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Exploring Vulnerability to Stress and Its Correlation with Bullying in the Nurse's Workplace

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Abstract: Background: Vulnerability to stress is associated with susceptibility to react to certain events, taking into account individual factors, beliefs, and available resources. Workplace bullying increases stress, absenteeism, and turnover among nurses, creating a toxic environment. This negatively impacts their well-being and compromises the quality of nursing care. As a result, patient safety and healthcare outcomes may be affected. Objectives: To assess the prevalence of vulnerability to stress in Portuguese nurses and its relationship with the experience of workplace bullying. Methodology: This study used a descriptive–correlational approach with a cross-sectional design. The data collection instrument used was a questionnaire consisting of a sociodemographic component and a scale assessing vulnerability to stress (QVS-23) and workplace bullying (NAQ-R). The total sample consisted of 2015 nurses working in healthcare institutions. Results: Nurses who perceived themselves as victims of workplace bullying were shown to be more vulnerable to stress, with a higher mean value for perfectionism and dramatization of existence, inhibition and functional dependence, lack of support and deprivation of affection, intolerance of frustration and rejection, and adverse living conditions. Conclusions: Organizations must create a healthy, respectful, and productive working environment by identifying the various factors that make them vulnerable to stress in the workplace. They must also act to prevent workplace bullying, thus protecting the health of nurses and promoting positive relationships and a harmonious work culture.

Keywords: vulnerability to stress; workplace bullying; nurses; correlational

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1. Introduction

Vulnerability to stress is related to susceptibility to react to a certain type of event, taking into account personal factors, beliefs, and resources. It is associated with the cognitive evaluation of the event and coping mechanisms. However, when coping mechanisms are not effective in overcoming difficulties, the perception of a lack of control over the same event increases [1]. Vulnerability is the result of a genetic or environmental context that favors the development of stress, and it consists of four components: biological, cognitive, emotional, and social [2]. Physical factors are related to genetic factors, which determine how we react to adverse events both in terms of speed of response and intensity [3].

The factors of vulnerability to stress related to the psychological component are a result of the person's perception of the event [4]. Stress vulnerability exists when there is

a perception of a lack of skills or resources to solve problems [3]. Personality influences how a person reacts to a stressful situation [5]. People who are considered vulnerable have low self-assertiveness, low frustration tolerance and inhibition, difficulty confronting and solving problems, excessive concern for events, marked emotionality, lack of affection and social support, and difficulty managing emotions when faced with an adverse situation [4].

As far as social factors are concerned, the lower the socio-economic status, the greater the risk of suffering sociopathological alterations, namely, the consumption of addictive substances, phobias, panic, and antisocial personality [4]. Vulnerability to stress varies greatly from person to person and is related to their tolerance, which results from social learning or relevant events experienced throughout their development [6]. In this sense, those who are less tolerant to stress have a higher risk of reacting negatively to a given event [7]. Nurses with less control, less psychological capital, or low compliance with social norms have been associated with a higher risk of experiencing harassment in the workplace [8], this phenomenon being characterized by repeated exposure to negative behavior, leaving workers with low self-esteem and no ability to defend themselves [9]; this is practiced by a hierarchical superior or co-worker against someone's physical and mental integrity, jeopardizing their job or disrupting the working environment [10].

Personality traits and different workplace conditions can be predictors of exposure to workplace bullying [5]. The victim's personality also plays an important and fundamental role in explaining harassment. Their actions can trigger negative behavior on the part of colleagues and bosses [11]. From this perspective, professionals who have certain characteristics or who are assessed as highly vulnerable may not conform to the expectations and norms of the institution and thus are targets of harassment [12]. However, there are few studies evaluating the relationship between stress vulnerability traits and the possibility of becoming a victim of workplace bullying [13].

Workplace bullying in nursing poses a serious threat to nurses' health and their ability to work safely. Nurses who experience bullying may suffer from reduced job satisfaction, increased absenteeism, depression, traumatic stress reactions, and other psychosomatic symptoms, all of which negatively impact their ability to provide safe and effective patient care. The implications of this issue extend beyond individuals, affecting healthcare organizations, the nursing profession, and patient outcomes [14].

The study of stress vulnerability and its relationship with workplace bullying is essential for nursing, as it helps to understand how psychological and social factors influence professionals' well-being and performance. Dimensions like perfectionism and dramatization of existence, inhibition and functional dependence, lack of personal support and deprivation of affection, intolerance of frustration and rejection, and adverse living conditions can make nurses more susceptible to stress and increase their risk of exposure to workplace bullying. Understanding this relationship is crucial for developing prevention and intervention strategies, fostering a safer and healthier work environment. Recognizing stress vulnerability as a risk factor for bullying enables the creation of institutional policies that promote emotional support, resilience building, and a more humanized organizational culture. Investing in this knowledge not only protects nurses' mental health but also enhances the quality of care provided to patients.

