

Emotional Symptomatology of Emergency Healthcare Personnel in a Health Institution in Medellín, Colombia: A Cross-Sectional Study

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Abstract

Introduction: Nowadays, Depression, Anxiety and Stress are common diseases at the occupational level. It is not common for health institutions to screen staff for emotional symptoms, which motivated us to delve deeper into this topic.

Objective: To determine the emotional symptoms (symptoms of anxiety, depression and/or stress) of healthcare personnel in the emergency area (general physicians, emergency physicians, head nurses and nursing assistants) in a health institution in the city of Medellín, 2023.

Material and methods: Observational, descriptive, cross-sectional study. 22 nursing assistants, 10 physicians, 10 professional nurses and 1 emergency physician from the emergency area of the health institution were surveyed. A validated DASS 21 survey was applied to determine the presence of Depression, Anxiety and Stress in health professionals.

Results: The surveyed personnel were 77% women and 23% men. The largest number of participants was between the ages of 22-29 years (53%), followed by the 30-45 age group (47%). There were more single participants (51.2%), followed by participants in free union (34.9%), married (9.3%) and divorced (4.7%). The frequencies found were depression at 30.2%, anxiety

and stress at 32.6%. The age group with the highest frequency of these emotional symptoms was that of less than or equal to 29 years. However, in the group of those over 29 years of age, extremely severe stress and anxiety were identified with a frequency of 1 participant.

Conclusions: of the three disorders, the one that occurred in the highest percentage was depression, followed by anxiety and stress. Higher percentages of depression and stress were observed in physicians. Nurses presented higher anxiety symptoms. The degree of depression, anxiety and stress that they presented the most was moderate, followed by mild.

Keywords: depression, anxiety, subjective stress, health personnel, mental health.

Introduction

The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being, and not merely the absence of disease (1). Within this framework, mental health is an essential component that encompasses the psychological, emotional, and social well-being of the individual, as well as the capacity to cope with everyday stress and adequately respond to the demands of their environment (2).

Globally, depression, anxiety, and stress are considered priority public health issues. According to the WHO, mental disorders are among the leading causes of disability and work absenteeism, with depression ranking as the primary cause of global disability (3,4). In the Americas region, mental, neurological, and substance use disorders, along with suicide, account for 34% of all years lived with disability (4). In Colombia, the National Mental Health Survey (2015) reported that between 10% and 12% of adolescents and adults present symptoms suggestive of mental illness (5). In Medellín, the 2019 Mental Health Study found that depression affects 4.3% of the population, with higher prevalence among women (6).

Healthcare personnel, particularly those working in emergency departments, are exposed to high levels of occupational stress, stemming from patient overload, pressure to make rapid decisions, constant exposure to human suffering, and structural factors such as understaffing or inadequate working conditions (7). This situation was further compounded by the impact of the COVID-19 pandemic, which not only increased care demands but also exacerbated psychosocial risk factors, significantly affecting the mental health of healthcare workers (8).

Evidence suggests that mental health disorders among healthcare personnel not only impact their individual well-being but also affect the quality of care, increase the risk of errors, absenteeism, and staff turnover (9). Despite this, it is uncommon for healthcare institutions to implement systematic screening or monitoring strategies to assess the emotional state of their workforce, leaving a gap in the preventive approach to this issue.

Therefore, the objective of the present study is to determine the emotional symptomatology—specifically symptoms of depression, anxiety, and stress—among healthcare personnel working in the emergency department of a health institution in Medellín during 2023.

Materials and Methods

Study design, type, and population

An observational, descriptive, cross-sectional study with a quantitative approach and primary data source was conducted. The objective was to identify, through the application of the DASS-21 screening scale, the presence of symptoms of depression, anxiety, and stress among healthcare personnel working in the emergency department.

