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Burnout and associated factors among healthcare workers at Point G University Hospital, Bamako, Mali: a cross-sectional study

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Abstract

Background

Burnout is a three-dimensional syndrome combining emotional exhaustion, depersonalisation and reduced personal accomplishment, and it is particularly common among health professionals. In sub-Saharan Africa, data remain limited and often come from epidemic settings or single departments. This study aimed to estimate the prevalence of burnout and to identify its associated factors among all healthcare workers of a Malian university hospital, outside any epidemic context. An analytical cross-sectional study was conducted from January to April 2025 among physicians, nurses, midwives, nursing assistants and thesis-year medical students working in the clinical departments of Point G University Hospital, Bamako. Convenience sampling was used. Data were collected with a structured self-administered questionnaire covering sociodemographic and occupational characteristics and burnout, assessed with the validated French version of the Maslach Burnout Inventory. Associations were tested with the chi-square or Fisher's exact test, then by logistic regression including variables with $p < 0.20$.

Results

A total of 410 participants were included (72.7% of the hospital's total staff). The mean age was 35.92 ± 9.04 years and 62% were men. The overall prevalence of burnout was 45%, including 4% of severe burnout. A high emotional exhaustion score was found in 32.2% of participants, a high depersonalisation score in 9.3% and a low personal accomplishment score in 20.2%. In multivariate analysis, the factors independently associated with burnout were age 20–29 years (aOR = 5.80; 95% CI 1.55–21.7; p = 0.008), age 30–39 years (aOR = 3.70; 95% CI 1.20–11.6; p = 0.020), dissatisfaction with salary (aOR = 4.90; 95% CI 1.28–18.7; p = 0.020) and working at least two on-call shifts per week (aOR = 5.25; 95% CI 1.22–22.6; p = 0.026). The absence of workplace harassment was a protective factor (aOR = 0.42; 95% CI 0.20–0.89; p = 0.024).

Conclusions

Burnout affects nearly one in two healthcare workers at Point G University Hospital. Young age, dissatisfaction with salary and frequent on-call shifts were the main associated factors, whereas the absence of workplace harassment was protective. These findings call for a review of the organisation of hospital work, better salary recognition and institutional psychological support for healthcare workers.

Background

Burnout, or occupational exhaustion, is defined as a three-dimensional syndrome combining emotional exhaustion, depersonalisation and reduced personal accomplishment at work, occurring in individuals who work with other people [1]. Health professionals are among the populations most exposed to this

syndrome [2, 3]. Several socio-environmental and occupational factors contribute to its onset [3]. One of them is the migration of physicians, particularly from Africa to high-income countries, which leads to a shortage of medical staff and an increased risk of burnout among the practitioners who remain in post and have to care for a large number of patients [4, 5].

In the United States, studies have reported burnout in 54.0% of physicians [6], 35.0% of hospital nurses [7] and 35.2% of medical students [8]. In France, a burnout rate of 57.0% has been observed among emergency physicians [9]. In Madagascar, burnout affected 51.2% of physicians in two university hospitals in Antananarivo [10].

In Mali, a burnout prevalence of 65.2% was reported among the medical and nursing staff of the COVID-19 unit of the Hôpital du Mali University Hospital, with the multiplicity of activities and longer working hours among the associated factors [11]. Similarly, in 2022, a study conducted in the psychiatry and emergency departments of Point G University Hospital found prevalences of 73.0% and 88.0%, respectively, with length of service and the traumatic experiences of caregivers identified as contributing factors [12].

These studies have limitations, however, as they were carried out either in an epidemic context or in specific clinical departments. To overcome these limitations, the present study extended the field of observation to all the clinical departments of a referral university hospital, outside any epidemic context, and included all professional categories of healthcare workers.

The general objective of this study was to assess burnout among healthcare workers at Point G University Hospital. The specific objectives were to determine the prevalence of burnout, to describe the sociodemographic and occupational characteristics of healthcare workers, and to analyse the relationship between these characteristics and the occurrence of burnout.

Methods

Study setting

The study was carried out at Point G University Hospital in Bamako, Mali, a public tertiary referral hospital with missions of care, training and research. It covered all the clinical departments of the hospital, namely psychiatry, gynaecology and obstetrics, nephrology, internal medicine, pulmonology, neurology, cardiology, emergency, pathology, intensive care, general surgery, medical imaging, urology, infectious diseases, haematology-oncology and rheumatology.

