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Analysis of the Risk and Protective Roles of Work-Related and Individual Variables in Burnout Syndrome in Nurses

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Abstract: Aims: Burnout syndrome is a phenomenon that is becoming ever more widespread, especially in workers such as nurses who have heavy workloads and time pressures. The progression of burnout syndrome has been shown to be related to both individual and work-related variables. The objective of this study is to examine the risk and protective roles played by work-related and personal variables, both sociodemographic and psychological, in the development of burnout in nurses. Method: The sample was composed of 1236 nurses aged between 21 and 57 years, with a mean age of 31.50 years (SD = 6.18). Women accounted for 84.5% (n = 1044), and the remaining 15.5% (n = 192) were men. Exploratory tests were performed to understand the relationships between burnout and other variables, and a binary logistic regression was conducted to understand the roles of these variables in the incidence of this syndrome. Lastly, a regression tree was constructed. Results: The results show that the sociodemographic variables examined are not related to the level of burnout in nurses. However, certain work-related variables, such as spending more time with colleagues and patients and reporting good-quality relationships, exhibit a negative relationship with the occurrence of burnout. Of the psychological variables, the stress factors conflict-social acceptance and irritability-tension-fatigue, as well as informative communication, are shown to be risk factors for the appearance of burnout in nurses. In contrast, the communication skills factor, empathy, and energy-joy exert a protective function. Conclusion: Identifying the variables that influence the occurrence of burnout syndrome and understanding the manner in which they exert their influence are key elements in the development of effective prevention and intervention of burnout in nursing.

Keywords: burnout syndrome; nurses; risk factors; protective factors

1. Introduction

In recent years, we have witnessed increasing concern in the healthcare community about workplace performance, which has led to numerous studies on its related pathologies and characteristics [1].

Burnout syndrome refers to a type of response that appears in the presence of emotional and interpersonal stressors in the workplace [2]. This syndrome is defined by feelings of detachment from work, emotional fatigue, and feelings of work inefficiency [3].

Burnout syndrome is a worldwide phenomenon that is becoming ever more widespread in professionals, especially in healthcare workers [4] and similar fields, such as caregiving [5]. In

Spain, the prevalence of this syndrome is estimated to be around 30% in healthcare professionals [6]. This percentage is similar to that found in nursing professionals in other countries [7,8]. However, in some studies, the proportion of nursing professionals affected by this syndrome is twofold higher [9]. Burnout is detrimental to the quality of work and the physical and psychological health of workers who are affected [10]. Absenteeism, the intention to leave the job, and the deterioration of personal and family relationships are some of the most common consequences of this syndrome, and they occur in a similar manner among health professionals from different countries and cultures [11]. Therefore, it is important to study this syndrome because of its consequences to both the individual and the workplace [12]. Understanding the variables that influence its prevention, development, and treatment is crucial from the perspectives of public health and the organizations themselves, which seek to reduce absenteeism and increase productivity [13].

Research in this field has established two distinct types of variables related to the risk and protective factors associated with the development of burnout syndrome: personal variables, including sociodemographic and psychological variables, and organizational variables related to work environments [14].

In a previous study, a meta-analysis of the sociodemographic variables related to work exhaustion found no differences in its occurrence between men and women. Although women tended to be more emotionally depleted than men, men tended to experience greater depersonalization than women [15]. Similarly, another study reported that gender did not appear to be related to burnout levels among nursing students [16]. Furthermore, several authors have indicated that sex and other sociodemographic characteristics, such as age, marital status, or having children, do not seem to influence the development of burnout syndrome in healthcare professionals [6,17–21]. However, other research efforts have indicated that having at least one child and living with a stable partner reduce the risk of developing burnout [22]. This may be because such family circumstances are typically less common in younger workers who, given their relative inexperience, may suffer higher levels of exhaustion than older workers who have children [23].

On the contrary, other studies have suggested that conflicts between work and family caused by a high chronic workload cause emotional exhaustion and that this, in turn, generates conflicts between work and family roles [24]. Therefore, according to these results, living as a couple or having offspring can constitute a risk factor for developing burnout due to family pressure. However, in part-time employees, this variable was no longer found to constitute a risk factor [25].

Certain work-related characteristics, such as flexible working arrangements, have demonstrated a protective capacity against burnout because they allow the employee to manage the demands of the job and their own needs [26]. In nursing, it is common to be pressed for time, which provides little opportunity for emotional or physical recovery. Nurses who reported lower levels of time pressure in their workday exhibited lower levels of burnout [27]. Having limited time can affect important aspects of nursing, such as listening to patients and dealing with their families [28]. Active listening, empathy, respect, and self-knowledge are requirements for establishing a good therapeutic relationship [29].

Other factors, such as having a fixed contract and working longer times in post, have been associated with higher levels of burnout in nurses. However, other studies have indicated that although higher levels of burnout have been found in nurses with more than two decades on the job, burnout has also been observed in nurses who have been working for eight years or less [30]. In this line, Frögéli, Rudman, and Gustavsson [31] reported that new nurses who experienced higher levels of task mastery, role clarity, and social acceptance had decreased levels of stress. Therefore, certain experience and adaptation to the workplace are needed to reduce the overload associated with the job.

In the organizational context, increasing attention is being paid to the study of individual differences and resources as a potential risk and protective factors of stress and work-related exhaustion [32]. For example, high levels of self-esteem and an appropriate level of self-efficacy are protective factors against burnout [33] and are also associated with job satisfaction and the subjective well-being of nursing workers [34]. A study by Nwafora, Immanel, and Obi-Nwosua [35] determined that self-esteem

significantly mediated the relationship between job satisfaction and factors of emotional exhaustion and personal experiences of burnout. Smeds et al. [36] indicated that the lowest level of burnout was associated with greater self-efficacy in healthcare professionals. Other variables, such as the standards related to patient care, have been found to be mediating variables in the appearance of burnout in workplaces with heavy workloads [37].

