LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Juillet 2026



Objectifs : réaliser une veille scientifique sur les horaires atypiques

La validation des informations fournies (exactitude, fiabilité, pertinence par rapport aux principes de prévention, etc.) est du ressort des auteurs des articles signalés dans la veille. Les informations ne sont pas le reflet de la position de l'INRS. Les éléments issus de cette veille sont fournis sans garantie d'exhaustivité. Les liens mentionnés dans le bulletin donnent accès aux documents sous réserve d'un abonnement à la ressource.

Les bulletins de veille sont disponibles sur le portail documentaire de l'INRS. L'abonnement permet de recevoir une alerte mail lors de la publication d'un nouveau bulletin (bouton « M'abonner » disponible après connexion à son compte).

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Horaires atypiques (HA)

Généralités et prévention

The impact of 24-h shift on cardiac anesthesia fellows.

Liu R, Shao K, He L, Yao Y. *Front Public Health*. 2026;14:1807234.

OBJECTIVE: To investigate the workload, sleep quality, and psychological wellbeing of anesthesiologists at a large volume cardiovascular center. METHODS: Eighteen anesthesiologists were enrolled from Fuwai Hospital. Data was collected using questionnaires and wearable smart wristbands. Participants worked 24-h shifts (from 8:00 a.m. to 8:00 a.m. the following day), during which they were responsible for emergency endotracheal intubation, invasive arterial catheterization, and central venipuncture catheterization, and analgesia pump management. Sleep parameters, physical activity, calories expenditure were recorded continuously throughout the shift using a wristband. The following self-report instruments were administered before and immediately after the shift: a self sleep quality rating, the Big Five Personality Traits, the Profile of Mood States (POMS), and the Karolinska Sleepiness Scale (KSS). RESULTS: Fatigue scores on the POMS increased significantly after the 24-h shift ($P < 0.05$), whereas no other mood subscales showed statistically significant changes. Wristband data revealed limited sleep during the monitored duty period. KSS scores increased significantly from pre-shift to post-shift. The workload and physical monitoring data suggested that anesthesiologists experienced substantial physical and emotional strain during 24-h shifts. CONCLUSIONS: During a 24-h on-call shift, anesthesiologists obtained limited sleep and reported significantly increased fatigue and sleepiness post-shift. These findings emphasize the need for systemic changes in clinical scheduling to improve physician health and patient safety.

Lien vers l'article

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Aucun article dans ce bulletin.

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Long working hours and mortality outcomes: A systematic review with outcome-specific evidence synthesis.

Shen X, Zhu D, Xiang Y, He J, Wu R, Huang Y. *iScience*. 2026 Jun 19;29(6):116294.

Long working hours are a major occupational health concern, but whether their associations differ across mortality outcomes remains unclear. We searched six databases from inception to January 31, 2026 and conducted a systematic review with outcome-specific evidence synthesis of longitudinal studies. Seven original cohort studies were included. Long working hours, commonly defined as 55 or more hours per week, were associated with higher cardiovascular mortality, whereas the pooled association with all-cause mortality was not statistically significant. The only eligible prospective cohort study suggested increased suicide mortality at 45-52 and more than 52 h per week, while no significant association was observed for accident mortality. These findings indicate that mortality associations of long working hours are outcome specific and highlight the need for prospective studies with standardized exposure definitions and clearer classification of cause-specific mortality.

Lien vers l'article

Associations of weekly working hours with biological aging and all-cause and cardiovascular mortality: the role of lifestyle.

Föhr T, Kankaanpää A, Heikkinen A, Hukkanen M, Hublin C, Kaprio J, et al. *J Occup Med Toxicol*. 2026 Jun 30.

BACKGROUND: This explorative study investigated the associations between working hours, biological aging, and all-cause and cardiovascular disease (CVD) mortality, and assessed the potential mediating role of lifestyle factors. METHODS: We utilized data from the Older Finnish Twin Cohort, which comprised 9246 participants who had reported their weekly working hours in 1990. Biological aging was assessed using blood-based epigenetic aging measures in a subsample (n = 740). We used a counterfactual mediation approach. Lifestyle-related factors, including leisure-time physical activity (LTPA), alcohol consumption, body mass index (BMI), smoking, and sleep, were considered potential mediators. Between-within twin models were used to evaluate the extent to which shared familial factors confounded the observed associations. RESULTS: During the mean 28-year follow-up period, 20.5% of the participants died. Long hours were directly associated with decreased risk of all-cause mortality, but only at the between-pair level; there were no associations with biological aging. However, long hours were indirectly associated with an increased risk of all-cause and CVD mortality through a higher BMI and smoking, and with an increased risk of CVD mortality through lower LTPA levels. Long hours were also indirectly associated with accelerated biological aging through smoking. Part-time work was indirectly associated with a lower risk of all-cause and CVD mortality through a lower BMI. CONCLUSIONS: The findings of this explorative study suggest that direct associations between long working hours, biological aging, and mortality are shaped by lifestyle-mediated pathways and shared familial factors.

Lien vers l'article

Association between long working hours and all-cause and cardiovascular disease mortality: a cohort study of Korean wage workers.

Baek SU, Yoon JH. *Ind Health*. 2026 Jun 12.

Long working hours are public health concern globally. However, their association with all-cause and cardiovascular disease (CVD) mortality remains underexplored. This cohort study investigated the relationship between long working hours and all-cause and CVD mortality. A nationwide sample of

22,582 Korean workers (10,266 men, 12,316 women) was analyzed. Weekly working hours were measured at baseline. The outcomes were the all-cause and CVD deaths. Cox regression models were used to determine the relation between working hours and mortality outcomes using a sex-stratified analysis, calculating hazard ratios (HRs) and 95% confidence intervals (CIs). During a median follow-up of 9.6 years, 670 all-cause deaths and 129 CVD deaths occurred. In the male workers, the HRs (95% CIs) for the association of working ≥55 h/week with mortality outcomes were 1.52 (1.06-2.17) for all-cause mortality and 2.59 (1.02-6.56) for CVD mortality, compared with working 35-40 h/week. In the female workers, the HRs (95% CIs) for the association of working ≥55 h/week with mortality outcomes were 0.74 (0.41-1.33) for all-cause mortality and 1.11 (0.31-6.92) for CVD mortality, compared with working 35-40 h/week. In conclusion, this study suggests that long working hours are linked to all-cause and CVD mortality among male workers.

Lien vers l'article

Santé psychique

Aucun article dans ce bulletin.

Troubles cognitifs et de la vigilance

Aucun article dans ce bulletin.

Travail posté et de nuit

Généralités et prévention

Shining a Light on the Challenges of Night Shift Nursing: A Mixed-Methods Study.

Weaver S, Harvey J, Fleming K, Wurmser TA, Paliwal M. *Am J Nurs*. 2026 Jul 1;126(7):22-32.

BACKGROUND: Night shift work is known to disrupt circadian rhythms, leading to significant physical and mental health challenges, including fatigue, sleep deprivation, and long-term health risks. For nurses working the night shift, these factors compromise both their own well-being and patient safety. Addressing these challenges is critical to improving outcomes for both staff and patients. PURPOSE: This study aimed to explore nurses' perspectives on night shift work, identify fatigue countermeasures, and elicit nurses' recommendations for improving working conditions. METHODS: This mixed-methods study was conducted in two phases. In Phase One, night shift nurses at 12 hospitals within a northeastern U.S. health care system were surveyed to assess their night shift experiences. Phase Two employed focus groups at six of those hospitals to gain insight into night shift nurses' perspectives on the challenges they face and suggestions for improvement. Descriptive statistics were used to analyze the survey data. Thematic analysis of focus group transcripts was conducted to identify themes. RESULTS: The survey results identified gaps in night shift support, including limited access to in-person education and hot, nourishing food. Recognition of night shift nurses' unique needs was the overarching theme from the focus groups. Seven additional themes further described those needs and indicated areas for improvement: safety at night--from feeling safe to being terrified; drowsy driving; need for a break; "we're tired"--napping; nourishment at night; self-care; and night work is undervalued. CONCLUSIONS: The results support findings from prior research and underscore the persistent challenges night shift nurses face. While these challenges are well documented, changes to address them have been limited. Health care organizations must move beyond acknowledging the issues to implementing evidence-based interventions and structured programs. Addressing the concerns of night shift nurses is imperative and necessary to safeguard nurses' health and well-being; reduce turnover; and ensure safer, high-quality patient care.

Lien vers l'article

Night shift work exposure shapes neurobehavioral and cardiometabolic profiles in female healthcare workers: a cross-sectional study.

Vivarelli S, Formica T, Fiorino FS, Pollicino M, Savasta S, Oliveri C, et al. *Front Public Health*. 2026;14:1860519.

BACKGROUND: Night shift work has been associated with adverse neurobehavioral and cardiometabolic outcomes, but the role of cumulative and long-term exposure, particularly among female healthcare workers, remains incompletely characterized. This study adopted a multidimensional approach to examine associations between night shift exposure and integrated health profiles. METHODS: This cross-sectional study included 243 female healthcare workers (96 day-shift, 147 night-shift). Night shift exposure was assessed using multiple metrics: status, cumulative lifetime shifts (<500 vs. ≥ 500), and duration (1-10 vs. 11-35 years). Sociodemographic, reproductive, lifestyle, and occupational data were collected. Neurobehavioral outcomes were evaluated using validated questionnaires (sleep quality, psychological well-being, work ability), while cardiometabolic assessment included BMI, WHtR, insulin resistance indices (METS-IR, TyG, WyG), and cardiovascular risk index (IRCV). Analyses comprised stratification, correlation, and multivariable regression adjusted for age, smoking, and menopausal status. RESULTS: Higher cumulative exposure was associated with lower physical activity ($p = 0.012$), poorer sleep ($p = 0.019$), reduced work ability ($p = 0.023$), and early insulin resistance ($p = 0.043$). Long-term exposure was linked to poorer psychological well-being ($p = 0.009$), higher adiposity ($p = 0.034$; $p = 0.028$), and increased IRCV ($p = 0.006$). In adjusted models, sleep quality was consistently associated with all exposure metrics, while metabolic outcomes were

more strongly linked to duration of exposure and individual factors. Correlation analyses revealed clustering of sleep, neurobehavioral, and cardiometabolic variables, with strength of the associations increasing with exposure level. CONCLUSION: Night shift work, particularly with cumulative and long-term exposure, is associated with sleep disruption, reduced well-being, and early cardiometabolic alterations in female healthcare workers. Sleep impairment emerges as a robust exposure-related marker, while metabolic risk reflects combined occupational and individual susceptibility. These findings support life-course exposure assessment and suggests the use of early subclinical indicators for implementation of precision prevention, as well as early intervention strategies. Future research may further benefit from a life-course exposome framework integrating environmental, occupational, and biological exposures.

Lien vers l'article

Association of shift work with body weight, stress, sleep, and dietary intake in prison officers and firefighters.

Mosomi LN, Fyfe CL, Horgan GW, Giles K, O'Connor DB, de Roos B, et al. *Eur J Nutr*. 2026 Mar 5;65(3).

PURPOSE: We explored how shift work in UK prison officers and firefighters is associated with body composition, stress, and sleep, and with the quantity, quality, and timing of dietary intake whilst on-shift and off-shift. METHODS: Secondary analysis of cross-sectional data from an intensive 7 day study on anthropometry, stress, sleeping patterns and dietary intake, obtained in 22 prison officers and 51 firefighters (both male and female), taking part in the neurobiology of food addiction and stress (NeuroFAST) study. RESULTS: Mean age was 37.4 ± 7.23 years, while 78% of prison officers and 61% of firefighters were classified as living with either overweight or obesity. Overall, daily energy and total fat intakes were within recommended ranges. However, carbohydrate and dietary fibre intakes were below, while saturated fat and salt intakes exceeded, recommended amounts for health. Prison officers had a significantly lower frequency of breakfast and dinner occasions when on-shift, whereas firefighters had a significantly lower frequency of all eating occasions when on-shift, than when off-shift (all $p < 0.001$). In prison officers, intake of energy and sugar was significantly higher when off-shift ($p = 0.001$ and $p = 0.002$, respectively). Both prison officers and firefighters had higher stress scores during shift days than on non-shift days ($p = 0.007$ and $p < 0.001$ respectively). Both groups had longer sleep durations on non-shift days than on shift days (all $p < 0.001$). CONCLUSION: Prison officers and firefighters had a high prevalence of overweight and obesity and their dietary patterns, and timing of eating occasions, especially when off-shift, may increase risk of metabolic disease.

Lien vers l'article

The impact of 24-h shift on cardiac anesthesia fellows.

Liu R, Shao K, He L, Yao Y. *Front Public Health*. 2026;14:1807234.

OBJECTIVE: To investigate the workload, sleep quality, and psychological wellbeing of anesthesiologists at a large volume cardiovascular center. METHODS: Eighteen anesthesiologists were enrolled from Fuwai Hospital. Data was collected using questionnaires and wearable smart wristbands. Participants worked 24-h shifts (from 8:00 a.m. to 8:00 a.m. the following day), during which they were responsible for emergency endotracheal intubation, invasive arterial catheterization, and central venipuncture catheterization, and analgesia pump management. Sleep parameters, physical activity, calories expenditure were recorded continuously throughout the shift using a wristband. The following self-report instruments were administered before and immediately after the shift: a self sleep quality rating, the Big Five Personality Traits, the Profile of Mood States (POMS), and the Karolinska Sleepiness Scale (KSS). RESULTS: Fatigue scores on the POMS increased significantly after the 24-h shift ($P < 0.05$), whereas no other mood subscales showed statistically significant changes. Wristband data revealed limited sleep during the monitored duty period. KSS scores increased significantly from pre-shift to

post-shift. The workload and physical monitoring data suggested that anesthesiologists experienced substantial physical and emotional strain during 24-h shifts. CONCLUSIONS: During a 24-h on-call shift, anesthesiologists obtained limited sleep and reported significantly increased fatigue and sleepiness post-shift. These findings emphasize the need for systemic changes in clinical scheduling to improve physician health and patient safety.

