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OCCUPATIONAL STRESS AND ITS ASSOCIATION WITH AFFECTIVE DISORDERS IN HEALTHCARE WORKERS: A CROSS-SECTIONAL STUDY

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SUMMARY

Background: *Healthcare workers (HCWs) face significant occupational stressors that increase their risk of psychological symptoms, including anxiety, depression, and burnout. In particular, nurse may experience higher psychological distress due to unique workplace demands. However, direct comparisons between nurses and other HCWs within tertiary care hospitals remain limited. This retrospective study aimed to compare work-related stress levels and mental health outcomes in nurses versus other HCWs seeking psychological or psychiatric support through the Occupational Health Service (OHS) of a tertiary care hospital in central Italy.*

Subjects and methods: *This is a retrospective cross-sectional study analyzing healthcare workers (HCWs) who accessed psychological or psychiatric support through an Occupational Counseling Service (OCS) over a three-year period. Medical records of 155 HCWs who accessed the OHS from January 2022 to December 2024 were reviewed. Sociodemographic, occupational, clinical, and psychometric data were collected. Subgroup analyses compared nurses (n=79) to other professionals (n=76) regarding psychological distress, psychiatric diagnoses, and treatment. Correlations between personal/family psychiatric history and work-related stress were also assessed.*

Results: *Nurses exhibited significantly higher levels of depressive symptoms and anxiety compared to other HCWs. A positive personal and/or family history of anxiety and mood disorders was present in 26.5% of the full cohort and correlated significantly with work-related stress and burnout ($p<0.001$). Burnout and secondary traumatic stress were prevalent across all groups, although compassion satisfaction remained relatively preserved.*

Conclusions: *Nurses demonstrated greater vulnerability to affective symptoms and work-related stress compared to other HCWs, underscoring the need for tailored mental health support within occupational health frameworks. Early identification and intervention strategies are crucial to mitigate psychological distress and improve wellbeing among hospital staff.*

Key words: *work-related stress – burnout - healthcare workers – nurses - affective disorders - occupational health service*

Abbreviations: *HCWs: Healthcare Workers; WRS: Work-Related Stress; OHS: Occupational Health Service; OCS: Occupational Counseling Service; ProQoL - Professional Quality of Life Scale; MBI - Maslach Burnout Inventory; STAI-Y1 - State-Trait Anxiety Inventory, Form Y1; HAM-A - Hamilton Anxiety Rating Scale; BDI-II - Beck Depression Inventory-II; HAM-D - Hamilton Depression Rating Scale; SD - Standard Deviation; CI - Confidence Interval*

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INTRODUCTION

Healthcare workers (HCWs) are routinely exposed to a variety of occupational stressors, including high patient acuity, time pressure, ethical dilemmas, and irregular work hours. These demanding conditions contribute to a disproportionately high prevalence of psychological disorders among HCWs, such as anxiety, depression, adjustment disorders, and burnout.

Compassion fatigue (CF) has been identified as a significant occupational hazard specific to HCWs subjected to high emotional distress. Franza et al. (2015) highlighted that psychiatric caregivers, particularly nurses, experience elevated levels of CF, with 28.6% reporting significant symptoms. Similarly, a 2024 study by De Luca et al. (2024) found that a substantial proportion of Italian nurses and hospital-based clinical social workers exhibited CF symptoms following the COVID-19 pandemic. These findings underscore the vulnerability of HCWs to CF, especially during periods of heightened stress.

Work-related stress (WRS) is recognized by the World Health Organization (WHO) as a mental health condition and is a known risk factor for other mental disorders, with significant implications for HCWs' overall performance and well-being. Occupational Health Services (OHSs) within hospital settings play a critical role in the early detection and management of mental health issues among healthcare personnel. These services provide timely, confidential, and contextually informed psychological and psychiatric care. Despite their central role, there is limited data characterizing HCWs who actively seek support through OHS programs.

Among HCWs, nurses frequently encounter a unique combination of stressors, including extended working hours, high patient loads, emotional labor, and repeated exposure to suffering and death. These factors profoundly affect their psychological well-being, increasing vulnerability to burnout, anxiety, depression, and other stress-related conditions.