The study was descriptive in nature, as it characterized the population according to sociodemographic, occupational, and emotional symptom variables. The study population consisted of 43 frontline healthcare professionals (general practitioners, emergency physicians, registered nurses, and nursing assistants) working in the emergency department of a health institution in Medellín, Colombia, during 2023. A census of the population was used; therefore, a sample size calculation was not required.

Variables

The main variables were emotional symptoms: depression, anxiety, and stress, measured with the DASS-21 scale. Secondary variables included sociodemographic characteristics (age, sex, marital status) and occupational characteristics (position and length of employment at the institution).

Data collection

Data were collected in person, after obtaining informed consent, in designated spaces within the institution. A structured questionnaire was administered, which included:

- 13 sociodemographic and occupational questions designed by the researchers.
- The abbreviated Depression, Anxiety, and Stress Scale (DASS-21), validated in Colombia (10), and widely used in Colombian popula-

tions.

The DASS-21 scale consists of 21 items distributed into three subscales (depression, anxiety, and stress), with four Likert-type response options ranging from 0 ("Did not apply to me at all") to 3 ("Applied to me most of the time"), assessing the frequency of symptoms during the past week. This instrument has demonstrated adequate psychometric properties: overall alpha coefficient of 0.96, and subscales for depression (0.93), anxiety (0.86), and stress (0.91) (11,12). It is a brief, self-administered tool, easy to interpret, and suitable for screening.

Statistical analysis

A univariate descriptive analysis was performed. Categorical variables (sex, marital status, occupation) were presented as absolute and relative frequencies (percentages). Quantitative variables (age and length of employment) were recategorized into dichotomous qualitative variables to facilitate descriptive analysis.

Measures of central tendency (mean or median), position (25th, 50th, and 75th percentiles), and dispersion (interquartile range or standard deviation) were calculated according to data distribution. The normality of quantitative variables was assessed using the Shapiro-Wilk test.

Ethical considerations

Participation in the study was voluntary, with all participants signing informed consent after receiving detailed information about the study's objectives, risks, and benefits. Confidentiality, anonymity, and the right to withdraw at any time were guaranteed.

The study was approved by the Institutional Ethics Committee for Human Research at Universidad CES, under Record No. 227, dated July 21, 2023. The study adhered to the ethical principles of the Declaration of Helsinki, as well as the principles of respect for persons, beneficence, non-maleficence, and justice.

Additionally, the process was supported by an external psychologist, who was present during survey administration to provide psychological first aid if required by any participant.

Results

Descriptive analysis of sociodemographic variables

Of the 43 healthcare professionals surveyed, 53.5% were aged 29 years or younger. The minimum age was 22 years and the maximum was 45 years. Half of the professionals had been working in the emergency department

for 24 months or more (IQR = 23.5 months). The minimum length of service was 6 months and the maximum was 151 months. The majority of respondents were female (76.7%), and most belonged to the lower-middle socioeconomic stratum. More than half of the participants reported residing in the municipality of Medellín (51.2%) (Table 1).

Table 1. Sociodemographic characteristics of healthcare professionals (N = 43)

	Variable	Absolute frequency	Relative frequency
Age	Less than or equal to 29	23	53,5 %
	Older than 29	20	46,5 %
Gender	Female	33	76.7 %
	Male	10	23.3 %
Socioeconomic stratum	Lower or equal to 3	31	72.1 %
	Higher to 3	12	27.9 %
Place of residence	Medellín	22	51.2 %
	Bello	8	18.6 %
	Itagüí	5	11.6 %
	Envigado	2	4.7 %
	Sabaneta	3	7.0 %
	Copacabana	1	2.3 %
	Amagá	1	2.3 %
	Barbosa	1	2.3 %
Marital status	Single	22	51.2 %
	Free union	15	34.9 %
	Married	4	9.3 %
	Divorced or separated	2	4.7 %

Descriptive analysis of emotional variables

According to the responses recorded on the DASS-21 scale, 69.8% of respondents did not present symptoms of depression, while 30.2% did report depressive symptomatology. Among these, 9.3% presented mild depression and 20.9% moderate depression (Table 2).