As of 31 December 2024, Point G University Hospital had 564 staff members, including medical, paramedical, administrative and support staff. General practitioners and specialists accounted for 120 staff members (21.66%), senior health technicians and health technicians for 182 (32.85%), and medical assistants for 64 (11.55%).

Study design and period

This was an analytical cross-sectional study with prospective recruitment, conducted over a 12-month period that included 4 months of data collection, from January to April 2025.

Study population

The study concerned all physicians, nurses, midwives, nursing assistants and thesis-year medical students working in the departments of Point G University Hospital.

Health professionals in these categories who freely consented to take part in the study were included. Health professionals who were absent during the study period, non-clinical health professionals and trainees in the various departments were not included.

Sampling

The sample size was estimated with the Schwartz formula, $n = z^2pq/i^2$, with $z = 1.96$, $p = 50\%$ (estimated prevalence of burnout), $q = 1 - p$ and $i = 5\%$ (desired precision). The calculation gave a minimum size of 384 participants, increased by 5% to allow for non-response, giving a target of 403 participants. Non-probabilistic convenience sampling was used: participants were selected according to their accessibility and availability at the time of the survey.

Data collection

Data were collected with a structured, self-administered questionnaire organised in three sections. The first section covered sociodemographic data (age, sex, marital status, number of dependants), history of medical or psychiatric illness, and use of psychoactive substances. The second section explored occupational data (position held, number of years in practice, daily and weekly working time, satisfaction with salary, satisfaction with work resources and with relationships with colleagues and superiors, number of daily ward rounds, number and duration of on-call shifts, involvement in secondary activities, distance between home and work, leisure activities, and experience of moral, sexual or physical harassment).

The third section assessed burnout with the validated French version of the Maslach Burnout Inventory (MBI), a self-assessment scale developed by Maslach and Jackson [13]. The scale comprises 22 items scored from 0 (never) to 6 (every day) and explores three dimensions: emotional exhaustion (9 items, score 0 to 54, high threshold ≥ 30), depersonalisation (5 items, score 0 to 30, high threshold ≥ 12) and personal accomplishment (8 items, score 0 to 48, low threshold ≤ 33). The emotional exhaustion and depersonalisation scores have a negative valence, whereas the personal accomplishment score has a positive valence. Using the overall score categorisation method, burnout was considered mild if a single dimension had a pathological score, moderate if two dimensions were affected, and severe if all three dimensions were affected simultaneously. The French version of the MBI Human Services Survey (MBI-HSS) was translated and validated by Dion and Tessier [14], and its factor structure was later examined in a large sample of French healthcare providers [15].

Data analysis

Data were analysed with SPSS version 25. Quantitative variables were described by their mean and standard deviation, and qualitative variables by their frequencies. The association between burnout and sociodemographic and occupational characteristics was tested with the chi-square test or Fisher's exact test, depending on expected counts, at a significance level of 5%. Multivariate analysis by logistic regression included all the variables with $p < 0.20$ in bivariate analysis.

Ethical considerations

The study was carried out with the verbal informed consent of each participant. The identity of participants was kept strictly confidential, and no item in the questionnaire allowed them to be identified. The study exposed participants to no harm. It was approved by the Ethics Committee of the University of Sciences, Techniques and Technologies of Bamako, Mali (approval No. 2024/128/CE/USTTB) and was conducted in accordance with the Declaration of Helsinki.

Results

A total of 410 participants were included in the study, that is, 72.7% of the hospital's total staff.

Sociodemographic characteristics

Men accounted for 62% of the sample, giving a sex ratio of 1.6. The 20–29 years age group was the most represented (39.3%). The mean age was 35.92 ± 9.04 years, with a range of 20 to 59 years. Participants living with a partner accounted for 72.9%, compared with 24.4% who were single, 2.0% divorced and 0.7% widowed. The number of dependants was between 0 and 5 in 77.8% of cases, with a mean of 3.22 ± 3.05.

A medical or psychiatric history was present in 20.0% of participants, peptic ulcer being the most frequent (50% of reported histories). Use of psychoactive substances concerned 19.1% of participants, coffee being the most commonly used substance (66.7% of cases).

