Research Article

A Single-Centre Study of Factors Associated with Components of Burnout Among Nursing Students in Croatia

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ABSTRACT

Background: Nursing students frequently encounter burnout, a state potentially jeopardizing their academic and subsequent professional trajectory.

Aim: To examine how demographic attributes are associated with burnout levels among nursing students, emphasizing variations across Maslach Burnout Inventory (MBI) subscales.

Methods: In 2022, 159 nursing students from the Faculty of Health Studies Rijeka, Croatia, were assessed for burnout using a cross-sectional approach. Burnout was measured using the Maslach Burnout Inventory Human Services Survey and a general questionnaire collecting demographic details.

Results: Among female students, 57.1% reported 'high' emotional exhaustion, compared to 36% of male students, though this difference was not statistically significant. In the age group of 18-25 years, a pronounced 60.2% experienced 'high' emotional exhaustion, which diminished with age. Significant differences emerged based on study type; 61.3% of full-time students displayed heightened emotional exhaustion compared to 46.2% of part-time students (p=0.028). Regarding marital status, single students showed increased emotional exhaustion, while married counterparts had reduced burnout levels, with married participants exhibiting statistically significantly lower overall burnout levels (p=0.034). These findings underscore the importance of addressing burnout in critical and intensive care nursing, highlighting the need for targeted strategies to manage burnout among future professionals in these high-stress areas.

Conclusion: Burnout among nursing students is distinctly associated with demographics, particularly age, study type, and marital status. Tailored interventions targeting specific student groups may prove beneficial in addressing burnout.

Keywords: burnout, nursing, students, Maslach burnout inventory, emotional exhaustion

INTRODUCTION

The evolving landscape of health care emphasizes the pivotal role of nursing students, who represent the impending vanguard of medical caregiving. These individuals embark on an academically rigorous journey, targeting the synthesis of compassionate care with clinical competency. In the contemporary healthcare context, burnout, particularly among nursing professionals, has manifested as a pronounced concern, with implications transcending individual well-being and permeating the quality of patient-centric care. After delineating nursing students' critical role in healthcare, it is imperative to consider the dire consequences of burnout in this demographic. Notably, student burnout has far-reaching implications beyond the academic environment, impacting future career paths. One alarming trend is the increasing tendency of new graduates to leave nursing due to the accumulated stress and burnout experienced during their education. This attrition not only exacerbates the existing nursing shortage but also poses a significant challenge to maintaining quality healthcare services. It underscores the urgent need to address burnout effectively within nursing education, ensuring the retention and well-being of future nursing professionals. Evidence indicates that the nursing profession is uniquely predisposed to elevated stress levels, an observation corroborated by Lim et al. (2010).

Nursing education in Croatia is organized as a three-year undergraduate program, leading to a Bachelor of Science in Nursing degree. The program encompasses a total of 180 ECTS (European Credit Transfer and Accumulation System) credits, balancing theoretical coursework with clinical practice. Over the course of the program, students undergo approximately 4600 hours of combined theoretical instruction and clinical training. This comprehensive educational approach ensures that graduates are thoroughly prepared to meet the rigorous standards and diverse demands of the nursing profession, both within Croatia and on a global scale.

Furthermore, the multifaceted challenges intrinsic to professional development in nursing pose substantial psychological stressors for students. Alarmingly, an elevated incidence of specific mental health disorders during the academic tenure has been documented, underscoring the vulnerability of this demographic (Auerbach et al., 2018). Notably, burnout exhibits variation when analysed against demographic factors, suggesting that specific demographic factors may differentially predispose nursing students to this syndrome. Understanding this nuanced interplay of burnout with demographic variables could pave the way for more targeted and efficacious interventions. Clinical exposure during their academic tenure exposes

nursing students to unprecedented challenges, requiring them to assimilate theoretical knowledge with hands-on interventions.

It is imperative to acknowledge the formidable challenges nurses face in delivering patient care within frequently resource-constrained environments. Such regularized exposure, compounded by the emotional ramifications of patient outcomes, exacts a significant toll on their psychological equilibrium. The phenomenon of emotional exhaustion, conceptualized as a sequela of aggregated stress, is increasingly recognized as an antecedent of burnout. Notably, specific demographic subsets, notably women and the younger cohort, manifest heightened vulnerability to this exhaustion (Rhéaume, 2022).

