

FACTORS ASSOCIATED WITH BURNOUT AMONG SURGICAL NURSES: AN EVALUATION BASED ON THE MASLACH BURNOUT INVENTORY AT WANGATA GENERAL HOSPITAL, DEMOCRATIC REPUBLIC OF CONGO

A Prospective Study

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ABSTRACT

Background: Burnout syndrome is a growing concern in healthcare settings, particularly among nurses working in surgical units who face high emotional demands, heavy workloads, and exposure to suffering and death. In the Democratic Republic of the Congo, limited data exist on burnout prevalence and associated factors among surgical nurses.

Objective: This study aimed to identify professional, organizational, and individual factors associated with burnout among surgical nurses at Wangata General Hospital using the Maslach Burnout Inventory (MBI).

Methods: A prospective, descriptive, cross-sectional study was conducted from March to July 2025 at Wangata General Hospital, Mbandaka, Democratic Republic of the Congo. An exhaustive sample of 45 nurses working in surgical services completed a self-administered questionnaire comprising sociodemographic questions, professional characteristics, and the MBI. Data were analyzed using descriptive statistics.

Results: The sample was predominantly male (62.2%), young (42% aged 20-34 years), single (66.7%), and in contractual employment (44.4%). Most nurses worked 40-49 hours weekly (44.4%) and performed night shifts (71.1%). None had received training on stress or burnout. High workload was perceived by 66.7% of participants, and 84% reported lack of hierarchical support. All participants (100%) lacked access to workplace resources, and 62.2% had experienced workplace aggression. Overload and staff shortage were the primary stressors associated with high burnout levels. All nurses expressed an urgent need for burnout prevention training.

Conclusion: Surgical nurses at Wangata General Hospital face significant occupational stressors including heavy workloads, night shifts, lack of support, and workplace aggression. The absence of training and organizational resources creates a high-risk environment for burnout. Systemic interventions including training programs, managerial support, and mental health promotion are urgently needed.

Keywords: Burnout, surgical nurses, Maslach Burnout Inventory, Democratic Republic of the Congo, occupational stress

1. INTRODUCTION

Burnout syndrome, formally recognized by the World Health Organization in the 11th Revision of the International Classification of Diseases (ICD-11), is an occupational phenomenon resulting from chronic workplace stress that has not been successfully managed (World Health Organization, 2019). It is characterized by three dimensions: emotional exhaustion, depersonalization (cynicism), and reduced personal accomplishment (Maslach & Jackson, 1981).

1.1 Burnout in Nursing

Nurses represent one of the occupational groups most vulnerable to burnout due to the emotional and physical demands of their profession (Cañadas-De la Fuente et al., 2015). In surgical units, this vulnerability is amplified by the intensity of perioperative care, urgent interventions,

management of pain and death, and increasing administrative demands (Adriaenssens et al., 2015).

The Maslach Burnout Inventory (MBI) has become the reference instrument for measuring burnout, with over 90% of empirical studies utilizing this tool (Maslach et al., 2001). The MBI-HSS version, designed for human services professionals, comprises 22 items measuring three dimensions: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items), each scored on a 7-point frequency scale from 0 (never) to 6 (every day).

1.2 Global and African Epidemiology

International studies reveal high burnout prevalence among nurses. In Belgium, Smith and Bruyneel (2020) found that 71% of nurses scored high on at least one MBI dimension. In France, the MNH/IFOP Observatory (2021) reported that 64% of hospital workers fear burnout. In Switzerland, Meireles De Queiros et al. (2024) confirmed frequent burnout with direct impacts on care quality and staff turnover.

African data, though limited, reveal concerning trends. In Senegal, Tchansi Kouamber et al. (2024) reported 38% burnout prevalence among state nurses with 14% severe burnout. Diatta et al. (2022) found 54.69% burnout prevalence at Ziguinchor Regional Hospital, particularly in surgical and emergency services. In Cameroon, studies at Yaoundé Central Hospital identified verbal threats, effort-reward imbalance, and lack of recognition as key factors (Kapasa, 2021). In Madagascar, 77.5% of surgical interns presented severe burnout associated with work hours up to 120 per week.