Although prior research documented elevated psychological distress among frontline HCWs, relatively few studies directly compared nurses to other professional groups within the same institutional setting, particularly in tertiary care hospitals, where patient complexity and workloads tend to be greater. This retrospective study aims to compare work-related stress levels and mental health outcomes in nurses versus other HCWs who sought psychological or psychiatric support through the OHS of a tertiary care hospital in central Italy between January 2022 and December 2024. By identifying group- specific risk factors and stress patterns, this study seeks to inform the development of tailored mental health interventions and occupational risk reduction strategies within hospital-based occupational health frameworks.

SUBJECTS AND METHODS

This retrospective was conducted at the Occupational Counseling Service (OCS), a collaborative initiative between the Unit of Psychiatry, Clinical Psychology and Psychiatric Rehabilitation and the Occupational Health Service (OHS) of Perugia General Hospital, Italy. The OCS provides free psychological and/or psychiatric support to all hospital healthcare workers (HCWs), including both clinical and non-clinical staff. Workers accessed the service either via referral from the OHS or through spontaneous self-referral. The intervention typically consisted of an initial psychological or psychiatric evaluation, followed by an offer of eight sessions of psychoeducation and support, delivered by mental health professionals from the Division of Psychiatry, Clinical Psychology, and Psychiatric Rehabilitation.

The study retrospectively analyzed paper medical records of HCWs who sought psychological or psychiatric support through the OCS between January 1, 2022, and December 31, 2024.

Inclusion criteria consisted of all hospital employees with at least one documented consultation with the OCS during the study period. Exclusion criteria included incomplete medical records.

Data were extracted using a standardized data collection form and entered into an electronic database created specifically for this analysis. The following variables were collected: a) Sociodemographic data (age, sex); b) Occupational data (professional category, including physicians, resident physicians, nurses, OSS, obstetricians, physiotherapists, technicians, administrative staff); c) Working area (medicine, surgery, accident and emergency, diagnostic services, technical and administrative staff); d) Temporal data (date of first contact during the study period).

A subgroup analysis was conducted comparing nurses to all other professionals, which included physicians, other paramedics, midwives, physiotherapists, technicians, and administrative staff.

The following validated psychometric instruments were employed:

Professional Quality of Life Scale (ProQoL). The ProQoL (Stamm 2010) assesses positive and negative aspects of professional caregiving, including compassion satisfaction, burnout, and secondary traumatic stress. It consists of 30 items rated on a 5-point Likert scale, providing scores for each subscale.

Maslach Burnout Inventory (MBI). The MBI (Maslach et al. 1996) is a widely used 22-item instrument measuring burnout across three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Items are rated on a 7-point frequency scale.

Beck Depression Inventory-II (BDI-II); State-Trait Anxiety Inventory – Form Y1 and Y2 (STAI-Y1 and STAI-Y2); Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D) scales, were used to investigated the presence of depression and anxiety.

All instruments were administered by trained mental health professionals during clinical assessments. Scores were used to quantify psychological distress, identify clinical thresholds, and compare symptom severity between nurses and other healthcare professionals. All participants provided informed consent for data collection. Data were anonymized at extraction to ensure confidentiality.

Statistical analysis

Descriptive statistics summarized sociodemographic, occupational, and clinical variables. Categorical variables were presented as frequencies and percentages, while continuous variables were expressed as means with standard deviations or medians with interquartile ranges, depending on the normality of distribution assessed by the Shapiro-Wilk test. Group comparisons were performed using chi-square or Fisher's exact tests for categorical variables, and Student's t-tests or Mann-Whitney U tests for continuous variables. Pearson's correlation coefficient was used for correlation analyses between the presence of positive personal and/or family history of anxiety and mood disorders and work-related stress and burnout. A p-value < 0.05 was considered statistically significant. Statistical analyses were conducted using SPSS version 29.0 (IBM).

RESULTS

A total of 155 healthcare workers (HCWs) accessed the Occupational Counseling Service (OCS), witha peak in 2022 (47.1%) and a decline in subsequent years. The average age was 48.3±8.9 years; most were women (80%), with nurses forming the largest group (51%). Although more nurses were women (86.1%) compared toothers (73.7%), the difference was not statistically significant. Overall, 74.3% were directly involved in

patient care, and the majority came from Medical departments. Nurses were younger and had fewer somatic comorbidities than other HCWs (22.5% vs. 52.6%, p = 0.006). Psychiatric history was present in 26.5%, and 15.4% reported family history; nearly 30% had prior treatment. Common reasons for consultation included relational conflicts (43.6%) and workload imbalance (33.3%). Nurses reported more trauma-related stressors (17.5% vs. 2.6%, p = 0.031), while personal difficulties were more frequent among other professionals (15.8% vs. 2.5%, p = 0.040). The most frequent diagnoses were adjustment (47.9%) and anxiety disorders (14.6%), with no significant differences between groups. A positive psychiatric history significantly correlated with work-related stress and burnout (r = 0.31, CI p < 0.001) (Table 1, 2, 3, Figure 1).