Lien vers l'article

Working against the clock: the impact of shift patterns on cognitive function, mental health, and stimulant use among healthcare workers.

AlSamhori JF, Baniamer AZ, Batat H, Abu Sahyoun AM, Hamasha AM, Alsharqwi MZ, et al. *BMC Psychiatry*. 2026 Jun 13.

BACKGROUND: Shift work is common in healthcare and has been associated with negative physical, cognitive, and mental health consequences. It may also associate with greater dependency on stimulants as a way of overcoming fatigue and a lowered level of alertness. AIM: This study was to investigate an association between shift pattern, cognitive function, mental health (depression and anxiety), and stimulant use among healthcare workers. METHODS: A descriptive cross-sectional design was used. A convenience sampling of 445 healthcare workers was recruited from two university-affiliated and two private hospitals in Jordan. Data was obtained from a self-administered questionnaire of sociodemographic characteristics, clinical symptoms, cognitive function, stimulant use, and validated scales. RESULTS: A total of 445 healthcare workers were included (58.7% night shift, n = 261; 41.3% day shift, n = 184). Night shift workers reported significantly higher levels of fatigue (n = 200, 76.6%), headache (n = 164, 62.8%), and tremors (n = 114, 43.7%) and greater impairment in cognitive functions, especially memory (n = 173, 66.3%) and learning abilities (n = 156, 59.8%), than day shift workers ($p < 0.05$). Caffeine consumption and the use of stimulants were also considerably higher in the night shift workers. The mean depression score showed that the symptoms of depression were mild (M = 9.75, SD = 5.47) and the level of anxiety was moderate (M = 8.97, SD = 5.04). Stronger associations were found between depressive and anxiety symptoms and clinical symptoms and cognitive impairment among night shift workers. CONCLUSION: Night shift work was associated with more physical symptoms, cognitive impairment, and stimulant use and greater associations to depression and anxiety among healthcare workers. These results highlight the need for targeted interventions to ensure the safety of patients by attending to mental health, decreasing fatigue, and improving cognitive performance.

Lien vers l'article

Activités physiques

Impact of nursing shift patterns on work-related musculoskeletal disorders: a systematic review and meta-analysis.

Ruiz-Zaldibar C, Mayoral-Gonzalo N, Barrio-Cortes J, Pérez-Manchón D, González GM, Sánchez RM, et al. *BMC Nurs*. 2026 Jul 1.

Musculoskeletal disorders (MSDs) are among the leading causes of disability worldwide and substantially affect the nursing workforce due to high physical demands, biomechanical strain, and irregular work schedules. Growing evidence suggests that shift work, particularly rotating and night schedules, may contribute to work-related musculoskeletal disorders (WRMSDs); however, findings remain inconsistent across studies. This study aimed to examine, through a systematic review and meta-analysis of observational studies, the association between distinct nursing shift patterns (day, rotating, and fixed night shifts) and generalized or region-specific musculoskeletal outcomes among

nurses. A systematic search was conducted in PubMed, Scopus, Web of Science, and CINAHL between December 2024 and August 2025. The review was prospectively registered in PROSPERO (CRD420250656652). Studies were eligible if they included samples comprising at least 50% practicing nurses, compared at least two shift types (day, rotating, or fixed night shifts), and reported musculoskeletal outcomes. Observational study designs were included without publication date restrictions. Methodological quality was assessed using the Newcastle-Ottawa Scale for cohort studies and the Joanna Briggs Institute checklist for cross-sectional studies. Risk of bias was evaluated using the ROBINS-E tool. Although the systematic review included a broad range of musculoskeletal outcomes, only musculoskeletal pain outcomes were sufficiently homogeneous to be included in the quantitative synthesis. Random-effects meta-analyses were conducted comparing day versus rotating shifts and day versus fixed night shifts. Twenty-four studies including 102,159 nurses were included in the systematic review, and thirteen studies were incorporated into the meta-analyses. No statistically significant associations were identified between rotating shifts and musculoskeletal pain compared with day shifts (pooled estimate = 1.15; 95% CI: 0.98-1.35; I^2 = 7.2%). Likewise, fixed night shifts were not significantly associated with musculoskeletal pain compared with day shifts (pooled estimate = 1.09; 95% CI: 0.94-1.27; I^2 = 81.1%). Stratified analyses across anatomical regions, including neck, back/lumbar, shoulder, and lower limb pain, also showed no statistically significant associations, although several pooled estimates tended to be higher among rotating shift workers. The available evidence suggests that the relationship between shift work and musculoskeletal pain among nurses is complex and likely influenced by multiple occupational, ergonomic, psychosocial, and organizational factors. Although no statistically significant associations were identified in the meta-analysis, rotating and fixed night shifts showed trends toward higher musculoskeletal pain estimates in several anatomical regions. Further longitudinal studies using more standardized definitions of shift work exposure and musculoskeletal outcomes are needed.

Lien vers l'article

Effects of a Job Rotation Intervention on Muscle Activity Variability and Health: A Case Study in a Swedish Commercial Laundromat.

Jackson JA, Januario LB, Mathiassen SE. *IISE Trans Occup Ergon Hum Factors*. 2026 Jul-Sep;14(3):303-19.

OCCUPATIONAL APPLICATIONSThis pre-post intervention case study found that team-based job rotation (JR) has the potential to increase job-level, within-worker variance bilaterally in trapezius and forearm muscle activity compared with baseline by a mean of 35%, and that an actual increase of 27% was achieved. Most workers experienced an increase in within-worker variance at all four muscle sites. At follow-up, over 45% of JR workers reported lower work demands, less fatigue after work, and feeling more rested and recovered when starting a workday compared to baseline; in contrast, some workers (0-4, depending on body part) reported higher musculoskeletal symptoms at follow-up. These results provide evidence from an occupational setting that a re-distribution of existing tasks can increase the average within-worker exposure variation and suggest that JR can lead to lower demands, lower fatigue, and better recovery; further consideration of the longer-term JR effects on musculoskeletal health is required.

Lien avec l'article

Relationship between obstructive sleep apnea risk and low back pain among shift workers in a tire manufacturing factory.

Jung S, Cho S, Kim S, Kang KW, Kim J, Park WJ. *Ann Occup Environ Med*. 2026 Jun;38:e15.

BACKGROUND: Low back pain (LBP) is highly prevalent among industrial workers, and obstructive sleep apnea (OSA) has been increasingly recognized as a factor influencing pain modulation. This study

evaluated the association between OSA risk, assessed by the STOP-Bang questionnaire, and LBP among shift workers in a tire manufacturing factory. METHODS: A total of 976 male shift workers from a tire manufacturing factory were analyzed. OSA risk was assessed using the STOP-Bang questionnaire and classified as low, moderate, or high. LBP and musculoskeletal pain were defined as self-reported symptoms occurring within the preceding 6 months. Multivariable logistic regression analyses were performed to estimate odds ratios (ORs) and 95% confidence intervals (CIs). RESULTS: Compared with workers at low OSA risk, those at moderate and high risk had significantly higher odds of LBP (OR: 1.50; 95% CI: 1.02-2.20; p = 0.038; and OR: 1.75; 95% CI: 1.20-2.55; p = 0.004, respectively). Similarly, moderate and high OSA risk were independently associated with increased odds of musculoskeletal pain (OR: 1.86; 95% CI: 1.26-2.73; p = 0.002; and OR: 1.84; 95% CI: 1.26-2.68; p = 0.002, respectively). CONCLUSIONS: Among male shift workers, elevated OSA risk is independently associated with a higher prevalence of LBP and musculoskeletal pain. Systematic workplace screening for OSA risk using the STOP-Bang questionnaire may support occupational health assessments by identifying shift workers with elevated OSA risk who are more likely to report pain-related morbidity.

Lien vers l'article

Autres pathologies

Exploring the Impact of Sleep Quality on Periodontal Health among Night Shift Factory Workers in Ahmedabad City.

Trivedi S, Parkar S. *J uoeh*. 2026;48(2):87-96.

Periodontal disease is multifactorial, influenced by both local and systemic factors. Environmental variables, such as sleep quality, may affect periodontal health; however, scant literature has addressed this relationship in factory workers. The present study aimed to investigate the impact of sleep quality on periodontal health in night-shift factory workers in Ahmedabad city. A cross-sectional questionnaire study was conducted on 360 workers from six selected factories in Ahmedabad city, Gujarat. Demographic data including age, sex, marital status, and tobacco use were recorded. Sleep quality was evaluated using the Pittsburgh Sleep Quality Index. A clinical assessment was done to assess the oral hygiene status and periodontal status by using the Oral Hygiene Index-Simplified and the WHO 1997 methodology, respectively. There were a total 198 (55%) day-shift workers and 162 (45%) night-shift workers. The global sleep quality mean scores in the day shift and night shift workers were 3.85 ± 2.14 and 4.80 ± 2.27, with a significant difference. The night shift workers had a significantly ($P<0.05$) worse score as compared to day shift workers when the oral hygiene status and periodontal status mean score were compared. Age (AOR=5.52; 95% CI=1.98-15.39; $P<0.001$), sex (AOR=5.89; 95% CI=1.74-19.94; P=0.004), oral hygiene (AOR=6.75; 95% CI=3.67-12.42; $P<0.001$), night shift (AOR=2.13; 95% CI=1.27-3.59; P=0.004), and poor sleep quality (AOR=2.65; 95% CI=1.47-4.78; $P<0.001$) were the independent risk factors for periodontal status. In conclusion, the findings indicate that night-shift factory workers exhibit significantly poorer sleep quality, oral hygiene, and periodontal health as compared to their day-shift counterparts.

Lien vers l'article

Impact of nursing shift patterns on work-related gastrointestinal disorders: a systematic review and meta-analysis.

Pérez-Manchón D, Lozano-Hernández CM, Mata-González G, Arias-Arias AJ, Mayoral-Gonzalo N, Gómez-de Quero Córdoba M, et al. *Front Public Health*. 2026;14:1839569.

BACKGROUND: Gastrointestinal diseases are highly prevalent worldwide and are linked to poorer quality of life and increased use of healthcare services. Nursing shift work may disrupt circadian

rhythms and contribute to functional gastrointestinal disorders through chronodisruption, sleep impairment, stress, and lifestyle changes. This review aims to analyze the relationship between nursing shift work and the development of gastrointestinal disorders. METHODS: A systematic review and meta-analysis of different observational studies was conducted to evaluate associations between nurses' work shifts and gastrointestinal disorders. PROSPERO: CRD420251018324. An extensive search of the Databases (PubMed, Scopus, Web of Science, CINAHL) was carried out between April and May 2025 with no date restrictions applied. The studies included compared the frequency of gastrointestinal outcomes among >50% of practicing nurses working fixed day shifts or rotating shifts (including night work). Study quality was assessed using NOS (cohort/case-control) and JBI (cross-sectional). Risk of bias was evaluated with ROBINS-E. Odds ratios (OR) with 95% confidence intervals (CI) were pooled using fixed or random-effects models depending on heterogeneity. RESULTS: Seventeen studies (data collection 1998-2023; publication 2003-2024) were included in the review, and 13 were incorporated into the meta-analysis. Most of the studies were cross-sectional and based in hospitals. Rotating shifts were associated with a significantly increased overall risk of gastrointestinal outcomes when compared to day shifts (OR = 1.15; 95% CI: 1.02-1.30; p = 0.02), with moderate heterogeneity (I(2) = 53%). Subgroup analyses showed significant and robust associations for irritable bowel syndrome (OR = 1.74; 95% CI: 1.27-2.37; I(2) = 0%) and diarrhea (OR = 2.41; 95% CI: 1.01-5.75; I(2) = 0%). No significant associations were identified for colorectal cancer or inflammatory bowel disease. Most studies had low risk of bias, although outcome reporting and confounding were frequent concerns. CONCLUSION: Rotating shift work among nurses, particularly schedules including night shifts, is associated with a higher risk of gastrointestinal disorders, notably IBS and diarrhea. These findings support the need for occupational health strategies targeting chronodisruption, sleep quality, stress, and healthy lifestyle behaviors in shift-working nurses. They call for improved monitoring of gastrointestinal symptoms and further longitudinal research to identify long-term disease risks. SYSTEMATIC REVIEW REGISTRATION: https://www.crd.york.ac.uk/PROSPERO/view/CRD420251018324, identifier: CRD420251018324.

Lien vers l'article

Cardiometabolic status among shift workers under meal time regulation: A systematic review of randomized controlled trials.

Wulandari F, Khoiriyah IE, Naim AJ, Walker AN, Atmaka DR, Khuang IA, et al. *Nutr Health*. 2026 Jul 1:2601060261464874.