Regarding anxiety levels, among the 43 participants, more than half (67.4%) did not present symptoms, while 32.6% fell into one of the anxiety categories. Of these, 9.3% presented mild anxiety, 14% moderate anxiety, 7% severe anxiety, and 2.3% extremely severe anxiety (Table 2).

Table 2. Description of anxiety symptoms (by categories) among the surveyed healthcare professionals. N = 43

Interpretation of Anxiety	Absolute frequency	Relative frequency
Extremely Severe Anxiety	1	2,3%
Mild Anxiety	4	9,3%
Moderate Anxiety	6	14,0%
Severe Anxiety	3	7,0%
No Symptoms	29	67,4%

Regarding stress levels, 67.4% of participants did not present symptoms. Among the remainder, 9.3% presented mild stress, 18.6% moderate stress, 2.3% severe stress, and 2.3% extremely severe stress (Table 3).

Table 3. Description of stress symptoms (by categories) among the surveyed healthcare professionals. N = 43

Stress Interpretation	Absolute frequency	Relative frequency
Extremely severe stress	1	2.3%
Mild stress	4	9.3%
Moderate stress	8	18.6%
Severe stress	1	2.3%
No symptoms	29	67.4%

In relation to the specific questions of the DASS-21 scale on depression, anxiety, and stress, the following findings were observed: In question 1, which asks about difficulty in relieving tension, nearly 50% reported that it occurred to them a little or for part of the time. In question 5, which evaluates difficulty in taking initiative, approximately 45% responded that it occurred to them a little or for part of the time. In question 6, regarding exaggerated reactions to certain situations, 51.2% indicated that it occurred to them a little or for part of the time, while 16.3% reported that it occurred quite a bit or for a good part of the time. For question 8, which addresses the feeling of expending a large amount of energy, 55.8% responded that it occurred to them a little or for part of the time, and 25.6% that it occurred quite a bit or for a good part of the time. In question 12, which asks about difficulty relaxing, 51.2% stated that it occurred to them a little or for part of the time, and 16.3% that it occurred quite a bit. Finally, in question 13, about feeling sad or depressed, 51.2% indicated that it occurred to them a little or for part of the time (Table 4).

Table 4. Description of the 21 items of the DASS-21 screening scale for depressive, anxiety, and stress symptoms among the surveyed healthcare professionals. N = 43

Question	It hasn't happened to me	It has happened to me a little, or for part of the time	It has happened to me quite a bit, or for a good part of the time	It has happened to me a lot, or most of the time
1. It has been very difficult for me to release the tension	9 (20,9%)	20 (46,5%)	12 (27,9)	2 (4,7)
2. I realized that my mouth was dry	26 (60,5%)	8 (18,6%)	8 (18,6%)	1 (2,3%)
3. I couldn't feel any positive feelings	26 (60,5%)	12 (27,9)	5 (11,6%)	0 (0%)
4. I found it difficult to breathe	35 (81,4%)	7 (16,3%)	1 (2,3%)	0 (0%)
5. I found it difficult to take the initiative to do things	21 (48,8%)	19 (44,2%)	3 (7%)	0 (0%)
6. I overreacted in certain situations	14 (32,5%)	22 (51,2%)	7 (16,3%)	0 (0%)
7. I felt my hands shaking	30 (69,8%)	10 (23,2%)	3 (7%)	0 (0%)
8. I felt like I was wasting a lot of energy	4 (9,3%)	24 (55,8%)	11 (25,6%)	4 (9,3%)
9. I was worried about situations in which I might panic or make a fool of myself.	19 (44,2%)	18 (41,9%)	3 (7%)	3 (7%)
10. I felt like there was nothing that excited me.	25 (58,1%)	13 (30,2%)	5 (11,6%)	0 (0%)
11. I have felt restless	19 (44,2%)	15 (34,9%)	8 (18,6%)	1 (2,3%)
12. I found it difficult to relax	13 (30,2%)	22 (51,2%)	7 (16,3%)	1 (2,3%)
13. I felt sad and depressed	15 (34,9%)	22 (51,2%)	5 (11,6%)	1 (2,3%)
14. I did not tolerate anything that did not allow me to continue with what I was doing.	28 (65,1%)	13 (30,2%)	2 (4,7%)	0 (0%)
15. I felt like I was on the verge of panic.	35 (81,4%)	6 (14%)	1 (2,3%)	1 (2,3%)
16. I couldn't get excited about anything	30 (69,8%)	11 (25,6%)	2 (4,7%)	0 (0%)
17. I felt like I was worth very little as a person.	33 (76,7%)	7 (16,3%)	3 (7%)	0 (0%)

