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# Sleep quality and mental well-being among healthcare workers: A cross-sectional study at Babcock University Teaching Hospital, Nigeria

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**Abstract**

**Introduction:** The sleep quality of healthcare workers significantly impacts their mental health. Poor sleep quality is associated with various negative outcomes, such as burnout and decreased work performance. Conversely, better sleep quality is linked to improved social relationships and patient outcomes. There is a lack of research on how it affects the mental well-being of healthcare workers, prompting this study. This study aims to explore the relationship between sleep quality and mental well-being among Babcock University Teaching Hospital healthcare workers.

**Method:** This study was done among the healthcare workers of Babcock University Teaching Hospital. It was a cross-sectional study done via a multi-stage sampling technique. A total of 246 valid responses were analysed. Sleep quality was measured using the Pittsburgh Sleep Quality Index, and mental well-being was assessed using the General Health Questionnaire-12. The data was presented in tables, percentages, and frequencies, while association was analysed using chi-square.

**Results:** The findings revealed that 69.5% of healthcare workers had poor sleep quality (mean PSQI score = 6.28 ± 5.612). Additionally, 48.4% of respondents experienced mental distress. Despite these high levels of poor sleep and mental distress, no statistically significant association was found between sleep quality and mental well-being ($\chi^2$= 0.126, p=0.723).

**Conclusion:** The study revealed a high prevalence of poor sleep quality and considerable mental distress among healthcare workers, underscoring the growing concern for their overall well-being. Although no statistically significant association was found between sleep quality and mental well-being, the elevated proportions observed suggest that both domains warrant independent attention. Interventions aimed at improving sleep hygiene and promoting psychological support within healthcare settings remain essential to enhance workforce health and performance.

KEYWORDS: Sleep quality, Mental well-being, Healthcare workers, Nigeria, PSQI

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**Plain English Summary**
This study looked at the sleep habits and mental health of doctors, nurses, and other staff at Babcock University Teaching Hospital in Nigeria. The researchers wanted to see if there was a connection between how well healthcare workers sleep and how they are feeling mentally.
We asked 246 healthcare workers to fill out two standard questionnaires. One questionnaire measured the quality of their sleep (using the Pittsburgh Sleep Quality Index), and the other measured their mental well-being (using the General Health Questionnaire-12).
We found that
1. Sleep Quality: A high number of healthcare workers (69.5%) reported having poor sleep quality.
2. Mental Well-being: Nearly half of the workers (48.4%) showed signs of mental distress, such as feeling unhappy, stressed, or indecisive.
Surprisingly, in this study, we did not find a statistically significant link between poor sleep and poor mental well-being. This means that having poor sleep did not automatically predict who would have mental distress in this group, and vice versa. Even though a direct link was not found, the study highlights a serious problem: a large portion of healthcare workers are struggling with both poor sleep and mental distress. These are two critical areas that affect their health and their ability to care for patients safely and effectively.
We conclude that hospitals and health institutions should pay independent attention to both the sleep health and mental well-being of their staff. They recommend implementing programs to improve sleep habits and providing accessible, confidential mental health support to create a healthier and more effective workforce.