Table 1. Demographic and assessment characteristics of healthcare workers contacting the Occupational Counseling Service from 2022 to 2024

	Total (N = 155)	Nurses (N = 79)	Other professionals (N= 76)	*P-value*
Female, n (%)	124 (80.0)	68 (86.1)	56 (73.7)	*0.054*
Age (years), mean ± SD	48.3±8.9	46.6±9.17	50.03±8.54	*0.140*
Year of Access, n (%)				
2022	73 (47.1)	40 (50.6)	33 (43.4)	
2023	51 (32.9)	24 (30.4)	27 (35.5)	
2024	31 (20.0)	15 (19.0)	16 (21.1)	
Professional Role, n (%)				
Nurse	79 (51.0)	79	-	
Other paramedic	18 (11.6)	-	18	
Physician	17 (11.0)	-	17	
Technician	21 (13.3)	-	21	
Administrative staff	18 (11.4)	-	18	
Type of Support received, n (%)				*0.840*
Psychological	46 (29.1)	24 (30.4)	22 (28.9)	
Psychiatric	109 (70.3)	54 (68.4)	54 (71.0)	
Completed intervention, n (%)	101 (65.2)	54 (68.4)	45 (59.2)	*0.380*

Table 2. Clinical characteristics and psychiatric evaluation outcomes of healthcare workers who completed psychiatric assessment

	Total (N = 78)	Nurses (N = 40)	Other professionals (N = 38)	*P-value*
Somatic comorbidities, n (%)	29 (37.2)	9 (22.5)	20 (52.6)	*0.006*
Positive family history, n (%)	12 (15.4)	7 (17.5)	5 (13.2)	*0.590*
Affective disorders	9 (11.5)	5 (12.5)	4 (10.5)	
Positive personal history, n (%)	46 (59.0)	26 (65)	20 (52.6)	*0.260*
Affective disorders	41 (52.6)	24 (60)	17 (44.7)	*0.170*
Previous treatment, n (%)	23 (29.5)	14 (35)	9 (23.7)	*0.270*
Psychotherapy	11 (14.1)	7 (17.5)	4 (10.5)	
Pharmacotherapy (BDZ, AD)	18 (23.1)	11 (27.5)	7 (18.4)	
Pharmacotherapy at assessment (AD), n (%)	12 (15.4)	8 (20)	4 (10.5)	*0.240*
Work-related stressors, n (%)				
Relational	34 (43.6)	18 (45.0)	16 (42.1)	*0.790*
Workload	26 (33.3)	13 (32.5)	13 (34.2)	*0.870*
Stressful events or traumas	8 (10.3)	7 (17.5)	1 (2.6)	*0.031*
Personal	7 (9.0)	1 (2.5)	6 (15.8)	*0.040*

Table 3. Demographics of the sample who underwent psychometric assessment

	Total (n = 23)	Nurses (n = 14)	Other professionals (n = 9)	*P-value*
Female, n (%)	18 (78.3)	13 (92.9)	5 (55.6)	*0.034*
Age (years), mean ± SD	48±9.5	47.6 ± 9.5	48.8 ± 9.9	*0.780*
Professional role, n (%)				
Nurse	14 (60.9)	14	-	
Physician	3 (17.3)		3	
Other paramedic	2 (8.6)		2	
Technician	2 (8.7)		2	
Administrative staff	1 (4.3)		1	