With this in mind, this research study was developed with the aim of assessing the prevalence of vulnerability to stress among nurses working in healthcare institutions in Portugal and its relationship with workplace bullying.

2. Materials and Methods

2.1. Research Design

This study takes a quantitative, descriptive, correlational, and cross-sectional approach. Data were collected using a digital questionnaire sent to all nurses working in healthcare institutions in Portugal and registered with the Portuguese Nursing Association. The questionnaire covered sociodemographic and professional aspects and assessed the dimensions of vulnerability to stress and workplace bullying. It should be emphasized that this study is part of a wider investigation into a related phenomenon.

2.2. Instruments

Vulnerability to stress in the workplace was assessed using the 23-item "Questions for assessing vulnerability to stress" scale (QVS-23) [15]. As its name suggests, this scale makes it possible to assess vulnerability to stress, relating it to the development of psychopathology. It is a Likert-type scale with 5 possible answers ranging from 0 to 4, i.e., the answer varies from "strongly disagree" to "strongly agree".

The overall index of the QVS-23 scale can vary between 0 and 92, with a score of 43 being considered the cut-off point [15]. Thus, individuals with a score equal to or higher than this value are considered vulnerable to stress. To obtain the overall index, the negative aspects with the highest value are taken into account, taking into account the 5 response possibilities, i.e., the values from 0 to 4 on the Likert scale.

The NAQ-R scale by Einarsen et al. [16] makes it possible to assess nurses' perceptions of the occurrence of bullying behavior in the workplace. It consists of 22 items, with response options like "never", "sometimes", "monthly", "weekly", and "daily". In addition, three criteria are applied to assess the prevalence of bullying at work. The first criterion involves a positive response, with intensity of 4 ("weekly") or 5 ("daily"), to at least 1 of the 22 items on the scale, referring to events that occurred in the last six months. The second criterion helps identify potential victims of workplace bullying when item 23 is answered with intensity of 3 ("yes, occasionally"), 4 ("yes, several times a week"), or 5 ("yes, daily"), also considering situations that have occurred in the last six months. Finally, the third criterion consists of a positive response to both the first and second criteria.

Authorization was sought from the authors of the scales used, and they gave a positive opinion.

2.3. Procedure

In order to assess the objectivity and clarity of the questionnaire, a preliminary study was carried out on 30 nurses, which allowed us to analyze and identify aspects that needed to be changed in order to improve the questionnaire. Subsequently, a final questionnaire was developed in digital format using Google Docs, and the collaboration of the Order of Nurses (OE) was requested to publicize it in the newsletter sent by email to all OE registered nurses.

The study was duly registered with Portugal's National Data Protection Commission (CNPD), which issued a resolution (resolution no. 931) confirming that no personal data were being processed. With regard to the ethical dimension, the Ethics Committee of the Nursing School of Coimbra issued an opinion (P435-06) stating that the study met the necessary ethical requirements.

After collecting the questionnaires, the statistical data were analyzed using Statistical Package for the Social Sciences (SPSS) software, version 24.

2.4. Population and Sample

The questionnaire, written in digital format, was aimed at all nurses working in health institutions in Portugal. The sample was made up of 2015 nurses, 56.28% of whom worked as general care nurses, 7.90% of whom worked in management roles, and 14.69% of whom worked as specialist nurses. Most of the nurses who took part in the study were female (82.68%). The average age of the participants ranged from 21 to 72 years, with the mean age being 38.51 years (SD = 9.22).

With regard to marital status, around half of the nurses who took part in the study were married (47.99%) and parents (58.66%).

With regard to academic qualifications, 99.40% of the nurses had a degree, and 30.02% were specialists in the field of nursing.

The largest percentage of the study subjects worked in hospitals (70.17%) and in primary healthcare (19.75%). The nature of the institution in which they worked was predominantly in Public Business Entities (58.31%) and public institutions (25.21%).

The nurses in the sample had an average of 12.10 years (SD = 8.85) in the profession and 7.59 years (SD = 6.78) in their current service.

In terms of workload, the average was 39.62 h per week (standard deviation = 7.95), and 62.03% worked shifts. The majority of nurses had a stable employment relationship (92.75%), with an individual open-ended employment contract with a public service contract.

3. Results

3.1. Validation of the Instruments

When applying the QVS-23 scale, the KMO value obtained was 0.921, considered excellent. As for Barlett's test of sphericity, it showed a value of χ^2 (253) = 15,541.230 and statistical significance (p = 0.000), thus confirming the existence of a significant correlation between the variables. An exploratory factor analysis was carried out on the QVS-23, and five factors were obtained with eigenvalues greater than one. The five factors obtained explained 55.44% of the total variance. With regard to the factors obtained, the alpha value was good for perfectionism and dramatization of existence (0.809) and adverse living conditions (0.823); reasonable for inhibition and functional dependence (0.785) and lack of social support and deprivation of affection (0.748); and weak for intolerance of frustration and rejection (0.653).