Nursing students navigate a dichotomy between theoretical instruction and experiential clinical exposure within the educational paradigm. This dual mandate, juxtaposed against environmental stressors and peer competition, can precipitate impediments in holistic development. An ecosystem fostering affirmation and recognition can serve as a catalyst for instilling professional confidence (Maslach et al., 1996). However, the accelerated progression of medical science and the expanding remit of nursing roles necessitates augmented information processing, potentially overwhelming students.

Balancing academic rigor with clinical immersion presents a quintessential challenge. Notably, the phenomenon of depersonalization, construed as a coping mechanism, has been observed among students grappling with academic intensities (Babenko-Mould et al., 2014). Endemic challenges in nursing, accentuated by institutional constraints, can exacerbate emotional exhaustion metrics (Friganović et al., 2019).

The advent of the COVID-19 pandemic introduced an unparalleled variable, subjecting healthcare professionals, especially nurses, to exacerbated burnout determinants (Galanis et al., 2021). This perturbation also reverberated among nursing students, introducing multifarious uncertainties. The emergence of psychosomatic symptoms in clinical environments warrants urgent redressal (Pradas-Hernandez et al., 2018). The onus rests on healthcare establishments and policy architects to prioritize the psychological well-being of the nursing cadre. Additionally, the potency of a robust social support framework is underscored by its preventive role against Post-Traumatic Stress Syndrome/ Post-Traumatic Stress Disorder (commonly referred to as PTSS/PTSD) (Zhang et al., 2020).

The intrinsic dedication of nursing students underscores their indelible role in global healthcare. Cultivating an environment of appreciation and acknowledgment is imperative for burnout mitigation. Given that a significant proportion of nursing students are likely to

embark on careers in critical and intensive care sectors, understanding the patterns and predictors of burnout within this group is essential. This knowledge is vital for devising effective strategies that ensure these future healthcare professionals are well-prepared to handle the high-stress environments of critical and intensive care, thereby maintaining the highest standards of patient care.

The aim of this study was to examine how demographic attributes are associated with burnout levels among nursing students, emphasizing variations across Maslach Burnout Inventory (MBI) subscales.

METHODS

Study Design

This study employed an exploratory, correlational cross-sectional design to investigate the levels of burnout among nursing students.

Study Participants

Our study included nursing students enrolled at the Faculty of Health Studies in Rijeka, Croatia. The participants were from all years of enrolment, ensuring a diverse representation of the student body. The inclusion criteria for the study were: being currently enrolled as a nursing student at the faculty and consenting to participate in the study. The survey was voluntary, and the instructors did not know who volunteered. There was no coercion for the students to complete the survey.

Data Collection

In our study, data were collected using physical questionnaires. The questionnaires were distributed to students by school faculty members during classroom sessions. This approach ensured a direct and efficient method of reaching a large number of students enrolled in various years of the nursing program. The use of physical questionnaires facilitated ease of access for students and allowed for immediate clarification of any queries regarding the questionnaire items. Instructors played a crucial role in this process by administering the questionnaires during teaching sessions, thereby maximizing student participation and ensuring a high response rate. The data for this study were gathered over four months, from September 5 to December 16, 2022. Demographic data, encompassing age, sex, year of study, and type of study, were collected using a general questionnaire.

Instrument

To assess burnout among the participants, we utilized the Maslach Burnout Inventory (MBI) Human Services Survey, a translation of the original MBI (Maslach, 1997). This is an internationally recognized tool that has been previously validated in Croatia (Bošković, 2021). The MBI consists of three subscales: Emotional Exhaustion (EE) with 9 items,

Depersonalization (DP) with 5 items, and Personal Accomplishment (PA) with 8 items.

Ethics

Before data collection, the participants were provided with both written and oral explanations concerning the ethical guidelines, purpose, and procedure of the research. They were then requested to provide informed consent to participate in the study. This rigorous process helped minimize the occurrence of unanswered questions and enhance the credibility of the responses. One improperly completed questionnaire was excluded from the analysis. The study was approved by the Ethics Committee of the Faculty of Health Sciences, Rijeka (Croatia), on May 22, 2022 (FILE: CLASS 600-05/22-01/39, ORDER NUMBER 2170 -15-22-1).

