

# SLEEP QUALITY ANALYSIS AND DECISION-MAKING PROFILE IN RESIDENT PHYSICIANS

Luiz Felipe Torminn Rocha Lima<sup>1</sup>

Bruna Machado Siqueira<sup>2</sup>

Gabriel de Paula Barros Botelho<sup>3</sup>

Lucas Camargo Souto<sup>4</sup>

Pedro Henrique Dos Santos<sup>5</sup>

Wesley Gomes da Silva<sup>6</sup>

Evangelical University of Goiás – UniEVANGÉLICA<sup>123456</sup>

## ABSTRACT

Decision-making is crucial for medical residents, who face uncertainties and complexities in their profession. The current study conducted a cross-sectional, analytical, and associative analysis of the decision-making profile and its relationship with sleep quality in 52 residents. Most of the professionals were female and had a high prevalence of poor sleep quality (92%), which can negatively impact mental health, learning, and cognition. The "vigilant" profile, characterized by rational decisions, was the most recurrent in the sample, followed by the "hypervigilant" profile, associated with quick decisions. Poor sleep quality calls into question residents' self-perception of their decision-making profile, as sleep deprivation can affect the ability to integrate emotion and cognition. The study highlights the need to improve residents' sleep and to further investigate its relationship with decision-making. Adapting residency programs to the reality of female physicians and promoting the health and well-being of residents are crucial. Despite its limitations, the study contributes to understanding the reality of residents and paves the way for future research on the impacts of sleep on the lives of these professionals.

**Keywords:** Hospital Clinical Staff; Sleep Quality; Decision Making.

## INTRODUCTION

The activity of medical residents is crucial to the health of the community, requiring a high level of responsibility and effective decision-making (QUICK et al., 1983). They face the constant challenge of making complex decisions in an environment characterized by incomplete information, diagnostic uncertainty, and unpredictable individual therapeutic responses (SIMPKIN et al., 2018). Given this reality, the "vigilance" profile, which involves actively seeking information, carefully evaluating alternatives, and taking a rational approach to decision-making, stands out as the most appropriate for clinical practice, especially in situations of uncertainty (JENNIS and MANN, 1977; MANN et al., 1997; LAUFFENBURGER et al., 2022).

However, the reality of medical training, marked by long working hours, sleep deprivation, and high levels of stress, can compromise the decision-making ability and clinical performance of residents, negatively impacting the quality of patient care

(HARVEY et al., 2012; PIQUETTE et al., 2014). Given the relevance of the topic and the scarcity of research, this study aims to investigate the demographic profile of resident physicians, identify the most prevalent decision-making profiles among them, and verify the association between sleep quality and changes in the decision-making profile.

## METHODS

This cross-sectional, analytical, and associative study investigated the decision-making profile of 52 Brazilian resident physicians recruited for convenience. Data collection was conducted in person and online, using validated questionnaires to assess sleep quality (PSQI), daytime sleepiness (ESE), and decision-making profile (MDMQ). In-person participants answered the questionnaires at different times during their shifts, while online participants had flexibility in when they responded. The collection also included demographic and occupational information.

Data analysis was conducted using SPSS software, version 24, employing significance tests to verify statistical differences between proportions. The project was approved by the Research Ethics Committee of the Evangelical University of Goiás, under registration number 6,245,749, in accordance with Resolution 466/2012 of the National Health Council.

## RESULTS

The study included 52 residents, most of whom were female (61.5%). Regarding hierarchical level, most participants were in the R1 period (48%), and most were on pre-shift duty (62%) at the time of responding to the questionnaire. Finally, the average age of the sample was 27.7 years.

**Table 1** - Distribution of the group of residents according to shift status, year of residency (R), and gender.

Variables	n
<b>On-call status</b>	
Pre-shift	3
Post-Shift	20
<b>Residency Period</b>	
R	25

R	13 (25.0)
R	9 (17.0)
R	5 (10.0)

**Gender**

Male	20
Female	32

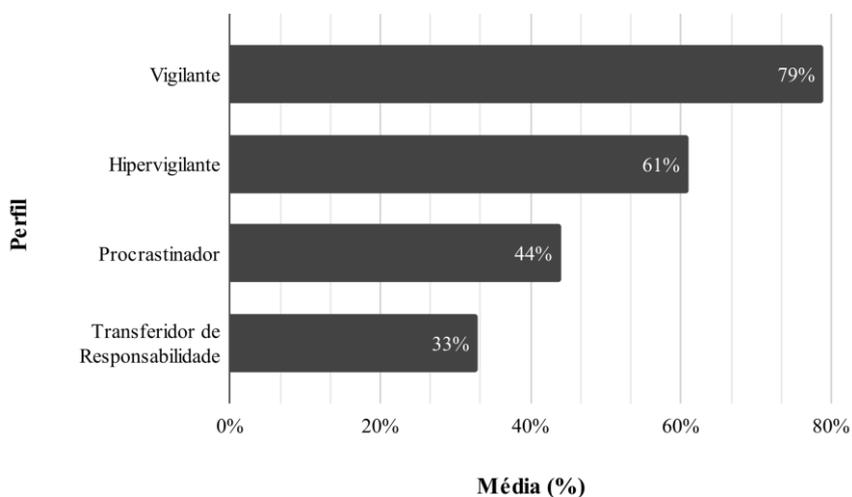
**Age**

Average	27.7 (± 3.0)
---------	--------------

Source: Prepared by the author (2024).

