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## PSYCHO-EMOTIONAL ASPECTS IN MIDDLE-AGED PATIENTS HOSPITALIZED WITH HYPERTENSIVE EMERGENCIES

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This article investigates the causes of hypertensive emergencies, levels of depression, anxiety, and stress, as well as stress resilience among middle-aged patients. Among the most frequently reported triggers of hypertensive emergencies were workplace conflicts and overload, followed by serious illness of a close relative, financial difficulties, and family conflicts. In middle-aged patients hospitalized with hypertensive emergencies, anxiety symptoms predominated over depressive symptoms and general stress levels, with a low level of stress resilience also being observed. Marital status proved to be a significant factor influencing stress resilience: married patients exhibited higher levels of resilience compared to those who were divorced.

**Keywords:** *depression, anxiety, stress, hypertensive emergencies*

### ASPECTE PSIHO-EMOȚIONALE LA PACIENȚII DE VÂRSTĂ MEDIE SPITALIZAȚI CU URGENȚE HIPERTENSIVE

Prezentul studiu investighează cauzele urgențelor hipertensive, precum și nivelurile de depresie, anxietate, stres și reziliența la stres în rândul pacienților de vârstă medie. Dintre cauzele posibile ale urgențelor hipertensive au prevalat conflictele la locul de muncă, suprasolicitarea la locul de muncă, urmate de boala persoanei apropiate, probleme de ordin financiar și conflicte în familie. În rândul pacienților spitalizați cu urgențe hipertensive, s-a observat o predominanță a simptomatologiei anxioase în comparație cu depresia și stresul, concomitent cu un nivel redus al rezilienței la stres. Statutul familial a avut un impact semnificativ asupra rezilienței la stres, astfel pacienții căsătoriți au o reziliență mai înaltă la stres comparativ cu cei divorțați.

**Cuvinte cheie:** *depresie, anxietate, stres, urgențe hipertensive.*

### Introduction

Cardiovascular diseases have become a ”real scourge of society”, and hypertension occupies a central place in this context due to its widespread prevalence and the severe complications it causes. These aspects are also confirmed by data from the World Health Organization, which indicated that hypertension affected about 1.4 billion people between the ages of 30 and 79 globally in 2024, although only 320 million people had their blood pressure controlled. Often referred to as the ”silent killer”, hypertension poses a serious risk to public health worldwide [14].

According to the National Clinical Protocol ”Arterial Hypertension in Adults”, arterial hypertension is defined as ”persistent blood pressure equal to or greater than 140/90 mmHg at rest in adults measured in a doctor’s office” [8]. However, a hypertensive emergency is a serious medical condition in which blood pressure rises suddenly, reaching very high values, above 180-220 mmHg for systolic blood pressure and/

or above 120-130 mmHg for diastolic blood pressure. This increase can cause rapid deterioration of one or more vital organs. More important than the exact blood pressure value is the speed at which it rises, as a rapid increase can lead to severe complications [10].

One of the important clinical manifestations of hypertension is hypertensive emergencies, characterized by significant increases in blood pressure values, accompanied by a varied symptomatic picture. The most common symptoms include severe headache, nausea, vomiting, scotoma, photopsia, palpitations, chest pain, dyspnea, and, in some cases, loss of consciousness. These episodes often require emergency hospitalization of the patient [1]. Hypertensive emergencies are associated with a major risk of severe complications, such as acute pulmonary edema, acute coronary syndrome, or stroke. Such events significantly affect the individual's daily activities, reduce quality of life, and can lead to temporary incapacity for work [10].

In addition to medical causes (such as the presence of comorbidities or non-compliance with treatment), the literature highlights the role of psychosocial factors in triggering these episodes by stimulating the sympathetic nervous system [13]. Patients with hypertension frequently experience symptoms of anxiety and depression, which can negatively influence treatment adherence and self-care behaviors [5, 6]. Chronic stress and the perception of lack of control over one's own health contribute to the deterioration of both psychological and physical health, promoting a vicious cycle that accelerates disease progression [4, 11].