18. I tended to get angry easily.	14 (32,6%)	21 (48,8%)	6 (13,9%)	2 (4,7%)
19. I felt my heartbeat even though I hadn't made any physical effort.	33 (76,7%)	5 (11,6%)	5 (11,6%)	0 (0%)
20. I was scared for no reason	28 (65,1%)	13 (30,2%)	2 (4,7%)	0 (0%)
21. I felt like life had no meaning	36 (83,7%)	6 (13,9%)	1 (2,3%)	0 (0%)

Descriptive analysis of work-related variables

More than half of the respondents belonged to the group of nursing assistants, and only 7% were pursuing additional studies. A total of 60.5% worked more than 48 hours per week. Likewise, 60.5% of the emergency department staff had been working at the institution for two years or longer. Regarding the work environment, relationships with both the immediate supervisor and coworkers were rated as good by more than 60% of participants (Table 5).

Table 5. Work-related characteristics among the surveyed healthcare professionals. N = 43

	Variable	Absolute frequency	Relative frequency
PProfession	Auxiliar de enfermería	22	51.2 %
	Enfermero Profesional	10	23.3 %
	Médico General	10	23.3 %
	Urgentólogo	1	2.3 %
Currently studying	No	40	93.0 %
	Sí	3	7.0 %
Weekly hours worked at the institution	Más de 48 horas	26	60.5 %
	Entre 24 y 48 horas	17	39.5 %
Works at another institution	No	41	95.3 %
	Si	2	4.7 %
Monthly income	Entre uno (\$1.160.00 COP) y tres (\$3.480.000 COP) SMLV	22	51.2 %
	Más de 3 SMLV (> \$3.480.000 COP)	21	48.8 %
Time working in the emergency room (months)	Igual o por encima de 2 años	26	60,5 %
	Menos de 2 años	17	39,5 %
Relationship with coworker	Regular	2	4.7 %
	Buena	33	76.7 %
	Excelente	8	18.6 %
Relationship with immediate supervisor	Buena	28	65.1 %
	Excelente	15	34.9 %

Discussion

When evaluating the prevalence of depressive symptoms, a previous study reported higher prevalence in women—approximately 1.5 to 2 times greater than in men (13)—which aligns with the findings of the present research. However, in this study, among the 30.2% of participants who presented depressive symptoms, 16.3% were female and 13.9% male, showing a very similar prevalence between genders.

When comparing these results with another study that reported a 28% prevalence of depression, similarities with the current findings are observed. Nonetheless, in that study, symptom distribution was concentrated exclusively in the female population, with no depressive symptoms reported in men. This reinforces prior findings indicating a higher prevalence of depressive symptoms among women (14).

In this study, the majority of respondents (51.2%) were single, which is consistent with studies highlighting the relationship between demographic variables and mental health, noting that mental disorders are more prevalent among single individuals (4,15,16).

One of the most relevant findings is the similar prevalence of symptoms of depression, anxiety, and stress, each affecting approximately 30% of participants. However, greater severity was observed in anxiety and stress symptoms, with cases of severe and extremely severe levels, whereas depression reached only moderate levels.