Research into burnout has always recognized the central role of social relationships in the development and resolution of this syndrome [2,38]. In contrast to other healthcare specialties, nursing entails certain non-technical skills, such as communication, that are central to good job performance [39]. The nurse–patient relationship is an important factor that can contribute to job dissatisfaction and exhaustion in these workers [40]. Thus, communication skills in nurses help to prevent and reduce the effects of burnout [41]. Similarly, satisfaction with communication has a moderate association with job satisfaction and the intention to leave the job in this group of workers [42]. The perception of appropriate, effective communication with patients by healthcare professionals has been related to decreased exhaustion in the nurses and increased satisfaction in the patients [43,44]. However, Martín's study [9] indicated that nursing professionals from different units did not feel sufficiently prepared in terms of communication skills.

In addition to the relationship with patients, the relationship formed with peers seems to be a variable that is highly related to burnout syndrome in healthcare professionals. Borg et al. [45] found that nursing workers with burnout felt less socially supported than professionals without it. Therefore, the perceived social support of peers and superiors affects the healthcare resources of the healthcare professional, which, in turn, influences burnout levels [46]. Research has also indicated that good communication and relationships between team members and their superiors constitute a protective variable against burnout [47] and that having the support of colleagues with more experience reduces the intention to leave the job among the most inexperienced nurses [48].

In the area of social relationships, the role of emotional intelligence is also notable when responding to and appropriately managing overwhelming situations [49,50]. Given the nature of the nursing practice, which is completely linked to attention through human relationships, emotional intelligence has been postulated as a necessary feature for proper work performance [51]. Healthcare professionals' ability to regulate and manage their feelings is a factor that influences the appearance of burnout [52], especially given the close contact that nurses have with patients in intensely emotional situations [53]. Thus, the ability to recognize and manage their own feelings and those of others facilitates the emotional well-being of nursing professionals. In addition, it improves their practical capacity, which benefits both patients and family members, as well as colleagues and co-workers [54]. This capacity to manage their emotions, remain calm, and experience empathy and distress allows these workers to think more clearly, which leads to better patient care [55]. Thus, emotional intelligence is a prominent variable in the nursing practice since it has the potential to affect the quality of care, patient outcomes, and the general well-being of the worker, as shown in the review by Raghubir [54]. Furthermore, emotional intelligence has been shown to be related to the coping strategies of nursing staff. Specifically, professionals with high interpersonal emotional intelligence most often employ an integrative strategy, which is known to be the most effective strategy. Intrapersonal subscales, adaptability, stress management, and emotional intelligence have been shown to be negatively related to the use of conflict avoidance strategies, that is, psychologically and physically moving away from difficulties [56]. For this reason, promoting practices that empower nurses to face high-stress situations in an emotionally effective manner is a priority in areas that are especially emotionally intense, such as pediatric oncology or palliative care [57,58].

Workplace stress is a key variable in the development of burnout and can appear as a result of a long period of stress on the job. Therefore, the vulnerability to stress is a risk factor for developing burnout [59,60], and stress management has been established as one of the key variables in the design of interventions that aim to reduce the incidence of this syndrome [12]. Accordingly, Minamizono et al. [48] reported that working conditions by themselves were not associated with the intention to leave the workplace among nursing professionals. This suggests that it is the low resistance to stress,

especially prevalent among the youngest and most inexperienced professionals, that increases the intention to rotate. For example, feeling energetic and enthusiastic about the challenges of healthcare has been presented as a variable related to job commitment among nursing workers [61]. Conversely, the presence of higher levels of perceived stress has been associated with worse clinical performance among students in training [62]. Similarly, nurses who reported facing more stressful situations at work scored higher in burnout than those who reported more relaxed activity [63]. In addition, nurses facing hostile and aggressive situations with patients and experiencing feelings of fear and insecurity have been related to higher levels of burnout [64]. Verbal abuse, bullying, threats, and physical violence from patients' families, colleagues, superiors, or other specialists have also been linked to diminished job satisfaction and increased burnout and absenteeism [65].

Research on burnout and the variables that can protect workers from its development is essential for the development of preventive actions against stress and professional attrition [66]. Thus, the objective of this study is to analyze the roles of protective or risk factors among job-related variables (such as the type and length of contracts and the quality of interpersonal relationships in the workplace) and personal variables, both sociodemographic and psychological (including social support, communication skills, emotional intelligence, perceived stress, self-esteem, and general self-efficacy), in the development of burnout in nurses.

Analysis of the involvement of psychological variables in the development of burnout is a contribution to completing antecedents in the literature on this problem in nurses. We, therefore, consider the main novelty in the study to be not merely inclusion of these variables, but the fact that they are analyzed as a set of personal characteristics to be taken into account in identifying the different levels of vulnerability or strength of nursing professionals for effectively coping with situations that could potentially lead to burnout.

2. Materials and Methods

2.1. Participants

The sample size was 1236 nurses in Andalusia (Spain) aged between 21 and 57 years, with a mean age of 31.50 years (SD = 6.18).

Women accounted for the majority of the sample (84.5%, n = 1044) and had a mean age of 31.65 years (SD = 6.17). The remaining 15.5% (n = 192) were men with a mean age of 30.71 years (SD = 6.19).