**Introduction**
Sleep quality is a complex construct that reflects an individual's overall satisfaction with their sleep experience. It includes several key components, such as how efficiently one sleeps, the time it takes to fall asleep (sleep latency), total sleep duration, and the frequency or duration of awakenings during the night (wake after sleep onset) (1). Sleep is a basic physiological necessity that is extremely important for health and well-being (2). Humans require sleep, which is defined by reversible unconsciousness and a decrease in motor and sensory function (3). Sleep plays a variety of homeostatic roles, including recuperation, conservation, adaptation, thermoregulation, and memory consolidation, as it regulates everything in the brain, including emotion, behaviour, memory, and cognition (3). Hence, healthy, quality, and appropriate (in terms of regularity, satisfaction, alertness, timing, efficacy, and duration) sleep cycles are thought to be physiologically and mentally necessary for an individual's well-being (4).
Health workers are all people engaged in actions whose primary intent is to enhance health." This broad definition includes both those who deliver direct care (such as doctors, nurses, and midwives) and those who support health services indirectly (such as laboratory personnel and public health) (5). The sleep quality of a healthcare worker is a vital component of mental prosperity, and there is a positive relationship between sleep quality and psychological well-being. The psychological well-being of healthcare workers is crucial for ensuring the standard of medical care for patients and the efficient operation of healthcare services (3, 6, 7). Conversely, the depletion of energy reserves caused by irregular or inadequate sleep increases the likelihood of long-term workplace distress and also negatively affects neurobehavioral functions, leading to excessive daytime fatigue, which increases the risk of accidents resulting from human error (8, 9). It increases the risk of experiencing anxiety, sadness, burnout, inattention, and other psychological issues, creating a vicious cycle (3). Therefore, it is acknowledged that mental health impairment in healthcare workers is a serious issue that could compromise patient care and prevent healthcare services from operating as intended (6).
The mental health needs of healthcare providers have attracted considerable attention as a notable public health concern and a potential barrier to delivering top-tier care (10). Healthcare workers are at a higher risk of burnout, sleep disorders, and mental health problems due to their irregular work schedules (11). Over the last few decades, there has been a global decline in the mental well-being of healthcare workers and a significant rise in psychological problems amongst healthcare workers, which can be caused by several factors, including poor sleep quality (4). It has been revealed that the alarming prevalence rates of poor sleep quality among HCWs. For instance, a cross-sectional study at a tertiary care centre found that 48.0% of HCWs experienced poor sleep quality (12). The link between sleep disturbances and mental health burdens has been quantified through meta-analyses. One such study found that HCWs with sleep disturbances had a 3.74 times higher risk of mental health problems; during the COVID-19 pandemic, this increased to 4.48 times (13).

Compounding these findings, a 2025 UK survey reported that one in three NHS doctors were so sleep-deprived that their ability to treat patients was impaired, with 26% acknowledging actual patient harm or near-misses caused by fatigue (14).
Most of the available literature currently accessible on the mental health of healthcare workers is from environments with greater and better resources, more sophisticated medical care, a larger number of healthcare workers, and differences in sociocultural background; hence, their experience might not apply to developing countries (6).
This study aims to assess the quality of sleep in BUTH healthcare workers, the mental well-being of BUTH healthcare workers and the relationship between the quality of sleep and mental well-being amongst BUTH healthcare workers.

## Materials and Methods

*Study area*
The study was conducted at Babcock University Teaching Hospital (BUTH), a private, faith-based (Seventh-day Adventist) tertiary health institution, established in 2012 and located in Ilishan-Remo, Ogun State, in Southwestern Nigeria. It lies within the campus of Babcock University, making it accessible to university students, staff, and the surrounding communities. The region is predominantly Yoruba-speaking. The hospital is owned and managed by Babcock University, integrating Christian principles with holistic healthcare delivery through quality services, and the vision to be a teaching hospital of excellence with global impact (15). The hospital is staffed by highly experienced professionals in various specialities and offers a wide range of specialised medical services, including General Surgery, Obstetrics and Gynaecology, Paediatrics, Internal Medicine, Radiology, Pathology, and Ophthalmology (16).

*Study design*
This research is a descriptive cross-sectional study among healthcare workers in Babcock University Teaching Hospital. It was conducted between August 2024 to March 2025.

*Study population*
The study population was healthcare workers in Babcock University Teaching Hospital who had worked for at least 6 months.

*Inclusion criteria*
All the employed healthcare workers agreed voluntarily to be a part of the study and gave informed consent.

*Exclusion criteria*
Healthcare workers who were on leave of absence
Healthcare workers who were ill at the time of this study
Healthcare workers who were off duty at the time of this study

*Sample size determination*
The calculation for the sample size was done using Cochran's formula: no = ($Z^2$x px q)/ $d^2$ (17).
Where;
n= sample size
Z= 95% confidence level (standard value 1.96)
q= 1-p
e= margin of error (0.05)
Using the formula where p represents 80.3% (0.803), the sample size was calculated as follows (18):
n= ($1.96^2$ x 0.803 x 0.197)/ $0.05^2$
n= (3.84 x 0.803 x 0.197)/ 0.0025
n= 242.98
n= 243
Considering a non-response factor of 10%:
243/(1-0.1) = 270
n= 270