To date, findings have denoted that disrupted meal timing and eating during biologically inappropriate hours are associated with an increased risk of adverse cardiometabolic outcomes among shift workers. However, solid evidence remains lacking due to the small number of clinical studies and low methodological quality. This review investigated how an intervention targeting shift workers' meal timing affects cardiometabolic markers. The MEDLINE, Cochrane Library, Web of Science, Embase, CINAHL Complete, and Scopus were searched using a predefined search strategy. Only randomized controlled trials of adults aged ≥18 under a shift work environment were included. Four trials met the inclusion criteria. Three studies assigned fasting periods during the night shift, ranging between 19:45 and 06:30 h, and one study used 10-h self-selected Time-Restricted Eating (TRE). A 10 h self-selected TRE reported a significantly lower VLDL-C particle size compared with the control group. Four studies reporting fasting insulin levels and homeostatic model assessment of insulin resistance observed a significant change in one trial after an 8.5-h overnight fast. No studies pointed to significant changes in HDL-C. In the postprandial measurement, 10.75 h of night fasting showed significantly lower glucose AUC, non-esterified fatty acids AUC, and 2-h glucose than in the meal- and snack-at-night group. Body weight was slightly lower after a short overnight fast. The scarcity of trials investigating mealtime interventions and cardiometabolic markers among shift workers limits the generalizability of the findings and raises concerns regarding the robustness of the preliminary positive outcomes. Therefore,

more trials with larger sample sizes and longer study durations are required, given the limited number of studies.

Lien vers l'article

Deep learning-based physiological risk stratification in night-shift hospital workers.

Lee I, Hong S, Lee J, Lee H, Kwon S, Min Y, et al. *Sci Rep*. 2026 Mar 16;16(1).

This cross-sectional study of 2,250 hospital workers attempted to identify potential physiological risk structures for night workers by utilizing the nonlinear manifold learning framework. Unlike conventional mean-centered linear analysis, this study applied the Potential of Heat-diffusion for Affinity-based Transition Embedding (PHATE) for topological visualization and Neural Additive Models (NAM) to predict interpretable risk. The 'cholesterol homeostasis profile' was defined as the main latent indicator. Analysis showed that the systemic metabolic load (PHATE-1) was higher after age correction, despite the night-shift group being younger than the non-night shift group ($p < 0.001$). This axis showed a positive correlation with body mass index ($r = 0.71$) and triglyceride ($r = 0.56$). The NAM model captured the risk slope with an average AUC of 0.864 (range 0.832–0.901) and confirmed a nonlinear risk transition when it exceeded the triglyceride 2 mmol/L threshold. The predicted risk of night workers in the highest risk cluster (cluster 1) was 0.71, and the metabolic load and cholesterol homeostasis profile risk were increased. Ultimately, the PHATE-NAM framework moves beyond traditional group averages. It provides a purely data-driven way to pinpoint individual physiological vulnerabilities, giving hospitals the exact evidence needed to design safer, more sustainable shift-work environments.

Lien vers l'article

Night shift work and dietary behaviors: a comparative analysis of European night shift and day workers from the SHIFT2HEALTH online survey.

Klink U, Feskens EJM, Lucassen DA, Vingerhoeds MH, Haider S, Papantoniou K, et al. *Nutr J*. 2026 Apr 7;25(1).

BACKGROUND: Night shift workers are more likely to exhibit unfavorable dietary behaviors than day workers. However, these differences remain insufficiently explored within the European workforce. This study aims to examine differences in dietary behaviors (food intake frequency, eating frequency) by night shift exposure (history, frequency, duration) to investigate eating frequency, meal timing, and food choice determinants during night shifts, and to explore gender differences across Europe. METHODS: Data were collected via an online survey (May 2024-January 2025) in eight countries (Austria, Germany, Denmark, Greece, Italy, the Netherlands, Poland, Spain). Participants self-reported sociodemographics, occupational sector, current work schedules, shift work history, lifestyle characteristics, and dietary behaviors. A shortened Food Frequency Questionnaire (FFQ) assessed dietary intake, alongside questions on eating rate and frequency on work and non-work-days. Current night shift workers additionally reported eating frequency, timing, and food choice determinants during night shifts. Analyses compared dietary behaviors by night shift exposure (current, former, vs. day worker). Among current night shift workers, associations with night shift frequency (nights/month) and duration (years) were examined. Secondary analyses were stratified by gender. RESULTS: A total of 6,260 individuals were included (mean age 40.7, SD 10.7; 50.5% female). Overall, 60.4% were current night shift workers, 19.6% former night shift workers, and 20% day workers. Compared to day workers, current night shift workers reported significantly faster eating rates (OR = 1.21, 95% CI: 1.06–1.37), more frequent intake of sugar-sweetened (OR = 1.30, 95% CI: 1.14–1.48) and caffeinated beverages (OR = 1.14, 95% CI: 1.01–1.30), and lower fruit intake (OR = 0.87, 95% CI: 0.77–0.98). Higher monthly night shift load and longer duration of night work were associated with less favorable dietary patterns. Most current night shift workers reported one to two eating occasions per night, typically at

the beginning or middle of their shift. Food choices were primarily driven by appetite, time, and food availability. Gender differences were observed only in food choice determinants. CONCLUSIONS: Night shift and day workers in Europe showed differences in dietary behaviors, particularly in sugar-sweetened beverage intake and eating rate. These findings highlight the need for targeted interventions to promote healthy eating among shift working populations.

Lien vers l'article

Diurnal Variation and Impairment of Postprandial Glucose-Insulin Responses and Lipid Rhythms in Simulated Shift Work.

Khan Sullivan AM, Isherwood CM, Hassanin H, Skene DJ, van der Veen DR. *Nutr Bull*. 2026 Jun 21.

Shift work is associated with insulin resistance, dyslipidaemia and metabolic syndrome, but how consecutive meals at the same clock times differentially shape postprandial metabolism in day- and night-shifts remains unclear. This study used a unique simulated shift work intervention with four consecutive meals and high-resolution sampling to examine interactions of endogenous rhythms and behavioural timing on postprandial metabolism. Nine healthy non-shift-worker participants (age 21-33 years, 3 females) completed a strictly-controlled laboratory protocol with a day-shift followed by two night-shifts of 10-h delayed sleep and mealtimes. Participants consumed four identical, isoenergetic, mixed-composition meals per shift. Three of four mealtimes (08:00, 18:00, 22:00) were fixed across conditions; the first and last meals were 1 h after waking and before bedtime. Plasma glucose, insulin, triglycerides, HDL-cholesterol and total cholesterol were measured hourly, with continuous interstitial glucose monitoring. Subjective hunger and appetite were assessed throughout. Plasma lipid rhythms shifted with the 10-h delay in sleep-wake times: acrophases delayed ~10-13 h and amplitudes lowered 46%-54% (all $p < 0.01$). Night-shifts elevated postprandial glucose (+165 mmol/L·min, 95% CI 1.05-34.31, $p = 0.05$) and insulin (+7678.7 mmol/L·min, 95% CI 3671.02-11686.38, $p < 0.01$). Time-of-day effects persisted irrespective of shift, with 18:00 meals producing the highest glycaemic responses (+261 mmol/L·min, 95% CI 124.37-398.01, $p < 0.01$). Insulin dynamics did not fully compensate for elevated glycaemia in night-shifts, indicating lower glucose tolerance and insulin sensitivity. Mistimed meals suggest a mechanism by which circadian disruption may increase metabolic disease risk.

Lien vers l'article

Relationship between obstructive sleep apnea risk and low back pain among shift workers in a tire manufacturing factory.

Jung S, Cho S, Kim S, Kang KW, Kim J, Park WJ. *Ann Occup Environ Med*. 2026 Jun;38:e15.

BACKGROUND: Low back pain (LBP) is highly prevalent among industrial workers, and obstructive sleep apnea (OSA) has been increasingly recognized as a factor influencing pain modulation. This study evaluated the association between OSA risk, assessed by the STOP-Bang questionnaire, and LBP among shift workers in a tire manufacturing factory. METHODS: A total of 976 male shift workers from a tire manufacturing factory were analyzed. OSA risk was assessed using the STOP-Bang questionnaire and classified as low, moderate, or high. LBP and musculoskeletal pain were defined as self-reported symptoms occurring within the preceding 6 months. Multivariable logistic regression analyses were performed to estimate odds ratios (ORs) and 95% confidence intervals (CIs). RESULTS: Compared with workers at low OSA risk, those at moderate and high risk had significantly higher odds of LBP (OR: 1.50; 95% CI: 1.02-2.20; p = 0.038; and OR: 1.75; 95% CI: 1.20-2.55; p = 0.004, respectively). Similarly, moderate and high OSA risk were independently associated with increased odds of musculoskeletal pain (OR: 1.86; 95% CI: 1.26-2.73; p = 0.002; and OR: 1.84; 95% CI: 1.26-2.68; p = 0.002, respectively). CONCLUSIONS: Among male shift workers, elevated OSA risk is independently associated with a higher prevalence of LBP and musculoskeletal pain. Systematic workplace screening for OSA risk using the

STOP-Bang questionnaire may support occupational health assessments by identifying shift workers with elevated OSA risk who are more likely to report pain-related morbidity.

Lien vers l'article

Shift Work and Unhealthy Dietary Patterns: Evidence From the Shahedieh Cohort Study.

Heydarizadeh A, Khayyatzade SS, Sefidkar R, Mehrparvar AH, Zare Sakhvidi MJ. *Saf Health Work*. 2026 Jun;17(2):246-53.

BACKGROUND: Evidence on the association between shift workers' dietary pattern, particularly in the Middle Eastern populations, remains limited. This study aimed to investigate dietary habits among male shift workers compared to non-shift workers in Iran. METHODS: A cross-sectional analysis was conducted using baseline data (2015-2017) of employed male workers enrolled in the Shahedieh cohort study in Yazd, Iran. Dietary intake was assessed using a validated food frequency questionnaire. Shift working status, demographic, socioeconomic, and lifestyle data were collected through structured interviews. Mean daily intake of processed and ultraprocessed food categories was compared between shift workers and non-shift workers. Models were adjusted for covariates. Associations were also analyzed according to the job categories and age. RESULTS: Among 3,158 participants, 530 (16.8%) were shift workers. Shift workers reported significantly higher intakes of high-fat dairy products (46.3 vs. 39.2 g/day), snacks (1.50 vs. 1.07 g/day), soft drinks (121 vs. 98.2 g/day), and total processed foods (212 vs. 180 g/day) than non-shift workers. Shift workers had lower pizza consumption and different meal frequency patterns compared to non-shift workers. The strong associations observed among driver shift-workers, especially for soft drinks and total processed food intake. Age modified the association of several processed and ultraprocessed food categories. CONCLUSION: The findings suggest a less healthy dietary profile in shift workers than in non-shift workers in Iran. These findings highlight the need for targeted nutritional interventions and policies to support healthy eating behavior among shift workers.

Lien vers l'article

Night shift work and the acceleration of chronic kidney disease onset: dose-response relationships, interactions with cardiometabolic genetic risk, and metabolomic mediators.

Cai X, Zhang Y, Ye Z, Zhang Y, Yang S, Gan X, et al. *Scand J Work Environ Health*. 2026 Jul 1;52(4):442-51.

OBJECTIVES: The association between night shift work and chronic kidney disease (CKD) risk remains uncertain. We investigated the associations of current/lifetime night shift work with incident CKD, assessed joint effects with genetic susceptibility, and explored the mediating roles of obesity and metabolomic alterations. METHODS: Utilizing UK Biobank data, current (N=242 721) and lifetime (N=63 659) night shift duration/frequency were assessed via questionnaires. The primary outcome was incident CKD. Polygenic risk scores (PRS) for cardiometabolic diseases (diabetes, hypertension, and cardiovascular disease) were calculated. Plasma metabolomics (249 measures, N=122 681) were analyzed. RESULTS: Over 13.7 years of follow-up, 5654 incident CKD cases were identified. Compared to day workers, those who usually or always worked night shifts had a 25% higher CKD risk [adjusted hazard ratio (HR(adj)) 1.25, 95% confidence interval (CI) 1.10-1.41] and developed CKD 2.06 years earlier (95% CI 0.75-3.25). Lifetime night shift exposure showed consistent dose-response relationships, with 16-17% increased risks for either ≥5 cumulative years (HR(adj) 1.17, 95% CI1.01-1.36) or ≥3 monthly night shifts (HR(adj) 1.16, 95% CI1.01-1.33). Participants with both usual/always night shift exposure and high PRS for cardiometabolic diseases exhibited the greatest CKD risk. Obesity-related parameters (body mass index and waist circumference) mediated 14.7-14.8% of the observed night shift-CKD association. A novel 9-metabolite signature reflective of night shift mediated 5.47% of this association, primarily through disrupted fatty acid metabolism. CONCLUSIONS: Night shift work

exhibits a dose-dependent association with CKD risk, exacerbated by cardiometabolic genetic predisposition and partially mediated through metabolic dysregulation and obesity. These findings underscore the need for workplace interventions targeting shift scheduling and metabolic health among high-risk workers.

Lien vers l'article

The swift study: dietary profiles of night shift workers characterised by overweight and obesity.

Clark AB, Coates AM, Davis C, Leung GKW, Phoi YY, Rogers M, et al. *Eur J Nutr*. 2026 Apr 10;65(3).