Statistics

The Shapiro-Wilk test was employed to ascertain the normal distribution of continuous numerical variables. Given the deviation of most variables from a normal distribution, both the mean with standard deviation and the median with interquartile range were presented as descriptive statistics. The internal consistency of the scales was assessed using the Cronbach alpha coefficient. For nominal or categorized variables, the count and proportion of participants within respective categories were delineated. Depending on the nature of the categorical variables under scrutiny, Chi-square or Fisher's exact test was utilized for group comparisons. The threshold for statistical significance concerning type 1 error was set at alpha=0.05. All data were processed using the IBM SPSS Statistics software, Version 25.0 (IBM SPSS V 25).

RESULTS

We distributed 200 questionnaires, with a response rate of 79.5% (n=159). The data were collected from 5 September to December 16, 2022. The demographic data collected from participants at the Faculty of Health Sciences in Rijeka is summarized in Table 1. There was a pronounced sex and age distribution, with 84.3% being female (n=134) and the majority of the respondents (71.7%) being between 18-25 years old. The normality of the Total MBI and its subscales, alongside their Cronbach alpha coefficients, were satisfactory. All scales show a high degree of internal consistency type reliability: Cronbach alpha Personal Accomplishment (PA) 0.79, Depersonalization (DP) 0.75, MBI total 0.72, especially the Emotional Exhaustion (EE) scale 0.89. Shapiro Wilk P showed EE 0.173, PA 0.016, DP <0,001, and MBI Total 0.830.

Table 1.

Demographic data collected from participants at the Faculty of Health Sciences in Rijeka

		N (159)	%
Sex	Male	25	15.7
	Female	134	84.3
Age categories	18-25 years	114	71.7
	26-35 years	22	13.8
	36-45 years	19	11.9
	46-55 years	3	1.9
	>55 years	1	0.6
Year of study	1	56	35.2
	2	63	39.6
	3	40	25.2
Type of study	Full-time	81	50.9
	Part-time study	78	49.1
Marital status	Single	67	42.9
	Married	26	16.7
	In a relationship	63	40

Table 2 presents sex differences in burnout categories within the MBI and its subscales. Females displayed a higher percentage (57.1%) of 'High' emotional exhaustion than males (36%). Both sexes had a balanced distribution in personal accomplishment. In depersonalization, 54.9% of females and 40% of males reported 'Low' levels. For the overall MBI, most from both sexes were in the 'Low and medium burnout' category. The Chi-square tests revealed no statistically significant sex-based differences in these distributions.

Table 3 presents age-related differences in burnout levels using the MBI. A notable 60.2% of 18–25-year-olds reported 'High' emotional exhaustion, decreasing with age. Personal accomplishment showed even distributions, while most ages reported 'Low' depersonalisation. The majority across age groups experienced 'Low and medium burnout'. Data for those over 55 was excluded due to limited respondents.

Table 4 delineates burnout levels in relation to study type. Full-time students exhibited a notably higher percentage (61.3%) of 'High' emotional exhaustion compared to part-time students (46.2%), with the difference being statistically significant (p=0.028). Other burnout categories, including personal accomplishment and depersonalisation, displayed no substantial discrepancies between the two study types. Overall, the majority in both groups experienced low and medium levels of burnout.

Table 2.

Sex differences in the representation of individual burnout categories on the total MBI and subscales

		Sex				P
		Male (n=25)		Female (n=133)		Chi-square
		n	%	n	%	
Emotional exhaustion	Low	8	32	20	15	0.07
	Medium	8	32	37	27.8	
	High	9	36	76	57.1	
Personal accomplishment	Low	9	36	35	26.5	0.35
	Medium	11	44	52	39.4	
	High	5	20	45	34.1	
Depersonalisation	Low	10	40	73	54.9	0.39
	Medium	8	32	32	24.1	
	High	7	28	28	21.1	
MBI in 2 categories	Low to medium burnout	17	68	86	65.2	0.99
	High burnout	8	32	46	34.8	

Table 3.