According to the National Clinical Protocol "Anxiety disorders", anxiety represents "subjective feelings (e.g., worry), physiological responses (e.g., tachycardia, hypercortisolemia), and behavioral responses (e.g., avoidance) and is characterized by a diffuse, unpleasant, vague feeling of fear or unease, accompanied by vegetative symptoms: headache, sweating, palpitations, tachycardia, gastric discomfort, etc. It therefore consists of two components, one physiological and the other psychological, with the individual being aware of the existence of both" [9].

Regarding depression, it generally involves "a wide range of mental health problems characterized by a lack of positive emotional background (loss of interest and pleasure in usual or previously enjoyable activities and experiences), low mood (sadness, grief) lasting at least two weeks (most episodes, however, last considerably longer) and a spectrum of associated emotional, cognitive, physical, and behavioral problems" [7]. A study conducted in the Republic of Moldova, investigated the psychopathological aspects of depression in the context of arterial hypertension. The authors analyzed the impact of external and biological factors on depression in hypertensive patients, finding that alcohol, smoking, and obesity are frequently associated with this condition. Heredity and personality traits, such as anankastic and impulsive tendencies, were also identified as significant influences [2].

At the same time, psychological resilience represents the ability, the process and result of managing personal and environmental resources in order to effectively and productively overcome change, difficulties, or adapt to a stressful situation. Analyzing the structure of this concept, first of all, resilience is a process, a personalized way of managing one's own resources and those of the environment, with the aim of constructively overcoming a situation of adversity. Resilience also represents a path of personal development which, in order to be effective, must be consciously assumed by the individual in a difficult situation. It is determined both by the individual's abilities and by their capacity to act in the context of a specific situation [3].

Studying hypertensive emergencies among middle-aged people (45–64 years old) is particularly relevant, given the social and psychological pressures specific to this stage of life. During this period, the level of responsibility is significant both in the family (caring for children, supporting elderly parents, sometimes grandchildren, managing the home and food), and professionally, where demands and expectations are often high. These multiple tasks can overlap with what the literature refers to as the "midlife crisis"—a concept introduced by Canadian psychoanalyst Elliott Jacques in 1965, following the observation of psychological changes (such as anxiety or depression) in patients who were aware of the limitations of their own abilities and aspirations [12]. In this context, a holistic approach to patients with hypertension, combining drug treatment with psychological support and psychosocial interventions, becomes essential. This integrative approach can help improve treatment compliance, reduce the risk of severe complications, and increase patients' quality of life.

**The aim of the study** was to identify the relationship between socio-demographic, etiological, and psycho-emotional factors in middle-aged patients hospitalized with hypertensive emergencies.

**The experimental objectives of the study were as follows:**

1. Identifying the etiological factors of hypertensive emergencies in middle-aged patients;
2. Determining the level of depression, anxiety, stress, and stress resilience in middle-aged patients hospitalized with hypertensive emergencies;
3. Identifying the relationship between depression, anxiety, stress, and stress resilience among these patients;
4. Assessing the relationship between psycho-emotional variables (depression, anxiety, stress, stress resilience) and socio-demographic factors such as gender, marital status, professional status, and duration of hypertension;
5. Determining the relationship between psycho-emotional variables and the identified causes of hypertensive emergencies in middle-aged patients.

**The specific hypotheses of the study were formulated as follows:**

1. We assume that middle-aged patients hospitalized with hypertensive emergencies will show high levels of depression, anxiety, and stress, correlated with low stress resilience.
2. We assume that there are statistically significant correlations between the levels of depression, anxiety, stress, and stress resilience in middle-aged patients hospitalized with hypertensive emergencies.
3. We assume that there are statistically significant correlations between psycho-emotional variables (depression, anxiety, stress, stress resilience) and socio-demographic factors (gender, marital status, professional status), the duration of hypertension, and the identified causes of hypertensive emergencies.