With regard to the NAQ-R scale, the legitimacy of applying factor analysis was assessed using the KMO measure of adequacy. The value obtained was 0.963, which is considered excellent. Bartlett's test showed a value of χ^2 (231) = 27,530.009 and statistical significance ($p < 0.001$). Subsequently, an exploratory factor analysis was carried out on the NAQ-R scale, in which three factors were obtained with an eigenvalue greater than one (Kaiser criterion), the same number obtained by Araújo [17]. However, this analysis did not reproduce the results obtained by Araújo [17], as the items in the scale were grouped differently at the factor level. The three factors obtained with an eigenvalue greater than one explained 61.63% of the total variance.

3.2. Correlation Between NAQ-R and QVS-23

In order to assess the correlation between the factors of the NAQ-R scale and the QVS-23, Pearson's correlation coefficient was analyzed, which revealed the presence of a significant correlation in all dimensions. This relationship can be seen in the following table (Table 1).

Table 1. Correlations between NAQ-R and QVS-23.

	Person-Related Bullying	Work-Related Bullying	Physically Intimidating Bullying	NAQ-R Total
Perfectionism and dramatization of existence	0.197 ***	0.198 ***	0.070 **	0.207 ***
Inhibition and functional dependence	0.145 ***	0.112 ***	0.028	0.141 ***
Lack of social support and deprivation of affection	0.300 ***	0.205 ***	0.143 ***	0.289 ***
Intolerance of frustration and rejection	0.129 ***	0.104 ***	0.052 *	0.129 ***
Adverse living conditions	0.136 ***	0.175 ***	0.086 ***	0.158 ***
QVS-23 total	0.245 ***	0.215 ***	0.098 ***	0.250 ***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

With regard to the factors of the NAQ-R scale, it was found that they were positively associated with the perfectionism and dramatization of existence dimension of the QVS-23 scale. The coefficient of this correlation proved to be very weak for the factors person-related bullying ($r = 0.197$), work-related bullying ($r = 0.198$), and physically intimidating bullying ($r = 0.070$). With regard to the total NAQ-R scale, the correlation coefficient was weak ($r = 0.207$) (Table 1).

The second factor of the QVS-23 scale, called inhibition and functional dependence, was also significantly correlated with the NAQ-R dimensions of person-related bullying ($r = 0.145$), work-related bullying ($r = 0.112$), and total NAQ-R ($r = 0.141$), with the correlation coefficient being very weak for all factors (Table 1).

The lack of social support and deprivation of affection factor of the QVS-23 scale showed a positive and statistically significant correlation with all of the dimensions of the NAQ-R scale. The correlation coefficient was weak in relation to the dimensions person-related bullying ($r = 0.300$), work-related bullying ($r = 0.205$), and total NAQ-R ($r = 0.289$) and very weak for physically intimidating bullying ($r = 0.143$) (Table 1).

Intolerance of frustration and rejection, the fourth factor of the QVS-23 scale, showed a statistically significant correlation, with the correlation coefficient being positive and very weak for all dimensions, namely person-related bullying ($r = 0.129$), work-related bullying ($r = 0.104$), physically intimidating bullying ($r = 0.052$), and the total NAQ-R ($r = 0.129$) (Table 1).

The last factor of the QVS-23 scale, called adverse living conditions, proved to be significantly correlated with all of the factors of the NAQ-R, with a positive and very weak correlation coefficient for person-related bullying ($r = 0.136$), work-related bullying ($r = 0.175$), physically intimidating bullying ($r = 0.086$), and the total NAQ-R ($r = 0.158$) (Table 1).

3.3. Vulnerability to Stress

The author Vaz-Serra established a cut-off point for the QVS-23 scale, which was taken into account in this study. A score higher than 43 on the overall scale indicated that the subjects under study were vulnerable to stress. The operationalization of this criterion, defined by the author, showed that 15.88% of the nurses were vulnerable to stress [15].

Items 1, 3, 4, 6, 7, 8, and 20 were reversed in the study of the QVS-23 scale in order to provide a better interpretation of the results [15]. The average of the items assessing vulnerability to stress was between 0.66 and 2.33, and the standard deviation values ranged from 0.88 to 1.23.

The descriptive analysis of the factors that make up the QVS-23 scale showed that the "perfectionism and dramatization of existence" factor (mean = 1.83) had the highest mean value of agreement, and the "inhibition and functional dependence" factor had the lowest value (mean = 0.97) (Table 2).

Table 2. Minimum, maximum, mean, and standard deviation of QVS-23 factors.