Just over half (55%, n = 680) of the participants were single, while 42.1% (n = 520) were married or in stable relationships. Participants who were separated or divorced accounted for 2.8% (n = 34), and the remaining 0.2% (n = 2) were widowed. A little more two-thirds (68.9%, n = 852) of the participants had no children, 14.5% (n = 179) had one child, 13.2% (n = 163) had two children, and the remaining 3.3% (n = 41) had three or more.

At the time of the study, 69.3% (n = 857) worked on short-term or temporary contracts, and 30.7% (n = 379) were employed on permanent contracts.

Almost one-third of the nurses (32%, n = 396) worked in general wards, 21.9% (n = 271) were emergency room staff, 11.4% (n = 141) worked in intensive care, 10.7% (n = 132) worked in surgical theaters, 2.3% (n = 28) worked in outpatient settings, 4% (n = 50) worked in mental health departments, and the remaining 17.6% (n = 218) indicated that they worked in other areas.

2.2. Instruments

We used an ad hoc questionnaire to collect sociodemographic data. The questionnaire included questions about job-related variables, such as the type of contract, the amount of time spent each day interacting with colleagues, superiors, patients, and families, and the quality of those relationships.

The Brief Burnout Questionnaire (CBB) [67] was used to evaluate this syndrome in nurses. The instrument consists of 21 items in three blocks, namely, the precursors, elements, and consequences of burnout. Although the objective of the questionnaire is the overall evaluation of the process of

professional exhaustion, it also addresses the factors in the model proposed by Maslach and Jackson [68] and the components that precede and co-occur with burnout. The response mode for the items is based on a Likert scale of 5 points. The response options change according to the content of the item (e.g., from "strongly disagree" to "strongly agree", from "never" to "always"). The reliability of the instrument (specifically the scale that reports the score for burnout syndrome) in the study sample was assessed by Cronbach's alpha, which was 0.76.

Self-efficacy was evaluated with the *General Self-efficacy Scale* [69]. This scale evaluates the feeling of personal competence to deal with stressful situations using 10 items with 4-point Likert-type scale responses (with 1 indicating "wrong" and 4 indicating "true"). Cronbach's alpha for the instrument in our study was 0.90.

The *Self-esteem Scale* [70] was used to evaluate an individual's satisfaction with themselves. It has 10 items, with responses from 1 ("strongly agree") to 4 ("strongly disagree") on a Likert-type scale. The reliability of the scale in our study had a Cronbach's alpha of 0.82.

We evaluated social support using the *Perceived Social Support Questionnaire (CASPE)* [71]. This comprises nine items that determine whether the subject has a partner and the quality of their relationship, the relationship with the family in terms of the number of contacts and the subjective perception of these contacts, friendships, and participation in social and cultural organizations. The first seven items have four response options on a Likert-type scale, the eighth item has four response options (where 1 equals "never/bad" and 5 equals "always/very good"), and the final item is answered with "yes" or "no". Cronbach's alpha for this instrument was 0.81.

For the evaluation of emotional skills in the sample, we used the *Brief Emotional Intelligence Inventory* (EQ-I-M20) [72]. This tool has 20 items in five subscales with Likert-type responses (where 1 equals "it never happens to me" and 5 equals "it always happens to me"). Cronbach's alpha for each subscale in our study was 0.91 for intrapersonal (which includes the individual's emotional self-awareness and assertiveness, e.g., "I can talk easily about my feelings"), 0.72 for interpersonal (which refers to social awareness, e.g., "I understand well how other people feel"), 0.82 for stress management (which includes management and regulation emotions, e.g., "I find it hard to control my anger"), 0.91 for adaptability (reference to flexibility and problem solving, e.g., "I can solve problems in different ways"), and 0.88 for the general mood subscale (which refers to the optimism and motivation of the individual, e.g., "I am happy with the type of person I am").

We also used the *Communication Skills Scale for Healthcare Professionals (EHC-PS)* [73]. This instrument has 18 items with 6-point Likert-style responses (with 1 indicating "almost never" and 6 indicating "very often"). The items are grouped into four dimensions: informative communication (referring to how clinical information is obtained from or given to patients, e.g., "when I give information to patients I do it in understandable terms"), which had a Cronbach's alpha of 0.7 in our study, empathy (the capacity to understand patients' feelings, actively listening, and responding with empathy, e.g., "I feel that I respect the needs of the patients"), with an alpha of 0.9, respect (evaluating politeness in the relationship with the patient, e.g., "when I disagree with patients' opinions, I keep quiet so as not to argue"), with reliability of 0.87 in our study, and social skills (the ability to be assertive and socially competent in the clinical relationship, e.g., "when the patient speaks to me, I show interest through body gestures like nodding, eye contact, smiles … "), with an alpha of 0.52.

We used the *Perceived Stress Questionnaire* (*Cuestionario de Estrés Percibido*: CEP) [74] with 30 items to evaluate stress. The subject reads the statements and indicates the extent to which they reflect their own circumstances on a 4-point Likert-type scale (where 1 equals "almost never" and 4 equals "almost always"). It is divided into six factors: tension-instability-fatigue (e.g., "you are irritable or grouchy"), with an alpha of 0.75, energy-joy (e.g., "you are full of energy"), with an alpha of 0.80, overburden (e.g., "you have too many things to do"), with an alpha of 0.74, conflict-social acceptance (e.g., "you feel lonely or isolated"), with an alpha of 0.66, fear-anxiety (e.g., "you feel loaded down with responsibility"), with an alpha of 0.57, and self-realization-satisfaction (e.g., "you feel you're doing things you really like"), with an alpha of 0.62.

2.3. Procedure

The study was approved by the University of Almería Bioethics Committee (Ref: UALBIO2017/011). Participation in the study was voluntary, and the participants were informed of the study aims and assured of the anonymity and confidentiality of their responses. Participants indicated their informed consent by ticking a box before starting to complete the questionnaire.