*Sampling technique*
A multistage method was used in the selection of participants for the study.
Stage 1: A sampling frame of the healthcare workers and their various departments was obtained.
Stage 2: The use of proportionate allocation to allocate the numbers that were interviewed from each of those units.
The total number of healthcare workers is 499: 161 doctors, 253 nurses, 9 pharmacists, 14 pharmacist technicians, 21 lab scientists, 34 lab technicians, and 7 nutritionists.
The number to be studied per group was obtained using this formula:
(Number of staff in each unit/ Total number of healthcare workers) x Sample size
For Doctors: Number of respondents= (161/ 499) x 270 = 87 doctors
For Nurses: Number of respondents= (253/ 499) x 270= 137 nurses
For Pharmacists: Number of respondents= (9/ 499) x 270= 5 pharmacists
Stage 3: The participants were selected by a random sampling method via balloting.

*Data collection tools*
A self-administered questionnaire was used to collect data. A structured questionnaire that consists of three sections was used. The sections

consisted of sociodemographic information and two validated questionnaires to measure the sleep quality using the Pittsburgh Sleep Quality Index (PSQI) and the mental well-being, the General Health Questionnaire-12 (GHQ-12) of the participants (19, 20). The PSQI Scoring: The PSQI is a 24-item standardised, self-rated questionnaire used to measure sleep difficulties and identify individuals showing symptoms of sleep problems. It is designed to assess problems in seven components, including sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medications and daytime dysfunction (6). A score of "0" in every situation suggests no difficulty, while a score of "3" suggests extreme difficulty. After adding the seven component scores, a single "global" score is obtained. This score has a range of 0 to 21, with "0" indicating little difficulty and "21" indicating huge problems in every area (21). A global PSQI score of 0-4 indicates "good" sleep, while a score of 5-21 indicates "poor" sleep (22). The GHQ-12: It is very fast to administer and score, as there are only 12 questions. It is scored using the Likert scoring (0-1-2-3) method that ranges from a 'better/healthier than normal' option, through a 'same as usual' and a 'worse/more than usual' to a 'much worse/more than usual' option (23). The possible lowest score is zero, while the highest possible score is 36. An assessment of no mental distress is made if a score of ≤11 is obtained, and that of mental distress is made if a score of ≥ 12 is obtained.

*Data collection*

The questionnaires were administered by doctors and research assistants who were medical students. They were trained for a period of two days in a conducive environment within Babcock University Teaching Hospital.

*Variables of the study*

The independent variables of the study were the sociodemographic characteristics and the sleep quality of the healthcare workers. The dependent variable was their mental well-being.

*Data entry and analysis*

The Statistical Package for Social Sciences (SPSS) version 26 was used to enter the information obtained. To analyse descriptive statistics such as sleep quality and mental well-being, the data were presented in tables, percentages, and frequencies. Categorical variables were analysed using the chi-square. Association between categorical variables was determined using the chi-square test, and $p < 0.05$ was statistically significant.

*Ethical considerations*

The Babcock University Health Research Ethics Committee (BUHREC) was consulted to obtain approval for this study (BUHREC 931/24), and informed consent was obtained from each participant. The study and its importance were explained to potential and willing participants. Any participant who wished to leave the study was allowed to do so voluntarily. The data collected was stored in password-protected computers. Strict ethical standards were upheld, and participants' identities remained confidential.

**Results**

Two hundred and seventy (270) copies of the questionnaire were distributed to the respondents, and two hundred and forty-six (246) copies were successfully retrieved and validated for analysis, giving a 91.1% response rate.

A total of 246 healthcare workers participated in the study. Most were aged 21–30 years (75.2%), female (56.9%), and single (68.7%). Yoruba (46.7%) and Igbo (38.2%) were the predominant ethnic groups, while Christianity was the major religion (95.5%). Nurses constituted half of the respondents (50.0%), followed by doctors (32.1%). About one-third had worked in BUTH for less than a year (33.7%) and another third for 1–3 years (34.6%) (Table I).