### **Material and methods**

The research sample included 50 hypertensive patients of middle age (45–64 years), hospitalized between February and September 2025 at the *Holy Trinity* Municipal Clinical Hospital, Chisinau. The average age was 55.6 years ( $\pm 4.6$  years). Most participants were women – 82% (41/50). In terms of marital status, 76% were married, 16% were divorced, and 8% were unmarried. In terms of employment, 86% were active in the labor market, and 14% were retired. The duration of hypertension ranged from 2 to 11 years, with a mean of 6.5 years ( $\pm 3.0$  years). Based on this, patients were distributed as follows: 1–5 years: 50%; 6–10 years: 46%; 10 years: 4%.

**The criteria for inclusion in the study were as follows:**

- age between 45 and 64 years;
- diagnosis of arterial hypertension established at least one year prior to current hospitalization;
- blood pressure values equal to or greater than 180/110 mmHg at the time of admission, accompanied by symptoms such as headache, nausea, vomiting, scotoma, photopsia, vertigo, palpitations, or cardialgia;
- informed consent of the subject for clinical examination, interview, and completion of questionnaires.

### **Research tools**

**Qualitative method.** To identify subjects' perceptions of the causes of hypertensive emergencies, the assessment questionnaire included an open-ended item: "What do you think was the cause of the hypertensive emergency for which you were hospitalized?" This approach was exploratory in nature, providing qualitative data on the etiological factors perceived by patients.

**Quantitative method.** The assessment of the psycho-emotional aspects associated with hypertensive emergencies was performed by applying two standardized psychometric instruments: The DASS-21 Scale (Depression Anxiety Stress Scales – Lovibond & Lovibond, 1995), used to measure levels of depression, anxiety, and stress; the Brief Resilience Scale (BRS; Smith et al., 2008), designed to assess the level of resilience to stress.

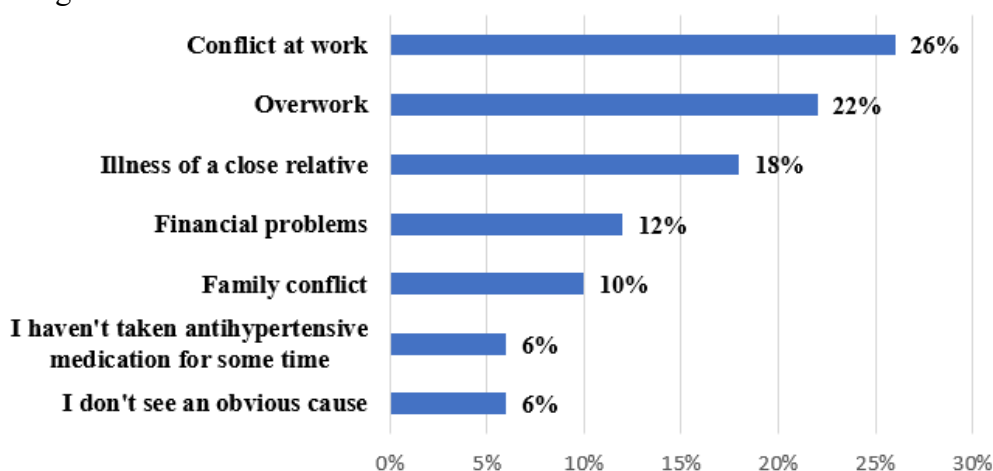
**Statistical methods.** Statistical analyses were performed using SPSS software (version 22). The t-test for independent samples was used to compare the means between two independent groups, and one-way analysis of variance (ANOVA) followed by the Bonferroni post-hoc test was used to compare the means between more than two groups. For variables that did not meet the assumption of normal distribution, nonparametric

tests were applied, namely the Kruskal–Wallis test. Correlations between quantitative variables were assessed using the Pearson correlation coefficient. The threshold for statistical significance was set at  $p < 0.05$ .

