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The Impact of Compassion Fatigue on the Psychological Well-Being of Nurses Caring for Patients with Dementia: Post-COVID-19 Pandemic Data Analysis

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Abstract

Background/Objectives: Nurses are susceptible to compassion fatigue due to the nature of their professional responsibilities. Factors contributing to this vulnerability include daily patient interactions, organizational elements within their work environment, as well as work-related stress and socio-demographic characteristics, including age, marital status, years of professional experience, and notably, gender. The present study aims to examine the burden experienced by nurses who provide care for dementia patients, focusing on aspects such as compassion fatigue, mental health issues, quality of life, and the interrelations among these dimensions. **Methods:** This study involved a survey administered to a sample of 115 nurses employed in healthcare institutions specializing in the care of patients with dementia in Greece. The Hospitality Anxiety and Depression Scale , the Professional Quality of Life Scale (ProQOL-5), and the participants' personal, demographic, and professional information were all included in an electronic questionnaire that they had to fill out. **Results:** A total of 42.6% of nurses rated their working environment as favorable relative to their peers. Additionally, 23.5% of the sample exhibited high levels of compassion satisfaction, whereas 46.1% demonstrated low levels of burnout. Elevated symptoms of anxiety and depression were found to correlate with decreased compassion satisfaction, increased burnout, and heightened secondary post-traumatic stress. **Conclusions:** Engaging in the care of patients with dementia, particularly throughout the pandemic period, has underscored a pronounced susceptibility to compassion fatigue, physical fatigue, pain, psychological stress, and a reduced quality of life. It is therefore imperative to prioritize the provision of support for nursing professionals.

Keywords: nurses; dementia patients; compassion fatigue; quality of life in healthcare; compassion satisfaction; mental health; post pandemic

1. Introduction

In recent years, the increase in life expectancy and the growing elderly population have contributed to a rise in the prevalence of chronic conditions, including dementia. According to data from the World Health Organization, over 55 million individuals globally are currently living with dementia. Furthermore, dementia is identified as the seventh leading cause of mortality and disability among older adults [1]. Projections indicate that this figure will escalate to approximately 131.5 million by the year 2050 [2]. The prevalence of dementia exhibits variation across different ethnic groups, as well as according to educational attainment and socioeconomic status. In the United States,

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higher rates of dementia have been observed among Hispanic and Black populations relative to White populations [3]. Dementia encompasses a spectrum of physical, behavioral, and neuropsychiatric manifestations, some of which pose significant risks to both affected individuals and their caregivers [4]. Hospitalization rates for patients with dementia are reported to be 1.49 times greater than those for patients without dementia, thereby imposing substantial demands on nursing staff in terms of responsibility, commitment, and workload. These challenges frequently elicit adverse emotional responses among nurses, including anxiety, fear, sadness, and frustration [5,6]. Concurrently, the quality of nursing care delivered to this patient group appears to have a considerable impact on overall treatment outcomes. Nonetheless, several factors impede the provision of effective nursing care for patients with dementia, notably deficiencies in knowledge, experience, and clinical competence [7].

The concept of compassion fatigue was initially introduced by Joinson (1992) and subsequently elaborated upon by Figley (1995). This phenomenon is often used interchangeably with terms such as secondary traumatic stress, secondary traumatic stress disorder, vicarious stress, and burnout, which has led to some conceptual ambiguity. Fundamentally, compassion fatigue is characterized as a state of exhaustion that arises from caregiving relationships and is marked by a diminished capacity to cope [8].

The repercussions of compassion fatigue manifest in a variety of physical and emotional symptoms, including disturbances in sleep, impaired concentration, feelings of burden, fear, anxiety, fatigue, emotional collapse, despair, and social isolation accompanied by detachment. Additional reported effects encompass emotional disconnection, a decreased sense of fulfillment, spiritual emptiness, feelings of incompetence, dissatisfaction, and a lack of motivation. Collectively, these symptoms contribute to a decline in the overall quality of professional life among affected individuals [9].

In the nursing profession, several factors have been identified as contributors to compassion fatigue. These include caring for patients with poor prognoses and experiencing patient death [10]. Other contributing elements pertain to the work environment, such as staff shortages, excessive workloads, unrealistic expectations from patients and their families, emotional involvement with patients, insufficient knowledge and skills, and a lack of support from supervisors and colleagues, which can engender feelings of isolation [11,12].

Effective strategies for managing compassion fatigue include self-care practices, mutual support among colleagues, and assistance from social and familial networks. Additionally, maintaining professional boundaries within the workplace, engaging in physical exercise, spirituality, ongoing education, and acquiring information about compassion fatigue have been identified as beneficial. Serving as role models for more experienced colleagues also contributes positively to coping mechanisms [11].