	Min.	Max.	Mean	SD
Perfectionism and dramatization of existence	0.00	4.00	1.83	0.79
Inhibition and functional dependence	0.00	3.33	0.97	0.69
Lack of social support and deprivation of affection	0.00	4.00	0.99	0.78
Intolerance of frustration and rejection	0.00	4.00	1.17	0.79
Adverse living conditions	0.00	4.00	1.17	1.11
QVS-23 total	0.00	3.65	1.29	0.60

Note. Min = minimum; Max = maximum; SD = standard deviation.

3.4. Vulnerability to Stress and Sociodemographic and Professional Variables

In the case of the QVS-23 scale, when the mean values were compared using the multivariate Manova test, it was found that there were statistically significant differences in at least one of the factors that make up the scale (Table 2), taking into account the nurses' gender (Pillai trait = 0.031, F (6, 2008) = 10.560, $p = 0.001$), marital status (Wilks Lambda = 0.992, F (6, 2008) = 2.700, $p = 0.013$), qualifications (Pillai = 0.010, F (6, 1996) = 3.407, $p = 0.002$), having a specialist degree (Pillai = 0.011, F (6, 2008) = 3.555, $p = 0.002$), having children (Wilks Lambda = 0.976, F (6, 2008) = 8.273, $p = 0.001$), whether or not the position held by the nurses was managerial (Pillai trait = 0.011, F (6, 2001) = 3.735, $p = 0.001$), the type of institution (CPE—corporate public entities, PPP—public–private, public or private) (Pillai trait = 0.017, F (18, 5901) = 1.848, $p = 0.016$), the type of working hours (Wilks Lambda = 0.984, F (6, 2008) = 5.528, $p = 0.001$), and the nature of the employment relationship (stable or precarious) (Pillai = 0.009, F (6, 1999) = 3.140, $p = 0.005$).

Women had a significantly higher mean value for perfectionism and dramatization of existence, $p = 0.001$, than men (1.85 vs. 1.68) (Table 3). On the other hand, with regard to lack of social support and deprivation of affection ($p = 0.001$), men reported a statistically significant higher mean value than women (1.13 vs. 0.96) (Table 3).

With regard to the factors inhibition and functional dependence ($p = 0.003$) and intolerance of frustration and rejection ($p = 0.033$), it was found that unmarried nurses had a significantly higher mean value than married nurses (1.03 vs. 0.94 and 1.22 vs. 1.14, respectively) (Table 3).

On the other hand, nurses with a bachelor's degree had a significantly higher mean value for the QVS-23 scale factor inhibition and functional dependence ($p = 0.001$) than those with a master's degree (1.00 vs. 0.87) (Table 3).

Perfectionism and dramatization of existence ($p = 0.032$), inhibition and functional dependence ($p = 0.001$), intolerance of frustration and rejection ($p = 0.015$), and adverse living conditions ($p = 0.036$) showed a significantly higher mean value in nurses who did not have a specialist degree (1.85 vs. 1.77, 1.01 vs. 0.88, 1.20 vs. 1.10, 1.21 vs. 1.09) compared to nurses who had this professional degree.

Perfectionism and dramatization of existence ($p = 0.001$), inhibition and functional dependence ($p = 0.001$) and intolerance of frustration ($p = 0.001$) had a higher mean value in nurses who did not have children compared to those who were parents (1.91 vs. 1.77, 1.07 vs. 0.90, 1.25 vs. 1.11).

With regard to the factors that make up the QVS-23 scale, perfectionism and dramatization of existence ($p = 0.037$), inhibition and functional dependence ($p = 0.001$), and intolerance of frustration and rejection ($p = 0.015$) showed a higher average value in nurses who did not hold a managerial position compared to nurses who did hold a managerial position (1.84 vs. 1.67, 0.99 vs. 0.69, 1.18 vs. 0.98).

Table 3. Significance of the differences in the factors of the QVS-23 according to the sociodemographic and professional variables.

