International Journal for Interdisciplinary Scientific Advancements (*IJISA*)
ISSN: 3085-5012

IJISA, 2025, Volume 6, Issue 2, Page 22-42

https://www.ijisa2025.com

Exploratory Study on Burnout Syndrome Among Nurse Anesthetists in the Operating Room of the University Hospital Center of Oujda

BELHAJ Hanane*[1], GHORAFI Salma[1], KROUMI Sanae[1], LYO Mohammed[1]

[1]*Higher Institute of Nursing Professions and Health Techniques, BV El Maghreb El Arabi, Oujda, Morocco*

**Corresponding author, Email address: hanaebelhaj02@gmail.com*

Received: 23/02/2025

Revised: 15/09/2025

Accepted: 01/10/2025

Published: 10/10/2025

Abstract:

Burnout syndrome is an increasingly recognized issue among healthcare professionals in Morocco, particularly anesthesia and intensive care nurses (AICNs). This study, conducted at the Oujda University Hospital Center (OUHC), aimed to identify the main risk factors contributing to burnout among AICNs working in the operating room. Using a mixed-method, cross-sectional design, researchers distributed a questionnaire to all AICNs (N=42), receiving 36 responses. The tool included the Maslach Burnout Inventory to measure burnout prevalence. Additionally, interviews with 10 participants provided qualitative insights and potential solutions. Results revealed that 81% of respondents experienced some level of burnout; 20% at a severe level, 25% moderate, and 36% low. Key contributing factors included demographic variables (gender, age), lifestyle, workload, organizational pressures, role ambiguity, job satisfaction, and interpersonal relationships. The study concludes that burnout among AICNs is a serious concern that may impact the quality of patient care. It emphasizes the need for targeted strategies to reduce risk factors and better support nursing staff.

Keywords: Burnout, Professional exhaustion syndrome, AICN, Operating room, OUHC.

I. Introduction

Burnout syndrome is a major problem in healthcare professions, and nurse anesthetists are no exception. Constantly subjected to high-pressure circumstances, a constant need for vigilance, and considerable emotional overload, these professionals are particularly vulnerable to this issue (Schaufeli, Leiter, & Maslach, 2009).

Internationally, numerous studies have noted an alarming frequency of burnout in this population, with significant consequences for the mental health of caregivers, patient safety, and quality of care (Lasalvia et al., 2009). However, the specific characteristics of the experiences of nurse anesthetists remain under-explored in a targeted manner.

In the Moroccan context, insufficient human resources, lack of recognition, and rigid working conditions exacerbate risk factors (Benchekroun, Mahassini, & El Kholti, 2020; Ministry of Health, 2021).

In reality, we observe in the operating room of the Oujda University Hospital Center that nurse anesthetists are constantly exposed to stressful situations, heavy workloads, and even difficult physical and emotional constraints that affect their comfort and mental health and subsequently lead them to burnout syndrome.

This article therefore aims to raise awareness of this issue, highlight its prevalence, and better understand the risk factors, with a view to stimulating reflection on prevention methods tailored to the challenges in the field.

Burnout: a multidimensional professional issue

Burnout is currently recognized as a multifactorial phenomenon involving social, organizational, and psychological factors. It is not simply exhaustion but reflects a disruption in the relationship with work (Dejours, 1998). Maslach and Jackson (1981) present a three-dimensional definition of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment. The MBI (Maslach Burnout Inventory) is currently considered the most widely used measurement tool.

The stronger the commitment to work and the fewer resources available to meet demands, the more pronounced this phenomenon becomes (Schaufeli & Enzmann, 1998).

The importance of recognition at work

Recognition remains an essential foundation for mental health in the professional world. Axel Honneth (2000) suggests that recognition is a constructive element of social identity. In the hospital environment, a lack of institutional and symbolic recognition could lead to a loss of meaning, which is a major cause of burnout (Clot, 2010). For nurses in anesthesia and intensive care, who are often seen as assistants to intensive care physicians, this lack of recognition could cause a feeling of professional invisibility.

A distinctive feature of anesthesiologists: working behind the scenes

Nurse anesthetists work in an environment characterized by heightened emotional and cognitive demands. They are constantly required to combine technical expertise, vigilance, and effective management of life-threatening emergencies, all within a framework that leaves no room for error. However, their work is generally undervalued in society (Béguin & Clot, 2004). This gap between their actual involvement and the recognition they receive creates fertile ground for burnout.

Specificity of the Moroccan context: between lack of resources and workload

In Morocco, healthcare workers are constantly faced with high pressure in hospitals, exacerbated by the ongoing shortage of specialized professionals and equipment (Ministry of Health, 2021). Nurse anesthetists take on a considerable workload in an often stressful environment, particularly in public facilities. These conditions cause a disconnect between lofty professional aspirations and the means at hand, heightening psychosocial risks (Benchekroun et al., 2020).

II. Materials and methods

1. Research strategy

This is a descriptive cross-sectional study based on a mixed approach, aiming to explore the factors that cause burnout syndrome among nurse anesthetists and resuscitators in the operating room at the Oujda University Hospital.

2. Target population and sampling

The target population for our study includes all nurse anesthetists working in the operating rooms at the Oujda University Hospital.

Specifically, the table below shows the number of AICN for each operating room:

Table 1. Number of AICNs for each block

Block	Sample size
Central block (CB)	**19**
Emergency block (EmB)	**12**
Oncology block (OB)	**9**
Endoscopy block (EB)	**2**
Total	**42**

3. Data collection methods

In order to answer our initial question and carry out our study, we opted to use:

A face-to-face questionnaire for nurse anesthetists in the operating room at Oujda University Hospital. This questionnaire is divided into four thematic sections, the last of which is reserved for the Maslach test.

A semi-structured interview with a reduced number of nurse anesthetists in the operating room at the Oujda University Hospital.

The MBI:

We chose this measurement tool because of its ease of use and because studies have confirmed its validity, demonstrating the necessity of using its three dimensions (Emotional Exhaustion, Depersonalization and Reduced Personal Accomplishment) to accurately assess burnout.

The following table further clarifies the data collection methods used in relation to the specific objectives:

Table 2. Data Collection Methods

Data Collection Tool	Target Population	Specific Objective
Questionnaire	All nurse anesthetists working in the operating block of the University Hospital of Oujda	To explore the risk factors contributing to burnout syndrome among nurse anesthetists in the operating block of the University Hospital of Oujda
Maslach Burnout Inventory (embedded in the questionnaire)	Same as above	To estimate the prevalence of burnout among anesthesia staff in the operating block of the University Hospital of Oujda.
Interview	A small sample of nurse anesthetists	To suggest recommendations and possible solutions aimed at preventing or reducing the intensity of burnout syndrome.

III. Results

We would like to mention that we received 36 responses to our questionnaire out of 42 from our target population.

1. Prevalence of burnout syndrome among nurse anesthetists in the operating room at Oujda University Hospital

According to the next graph, 81% of AICNs suffer from burnout. Among them, 20% have a severe level of burnout, 25% a moderate level, and 36% a low level.

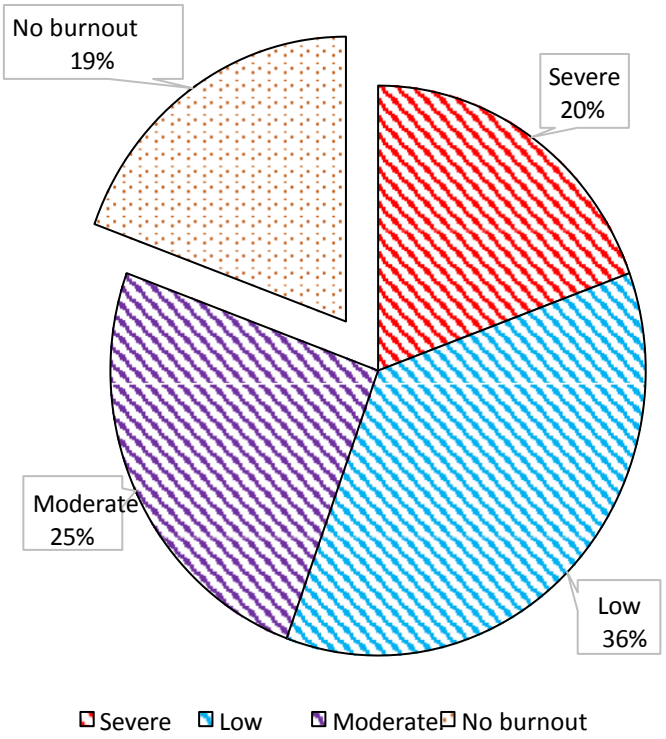

Figure 1: Distribution of AICNs according to different degrees of burnout.