Nursing staff who care for patients with chronic conditions such as dementia experience elevated levels of stress. The literature attributes this to several factors, including the time-intensive nature of care, the behavioral and psychiatric symptoms associated with dementia, the necessity of establishing and maintaining therapeutic relationships despite fears of aggression, and the resultant emotional detachment or apathy toward these patients. Furthermore, nurses often act as intermediaries among family members, patients, and physicians, while contending with limited material resources, bureaucratic demands that detract from patient care, and heavy workloads [13-16].

Numerous studies have demonstrated that disruptions in daily routines—such as decreased physical activity, social isolation, and sleep disturbances caused by confinement—have adversely impacted the physical and mental health of older adults during the COVID-19 pandemic [40,41]. The pandemic has affected not only the general population but also vulnerable groups with chronic health conditions, including individuals with dementia and their caregivers.

Cognitive impairments in dementia patients have hindered adherence to infection control measures, thereby increasing their risk of exposure to infection and mortality [17,18]. In many cases, protective protocols in dementia care facilities were particularly stringent to safeguard this population. However, these measures led to significant adverse effects, including psychomotor agitation, sleep disturbances, and depressive symptoms. Comparable psychological and physical

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stress has been reported among nurses working with dementia patients [19-22]. A study conducted in Switzerland found that nurses caring for dementia patients primarily experienced emotions of fear, helplessness, anxiety, and loneliness during the pandemic. Nonetheless, these nurses also reported enhanced levels of cooperation and job satisfaction, which were attributed to the formation of family-like relationships during periods of isolation and the strengthening of collegial bonds [23-25].

The psychosocial burden experienced by nurses globally during the COVID-19 pandemic was notably substantial. Specifically, the prevalence of depressive and anxiety disorders among this population reached 37% and between 41% to 45%, respectively [26]. In Italy, a study involving 1,071 employees at dementia care centers reported anxiety disorder rates of 22% and post-traumatic stress disorder (PTSD) rates of 39% [27]. Similarly, research conducted in Spain documented prevalence rates of 49% for depression, 59% for anxiety, and 71% for PTSD among healthcare workers [28]. A German study further corroborated these findings, indicating elevated levels of stress, anxiety, and depression, with 59.1% of nurses affected. Specifically, approximately 39% exhibited moderate to extremely severe stress symptoms, 36.5% demonstrated clinically significant anxiety, and 41.4% showed clinically significant depression [29,30].

Beyond the high incidence of anxiety and depressive disorders, healthcare professionals faced additional adverse outcomes during the pandemic, including professional burnout, compassion fatigue, increased workload, and both physical and psychological stress [43,44]. These challenges were particularly pronounced among healthcare workers caring for individuals with neurodegenerative and psychiatric conditions such as dementia [45]. Caregivers of dementia patients also reported significant mental distress, depressive symptoms, sleep disturbances, and both physical and mental exhaustion, exacerbated by the isolation and restrictions imposed during the pandemic [42].

Several factors were identified as contributing to the heightened psychosocial burden, including female gender, professional knowledge, nursing specialty, younger age, direct care of dementia patients, and exposure to staff or residents infected with COVID-19 [29,30]. A study conducted in England highlighted additional stressors for caregivers of dementia patients, emphasizing staff shortages and resource limitations between 2008 and 2018. Furthermore, poor team dynamics, lack of mutual respect among nursing staff, absence of clear guidelines for dementia populations, and insufficient counseling and support services were identified as significant aggravating factors [31,49]. The inherent challenges of dementia care—such as patients' inability to adhere to protective measures, social isolation from family members, anxiety and agitation among patients, and the ethical dilemmas arising from decision-making responsibilities—contributed to ambivalence, elevated mental distress, and increased burnout rates [38,39,46].

Both prior to and during the pandemic, nursing personnel in dementia care settings reported considerable stress, emotional exhaustion, and frustration, with these indicators intensifying markedly during the pandemic period [47,48]. Additionally, nursing staff indicated a lack of adequate training before the pandemic to effectively manage emergency situations and the specific needs of this patient population [49].

Protective factors mitigating psychosocial burden included workplace support, clear and consistent guidelines and protocols related to the virus, involvement in decision-making processes, and enhanced communication among colleagues [30]. Given the particularly demanding nature of dementia care, the provision of frequent, even brief, breaks during shifts was identified as especially beneficial and supportive for nursing staff [32].

The objective of this study is to examine the relationship between compassion fatigue and nurses who provide care for patients with dementia. Specifically, the study aims to assess the impact of compassion fatigue on the mental health of these nurses. The research questions guiding this investigation are as follows:

- What is the level of compassion fatigue among nurses caring for patients with dementia?
- What is the status of mental health, specifically anxiety and depression, among nurses caring for patients with dementia?