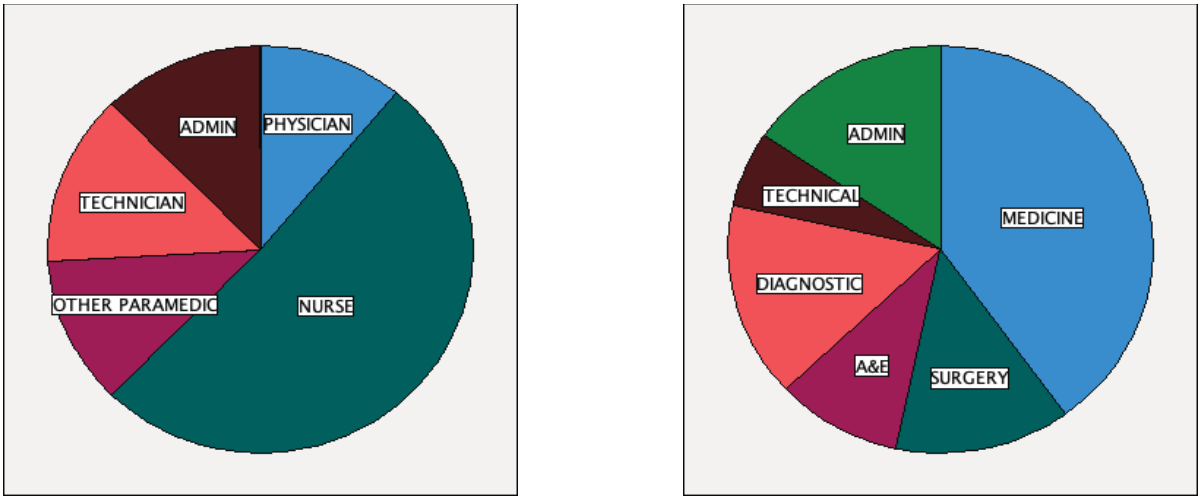

Figure 1. Distribution of professional roles and working areas among healthcare workers contacting the Occupational Counseling Service

Table 4. Psychometric assessment

	Total (n = 23)	Nurses (n = 14)	Other professionals (n = 9)	*P-value*
Positive BDI-II or Ham-D, n (%)	11 (47.8)	9 (64.3)	2 (22)	*0.049*
Positive STAI-Y1 or Ham-A, n (%)	12 (52.2)	7 (55.6)	5 (50)	*0.795*
Loss of Compassion Satisfaction/ Autorealization n (%)	4 (17.4)	3 (21.4)	1 (11.1)	*0.520*
Burnout, n (%)	19 (82.6)	11 (78.6)	8 (88.9)	*0.520*
Secondary Trauma/Depersonalization, n (%)	14 (60.9)	9 (64.3)	5 (55.6)	*0.670*
ProQoL (N = 21)	N = 21	N = 13	N = 8	
Compassion Satisfaction, n (%)	20 (95.2)	12 (85.7)	8 (100)	*0.420*
Burnout, n (%)	17 (81)	10 (76.9)	7 (87.5)	*0.540*
Secondary Trauma, n (%)	13 (61.9)	9 (69.2)	4 (50)	*0.370*
Maslach Burnout Inventory (N = 10)	N = 8	N = 8	N = 2	
Autorealization, n (%)	6 (60)	5 (62.5)	1 (50)	*0.740*
Burnout, n (%)	8 (80)	6 (75)	2 (100)	*0.430*
Depersonalization, n (%)	6 (60)	4 (50)	2 (100)	*0.190*
Presence of work-related stress, n (%)	19 (82.6)	11 (76.7)	8 (88.9)	*0.520*

Table 5. Psychometric assessment – scores

	Total (n = 23)	Nurses (n = 14)	Other professionals (n = 9)	*P-value*
Positive BDI-II or Ham-D, n (%)	17.2±9.2	20.3±9.8	12.3±5.8	*0.068*
Positive STAI-Y1 or Ham-A, n (%)	55.0±7.4	59.14±8.0	51±4	*0.034*
ProQoL (N = 21)				
Compassion Satisfaction, n (%)	34.5±5.8	33.46±5.7	36.25±6.3	0.290
Burnout, n (%)	27.2±5.7	27.08±5.8	27.5±5.9	0.870
Secondary Trauma, n (%)	23.9±5.9	25.4±5.7	21.5±5.7	0.140
Maslach Burnout Inventory (N = 10)				
Autorealization, n (%)	34.1±7.5	35.4±7.4	29±7	0.300
Burnout, n (%)	30.10±15.0	27.3±15	41±9	0.270
Depersonalization, n (%)	8.1±7.9	6.6±7.8	14±5	0.260

Psychometric Assessment Twenty-three HCWs underwent psychometric screening. Clinically significant anxiety and depression were found in 52.2% and 47.8%, respectively. Nurses showed higher depression prevalence (64.3% vs. 22.2%, p = 0.049) and anxiety scores (STAI-Y1: 59.1 vs. 51.0, p = 0.034), and more frequent antidepressant use (21.4% vs. 0%).Work-related stress affected 82% of the subgroup. High burnout was present in over 80%, with secondary traumatic stress in over 60%. Compassion satisfaction and self-realization remained largely preserved. Nurses showed a trend toward higher secondary trauma and lower compassion satisfaction, though not statistically significant (Table 4, 5, Figure 2).