2. Risk factors likely to contribute to burnout syndrome among nurse anesthetists in the operating room at Oujda University Hospital

2.1. Individual factors

Gender

In light of Table 3, women (75%) are dominant in our population. Burnout syndrome affects both sexes, but with a higher percentage among women (81%) than men (78%).

Table 3. Distribution of AICNs according to gender and burnout severity

	Population		Burned-out AICNs		No Burned-out AICNs	
	Count	**Pourcentage**	**Count**	**Pourcentage**	**Count**	**Pourcentage**
Women	27	75%	22	81%	5	19%
Men	9	25%	7	78%	2	22%

Age groups

According to the data in the graph, the 31-40 age group is the most affected by burnout syndrome, with a percentage of 69%, while 57% of AICNs aged 21-30 do not suffer from burnout. We note the absence of the over-40 age group.

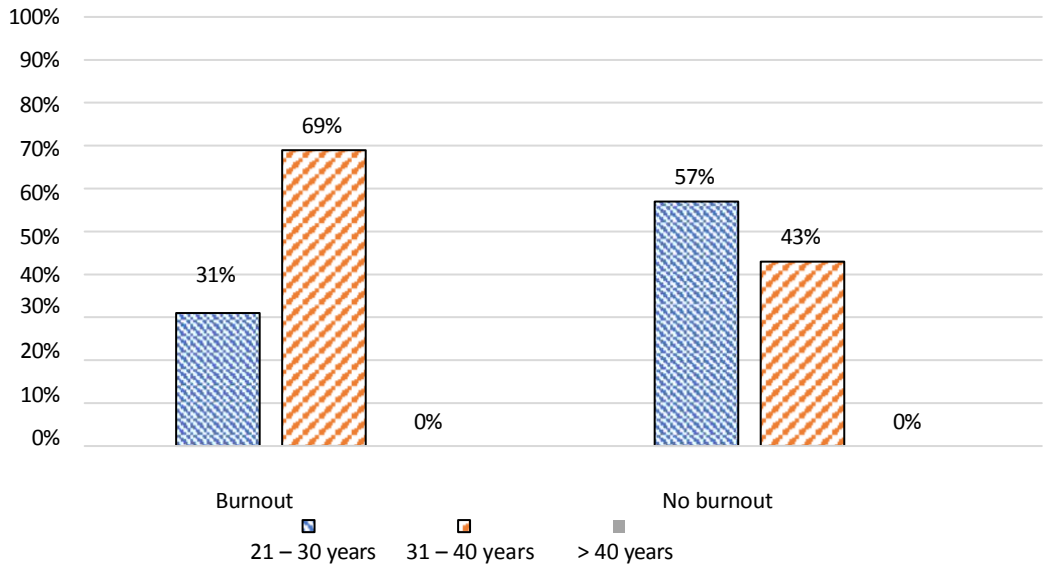

Figure 2. Description of AICNs according to age and burnout

Leisure activities

It has been observed that most AICNs suffering from burnout do not engage in leisure activities (52%). On the other hand, the majority of AICNs who engage in leisure activities do not suffer from burnout (71%).

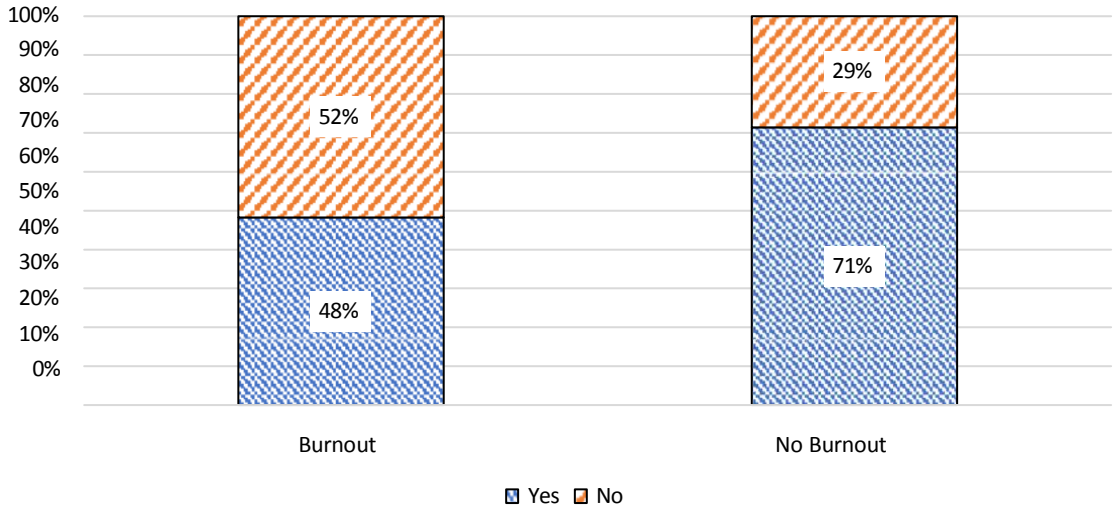

Figure 3. Distribution of AICNs according to leisure activities and burnout.

History

According to the data in the graph below, no history is observed among AICNs who do not have burnout. However, there is a notion of psychological and addictive history among those with burnout.

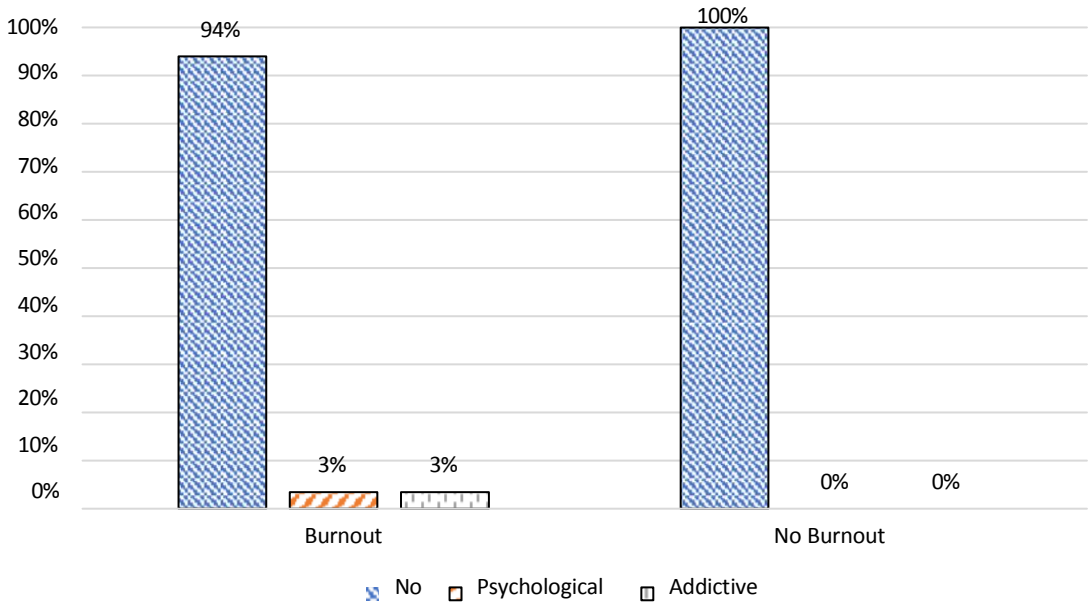

Figure 4. History of AICNs according to burnout severity.

Perfectionist Personality

This graph shows that most participants are perfectionists based on their responses for both categories.