Age-group analysis showed that participants aged 29 years or younger reported more frequent emotional symptoms compared to those older than 29. This finding is consistent with other studies reporting that individuals under 30 present higher levels of emotional symptoms (17,18). This trend is further supported by reports from international organizations, which indicate that people aged 15 to 29 are the most affected by symptoms of depression and other mental disorders (20–22).

When comparing these results with other studies on healthcare personnel, considerable variability is found in reported prevalence. In this study, depression symptoms were present in 30.2% of participants, anxiety in 32.6%, and stress also in 32.6%. These results are similar to a study that reported 33.3% anxiety, though with lower prevalence of depression (23.6%) (6,22). They are also comparable to another study where prevalence was 28% for both depression and stress, and 20% for anxiety (6,22).

Another study reported lower figures: depression in 21.5%, stress in

25.4%, and anxiety in 28.5%, results close to those found here (23). In research conducted in the post-pandemic context, 36% of respondents presented depressive symptoms, distributed as 10.5% mild, 16.3% moderate, 4.7% severe, and 4.7% extremely severe (24). Compared with the present study, where 30.2% reported depression (9.3% mild and 20.9% moderate), the population analyzed here did not report severe or extremely severe symptoms, unlike that study.

Regarding anxiety, 32.6% of participants presented some level of symptoms (9.3% mild, 14% moderate, 7% severe, and 2.3% extremely severe). These data are similar in prevalence to severe and extremely severe symptoms reported in prior studies, although they differ from another study where 23.2% presented higher levels of anxiety (24).

For stress, 32.6% of participants reported symptoms (9.3% mild, 18.6% moderate, 2.3% severe, and 2.3% extremely severe). An increase in both prevalence and severity of stress symptoms is observed compared to previous studies, consistent with the trend reported in the post-pandemic context.

Analysis by profession revealed that general practitioners or physicians were the most affected, not only presenting 20% more symptoms of depression and stress than nursing staff but also experiencing greater severity. In contrast, among professional nurses, 10% presented moderate symptoms and 30% mild symptoms, with no cases of severe or extremely severe anxiety reported. These findings are consistent with studies concluding that physicians exhibit a higher prevalence of psychiatric disorders compared with nurses, with depression being the most frequent in both groups but more common among physicians (24).

Similar results were reported in studies finding that 28% of their surveyed population presented symptoms of depression, 40% anxiety, and 40% stress. In those studies, depression and stress were more prevalent among physicians, while anxiety predominated among nurses, a pattern that coincides with the findings of this study (14).

Regarding work hours, symptoms of depression, anxiety, and stress were more frequent among those working more than 48 hours per week. This finding is consistent with studies and reports from international organizations that emphasize not only the physical effects of excessive workload but also its negative impact on workers' mental health (25,26).

Conclusions

The results of this study show a high prevalence of emotional symptoms among healthcare personnel working in emergency services, with depressive and stress-related symptoms predominating among physicians, and anxiety symptoms among nursing staff.

It was identified that workers with shorter tenure in the institution presented a higher frequency of stress symptoms, which could be related to the demands inherent in adapting to a new work environment, including adjustment to work teams, protocols, and institutional dynamics.

The findings suggest that nursing staff experience a significant level of emotional distress, which may increase over time if effective intervention and prevention strategies are not implemented. The presence of emotional symptoms, both evident and unrecognized, represents a risk to the worker's overall health, with potential repercussions in their family and community environments, as well as in the quality of patient care.

It is recommended to implement mental health screening, prevention, and intervention programs for healthcare personnel, incorporating technological tools, psychosocial care strategies, early intervention, and specialized follow-up. Furthermore, it is necessary to strengthen collaboration among healthcare institutions, government entities, professional associations, and mental health teams, in order to protect workers' emotional well-being and ensure quality and safety in emergency care services.

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