**Table I: Socio-demographic Characteristics of the Respondents**

| Variable | Categories | Frequency | Percentage |
|---|---|---|---|
| Age | 21-30 | 185 | 75.2 |
| | 31-40 | 39 | 15.9 |
| | 41-50 | 13 | 5.3 |
| | 51-60 | 4 | 1.6 |
| | 61 and above | 5 | 2.0 |
| Sex | Male | 106 | 43.1 |
| | Female | 140 | 56.9 |
| Marital status | Single | 169 | 68.7 |
| | Married | 64 | 26.0 |

| | | | |
|---|---|---|---|
| | Divorced | 5 | 2.0 |
| | Widowed | 8 | 3.3 |
| Ethnicity | Igbo | 94 | 38.2 |
| | Yoruba | 115 | 46.7 |
| | Hausa | 21 | 8.5 |
| | Others | 16 | 6.5 |
| Religion | Christianity | 235 | 95.5 |
| | Islam | 11 | 4.5 |
| Discipline | Doctor | 79 | 32.1 |
| | Nurse | 123 | 50.0 |
| | Pharmacist | 6 | 2.4 |
| | Pharmacist technician | 7 | 2.8 |
| | Laboratory scientist | 10 | 4.1 |
| | Laboratory technician | 17 | 6.9 |
| | Nutritionist | 4 | 1.6 |
| Work duration in BUTH | Less than a year | 83 | 33.7 |
| | 1-3 years | 85 | 34.6 |
| | 4-6 years | 27 | 11.0 |
| | 7-9 years | 12 | 4.9 |
| | 10 years and above | 39 | 15.9 |

The assessment of sleep quality showed that more than half of the respondents (52.8%) reported a score of 1 for subjective sleep quality, with a mean score of 0.88 ± 0.71. Sleep latency had a mean score of 1.15 ± 0.93, with most participants scoring 1 (38.2%). For sleep duration, the mean was 1.47 ± 0.92, and the largest proportion also scored 1 (42.7%). Habitual sleep efficiency recorded a mean of 0.69 ± 0.96, with 58.1% scoring 0. Regarding sleep disturbances, most respondents (72.8%) scored 1, with a mean score of 1.08 ± 0.56. The use of sleeping medication was generally low, as 83.7% scored 0, and the mean was 0.26 ± 0.69. Daytime dysfunction had a mean of 0.75 ± 0.84, with 47.2% scoring 0 (Table II)

**Table II: Assessment of Sleep Quality (PSQI Scores) (n=246)**

| Components of Sleep Quality | Frequency | Percentage |
|---|---|---|
| **Subjective Sleep Quality** | | |
| Score of 3 | 4 | 1.6 |
| Score of 2 | 37 | 15.0 |
| Score of 1 | 130 | 52.8 |
| Score of 0 | 75 | 30.5 |
| Mean: 0.88±0.712 | | |
| **Sleep Latency** | | |
| Score of 3 | 21 | 8.5 |
| Score of 2 | 63 | 25.6 |
| Score of 1 | 94 | 38.2 |
| Score of 0 | 68 | 27.6 |
| Mean: 1.15±0.925 | | |
| **Sleep Duration** | | |
| Score of 3 | 41 | 16.7 |
| Score of 2 | 67 | 27.2 |
| Score of 1 | 105 | 42.7 |
| Score of 0 | 33 | 13.4 |
| Mean: 1.47±0.924 | | |
| **Habitual Sleep Efficiency** | | |
| Score of 3 | 20 | 8.1 |
| Score of 2 | 26 | 10.6 |
| Score of 1 | 57 | 23.2 |
| Score of 0 | 143 | 58.1 |
| Mean: 0.69±0.958 | | |

| | | |
|---|---|---|
| **Sleep Disturbances** | | |
| Score of 3 | 4 | 1.6 |
| Score of 2 | 37 | 15,0 |
| Score of 1 | 179 | 72.8 |
| Score of 0 | 26 | 10.6 |
| Mean: 1.08±0.563 | | |
| **Use of Sleeping Medication** | | |
| Score of 3 | 9 | 3.7 |
| Score of 2 | 7 | 2.8 |
| Score of 1 | 24 | 9.8 |
| Score of 0 | 206 | 83.7 |
| Mean: 0.26±0.688 | | |
| **Daytime Dysfunction** | | |
| Score of 3 | 9 | 3.7 |
| Score of 2 | 37 | 15.0 |
| Score of 1 | 84 | 34.1 |
| Score of 0 | 116 | 47.2 |
| Mean: 0.75±0.842 | | |

Based on the global PSQI scores (mean: 6.28 ± 5.61), 69.5% of respondents were categorised as having poor sleep quality, while only 30.5% had good sleep quality (Table III).