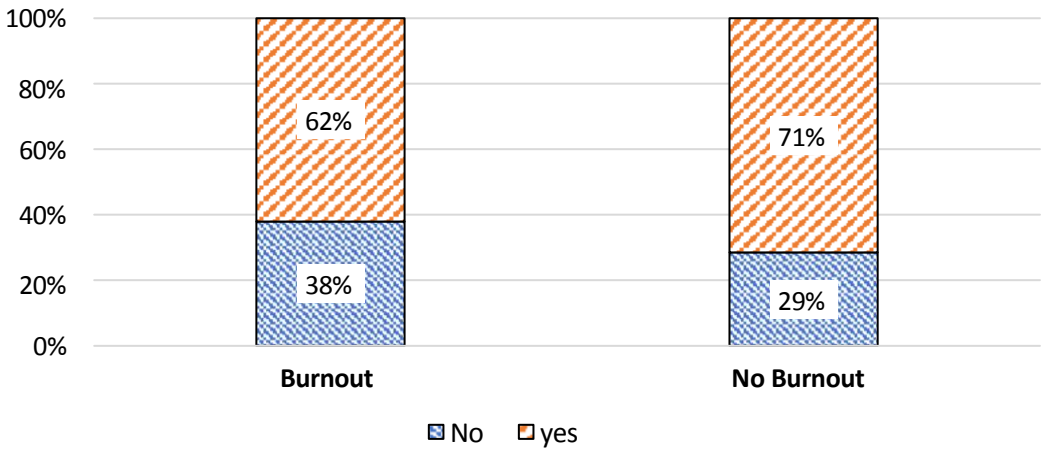

Figure 5. Comparison of AICNs according to perfectionism and burnout.

2.2 Professional factors

Environment

The results reveal that 55% of AICNs affected by burnout work at the central block, and that all those working at the endoscopy block are affected by burnout. Nevertheless, most AICNs who do not have burnout work at the emergency block.

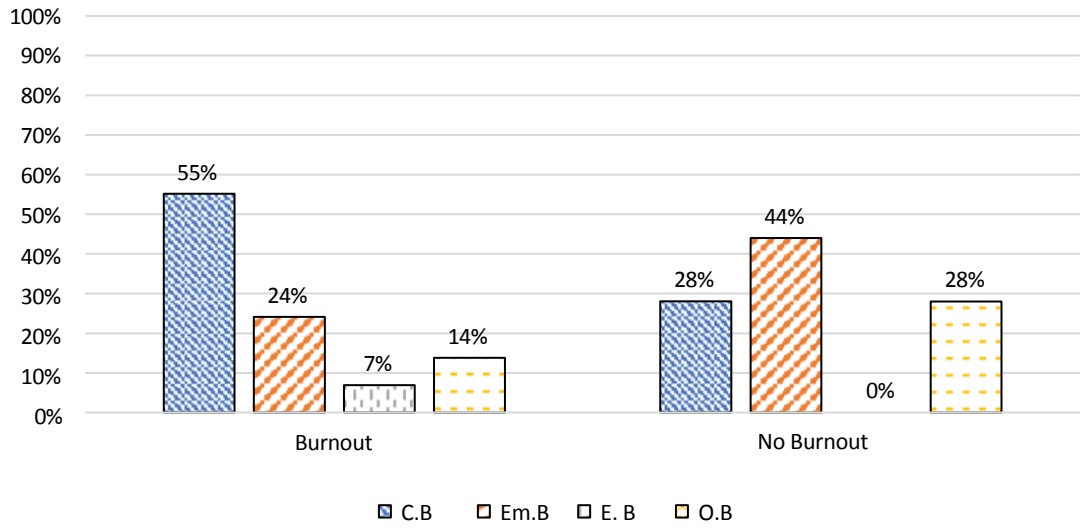

Figure 6. Distribution of AICNs according to workplace and burnout.

Seniority

According to the graph, there is a complete absence of the category of more than 20 years of work. For the others, the results reveal that AICNs with less than 5 years of seniority are more affected by burnout, with a percentage of 83%, compared to those with between 5 and 20 years of seniority with a percentage of 80%.

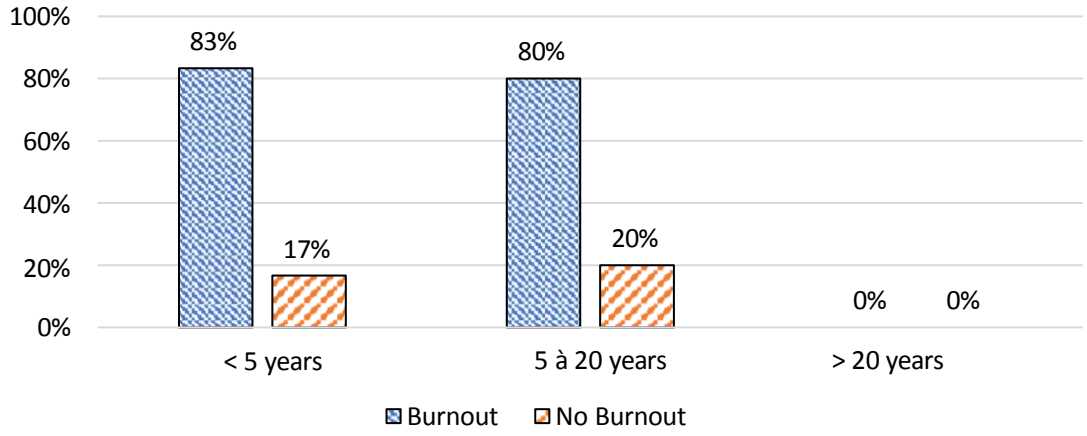

Figure 7. Distribution of AICNs according to years of work and burnout.

Shift system

The results indicate that the majority of AICNs suffering from burnout (66%) work during the day, while the majority of AICNs who do not suffer from burnout (57%) work on a rotating schedule, and there are no AICNs who work only at night.

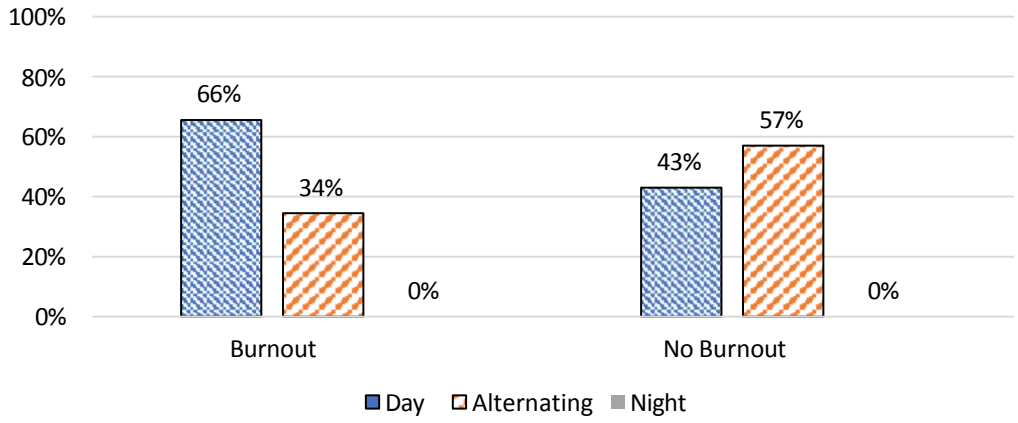

Figure 8. Distribution of AICNs according to shift system and burnout.

Work overload

The majority of AICNs feel that they are overworked, but the frequencies are higher and the differences are more pronounced among those suffering from burnout.