The questionnaires were self-administered and included control questions to check for participants who answered randomly. The questionnaires were completed online and took 20–25 minutes. At the beginning of each questionnaire, respondents were given information about how to answer the questionnaire and the type of response in each test.

2.4. Data Analysis

First, we present the data on burnout syndrome by examining sociodemographic and work-related variables using frequency analysis. In order to explore relationships between variables, we carried out a correlational analysis for the continuous quantitative variables (burnout scores, age, number of children, amount of the workday spent with colleagues, superiors, patients, and patients' families, etc., factors of emotional intelligence, components of perceived stress, communication skills, self-efficacy, self-esteem, perceived social support) and Student's *t* test and ANOVA for the categorical variables.

Following that, we performed a binary logistic regression using the introduction method. Specifically, the logistic function of the independent variables classified individuals into one of two subpopulations or groups established by the values of the dependent variable, which, in this case, was exhaustion. We used logistic regression in which burnout was specified as a dependent variable that acquires a qualitative character. To that end, the dependent variable (burnout) was dichotomized, and the cutoff point was chosen as 25 points on the basis of our assessment of the diagnosis of burnout syndrome. A person scoring over 25 points was considered to be suffering from the syndrome [67]. The reliability at the cutoff point was estimated using Livingston's K^2 coefficient [75,76], which, conceptually, can be interpreted as the percentage of cases that would be classified in the same category if they responded to the same test again [77]. To calculate K^2, we used the variance (23.42) and average (20.23) of the test scores, its Cronbach's alpha (0.76), and the cutoff point value (25). A K^2 coefficient of 0.87 was obtained.

The following predictor variables were used: general self-efficacy, overall self-esteem, emotional intelligence (intrapersonal, interpersonal, stress management, adaptability, mood), communication skills (empathy, informative communication, respect, social skills), perceived stress (conflict social acceptance, overburden, irritability-tension-fatigue, energy-joy, fear-anxiety, self-realization-satisfaction), and perceived social support. Lastly, we constructed a regression and classification tree using the CHAID (Chi-Square Automatic Interaction Detector) method. It is one of the most efficient multivariate classification techniques and belongs to the family of decision trees, whose objective is to predict or classify future actions or behaviors from a set of previous observations.

The data were treated and analyzed using the SPSS statistical package version .23 for Windows.

3. Results

3.1. Burnout, Sociodemographic Variables, and Workplace Characteristics

The results of the frequency analysis for the presence or absence of burnout syndrome show that 17.7% (n = 219) of the nurses scored 25 or higher, and 82.3% (n = 1017) of them scored lower. Of those who were affected by burnout, 19.6% (n = 43) were men, and 80.4% (n = 176) were women. When we examined the dependent burnout variable without dichotomizing it, we did not find statistically significant differences in the mean scores (t = 1.03, p = 0.30) between the men (M = 20.56, SD = 5.27) and women (M = 20.17, SD = 4.75). No differences were seen in burnout related to civil status (F = 0.36, p = 0.77).

We performed correlational analysis in order to examine the relationship between burnout scores and the individual's age and the number of children. We did not find any significant relationship between burnout and age ($r = 0.01$, $p = 0.57$) or number of children ($r = 0.00$, $p = 0.99$).

For work-related variables, such as the percentage of the workday spent with colleagues, superiors, patients, or patients' families, we found negative correlations between the burnout score and the amount of the workday spent with colleagues ($r = -0.05$, $p < 0.05$) and patients ($r = -0.08$, $p < 0.01$). We found negative correlations between burnout and relationships in the workplace: the quality of relationships with colleagues ($r = -0.19$, $p < 0.001$), superiors ($r = -0.22$, $p < 0.001$), patients ($r = -0.20$, $p < 0.001$), and patients' families ($r = -0.23$, $p < 0.001$).

Another work-related variable is the pattern of shifts worked (rotation, 24 hours, nights, and mornings/evenings). After applying the ANOVA test, we found no statistically significant difference between the groups ($F = 2.00$, $p = 0.11$). However, we did find differences according to the type of contract. Nurses with permanent contracts ($M = 21.26$, $SD = 5.04$) had a higher mean score for burnout ($t = -5.00$, $p < 0.001$) than those on temporary contracts ($M = 19.78$, $SD = 4.68$).

3.2. Psychological Variables and Burnout

Table 1 shows that burnout was negatively correlated with all of the factors of emotional intelligence (intrapersonal: $r = -0.10$, $p < 0.001$, interpersonal: $r = -0.15$, $p < 0.001$, stress management: $r = -0.26$, $p < 0.001$, adaptability: $r = -0.16$, $p < 0.001$, mood: $r = -0.26$, $p < 0.001$). With respect to the components of perceived stress, burnout was positively correlated with conflict-social acceptance ($r = 0.46$, $p < 0.001$), overburden ($r = 0.36$, $p < 0.001$), irritability-tension-fatigue ($r = 0.49$, $p < 0.001$), fear-anxiety ($r = 0.36$, $p < 0.001$), and self-realization-satisfaction ($r = 0.18$, $p < 0.001$), and it was negatively correlated with energy-joy ($r = -0.47$, $p < 0.001$). With respect to communication skills, burnout correlated negatively with empathy ($r = -0.28$, $p < 0.001$), informative communication ($r = -0.15$, $p < 0.001$), and respect ($r = -0.23$, $p < 0.001$).

Table 1. Correlations between burnout and emotional intelligence, perceived stress, communication skills, self-efficacy, self-esteem, and perceived social support.