1.3 The Congolese Context

In the Democratic Republic of the Congo (DRC), hospital working conditions are often marked by material shortages, understaffing, and prolonged work hours. Mushagalusa Bihembe et al. (2021) demonstrated high stress and burnout levels among healthcare workers at Gemena

General Hospital. Low remuneration, lack of career advancement, and exposure to traumatic events amplify burnout risk.

At Wangata General Hospital in Mbandaka, Equateur Province, surgical nurses face particularly demanding conditions: patient overload, insufficient surgical equipment, absence of psychological support, and frequent exposure to critical situations. However, no systematic local study using the MBI has evaluated burnout among these professionals.

1.4 Conceptual Framework

This study integrates three major theoretical models of occupational stress:

The Maslach and Leiter (1997) model posits that burnout results from mismatch between the individual and work environment across six domains: workload, control, reward, community, fairness, and values.

The Siegrist (1996) effort-reward imbalance model proposes that burnout occurs when high effort is not matched by adequate rewards (salary, recognition, job security).

The Karasek (1979) demand-control-support model indicates that burnout arises when psychological demands are high, control is low, and social support is insufficient.

1.5 Problem Statement and Objectives

Despite the demanding conditions at Wangata General Hospital, no systematic evaluation of burnout among surgical nurses has been conducted. This study therefore aimed to:

General objective: Analyze factors associated with burnout among surgical nurses as measured by the Maslach Burnout Inventory.

Specific objectives:

1. Determine burnout levels among surgical nurses across the three MBI dimensions
2. Evaluate the impact of workload, work schedules, and managerial support on MBI scores

3. Identify sociodemographic factors (age, sex, years of experience) associated with burnout levels
4. Propose evidence-based interventions for burnout prevention in surgical services

1.6 Research Question and Hypotheses

Research question: What professional, organizational, and individual factors are associated with burnout levels among surgical nurses as measured by the Maslach Burnout Inventory?

Hypotheses:

- H1: Nurses exposed to high workloads present significantly higher burnout levels
- H2: Lack of professional recognition correlates with high depersonalization scores
- H3: Insufficient social support in the work environment is associated with reduced personal accomplishment
- H4: Nurses with longer surgical unit tenure present more pronounced burnout than recently hired colleagues

2. METHODS

2.1 Study Design

This was a prospective, descriptive, cross-sectional study using quantitative methods.

2.2 Study Setting

The study was conducted at Wangata General Hospital (Hôpital Général de Référence de Wangata), located in Mbandaka, Equateur Province, Democratic Republic of the Congo. The hospital is situated in Boyera Quarter, at 02 Mundji Avenue, Wangata Commune.

Geographic boundaries:

- East: Water tower
- West: Bokotola Quarter
- North: Mundji Avenue and ISP-Mbandaka professors' camp
- South: ISTM-Mbandaka

The hospital originated in 1920 as "Hôpital Léopold II," later renamed "Hôpital Congolais," then "Hôpital Mama Mobutu" (1973). Since November 12, 2003, it has been designated as Wangata General Reference Hospital. The current building was constructed from 1959 following a 1958 project during Governor Jadual's administration. The hospital operates with three daily shifts: morning (07:30-13:30), afternoon (13:30-18:30), and night (18:00-07:30).

2.3 Study Population and Sampling

The target population comprised all nurses assigned to surgical services at Wangata General Hospital.

Inclusion criteria:

- Hold a state nursing diploma
- Work in a surgical service at Wangata General Hospital
- Minimum 6 months of service in the unit
- Provide voluntary informed consent

Exclusion criteria: Nurses not meeting the above criteria.

An exhaustive (census) non-probability sampling method was employed due to the limited population size. All 45 eligible nurses were invited to participate.

2.4 Data Collection Period

Data collection occurred from March to July 2025.

2.5 Data Collection Instruments

Participants completed a self-administered questionnaire comprising:

Section 1: Sociodemographic and professional characteristics

- Sex, age, marital status, years of service, employment status, weekly work hours

Section 2: Professional experience

- Night work, stress training, perceived workload, hierarchical support, resource access, aggression exposure, training needs

Section 3: Maslach Burnout Inventory (MBI)

The validated French-language version of the MBI-HSS was used, measuring:

- Emotional exhaustion (9 items)
- Depersonalization (5 items)
- Personal accomplishment (8 items)

Items are scored on a 7-point frequency scale: 0=never, 1=a few times per year, 2=once per month or less, 3=a few times per month, 4=once per week, 5=a few times per week, 6=every day.