Occupational characteristics

The psychiatry department accounted for 11.5% of the sample. Physicians were the most represented professional category (52.2%), followed by nurses (22.2%), thesis-year medical students (19.8%), nursing assistants (4.1%) and midwives (1.7%).

The length of professional practice was between 1 and 5 years in 52.4% of participants, with a mean of 8.12 ± 8.02 years. Involvement in secondary activities (teaching, research association, trade union, trade) was reported by 33.4% of participants, teaching being the most frequent (59.9%). A daily working time of more than 8 hours concerned 72.4% of participants.

Regarding professional experience, 48.0% of staff said they were happy with their professional life, and 84.9% perceived their professional life as satisfactory. The mean monthly income was 152,182.93 CFA francs (XOF), and 58.8% of participants earned less than 100,000 CFA francs per month. Satisfaction with salary was reported by only 10.0% of participants. In contrast, satisfaction with relationships with colleagues (90.9% satisfied or very satisfied) and with superiors (82.9%) was high, whereas 44.4% of participants were dissatisfied with the resources made available to them.

The number of weekly on-call shifts was fewer than two in 96.8% of participants, and on-call duration was less than 24 hours in 97.3% of cases. Workplace harassment (moral, sexual or physical) was reported by 11.0% of participants, moral harassment accounting for 82.2% of reported cases. Leisure activities were practised by 67.1% of staff, games being the most frequent (58.5%).

Prevalence and severity of burnout

According to the Maslach Burnout Inventory, 32.2% of participants had a high emotional exhaustion score, 9.3% a high depersonalisation score and 20.2% a low personal accomplishment score (Table 1). The overall prevalence of burnout, defined as at least one dimension at a pathological level, was 45%. Burnout was mild (one dimension affected) in 32.9% of participants, moderate (two dimensions affected) in 8.3% and severe (three dimensions affected) in 3.7%. No dimension was affected in 55.1% of participants.

Table 1
Distribution of participants by Maslach Burnout Inventory score for each dimension (n = 410)

MBI dimension	Low score, n (%)	Moderate score, n (%)	High score, n (%)
Emotional exhaustion	122 (29.8)	156 (38.0)	132 (32.2)
Depersonalisation	303 (73.9)	69 (16.8)	38 (9.3)
Personal accomplishment	83 (20.2)*	129 (31.5)	198 (48.3)

MBI: Maslach Burnout Inventory. *For personal accomplishment, a low score indicates a high level of burnout.

Factors associated with burnout: bivariate analysis

Bivariate analysis showed several significant associations between burnout and demographic, occupational and psychosocial variables (Table 2). Participants aged 20–29 years (OR = 20.07; 95% CI 4.55–88.45; $p < 0.001$) and those aged 30–39 years (OR = 8.47; 95% CI 1.91–37.53; $p < 0.001$) were significantly more likely to have burnout than those aged 50–59 years, taken as the reference group.

Regarding profession, nursing assistants (OR = 11.67; 95% CI 1.49–91.55; $p = 0.021$) and thesis-year medical students (OR = 5.94; 95% CI 1.08–32.76; $p = 0.037$) were significantly more likely to have burnout than midwives. Length of practice was also significantly associated with burnout, in particular for less

than 1 year (OR = 14.00; 95% CI 4.23–46.38; p < 0.001), 1 to 5 years (OR = 4.78; 95% CI 2.83–8.05; p < 0.001) and 5 to 10 years (OR = 4.14; 95% CI 2.09–8.22; p < 0.001).

Professional relationships also showed notable associations. Moderate satisfaction with superiors (OR = 3.38; 95% CI 1.65–6.94; p < 0.001) and with colleagues (OR = 2.54; 95% CI 1.16–5.56; p = 0.020) was associated with a higher risk of burnout than high satisfaction. Dissatisfaction with salary was strongly associated with burnout (OR = 8.81; 95% CI 3.08–25.22; p < 0.001) compared with satisfaction with salary.

Finally, the absence of workplace harassment appeared to be protective (OR = 0.45; 95% CI 0.24–0.86; p = 0.017), and fewer than two on-call shifts per week was also associated with a lower risk of burnout (OR = 0.23; 95% CI 0.06–0.86; p = 0.023) than two or more.