PURPOSE: This study aimed to explore dietary profiles of a night shift working population with overweight/obesity and the impact of different shift work schedules (rotating vs. fixed night) on their diet. METHODS: Participants from a randomised controlled trial (SWIFt trial) provided 7-day food diaries at study enrolment. Mean energy intakes (EI), and mean percentage of EI as nutrients (macronutrients, saturated fat, added sugar, alcohol) grams of fibre and milligrams of sodium, were assessed against recommendations for Australian adults. Energy intake was assessed for underreporting. Regression analyses were performed on nutrient intakes whilst controlling for individual and lifestyle factors (age, gender, BMI, physical activity, shift work exposure, occupation and shift schedule). RESULTS: The diet of night shift workers (N = 245, aged 46.8 ± 9.8 (mean ± SD) years and 53% female) was characterised as high in fat, saturated fat and sodium, while low in carbohydrate and fibre compared with recommendations, regardless of shift work schedule. However, the mean 24 h EI of rotating shift workers was higher than fixed night workers (9329 ± 2915 kJ/day vs. 8025 ± 2383 kJ/day, p< 0.001), even after assessing plausible EI reporters only (n = 130) (10968 ± 2411 kJ/day vs. 9307 ± 2070 kJ/day, p< 0.001). Furthermore, those performing rotating schedules presented with higher sodium and alcohol consumption. CONCLUSION: These findings support the evidence of shift work being associated with poorer dietary profiles, which likely contribute towards worsened metabolic health amongst night shift workers. Dietary strategies that target problematic eating habits and address unique challenges of working shift schedules are needed to mitigate metabolic health risk in shift working populations.

Lien vers l'article

Shift work migraine disorder: evidence, mechanisms, and implications for diagnosis, prevention, and management.

Azhar Z, Sadia Z, Yousaf M, Ekouo J, Abbas N, Akram L. *J Headache Pain*. 2026 Mar 30;27(1).

INTRODUCTION/BACKGROUND: Migraine is the leading neurological disorder and the second leading cause of years of life lived with disability (YLDs), affecting roughly 14–15% of the global population. The recognized importance of circadian rhythm disruption, sleep disorders, and occupational stressors as migraine triggers provides justification for studying shift work in connection to migraine. Circadian rhythm disruption has been shown to increase the risk of migraine, with shift workers experiencing a higher prevalence as compared to non-shift workers. The goal of this review is to support viewing “Shift Work Migraine Disorder” as a possible distinct chrono-neurological subtype of migraine. RESULTS: Epidemiological studies consistently show that night and rotating shift workers have higher migraine prevalence compared with non-shift workers, with meta-analytic estimates indicating more than a 60% increased risk, OR = 1.61, and a 63% increased incidence of migraine, HR = 1.63. Dose-response relationship indicates that a higher number or longer duration of night shifts is associated with a greater risk of developing migraine. Circadian misalignment, reduced melatonin secretion, and sleep disturbances, including insomnia and shift work disorder, are strongly implicated in migraine pathophysiology among shift workers. Neuroimaging, hormonal and genetic evidence implicate common pathways in the hypothalamus, brainstem and suprachiasmatic nucleus (SCN). Clinically, migraine attacks in shift workers are characterized by timing and frequency patterns related to night

and rotating schedules, with higher comorbidity of insomnia, anxiety, and metabolic disruption. Diagnosis is limited by the absence, within present classification systems, of criteria describing circadian misalignment and irregular shift patterns. CONCLUSION: Shift work, especially rotating and night shifts, greatly heightens migraine risk and burden; emerging evidence supports the concept of Shift Work Migraine Disorder as a distinct subtype. More longitudinal, neurobiological, and diagnostic validation studies are needed to establish causality and optimize preventive and management strategies.

Lien vers l'article

Impact of Pre-Test Sleep Duration on Audiometric Testing Outcomes.

Dizdar SK, Ece M, Günay G, Aktürk K, Kamer Ü, Memioğlu M, et al. *J Int Adv Otol*. 2025 Dec 26;21(6):1-6.

BACKGROUND: Sleep deprivation affects vigilant attention and may influence audiological test performance. This study aims to evaluate the effects of pre-test sleep duration on audiological findings. METHODS: This prospective study was conducted at the University of Health Sciences Hamidiye Sisli Etfal Education and Research Hospital's Ear, Nose, Throat, and Audiology Department from August 2024 to November 2024, involving 35 participants. Hearing thresholds, test durations, and psychomotor vigilance attention were measured and compared under 2 conditions: after night shifts (less than 6 hours of sleep) and after normal sleep (more than 6 hours). Vigilance attention was assessed using the psychomotor vigilance test (PVT). Sleep duration, PVT results, and audiological findings were analyzed. RESULTS: After night shifts, air conduction levels were significantly higher compared to measurements after normal sleep at 500 Hz (8.10 ± 4.43 vs. 5.19 ± 3.96 dB), 1000 Hz (8.16 ± 4.01 vs. 5.07 ± 3.6 dB), and 2000 Hz (8.16 ± 4.43 vs. 5.04 ± 3.38 dB) (P=.007, P= .021, P=.018 respectively). The PVT prolongation duration was significantly greater in participants showing ≥5 dB shifts in air conduction hearing thresholds after sleep deprivation compared to those with <5 dB shifts (405.93 ± 476.51 ms vs. 360.9 ± 910.95 ms, P=.05). CONCLUSION: Sleep deprivation affects vigilance, attention, and consequently impacts audiological test performance. Adequate sleep duration should be recommended prior to audiological testing to ensure more accurate results.

Lien vers l'article

Cancers

Night shift work and breast cancer risk: A cohort study based on payroll and survey data from Finland.

Shiri R, Vanttola P, Ervasti J, Koskinen A, Hansen J, Härmä M. *Scand J Work Environ Health*. 2026 Jul 1;52(4):452-61.

OBJECTIVE: This study aimed to (i) investigate associations between different characteristics of exposure to shift work and breast cancer risk and (ii) identify effect modifiers. METHODS: Comprising 42 379 women from the Finnish Public Sector cohort, this longitudinal study included data from survey responses, payroll-based working hour records, and national breast cancer registry data. Cause-specific Cox proportional hazards models were used to estimate hazard ratios (HR), adjusting for age, marital status, socioeconomic status, living with a child, lifestyle, and occupational factors. Stratified analyses and interaction tests were performed to assess effect modification. RESULTS: Over an average follow-up of 9.8 years, 945 women were diagnosed with breast cancer. Among women aged ≥50 years, increased risk was associated with working >3 consecutive night shifts [hazard ratio (HR) 1.64, 95% confidence interval (CI) 1.22-2.21] and evening shifts (HR 1.28, 95% CI 1.03-1.59). Sleep problems and fatigue at work modified the association between night shift work and breast cancer risk, whereas

psychological distress and diurnal preference did not. Permanent night shift workers reporting sleep problems (HR 1.76, 95% CI 1.01-3.09) or fatigue at work (HR 1.90, 95% CI 1.08-3.35) had a higher risk compared to day workers with similar symptoms. CONCLUSIONS: Women aged ≥50 years showed increased breast cancer risk for several shift work characteristics. Permanent night shift work was especially associated with increased risk among those reporting sleep problems or fatigue. These findings may help identify groups needing closer occupational health monitoring, though causal inference is limited by the observational design. Intervention studies are required to determine whether changes in work schedules or management of sleep problems and fatigue could reduce risk.

Lien vers l'article

Night shift work and risk of total and site-specific cancer: results from a prospective cohort study among Chinese men.

Shen QM, Li ZY, Tan YT, Gao LF, Liu DK, Li HL, et al. *Scand J Work Environ Health*. 2026 Jul 1;52(4):391-402.

OBJECTIVE: Epidemiological evidence on the association between night shift work and cancer risk remains limited and inconsistent. This study aimed to systematically investigate this association among Chinese men. METHODS: This population-based prospective cohort study included 61 078 men from the Shanghai Men's Health Study. Detailed information on night shift work was collected at baseline using a structured questionnaire. Cox regression model was used to estimate hazard ratios (HR) and 95% confidence intervals (CI) for total cancer and ten major site-specific cancers. Restricted cubic spline functions were used to characterize the dose-response associations for key metrics. Further analysis was conducted with lag periods of 5, 10, 15 and 20 years, and potential effect modification by lifestyle factors was tested. RESULTS: During a median follow-up period of 16.1 years, 8202 incident cancer cases were identified. Participants with 11-20 years of cumulative night shift work had a higher risk of pancreatic cancer compared with never-shift workers (HR 1.59, 95% CI 1.09-2.31). This association persisted across all lag periods tested, peaking at a 15-year lag (HR 1.82, 95% CI 1.25-2.64). No significant associations were found between night shift work metrics, including night shift work experience, starting age, cumulative duration, and frequency, and the risk of total and other major site-specific cancers. No evidence of effect modification by lifestyle factors was observed. CONCLUSIONS: Night shift work was not associated with the risk of overall or some common cancers among Chinese men. However, an increased risk of pancreatic cancer was associated with intermediate-to-long-term night shift work.

Lien vers l'article

Occupational exposure to carcinogenic substances in night versus day shift jobs.

Parks J, Zanif U, Bhatti P. *Scand J Work Environ Health*. 2026 Jul 1;52(4):434-41.

OBJECTIVES: This study aimed to determine whether night shift work was associated with exposure to carcinogenic hazards, independent of occupation and industry. METHODS: We conducted a cross-sectional analysis of 16 250 job records reported by 7023 participants. Participants provided lifetime job histories, including shift schedules and exposures to hazardous agents. Carcinogenic agents included established carcinogens classified by the International Agency for Research on Cancer, as well as broader exposure categories that may potentially contain carcinogenic constituents. Jobs involving ≥1 and ≥7 night shifts/month were compared with day-shift jobs. Occupations and industries were coded using National Occupational Classification (2016) and North American Industry Classification System (2017) codes. Generalized linear mixed models with random intercepts for participant, occupation code (2-digit level), and industry code (2-digit level) were used to estimate odds ratios (OR) for exposures associated with night- versus day-shift work, adjusting for biological sex and job start year. RESULTS: Night shifts were associated with greater odds of any hazardous exposure [≥1 night

shift/month: OR 3.1, 95% confidence interval (CI) 2.6-3.8; ≥7 night shifts/month: OR 3.1, 95% CI 2.5-3.8]. Significant associations were observed for multiple agents, including asbestos, degreasing agents, diesel engine exhaust, gasoline engine exhaust, ionizing radiation, mineral/cutting/lubricating oil, paints/stains/varnish, welding fume, and wood dust. CONCLUSIONS: Night-shift work was associated with an increased likelihood of self-reported exposure to multiple potentially carcinogenic agents, independent of broad occupational and industry groupings. Future research with more granular task-level information and quantitative exposure assessment will be important for clarifying the mechanisms underlying these differences.

Lien vers l'article

Risque routier, accidentologie

Permanent night work and risk of injuries: A register-based cohort study using payroll data.

Nabe-Nielsen K, Aagaard A, Larsen AD, Nielsen HB, Hansen J, Hansen Å M, et al. *Scand J Work Environ Health*. 2026 Jul 1;52(4):415-24.

OBJECTIVE: Shift work is associated with a higher injury risk, but the optimal way of organizing night work remains debated. This study examined whether the injury risk among permanent night workers differs from that of employees working other types of work schedules with or without night work. METHODS: This register-based cohort study used payroll data from the Danish Working Hour Database over a 12-year period (2007-2018), with daily information on working hours among all hospital employees in Denmark. Work schedules were categorized according to the proportion of night, evening, and day shifts worked in the preceding 365 days. Hospital-treated injuries were identified using the Danish National Patient Register. Poisson regression with generalized estimating equations was used to estimate incidence rate ratios (IRR) for injuries across work schedules. Main analyses were adjusted for sex, age, and job type. RESULTS: Among 192 711 employees contributing 298.5 million observation days, we identified 87 185 injuries. Permanent night workers had a lower injury risk compared with all other groups of shift workers and a similar risk as permanent day workers. Relative to permanent night workers, the observed injury risk was higher among evening/night workers [IRR 1.37, 95% confidence interval (CI) 1.23-1.53] and day/evening/night workers (IRR 1.37, 95% CI 1.28-1.47). CONCLUSION: Permanent night workers had lower risk of injuries than permanent evening workers and workers in 2- or 3-shift schedules. Differences in tasks, adaptation, and selection may contribute to this pattern. Injury prevention efforts should prioritize workers exposed to night shifts in combination with other shift types.

Lien vers l'article

RPS et QVT

Fracture Detection on Bone Radiographs: The Impact of an AI Tool on Orthopaedic Night Shifts.

Albano D, Vignati G, D'Andrea S, Gitto S, Messina C, Accetta R, et al. *J Imaging*. 2026 Jun 7;12(6).

We evaluated how using an artificial intelligence (AI)-based diagnostic tool impacts orthopaedists' accuracy in detecting fractures during night shifts without the support of on-site radiologists. We compared diagnostic discrepancies between orthopaedists and radiologists in recorded cases from our emergency department between September 2024 and June 2025. In February 2025, we introduced Gleamer BoneView(®) to help orthopaedists with automated fracture detection during shifts without on-site radiologists. Statistical analyses measured the rates of fracture misdiagnosis before and after implementation of Gleamer BoneView(®). Chi-square and Fisher's Exact Tests were employed, and a

p-value < 0.05 was considered statistically significant. A total of 28,655 patients were subjected to radiographs resulting in 31/13,813 recalls (0.22%) in the pre-implementation and 27/14,842 recalls in the post-implementation period (0.18%, p = 0.42). Among these, 51 recalls (30 males, age: 39 ± 23 years) were related to fractures: 26 (16 missed fractures, 8 clinical re-assessment, 2 additional CT) occurred in the pre-implementation period (0.19%), and 25 (13 missed fractures, 7 clinical reassessment, 3 additional radiographs, 2 additional CT) in the post-implementation period (0.17%, p = 0.63). Patient management was changed in 9/13,813 patients (0.0006%) in the pre-implementation period and 7/14,842 (0.0005%) after the implementation (p = 0.551). Gleamer BoneView(®) use was linked to a non-significant decrease in missed fractures by orthopaedists working without on-site radiologists.