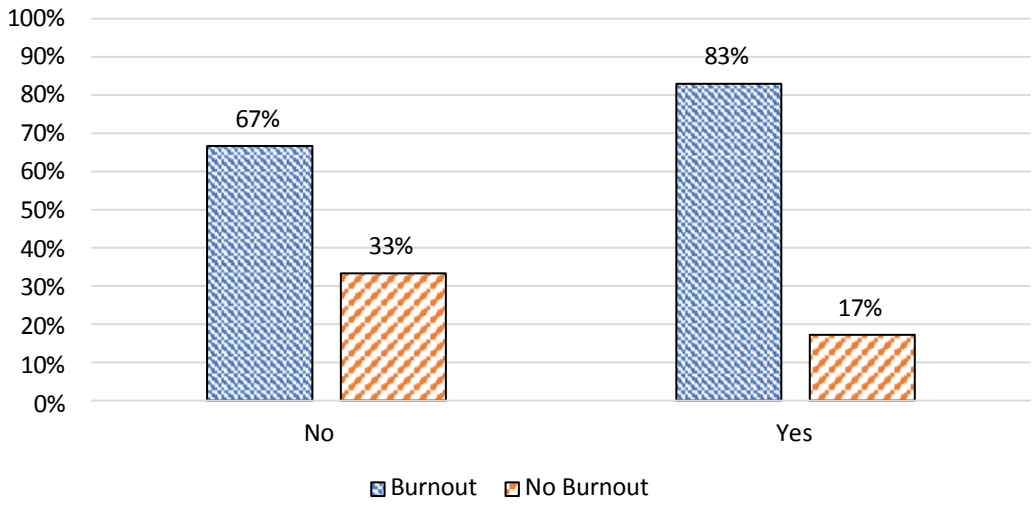

Figure 9. AICNs's perception of work overload.

Organizational constraints

It has been observed that all AICNs report organizational constraints. AICNs experiencing burnout face constraints related to a lack of human resources, administrative pressures, and work management at higher rates than those who do not experience burnout.

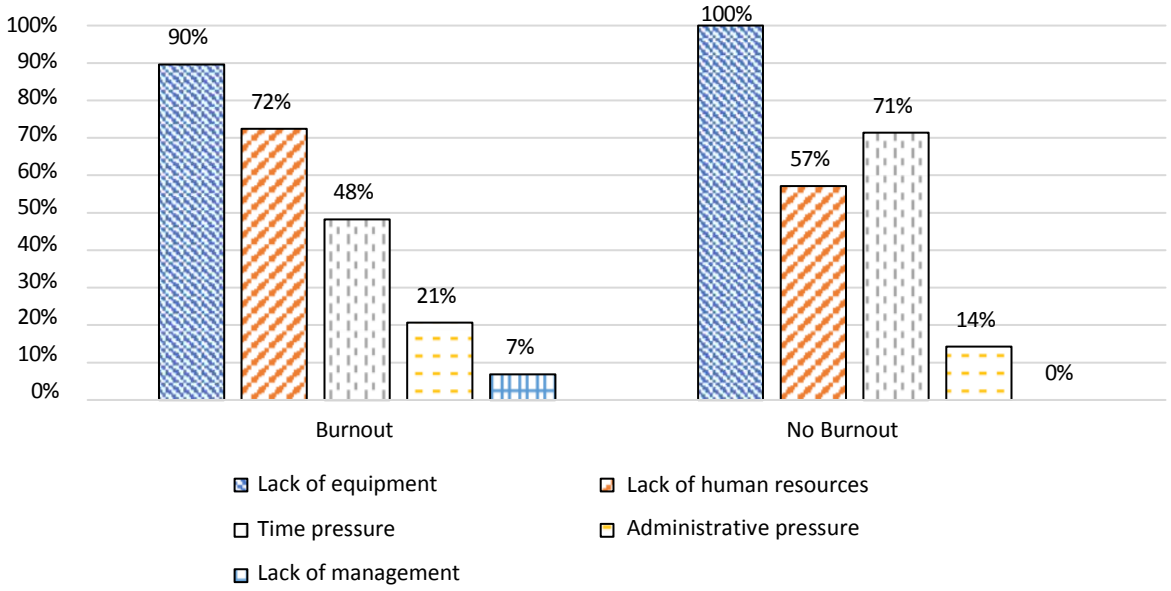

Figure 10. Organizational constraints and burnout among AICNs.

Role ambiguity

The results show that most AICNs suffering from burnout feel role ambiguity (62%) compared to those who do not suffer from burnout (43%).

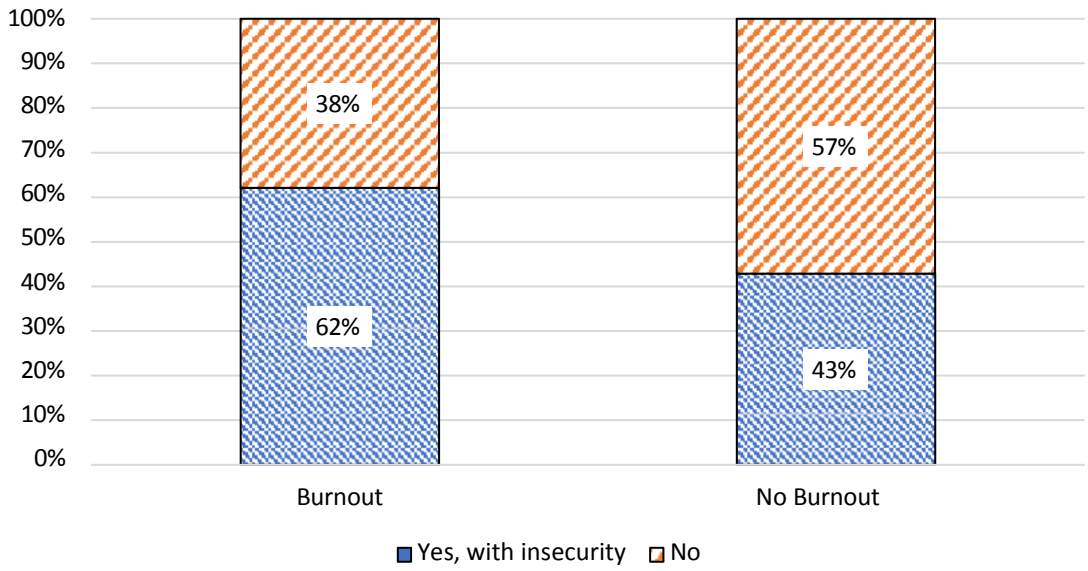

Figure 11. Role ambiguity among AICNs according to burnout severity.

Professional autonomy

According to the data in the graph, it appears that 71% of AICNs lacking autonomy do not experience burnout, while 45% of those with professional autonomy do experience burnout.

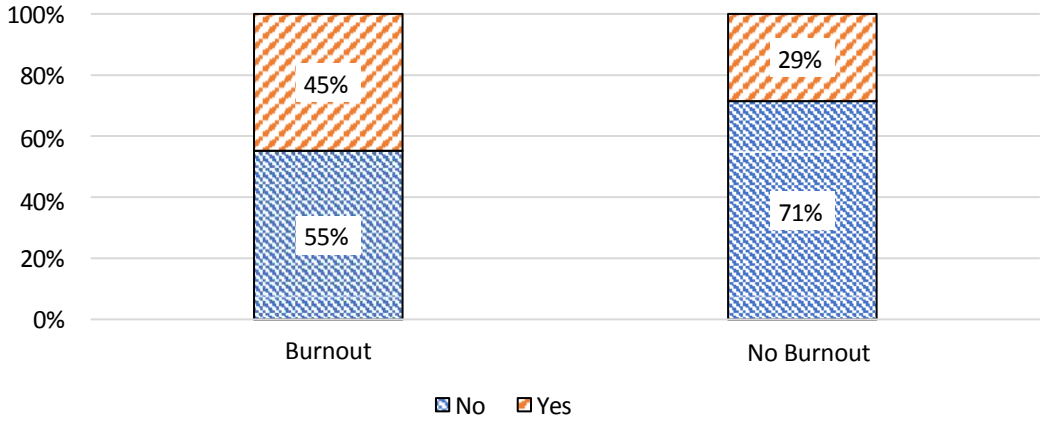

Figure 12. Perception of professional autonomy among AICNs based on burnout levels.

Control over work

This graph clearly shows that all AICNs who do not suffer from burnout have control over their work, while 10% of those who suffer from burnout have no control over their work.