Age differences in the representation of individual burnout categories on the total MBI and subscales

		Age								p
		18-25 years		26-35 years		36-45 years		46-55 years		
		n	%	n	%	n	%	n	%	
Emotional exhaustion	Low	12	10.6	8	36.4	6	31.6	2	66.7	--
	Medium	33	29.2	6	27.3	6	31.6			
	High	68	60.2	8	36.4	7	36.8	1	33.3	
Total		113	100	22	100	19	100	3	100	
Personal accomplish-ment	Low	28	24.8	7	31.8	7	38.9	2	66.7	--
	Medium	47	41.6	9	40.9	6	33.3	1	33.3	
	High	38	33.6	6	27.3	5	27.8			
Total		113	100	22	100	18	100	3	100	
Depersonalis-ation	Low	55	48.7	13	59.1	12	63.2	3	100	--
	Medium	31	27.4	2	9.1	6	31.6			
	High	27	23.9	7	31.8	1	5.3			
Total		113	100	22	100	19	100	3	100	
MBI in 2 categories	Low to medium	71	62.8	15	68.2	15	83.3	2	66.7	0.39
	High	42	37.2	7	31.8	3	16.7	1	33.3	
Total		113	100	22	100	18	100	3	100	

Table 4.

Differences in the representation of individual burnout categories on the total MBI and subscales according to the type of study

		Type of study				P
		Full-time		Part-time		
		N (80)	%	N (78)	%	
Emotional exhaustion	Low	8	10	20	25.6	0.028
	Medium	23	28.7	22	28.2	
	High	49	61.3	36	46.2	
Personal accomplishment	Low	20	25	24	31.2	0.449
	Medium	31	38.8	32	41.6	
	High	29	36.3	21	27.3	
Depersonalis-ation	Low	42	52.5	41	52.6	0.725
	Medium	22	27.5	18	23.1	
	High	16	20	19	24.4	
MBI in 2 categories	Low and medium burnout	51	63.7	52	67.5	0.737
	high burnout	29	36.3	25	32.5	

Table 5.

Differences in the representation of individual burnout categories on the total MBI and subscales according to the year of study

		Year of Study						
		1		2		3		p
		n	%	n	%	n	%	
Emotional exhaustion	Low	6	10.7	16	25.8	6	15.0	0.089
	Medium	21	37.5	16	25.8	8	20.0	
	High	29	51.8	30	48.4	26	65	
Total		56	100	62	100	40	100	
Personal accomplishment	Low	17	30.9	16	25.8	11	27.5	0.681
	Medium	23	41.8	27	43.5	13	32.5	
	High	15	27.3	19	30.6	16	40	
Total		55	100.0	62	100	40	100	
Depersonalization	Low	27	48.2	34	54.8	22	55	0.771
	Medium	15	26.8	17	27.4	8	20	
	High	14	25.0	11	17.7	10	25	
Total		56	100.0	62	100	40	100	
MBI in 2 categories	Low and medium	36	65.5	44	71	23	57.5	0.376
	High	19	34.5	18	29	17	42.5	
Total		55	100	62	100	40	100	

Table 5 presents burnout levels in relation to the year of study. For emotional exhaustion, first-year students show the highest

prevalence of 'High' exhaustion at 51.8%, compared to 48.4% in the second year and 65% in the third year. Personal accomplishment and depersonalization subscales reflect no marked variation across study years. Generally, most students across all years fall into the 'Low and medium burnout' category, with the third-year students showing a slightly higher percentage of 'High burnout' at 42.5%. Statistical analysis suggests no significant differences across the years for all categories.

Table 6 highlights burnout differences based on marital status. Single students exhibit a notably higher level of emotional exhaustion (EE) (χ^2=27.271, p<0.001). Married participants, on the other hand, show the lowest 'High' emotional exhaustion (23.1%) and the most diminished level of Depersonalization (χ^2=9.782, p=0.044). They also demonstrate a reduced prevalence in the 'High burnout' category compared to singles and those in a relationship, with a statistically significant overall lower burnout (χ^2=6.790, p=0.034).

Table 6.