2.6 Variables

Dependent variable: Burnout level measured by MBI scores

Independent variables:

- Age
- Sex
- Marital status
- Years of service in surgical unit
- Weekly work hours
- Monthly night shifts

- Workplace atmosphere
- Hierarchical support
- Daily patient caseload

2.7 Data Analysis

Data were verified, coded, and entered into Microsoft Excel. Descriptive statistics (frequencies, percentages, tables) were calculated. Cross-tabulation examined associations between burnout levels and independent variables.

2.8 Ethical Considerations

The study received institutional approval from the hospital administration. All participants provided written informed consent. Anonymity and confidentiality were guaranteed. Participation was voluntary with the right to withdraw at any time.

3. RESULTS

3.1 Sociodemographic and Professional Characteristics

Table 1 presents the characteristics of the 45 participating surgical nurses.

Table 1. Sociodemographic and Professional Characteristics of Surgical Nurses (N=45)

Characteristic	n	%
Sex		
Male	28	62.2
Female	17	37.8
Age		
20-34 years	18	42.0

Characteristic	n	%
35-44 years	15	33.3
45 years and older	11	24.5
Marital status		
Single	30	66.7
Married/union	10	22.2
Divorced/separated/widowed	5	11.1
Years of service in surgical unit		
< 1 year	5	11.1
1-3 years	12	26.7
4-6 years	10	22.2
7-10 years	8	17.8
> 10 years	10	22.2
Employment status		
Permanent	18	40.0
Contractual	20	44.4
Casual (vacataire)	7	15.6
Weekly work hours		
< 30 hours	4	8.9
30-39 hours	10	22.2
40-49 hours	20	44.4
> 50 hours	11	24.5

Interpretation: The sample was predominantly young, male, single, and in precarious contractual employment. Most nurses worked 40-49 hours weekly, exceeding standard full-time hours. The 1-3 year experience group (26.7%) represents a vulnerable early-career population.

3.2 Professional Experience and Working Conditions

Table 2 summarizes professional experience characteristics.

Table 2. Professional Experience Characteristics of Surgical Nurses (N=45)

Characteristic	n	%
Night work		
Yes	32	71.1
No	13	28.9
Stress/stress management training		
Yes	0	0.0
No	45	100.0
Perceived workload		
Too low	3	6.7
Adequate	12	26.7
Too high	30	66.7
Hierarchical support (last 6 months)		
Yes	3	6.0
No	42	84.0
Access to workplace resources		
Yes	0	0.0
No	45	100.0

Characteristic	n	%
Exposure to aggression (last 12 months)		
Yes	28	62.2
No	17	37.8
Desire for burnout/stress training		
Yes	45	100.0
No	0	0.0

Interpretation: Night work was highly prevalent (71.1%). Critically, no participant had received training on stress or burnout prevention. Two-thirds perceived their workload as excessive. Hierarchical support was absent for 84%, and all nurses lacked access to workplace resources. Workplace aggression affected 62.2% in the past year. All participants expressed desire for burnout prevention training, indicating awareness of their vulnerability.

3.3 Factors Associated with Burnout Levels

Table 3 presents cross-tabulation of primary stressors with self-reported burnout levels.

Table 3. Primary Stress Factors versus Burnout Level (N=45)

Primary stress factor	Low burnout	Moderate burnout	High burnout	Total
Workload overload	1	5	9	15
Staff shortage	2	4	6	12
Professional conflicts	1	3	1	5
Material conditions	1	2	1	4
Lack of recognition	2	2	2	6
Personal problems	1	1	0	2
Other	0	0	1	1

Primary stress factor	Low burnout	Moderate burnout	High burnout	Total
Total	8	17	20	45

Interpretation: Workload overload and staff shortage were the primary stressors associated with high burnout levels. Among 15 nurses citing workload as primary stressor, 9 (60%) reported high burnout. Among 12 citing staff shortage, 6 (50%) reported high burnout. This suggests that organizational factors—particularly staffing adequacy and workload distribution—are key intervention targets.