### Results and discussion

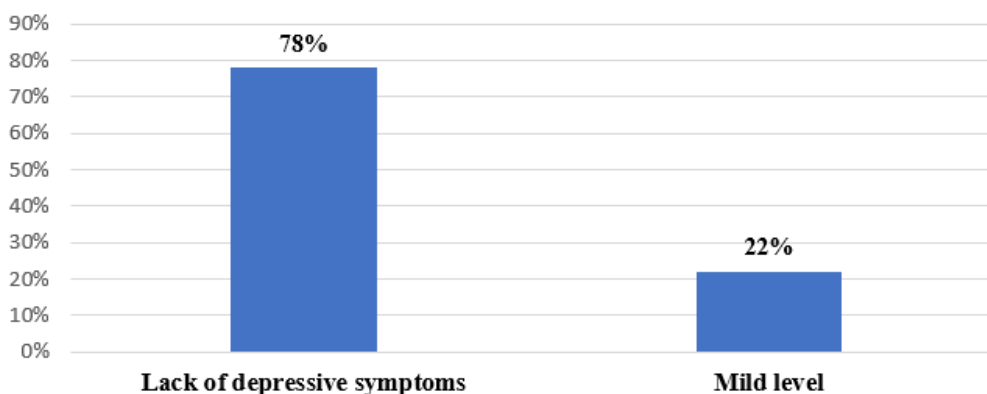
The first objective of the study was to identify the underlying causes of hypertensive emergencies, a challenge given the multifactorial nature of arterial hypertension. In this regard, we considered it relevant to highlight the subjects' perceptions of the triggers of these emergencies. The results indicate that the main factor identified was conflict at work, mentioned by 26% of participants (13 out of 50), closely followed by professional overload – 22% (11 out of 50) and the illness of a close person – 18% (9 out of 50). Family conflicts were indicated as a causal factor in only 10% of cases (5 out of 50).

In total, causes related to the professional environment (conflicts and overwork) were reported in almost half of the cases - 46% (Figure 1). These results can be explained by the fact that most subjects are professionally active, and a conflictual and stressful work environment can act as a significant trigger for the activation of the autonomic nervous system, causing acute increases in blood pressure and, implicitly, hypertensive emergencies.



**Figure 1. Causes of hypertensive emergencies as perceived by the subjects included in the study**

The second objective of the study was to assess levels of depression, anxiety, and stress using the DASS-21 scale (Lovibond & Lovibond, 1995) and levels of stress resilience using the BRS scale (Smith et al., 2008). The average depression score was 5.5 (SD = 3.2), with values ranging from 2 to 12 points. The classification of depression severity showed that 78% of participants ( $n = 39$ ) did not show depressive symptoms, while 22% ( $n = 11$ ) had a mild level of depression (Figure 2).



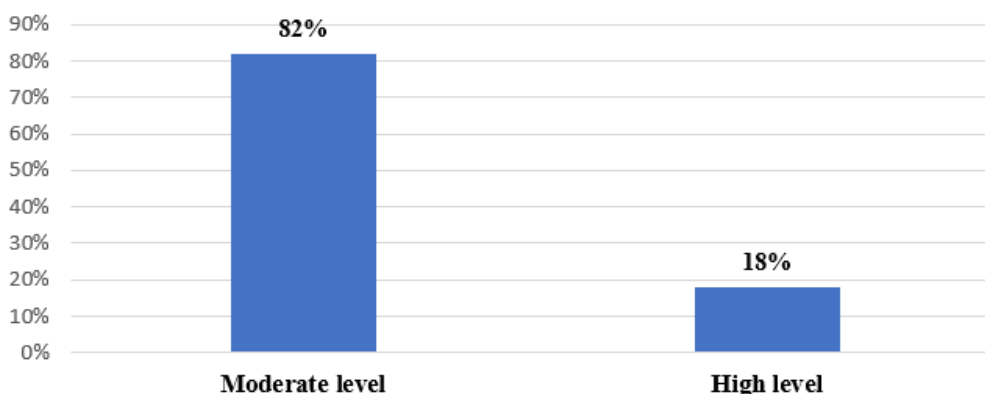
**Figure 2. Level of depression among the subjects included in the study**

One possible explanation for the absence of increased levels of depression among participants is the acute and unpredictable nature of hypertensive emergency, which predominantly causes anxiety rather than

depressive symptoms. Depression involves persistent affective impairment, characterized by social withdrawal, anhedonia, hopelessness, and decreased vital energy, symptoms that typically develop in chronic stress contexts or following repeated personal failures. In contrast, a hypertensive crisis triggers an alarm-type psychological reaction associated with acute fear for one's life, hypervigilance, and rapid activation of the autonomic nervous system, manifestations specific to anxiety rather than depression [4, 6]. Furthermore, it is possible that the patients evaluated did not have enough time to develop a complete depressive picture, given that prompt medical intervention and hospitalization can be perceived as supportive factors, thus reducing the feeling of helplessness characteristic of depression. Therefore, in the initial stage of dealing with an acute episode, the predominant emotions are those oriented toward survival and control, rather than those associated with resignation or affective demobilization.