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- Which demographic, individual, and professional characteristics of nurses are associated with compassion fatigue and mental health outcomes in those caring for patients with dementia?
- What is the relationship between compassion fatigue and the psychological well-being of nurses providing care to patients with dementia?

2. Materials and Methods

2.1. Data Collection

This research employs a non-experimental, correlational design utilizing primary quantitative data. The quantitative methodology was selected due to its capacity to objectively capture respondents' responses. Subsequently, the collected data were transformed into numerical and statistical formats, enabling the execution of suitable comparative analyses between variables to derive the study's findings.

2.2. Participants

The present study was exclusively carried out among nurses employed in four nursing units dedicated to the care of anemic patients within the prefecture of Larissa. The study population, which constituted the final sample, comprised 115 nurses possessing a minimum of one year of prior professional experience, irrespective of gender or age, and with the ability to read and comprehend the Greek language.

Participants were recruited through a convenience sampling technique, which involves selecting the most readily accessible and available individuals who consented to participate in the survey. This sampling approach facilitated the acquisition of a substantial sample size within a relatively brief timeframe.

Data collection occurred between early February 2024 and the end of March 2024. Questionnaires were distributed and subsequently collected via the Google Forms platform, with an estimated completion time of approximately 20 minutes per respondent.

Prior to participation, all respondents were provided with written information detailing the study's objectives, the voluntary nature of their involvement, and assurances regarding the anonymity of their responses. Statistical analyses were performed using the SPSS software, version 26.0.

2.3. Research Instrument

The study employed a questionnaire comprising three distinct instruments for data collection. The first section addressed the respondents' personal, demographic, and professional characteristics. This section included eighteen items covering variables such as gender, age, marital status, number of children, educational attainment, years of service, job title, leadership responsibilities, working hours, frequency of night shifts, number of weekends worked per month, patient load within the department, monthly family income, work environment, job satisfaction within the nursing profession, motivations for choosing the profession, methods of relaxation after work, and whether any family member has experienced dementia or Alzheimer's disease.

The second section focused on assessing nurses' quality of life through the Professional Quality of Life Scale (ProQOL), specifically the Compassion Satisfaction and Compassion Fatigue Version 5 (2010). This instrument evaluates the risk of compassion fatigue and burnout—negative outcomes associated with caregiving professions—as well as the level of compassion satisfaction experienced by the individual. Each of the three dimensions is measured via ten items, rated on a five-point Likert scale ranging from 0 (Never) to 5 (Always) [34,35].

Given the direct interpersonal nature of caregiving, the compassion provided can have both beneficial and adverse effects on caregivers. Participants were instructed to reflect on their experiences over the preceding 30 days and to respond candidly to items concerning both positive and negative aspects of their caregiving roles.

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Cultural adaptation and validation of the instrument were conducted by Missouridou et al. (2020) and Misouridou et al. (2021) [36,37].

Part 3 focused on the Hospital Anxiety and Depression Scale (HADS), a brief 14-item self-report instrument designed to evaluate symptoms of anxiety and depression, particularly in individuals with coexisting physical health conditions. The HADS is endorsed by European consensus guidelines for caregivers of individuals with dementia and has been employed as a primary outcome measure in extensive clinical trials within this population [33].

Analyzing the factor structure of the HADS among caregivers also facilitates the assessment of measurement invariance, which is crucial for determining whether the scale can reliably detect differences across caregiver subgroups. This consideration is particularly important given the heterogeneity of caregiver populations and the research interest in how specific caregiver characteristics—such as gender, kinship relation, cohabitation status with the person with dementia, or age—may influence levels of stress or depression [33].

The HADS evaluates three dimensions: depression, anxiety, and negative emotionality. Originally developed in 1983 by A. S. Zigmond and R. P. Snaith, the HADS-7 is a self-administered scale intended to screen for anxiety and depression. While the HADS-14 does not provide a definitive clinical diagnosis, it serves as an initial screening tool within a multi-stage assessment process, identifying individuals at elevated risk who warrant further clinical evaluation [33].

The scale assesses participants' emotional states by asking them to indicate the extent to which they have experienced specific feelings over the preceding week. It comprises seven items related to anxiety and seven related to depression, each rated on a four-point Likert scale ranging from 0 (Not at all) to 3 (All the time/often). Completion typically requires between two and five minutes [33].