		Burnout Syndrome
Emotional intelligence	Intrapersonal	−0.10 ***
	Interpersonal	−0.15 ***
	Stress management	−0.26 ***
	Adaptability	−0.16***
	General mood	−0.26 ***
Perceived stress	Conflict-social acceptance	0.46 ***
	Overburden	0.36 ***
	Irritability-tension-fatigue	0.49 ***
	Energy-joy	−0.47 ***
	Fear-anxiety	−0.36 ***
	Self-realization-satisfaction	0.18 ***
Communication skills	Empathy	−0.28 ***
	Informative communication	−0.15 ***
	Respect	−0.23 ***
	Social skills	0.01
General self-efficacy		−0.19 ***
Overall self-esteem		−0.34 ***
Perceived social support		−0.27 ***

Note: *** $p < 0.001$.

Table 2 reports the means for each of the variables to compare those affected by burnout with those unaffected. Nurses unaffected by burnout scored significantly higher in interpersonal ($t = 3.66$, $p < 0.001$, $d = 0.27$), stress management ($t = 6.56$, $p < 0.001$, $d = 0.49$), adaptability ($t = 3.77$, $p < 0.001$, d=.28), and mood ($t = 7.57$, $p < 0.001$, $d = 0.56$) than those affected by it.

Table 2. Descriptive statistics and *t* test according to the presence or absence of burnout.

	Burnout						***t***	***p***
	<25 points			**≥25 points**				
	N	***Mean***	***SD***	***N***	***Mean***	***SD***		
Intrapersonal	1017	10.66	1.93	219	10.29	2.65	1.85	0.065
Interpersonal	1017	12.40	1.85	219	11.88	2.08	3.66 ***	0.000
Stress management	1017	13.36	2.23	219	12.25	2.40	6.56 ***	0.000
Adaptability	1017	11.77	2.05	219	11.19	2.13	3.77 ***	0.000
General mood	1017	12.73	2.22	219	11.47	2.32	7.57 ***	0.000
Conflict-social acceptance	1017	11.78	2.49	219	14.73	3.40	−12.10 ***	0.000
Overburden	1017	9.37	2.35	219	10.77	2.40	−7.94 ***	0.000
Irritability-tension-fatigue	1017	17.04	3.57	219	21.14	4.25	−13.28 ***	0.000
Energy-joy	1017	15.05	2.82	219	12.28	2.87	13.10 ***	0.000
Fear-anxiety	1017	3.66	1.30	219	4.51	1.47	−7.82 ***	0.000
Self-realization-satisfaction	1017	6.88	1.19	219	7.32	1.29	−4.62 ***	0.000
Empathy	1017	26.51	3.33	219	24.29	4.29	7.21 ***	0.000
Informative communication	1017	28.88	3.39	219	27.63	4.30	4.03 ***	0.000
Respect	1017	16.45	1.98	219	15.31	2.55	6.23 ***	0.000
Social skills	1017	16.84	3.01	219	16.71	3.21	0.54	0.587
General self-efficacy	1017	32.35	4.21	219	30.84	4.46	4.76 ***	0.000
Overall self-esteem	1017	33.39	4.22	219	30.48	4.34	9.19 ***	0.000
Perceived social support	1017	24.72	2.97	219	22.77	3.58	7.52 ***	0.000

Note: *** $p < 0.001$. <25 points: the absence of burnout, ≥25 points: presence of burnout.

In terms of perceived stress, those affected by burnout syndrome scored significantly higher in conflict-social acceptance ($t = -12.10$, $p < 0.001$, $d = 0.90$), overburden ($t = -7.94$, $p < 0.001$, $d = 0.59$), irritability-tension-fatigue ($t = -13.28$, $p < 0.001$, $d = 0.99$), fear-anxiety ($t = -7.82$, $p < 0.001$, $d = 0.58$), and self-realization-satisfaction ($t = -4.62$, $p < 0.001$, $d = 0.34$) than those unaffected by it. In the energy-joy dimension, however, those who were not suffering burnout scored the highest, and the difference was statistically significant ($t = 13.10$, $p < 0.001$, $d = 0.98$).

The results of the analysis of the average scores of communication skills show that, in this case, those unaffected by burnout scored higher in empathy ($t = 7.21$, $p < 0.001$, $d = 0.54$), informative communication ($t = 4.03$, $p < 0.001$, $d = 0.30$), and respect ($t = 6.23$, $p < 0.001$, $d = 0.46$).

Finally, table provides the results of comparing the group suffering from burnout with the unaffected group for differences in self-efficacy, self-esteem, and perceived social support. In this case, nurses who were not affected by burnout scored higher in general self-efficacy ($t = 4.76$, $p < 0.001$, $d = 0.35$), overall self-esteem ($t = 9.19$, $p < 0.001$, $d = 0.69$), and perceived social support ($t = 7.52$, $p < 0.001$, $d = 0.56$).

3.3. Logistic Regression Model for the Presence of Burnout: Risk and Protective Factors

We performed a logistic regression analysis with burnout syndrome as the dependent variable. The data had previously been dichotomized to produce two categories: those affected by burnout syndrome (17.7%, $n = 219$) and those unaffected by it (82.3%, $n = 1017$).

The following predictor variables were added to the model: general self-efficacy, overall self-esteem, emotional intelligence (intrapersonal, interpersonal, stress management, adaptability,

mood), communication skills (empathy, informative communication, respect, social skills), perceived stress (conflict-social acceptance, overburden, irritability-tension-fatigue, energy-joy, fear-anxiety, self-realization-satisfaction), and perceived social support.