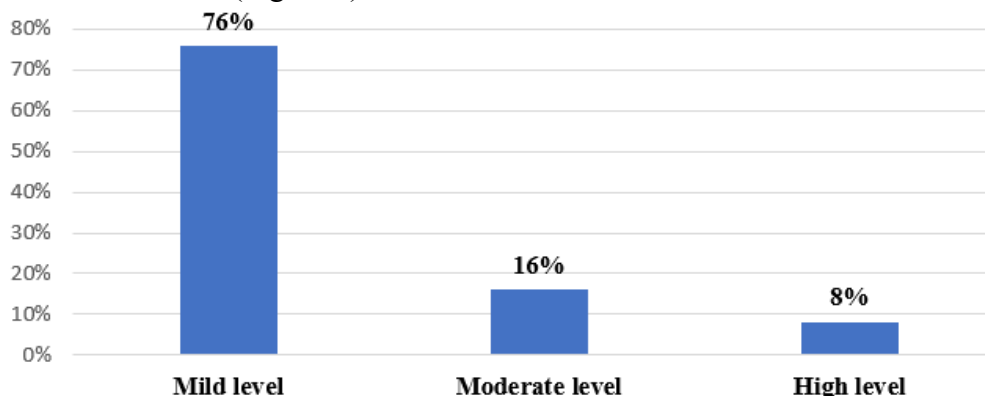
Our results contrast with those reported in the local study conducted by Caraușu Gh. and Sidorenko L., which showed a higher incidence of depression [2]. This difference can be explained by the fact that the subjects included in our study belonged to a middle-aged category, while the aforementioned study predominantly included elderly people. At the same time, our participants were hospitalized for hypertensive emergencies, a condition associated with hyperactivation of the sympathetic nervous system, whose mediation by the neurotransmitters norepinephrine and epinephrine favors the onset of anxiety symptoms rather than depressive ones.

This hypothesis is supported by the data obtained on the anxiety subscale of the DASS-21, where the mean score was 13.5 points ( $SD = 2.4$ ), with values ranging from 10 to 18 points. The classification of anxiety severity indicated that 82% of participants (41 out of 50) had moderate anxiety, and 18% (9 out of 50) had severe anxiety (Figure 3).



**Figure 3. Anxiety levels among the subjects included in the study**

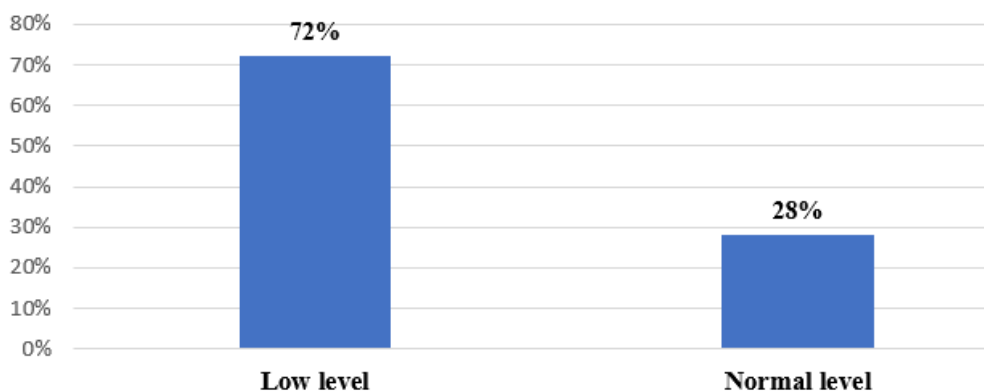
The evaluation of the scores obtained on the DASS-21 stress subscale showed an average of 17.6 points ( $SD = 4.2$ ), with values ranging from 10 to 28 points. In addition, analysis of the distribution of stress levels revealed that 76% of participants (38 out of 50) experienced mild stress, while 24% (12 out of 50) experienced moderate to severe stress (Figure 4).



