrimination from direct family, colleagues, neighbours, patients, or family members, but above all from strangers.

Based on the Goldberg General Health Survey, nurses expressed a greater number of somatic symptoms, reflected in an increase in anxiety, insomnia, social dysfunction, and depression.

There is a lack of programs oriented towards mental health for professionals and students in the field of health.

Implications for Nursing Management

Nursing students, technicians and graduates perceived more aggression than specialist nurses or those with a post-graduate qualification. Among our respondents, we found that younger nurses, who lived in the East of the country, worked in the public sector in clinical or hospital settings, and had contact with COVID-19 patients or had been diagnosed with the virus were more susceptive to this type of violence.

Strategies should be developed to improve the mental health of nurses and students in the field of health that are attending to COVID-19 patients; as well as managing, teaching, and support staff that work in public hospitals and clinics in Mexico, such as the Mexican Institute of Social Security as well as private hospitals and clinics.

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