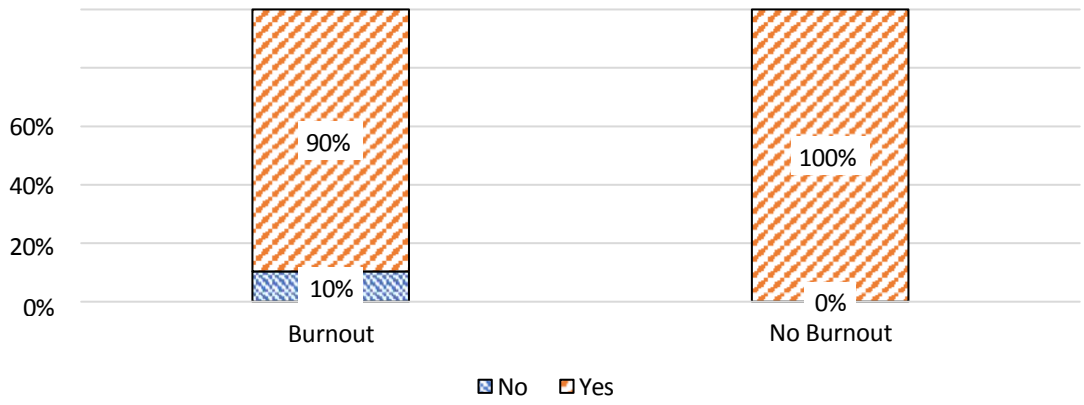

Figure 13. Comparison of AICNs based on control over work and burnout.

Work stress

The graph shows that all AICNs consider their work to be stressful.

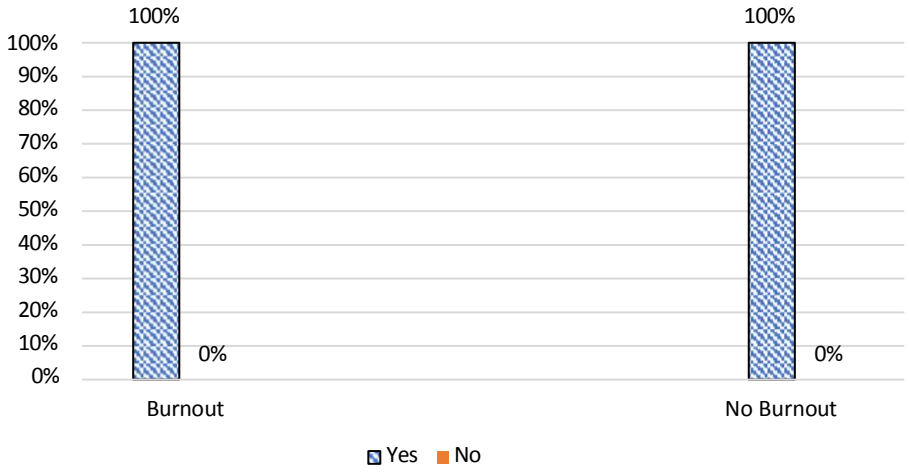

Figure 14. Distribution of AICNs according to work stress and burnout.

Satisfaction with salary

The majority of AICNs who are dissatisfied with their salary suffer from burnout (82%), compared to 18% who do not suffer from burnout. See figure 15.

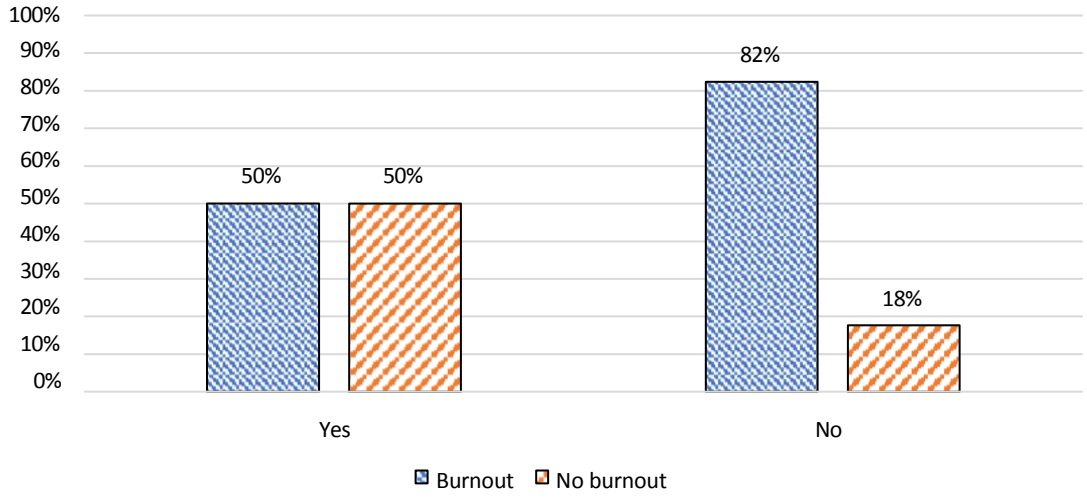

Figure 15. AICNs satisfaction with salary according to burnout.

2.3 Relational factors

Problems encountered

It has been found that the most common problems faced by AICNs suffering from burnout are problems with handing down instructions (75%), hierarchy (75%) and lack of team support (71%).

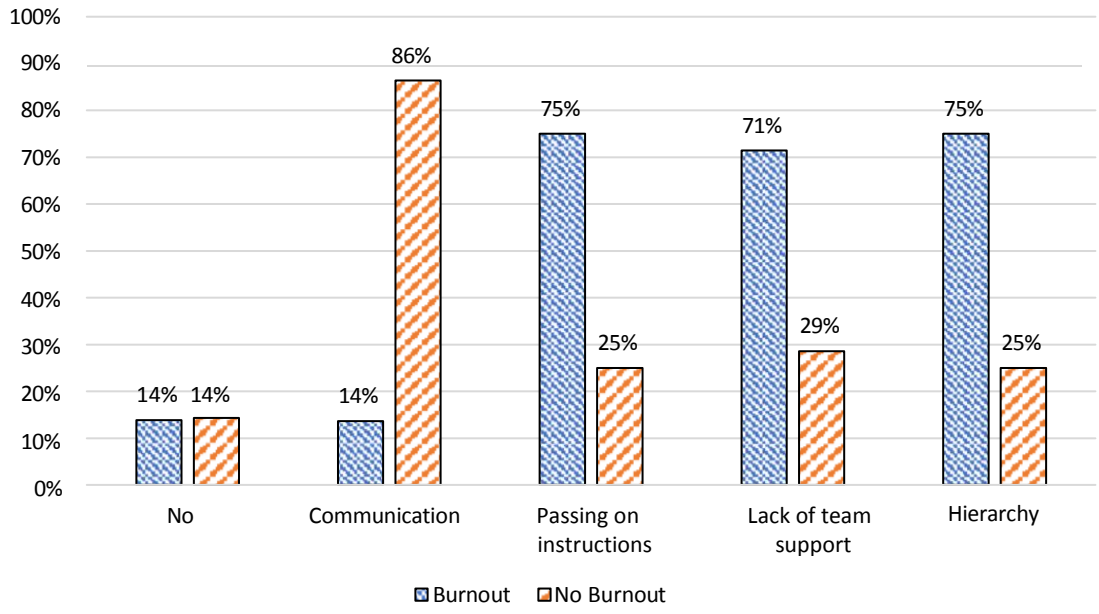

Figure 16. Description of problems faced by AICNs according to burnout.

Exposure to verbal or physical violence

The graph shows that there is almost no difference between AICNs suffering from burnout and those who are not in terms of exposure to verbal and physical abuse.

Figure 17. Exposure of AICNs to verbal or physical abuse and burnout.

Relationship problems

It has been observed that most AICNs suffering from burnout report relationship problems (59%), while most AICNs who do not suffer from burnout do not report relationship problems (71%).

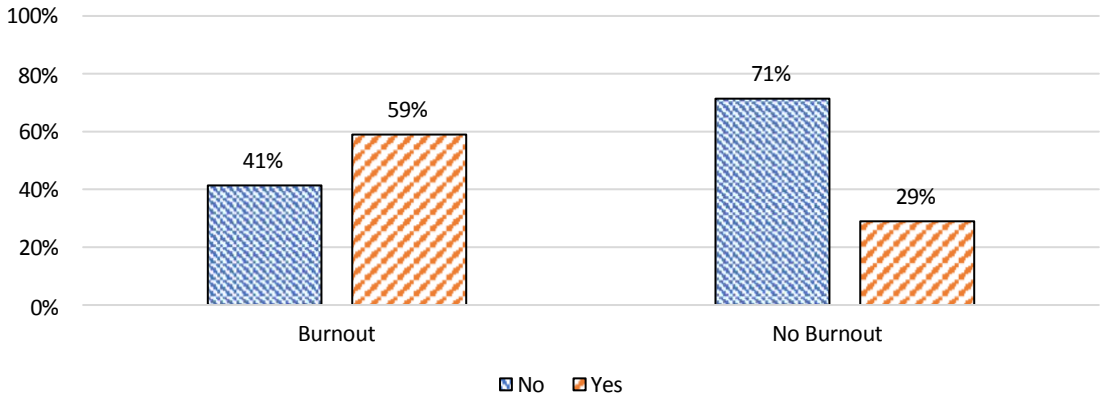

Figure 18. Description of relationship problems among AICNs and burnout.