**Figure 4. Stress levels among the subjects included in the study**



In terms of stress resilience among patients hospitalized with hypertensive emergencies, the average score on the BRS scale was 2.7 points (SD = 0.7), with values ranging from 1.5 to 4 points. Individual interpretation of the scores revealed that approximately two-thirds of participants, or 72% (36 out of 50), had low stress resilience (Figure 5).



**Figure 5. Level of stress resilience among the subjects included in the study**

In the continuation of the analysis, we set out to investigate the existence of correlations between depression, anxiety, stress, and stress resilience among middle-aged patients hospitalized with hypertensive emergencies. For this purpose, Pearson's correlation analysis was applied. The results showed the existence of moderate negative correlations between the following variables:

1. Depression (assessed by DASS-21) and stress resilience (assessed by BRS), with a statistically significant correlation coefficient  $r = -0.456$  ( $p = 0.026$ ,  $df = 50$ );
2. Anxiety (DASS-21) and stress resilience (BRS), with a correlation coefficient  $r = -0.531$ , statistically significant ( $p = 0.001$ ,  $df = 50$ );
3. Stress (DASS-21) and stress resilience (BRS), with a correlation coefficient  $r = -0.581$ , statistically significant ( $p = 0.002$ ,  $df = 50$ ).

These results indicate that as levels of depression, anxiety, or stress increase, levels of stress resilience tend to decrease significantly.

In the third hypothesis formulated in this study, we assumed the existence of statistically significant correlations between the psychological variables investigated: depression, anxiety, stress, stress resilience, socio-demographic and clinical factors such as gender, family status, professional status, duration of hypertension, and causes of hypertensive emergencies among middle-aged patients. To test this hypothesis, we compared the values obtained on the depression, anxiety, and stress subscales of the DASS-21, as well as the BRS scores, according to the gender of the participants (men versus women), using the t-test for independent samples. The results of the analysis did not indicate any statistically significant differences between the two groups, suggesting that gender did not significantly influence the levels of these psychological variables in the context of hypertensive emergencies.

Furthermore, the one-way analysis of variance (ANOVA) revealed a significant impact of marital status on the level of stress resilience (assessed using the BRS scale). Previously, Levene's test of homogeneity of variances indicated that for all variables analyzed, such as depression, anxiety, stress, and stress resilience, the p-value was greater than 0.05, confirming the homogeneity of the groups and allowing for a valid interpretation of the subsequent results. The application of the ANOVA test showed that only the stress resilience variable presented significant differences between groups, with an F coefficient = 3.752 and a significance threshold  $p = 0.038$ . Post-hoc analysis using the Bonferroni test revealed that significant differences were found exclusively between married and divorced subjects, with a mean difference of 0.9287 and a significance level of  $p = 0.041$ . These results suggest that marital status may influence the level of resilience to stress, with divorced individuals most likely to exhibit a lower level of psychological adaptation to stressful situations.

Determining the impact of professional status (employed vs. retired) on levels of depression, anxiety,

stress (assessed by DASS-21), and stress resilience (assessed by BRS), using the t-test for independent samples, did not reveal statistically significant differences between the two professional categories.

The influence of another independent variable, the duration of hypertension, structured into three subgroups, on the same psychological variables was also analyzed using the nonparametric Kruskal–Wallis test. The results did not indicate statistically significant differences, suggesting that the duration of hypertension did not influence levels of depression, anxiety, stress, or stress resilience in the sample analyzed. Similarly, research into the impact of the reported causes of hypertensive emergencies on the scores obtained on the DASS-21 and BRS, also using the Kruskal–Wallis test, did not reveal a statistically significant influence. These results suggest that the perception of the causes that generated the acute episode was not significantly associated with variations in the participants’ affective state or ability to adapt to stress.