Table 2
Factors associated with burnout in bivariate analysis (selected significant associations, n = 410)

Variable	OR	95% CI	p
Age 20–29 years (ref. 50–59 years)	20.07	4.55–88.45	< 0.001
Age 30–39 years (ref. 50–59 years)	8.47	1.91–37.53	< 0.001
Nursing assistants (ref. midwives)	11.67	1.49–91.55	0.021
Thesis-year medical students (ref. midwives)	5.94	1.08–32.76	0.037
Length of practice < 1 year (ref. ≥ 10 years)	14.00	4.23–46.38	< 0.001
Moderate satisfaction with superiors (ref. very satisfied)	3.38	1.65–6.94	< 0.001
Moderate satisfaction with colleagues (ref. very satisfied)	2.54	1.16–5.56	0.020
Dissatisfaction with salary (ref. satisfied)	8.81	3.08–25.22	< 0.001
No harassment (ref. harassment)	0.45	0.24–0.86	0.017
On-call shifts per week < 2 (ref. ≥ 2)	0.23	0.06–0.86	0.023

OR: odds ratio; CI: confidence interval; ref.: reference category.

Factors associated with burnout: multivariate analysis

After adjustment in the multivariate logistic regression model, four factors remained independently associated with burnout (Table 3): age 20–29 years (aOR = 5.80; 95% CI 1.55–21.7; p = 0.008), age 30–39 years (aOR = 3.70; 95% CI 1.20–11.6; p = 0.020), dissatisfaction with salary (aOR = 4.90; 95% CI 1.28–18.7; p = 0.020) and working at least two on-call shifts per week (aOR = 5.25; 95% CI 1.22–22.6; p = 0.026). The absence of workplace harassment emerged as an independent protective factor (aOR = 0.42; 95% CI 0.20–0.89; p = 0.024).

Table 3
Factors independently associated with burnout in multivariate analysis (logistic regression, n = 410)

Variable	aOR	95% CI	p
Age 20–29 years (ref. 50–59 years)	5.80	1.55–21.7	0.008
Age 30–39 years (ref. 50–59 years)	3.70	1.20–11.6	0.020
Dissatisfaction with salary (ref. satisfied)	4.90	1.28–18.7	0.020
No harassment (ref. harassment)	0.42	0.20–0.89	0.024
On-call shifts per week ≥ 2 (ref. < 2)	5.25	1.22–22.6	0.026

aOR: adjusted odds ratio; CI: confidence interval; ref.: reference category.

Discussion

This study found a burnout prevalence of 45.0% among healthcare workers at Point G University Hospital, including 4.0% of severe burnout. This figure lies within the very wide range (0% to 80.5%) reported in an international systematic review of 182 studies covering 109,628 physicians in 45 countries, in which estimates varied with the setting and the definition used [16]. It is, however, lower than the prevalence reported in other African studies, such as those from Yaoundé Central Hospital in Cameroon (63.0%) [17] and the Notsè Prefectural Hospital in Togo (52.5%) [18], and lower than the 57.0% reported among emergency physicians in France [9]. These differences may be explained by differences in working conditions, available resources or assessment tools, and by the mixed composition of our study population (physicians and other categories of healthcare workers).

Emotional exhaustion was the dimension most often affected (32.2%), ahead of reduced personal accomplishment (20.2%) and depersonalisation (9.3%). A similar ranking has been reported in Tunisia [3] and Madagascar [10], and it is consistent with the model of Maslach and Jackson, in which emotional exhaustion is the earliest and most decisive dimension of the syndrome, preceding the other two [19]. This predominance reflects the emotional load inherent in the caring professions, amplified by the shortage of resources, the intensity of work and the insufficient institutional support observed at Point G University Hospital.

Young age emerged as a major determinant of burnout: healthcare workers aged 20–29 years (aOR = 5.80; p = 0.008) and 30–39 years (aOR = 3.70; p = 0.020) had a markedly higher risk than those aged 50–59 years. This result may be explained by the difficult transition between theoretical training and the demands of practice at the start of a career, combined with high professional expectations that often collide with hospital reality, and with coping resources that are still being built [8].

Dissatisfaction with salary was also a determining factor (aOR = 4.90; p = 0.020), in a Malian context marked by persistent budgetary constraints despite a recent upgrade of the salary index. This

dissatisfaction, perceived as a lack of professional recognition, fuels demotivation and a loss of meaning at work, in line with the observations of Yuan et al. on effort-reward imbalance in China [20] and with the model of Maslach and Jackson [19].