**Table III: Categorisation of the Respondents' Quality of Sleep (n=246)**

| Categorization | Frequency | Percentage |
|---|---|---|
| Good Sleep Quality (0-4) | 75 | 30.5 |
| Poor Sleep Quality (≥5) | 171 | 69.5 |
| Mean = 6.28±5.612 | | |

Assessment of mental well-being using the GHQ-12 revealed mixed outcomes among respondents. Common negative experiences included not making good use of time (72.7% reported "often" or "sometimes"), indecisiveness (59.8%), and sleeplessness due to worry (44.8%). Feelings of unhappiness/distress (48.4%) and pressure (44.7%) were also reported. Conversely, most respondents indicated positive well-being: 73.6% were able to lead a happy life, 72.0% felt useful, 67.1% could concentrate, and 65.9% reported feeling generally happy (Table IV).

**Table IV: Assessment Of Mental Well-Being (GHQ- 12) (n=246)**

| Variables | Often Frequency (%) | Sometimes Frequency (%) | Seldom Frequency (%) | Never Frequency (%) |
|---|---|---|---|---|
| Feeling that you had not made good use of time | 69 (28.0) | 110 (44.7) | 50 (20.3) | 17 (6.9) |
| Feeling that you were not decisive | 55 (22.4) | 92 (37.4) | 68 (27.6) | 31 (12.6) |
| Feeling that you had suffered from pressure | 35 (14.2) | 75 (30.5) | 98 (39.8) | 38 (15.4) |
| Feeling that you could not overcome your difficulties | 27 (11.0) | 58 (23.6) | 86 (35.0) | 75 (30.5) |
| Feeling unhappy or distressed | 26 (10.6) | 93 (37.8) | 82 (33.3) | 45 (18.3) |
| Sleepless because of worrying about something | 25 (10.2) | 85 (34.6) | 101 (41.1) | 35 (14.2) |
| Having lost self-confidence | 34 (13.8) | 35 (14.2) | 93 (37.8) | 84 (34.1) |
| Able to lead a happy life | 181 (73.6) | 50 (20.3) | 11 (4.5) | 4 (1.6) |
| Able to face your difficulties | 139 (56.5) | 89 (36.2) | 14 (5.7) | 4 (1.6) |
| Able to concentrate on doing anything | 165 (67.1) | 61 (24.8) | 16 (6.5) | 4 (1.6) |
| Feeling that you were a useful person | 177 (72.0) | 52 (21.1) | 13 (5.3) | 4 (1.6) |
| Feeling happy in general | 162 (65.9) | 65 (26.4) | 15 (6.1) | 4 (1.6) |

Assessment of mental well-being using the GHQ-12 revealed mixed outcomes among respondents. Common negative experiences included not making good use of time (72.7% reported “often” or “sometimes”), indecisiveness (59.8%), and sleeplessness due to worry (44.8%). Feelings of unhappiness/distress (48.4%) and pressure (44.7%) were also reported. Conversely, most respondents indicated positive well-being: 73.6% were able to lead a happy life, 72.0% felt useful, 67.1% could concentrate, and 65.9% reported feeling generally happy (Table V).

**Table V: Categorisation of the Respondents’ Mental Health Status (n=246)**

| Category | Frequency | Percentage |
|---|---|---|
| No Mental distress (≤11) | 127 | 51.6 |
| Mental distress (≥12) | 119 | 48.4 |

Based on the GHQ-12 scores, slightly more than half of the respondents (51.6%) had no mental distress, while 48.4% were classified as experiencing mental distress (Table VI).

**Table VI: Relationship between Sleep Quality and Mental Well-Being of Respondents (n=246)**

| Mental Well-being | Quality of Sleep | | $\chi^2$ | p-value |
|---|---|---|---|---|
| | Poor | Good | | |
| No Mental Distress | 87 (50.9%) | 40 (53.3%) | | |
| Mental Distress | 84 (49.1%) | 35 (46.7%) | 0.126 | 0.723 |

**Discussion**

In the context of current global economic challenges and competing daily demands, sleep is often deprioritised, with many individuals attempting to minimise sleeping hours. Yet, sleep is just as vital to health and well-being as exercise and nutrition. Evidence indicates that sleep quality has a direct impact on waking life, influencing mental alertness, productivity, emotional stability, creativity, and overall physical vitality (24).