Social and family support

Most AICNs do not benefit from social or family support, with 59% for those suffering from burnout and 57% for those who do not. See figure 19.

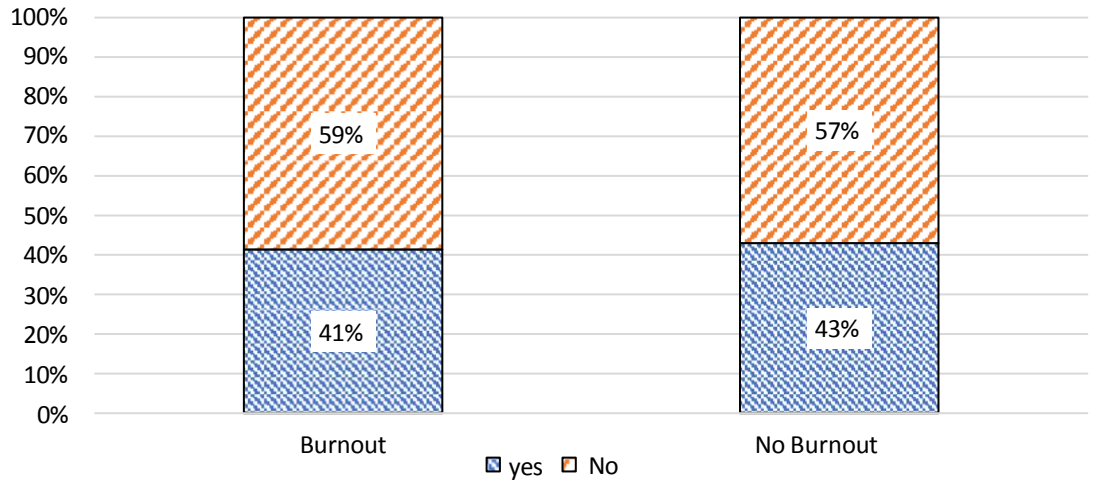

Figure 19. Comparison of AICNs according to the benefit of social or family support and the onset of burnout.

Recognition

According to the results, it appears that there is almost equality in terms of recognition between AICNs suffering from burnout and those who are not.

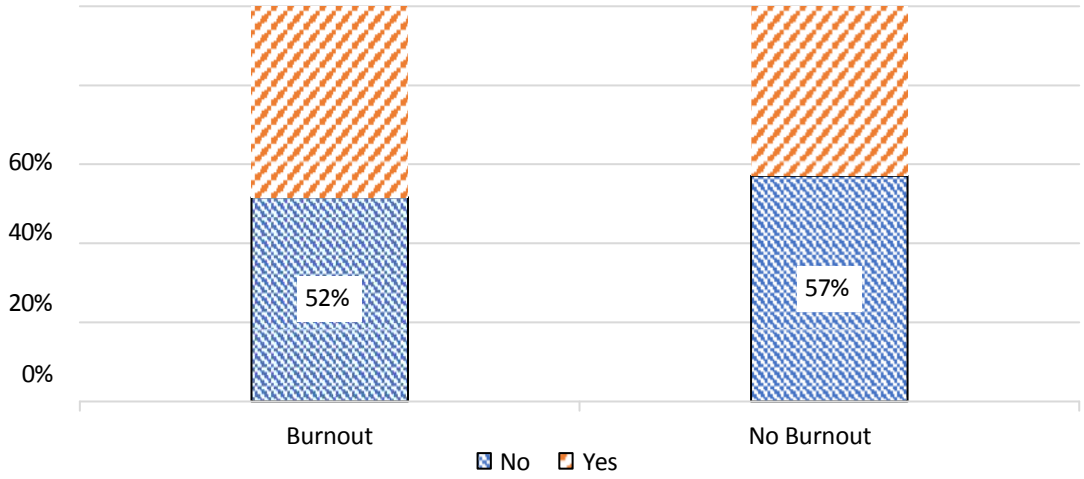

Figure 20. Distribution of AICNs according to recognition and burnout.

Perception of professional exhaustion

The results reveal that the majority of AICNs suffering from burnout (72%) feel professionally exhausted, compared to 43% of those who do not suffer from burnout.

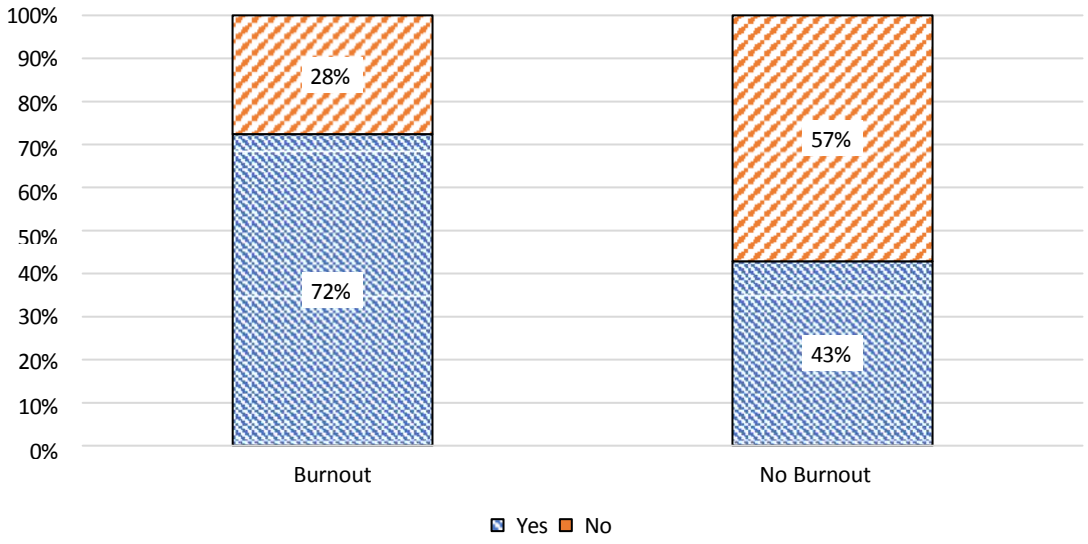

Figure 21. Distribution of AICNs according to feelings of exhaustion.

3. Interview results

According to the interviews, the data obtained reveal that among the 10 AICNs interviewed, 90% of them already have a general knowledge of burnout syndrome.

3.1 Strategies for overcoming burnout syndrome

Based on the interviews, taking time off work is the strategy used by all of the staff surveyed to deal with burnout syndrome. Changing their routine by engaging in leisure activities outside of work (such as sports, reading, traveling, etc.) is also among the most common strategies adopted by these staff members. In addition, they emphasized effective communication with the surgical team and the anesthesia team in order to avoid problems. They seek to reduce fatigue as much as possible by performing tasks specific to the AICN profile, separating their personal and professional lives, benefiting from family and friend support, promoting the development of positive ideas and thoughts, distancing themselves from pessimistic ideas and people, and finally sharing responsibility with the resuscitator.

3.2 Recommendations and suggestions for preventing burnout syndrome

According to the recommendations most frequently suggested by anesthesiologists for preventing burnout:

Firstly, it is crucial for the surgical team to adhere to the schedule (the time of the last induction), to improve working conditions by reducing working hours and increasing the number of anesthesiologists, to provide meals during breaks to maintain energy levels, and to organize rest areas that must be available with strict adherence to meal breaks.

Secondly, recovery days must be introduced, especially for anesthetists working in demanding specialties.