Lien vers l'article

Subjective and objective workload of critical care nurses in a tertiary hospital in Switzerland: a retrospective analysis.

Zölle S, Ruf S, Wyss S, Christ S, Broer P, Bühler PK, et al. *BMC Nurs*. 2026 Jun 29.

BACKGROUND: Nursing workload in intensive care units affects outcomes and staff well-being. Objective measures such as Nine Equivalents of Nursing Manpower Score (NEMS) capture task demands, whereas subjective ratings reflect nurses' workload; how these relate is unclear (1-4). METHODS: All shifts over 6 months in an adult ICU of a tertiary hospital were analyzed. For each shift, staffing (number of nurses, patients, patient-to-nurse ratio PNR), number of interventions, admissions and discharges, cumulative Richmond agitation sedation scale RASS score and intensivist identity were recorded. Shift workload was measured as cumulative NEMS and subjective rating on a 1-7 scale (LEP). Analyses used Pearson correlations, linear regression, one-way ANOVA, and multiple regression. RESULTS: 531 shifts showed a mean NEMS of 347.7 and subjective rating of 4.6 with a mean PNR of 1.42. Early shifts had the highest NEMS; the highest subjective ratings occurred in late shifts (4.8 late, 4.6 early, 4.4 night; $p < 0.0001$). Subjective workload correlated weakly with NEMS overall ($r = 0.254$, $p < 0.0001$), but moderately in early ($r = 0.31$) and late ($r = 0.43$) shifts with no association at night. PNR correlated with subjective workload in early ($r = 0.37$) and late ($r = 0.24$) but not night shifts. Multiple regression including NEMS, PNR, RASS, admissions and discharges and consultant identity explained 12.4% of variance in subjective workload ($p < 0.001$). NEMS ($B = 0.0030$, $p < 0.0001$), admissions ($B = 0.0687$, $p = 0.048$) and interventions ($B = 0.0603$, $p < 0.008$) were independent predictors. PNR, cumulative RASS, discharges and consultant identity were not independently associated. CONCLUSION: NEMS, admissions and interventions were related to perceived workload but explained little of what makes a shift demanding. The NEMS-subjective workload association was confined to early and late shifts, suggesting night-time workload is driven by other factors. ICU workload is multidimensional and cannot be adequately captured by objective task counts alone. Routinely recorded key performance indicators from intensive care units can only partially reflect the fluctuations in the subjective workload perceived by nurses. TRIAL REGISTRATION: Not applicable.

Lien vers l'article

The association between shift work, occupational physical activity and cardiovascular-kidney-metabolic syndrome: a cohort study in China.

Zhang X, Wang W, Lu H, Huang C, Jin Y, Xiang M, et al. *Front Public Health*. 2026;14:1831468.

BACKGROUND: The relationship between shift work, occupational physical activity (OPA), and CKM syndrome remains unclear. The present study aimed to investigate the independent and joint associations of these two factors with CKM syndrome. METHODS: This study conducted a baseline survey in 2013 and a follow-up in 2023, with a total of 690 workers finally enrolled. CKM syndrome was diagnosed according to the American Heart Association (AHA) criteria. Participants were classified

into fixed day shifts and shift work, and OPA into light/moderate and heavy/very heavy groups. Poisson regression was adopted to explore the associations of shift work and OPA with CKM syndrome, as well as their joint effects. RESULT: Compared with fixed day shifts, shift work was associated with CKM syndrome (RR = 1.568, 95% CI: 1.328-1.852); two-shift (RR = 1.677, 95% CI: 1.391-2.022), three-shift (RR = 1.502, 95% CI: 1.223-1.844), four-shift (RR = 1.529, 95% CI: 1.235-1.892). The risk of CKM syndrome showed a dose-response relationship with cumulative night shift exposure. Workers with heavy or very heavy OPA had a higher risk of CKM syndrome (RR = 1.432, 95% CI: 1.239-1.654) than those with light or moderate OPA. CONCLUSION: Both shift work and heavy or very heavy OPA increase the risk of CKM syndrome. The risk rises with increasing cumulative night shift exposure. Workers with both shift work and heavy or very heavy OPA have the highest risk. Therefore, early screening for CKM syndrome should be strengthened among shift workers and those with heavy OPA.

Lien vers l'article

Association Between Shift Work and Mental Health and Sleep Outcomes in Working Adults: A Systematic Review.

Shaikh SS, Kilic A, Okoro C, Rai M, Rajapandian R, Hakeem S, et al. *Cureus*. 2026 Jun;18(6):e110089.

Shift work is the norm in modern industrialised societies and is associated with disruptions in circadian rhythms as well as adverse mental health and sleep outcomes. However, many studies have examined sleep-related and mental health outcomes independently, limiting understanding of their interrelationship. This systematic review aimed to evaluate the association between shift work exposure and both sleep-related and mental health outcomes among adult workers. A systematic review was conducted using a predefined and structured methodology for study identification, selection, and reporting. A comprehensive search of PubMed, Cochrane CENTRAL, Europe PMC, PsycINFO, and ClinicalTrials.gov was performed for studies published between January 2016 and January 2026. Eligible studies included adult shift-working populations that reported both sleep-related and mental health outcomes. Observational studies and randomized controlled trials were included. Study selection, screening, and quality appraisal were performed using established methodological assessment approaches appropriate to the included study designs. A total of 386 records were identified, of which 36 duplicates were removed. Following screening and full-text assessment of 80 articles, 11 studies met the inclusion criteria. Included studies were conducted across Europe, North America, Asia, and Australia and involved diverse occupational groups, including healthcare workers, correctional officers, and industrial workers. Across studies, shift work exposure was associated with sleep-related outcomes such as insomnia, poor sleep quality, and shift work sleep disorder, as well as mental health outcomes including depression, anxiety, stress, and fatigue. Overall methodological quality was moderate to high. Shift work exposure is associated with adverse sleep-related and mental health outcomes among adult workers. These findings support the need for integrated occupational health strategies addressing both sleep and psychological well-being in shift-working populations.

Lien vers l'article

Professional attitudes, job satisfaction, and professional satisfaction among physiotherapists across regions with different socio-economic development levels: a cross-sectional study.

Özbey H, Şavkın R, Bayrak G. *J Health Organ Manag*. 2026 Jun 25:1-16.

PURPOSE: Professional satisfaction among physiotherapists is important for workforce sustainability; however, the role of regional socio-economic context remains insufficiently understood. This study compared professional attitudes, job satisfaction and global professional satisfaction among physiotherapists working in two provinces with different socio-economic development levels and examined factors associated with global professional satisfaction.

DESIGN/METHODOLOGY/APPROACH: This cross-sectional study included physiotherapists from Denizli (higher-SEGE province, n = 102) and Mus (lower-SEGE province, n = 53), classified according to the Socio-Economic Development Index (SEGE-2025). Data were collected using the Attitude Scale Toward the Physiotherapy Profession, the Minnesota (Job) Satisfaction Questionnaire Short Form (MSQ), the Job Satisfaction Scale, a single-item global professional satisfaction rating, and a researcher-developed job-related perceptions questionnaire. FINDINGS: Physiotherapists in the higher SEGE province reported more positive professional attitudes and higher global professional satisfaction, despite their longer working hours and more working days ($p < 0.05$). Physiotherapists in the lower-SEGE province reported higher income ($p < 0.001$), while salary satisfaction responses differed between provinces. Regression analysis identified monthly income (ß = 0.128, $p = 0.034$), professional attitudes (ß = 0.317, $p < 0.001$), job satisfaction scale total score (ß = 0.191, $p = 0.023$), MSQ general satisfaction (ß = 0.319, $p < 0.001$) and province-level SEGE score (ß = 0.138, $p = 0.036$) as significant predictors. ORIGINALITY/VALUE: Findings suggest that physiotherapists' global professional satisfaction is shaped by attitudinal, organizational and structural factors, rather than income alone. Non-financial workforce strategies may be particularly important in lower-SEGE regions.

Lien vers l'article

The Hidden Toll of On-Call Shifts: Reduced Heart Rate Variability and Increased Physiological Stress in Residents.

Kılıç Ş, Asal S, Yılmaz Atinkaya A, Babaoğlu M, Yavuz S, Çiçek V, et al. *Turk Kardiyol Dern Ars*. 2026 Jun 5;54(4):316-22.

OBJECTIVE: The aim of this study was to assess autonomic dysfunction via heart rate variability (HRV) in residents with on-call shifts. METHOD: A cross-sectional study of 140 residents (104 on-call, 36 non-on-call) was conducted. HRV parameters, stress indices, and physical activity (International Physical Activity Questionnaire, IPAQ) were compared using parametric and non-parametric tests. RESULTS: On-call residents showed elevated heart rates (84 vs. 79 bpm, $P = 0.006$), higher stress indices (12.1 vs. 9.96, $P = 0.003$), and reduced parasympathetic markers (root mean square of successive differences [RMSSD], standard deviation of normal-to-normal intervals [SDNN], parasympathetic nervous system index [PNS index]; all $P \leq 0.006$). Physical activity did not differ between groups. CONCLUSION: An association between on-call shifts and altered autonomic balance was observed, suggesting a potential increase in cardiovascular risk independent of lifestyle factors. These findings may be considered by policymakers when planning resident physician workloads.

Lien vers l'article

Uncovering the pattern of physical behaviours among Swedish ambulance personnel: is the type of work shift important?

Johnsen AM, Gupta N, Kyriakidis S, Broström A, Wagman P, Fransson EI. *BMC Public Health*. 2026 Apr 21;26(1).

BACKGROUND: Previous studies indicate that ambulance personnel have an increased risk of ill health. Shift work and time spent on physical behaviours during work and leisure are factors that could be related to health, however the research is limited. Thus, the aim of this study was to describe patterns of physical behaviours during and after work among Swedish ambulance personnel and to analyse the associations between physical behaviours and different work shifts. METHODS: In this observational study, the physical behaviours of 63 ambulance personnel were measured over seven days using two accelerometers. Accelerometer data was processed using the MATLAB program Acti4, to identify physical behaviours i.e. sleep, being sedentary, light physical activity (LPA), and moderate to vigorous physical activity (MVPA), during and after work. To determine the association between shift types (independent) and patterns of physical behaviours (dependent), a Multivariate Analysis of Variance

was performed on data processed according to compositional data analysis. RESULTS: At work, the highest proportion of both MVPA and being sedentary occurred during day shifts, compared to night and 24-h shifts (MVPA: 7% vs 4% and 5%; sedentary time: 62% vs 44% and 54% respectively). Night and 24-h shifts included 31% and 18% sleep, respectively. During the after-work periods, the highest proportions of MVPA were observed after 24-h shifts (8%). Overall, there was no statistically significant difference in physical behaviours during work and after work for various shift types. However, in a sub-analysis restricted to night and 24-h shifts, a statistically significant association between shift type and composition of physical behaviours during work was observed ($\eta p2 = 0.42$, $p < 0.001$), with a lower proportion of sleep time relative to awake time during 24-h shifts compared to night shift ($\eta p2 = 0.34$, $p < 0.001$). CONCLUSIONS: In general, ambulance personnel were physically active both during and after work. At the same time, work hours entailed a substantial amount of sedentary time. Shift type was not associated with the pattern of physical behaviours among ambulance personnel. However, during 24-h shift a lower proportion of the time was spent sleeping compared to during night shift. Studies with larger sample sizes are needed to confirm these results.

Lien vers l'article

The Impact of Night Shift Clinicals on Nursing Student Learning: A Mixed-Method Analysis of Perceptions and Performance.

Gauvin S, Harrison K, Bellaire E. *Nurs Educ Perspect*. 2026 Jul-Aug 01;47(4):E56-e8.

With challenges in finding clinical placements for nursing students, night shift clinical opportunities provide broader access than day shift rotations. This study surveyed nursing students who participated in a night shift rotation about their perceptions of the effects of the alternative shift on their learning. The study also evaluated testing outcomes between the night shift and day shift clinical groups. Testing averages showed no significant difference between the two groups, and student perceptions were more positive than anticipated.

Lien vers l'article

Association Between Shift Patterns and Occupational Stress and Perceived Professional Benefits Among Nurses: A Cross-Sectional Study.

Kong X, Cai L, Wang J. *J Nurs Manag*. 2026;2026(1):e3178918.

OBJECTIVE: This cross-sectional study examined the associations between shift patterns, occupational stress, and perceived professional benefits among hospital nurses. METHODS: A convenience sample of 325 nurses from a single tertiary hospital in Hubei Province, China, was enrolled. Data were collected using a general information questionnaire, a shift pattern scale, a perceived professional benefits scale, and an occupational stress scale. Statistical analyses included chi-square tests, t-tests, rank-sum tests, Pearson's correlation, and multivariable linear regression. RESULTS: Nonshift nurses had significantly higher occupational stress scores than shift nurses (67.23 vs. 58.55, $p < 0.001$). Among shift nurses, those with 2-6 years of experience and those working > 6 night shifts per month reported higher stress levels. Among different shift patterns, only the 21:00-8:00 group scored lower in nurse-patient relationship than the nonshift group, whereas the 18:00-01:30 and 01:30-08:00 groups reported higher perceived professional benefits from positive occupational perceptions than the nonshift group. The nonshift group experienced higher occupational stress levels compared to the shift group. Pearson's correlation analysis indicated that the overall score for occupational sense of gain was positively correlated with the total scores for work tasks and development, interpersonal support, patient care, and occupational stress. Positive but modest correlations were observed between several stress dimensions and professional benefit dimensions ($r = 0.12$-0.18, $p < 0.05$). CONCLUSIONS: In this single-site sample, certain shift patterns and a higher monthly frequency of night shifts were associated with increased occupational stress, whereas longer shift experience was correlated with

better nurse-patient relationship scores. Nursing managers may use these findings to limit night shifts to ≤ 6 per month, provide targeted support for mid-career nurses, and monitor stress levels across shift types.