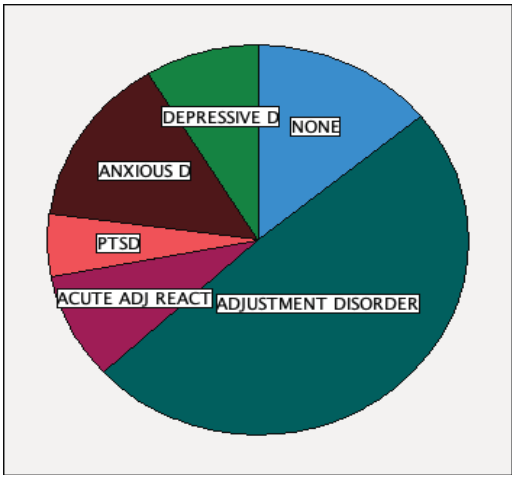

Figure 2. Prevalence of psychiatric diagnoses among healthcare workers evaluated by psychiatric assessment

DISCUSSION

This study examined work-related stress in nurses compared to other healthcare workers (HCWs) in a tertiary care hospital, focusing on associations with anxiety and mood disorders. Nurses showed significantly higher depressive and anxiety symptoms, consistent with literature highlighting their greater psychological burden (Maslach & Leiter 2016; Mealer et al. 2009). We analyzed HCWs seeking support through an Occupational Counseling Service (OCS) after the COVID-19 pandemic outbreak. Most users were female nurses, reflecting the workforce composition (Gómez-Urquiza et al. 2017). While female prevalence was higher among nurses, gender distribution did not differ significantly across groups. Somatic comorbidities were more frequent in non-nurse professionals, while nurses were younger and physically healthier factors potentially increasing susceptibility to environmental stressors (Naveed & Vergunst 2020). High rates of personal and family psychiatric history, and prior treatment, underline a vulnerable population (Shanafelt et al. 2020). Notably, history of anxiety or mood disorders correlated with work-related stress and burnout ($p < 0.001$). Relational conflicts, workload, and traumatic events were common triggers for service use, with nurses more often reporting trauma, and other HCWs more personal difficulties. Adjustment and anxiety disorders were prevalent, without significant group differences, mirroring pandemic-related mental health trends (Adams et al. 2006). Psychometric data revealed elevated anxiety, depression, and burnout, especially in nurses, who also showed higher antidepressant use - confirming their increased distress (Chen et al. 2021; Li et al. 2023). Despite widespread burnout and secondary traumatic stress, compassion satisfaction and self-realization were relatively preserved, suggesting resilience (Stamm 2010). Nurses may be more vulnerable to secondary trauma, although differences were not statistically significant. This study underscores the heightened psychological vulnerability of nurses compared to other healthcare workers in the aftermath of the COVID-19 pandemic, calling for targeted psychiatric screening and early intervention protocols within OHSs.

Several limitations should be aknowledged. The retrospective design, and the use of self-referred sample limits the generalizability and precludes causal interpretations. Self-selection bias may have resulted in overrepresentation of more distressed individuals, while reliance on self-reported data introduces potential recall and reporting inaccuracies. Future longitudinal studies are needed to track changes in mental health status and evaluate the effectiveness of targeted interventions (Haapasalo et al. 2025; Nobrega et al. 2020).

CONCLUSIONS

This study highlights a significant burden of psychological distress, work-related stress, and burnout among healthcare workers accessing a support service, with nurses emerging as a particularly vulnerable group. These findings support the integration of psychological screening and tailored interventions within occupational health frameworks, particularly in high-stress healthcare environments. Tailored preventive and therapeutic strategies are crucial to support this vulnerable workforce, reduce burnout, and enhance occupational well-being. Longitudinal research and preventive strategies are essential to monitor at-risk staff, improve resilience, and reduce long-term consequences on both worker well-being and organizational performance.

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Contribution of individual authors:

Grazia Pula & Guido Caramanico: study design and data collection, data analysis and interpretation.

Innocenza Ritacco & Patrizia Moretti: study conceptualization and revision of manuscript.

Giuseppe De Filippis & R. Magnone: revision of the manuscript.

Alfonso Tortorella: drafting and revision of the manuscript.

All authors approved the final manuscript.

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