Thirdly, staff motivation through participation in continuing education dedicated to the AICN profile, conferences, congresses, scientific days, and through financial (salary increases and bonuses) and moral recognition.

Fourthly, it is recommended that there be rotations in the operating rooms, that the workplace be made more comfortable and lively through the use of light colors in the rooms, gardens, and green spaces, that psychological consultations be required if there is a feeling of exhaustion or mental fatigue, and that a psychologist be available to staff within the operating room department. Finally, they demanded flexibility in terms of leave.

IV. Discussion

The purpose of this phase is to examine and analyze the results, taking into account our specific objectives and research question. The discussion will explore the results obtained from the questionnaire and interviews. In addition, these results will be compared with those of other studies that have focused on assessing burnout syndrome among nurse anesthetists and resuscitators.

Prevalence of burnout syndrome among nurse anesthetists in the operating room at the Oujda University Hospital

The results obtained from the Maslach Burnout Inventory (MBI) test on nurse anesthetists in the operating room at Oujda University Hospital showed that the majority (81%) are suffering from burnout. More specifically, 20% have a severe level of burnout, 25% a moderate level, and 36% a low level. These figures highlight the importance of focusing on the study of potential risk factors and implementing preventive measures and recommendations to overcome this syndrome.

Similarly, Massou's survey on occupational burnout syndrome among anesthesia and intensive care staff at four Moroccan university hospitals found that 49% of staff suffer from burnout. Among these participants, there are nurses with a high prevalence (72.79%) (n=136) (Massou et al., 2013).

Similarly, Mhamdi's study on the prevalence of burnout in the anesthesia and intensive care setting in a Tunisian university hospital center revealed that 94.71% of participants suffer from burnout, including state-certified nurse anesthetists (n=164) with a particularly high prevalence (95.1%) among them. It is also interesting to note that the majority of these nurse anesthetists suffer from moderate burnout (53.5%). IADEs (n=164) with a particularly high prevalence (95.1%) among them. It is also interesting to note that the majority of these nurses suffer from moderate (53.26%) or low (33.74%) burnout, with a small proportion (8.1%) suffering from severe burnout (Mhamdi et al., 2018).

According to another study conducted by Adelin and colleagues among nursing staff in intensive care units at the University Hospital of Parakou in Benin, all nurse anesthetists (100% of participants) are affected by burnout syndrome (Adelin et al., 2018).

Risk factors likely to contribute to burnout syndrome among nurse anesthetists in the operating room at Oujda University Hospital

The shocking prevalence of burnout observed shows the extent and severity of this problem in our population. After analyzing our results, it appears that there are many risk factors that can contribute to burnout syndrome in our population, including: Gender, age, leisure activities, history, work environment, on-call system, overload, organizational constraints, role ambiguity, satisfaction with salary, control over work, problems with handing over instructions, lack of team support, hierarchy, and relationship problems.

Gender

The results of our study revealed that the syndrome was present in both sexes, but with a higher prevalence among women than men. In other studies, such as the one conducted by Massou, women accounted for 48.5% of individuals experiencing professional burnout (76% of the caregiving population) and 35.2% of those not affected. According to Massou, the association between the onset of burnout and being female was statistically significant (p = 0.03) (Massou etal.,2013). Our findings suggest that women are more affected than men, which could be attributed to their greater exposure to multiple responsibilities and family obligations. Unlike men, they tend to be more sensitive to emotionally challenging situations.

Age Groups

According to our findings, the age group most affected by burnout syndrome is between 31 and 40 years old. Several authors have reported a relationship between age and professional burnout. For instance, a study conducted by Berrichi in 2021 on the prevalence and risk factors of burnout among nursing staff at the Nador Provincial Hospital Center found that emotional exhaustion was highest among those aged 30 to 39 (Berrichi et al., 2021). Another study by Ben Moussa in 2016 reported that 56.9% of emotionally exhausted nurses at the University Hospital of Marrakech were between 25 and 35 years old, with a statistically significant result (p = 0.019). Since these individuals showed at least one dimension of burnout, they were considered to be affected by it (Ben Moussa, 2016). It is likely that during this stage of life, AICNs experience a sense of routine while simultaneously bearing both professional and family responsibilities.

Leisure Activities

Our findings are consistent with those published by Arora et al. in 2013, which demonstrated that engaging in leisure activities serves as a protective factor against burnout (Arora et al., 2013). Another study conducted by Marpinard found that the absence of physical activity is a contributing factor to the development of professional burnout (Marpinard, 2007–2008). In fact, according to our results, the majority of AICNs affected by burnout do not engage in leisure activities, with a reported frequency of 52%.

Medical and Addiction History

Although only 6% of AICNs reported having a history of psychological or addictive disorders, this factor appeared exclusively among those affected by burnout. The use of alcohol, tobacco, and psychoactive substances may represent an escape mechanism from work or a means of seeking pleasure not found in the professional environment. This behavior may serve as a way for individuals to numb themselves and alleviate psychological suffering. Moreover, anesthetists are known to be at higher risk of substance addiction. Additionally, Merchaoui et al. found that burnout was significantly associated with tobacco use (p = 0.004; 78.6%), alcohol consumption (p = 0.001; 88.9%), and coexisting psychiatric disorders (p = 0.013; 58.3%) (Merchaoui et al., 2022). In a study by El Hijazi, it was reported that among healthcare workers who used cannabis, 30% had high levels of emotional exhaustion, with a significant association (p = 0.03) (El Hijazi, 2022). Similarly, Alqahtani et al. observed that smokers had a significantly higher risk of professional burnout compared to non-smokers (Alqahtani et al., 2019). A correlation between alcohol consumption and burnout has also been established in the literature (Petrelli et al., 2018), along with a reported link between the use of psychotropic substances and burnout (Grau et al., 2005).

Work Environment

The results show that 55% of AICNs affected by burnout work in the central operating block. In contrast, most of the AICNs (44%) who are not experiencing burnout work in the emergency operating block. In our context, this may be explained by the higher number of anesthetists assigned to the emergency operating block, which allows for more recovery and rest days an advantage not typically available in the central operating block. However, it is worth noting that a study conducted among nurses at the University Hospital Center of Marrakech found that those working in emergency departments had a higher rate of burnout (Ben Moussa, 2016).

Shift System

The majority of AICNs suffering from burnout (66%) work during the day. This may be explained by the high number of scheduled surgeries, continuous work without sufficient breaks, and frequent overtime beyond regular working hours. Similarly, Ben Moussa found that nurses working daytime shifts were affected by burnout syndrome, although the association was not statistically significant (Ben Moussa, 2016). In contrast, a study on burnout among nurses in Ouarzazate identified a significant correlation between work schedules and the incidence of burnout, particularly among nurses working rotating shifts, with a p-value of 0.028 for high emotional exhaustion and 0.020 for low personal accomplishment (Bote, 2007).

Work Overload

In our study, results show that both categories ; those who report feeling overloaded and those who do not ; experience burnout. However, the perception of work overload is significantly more pronounced among those affected by burnout. This trend has also been observed in several other studies on the syndrome. Similarly, Ben Moussa found that 75% of nurses experiencing burnout reported work overload, with a statistically significant association ($p = 0.041$) (Ben Moussa, 2016).

Organizational, Professional, and Relational Constraints

According to our findings, organizational constraints ; such as lack of human resources, administrative pressure, and poor workload management ; as well as professional constraints like issues in handover communication (75%), hierarchical tensions (75%), and lack of team support (71%), in addition to relational challenges, are risk factors contributing to the onset of burnout syndrome. Moreover, Massou found that administrative pressure and poor service organization are significant risk factors for burnout (Massou et al., 2013). A Tunisian study involving 142 nurses also revealed that the relationship with the immediate supervisor was among the causes of burnout, with a significant association ($p = 0.03$) (Aloulou et al., 2013). Finally, Adelin et al. reported that interpersonal difficulties within care teams and the feeling of being under pressure at work are also notable contributing factors (Adelin et al., 2018).