Scores for each subscale are calculated by summing the responses to the respective items, yielding a range from 0 to 21. Scores between 0 and 7 are considered within the normal range, indicating non-pathological levels of anxiety or depression. Scores from 8 to 10 suggest borderline or intermediate conditions, representing doubtful cases, while scores from 11 to 21 denote clinically significant symptoms warranting appropriate intervention. These thresholds apply equally to both the Anxiety and Depression subscales [33].

The HADS has been adapted and translated into Greek through a process involving independent back-translation. The Greek version demonstrates high internal consistency, with a Cronbach's alpha coefficient of 0.887.

2.4. Ethical Considerations

The research was conducted following the approval of the questionnaire by the Ethics and Deontology Committee of the University of Thessaly. Additionally, authorization was obtained individually from the respective scientific councils of each healthcare facility where the questionnaires were administered.

Participants were assured of the anonymity and confidentiality of their personal information, and no financial burden was imposed on the healthcare institutions. Prior to participation, all individuals were provided with an information and consent form, which detailed that their responses would be treated with strict confidentiality and anonymity, thereby safeguarding their personal data.

Furthermore, permission was obtained from the original authors for the use of all measurement scales incorporated in the questionnaire. The study adhered rigorously to the ethical standards outlined in the Declaration of Helsinki and complied with the provisions of Law 4624/2019 concerning the Personal Data Protection Authority.

3. Results

3.1. Statistical Analysis

The Kolmogorov-Smirnov test was employed to assess the normality of the distributions of quantitative variables. For variables exhibiting normal distribution, descriptive statistics were

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presented as means and standard deviations (SD), whereas for those deviating from normality, medians and interquartile ranges (IQR) were reported. Qualitative variables were summarized using absolute frequencies (N) and relative frequencies (%). The relationships between pairs of quantitative variables were evaluated using either Pearson's or Spearman's correlation coefficients, depending on data characteristics. To identify independent predictors associated with professional quality of life (ProQoL) and depression/anxiety scores (HADS), linear regression analyses with a stepwise selection procedure were conducted, yielding regression coefficients (β) alongside their standard errors (SE). In instances where the dependent variable's distribution was non-normal, a logarithmic transformation was applied prior to analysis. All statistical tests were two-tailed, with significance established at the 0.05 level.

3.2. Demographic Characteristics of Participants

The study sample comprised 115 healthcare professionals, with a mean age of 37.7 years (SD = 10.6). Females constituted 75.7% of the participants. Regarding marital status, 44.3% were married, 43.5% were single, 7.8% divorced, 3.5% cohabiting with a partner, and 0.9% widowed. In terms of parental status, 46.1% reported having no children, 26.1% had two children, and 20% had one child. Educationally, the majority (46.1%) were graduates of Technical Vocational High Schools specializing in Nursing, 33% had completed studies at the Institute of Vocational Training (I.E.K.) in Nursing, and 24.8% were graduates of Technical Educational Institutes (TEI). Additionally, 4.3% held university degrees, 1.7% possessed a master's degree, while none had attained a doctoral degree. The median monthly income among participants was €850, with a range from €800 to €1,500. A comprehensive summary of the participants' demographic characteristics is presented in Table 1.

Table 1. Demographic characteristics of participating nurses (N=115).

		N	%
Gender	Male	2	24.3
	Female	87	75.7
Age, Mean (SD)		37.7 (10.6)	
Marital status	Singe	50	43
	Married	51	44
	Widowed	1	0
	Divorced	9	7.8
	Living with partner	4	3.5
Number of children	0	53	46.1
	1	23	20
	2	30	26.1
	3	9	7.8
Level of education	Technical Vocational High School (T.E.L.) Nursing Department	53	46.1
	Vocational Training Institute (I.E.K.) Nursing	38	33.0
		17	14.8
	TEI	5	4
	University	2	1.7
	Master's Degree	0	0
	Doctorate		
Monthly family income Mean (SD), Median (interquartile range)		1128.3(518.6)	850.0 (800 – 1500)

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Table 2 presents the employment characteristics of the study participants, who exhibited a median tenure of 5 years, ranging from 3 to 14 years. The majority of participants (76.5%) were nursing assistants with secondary education, followed by 13% who were nurses possessing technical education. Auxiliary staff with compulsory education comprised 6.1%, while nurses with primary education accounted for 4.3%. A minority of 11.3% held positions of responsibility, and 74.8% were engaged in rotating shift work. The median number of night shifts per month was 5, with a range of 3 to 6, and the median number of weekend shifts was 2, ranging from 2 to 3. The median patient census in the department was 50, with a range between 40 and 50. Additionally, when queried about having a family member affected by dementia or Alzheimer's disease, 13.9% of participants responded affirmatively.

Table 2. Professional attributes of the nurses involved in the study.