Through the MDMQ, the overall average incidence by category was: 79% vigilant, 61% hypervigilant, 44% procrastinator, and 33% responsibility-shifter (transferor). From this, a predominant profile of vigilance followed by hypervigilance can be observed (Graph 1).

**Graph 1** - Incidence of sleep quality (PSQI) and daytime sleepiness (ESE) in the respective hospital records.



Source: Prepared by the author (2024).

Through the Pittsburgh questionnaire, applied to the 52 residents, it was found that the vast majority of residents have sleep-related changes, with only 8% of residents classified as having "good quality" sleep. In contrast, the other 92% of residents obtained "low quality" sleep.

Regarding the association between poor sleep quality and changes in decision-making profile, based on the results obtained by the PSQI and MDMQ, Pearson's chi-square was calculated between each decision-making profile and sleep quality presented by the PSQI. A p-value of  $<0.05$  was adopted, and it was concluded that there were no significant relationships between the profiles analyzed and the residents' sleep quality.

## **CONCLUSION**

This study revealed the growing presence of women in medical residency, requiring more inclusive programs. Most residents presented a "vigilant" decision-making profile, characterized by actively seeking information and critical analysis. There was also a worrying prevalence of poor sleep quality among residents, associated with changes in the decision-making profile, with a greater propensity for impulsive or hesitant decisions. Despite the challenges, residents demonstrated the ability to make assertive decisions in complex situations. Thus, the study reveals a high prevalence of sleep deprivation among medical residents and its impacts on health and performance, paving the way for future research and interventions.

## **ACKNOWLEDGMENTS**

We express our deep gratitude to UniEvangélica and the Evangelical Hospital of Goiás for their support, which made this work possible. We are especially grateful to Dr. Wesley Gomes da Silva, whose guidance and expertise were fundamental to the research.

## **REFERENCES**

- BERTOLAZI, A. N. *et al.* Translation into Portuguese and validation of the Epworth Sleepiness Scale. **Brazilian Journal of Pulmonology**, v. 35, n. 5, p. 489-495, 2009.
- BUYSSE, D. J. *et al.* The Pittsburgh Sleep Quality Index (PSQI): a new instrument for psychiatric practice and research. **Psychiatry research**, v. 28, n. 2, p. 193-213, 1989.
- CONTRENA, M. T. R.; BRANCO, A.; FONSECA, A. C. Cross-cultural adaptation and validation of the Melbourne Decision Making Questionnaire for European Portuguese. **Psychology: Reflection and Criticism**, v. 31, n. 1, p. 1-10, 2018.

HARVEY, A. *et al.* Impact of Stress on Resident Performance in Simulated Trauma Scenarios. **The Journal of Trauma and Acute Care Surgery**, v.72, n.2, p. 497-503, 2012.

JENNIS, I.L.; MANN, L.. Decision Making: A Psychological Analysis of Conflict, Choice and Commitment. **American Psychological Association**, 1977.

LAUFFENBURGER, J.C. *et al.* Prescribing Decision Making by Medical Residents on Night Shifts: A Qualitative Study. **Medical Education**, v. 56, n.10, p. 1032-1041, 2022.

MANN, L. *et al.* The Melbourne Decision Making Questionnaire- An Instrument for Measuring Patterns for Coping with Decisional Conflict. **Journal of Behavioral Decision Making**, v. 10, p. 1-19, 1997.

PASSOS, M. H. P. *et al.* Reliability and Validity of the Brazilian Version of the Pittsburgh Sleep Quality Index in Adolescents. **Jornal de Pediatria**, v. 93, n.2, p. 200-206, 2016.

PIQUETTE, D. *et al.* Impact of Acute Stress on Resident Performance During Simulated Resuscitation Episodes: A Prospective Randomized Cross-Over Study. **Teaching and Learning in Medicine**, v.26, n.1, p. 9-16, 2014.

QUICK, J.D. *et al.* Decision-Making Among Emergency Room Residents. **Journal of Medical Education**, v.68, n.2, p. 117-125, 1983.

SIMPKIN, A.L. *et al.* Stress from Uncertainty and Resilience among Depressed and Burned-Out Residents: A Cross-Sectional Study. **Academic Pediatrics**, Boston, v.18, n.6, p. 698-704, 2018.