This study examined the association between sleep quality and the mental well-being of the healthcare workers in Babcock University Teaching Hospital in Nigeria. A total of 246 participants responded to the interview.

About two-thirds of the health care workers had poor sleep quality, which is lower than a similar study conducted in Malaysia. The reason for the disparity may be due to the variation in the study population, as the latter comprised only nurses (25). However, another study reported a similar prevalence (6). Among the various disciplines, the pharmacists, nutritionists, and medical doctors had the highest percentages of poor sleep quality. A previous research about the association between sleep quality and uncertainty stress among healthcare professionals in hospitals in China reported the highest poor quality of sleep among nurses (26). The disparity may be because of the period the latter was done, during the Covid-19 pandemic, which may have had a greater impact on the nursing staff, being the health care workers closest to patients in terms of proximity and duties. A little less than half of the health care workers were found to be mentally distressed, with the highest percentage found among the nurses (over half). This prevalence is about double that found in a study of psychological distress and sleep problems among health care workers (6). This disparity was explained to be probably due to reservations by the health care workers, given the general reluctance to disclose mental health problems due to stigmatisation or downplay or conceal mental health difficulties, influenced by cultural expectations of resilience, fear of jeopardising job opportunities, and uncertainty about where or to whom such issues can be safely disclosed.

The relationship between the sleep quality and the mental well-being of the health care workers was not significant (p = 0,723). That is not the case for some other studies done that revealed a significant relationship between sleep quality and mental well-being (6, 27). The disparity when compared to the latter two studies may be because one was done during a pandemic era, when there was overwhelming pressure on health care workers or because the study was done only among physicians.

Healthcare institutions in Nigeria should incorporate regular sleep and mental health screening into their occupational health protocols, which has been shown in a study of sleep health of healthcare workers in Kano, which found that more than half of the workers had poor sleep quality (24). This suggests an actionable benefit in detecting sleep issues early, offering counselling, and promoting sleep hygiene training. Healthcare institutions should provide accessible, stigma-sensitive mental health support. For instance, the

2025 study on sleep disturbances in healthcare workers during the COVID-19 pandemic showed high rates of insomnia, difficulty with sleep latency, and daytime dysfunction among healthcare workers (28). Embedding peer support, confidential counselling, and resilience training into staff wellness programs would help address both sleep and psychological challenges.

The national and hospital health workforce policies should allocate funding for mental health infrastructure within public and private spaces. A Nigerian COVID-19 study called for preventative psychosocial support services as an essential response to elevated sleep and psychological problems among healthcare workers (29). Policy makers should include sleep health and psychological well-being as standard metrics in healthcare worker welfare assessments, accreditation, and institutional audit frameworks. This approach ensures accountability and continuous improvement. Recent research shows that in Nigeria, quality of life and psychological health suffer when disturbed sleep is neglected in policy settings (30).

*Study limitations*

The limitations of this study included the unwillingness of healthcare workers to participate in the study and the timing of the interview.

**Conclusion**

This study revealed a high prevalence of poor sleep quality and considerable levels of psychological distress among healthcare workers at Babcock University Teaching Hospital. Although no significant association was found between sleep quality and mental well-being in this cohort, the findings highlight the vulnerability of healthcare workers to both sleep-related difficulties and mental health challenges. Differences from other studies may be explained by contextual variations such as study population and timing. These results underscore the importance of prioritising sleep health and psychological support within the healthcare workforce.

**List of Abbreviations**

BUTH: Babcock University Teaching Hospital
GHQ-12: General Health Questionnaire-12
PQSI: Pittsburgh Sleep Quality Index

**Declarations**

*Ethical approval and consent to participate*

Ethical clearance was obtained from Babcock University Health Research Ethics Committee (BUHREC) with approval number BUHREC 931/24. Ethical standards and procedures were strictly adhered to, and the anonymity of the patients was ensured. Written consent was obtained from respondents, and strict confidentiality of all information and findings was maintained throughout the study.

*Consent for Publication*

All the authors gave their consent for the publication of the work under the Creative Commons Attribution Non-Commercial 4.0 license. Otherwise, all copyright ownership, including all rights incidental thereto, is conveyed to the journal when published.