		N	%
Years of service, Mean (SD), Median (range)		8.7 (8.1)	5.0 (3–14)
Job position	Support Staff Compulsory Education (YE)	7	6.1
	Nursing Assistant (DE)	88	76
	Nurse (TE)	15	13
	Nurse PE	5	4
Position of responsibility	Yes	13	11.3
	No	102	88.7
Working hours	Morning	20	17.4
	Morning & Afternoon	9	7.8
	Circular	86	74.8
Number of night shifts per month Mean (SD), Median (interquartile range)		4.1 (2.7)	5
How many weekends do you work on average per month? Mean (SD), Median (interquartile range)		2.1 (1.2)	2
Number of patients in the department Mean (SD), Median (range)		47.7 (15.9)	50.0 (40 – 50)
Does/did any member of your family suffer from dementia/Alzheimer's disease?	Yes	16	13
	No	99	86.1

A total of 42.6% of respondents characterized the working atmosphere with their colleagues as good, 25.2% as neutral, while 19.1% and 1.7% described it as very good and very bad, respectively. Regarding job satisfaction, 52.2% reported being quite satisfied with the nursing profession, 20% very satisfied, and 15.7% somewhat satisfied. Motivations for choosing this profession included a desire to help others (40.5%), the increased likelihood of professional rehabilitation (27.9%), and environmental influences (27.9%), whereas 16.2% indicated that they entered the profession by chance. For relaxation, 43.2% preferred sleep, 36% socializing with friends, and 27.9% engaging in physical exercise.

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Table 3. Occupational Settings of the Nurses Involved in the Study.

		N	%
How would you describe the working environment (relationship with colleagues) in your department?	Very poor	2	1
	Poor	1	11.3
	Neutral	29	25
	Good	49	42
	Very good	22	19
Are you generally satisfied With the nursing profession?	Not at all satisfied	5	4
	Somewhat satisfied	18	1
	Quite satisfied	60	52
	Very satisfied	23	2
	Very satisfied	9	7
What led you to choose the nursing profession?	My desire to help people	45	40.5
	The increased likelihood of professional rehabilitation	31	27
	The influences I received from my environment	31	27
	I ended up in this profession by Chance	18	16
How do you unwind/decompress from your work?	Physical rest/sleep	48	43
	Physical exercise/gym	31	27
	Socializing with friends/family	40	36
	Career counseling/supervision	1	0
	I do nothing	10	9

3.3. Professional Quality of Life Scale (ProQoL)

Table 4 presents descriptive statistics for the Professional Quality of Life (ProQoL) scale, which comprises three subscales: Compassion Satisfaction, Burnout, and Secondary Traumatic Stress. Elevated scores within each subscale indicate greater levels of compasion satisfaction, burnout, and secondary traumatic stress, respectively. In the current sample, scores on the Compassion Satisfaction subscale ranged from 20 to 50, with a mean of 35.4 (SD = 7.4), reflecting moderate to high levels of satisfaction. Scores on the Secondary Traumatic Stress subscale varied between 11 and 41, with a mean of 23.5 (SD = 6.4). The Burnout subscale scores ranged from 10 to 35, with a mean of 21.5 (SD = 5.8).

Table 4. Professional quality of life (ProQOL).

	Minimum Value	Maximum Value	Mean (SD)2
Compassion satisfaction	20.0	50	35.4
Exhaustion	11	41	23.5
Secondary traumatic Stress	10	35.0	21.5 (5.8)

Table 5 presents the distribution of work-related quality of life across various dimensions. Specifically, 23.5% of participants exhibited high levels of compassion satisfaction, 69.6% demonstrated moderate levels, and 7% reported low levels. Regarding professional burnout, 46.1% of participants experienced low levels, while 53.9% exhibited moderate levels; notably, no participants were identified with high levels of professional burnout. In terms of secondary traumatic

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stress, 58.3% of participants reported low levels, and 41.7% reported moderate levels, with no cases of high secondary traumatic stress observed.

Table 5. Distribution of participating nurses across levels of professional quality of life (ProQOL).

		N	%
Compassion satisfaction	Low (≤ 22)	8	7
	Moderate (23-41)	8	69.6
	High (≥ 42)	27	23
Exhaustion	Low (≤ 22)	53	46
	Moderate (23-41)	62	53.9
	High (≥ 42)	0	0
Secondary post-traumatic stress	Low (≤ 22)	67	58
	Moderate (23-41)	48	41
	High (≥ 42)	0	0

3.4. Hospital Anxiety and Depression Scale (HADS)

Table 6 follows, with descriptive data for the anxiety and depression dimensions of the HADS hospital scale. The scores on the dimensions range from 0 to 21 points. A higher score indicates greater anxiety or depression, respectively. In this sample, the minimum value on the depression dimension was 0 and the maximum was 15 points, with a mean value of 4.3 points (SD=3 points). The minimum value in the anxiety dimension was 0 and the maximum was 13 points, with a mean value of 3.5 points (SD=3 points).