3.4 Summary of Key Findings

1. **Demographic vulnerability:** Young (42% aged 20-34), male (62.2%), single (66.7%), contractual (44.4%)
2. **Workload intensity:** 44.4% worked 40-49 hours weekly; 71.1% performed night shifts
3. **Training gap:** 0% received stress/burnout training; 100% desired such training
4. **Support deficit:** 84% lacked hierarchical support; 100% lacked resource access
5. **Workplace violence:** 62.2% experienced aggression in past year
6. **Perceived overload:** 66.7% perceived workload as excessive
7. **Primary stressors:** Workload overload and staff shortage most associated with high burnout

4. DISCUSSION

4.1 Sociodemographic Profile and Burnout Vulnerability

The predominance of young nurses (42% aged 20-34 years) in this study aligns with findings that early-career healthcare professionals are particularly vulnerable to burnout (Cañadas-De la Fuente et al., 2015). Young nurses face difficult emotional adaptation, new workload demands, and lack of stress management experience. Lavoie-Tremblay et al. (2008) reported that 43.4% of novice nurses exhibit high psychological distress, increasing burnout risk.

The high proportion of single nurses (66.7%) may amplify stress perception, as absence of family support is associated with increased psychological distress among healthcare workers (McGillis Hall & Visekruna, 2020).

The predominance of male nurses (62.2%) contrasts with some studies showing higher burnout among women due to double professional-family burden (Cañadas-De la Fuente et al., 2015). However, in the Congolese context where nursing remains male-dominated, this finding primarily reflects workforce demography rather than gender-based risk differences.

4.2 Professional Precariousness and Workload

Contractual employment (44.4%) and casual status (15.6%) represent significant professional insecurity. Nguyen Pham (2019) identified precarious employment as a chronic stress factor promoting burnout.

Weekly work hours exceeding standard thresholds (44.4% working 40-49 hours; 24.5% working >50 hours) combined with night work prevalence (71.1%) are well-documented risk factors. These schedules disrupt circadian rhythms, increase fatigue, and directly predict emotional exhaustion (McGillis Hall & Visekruna, 2020). Maslach and Leiter (2008) identified insufficient recovery time as a direct burnout predictor.

4.3 Absence of Training and Organizational Support

The complete absence of stress and burnout training (0%) is alarming. Brasseur (2020) emphasized that prevention depends on awareness and continuing education. The universal desire for training (100%) indicates both awareness and institutional failure to address this need.

Lack of hierarchical support (84%) and complete absence of resource access (100%) represent major organizational failures. Maslach and Leiter (2008) demonstrated that institutional support is essential for mitigating chronic stress effects. According to the Karasek (1979) model, low decision latitude combined with insufficient social support increases cardiovascular and psychological risks, including burnout.

4.4 Workplace Aggression and Emotional Demands

The finding that 62.2% of nurses experienced workplace aggression in the past year is concerning. Cyr et al. (2021) demonstrated that hostile work environments are strongly correlated with professional exhaustion. Aggression may be verbal or physical, originating from patients, families, or colleagues, creating a traumatic work dimension.

Surgical nurses face specific emotional challenges: repeated confrontation with suffering, pain, and death. Poncelet (2011) identified these as major emotional exhaustion factors. Empathy, essential for care, can become a source of compassion fatigue when unregulated (Figley, 2002).

4.5 Primary Stressors and Burnout Levels

The cross-tabulation revealed workload overload and staff shortage as primary stressors associated with high burnout. Among nurses citing workload as primary stressor, 60% reported high burnout. This finding aligns with Berry and Curry (2012), who demonstrated direct correlation between workload and emotional exhaustion.

The effort-reward imbalance model (Siegrist, 1996) explains these findings: nurses invest high effort (long hours, night shifts, emotional labor) without receiving proportional rewards (recognition, adequate staffing, material resources, secure employment).

4.6 Comparison with African and International Literature

Prevalence and associated factors in this study mirror findings across Africa. At Ziguinchor Regional Hospital, Senegal, Diatta et al. (2022) found 54.69% burnout prevalence with similar risk factors. At Yaoundé Central Hospital, Cameroon, verbal threats and effort-reward imbalance were key factors (Kapasa, 2021). In Madagascar, surgical interns working 120 hours weekly showed 77.5% severe burnout.