Table 3 presents these variables, regression coefficients, standard error of estimation, the Wald statistic with the degrees of freedom and associated probability, the partial correlation coefficient, and the odds ratio. The odds ratios for each variable suggest two conclusions:

Table 3. Results of the logistic regression analysis for the probability of suffering burnout.

Variables	β	Std. Err	Wald	df	Sig	Exp(β)	95% CI
Intrapersonal	0.02	0.03	0.38	1	0.538	1.02	0.95–1.10
Interpersonal	0.03	0.06	0.29	1	0.586	1.03	0.91–1.16
Stress management	0.05	0.04	1.91	1	0.166	1.06	0.97–1.15
Adaptability	−0.03	0.06	0.26	1	0.610	0.96	0.86–1.09
General mood	0.02	0.06	0.13	1	0.718	1.02	0.90–1.15
Conflict-social acceptance	0.17	0.04	18.74	1	0.000	1.19	1.10–1.29
Overburden	−0.01	0.05	0.08	1	0.768	0.98	0.88–1.09
Irritability-tension-fatigue	0.15	0.03	16.25	1	0.000	1.16	1.08–1.26
Energy-joy	−0.19	0.03	24.75	1	0.000	0.82	0.76–0.88
Fear-anxiety	−0.11	0.08	1.58	1	0.209	0.89	0.75–1.06
Self-realization-satisfaction	−0.08	0.08	0.99	1	0.319	0.91	0.77–1.08
Empathy	−0.19	0.05	13.74	1	0.000	0.82	0.74–.91
Informative communication	0.09	0.04	3.95	1	0.047	1.10	1.00–1.21
Respect	−0.03	0.07	0.22	1	0.632	0.96	0.83–1.12
Social skills	0.03	0.03	0.77	1	0.379	1.03	0.95–1.11
General self-efficacy	0.01	0.02	0.36	1	0.544	1.01	0.96–1.06
Overall self-esteem	−0.01	0.02	0.14	1	0.707	0.98	0.93–1.04
Perceived social support	−0.01	0.03	0.23	1	0.628	0.98	0.92–1.04
Constant	−1.74	1.30	1.78	1	0.182	0.17	

(a) From the perceived stress dimensions, conflict-social acceptance and irritability-tension-fatigue act as risk factors that increase the likelihood of suffering burnout. Nurses with higher mean scores in these dimensions have a higher risk of developing the syndrome. Energy-joy serves a protective function against burnout.

(b) The elements of communication skills that are significantly involved are empathy (a protective factor) and informative communication (a risk factor).

The overall fit of the model ($\chi^2 = 295.40$, df = 18, $p < 0.001$) was confirmed by the Hosmer–Lemeshow test ($\chi^2 = 5.86$, df = 8, $p = 0.66$). Nagelkerke's R^2 indicated that 35% of the variability in the response variable was explained by the logistic regression model. In addition, from the table of classification of cases, we estimated the probability that the logistic function was accurate to be 85.4%, with a false positive rate of 0.03 and a false negative rate of 0.34.

3.4. Multiple Linear Regression Model of Burnout according to Employment Situation

We found differences in burnout between nurses on permanent contracts and those who worked under short-term, temporary contracts. In order to determine the explanatory value of the psychological variables (analyzed in the overall sample above), we constructed models using stepwise multiple linear regression analysis for each of the groups depending on their employment situation and used the employment situation as the selection variable (discontinuous/permanent).

As Table 4 shows, the analysis of the group of nurses with discontinuous employment (69.3%, $n = 857$) produced five regression analysis models, with the final model producing the highest percentage of explained variance (35.3%, $R^2 = 0.35$). The validity of the model was determined using

the Durbin–Watson *D* statistic, with $D = 2.02$. The value of *t* was associated with a probability of error of less than 0.05 for the variables in the model (energy-joy, conflict-social acceptance, empathy, irritability-tension-fatigue, and social skills). Of those, energy-joy had the greatest explanatory value, as indicated by the standardized coefficients. According to the values of the tolerance indicators and VIF, collinearity between the variables in the model was absent.

Table 4. Stepwise multiple linear regression model by employment situation. (Discontinuous work: $n = 857$, Permanent work: $n = 379$).

					Change Statistics				
	Model	***R***	**R^2**	**Corrected R^2**	**Standard Error of Estimation**	**Change in R^2**	**Change in *F***	**Sig. of Change in *F***	**Durbin–Watson**
DISCONTINUOUS WORK	1	0.47	0.22	0.22	4.12	0.22	247.85	0.000	
	2	0.55	0.30	0.30	3.91	0.08	97.83	0.000	
	3	0.57	0.33	0.33	3.83	0.02	36.93	0.000	2.02
	4	0.58	0.34	0.34	3.79	0.01	17.32	0.000	
	5	0.59	0.35	0.35	3.77	0.00	8.98	0.003	

	Model 5	**Non-Standardized Coefficients**		**Standardized Coefficients**	***t***	**Sig.**	**Collinearity**	
		B	**Std. Error**	**Beta**			**Tol.**	**VIF**
	(Constant)	23.97	1.47		16.26	0.000		
	Energy-joy	−0.39	0.05	−0.25	−7.61	0.000	0.66	1.49
	Conflict-soc. accpt.	0.28	0.06	0.17	4.40	0.000	0.48	2.05
	Empathy	−0.29	0.04	−0.22	−6.95	0.000	0.70	1.41
	Irrita.-tens.-fatigue	0.19	0.04	0.17	4.05	0.000	0.42	2.37
	Social skills	0.14	0.04	0.09	2.99	0.003	0.77	1.29