Table 6. HADS scale.

	Minimum Value	Maximum Value	Mean value (SD)	Median (Range)
Depression	0.0	15.0	4.3 (3)	4 (2 — 6)
Anxiety	0	13	35.3 (3)	3 (1 — 4)

3.5. Scale Correlations

Table 7 presents the Spearman correlation coefficients between the Professional Quality of Life (ProQoL) scale and the subscales of the Hospital Anxiety and Depression Scale (HADS). All correlations between the ProQoL dimensions and the HADS subscales were statistically significant. Notably, compassion satisfaction exhibited a negative correlation with both anxiety and depression, indicating that higher levels of anxiety and more severe depressive symptoms were associated with lower compassion satisfaction. Conversely, the dimensions of burnout and secondary traumatic stress demonstrated positive correlations with anxiety and depression, suggesting that increased burnout and secondary traumatic stress corresponded with elevated anxiety and depressive symptomatology.

Table 7. Correlation between the ProQoL professional life quality scale and the hospital depression and anxiety scale.

		Depression	Anxiety
Compassion satisfaction	rho	-0,37	-0,22
	P	<0,001	0,016
Exhaustion	rho	0,44	0,44
	P	<0,001	<0,001
Secondary traumatic	rho	0,37	0,36
	P	<0,001	<0,001

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stress				

3.6. Multivariate Linear Regressions

To determine the factors independently associated with the dimensions of professional quality of life, multivariate linear regression analyses were conducted. The dependent variables comprised the scores on these dimensions, while the independent variables included participants' demographic and occupational characteristics. The findings of these analyses are presented in Table 8.

Table 8. Multivariate linear regression.

	β+	**SE++**	**b÷**	**P**
Dependent variable satisfaction (R2=0,44 F=5,9 p<0,001)				
Gender (Female vs Male)	3,201	1,377	0,193	0,022
Monthly family income	0,003	0,001	0,207	0,046
How would you describe the working environment (relationship with colleagues) in your department?	2,856	,698	0,378	<0,001
Are you generally satisfied with the nursing profession?	1,895	,787	0,226	0,018
Dependent variable: "Burnout" (R2=0,39 F=5,0 p<0,001)				
How would you describe the working environment Relationship with colleagues in your department?	-2,624	0,618	-0,406	<0,001
Are you generally satisfied with the nursing profession?	-1,394	0,698	-0,195	0,049
Dependent variable "Secondary post-traumatic stress" (R2=0.26 F=2.7p=0.004)				
How would you describe the working environment (relationship with colleagues) in your department?	-1.764	,640	-0,292	0,007
Educational level Vocational Training Institute (IEK) vs Technical Vocational High School (TEL)	-3,124	1,255	-0,262	0,015

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Nursing Department				

Gender, monthly family income, work climate, and job satisfaction emerged as independent predictors of compassion satisfaction. Specifically, female participants reported higher levels of compassion satisfaction compared to their male counterparts. Additionally, higher family income and a more positive perception of the collegial work environment were both positively correlated with increased compassion satisfaction. Similarly, greater job satisfaction was significantly associated with elevated compassion satisfaction.

Regarding professional burnout, satisfaction with the work environment and job satisfaction were identified as independent correlates. Notably, higher satisfaction with colleagues corresponded to lower levels of burnout. Likewise, increased job satisfaction was linked to reduced burnout symptoms.

Finally, satisfaction with the work environment and educational attainment were independently related to secondary post-traumatic stress. Greater satisfaction with colleagues was associated with diminished secondary post-traumatic stress. Furthermore, individuals who graduated from the Vocational Training Institute exhibited lower levels of secondary post-traumatic stress compared to those who graduated from the Technical Vocational High School (T.E.L.) Nursing Department.

Burnout was identified as the sole independent predictor significantly associated with the depression dimension, with higher levels of burnout corresponding to increased severity of depressive symptoms. Both the interpersonal climate among colleagues and burnout emerged as independent predictors of the anxiety dimension. Specifically, a more positive collegial atmosphere was linked to lower levels of anxiety, whereas elevated burnout was associated with heightened anxiety. Collectively, these predictor variables accounted for 33% of the variance observed in the anxiety dimension.

Table 9. Multivariate linear regression.