Differences in the representation of individual categories of burnout on the total MBI and subscales according to marital status

| | | Marital status | | | | | | p |
| | | Single | | Married | | In a relationship | | |
		N	%	n	%	n	%	
Emotional exhaustion	Low	3	4.5	12	46.2	12	19.4	**0.001**
	Medium	17	25.4	8	30.8	19	30.6	
	High	47	70.1	6	23.1	31	50	
Total		67	100	26	100	62	100	
Personal accomplishment	Low	17	25.4	12	48	15	24.2	0.168
	Medium	25	37.3	7	28	28	45.2	
	High	25	37.3	6	24	19	30.6	
Total		67	100.0	25	100	62	100	
Depersonalization	Low	29	43.3	19	73.1	33	53.2	**0.044**
	Medium	23	34.3	5	19.2	12	19.4	
	High	15	22.4	2	7.7	17	27.4	
Total		67	100	26	100	62	100	
MBI in 2 categories	Low and medium burnout	40	59.7	22	88	39	62.9	**0.034**
	High burnout	27	40.3	3	12	23	37.1	
Total		67	100	25	100	62	100	

DISCUSSION

Our study's insights into burnout among nursing students, contextualized with demographic variables, enrich the current understanding of this phenomenon.

We have identified significant emotional exhaustion, particularly in the age group of 18-25 years, where a staggering 60.2% reported 'High' levels of emotional exhaustion. This finding is especially concerning, spotlighting potential academic and environmental challenges younger students face at the initial stages of their academic journey. Likely contributors to this emotional exhaustion in this younger cohort could be the transitional phase from high school to a more demanding university environment, increased academic pressures, unfamiliarity with the clinical setting, financial stressors, and perhaps the struggle to establish a work-life balance. This observation, when analysed in tandem with Galdino's study results, suggests an intriguing trajectory of burnout among nursing students.

Galdino found that as students progressed in their academic years, there was an escalation in exhaustion, depersonalization, and low academic effectiveness (Galdino, 2020). This indicates that while younger students, such as our 18-25 age bracket, commence their academic journey with heightened emotional exhaustion, this trend doesn't wane but rather amplifies, becoming compounded with depersonalization and decreased academic effectiveness as they move forward. Further, Prakash et al. introduce another layer of complexity to this research evidence, revealing a significant association between academic burnout and age (Prakash, 2023).

Our observation that third-year students demonstrate a 42.5% prevalence of 'High' burnout is intriguing. Factors potentially exacerbating burnout in final-year students may include the cumulative academic load, imminent transition to professional roles, increased clinical responsibilities, and perhaps anxieties related to post-graduation placements and the impending job market.

In the exploration of emotional exhaustion among nursing students, our study underscores a pronounced difference: full-time students displayed elevated emotional exhaustion levels of 61.3% in comparison to their part-time peers at 46.2%. Such an observation warrants a thorough comparative analysis with findings from diverse studies that delve into the relationship between academic year, clinical practice experience, and stress levels. Hwang and Kim's research provides a comprehensive perspective on this topic (Hwang & Kim, 2022). They observed that, in the absence of clinical practice experience, first- and second-year students faced heightened stress levels relative

to their more senior counterparts. Furthermore, when considering the impact of clinical practice, their findings indicated that students with such experiences manifested variations in academic burnout associated with factors such as major satisfaction, satisfaction with professors, and nursing implications. Conversely, those lacking clinical engagements showed a consistent pattern of academic burnout, with no distinct variations. This dichotomy in Hwang and Kim's findings is further corroborated by Shin and Hwang's earlier research, which emphasized the significant association of clinical practice stress with academic burnout (Shin & Hwang, 2020). In a contrasting vein, Moon (2018) provides an alternative perspective, indicating a nebulous connection between the year of study and stress levels, with no discernible correlation evident.

The sex disparity in our cohort is consistent with longstanding trends in the nursing field. In the examination of sex-specific patterns of emotional exhaustion among nursing students, our study discerned a significant disparity with 57.1% of females reporting 'High' emotional exhaustion as opposed to 36% of their male counterparts. This sex-based variance in emotional exhaustion resonates with the findings from Alarcon et al. (2009). In their comprehensive meta-analysis, they elucidated inherent sex-specific differences in the experience of burnout. Specifically, women were identified as more susceptible to emotional exhaustion, a trend paralleled in our study. On the flip side, men, according to Alarcon and colleagues, tended to be more predisposed to depersonalization. Such interlocking observations highlight the multifaceted nature of burnout, underlining the significance of sex as a crucial variable. These shared trends across studies underscore the necessity of tailoring interventions and supports to the distinct needs and experiences of both sexes within the academic and clinical environments.