Lien vers l'article

Santé psychique

Association Between Shift Work and Mental Health and Sleep Outcomes in Working Adults: A Systematic Review.

Shaikh SS, Kilic A, Okoro C, Rai M, Rajapandian R, Hakeem S, et al. *Cureus*. 2026 Jun;18(6):e110089.

Shift work is the norm in modern industrialised societies and is associated with disruptions in circadian rhythms as well as adverse mental health and sleep outcomes. However, many studies have examined sleep-related and mental health outcomes independently, limiting understanding of their interrelationship. This systematic review aimed to evaluate the association between shift work exposure and both sleep-related and mental health outcomes among adult workers. A systematic review was conducted using a predefined and structured methodology for study identification, selection, and reporting. A comprehensive search of PubMed, Cochrane CENTRAL, Europe PMC, PsycINFO, and ClinicalTrials.gov was performed for studies published between January 2016 and January 2026. Eligible studies included adult shift-working populations that reported both sleep-related and mental health outcomes. Observational studies and randomized controlled trials were included. Study selection, screening, and quality appraisal were performed using established methodological assessment approaches appropriate to the included study designs. A total of 386 records were identified, of which 36 duplicates were removed. Following screening and full-text assessment of 80 articles, 11 studies met the inclusion criteria. Included studies were conducted across Europe, North America, Asia, and Australia and involved diverse occupational groups, including healthcare workers, correctional officers, and industrial workers. Across studies, shift work exposure was associated with sleep-related outcomes such as insomnia, poor sleep quality, and shift work sleep disorder, as well as mental health outcomes including depression, anxiety, stress, and fatigue. Overall methodological quality was moderate to high. Shift work exposure is associated with adverse sleep-related and mental health outcomes among adult workers. These findings support the need for integrated occupational health strategies addressing both sleep and psychological well-being in shift-working populations.

Lien vers l'article

Bedtime rumination mediates the burnout-insomnia link and relates to shift adaptation in emergency department staff.

Schmidt L, Claverie D, Douplat M, Tazarourte K, Mazza S, Trousselard M. *Sci Rep*. 2026 Jul 4.

Burnout and sleep disturbances are highly prevalent among emergency department staff, yet their mechanisms within shift work remain poorly understood. This study examined whether cognitive pathways explain the comorbidity between burnout and insomnia, and how these processes relate to behavioral adaptation to shift load, in a secondary pre-intervention analysis of the REST randomized controlled trial. Fifty-eight physicians and nurses completed the Maslach Burnout Inventory, Pittsburgh Sleep Quality Index, Insomnia Severity Index, and Pre-Sleep Arousal Scale (somatic and cognitive subscales; cognitive subscale reflecting bedtime rumination), together with shift work disorder screening items. Work schedules informed shift load and actigraphy provided total sleep time and sleep regularity to classify individual shift adaptation profiles. Individuals were considered vulnerable when their sleep metrics were lower than expected given their schedule-related load. Burnout,

insomnia and pre-sleep arousal were strongly interrelated. Cognitive pre-sleep arousal fully mediated the association between burnout and insomnia, identifying bedtime rumination as a central cognitive pathway. In parallel, objective sleep-based adaptation profiles showed that vulnerable adaptors reported higher burnout, emotional exhaustion, and insomnia. Together, these findings support a cognitive-behavioral framework linking stress-related cognition to both subjective sleep complaints and objective shift adaptation in shift-working healthcare professionals.

Lien vers l'article

Is Night Shift Work Associated With Depression and Suicidal Ideation? A 17-Year Follow-Up Study.

Romero-Parra M, García-Hermoso A, Yáñez-Sepúlveda R, Recabarren-Dueñas C, Páez-Herrera J, López-Gil JF, et al. *Workplace Health Saf*. 2026 Jun 11:21650799261447539.

BACKGROUND: Despite awareness of night shift work's mental health risks, its long-term effects, especially sex differences, remain underexplored. The aim of the study was to investigate the association between night shift work and mental health outcomes using multivariable regression models and to assess sex differences in these associations. METHODS: We analyzed data from 9,057 participants (mean age = 22.08 years, 52.6% females) who participated in Waves III (2001-2002), IV (2008-2009), and V (2016-2018) of the National Longitudinal Study of Adolescent Health (Add Health) in the USA. Associations between night shift work and mental health outcomes were assessed using binomial generalized linear models to estimate relative risks (RR; 95% CIs). We tested night shift with sex interactions and performed sex-stratified analyses when significant. FINDINGS: Night shift work for 17 years (4.6% of the participants), was associated with an increased risk of suicidal ideation (RR = 2.30, 95% CI [1.35, 3.90]) and depression (RR = 1.46, 95% CI [1.02, 2.09]) in women, but not in men. Depressive symptoms including feeling unhappy (RR = 1.69, 95% CI [1.15, 2.46]) and "shake blue/feeling blue" (RR = 2.04, 95% CI [1.01, 4.12]) were significantly associated with night shift work in men. In women, feeling sad (RR = 1.79, 95% CI [1.05, 3.07]) and "shake blue/feeling blue" (RR = 1.87, 95% CI [1.02, 3.43]) were also significantly linked to night shift work. CONCLUSIONS/APPLICATION TO PRACTICE: Long-term night shift work was associated with suicidal ideation and depression among women, but not men, reflecting sex-specific susceptibility to adverse mental health outcomes. Our findings suggest the need for sex-specific interventions to address the mental health risks of night shift work, particularly in women.

Lien vers l'article

Adverse childhood experiences and mental health symptoms among aviation shift workers in China: A national cohort study.

Li R, Su Y, Zhang L, Chen M, Zhang E, Zhang J, et al. *J Affect Disord*. 2026 Oct 15;411:121979.

BACKGROUND: Adverse childhood experiences (ACEs) are known risk factors for mental health issues in adulthood. Shift workers, especially those in high-stress roles like aviation, are particularly vulnerable to these mental health conditions. However, limited research has explored the relationship between ACE exposure and mental health in this population. METHODS: This cross-sectional study used data from the Civil Aviation Health Cohort of China (November to December 2023). Aviation personnel (aged 18-60) reported 11 ACE types, categorized by count and latent class analysis. Mental health symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9), the Generalized Anxiety Disorder-7 (GAD-7), and a single-item screener for depression, anxiety, and suicidal ideation, respectively. RESULTS: The study analyzed 19,137 aviation personnel (61.7% male, mean age 31.7 years). Latent class analysis identified three ACE patterns: low ACE (96.5%), abuse (2.8%), and family dysfunction (0.7%). Notably, 22.6% reported ≥1 ACE and 1.2% reported ≥4, showing a dose-response association with mental health risks. Family dysfunction showed the strongest associations with depression (AOR 5.22, 95% CI 3.80-7.17), anxiety (AOR 3.94, 95% CI 2.82-5.50), and suicidal

ideation (AOR 4.46, 95% CI 2.55-7.82). LIMITATIONS: The cross-sectional design precludes causal inference. The reliance on retrospective self-report of ACEs may be subject to recall bias. Potential residual confounding and selection bias further limit generalizability. CONCLUSIONS: These findings highlight the need for workplace mental health strategies to support shift workers, particularly those with a history of ACEs. Further research is needed on mechanisms linking ACEs to aviation shift workers' mental health and potential protective factors.

Lien vers l'article

The effect of employment status and work schedule on all-cause dementia: a longitudinal analysis from the Australian Longitudinal Study on Women's Health.

Khaing K, Dolja-Gore X, Nair BR, Byles J, Attia J. *J Occup Environ Med*. 2026 Jun 29.

OBJECTIVES: This study assessed the effect of employment status and work schedule on all-cause dementia. METHODS: A total of 10,349 participants from the Australian Longitudinal Study on Women's Health (mean age 47 years) were recruited. Work information was gathered using a self-reported questionnaire. Dementia was defined as per International Classification of Disease - 10 codes. The Fine-Gray sub-distribution hazard model was used for analysis. RESULTS: Unemployment and rotating shift work increased the risk of all-cause dementia (HR 1.77, 95% CI 1.18-2.64 and HR 1.89, 95% CI 1.23-2.91 respectively). No statistically significant association was observed for only night shift work or volunteering. There was no dose-response relationship between years of shift work and risk of dementia. CONCLUSION: Unemployment and rotating shift work was associated with increased risk of all-cause dementia, suggesting these may be potential modifiable risk factors for dementia.

Lien vers l'article

Distinct mental fatigue mechanisms under prolonged work and night shifts Implications for safety management in a real-world oil drilling site.

Hao S, Xin Q, Xiandeng H, Jian W, Hongbin C, Xiaoqin W, et al. *J Occup Environ Med*. 2026 Jun 9.

OBJECTIVE: This study aimed to investigate how shift work and prolonged working hours affect mental fatigue under real-world working conditions, focusing on oil and gas drilling operations. METHODS: Physiological data from drillers, collected via wearable sensors, were analyzed. EEG features and heart rate data were integrated, and a semi-supervised machine learning model was developed to classify mental fatigue. RESULTS: The study revealed distinct heart rate changes under prolonged work and night-shift conditions, reflecting parasympathetic regulation and circadian disruption. EEG analysis showed significant alterations in the α band and increased functional connectivity in the left frontal lobe. The machine learning model achieved a 93.46% classification accuracy. CONCLUSIONS: Night-shift work induces different fatigue characteristics from day shifts, necessitating tailored safety management strategies. The fatigue recognition method offers a proactive approach for early intervention in complex operational environments.

Lien vers l'article

When owls struggle at work: chronotype, burnout, and work ability in shift and non-shift employees.

Baka Ł, Kapica Ł, Warszawski S, Najmiec A, Bugajska J. *BMC Psychol*. 2026 Mar 14;14(1).

Evening chronotype has been linked to poorer occupational functioning, yet the mechanisms through which circadian preference relates to work ability remain insufficiently understood. This study examined whether job burnout functions as a psychological pathway connecting chronotype to work ability and whether this mechanism operates similarly in day workers and employees working shifts including night work. A cross-sectional Computer-Assisted Web Interviewing (CAWI) survey was

conducted among 1,293 employed adults in Poland. Confirmatory factor analyses (CFA) and multi-group CFAs confirmed the factorial validity and full measurement invariance of all measures across both groups. Mediation models controlling for age and gender revealed a consistent mediation pattern in day and shift workers, with no significant between-group differences in path coefficients or indirect effects. Specifically, morningness was associated with lower burnout and higher work ability, burnout was strongly and negatively related to work ability, and the indirect effect of chronotype on work ability via burnout was significant, indicating partial mediation alongside a remaining direct effect. These findings demonstrate a general psychological mechanism linking chronotype to work ability that operates independently of formal shift work. The structural equivalence across groups suggests that chronotype-related vulnerability is not limited to shift work but may emerge under any rigid work schedule misaligned with individual circadian preferences. Chronotype-sensitive work arrangements and burnout-prevention strategies may therefore support sustainable work ability, particularly among employees with evening chronotypes.

Lien vers l'article

Troubles cognitifs et de la vigilance

Adaptation across consecutive night shifts at 71°N under Arctic summer daylight and winter darkness: Effects on alertness, sleepiness, and fatigue.

Holme AN, Moen LV, Sallinen M, Nilsen KB, Boccara CN, Phillips AJK, et al. *Scand J Work Environ Health*. 2026 Jul 1;52(4):403-14.

OBJECTIVES: This study aimed to investigate how alertness, sleepiness, and fatigue change across consecutive night compared to morning shifts among Arctic shift workers and whether these effects differ between seasons of midnight sun and polar night. METHODS: We conducted an observational crossover study of 118 shift workers from an industrial plant at a high latitude (71°N) in northern Norway. Eighty-one individuals participated in both the light (near 24-hour daylight) and dark (minimal natural light) seasons. Work schedules included blocks of seven consecutive morning shifts and seven consecutive night shifts, separated by four rest days. Alertness (psychomotor vigilance test), subjective sleepiness (Karolinska Sleepiness Scale), and subjective fatigue were measured at the end of shifts on days 1, 3, and 6 of each shift block. We analyzed data using multilevel mixed-effects regression models with season, shift type (morning/night), and consecutive workday number as fixed effects. RESULTS: Night shifts were linked to lower alertness and higher sleepiness and fatigue in both seasons, with the largest impairments on the first night. Across six consecutive night shifts, alertness improved and sleepiness and fatigue decreased, with similar trajectories in both seasons. There was no evidence that season significantly affected alertness, sleepiness, or fatigue. CONCLUSIONS: Night shifts generally impair alertness and increase sleepiness and fatigue, yet outcomes improved across consecutive nights. Despite the well-established effects of natural light on circadian rhythms, the seasonal photoperiod altered neither the shift-related impairments in alertness, sleepiness or fatigue nor the subsequent improvements across consecutive nights; workers showed similar adaptation in both seasons.