		Perfectionism and Dramatization of Existence	Inhibition and Functional Dependence	Lack of Social Support and Deprivation of Affection	Intolerance of Frustration and Rejection	Adverse Living Conditions
Gender	Male	1.68 (0.76)	0.95 (0.71)	1.13 (0.79)	1.14 (0.78)	1.27 (1.15)
	Female	1.85 (0.79)	0.98 (0.68)	0.96 (0.77)	1.18 (0.79)	1.15 (1.10)
	Sig.	0.001 ***	0.480	0.001 ***	0.462	0.059
Marital status	Not married	1.85 (0.80)	1.03 (0.71)	1.00 (0.80)	1.22 (0.79)	1.21 (1.12)
	Married	1.81 (0.78)	0.94 (0.67)	0.99 (0.77)	1.14 (0.78)	1.15 (1.11)
	Sig.	0.231	0.003 **	0.900	0.033 *	0.177
Qualifications	Bachelor's	1.85 (0.79)	1.00 (0.69)	0.99 (0.77)	1.19 (0.78)	1.17 (1.10)
	Master's	1.76 (0.79)	0.87 (0.67)	0.99 (0.78)	1.11 (0.81)	1.18 (1.14)
	Sig.	0.053	0.001 ***	0.964	0.053	0.786
Specialist degree	Yes	1.77 (0.80)	0.88 (0.66)	0.96 (0.78)	1.10 (0.80)	1.09 (1.13)
	No	1.85 (0.79)	1.01 (0.70)	1.01 (0.77)	1.20 (0.78)	1.21 (1.11)
	Sig.	0.032 *	0.001 ***	0.176	0.015 *	0.036 *
Children	Yes	1.77 (0.79)	0.90 (0.66)	0.98 (0.76)	1.11 (0.78)	1.21 (1.13)
	No	1.91 (0.79)	1.07 (0.72)	1.01 (0.81)	1.25 (0.79)	1.12 (1.08)
	Sig.	0.001 ***	0.001 ***	0.418	0.001 ***	0.083
Management position	Yes	1.67 (0.73)	0.69 (0.52)	0.93 (0.77)	0.98 (0.64)	1.01 (1.03)
	No	1.84 (0.79)	0.99 (0.69)	1.00 (0.78)	1.18 (0.79)	1.18 (1.12)
	Sig.	0.037 *	0.001 ***	0.417	0.015 *	0.135
Type of institution	CPE	1.84 (0.77)	0.97 (0.68)	1.01 (0.76)	1.21 (0.78)	1.16 (1.09)
	PPP	1.86 (0.91)	0.98 (0.71)	1.03 (0.82)	1.05 (0.77)	1.24 (1.15)
	Public	1.75 (0.81)	0.93 (0.69)	0.97 (0.81)	1.09 (0.79)	1.19 (1.16)
	Private	1.93 (0.78)	1.06 (0.72)	0.95 (0.78)	1.23 (0.79)	1.13 (1.10)
	Sig.	0.051	0.153	0.601	0.012 *	0.812
Type of working hours	Fixed	1.79 (0.79)	0.92 (0.66)	1.04 (0.82)	1.14 (0.79)	1.25 (1.16)
	Shift	1.85 (0.79)	1.00 (0.70)	0.97 (0.75)	1.19 (0.79)	1.12 (1.09)
	Sig.	0.103	0.006 **	0.055	0.139	0.008 **
Employment relationship	Stable	1.82 (0.79)	0.96 (0.68)	0.99 (0.78)	1.17 (0.79)	1.18 (1.12)
	Precarious	1.96 (0.79)	1.16 (0.76)	1.01 (0.78)	1.22 (0.74)	1.11 (1.03)
	Sig.	0.041 *	0.001 ***	0.808	0.408	0.513

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

The only factor on the QVS-23 scale that showed statistically significant differences (p = 0.012), taking into account the type of institution, was intolerance of frustration and rejection. When the paired comparison test was applied, CPE institutions showed a significantly higher mean value (p = 0.034) than public institutions (1.21 vs. 1.09) (Table 3).

With regard to inhibition and functional dependence (p = 0.006), nurses who worked shift work had a significantly higher mean value than nurses with fixed hours (1.00 vs. 0.92). On the other hand, nurses working fixed hours had a higher mean score for adverse living conditions (p = 0.008) than nurses working shifts (1.25 vs. 1.12) (Table 3).

Nurses with insecure employment had a higher mean score for perfectionism and dramatization of existence (p = 0.041) and for inhibition and functional dependence (p = 0.001) than nurses with stable employment (1.96 vs. 1.82, 1.16 vs. 0.96) (Table 3).

Subsequently, Pearson's correlation was used to analyze the relationship between age, number of weekly working hours, length of service in the profession, and length of service at the current unit, taking into account vulnerability to stress. The results obtained are described in the following table (Table 4).

Regarding the number of weekly working hours, there was no statistically significant correlation with the factors on the QVS-23 scale.

Table 4. Pearson's correlation coefficient between age and QVS-23 factors.

	Age	Number of Weekly Working Hours	Length of Service in the Profession	Length of Service at the Current Unit
Perfectionism and dramatization of existence	−0.097 ***	0.029	−0.085 ***	−0.048 *
Inhibition and functional dependence	−0.147 ***	−0.006	−0.126 ***	−0.071 ***
Lack of social support and deprivation of affection	0.064 **	0.026	0.032	0.009
Intolerance of frustration and rejection	−0.088 ***	0.033	−0.060 **	−0.023
Adverse living conditions	0.066 **	0.006	0.039	0.012
QVS-23 total	−0.072 ***	0.024	−0.069 **	−0.041

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

The factors perfectionism and dramatization of existence, inhibition and functional dependence, and intolerance of frustration and rejection showed statistically significant correlations with length of service in the profession (Table 4).