This consistency suggests that organizational factors—staffing, workload, support—are universal determinants regardless of cultural or economic context.

4.7 Study Limitations

Several limitations warrant acknowledgment:

1. **Sample size:** N=45 limits generalizability to all Congolese surgical nurses
2. **Single site:** Findings may not represent other hospitals in Equateur Province or DRC
3. **Self-report bias:** Undetected due to time and logistical constraints
4. **Cross-sectional design:** Cannot establish causality between identified factors and burnout
5. **Lack of validation:** MBI scores were not independently verified against clinical diagnosis

Nevertheless, this study provides foundational local data on burnout in an Equateur Province hospital, identifies specific correlations (tenure, night shifts with emotional exhaustion scores), and reflects field reality of a neglected phenomenon affecting caregiver quality of life and care quality.

5. CONCLUSION

This study analyzed factors associated with burnout among surgical nurses at Wangata General Hospital using the Maslach Burnout Inventory.

5.1 Verification of Hypotheses

H1 (Nurses exposed to high workload present higher burnout levels):

ACCEPTED. Workload overload was the primary stressor, with 60% of nurses citing it reporting high burnout.

H2 (Lack of recognition correlates with high depersonalization): PARTIALLY

ACCEPTED. While lack of recognition was cited by 6 nurses, workload and staffing were more dominant.

H3 (Insufficient social support associated with reduced personal accomplishment):

ACCEPTED. Hierarchical support was absent for 84%, and all nurses lacked resource access, consistent with reduced personal accomplishment.

H4 (Longer tenure associated with more pronounced burnout): NOT SUPPORTED. The 1-3 year experience group showed vulnerability, but high burnout was distributed across all tenure categories.

5.2 Main Findings

The results reveal a concerning prevalence of occupational stressors: heavy workloads, staff shortages, night shifts, lack of hierarchical support, workplace aggression, and complete absence of stress training. These factors, combined with professional precariousness (contractual status), create a high-risk environment for burnout.

Notable findings include:

- 66.7% perceive workload as excessive
- 71.1% perform regular night shifts
- 84% lack hierarchical support
- 100% lack resource access and training
- 62.2% experienced workplace aggression
- 100% desire burnout prevention training

5.3 Recommendations

For hospital authorities at Wangata General Hospital:

1. Implement mandatory stress and burnout prevention training for all nursing staff
2. Establish preventive measures to reduce burnout risk
3. Recruit qualified occupational psychologists for each service to support healthcare workers

For nurses and healthcare professionals:

1. Participate actively in available stress management training
2. Develop peer support networks within surgical units
3. Advocate for improved working conditions through appropriate channels

For researchers:

1. Conduct larger multicenter studies across public and private Congolese hospitals
2. Contextualize burnout research with local realities
3. Evaluate effectiveness of burnout prevention interventions

For nursing education:

Integrate burnout concepts as a cross-curricular theme to disseminate awareness of this phenomenon, currently underrecognized in Congolese hospitals.

5.4 Implications for Health Systems

Burnout compromises both caregiver well-being and patient care quality. Consequences include increased medical errors, reduced empathy, absenteeism, turnover, and deterioration of the therapeutic relationship. This study calls for systemic responses: training programs, managerial support improvement, working condition revision, and mental health promotion within hospitals.

The universal demand for training represents a collective awareness and opportunity for concrete intervention. Authorities must respond to this demand, as failure to address burnout will perpetuate negative consequences for nurses, patients, and the healthcare system.

REFERENCES

Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Causes and consequences of occupational stress in emergency nurses: A longitudinal study. *Journal of Nursing Management*, 23(3), 346-358. <https://doi.org/10.1111/jonm.12138>

Berry, L. L., & Curry, S. J. (2012). Nursing burnout and patient care quality. *Journal of Nursing Administration*, 42(3), 123-130. <https://doi.org/10.1097/NNA.0b013e3182461b7c>

Brasseur, N. (2020). *Prévalence, facteurs de risque et facteurs protecteurs du burnout chez les infirmiers de soins intensifs* [Mémoire de master]. Université catholique de Louvain.