The absence of workplace harassment emerged as a protective factor (aOR = 0.42; p = 0.024), which underlines the role of the relational climate in preserving the well-being of healthcare workers. This factor is probably underestimated in Mali, where reporting harassment remains culturally difficult for healthcare workers who are often young or on precarious contracts. In addition, working at least two on-call shifts per week significantly increased the risk of burnout (aOR = 5.25; p = 0.026), in connection with the chronic shortage of staff in Malian public hospitals, work overload and insufficient recovery time [16]. Some variables that were significant in bivariate analysis lost their significance after multivariate adjustment, which suggests an indirect influence, or one mediated by other factors, rather than a true absence of effect, and illustrates the multifactorial nature of burnout.

Strengths and limitations

This study is one of the few in Mali to have covered an entire university hospital and all professional categories of healthcare workers, with a large sample and a detailed exploration of associated factors. It nevertheless has limitations. Its cross-sectional design does not allow causal relationships to be established, only associations. It was conducted in a single centre, which limits the generalisability of the results. Data collection by unassisted self-administered questionnaire may have introduced interpretation bias. The lack of consensus on the interpretation thresholds of the MBI, as highlighted by Doulougeri et al. [21], limits comparability between studies. Finally, administrative staff were not included, although they are also exposed to the risk of burnout.

Conclusions

This study showed a high prevalence of burnout (45.0%) among healthcare workers at Point G University Hospital, including 4.0% of severe burnout. Young age, dissatisfaction with salary and a high number of weekly on-call shifts were independently associated with its occurrence, whereas the absence of workplace harassment was a protective factor. Burnout is therefore a worrying reality in Malian hospitals and calls for targeted structural and organisational interventions.

Political and health authorities are advised to lighten the workload by reducing the number of on-call shifts, to improve material conditions and professional relationships, and to set up psychological support and stress prevention programmes. Practitioners and hospital managers are advised to optimise the organisation of work through a fair distribution of tasks, to foster a positive relational climate, to create internal units for listening, mediation and psychological support, to identify and monitor the early signs of burnout, and to encourage prompt use of mental health services. University leaders are advised to pursue longitudinal research in order to follow the course of burnout and its determinants, and to include qualitative approaches in order to better understand the underlying psychological and organisational mechanisms.

Abbreviations

aOR: Adjusted odds ratio; CI: Confidence interval; COVID-19: Coronavirus disease 2019; MBI: Maslach Burnout Inventory; MBI-HSS: Maslach Burnout Inventory Human Services Survey; OR: Odds ratio; XOF: West African CFA franc

Declarations

Ethics approval and consent to participate

The study was approved by the Ethics Committee of the University of Sciences, Techniques and Technologies of Bamako, Mali (approval No. 2024/128/CE/USTTB). It was conducted in accordance with the Declaration of Helsinki of 1964 and its later amendments. Verbal informed consent was obtained from each participant before inclusion. Data confidentiality and participant anonymity were strictly guaranteed throughout the study.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors’ contributions

SPC, TKK and MKou designed and supervised the study. TKK collected the data. TKK and AAT performed the statistical analysis. SPC, MKou and TKK drafted the manuscript. SPC and MKou provided scientific

direction and critically revised the manuscript for intellectual content. EAD, KT, AAT, BHM, MKon, JT and HD contributed to the critical revision of the manuscript and to the interpretation of the results. All authors read and approved the final manuscript.