Only the factors perfectionism and dramatization of existence and inhibition and functional dependence showed a statistically significant correlation with length of service at the current unit (Table 4).

With regard to the factors that make up the QVS-23 scale, all of them were found to be significantly correlated with age. Thus, perfectionism and dramatization of existence ($r = -0.097$), inhibition and functional dependence ($r = -0.147$), and intolerance of frustration and rejection ($r = -0.088$) showed a negative and very weak correlation coefficient. On the other hand, for the factors lack of social support and deprivation of affection ($r = 0.064$) and adverse living conditions ($r = 0.066$), the correlation coefficient was positive and very weak (Table 4) when taking age as a reference.

Perfectionism and dramatization of existence ($r = -0.085$), inhibition and functional dependence ($r = -0.126$), and intolerance of frustration and rejection ($r = -0.060$) were significantly correlated with length of service in the profession, with the coefficient being very weak and negative (Table 4).

There was also a statistically significant correlation between the factors perfectionism and dramatization of existence ($r = -0.048$) and inhibition and functional dependence ($r = -0.071$) and length of service at the current unit. The correlation coefficient was negative and very weak (Table 4).

3.5. The Relationship Between Vulnerability to Stress and Workplace Bullying

Taking into account the first criterion for diagnosing workplace bullying, it was found that there was a significant difference between the two groups of nurses: those who were vulnerable to stress and those who were not (χ (1) = 28.283, $p = 0.001$). The proportion of nurses who, according to this criterion, suffered workplace bullying and were vulnerable to stress was 60.00%, while the proportion of nurses who were not vulnerable to stress was 43.83% (Table 5).

With regard to the second criterion for identifying workplace bullying, there was also a statistically significant difference between nurses who were vulnerable to stress and those who were not (χ (1) = 13.750, $p = 0.001$). Taking into account the second criterion for assessing workplace bullying, it was found that the number of nurses who suffered workplace bullying and were vulnerable to stress was 37.50% and the number of nurses who suffered workplace bullying but were not vulnerable to stress was 27.26% (Table 5).

Finally, with regard to the third criterion for assessing workplace bullying, as with the previous criteria, there was a statistically significant difference between nurses who were vulnerable to stress and those who were not (χ (1) = 8.429, $p = 0.004$). It was found that the percentage of nurses who suffered workplace bullying and were vulnerable to stress was

higher (28.75%) than the percentage of nurses who suffered workplace bullying and were not vulnerable to stress (21.36%) (Table 5).

Table 5. Frequency distribution of first, second, and third criteria for identifying workplace bullying and vulnerability to stress.

Workplace Bullying		Vulnerability to Stress		
		No (n = 1961) %	Yes (n = 54) %	
First criterion evaluation (n = 935)	Yes	43.83	60.00	χ^2 (1) = 28.283, p = 0.001
	No	56.17	40.00	
Second criterion evaluation (n = 582)	Yes	27.26	37.50	χ^2 (1) = 13.750, p = 0.001
	No	72.74	62.50	
Third criterion evaluation (n = 454)	Yes	21.36	28.75	χ^2 (1) = 8.429, p = 0.004
	No	78.64	71.25	

Later, when comparing the mean values of the QVS-23 scale using the multivariate Manova test, it was found that there were statistically significant differences in at least one of the factors that made up the scale, taking into account the criteria for assessing workplace bullying: the first criterion (Wilks Lambda = 0.949, F (6, 2008) = 17.955, p = 0.001), the second (Wilks Lambda = 0.969, F (6, 2008) = 10.671, p = 0.001), and the third (Wilks Lambda = 0.967, F (6, 2008) = 11.293, p = 0.001) (Table 5).

Nurses who suffered workplace bullying, according to the first evaluation criterion, had a significantly higher mean value for perfectionism and dramatization of existence (p = 0.001), inhibition and functional dependence (p = 0.001), lack of support and deprivation of affection (p = 0.001), intolerance of frustration and rejection (p = 0.001), and adverse living conditions (p = 0.001) compared to nurses who did not suffer workplace bullying, according to the same evaluation criteria (1.99 vs. 1.68, 1.05 vs. 0.91, 1.13 vs. 0.87, 1.27 vs. 1.09, 1.31 vs. 1.05) (Table 6).

Table 6. Significance of the differences in the QVS-23 factors according to the first, second, and third criteria for assessing workplace bullying.