					Change statistics				
	Model	***R***	**R^2**	**Corrected R^2**	**Standard Error of Estimation**	**Change in R^2**	**Change in *F***	**Sig. of Change in *F***	**Durbin Watson**
PERMANENT WORK	1	0.54	0.29	0.29	4.24	0.29	157.20	0.000	
	2	0.59	0.34	0.34	4.08	0.05	30.94	0.000	
	3	0.61	0.38	0.37	3.98	0.03	20.14	0.000	
	4	0.62	0.39	0.38	3.95	0.01	6.63	0.010	1.91
	5	0.63	0.40	0.39	3.93	0.00	5.56	0.019	
	6	0.64	0.40	0.40	3.90	0.00	5.17	0.023	

	Model 6	**Non-Standardized Coefficients**		**Standardized Coefficients**	***t***	**Sig.**	**Collinearity**	
		B	**Std. Error**	**Beta**			**Tol.**	**VIF**
	(Constant)	15.67	2.27		6.89	0.000		
	Irrita.-tens.-fatigue	0.30	0.07	0.23	4.18	0.000	0.48	2.05
	Conflict-soc. accpt.	0.47	0.09	0.27	5.17	0.000	0.56	1.76
	Energy-joy	−0.31	0.08	−0.18	−3.78	0.000	0.66	1.50
	Empathy	−0.40	0.10	−0.29	−3.90	0.000	0.27	3.58
	Social skills	0.17	0.07	0.10	2.38	0.018	0.75	1.32
	Respect	0.38	0.16	0.16	2.27	0.023	0.30	3.25

The regression analyses of the nurses with permanent contracts (30.7%, $n = 379$) produced six models. The third model included irritability-tension-fatigue, conflict-social acceptance, energy-joy, empathy, social skills, and respect, and it explained 40.9% ($R^2 = 0.40$) of the variance. To confirm the model's validity, we analyzed the independence of the residuals using the Durbin–Watson *D* statistic, with $D = 1.91$, which confirmed the absence of positive or negative autocorrelation. The value of *t* was associated with a probability of error of less than 0.05 for the variables in the model. The standardized coefficients showed that the variable with the greatest explanatory value was empathy. According to the values of the tolerance indicators and VIF, collinearity between the variables in the model was absent.

The decision tree (Figure 1) shows that irritability-tension-fatigue was the strongest predictor of burnout. Subjects with a high level (>23) of irritability-tension-fatigue exhibited the highest risk of burnout (57.9%). The lowest levels of burnout (96.8%) were found in subjects with very low levels

(<14) of irritability-tension-fatigue. Finally, the goodness of fit of the model was reflected by its correct classification of 83.7% of the participants.

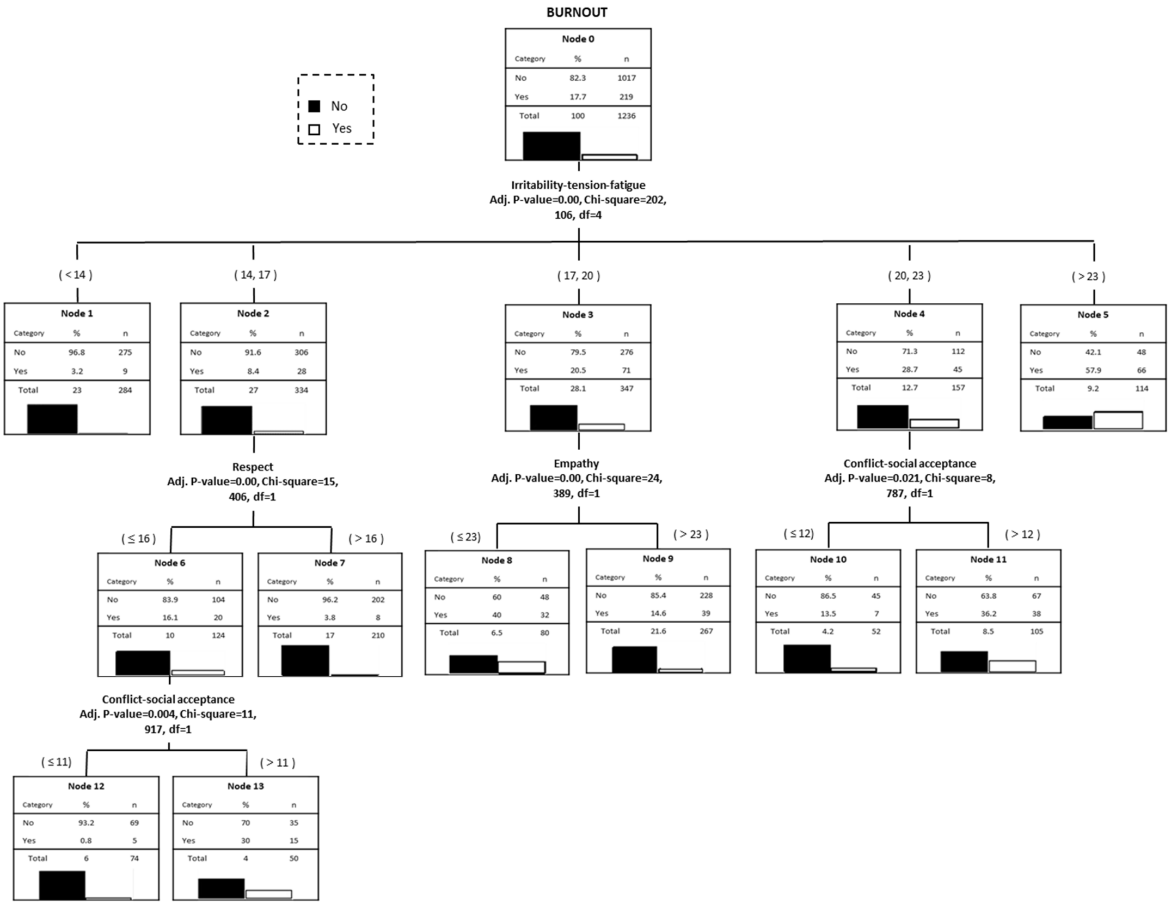

Figure 1. Decision tree according to psychological variables.