	β+	**SE++**	**b÷**	**P**
Dependent variable: depression dimension (R2=0,37F=4,0p<0,001)				
Exhaustion	0,016	0,004	0,393	<0,001
With the dependent variable being the dimension of anxiety (R2=0,33 F=3,4 p<0,001)				
How would you describe the working environment (relationship with colleagues) in your department?	-0,069	0,034 -	0,232	0,044
Burnout	0,024	0,005	0,530	<0,001

4. Discussion

4.1. Analysis and Interpretation of Findings

This study examined the burden experienced by nurses providing care to patients with dementia. Existing literature consistently demonstrates that caring for individuals with chronic conditions significantly affects nurses' physical and mental health.

In the present study, the majority of participants (42.6%) characterized their working environment positively in terms of collegial relationships, whereas only a small fraction (1.7%) rated it as very poor. Effective collaboration among healthcare professionals and a supportive work environment have been shown to enhance nurses' job satisfaction and contribute to improved quality of both professional and personal life [50]. Furthermore, the work environment plays a critical role

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in fostering dedication and commitment, promoting job satisfaction, and supporting psychological well-being, thereby mitigating burnout and the phenomenon of silent resignation among nurses [51]. For instance, a study involving 497 nurses found that those reporting lower workloads, higher job commitment, effective communication with colleagues, and recognition from supervisors experienced reduced levels of professional burnout [59].

More than half of the nurses in the current study expressed considerable satisfaction with the nursing profession. Notably, no participants exhibited high levels of burnout, and only 7% reported low job satisfaction. Given that job dissatisfaction is a significant predictor of burnout, maintaining high levels of job satisfaction is essential for preventing burnout and fatigue among nurses and other healthcare professionals [52]. These findings align with those of Coetzee and Klopper, whose research on nurses caring for anemic patients yielded similar results [53]. Professional burnout has been linked to factors such as staffing adequacy, management effectiveness, and the psychological burden inherent in nursing, which involves care provision, pain management, illness, and loss [52,54,55]. Collectively, these elements constitute critical conditions for ensuring satisfactory professional experiences within nursing.

A significant correlation was identified between the parameters of professional quality of life and the mental health status of nurses. Specifically, increased levels of stress and depression reported by participants were inversely related to their overall job satisfaction. Comparable findings have been documented in a study involving nurses caring for patients with dementia, where a decline in self-esteem was observed, subsequently leading to heightened anxiety and depression [57]. Furthermore, research by Finzi-Dottan and Kormosh highlights that compassion fatigue—arising from the challenges of managing the complex demands within an overburdened healthcare system—exerts considerable stress on nurses tasked with service provision [58].

Elevated levels of professional burnout and secondary post-traumatic stress were associated with increased anxiety and depression among nurses in the study. The repercussions of professional burnout on employees' physical and mental health bear significant implications both within and beyond the workplace environment [60]. Notably, even prior to the COVID-19 pandemic, burnout among healthcare professionals, with attendant effects on mental health, was recognized as a pervasive issue [61]. During the pandemic, studies involving healthcare workers reported heightened incidences of mental distress and burnout, attributed in part to social isolation measures and their consequences [56,62]. The pandemic further intensified anxiety related to viral transmission, which correlated with elevated professional burnout rates, as evidenced in a study of nurses in India during the initial wave in 2020 [63].

The present study, conducted post-pandemic, establishes a link between substantial levels of professional burnout and increased prevalence of anxiety and depression. Consistent with these findings, a related study involving 92 nurses demonstrated a significant association between work-related stress, depression, emotional exhaustion, and professional burnout. Both emotional and physical exhaustion among nurses were found to be connected to the pandemic context [65]. Consequently, it appears that the pandemic has markedly influenced the incidence of professional burnout as well as elevated rates of anxiety and depression among nursing professionals.

Participants in the study indicated that their preferred activities for relaxation included sleep (43.2%), socializing with friends (36%), and physical activity or exercise (27.9%). For healthcare professionals specifically, engagement in recreational activities, social interaction, and rest is critically important for sustaining mental resilience [64]. However, the ability to participate in these activities was often constrained by movement restrictions imposed during the pandemic, thereby imposing a substantial burden on healthcare workers.

The pandemic also negatively impacted nurses' job satisfaction and was associated with up to a 70% increase in symptoms indicative of professional burnout. Key factors contributing to diminished job satisfaction among nurses included increased workload, confinement, administrative management of protective protocols, financial insecurity, patient and family reactions, and more frequent exposure to death [66-69].

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Workplace atmosphere and burnout were independently correlated with stress levels; a more positive collegial environment was linked to reduced stress, whereas higher burnout corresponded with increased stress. Literature suggests that mentorship and guidance from more experienced colleagues serve as effective strategies for mitigating depression, stress, and burnout among nurses [72,73]. Nurses employed in dementia care units in the United States reported pervasive stress, frustration, and burnout, largely attributable to diminished support from management and peers, as well as understaffing [49]. These findings align with pre-pandemic research [74,75].