Criteria for Assessing Workplace Bullying	Dimensions of Vulnerability to Stress	You Suffer Workplace Bullying				
		Yes		No		
		M	DP	M	DP	Sig.
1st Evaluation Criterion	Perfectionism and dramatization of existence	1.99	0.76	1.68	0.79	0.001 ***
	Inhibition and functional dependence	1.05	0.69	0.91	0.68	0.001 ***
	Lack of social support and deprivation of affection	1.13	0.81	0.87	0.73	0.001 ***
	Intolerance of frustration and rejection	1.27	0.80	1.09	0.77	0.001 ***
	Adverse living conditions	1.31	1.19	1.05	1.03	0.001 ***
2nd Evaluation Criterion	Perfectionism and dramatization of existence	1.95	0.80	1.77	0.78	0.001 ***
	Inhibition and functional dependence	1.04	0.70	0.94	0.68	0.002 **
	Lack of social support and deprivation of affection	1.19	0.83	0.91	0.74	0.001 ***
	Intolerance of frustration and rejection	1.23	0.81	1.14	0.78	0.019 *
	Adverse living conditions	1.31	1.20	1.12	1.07	0.001 ***
3rd Evaluation Criterion	Perfectionism and dramatization of existence	2.00	0.78	1.78	0.79	0.001 ***
	Inhibition and functional dependence	1.06	0.69	0.94	0.68	0.001 ***
	Lack of social support and deprivation of affection	1.22	0.83	0.93	0.75	0.001 ***
	Intolerance of frustration and rejection	1.26	0.81	1.14	0.78	0.008 **
	Adverse living conditions	1.32	1.20	1.13	1.08	0.001 ***

* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

The results obtained showed that nurses who suffered workplace bullying, taking into account the second evaluation criterion, had a higher average value for perfectionism and

dramatization of existence ($p = 0.001$), inhibition and functional dependence ($p = 0.002$), lack of social support and deprivation of affection ($p = 0.001$), intolerance of frustration and rejection ($p = 0.019$), and adverse living conditions ($p = 0.001$) compared to nurses who did not suffer workplace bullying, according to the same evaluation criterion (1.95 vs. 1.77, 1.04 vs. 0.94, 1.19 vs. 0.91, 1.23 vs. 1.14, 1.31 vs. 1.12) (Table 6).

Nurses who suffered workplace bullying, with reference to the third evaluation criterion, had a higher mean value for perfectionism and dramatization of existence ($p = 0.001$), inhibition and functional dependence ($p = 0.001$), lack of social support and deprivation of affection ($p = 0.001$), intolerance of frustration and rejection ($p = 0.008$), and adverse living conditions ($p = 0.001$) compared to nurses who did not suffer workplace bullying (2.00 vs. 1.78, 1.06 vs. 0.94, 1.22 vs. 0.93, 1.26 vs. 1.14, 1.32 vs. 1.13) (Table 6).

4. Discussion

Women had a higher average value for perfectionism and dramatization of existence compared to men. The Amaro and Jesus study [18] also found a significantly higher mean value for the "dramatization of existence" dimension in women compared to men.

With regard to the age of the nurses, the younger the age, the higher the average value of perfectionism and dramatization of existence, inhibition and functional dependence, and intolerance of frustration and rejection. Due to their lack of autonomy, precarious employment, and instability, younger nurses are more vulnerable to stress and have a higher "dramatization of existence" score [19]. However, as some of these professionals still live at home with their parents, they have a higher perception of social support than older nurses. And, the fact that many of them are not married leads to a significantly higher level of inhibition and functional dependence and intolerance of frustration and rejection than married nurses.

The dimensions of vulnerability to stress, namely, perfectionism and dramatization of existence, inhibition and functional dependence, and intolerance of frustration and rejection, were significantly higher among nurses with shorter lengths of service in the profession. Cheng et al. [20] and Fang et al. [21] also found that newly qualified nurses, or those with shorter lengths of service in the profession, had higher levels of work-related stress. Nurses with fewer years in the profession had a higher average value for dramatization of existence [19]. This may be justified by the study by Alshawush et al. [22], in which it is stated that younger nurses report that their education did not fully provide them with the necessary skills to deal with stress and workplace bullying in clinical practice. The length of service at the current unit is another variable that is significantly related to the factors perfectionism and dramatization of existence, inhibition and functional dependence, and intolerance of frustration and rejection. The longer the nurse has worked in the institution, the less vulnerable they are to stress.

With regard to specialist degrees, nurses who did not have a nursing specialty had a significantly higher average value for perfectionism and dramatization of existence, inhibition and functional dependence, intolerance of frustration and rejection, and adverse living conditions than nurses who did have a specialty. This result can be explained by training, which can be a source of knowledge that enables the development of resources/competences in the face of stress [23].

Nurses in managerial positions had significantly lower mean values for the dimensions of vulnerability to stress. This result could be explained by the fact that many of the nurses in managerial positions do not provide direct nursing care to patients. This is because stress is higher when there is responsibility for the health of patients, carrying out invasive procedures, and contact with people with serious illnesses and emergency situations involving human life [24]. Another way to explain this result is that according to

Yang et al. [25], the level of stress depends on the organizational support available to nurses in management roles.