Thus, the results of the research highlight the following significant aspects:

Hypothesis 1, that middle-aged patients hospitalized with hypertensive emergencies will show high levels of depression, anxiety, and stress, correlated with a low level of stress resilience, is partially confirmed, as we found a predominance of high levels of anxiety and low levels of stress resilience.

Hypothesis 2, that there are statistically significant correlations between the levels of depression, anxiety, stress, and stress resilience in middle-aged patients hospitalized with hypertensive emergencies, was confirmed. We found a statistically significant negative correlation between depression and stress resilience scores, between anxiety and stress resilience scores, and between stress and stress resilience scores, which means that decreased stress resilience contributes to increased depression, anxiety, and stress in hypertensive patients.

This finding indicates a predominantly anxious response to a situation perceived as threatening to physical integrity. Specifically, high anxiety signals a state of heightened psychophysiological alertness, reflecting the anticipation of imminent danger, a catastrophic interpretation of somatic symptoms, and an acute need for control over one’s own body. Low resilience scores indicate a deficient internal resource for emotional adaptation and regulation, which weakens the patient’s ability to respond flexibly and effectively to stress. In this context, anxiety becomes the dominant emotional mechanism mediating the relationship between perceived stress and the physiological manifestation of hypertensive emergency.

One possible explanation for the absence of increased levels of depression lies in the acute and unpredictable nature of the medical event, a hypertensive emergency, which predominantly triggers anxiety-type reactions rather than depressive symptoms. Depression involves a lasting emotional disturbance, marked by withdrawal, anhedonia, hopelessness, and decreased vital energy, aspects that usually develop in chronic stress contexts or following repeated personal failures. In contrast, a hypertensive crisis generates an alarm-type psychological reaction, associated with acute fear for one’s life, hypervigilance, and rapid activation of the autonomic nervous system, characteristics specific to anxiety and not depression. It is also possible that the patients evaluated did not have enough time to develop a complete depressive picture, given that rapid medical intervention and hospitalization can be perceived as forms of support that reduce the feeling of helplessness specific to depression. Thus, in the initial stage of dealing with an acute episode, the dominant emotions are those related to survival and control, not those of resignation or emotional demobilization.

Hypothesis 3, that there are statistically significant correlations between psycho-emotional variables (depression, anxiety, stress, stress resilience) and socio-demographic factors (gender, marital status, professional status), the duration of hypertension, and the identified causes of hypertensive emergencies is refuted, given that statistical correlation was confirmed only for family status; for the other independent variables (gender, professional status, duration of hypertension, causes of hypertensive emergencies), we did not establish statistical significance.

## Conclusions

The original contribution of the research lies in identifying the predominant causes of hypertensive emergencies as being psychosocial, particularly in the professional and family spheres. In this regard, the main causes of hypertensive emergencies were conflicts and overwork at the workplace, followed by

problems related to the illness of a close person, financial difficulties, and family conflicts. These indicate a significant influence of chronic or acute psychosocial stress factors, especially occupational and relational ones, which cause hyperactivation of the sympathetic nervous system and the hypothalamic-pituitary-adrenocortical axis, contributing to increased blood pressure.

In middle-aged patients hospitalized with hypertensive emergencies, anxiety was found to predominate over depression and stress, along with low stress resilience.

The negative correlations between resilience and DASS-21 scores indicate that a reduced capacity for emotional adaptation favors intense psycho-emotional reactions in critical situations. Anxiety appears as the dominant emotional response, reflecting a state of alertness and an accentuated need for control in the face of a perceived threat.

It was also found that family status significantly influences resilience: married patients showed higher levels of resilience compared to divorced patients. The lack of differences based on other variables (gender, profession, duration of illness) can be explained by the intensity of the emotional reaction in the acute crisis, which standardizes responses and reduces the influence of individual factors. This research has shown that hypertension is a multifactorial condition in which not only biological mechanisms but also psychological and contextual factors play an essential role. This confirms the hypothesis that hypertensive emergencies are not simple physiological episodes, but manifestations of a deeper imbalance between stress factors and the individual's self-regulation mechanisms.

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