Research focusing on nurses caring for individuals with dementia during the pandemic revealed heightened experiences of frustration and emotional exhaustion [49]. Even prior to the pandemic, this group exhibited elevated levels of emotional exhaustion, professional burnout, and depersonalization [47,48]. The demanding nature of dementia care, particularly the challenges inherent in communicating with cognitively impaired patients, exacerbated the pressure on nurses to enforce COVID-19 containment measures among this high-risk population. The absence of adequate training for managing these circumstances further adversely affected nurses' job satisfaction [70]. Additionally, patient aggression, noncompliance with protective measures, and the imperative to safeguard patients, healthcare workers, and their families collectively contributed to a highly stressful work environment for nurses [49,71].

Gender, monthly family income, work environment, and job satisfaction were identified as independent predictors of compassion satisfaction. Female participants exhibited higher levels of compassion satisfaction compared to their male counterparts. Additionally, increased family income correlated positively with greater compassion satisfaction. A more favorable perception of the collegial work atmosphere was also associated with enhanced compassion satisfaction. Similarly, higher overall job satisfaction corresponded with increased compassion satisfaction.

Both satisfaction with the work environment and job satisfaction were independently linked to professional burnout. Specifically, greater satisfaction with colleagues was inversely related to burnout levels. Likewise, elevated job satisfaction was associated with reduced burnout. The presence of supportive peers and colleagues has been shown to mitigate stress and enhance compassion satisfaction [72,73].

Satisfaction with the work environment and educational attainment were independently associated with secondary post-traumatic stress. Higher satisfaction regarding the collegial work environment corresponded with lower levels of secondary post-traumatic stress. Furthermore, graduates from the Institute of Vocational Training reported less secondary post-traumatic stress compared to those who graduated from the Technical Vocational High School (T.E.L.) Nursing Department. Engagement in training opportunities and participation in nursing workshops positively influenced compassion fatigue and stress outcomes [72,73].

A longitudinal study conducted three years following the initial wave of the COVID-19 pandemic revealed a decline in rates of compassion fatigue and burnout among healthcare professionals relative to earlier pandemic phases. Notably, nurses exhibited higher incidences of compassion fatigue, secondary traumatic stress, and professional burnout compared to findings from previous research [76].

4.2. Limitations of the Study

This study is subject to several limitations. Firstly, the specific temporal and geographical scope of the research may have constrained the diversity of the sample. The limited time frame potentially restricts participant involvement, while the geographical focus poses challenges for the generalizability of the findings, given that many variables under investigation may vary between the capital city and provincial regions.

Secondly, the assessment instruments employed were self-administered, which introduces a considerable risk of response bias and consequently undermines the validity of the results. Furthermore, the use of a convenience sampling method may compromise the reliability of the findings, as this approach heightens the likelihood of selection bias; individuals who opt to

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participate voluntarily may differ systematically in their perceptions of work-life quality or mental health from those who decline participation.

Notwithstanding these limitations, the study's findings offer valuable insights into the impact of compassion fatigue on the mental health of nurses caring for patients with dementia.

4.3. Recommendations for Clinical Practice

Based on the findings, healthcare institutions—both management and staff—should be made aware of the importance of improving the stressful and demanding work environment to the greatest extent possible, promoting self-actualization, personal and professional well-being, mental resilience, the effectiveness and efficiency of nurses, and, by extension, the quality of care provided to patients.

The above findings, combined with the experiences of participating nurses and healthcare professionals in this and similar studies, show that the work environment and support from administrative and supervisory authorities play a significant role in reducing burnout and stress, particularly during times like the Covid-19 pandemic.

5. Conclusions

The findings of this study, along with existing literature, indicate that nurses endure frequent and extended exposure to stress while caring for patients with dementia. Gender, age, shift work, and occupational burnout correlate with depression and physical health. An optimal professional environment, a stable monthly family income, and gender contribute to stress reduction. Shift work and educational attainment lead to stress and physical discomfort.

Furthermore, nurses do not have sufficient support to deliver adequate care to their patients. There is a need to create a mechanism for assessing nurses' workloads that considers the various characteristics of dementia patients. Counseling sessions or mindfulness programs can also help nurses deal with the emotional stress caused by their dementia patients.

Nurses' quality of life is determined by sociodemographic factors such as education level, age, remuneration, shift patterns, and job-related stress. Nurses who have a low quality of life are less productive at work. Nurses who work in dementia care units are more likely to experience compassion fatigue, physical exhaustion, discomfort, stress, and a lower quality of life.

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