Stress is higher when it involves shift rotation [24]. In this research, nurses who worked shifts had a significantly higher mean score for inhibition and functional dependence than nurses with fixed working hours. This could be explained by the fact that shift work causes sleep changes and a higher average level of subjugation [18]. However, nurses who worked shifts had a significantly lower mean score for adverse living conditions compared to nurses who worked fixed hours. This is because stress is associated with work–life balance, and nurses with fixed working hours who work all day have to do household chores and look after their children after work, which leaves them no time for leisure [26].

Nurses are more vulnerable to stress when they find themselves in a situation of instability and precarious employment [19], as was the case in this study.

When applying the QVS-23 scale, 15.88% of the nurses were vulnerable to stress, a lower figure than that found by Banha [27], as 50.00% of their sample identified as vulnerable to stress. However, Banha's study was only carried out on nurses working in oncology, which may alter the vulnerability to stress variable to higher values [27].

Perfectionism and dramatization of existence comprised the factor with the highest average value on the stress vulnerability scale. The Ghaffari et al. study [28] also found that perfectionism was the factor that contributed most to vulnerability to stress, and adverse living conditions contributed the least.

Nurses who suffered workplace bullying, according to the first, second, and third evaluation criteria, tended to be more vulnerable to stress. These results are in line with the study by Carvalho [3], which found that in the public sector, vulnerability to stress conditioned workplace bullying. Coelho [29] also found that the greater the perception of vulnerability to stress, the greater the dimensions of workplace bullying known as isolation and exclusion (person-related bullying). It is necessary to develop and implement interventions to improve and strengthen the mindset that can help a person properly perceive and interpret the thoughts and situations of themselves and others and to make efforts at the level of the nursing organization so that nurses' personality traits can harmonize with the culture of nursing organizations and generate positive effects [30].

5. Limitations

This research strictly considered the subjective perspective of the participants who answered the questionnaire and did not incorporate the views of other social actors, such as family members or networks of friends.

Furthermore, due to the cross-sectional nature of the research design, in which data were collected at a specific point in time, the replicability of the same results cannot be guaranteed if the study were conducted over different periods of time. It is important to consider these limitations when interpreting the results and generalizing the conclusions to wider contexts. Longitudinal studies would be necessary to investigate the stability and consistency of the patterns identified over time.

6. Conclusions

It is crucial to act on vulnerability to stress as a preventative measure to combat workplace bullying, which can manifest itself in various ways and negatively affect the health and well-being of the individuals involved.

Addressing all of the dimensions of vulnerability to stress is fundamental to creating a healthy and safe working environment. One of these dimensions is perfectionism and dramatization of existence, because promoting a culture that values collaboration and

learning from mistakes, rather than demanding absolute perfection, reduces the pressure and excessive stress that can lead to workplace bullying.

Inhibition and functional dependence comprise another dimension that must be taken into account. It is important to create an environment in which all team members feel safe to express their opinions, make decisions, and seek support when necessary. Promoting autonomy and trust in employees can reduce vulnerability to stress and reduce workplace bullying.

Lack of support and deprivation of affection contribute to vulnerability to stress and can increase the likelihood of workplace bullying. Organizations should prioritize building healthy and supportive relationships between co-workers, encouraging open communication, empathy, and mutual respect.

Intolerance of frustration and rejection are also important dimensions to consider. Fostering emotional resilience through personal development programs can help employees deal with challenges and setbacks in a healthy way, thus reducing the risk of workplace bullying.

It is also essential to recognize and address the adverse living conditions that can increase vulnerability to stress. This includes providing adequate support to workers, offering flexibility in the workplace, and addressing issues related to working hours, fair pay, and safe working conditions.

By acting on the various dimensions of vulnerability to stress, organizations can create a healthier and more respectful and productive working environment. By preventing workplace bullying, they are acting on the mental and physical health of nurses, promoting positive relationships, and contributing to a positive and inclusive professional environment. In order to create a working environment where dignity, respect, and well-being are priorities, significantly reducing the risk of workplace bullying and promoting a healthy and harmonious working culture are crucial.

Understanding the relationship between stress vulnerability and workplace bullying is essential for developing prevention and intervention strategies, thus fostering a safer and healthier work environment. Recognizing stress vulnerability as a risk factor for bullying enables the creation of institutional policies that promote emotional support, resilience building, and a more human-centered organizational culture. Investing in this knowledge not only helps protect nurses' mental health but also enhances the quality of patient care.

As a suggestion for future studies, longitudinal approaches could be explored to assess how vulnerability to stress evolves throughout nurses' careers and its ongoing impact on mental health. Additionally, qualitative investigations may provide a deeper understanding of the subjective experiences of nurses facing workplace bullying. Another possibility would be to analyze institutional interventions already implemented in different healthcare settings and evaluating their effectiveness in reducing stress and bullying. Finally, incorporating cultural and organizational variables in international comparative research could offer insights into global strategies for a safer and healthier nursing work environment.

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