Role Ambiguity

Among our study population, the majority of AICNs experiencing burnout reported a sense of role ambiguity (62%). Conversely, most of the AICNs who were not affected by burnout did not report such a feeling. A Tunisian study involving 142 nurses identified role ambiguity and role conflicts as contributing factors to burnout, significantly associated with high levels of emotional exhaustion ($p = 0.04$) and depersonalization ($p = 0.03$), as well as low levels of personal accomplishment ($p = 0.0001$) (Aloulou et al., 2013). This can be explained by the insecurity that comes with performing

unclear or ill-defined roles and tasks. This hypothesis is further supported by our findings, as 100% of the participants who reported role ambiguity also expressed a feeling of insecurity.

Salary Satisfaction

The majority of AICNs who are dissatisfied with their salary suffer from burnout (82%), indicating that an unsatisfactory effort-to-pay ratio is a significant risk factor. Several studies have reported similar findings. This may be explained by a decrease in staff motivation due to a perceived injustice in compensation for their efforts, leading to a feeling of devaluation of the nursing profession and professional skills. Moreover, Massou reported that an unsatisfactory effort-to-pay ratio is a significant risk factor ($p = 0.02$) (Massou et al., 2013). Additionally, a study on burnout in Tunisian units caring for end-of-life patients found that the frequency of burnout was significantly higher among nurses who perceived a mismatch between their salary and workload compared to those who did not perceive such incompatibility (70.2% versus 66.7%; $p = 0.017$) (Amamou et al., 2014).

Control Over Work

All AICNs without burnout reported feeling they have control over their work, whereas 10% of those suffering from burnout indicated that they do not have such control. In the literature, lack of control over work is recognized as a risk factor contributing to the development of burnout syndrome. This may be explained by the increased risk of making serious errors that could jeopardize patient outcomes. According to Hoffman (2005), insufficient control over one's work activity is among the most significant factors implicated in the onset of burnout (Hoffman, 2005).

V. Conclusion

In this study, we set out to gain a clearer understanding of burnout syndrome and to identify the key contributing factors among AICNs at the University Hospital Center of Oujda. This goal was met through the use of a face-to-face questionnaire, which incorporated the Maslach Burnout Inventory (MBI). The findings confirmed that burnout is a significant concern in the operating room, with an alarmingly high prevalence rate of 81%.

The analysis identified several factors that may be associated with burnout syndrome, including gender, age, leisure habits, personal medical history, work setting, on-call shifts, perceived workload, organizational and interpersonal challenges, ambiguity in professional roles, lack of control over one’s work, and dissatisfaction with salary.

We also carried out interviews with staff members, which allowed us to collect practical, context-specific suggestions and recommendations aimed at improving both working conditions and overall well-being.

Our literature review was carefully conducted, drawing on trustworthy and varied sources. We ensured the use of standardized data collection tools and selected a representative sample size (greater than 30), which contributes to the internal validity of our results.

It is important to note, however, that the conclusions of this study are context-specific and cannot be generalized to all university hospitals across Morocco, as working conditions can differ greatly from one institution to another.

To build on these findings and further explore burnout among nurse anesthetists, we recommend conducting future research in different settings or undertaking comparative studies to identify risk factors that are widely shared within the AICN profession.

Références

Adelin, T. B., Anselme, D., Frédéric, T. N. C., Armistice, G. G. T., & Prosper, G. (2018). Burnout among healthcare workers in the intensive care units of the University Hospital of Parakou in Benin. *European Scientific Journal, 14*(24), 408. https://doi.org/10.19044/esj.2018.v14n24p408

Aloulou, J., Damak, R., Masmoudi, F., & Amami, O. (2013). Professional burnout among caregivers: A Tunisian study involving 142 nurses. *ResearchGate*. https://www.researchgate.net/publication/235349252

Alqahtani, A. M., Awadalla, N. J., Alsaleem, S. A., Alsamghan, A. S., & Alsaleem, M. A. (2019). Burnout syndrome among emergency physicians and nurses in Abha and Khamis Mushait cities, Aseer Region, Southwestern Saudi Arabia. *The Scientific World Journal, 2019*, Article 4515972. https://doi.org/10.1155/2019/4515972

Amamou, B., Bannour, A. S., Yahia, M. B. H., Nasr, S. B., & Ali, B. B. H. (2014). High prevalence of burnout in Tunisian units treating end-of-life patients. *The Pan African Medical Journal, 19*. https://doi.org/10.11604/pamj.2014.19.9.2865

Arora, M., Asha, S., Chinnappa, J., & Ashish, D. (2013). Burnout in emergency medicine physicians. *Emergency Medicine Australasia, 98*(125), 491–495.

Béguin, P., & Clot, Y. (2004). *From gesture to work: For an ergonomic psychology*. Octarès.

Benchekroun, T., Mahassini, N., & El Kholti, A. (2020). Stress and professional burnout among Moroccan healthcare workers: A concerning reality. *Revue Marocaine de Santé Publique, 6*(2), 45–52.

Ben Moussa, M. K. (2016). *Burnout among nurses at the University Hospital Center of Marrakech* [Doctoral dissertation, Cadi Ayyad University, Faculty of Medicine and Pharmacy of Marrakech].

Berrichi, A., Benmoumen, M., & Chama, K. (2021, September 15). Prevalence and risk factors of burnout among nursing staff: Case of CHP Nador. *Revue Freg*. https://www.revuefreg.fr/index.php/home/article/view/377

Bote, M. (2007). *Burnout among nurses in Ouarzazate* [Research thesis, Cadi Ayyad University, Faculty of Medicine and Pharmacy of Marrakech].

Clot, Y. (2010). *Work at heart: Putting an end to psychosocial risks*. La Découverte.

Dejours, C. (1998). *Suffering in France: The trivialization of social injustice*. Seuil.

El Hijazi, N. S. (2022). *Stress and burnout in emergency medicine: Survey of healthcare staff in the Souss-Massa region* [Doctoral dissertation, Cadi Ayyad University, Faculty of Medicine and Pharmacy of Marrakech].

Grau, A., Suñer, R., & García, M. M. (2005). Burnout among healthcare workers and its relationship with personal and environmental factors. *Gaceta Sanitaria, 19*(6), 463–470. https://doi.org/10.1016/s0213-9111(05)71397-2

Hoffman, A. (2005). Bibliography of a concept. *Santé Conjuguée*.

Honneth, A. (2000). *The struggle for recognition*. Éditions du Cerf.

Lasalvia, A., Bonetto, C., Bertani, M., Bissoli, S., Cristofalo, D., Marrella, G., ... & Ruggeri, M. (2009). Influence of perceived organizational factors on job burnout: Survey of community mental health staff. *The British Journal of Psychiatry, 195*(6), 537–544. https://doi.org/10.1192/bjp.bp.108.060871

Marpinard, M. (2007–2008). The SeSMaT European survey: Measuring burnout in physicians and prevention principles. *CHU de Toulouse*.

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

Massou, S., Doghmi, N., Belhaj, A., Aboulaala, K., Azendour, H., Haimeur, C., Balkhi, H., & Kamili, N. D. (2013). Survey on burnout syndrome among anesthesia and intensive care staff in four Moroccan university hospitals. *Annales Médico-psychologiques, 171*(8), 538–542. https://doi.org/10.1016/j.amp.2012.02.024

Merchaoui, I. Z., Rahoua, R., Maphghoul, S., Gaha, L., Akrout, M., & Amamou, B. (2022). Burnout among healthcare professionals in a Tunisian university hospital during the first wave of COVID-19.

Mhamdi, S., Nakhli, M. S., Kahloul, M., Latrech, N., Rejeb, M. B., Khadhraoui, M., Chaouch, A., & Naija, W. (2018). Prevalence of burnout in anesthesia and intensive care units in central Tunisia. *The Pan African Medical Journal*. https://www.ajol.info/index.php/pamj/article/view/207798

Ministry of Health. (2021). *Annual report on human health resources*. Directorate of Human Resources, Rabat, Morocco.

Petrelli, F., Scuri, S., Tanzi, E., Nguyen, C., & Grappasonni, I. (2018). Public health and burnout: A survey on lifestyle changes among healthcare workers. *Acta Biomedica, 90*(1), 24–30. https://doi.org/10.23750/abm.v90i1.7626

Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and practice: A critical analysis*. CRC Press.

Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International, 14*(3), 204–220. https://doi.org/10.1108/13620430910966406