4. Discussion

Our results show that sociodemographic variables such as age, sex, civil status, and number of children are not related to levels of burnout in nurses. This is in agreement with other studies that have not found these individual variables to be associated with the presence of burnout among nursing workers [19,21] and similar health professionals [6,17,18,20].

We did find significant relationships between certain work-related variables and burnout. Spending more time with colleagues and patients and reporting good-quality relationships with colleagues, superiors, patients, and their families were found to be negatively related to the level of burnout in nurses. This is in line with the literature, as indicated by the research conducted by Lee and Ji [47], who reported that good relationships with members of the team reduced levels of exhaustion. Conversely, negative relationships and conflict have been found to be associated with higher levels of burnout [67]. The lowest levels of burnout in nurses who spent more of their workday with colleagues and patients may be the result of less time pressure. The nurses who are able to spend more time with their patents and colleagues may have less urgency in their daily tasks, which has been associated with lower levels of burnout because it allows for brief periods of physical and emotional recovery [27,28].

In terms of psychological variables, our results show a negative association between burnout and various factors of emotional intelligence [49,56], self-efficacy [36], social support [46], communication skills [41], and self-esteem [33]. However, in the perceived stress scale, we found a positive relationship between high levels of burnout and factors associated with conflict, irritability, fatigue, overburden,

fear, and anxiety [59]. Conversely, energy-joy demonstrated a negative relationship with the presence of burnout and was highest in nurses who did not exhibit burnout.

Only some of the psychological variables were found to be protective or risk factors of the development of burnout. Irritability-tension-fatigue in the perceived stress scale and informative communication were shown to be risk factors for the appearance of burnout in nurses, whereas the empathy factor in communication skills and energy-joy exerted a protective function. Similar to our findings for perceived stress factors, Ye et al. [62] reported that the increase in stress associated with exposure to stressors raised the levels of burnout in healthcare professionals. In contrast, energy has been highlighted as a factor that promotes commitment in these workers [61]. It is not surprising that informative communication was shown to be a risk factor for the development of burnout in these professionals. Although communication skills have been identified as especially relevant in nursing [43,44], workers have reported not feeling trained sufficiently in this aspect [9]. Therefore, transferring information to both the patient and their families could be a source of stress and exhaustion in these professionals, who are then not satisfied with its execution [42].

Once the protective and risk roles of the previous variables were identified in the overall sample, we carried out a new analysis based on the type of employment. The informative communication variable disappeared for both types of contracts, while social skills remained a risk factor. For workers with permanent contracts, the respect variable was added to the model as a risk factor.

It may seem counterintuitive that informative communication and social skills in nurses, together with respect for patients in nurses on permanent contracts, are risk factors for developing burnout, but there are possible explanations. According to MacPhee et al. [37], factors such as respect and active communication with empathy, which are important for establishing effective therapeutic relationships with patients [29], may also be mediating variables in the appearance of burnout when there is a heavy workload. These variables may not be risk factors in and of themselves, but rather may be implicated in increased levels of burnout when nurses face high demand with few resources. We must add that the heterogeneity in the design and the measures used in the different studies carried out so far make it difficult to draw conclusions about relationships for variables such as emotional intelligence and communication between workers in healthcare [44,51].

5. Conclusions

The results of this study show that sociodemographic variables are not associated with burnout levels in nursing professionals, while individual psychological variables (such as social support, emotional intelligence, self-efficacy, communication skills, and self-esteem) and labor (such as having good relationships and spending more time with patients, family, and colleagues) present a negative relationship with burnout syndrome. On the contrary, most of the factors in the perceived stress scale were positively associated with levels of this syndrome. The results of the regression of communication skills and perceived stress indicate that there are both protective and risk factors among the variables analyzed. Furthermore, the regression model was modified on the basis of the contract type.

There is a need for more research that evaluates nurses' workloads so that we can discover whether communication skills based on respect and assertiveness and the ability to provide optimal information to the patient could be risk factors for exhaustion in these professionals when they face heavy demands.

There are some potential limitations within this study. First, nurses with temporary contracts were represented more than those with permanent contracts in this sample. Professionals with temporary contracts usually change service and, in some cases, have several short-term contracts. In this case, contextual variables, such as the type of service, were not considered stable enough to reflect the usual work context of the participants, and this could lead to a generalized bias in the results. As indicated above, this limitation can be addressed in proposed future lines of research, in which the main objective will be to analyze the predictive value of contextual variables and their relationships with personal variables.

Second, data were collected by having participants fill out online questionnaires, and this procedure could have been subject to the degree of accessibility to computer resources. However, according to the age and generational cut of the participants, this is not considered to be a conditioning factor for the results. A third limitation of this study is its transversal nature.

These findings contribute to the growing body of research that aims to promote improvements in the health of patients and workers, given the negative consequences of burnout to both the workplace and the individuals who suffer from it. Identifying the variables that influence the appearance of burnout and understanding the manner in which they exert this influence will be key elements in the development of effective prevention and intervention.

From the results obtained, it is possible to design and implement intervention programs that aim to improve the well-being of health professionals. By using the implication of each of the analyzed variables and their relationships, we can formulate measures to prevent burnout. Satisfactory results are thus expected from the future implementation of an effective approach to the problem of stress chronification in nursing and its possible contribution to burnout, with positive consequences for those involved on a personal and professional level.

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