In the intricate landscape of emotional exhaustion and burnout, our findings shed light on the potential association of marital status with these outcomes. We discerned that single students were significantly more predisposed to experiencing elevated levels of emotional exhaustion, as evidenced by our statistical results. In contrast, married participants were somewhat protected from such adversities. They recorded the lowest 'High' emotional exhaustion at 23.1% and notably less depersonalization. Furthermore, when juxtaposed with singles and those in a relationship, the married cohort showed a marked decrease in the 'High burnout' category, revealing an overall significantly lower burnout propensity. Such observations resonate with a study from Brazil by Cestari et al. (2017), which highlighted that a substantial proportion of students lived alone

(81.3%) and did not have children (86.8%). This demographic profile suggests a lesser burden of familial obligations, possibly allowing more time to dedicate to academic pursuits. Yet, the high emotional exhaustion observed in our single participants offers a paradox, raising the question of whether living alone and the absence of family commitments genuinely translates into reduced stress or if other underexplored factors play a role in amplifying emotional strains. Our findings and the insights from Cestari et al. (2017) can be further contextualized by another piece of research by França et al. (2012). They proposed that individuals in marital partnerships or those with stable partners, and especially those with children, have a reduced inclination towards chronic stress. This assertion seems to align with our observations, suggesting that the inherent support structures or sense of purpose associated with marriage and parenthood might act as protective buffers against burnout and emotional exhaustion.

While our research aligns with certain aspects of the current body of knowledge, it also surfaces novel insights and disparities. Given the indispensable role of nurses in healthcare, these revelations underscore the urgency to bolster academic and institutional frameworks that prioritize student well-being. Our results underscore the importance of addressing burnout in nursing education, especially as it relates to preparing students for the rigors of critical and intensive care nursing, where resilience and emotional stability are paramount for patient safety and care quality.

Our study's findings are influenced by several limitations. The cross-sectional design of the research impedes the establishment of causality between demographic variables and burnout levels. The geographical concentration of our sample could affect the generalizability of the results to broader populations. Using self-reported measures introduces the risk of response bias, with participants possibly misrepresenting their actual burnout levels. Furthermore, while we considered multiple demographic factors, we might have overlooked some nuances, such as socioeconomic status or prior healthcare experience. Although the burnout measure we used was validated, it might not capture specific stressors unique to nursing students. Lastly, article also has methodological limitations, especially in statistical analysis ratio/ interval level variables, like age, have been treated as categorical and chi-square tests are employed throughout without adjustment for pertinent confounders, lowering the reliability of results. These constraints should be borne in mind when interpreting our results and planning future research.

CONCLUSIONS

The findings of our study accentuate the impact of demographic variables on burnout levels among nursing students. Recognizing these factors is paramount for educational institutions and healthcare organizations as they design strategies to support nursing students. The higher rates of emotional exhaustion, especially among younger students and those in full-time study programs, underscore the need for targeted interventions. These may include tailored counselling services, stress-management workshops, and perhaps a revision of curricula to ensure a balanced workload. Institutions should also emphasize building community and support systems, given the observed correlation between marital status and burnout.

Also, it is crucial that nursing mentors and leaders are equipped with resources to identify early signs of burnout. Enhancing the training modules to integrate elements of self-care, resilience building, and effective coping mechanisms can help in mitigating burnout. Moreover, continuous feedback mechanisms should be in place, enabling students to voice their concerns and institutions to make timely interventions.

Future studies might benefit from a longitudinal design to capture the evolving nature of burnout across academic years. Qualitative research, through interviews or focus group discussions, can capture the lived experiences of students, providing a richer context to the quantitative findings. Furthermore, exploring the efficacy of various interventions in reducing burnout can provide actionable insights for institutions and policymakers.

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