Lien vers l'article

Association of real-time noise exposure with rest-activity circadian rhythms and sleep health: a 7-day longitudinal measure among Hong Kong nurses with night-shifts.

Weng X, Tang NHY, Ma JYT, Wan CCM, Liu Y, Wang F, et al. *Environ Pollut*. 2026 Jun 29;406:128644.

Circadian rhythms play a crucial role in regulating the sleep-wake cycle, with environmental light acting as the primary entraining factor. However, it remains unclear how environmental noise, particularly

the persistent low-intensity noise common in urban environments, modulates circadian rhythms and sleep health. This study utilized real-time noise monitoring to evaluate average noise levels and noise variability, and to assess their effects on actigraphy-based rest-activity circadian rhythms and sleep characteristics across different time intervals among Hong Kong nurses working different shifts, using multivariable logistic regression models and interaction analysis. Among 360 nurses included in the analysis, 281 of them (78.1%) were required to work night shifts. A gradually reduced tendency in noise levels was observed approaching sleep, with the lowest levels recorded during the sleep period. Weakened rest-activity circadian rhythms and restless sleep were positively associated with noise exposures occurring within a 1-h pre-sleep window (eg, Amplitude, OR = 1.037, 95%CI: 1.005-1.074) or during sleep (eg, Amplitude, OR = 1.055, 95%CI: 1.017-1.101), with noise variability exerting the greatest effect size. Individuals with a shorter career of night-shift work were more vulnerable to noise-induced circadian disturbances. Neither sleep duration nor efficiency was significantly associated with any noise variables. This study indicated that noise exposure, especially fluctuations in noise levels, disrupted circadian rhythms and led to restless sleep even if individuals did not fully awaken. These effects were predominantly more pronounced among workers with shorter night-shift tenure. Further intervention programs aimed at mitigating noise hazards should focus on reducing intensity and fluctuations, while prioritizing protection for early-career night shift workers.

Lien vers l'article

Associations Between Nonstandard Work Schedules and Abnormal Sleep Duration and Weekend Catch-Up Sleep: Findings From a Nationally Representative Sample of Middle-Aged Workers in Japan.

Wang H, Kobayashi H, Takahashi M, Suzuki K, Takami T. *Am J Ind Med*. 2026 Jul;69(7):548-59.

BACKGROUND: Owing to the rise of the 24/7 economy, many workers operate around the clock. However, few studies have explored the association between specific types of nonstandard work schedules (NWSs) and sleep. METHODS: Using a nationally representative sample of middle-aged workers (n = 14,675) in Japan, we investigated the associations between four types of NWSs (evening, morning, both morning and evening, and night schedules) and abnormal sleep duration on weekdays and weekend catch-up sleep (WCS) via multinomial logistic regression. RESULTS: Compared to daytime work schedules, all four types of NWSs were associated with increased risks of very short (< 5 h) and long (≥ 9 h) sleep duration and short (1 h) WCS. Night schedules were associated with the highest risk of very short sleep duration, whereas both morning and evening schedules were associated with the highest risk of short (5 h) and long sleep duration. Additionally, both morning and evening, and night schedules were associated with increased risks of moderate (2 h) and long (≥ 3 h) WCS. Stratification revealed sex-related differences. CONCLUSIONS: Work timing is independently associated with abnormal sleep duration and WCS. Furthermore, the associations differ across different types of NWSs. These findings provide insights into worktime arrangements in workplaces to promote sleep health.

Lien vers l'article

Association between shift work and insomnia in nurses: a cross-sectional study using the Athens Insomnia Scale.

Szczupak M, Kobak J, Krupa-Nurcek S. *Front Public Health*. 2026;14:1848179.

INTRODUCTION: Shift work is a recognized occupational risk factor for sleep disturbances, particularly among healthcare professionals. Nurses are especially vulnerable due to irregular work schedules, night duties, and the high physical and psychological demands of clinical practice. The aim of this study was to assess the association between shift work and insomnia among nurses using the Athens Insomnia Scale. METHODS: A cross-sectional survey was conducted among 110 nurses. Data were collected using an anonymous electronic questionnaire consisting of an original sociodemographic and

occupational section and the Athens Insomnia Scale (AIS). Statistical analysis was performed using non-parametric methods, including the Mann-Whitney U-test, Kruskal-Wallis test, Spearman's rank correlation, and chi-square test, with the significance threshold set at $p \leq 0.05$. RESULTS: The mean AIS score in the study group was 9.62 (SD = 4.60), indicating a high burden of sleep disturbances in the analyzed population. Nurses on shift schedules, including night duties, had higher AIS scores than those on daytime schedules only; however, this difference did not reach statistical significance ($p = 0.204$). Similarly, no significant associations were found between AIS score and age, length of service, education level, family status, number of jobs, weekly working hours, or hospital referral level. In contrast, the use of hypnotics was associated with significantly higher insomnia severity ($p = 0.033$). CONCLUSION: Insomnia symptoms were common among the nurses in the study group. Although shift work was associated with higher insomnia scores, no statistically significant relationship was observed in this sample. The findings nevertheless indicate the need for further large-scale studies and organizational measures to improve sleep hygiene and working conditions among nurses.

Lien vers l'article

Association Between Shift Work and Mental Health and Sleep Outcomes in Working Adults: A Systematic Review.

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Shift work is the norm in modern industrialised societies and is associated with disruptions in circadian rhythms as well as adverse mental health and sleep outcomes. However, many studies have examined sleep-related and mental health outcomes independently, limiting understanding of their interrelationship. This systematic review aimed to evaluate the association between shift work exposure and both sleep-related and mental health outcomes among adult workers. A systematic review was conducted using a predefined and structured methodology for study identification, selection, and reporting. A comprehensive search of PubMed, Cochrane CENTRAL, Europe PMC, PsycINFO, and ClinicalTrials.gov was performed for studies published between January 2016 and January 2026. Eligible studies included adult shift-working populations that reported both sleep-related and mental health outcomes. Observational studies and randomized controlled trials were included. Study selection, screening, and quality appraisal were performed using established methodological assessment approaches appropriate to the included study designs. A total of 386 records were identified, of which 36 duplicates were removed. Following screening and full-text assessment of 80 articles, 11 studies met the inclusion criteria. Included studies were conducted across Europe, North America, Asia, and Australia and involved diverse occupational groups, including healthcare workers, correctional officers, and industrial workers. Across studies, shift work exposure was associated with sleep-related outcomes such as insomnia, poor sleep quality, and shift work sleep disorder, as well as mental health outcomes including depression, anxiety, stress, and fatigue. Overall methodological quality was moderate to high. Shift work exposure is associated with adverse sleep-related and mental health outcomes among adult workers. These findings support the need for integrated occupational health strategies addressing both sleep and psychological well-being in shift-working populations.

Lien vers l'article

Bedtime rumination mediates the burnout-insomnia link and relates to shift adaptation in emergency department staff.

Schmidt L, Claverie D, Douplat M, Tazarourte K, Mazza S, Trousselard M. *Sci Rep*. 2026 Jul 4.

Burnout and sleep disturbances are highly prevalent among emergency department staff, yet their mechanisms within shift work remain poorly understood. This study examined whether cognitive pathways explain the comorbidity between burnout and insomnia, and how these processes relate to

behavioral adaptation to shift load, in a secondary pre-intervention analysis of the REST randomized controlled trial. Fifty-eight physicians and nurses completed the Maslach Burnout Inventory, Pittsburgh Sleep Quality Index, Insomnia Severity Index, and Pre-Sleep Arousal Scale (somatic and cognitive subscales; cognitive subscale reflecting bedtime rumination), together with shift work disorder screening items. Work schedules informed shift load and actigraphy provided total sleep time and sleep regularity to classify individual shift adaptation profiles. Individuals were considered vulnerable when their sleep metrics were lower than expected given their schedule-related load. Burnout, insomnia and pre-sleep arousal were strongly interrelated. Cognitive pre-sleep arousal fully mediated the association between burnout and insomnia, identifying bedtime rumination as a central cognitive pathway. In parallel, objective sleep-based adaptation profiles showed that vulnerable adaptors reported higher burnout, emotional exhaustion, and insomnia. Together, these findings support a cognitive-behavioral framework linking stress-related cognition to both subjective sleep complaints and objective shift adaptation in shift-working healthcare professionals.

Lien vers l'article

Exploring chronotype, sleep patterns, and health in petrochemical shift workers.

Mokarami H, Bolghanabadi S, Kazemi R, Smith A. *Aten Primaria*. 2026 Jul;58(7):103480.

OBJECTIVE: Chronotype is a personal characteristic affecting an individual's adaptability to shift work. The present study aimed to investigate the relationship between chronotype, shift work-related health disorders and sleep quality in shift workers in the petrochemical industry in southern Iran. DESIGN: This was a cross-sectional study. SITE: The study was conducted in a petrochemical complex located in southern Iran. PARTICIPANTS: 250 male shift workers with at least five years of shift work experience, no major physical or mental health issues, and no use of alcohol, drugs, or sleep medications. INTERVENTIONS: No interventions were applied, as this was an observational cross-sectional study. MAIN MEASUREMENTS: Data were collected using the Shift Work Impact on Health and Social Disorders (SOS) Questionnaire, the Pittsburgh Sleep Quality Index (PSQI), the Morningness-Eveningness Questionnaire (MEQ), and the Cognitive Failure Questionnaire. RESULTS: The prevalence of musculoskeletal, gastrointestinal, and cardiovascular disorders was significantly higher in morning types than evening types ($p<0.05$). Cognitive failures and sleep quality also differed significantly between the two groups ($p<0.05$). CONCLUSIONS: Evening-type individuals showed higher adaptability to shift work and lower vulnerability to negative consequences. Circadian typology should be considered when assigning workers to shifts, especially for sensitive jobs.

Lien vers l'article

Circadian rhythm sleep disorders and changes in cognitive function and sleepiness among healthcare workers.

Maghsoudipour M, Moradi R, Moghimi S, Ancoli-Israel S, Vahidi MT, Malhotra A. *Sleep Breath*. 2026 Jun 16;30(4).

BACKGROUND: Circadian rhythm sleep disorders (CRSDs) are common among healthcare workers (HCWs) and may impair alertness and cognitive performance during night shifts. This study examined CRSDs associations with cognitive function and sleepiness during overnight duty. METHODS: Seventy-six hospital employees (80.3% female; mean age 31.8 ± 7.5 years) participated in this cross-sectional study. Based on clinical evaluation, participants were classified as normal circadian rhythm, delayed sleep phase syndrome (DSPS), and shift work sleep disorder (SWSD). Sleepiness was measured using Karolinska Sleepiness Scale (KSS) and Epworth Sleepiness Scale (ESS). Cognitive and psychomotor performance were assessed at the start and end of an 8-hour night shift using reaction time, minor lapses, memory span, and digit span tests. Statistical analyses included ANOVA, paired t-tests, Wilcoxon, and Kruskal-Wallis tests. RESULTS: The prevalence of DSPS and SWSD was 13.2% and 15.7%.

Total sleep duration did not differ significantly between CRSDs ($P > 0.05$). Reaction times and minor lapses increased significantly after the night shift ($P < 0.05$). Memory span, forward and reverse digit recall, and total correct responses all declined post-shift ($P < 0.01$). KSS scores increased significantly ($P = 0.001$). Reaction times and minor lapses differed significantly between CRSD subgroups, with SWSD participants demonstrating the greatest decline in performance. CONCLUSIONS: HCWs with SWSD, exhibited greater cognitive deterioration and sleepiness during night shifts compared with normal circadian rhythms, whereas individuals with DSPS show relatively preserved performance. These findings highlight the importance of early recognition and occupational strategies to mitigate cognitive fatigue and associated risks in shift-working HCWs.

Lien vers l'article

Dietary intake, lifestyle behaviors, and sleep architecture among night-shift medical residents: a cross-sectional study.

Rousan MY, Ghazzawi HA, Al Oweidat K, Alawamleh RA. *Front Nutr*. 2026;13:1851443.

BACKGROUND: Medical residents are at risk of sleep disturbances due to extended working hours, rotating night shifts, elevated occupational stress, and irregular meal schedules. Although evidence suggests that diet and lifestyle may influence sleep quality and sleep architecture, these relationships remain insufficiently explored among medical residents. OBJECTIVE: This study aimed to assess dietary intake, lifestyle, physical activity levels, and sleep quality and architecture among medical residents, and to investigate the links between sleep quality and other measures. METHODS: This cross-sectional study included 50 medical residents, aged 24-34 years recruited from JUH, Amman, Jordan. Dietary intake was assessed using 3-day food records and analyzed for total energy consumption, macronutrient, fiber, magnesium, and zinc intake. The IPAQ was used to measure physical activity. While the PSQI was used to measure sleep quality, along with objective sleep parameters, including total sleep duration, light sleep, deep sleep, REM sleep, and nocturnal awakenings, were measured using a wearable sleep-tracking device over the same 3-day period. Spearman correlation and multivariable linear regression analyses were performed, with statistical significance set at $p < 0.05$. RESULTS: Zinc intake was positively associated with deep sleep duration ($r = 0.434$, $p = 0.010$). Higher total energy intake ($r = 0.367$, $p = 0.030$), carbohydrate intake ($r = 0.413$, $p = 0.014$), and dietary fiber intake ($r = 0.428$, $p = 0.010$) were positively associated with nocturnal awakenings. In multivariable regression models, more frequent junk food consumption independently predicted longer total sleep duration ($\beta = 19.22$, $p = 0.026$) and longer light sleep duration ($\beta = 13.45$, $p = 0.042$). No significant independent associations were observed between lifestyle factors and PSQI global score. CONCLUSION: Dietary intake and lifestyle behaviors appear to be important correlates of sleep duration and sleep architecture among medical residents. Zinc intake was associated with longer deep sleep duration, whereas higher energy, carbohydrate, and fiber intake were associated with greater sleep fragmentation. Frequent junk food consumption was associated with longer sleep duration but also greater light sleep, suggesting poorer sleep architecture. With the prevalence of sleep disturbances among medical residents, nutritional modification may support sleep quality and occupational wellbeing.