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References

1. Montgomery A, Panagopoulou E, Esmail A, Richards T, Maslach C (2019) Burnout in healthcare: the case for organisational change *BMJ*. 366:l4774. https://doi.org/10.1136/bmj.l4774
2. Bender A, Farvolden P (2008) Depression and the workplace: a progress report. Curr Psychiatry Rep 10(1):73–79. https://doi.org/10.1007/s11920-008-0013-6
3. Amamou B, Bannour AS, Ben Hadj Yahia M, Ben Nasr S, Ben Hadj Ali B (2014) High prevalence of burnout in the Tunisian units that support terminally ill patients. Pan Afr Med J 19:9. https://doi.org/10.11604/pamj.2014.19.9.2865
4. Stilwell B, Diallo K, Zurn P, Vujicic M, Adams O, Dal Poz M (2004) Migration of health-care workers from developing countries: strategic approaches to its management. Bull World Health Organ 82(8):595–600
5. Naicker S, Plange-Rhule J, Tutt RC, Eastwood JB (2009) Shortage of healthcare workers in developing countries - Africa. Ethn Dis 19(1 Suppl 1):S1–60
6. Shanafelt TD, Hasan O, Dyrbye LN, Sinsky C, Satele D, Sloan J et al (2015) Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. Mayo Clin Proc. ;90(12):1600–13. https://doi.org/10.1016/j.mayocp.2015.08.023
7. McHugh MD, Kutney-Lee A, Cimiotti JP, Sloane DM, Aiken LH (2011) Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care. Health Aff (Millwood) 30(2):202–210. https://doi.org/10.1377/hlthaff.2010.0100
8. Dyrbye LN, West CP, Satele D, Boone S, Tan L, Sloan J et al (2014) Burnout among US medical students, residents, and early career physicians relative to the general US population. Acad Med 89(3):443–451. https://doi.org/10.1097/acm.0000000000000134
9. Kansoun Z, Boyer L, Hodgkinson M, Villes V, Lançon C, Fond G (2019) Burnout in French physicians: a systematic review and meta-analysis. J Affect Disord 246:132–147
10. Rakotondrainibe A, Randriamizao HM, Ratsimbazafy NS, Mong-Gine Y, Rakotoarison CN, Rakototiana FA et al (2018) Burnout syndrome and associated factors among physicians in two University Hospitals in Antananarivo. Pan Afr Med J 31:63. https://doi.org/10.11604/pamj.2018.31.63.11123

11. Nounga Nyanke R (2021) Étude du burnout chez le personnel soignant (médical et infirmier) de l'unité COVID-19 de l'hôpital du Mali. https://www.bibliosante.ml/handle/123456789/5369. Accessed 16 Dec 2024
12. Lokonon SAJ (2022) État de burn-out chez le personnel soignant impliqué dans la prise en charge des malades mentaux au CHU Point G: cas des services de psychiatrie et d'accueil des urgences [thesis]. Bamako: Université des Sciences, des Techniques et des Technologies de Bamako; https://www.bibliosante.ml/handle/123456789/5969. Accessed 16 Dec 2024
13. Maslach C, Jackson SE (1986) Maslach Burnout Inventory manual, 2nd edn. Consulting Psychologists, Palo Alto
14. Dion G, Tessier R (1994) Validation de la traduction de l'Inventaire d'épuisement professionnel de Maslach et Jackson. Can J Behav Sci 26(2):210–227. https://psycnet.apa.org/doi/10.1037/0008-400X.26.2.210
15. Lheureux F, Truchot D, Borteyrou X, Rascle N (2017) The Maslach Burnout Inventory – Human Services Survey (MBI-HSS): factor structure, wording effect and psychometric qualities of known problematic items. Trav Hum 80(2):161–186. https://doi.org/10.3917/th.802.0161
16. Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S et al (2018) Prevalence of burnout among physicians: a systematic review. JAMA 320(11):1131–1150. https://doi.org/10.1001/jama.2018.12777
17. Negueu AB, Cumber SN, Donatus L, Nkfusai CN, Ewang BF, Bede F et al (2019) Burnout chez les professionnels soignants de l'Hôpital Central de Yaoundé. Pan Afr Med J 34:126. https://doi.org/10.11604/pamj.2019.34.126.19969
18. Afanvi KA, Sokpoli J, Assogba S, Gbadoe ES, Kassankogno Y, Saka B et al (2023) Prévalence et facteurs de risque du burnout chez le personnel de santé du centre hospitalier préfectoral de Notsè. J Rech Sci Univ Lomé 25(1):227–246
19. Maslach C, Jackson SE (1981) The measurement of experienced burnout. J Occup Behav 2(2):99–113
20. Yuan Z, Yu D, Zhao H, Wang Y, Jiang W, Chen D et al (2021) Burnout of healthcare workers based on the effort-reward imbalance model: a cross-sectional study in China. Int J Public Health 66:599831. https://doi.org/10.3389/ijph.2021.599831
21. Doulougeri K, Georganta K, Montgomery A (2016) Diagnosing burnout among healthcare professionals: can we find consensus? Cogent Med 3(1):1237605. https://doi.org/10.1080/2331205X.2016.1237605