*Availability of data and materials*

The study data are available upon reasonable request to the corresponding author.

*Competing interests*

The authors declare that no competing interests exist.

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*Authors´contributions*

OAY conceived the research idea and wrote the first draft. All authors drafted the manuscript and approved the final submission.

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**References**

1. Sleep Quality - Consensus Academic Search Engine [Internet]. [cited 2025 Aug 28]. Available from: https://consensus.app/questions/sleep-quality/
2. Sleep quality and its relationship with mental well-being and work performance among nurses: a cross-sectional study [Internet]. [cited 2024 Aug 20]. Available from: https://www.researchgate.net/publication/381215291_Sleep_quality_and_its_relationship_with_mental_well-being_and_work_performance_among_nurses_a_cross-sectional_study
3. Pinheiro MF, Relva IC, Costa M, Mota CP. The role of social support and sleep quality in the psychological well-being of nurses and doctors. International Journal of Environmental Research and Public Health. 2024 Jun 17;21(6):786. https://doi.org/10.3390/ijerph21060786

4. Zhu Y, Meng R, Jiang C, Yang N, Huang M, Wang X, Zou W, Lou C, Xiao R, Lu J, Xu J. Sleep quality and subjective well-being in healthcare students: examining the role of anxiety and depression. Frontiers in Public Health. 2023 Dec 11;11:1281571. https://doi.org/10.3389/fpubh.2023.1281571
5. World Health Organization. The Selection and Use of Essential Medicines: Report of the WHO Expert Committee, 2005 (including the 14th Model List of Essential Medicines). World Health Organization; 2006.
6. Olagunju AT, Bioku AA, Olagunju TO, Sarimiye FO, Onwuameze OE, Halbreich U. Psychological distress and sleep problems in healthcare workers in a developing context during COVID-19 pandemic: Implications for workplace wellbeing. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2021 Aug 30;110:110292. https://doi.org/10.1016/j.pnpbp.2021.110292
7. Su P, He M. Relationship between sleep quality and subjective well-being: Resilience as a mediator and belief in a just world as a moderator. Frontiers in Psychiatry. 2023 Dec 7;14:1297256. https://doi.org/10.3389/fpsyt.2023.1297256
8. Sleep: A Health Imperative | SLEEP | Oxford Academic [Internet]. [cited 2024 Aug 20]. Available from: https://doi.org/10.5665/sleep.1846
9. Wang B, Lu Q, Sun F, Zhang R. The relationship between sleep quality and psychological distress and job burnout among Chinese psychiatric nurses. Industrial health. 2021 Sep 27;59(6):427-35. https://doi.org/10.2486/indhealth.2020-0249
10. Frontiers | Prioritizing the Mental Health and Well-Being of Healthcare Workers: An Urgent Global Public Health Priority [Internet]. [cited 2024 Apr 22]. Available from: https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2021.679397/full
11. Coelho J, Lucas G, Micoulaud-Franchi JA, Tran B, Yon DK, Taillard J, D'Incau E, Philip P, Boyer L, Fond G. Sleep timing, workplace well-being and mental health in healthcare workers. Sleep Medicine. 2023 Nov 1;111:123-32. https://doi.org/10.1016/j.sleep.2023.09.013
12. Kafle B, Tiwari S, Pokhrel A, Shrestha R, Bagale Y, Pahari N. Poor quality of sleep among healthcare workers in a tertiary care centre. JNMA: Journal of the Nepal Medical Association. 2024 Feb 29;62(270):118. https://doi.org/10.31729/jnma.8435
13. Liu Y, Zhang Q, Jiang F, Zhong H, Huang L, Zhang Y, Chen H. Association between sleep disturbance and mental health of healthcare workers: A systematic review and meta-analysis. Frontiers in psychiatry. 2022 Jul 29;13:919176. https://doi.org/10.3389/fpsyt.2022.919176
14. One in three NHS doctors so tired their ability to treat patients is affected, survey finds | NHS | The Guardian [Internet]. [cited 2025 Sept 3]. Available from: https://www.theguardian.com/society/2025/mar/03/one-in-three-nhs-doctors-so-tired-their-ability-to-treat-patients-is-affected-survey-finds?utm_source=chatgpt.com
15. Babcock University Teaching Hospital (BUTH) – Compassionate Care, Innovative Medicine. [Internet]. [cited 2024 Apr 27]. Available from: https://buth.babcock.edu.ng/
16. Vision and Mission – Babcock University Teaching Hospital (BUTH) [Internet]. [cited 2025 Oct 9]. Available from: https://buth.babcock.edu.ng/vision-and-mission/
17. Nanjundeswaraswamy TS, Divakar S. Determination of sample size and sampling methods in applied research. Proceedings on engineering sciences. 2021 Mar 12;3(1):25-32. https://doi.org/10.24874/PES03.01.003
18. Alwhaibi M, Al Aloola NA. Associations between stress, anxiety, depression and sleep quality among healthcare students. Journal of Clinical Medicine. 2023 Jun 28;12(13):4340. https://doi.org/10.3390/jcm12134340
19. Adebola YO, Olawale OO, Oluwatoyin AF, Kolawole JS, Ngozi OA, John OO, Abiodun OO, Chikwendu A, Fisayo GA, Olumide AA. Prevalence of mental illness and associated factors among the elderly in Ogun East Senatorial District, Nigeria. Archives of Mental Health. 2024 Jul 1;25(2):155-61. https://doi.org/10.4103/amh.amh_92_24
20. assessment, pittsburgh psqi.pdf [Internet]. [cited 2024 May 4]. Available from: https://www.goodmedicine.org.uk/files/assessment,%20pittsburgh%20psqi.pdf
21. PSQI.pdf [Internet]. [cited 2024 Apr 25]. Available from: https://curesickle.org/sites/scdc/files/Doc/SC/PSQI.pdf
22. What is the Pittsburgh Sleep Quality Index (PSQI)? - Examine [Internet]. [cited 2024 Apr 25]. Available from: https://examine.com/conditions/insomnia/faq/what-is-the-pittsburgh-sleep-quality-index-psqi/