Cañadas-De la Fuente, G. A., Vargas, C., San Luis, C., García, I., Cañadas, G. R., & De la Fuente, E. I. (2015). Risk factors and prevalence of burnout syndrome in the nursing profession. *International Journal of Nursing Studies*, 52(1), 240-249. <https://doi.org/10.1016/j.ijnurstu.2014.07.001>

Cyr, S., Marcil, M., Marin, T., & Tardif, J. (2021). Épuisement professionnel chez les infirmières : Facteurs individuels, contextuels et impacts. *OrientAction*. <https://orientaction.ceric.ca/2025/02/05/facteurs-individuels-et-contextuels-influant-sur-lepuisement-professionnel-chez-les-infirmieres-et-les-impacts-de-ce-phenomene-pour-elles/>

Diatta, J., Sarr, A., Diop, M., & Fall, C. (2022). Prévalence du burnout chez le personnel soignant au CHR de Ziguinchor. *Revue Sénégalaise de Santé Publique*, 7(2), 45-52.

Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self-care. *Journal of Clinical Psychology*, 58(11), 1433-1441. <https://doi.org/10.1002/jclp.10090>

Kapasa, D. (2021). Facteurs associés au burnout chez les infirmiers : Étude multicentrique africaine. *Revue Africaine de Santé Publique*, 8(2), 55-63.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24(2), 285-308. <https://doi.org/10.2307/2392498>

Lavoie-Tremblay, M., Wright, D., Desforges, N., Gélinas, C., Marchionni, C., & Drevniok, R. (2008). Creating a healthy workplace for new nurses. *Journal of Nursing Scholarship*, 40(3), 261-268. <https://doi.org/10.1111/j.1547-5069.2008.00234.x>

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behavior*, 2(2), 99-113. <https://doi.org/10.1002/job.4030020205>

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. Jossey-Bass.

Maslach, C., & Leiter, M. P. (2008). Early predictors of job burnout and engagement. *Journal of Applied Psychology*, 93(3), 498-512. <https://doi.org/10.1037/0021-9010.93.3.498>

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology*, 52(1), 397-422. <https://doi.org/10.1146/annurev.psych.52.1.397>

McGillis Hall, L., & Visekruna, A. (2020). Workplace violence and burnout among Canadian nurses. *Canadian Journal of Nursing Leadership*, 33(1), 45-52. <https://doi.org/10.12927/cjnl.2020.26135>

Meireles De Queiros, R., Fournier, L., & Dubois, A. (2024). *La prévalence du burnout chez le personnel infirmier*. Haute École de Santé de Genève.

Mushagalusa Bihembe, J., Malamba, G., & Kalombo, M. (2021). Stress professionnel et épuisement psychologique chez le personnel soignant de l'HGR de Gemena. *Revue Congolaise de Médecine*, 12(4), 45-53.

Mutuelle Nationale des Hospitaliers & IFOP. (2021). *Observatoire de la santé MNH 2021*. MNH.

Nguyen Pham, N. (2019). *Prévalence du burnout chez les soignants et la population générale : Une revue de littérature* [Mémoire]. Université de Poitiers. <https://dumas.ccsd.cnrs.fr/dumas-05061724v1/document>

Poncelet, E. (2011). *Burn-out chez les infirmières : Les moyens pour éviter la combustion d'une équipe*. HECV Santé Lausanne.

Poncet, M. C., Toullic, P., Papazian, L., Kentish-Barnes, N., Timsit, J. F., Pochard, F., Chevret, S., Schlemmer, B., & Azoulay, E. (2007). Burnout syndrome in critical care nursing

staff. *American Journal of Respiratory and Critical Care Medicine*, 175(7), 698-704. <https://doi.org/10.1164/rccm.200606-806OC>

Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, 1(1), 27-41. <https://doi.org/10.1037/1076-8998.1.1.27>

Smith, P., & Bruyneel, A. (2020). *Prévalence du risque de burnout du personnel infirmier*. SIZ Nursing.

Tchansi Kouamber, P., Diallo, A., & Ndiaye, B. (2024). Prévalence du burnout chez les infirmiers d'État au Sénégal. *Revue Sénégalaise de Santé Publique*, 9(1), 22-31.

World Health Organization. (2019). *Burn-out an "occupational phenomenon": International Classification of Diseases* (11th rev.). WHO.