23. General Health Questionnaire (GHQ) [Internet]. [cited 2020 July 21]. Available from: https://www.gl-assessment.co.uk/products/general-health-questionnaire-ghq/
24. Kolo ES, Ahmed AO, Hamisu A, Ajiya A, Akhiwu BI. Sleep health of healthcare workers in Kano, Nigeria. Nigerian Journal of clinical practice. 2017 May 19;20(4):479-83. https://doi.org/10.4103/1119-3077.204378
25. Mohamad N, Mulud ZA, Daud NA, Halim NA, Hashim N. Sleep quality and its relationship with mental well-being and work performance among nurses: a cross-sectional study. Healthcare in Low-resource Settings. 2024 Jun 5;12(3). https://www.pagepressjournals.org/hls/article/view/12096
26. Pan J, Cai X, Chen L, Wu L, Xia J, Lu J. Association between sleep quality and uncertainty stress among healthcare professionals in hospitals in China: a nationwide cross-sectional survey. BMJ open. 2024 Oct 1;14(10):e087090. https://doi.org/10.1136/bmjopen-2024-087090
27. Ogunsemi OO, Afe TO, Oyelekan AA, Ale A, Osalusi BS, Tessie S. Sleep quality and psychological morbidity among physicians in southwest Nigeria. Research Journal of Health Sciences. 2019 Jun 24;7(2):169-75. https://doi.org/10.4314/rejhs.v7i2.12
28. Khannou A, Essoli S, Khannous A, Bounoua F, Halloumi O, Moubachir H, Adarmouch L, Serhane H. Sleep disturbances in healthcare workers during the COVID-19 pandemic. Nigerian Medical Journal. 2025 Apr 10;66(1):82-90. https://www.nigerianmedjournal.org
29. Olagunju AT, Bioku AA, Olagunju TO, Sarimiye FO, Onwuameze OE, Halbreich U. Psychological distress and sleep problems in healthcare workers in a developing context during COVID-19 pandemic: Implications for workplace wellbeing. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2021 Aug 30;110:110292. https://doi.org/10.1016/j.pnpbp.2021.110292
30. Ugwu LE, Idemudia ES, Onyedibe MC. Decoding the impact of night/day shiftwork on well-being among healthcare workers. Scientific Reports. 2024 May 4;14(1):10246. https://doi.org/10.1038/s41598-024-60882-1