Lien vers l'article

Casino schedules reduce inflammatory biomarkers and improve sleep in emergency medicine physicians during shift work.

Kendrick E, Morales ED, Nathan P, Stilley J, Eubanks J, Helming D, et al. *Am J Emerg Med*. 2026 Sep;107:65-70.

BACKGROUND: Shift work is essential to hospital operations but disrupts circadian rhythms and is associated with increased metabolic, cardiovascular, and sleep health risks. Medications, naps, etc.

may reduce symptoms but do not solve the underlying problem of an unstable sleep schedule. Anchor sleep, where an individual maintains a core daily sleep period, is recommended to reduce circadian misalignment but is difficult to maintain. Casino schedules, which use a 4:00 a.m. turnover, provide a practical way to preserve anchor sleep, particularly during dark hours. Reports suggest casino schedules benefit wellness and cognition in healthcare workers, but other potential benefits have not yet been evaluated. METHODS: We completed a pilot study to assess inflammatory biomarkers and sleep in 12 emergency medicine physicians over a 6-month period. Each participant was studied under three conditions: baseline (96 h without overnight shifts), traditional overnight shifts, and casino shifts. We measured white blood cell and platelet counts, erythrocyte sedimentation rates, hemoglobin, and hematocrit. We also measured minutes of deep sleep using Fitbits and post-shift sleepiness using surveys. RESULTS: Traditional overnight shifts were associated with higher inflammatory markers and worse sleep outcomes, while casino shifts showed improvement. White blood cell and platelet counts increased during traditional overnight shifts and returned to baseline during casino shifts. Hemoglobin and hematocrit were unchanged. Deep sleep was better-preserved and participants reported less sleepiness during casino shifts. CONCLUSION: Casino shifts may improve sleep and inflammatory markers. These preliminary findings support larger, long-term studies on implementing casino shifts in healthcare.

Lien vers l'article

Inflammation-associated brain functional network topological disruption in female nurses with SWSD: associations with symptoms and transcriptomics.

Gu SY, Wang SF, Wang S, Yang HC, Liu JP, Ji YN, et al. *Front Immunol*. 2026;17:1724276.

INTRODUCTION: Shift work sleep disorder (SWSD) is prevalent among female nurses and is associated with significant health morbidities. While inflammation is implicated in SWSD, how it relates to brain network alterations and clinical symptoms remains underexplored. This study aimed to investigate the associations among peripheral inflammation, brain functional network topological disruptions, clinical symptoms, and transcriptomic signatures in female nurses with SWSD. METHODS: Fifty female nurses with SWSD and 50 healthy daytime-working controls (HCs) comparable in age and education underwent clinical assessments, quantification of peripheral inflammatory markers, and resting-state functional magnetic resonance imaging (rs-fMRI). Graph theory was applied to rs-fMRI data to assess brain network topology. Mediation analyses were used to evaluate the pathways linking inflammation, network topology, and symptoms. Imaging transcriptomics, leveraging the Allen Human Brain Atlas, was used to identify gene expression patterns correlated with network alterations. Machine learning models were employed to assess the utility of these multimodal features in classifying SWSD. RESULTS: Compared with HCs, nurses with SWSD exhibited immune dysregulation (elevated levels of interferon α (IFN-α), IFN-γ, interleukin 4 (IL-4), IL-5, IL-17A, and particularly IL-6). Graph analysis revealed altered global network topology (reduced global efficiency and small-worldness, increased local efficiency, clustering coefficient, and characteristic path length) alongside significant nodal changes, notably increased local efficiency and clustering coefficient in the left medial superior frontal gyrus (SFGmed.L). These topological alterations were significantly correlated with the severity of clinical symptoms. Mediation analyses indicated that global small-worldness mediated the relationship between IL-6 levels and poor sleep quality, whereas the local efficiency of SFGmed.L mediated the associations between IFN-γ levels and anxiety and cognitive performance. The support vector classifier model accurately differentiated nurses with SWSD from HCs (accuracy: 90%). Imaging transcriptomics identified spatial gene-expression patterns associated with altered nodal topology, particularly involving genes related to cytokine signaling and cellular regulation. DISCUSSION: Our findings suggest that systemic inflammation is associated with characteristic brain functional network disruptions in female nurses with SWSD, and that these disruptions are associated with clinical symptoms. These inflammation-related neurobiological alterations, together with spatially associated transcriptomic

signatures, provide novel insights into SWSD pathophysiology and may help identify potential biomarkers and therapeutic targets.

Lien vers l'article

Subjective and objective sleep in relation to the work context, profession, age, and workload among helicopter emergency medical service (HEMS) workers.

Flaa TA, Zakariassen E, Bjorvatn B, Pallesen S, Harris A, Waage S. *Chronobiol Int*. 2026 Jun 17:1-14.

Sleep is essential for cognitive function and performance. This is particularly evident in safety-critical professions such as Helicopter Emergency Medical Services (HEMS). The present study examined sleep among pilots and HEMS crew members (HCMs) during a 7-day duty period. Based on sleep diary and actigraphy, we assessed sleep in relation to work context, profession, age, and workload. Sleep diary data showed delayed sleep timing across the week, with reduced sleep duration (08:22 vs. 07:48, b = -0.55, $p < 0.05$) and increased sleep debt (-00:03 vs. 00:27, b = 0.57, $p < 0.05$) from first to last duty day. Furthermore, pilots went to bed later (00:38) than HCMs (00:19, b = 0.38, $p < 0.05$). Night missions were associated with reduced sleep duration (06:52 vs. 07:29, b = -0.52) and sleep efficiency (80% vs. 92%, b = -14.8), as well as increased wake time after sleep onset (01:26 vs. 00:11, b = 86.3) and sleep debt (00:29 vs. 00:01, b = 0.44), all $p < 0.05$. Older workers at busy bases accumulated more self-reported sleep debt (b = 0.86, $p < 0.05$). These findings highlight how operational demands and worker characteristics influence sleep among HEMS personnel, underscoring the need for strategies to optimize sleep.

Lien vers l'article

Real-time text message intervention to mitigate workplace fatigue in emergency medical services: A cluster-randomized trial.

Daniel Patterson P, Martin SE, Weaver MD, Patterson CG, Smith CN, Parmanto B, et al. *Sleep Health*. 2026 Jun;12(3):479-87.

OBJECTIVES: To test the effectiveness of a mobile phone text message-based intervention to mitigate fatigue and improve indicators of sleep health in a nationally representative sample of emergency medical services clinician shift workers. METHODS: We conducted a cluster-randomized trial of emergency medical services agencies in the United States. Agencies (clusters) were randomized to intervention or the attention control group. Individual emergency medical services clinician shift workers used a mobile app to complete monthly surveys for 6 months and answered text message queries 1 out of every 4 weeks. Intervention text messages promoted adoption of fatigue mitigation behaviors. All attention control group text messages focused on teamwork improvement. RESULTS: In total, 108 emergency medical services agencies and 708 emergency medical services shift workers were enrolled. Participants responded to >77% of monthly surveys and text message queries. The proportion of emergency medical services shift workers reporting severe fatigue declined over the study period; however, differences by intervention and attention control group status were not statistically significant. The proportion of participants with a clinically meaningful reduction in daytime sleepiness at 6 months was greater in the intervention group vs. the attention control group ($p = .04$). CONCLUSIONS: Mobile phone text message-based assessments followed by immediate intervention are engaging, scalable on a nationwide level, and effective for addressing some indicators of sleep health like daytime sleepiness. Interventions combining behavioral sleep recommendations with fatigue mitigation strategies could result in larger effects on sleep health and fatigue. TRIAL REGISTRATION NUMBER: ClinicalTrials.gov ID# NCT04456764 registered on June 29, 2020. First enrollment/consent on December 8, 2020.

Lien vers l'article

Post-shift recovery sleep duration and its association with daytime sleepiness among night-shift nurses: a repeated-measures observational study.

Feng Y, Feng L, Shi W. *Front Public Health*. 2026;14:1835119.

OBJECTIVE: To examine the association between post-shift recovery sleep duration and daytime sleepiness among night-shift nurses. METHODS: A repeated-measures observational study among night-shift nurses in a tertiary hospital. Data were collected between September and November 2025. Post-shift recovery sleep duration, defined as sleep obtained within 24 h after completing a night shift, was categorized as 0 h, <2 h, 2-4 h, or ≥4 h. Daytime sleepiness was assessed using the Epworth Sleepiness Scale (ESS). Linear mixed-effects models with random intercepts were applied to evaluate associations while controlling for sex, working unit, night-shift workload, caffeine intake during night shifts, and insomnia severity. RESULTS: Recovery sleep duration was associated with daytime sleepiness across sleep-duration categories. Nurses reporting 2-4 h of recovery sleep had the highest ESS scores compared with those reporting no recovery sleep (ES, ±95% CI: 0.5, ±0.29; $p < 0.001$), <2 h (2.76, ±0.23; $p < 0.001$) or ≥4 h (1.62, ±0.25; $p < 0.001$). This pattern was generally consistent across clinical units, although differences were attenuated in high-acuity settings such as emergency, intensive care, and operating room units. CONCLUSIONS: Post-shift recovery sleep duration was associated with daytime sleepiness among night-shift nurses, with intermediate recovery sleep duration (2-4 h) showing the highest ESS scores. Because recovery sleep duration was self-reported and the study design limits causal inference, these findings should be interpreted as associations rather than evidence of causality. Fatigue risk management strategies should consider not only sleep duration but also the quality and context of post-shift recovery.

Lien vers l'article

Reduced but Reversible Brain Entropy After Occupational Partial Sleep Deprivation in Night-Shift Medical Staff.

Cai S, Yang F, Jiang C, Zou L, Zhang L. *Brain Behav*. 2026 Jun;16(6):e71530.

BACKGROUND: Partial sleep deprivation (PSD) poses health risks to the night-shift workers (NSW), but its underlying impacts on local brain function remain underexplored. Brain entropy (BEN), a nonlinear dynamic metric, has emerged as a novel parameter of choice in probing the temporal irregularity of brain activity, thus may offer new insights into the characterization of the brain dysfunction following sleep deprivation. METHODS: Seventy-eight female medical NSWs and 30 non-NSW healthy controls (HC) were recruited in this study. Psychomotor vigilance tasks (PVT) and resting-state fMRI (rs-fMRI) were sequentially conducted at three conditions for NSWs: baseline (prior to NSW), PSD (immediately after NSW), and recovery (after 3-5 days of regular sleep). Nine NSWs were excluded due to consecutive or intermittent sleep duration exceeding 6 h on the night-shift day, or significant head motion in the rs-fMRI scans, resulting in 69 NSWs in the following analysis. Static and dynamic sample entropy (SampEn) metrics were calculated for BEN quantification. An L1-regularized logistic regression (LR) model was constructed based on baseline SampEn metrics to distinguish PSD-vulnerable (N = 35) and PSD-resistant (N = 34) individuals with their PVT performances as the classification reference. RESULTS: Compared to HCs, SampEn of young female NSWs reduced mainly in the occipital and temporal cortices, and associated with poor sleep quality. But these inter-group differences did not survive the strict multiple comparison correction. Both static and dynamic SampEn metrics of NSWs were significantly altered following acute PSD, and largely returned to the baseline after sleep recovery. The SampEn-based LR model achieved a classification accuracy value of 78.26% to distinguish PSD-vulnerable and PSD-resistant individuals. CONCLUSIONS: One-night of acute PSD in shift work leads to reduced but largely reversible BEN, whereas long-term occupational chronic PSD tends to reduce the BEN in distributed primary cortices and correlates with the poor sleep quality in young

female NSWs. The BEN metrics could serve as a potential biomarker to identify individual susceptibility to PSD, which may contribute to the optimization of rotating-shift schedules.

Lien vers l'article

Latent profile analysis of sleep quality and associated factors on sleep patterns in night-shift nurses: a cross-sectional study.

Chu X, Lv J, Li G, Wang D. *Front Public Health*. 2026;14:1800662.

OBJECTIVE: This study aimed to investigate the potential categories of sleep quality in shift nurses using latent profile analysis, and to explore the characteristics and associated factors of sleep quality in each category. METHODS: Convenience sampling was used to select 1,650 shift nurses from four tertiary A-level hospitals from May to June 2025. Data were collected using the Pittsburgh Sleep Quality Index (PSQI), the sleep chronotype questionnaire, the perceived stress scale, and a general demographic questionnaire. Latent profile analysis was conducted to determine the latent categories of sleep quality. Univariate and multinomial logistic regression analyses were used to investigate the associated factors of different sleep quality categories. A total of 1,650 questionnaires were distributed, of which 1,608 were valid, yielding a valid response rate of 97.5%. RESULTS: The mean PSQI score among shift nurses was 7.23 ± 3.16 points, indicating overall sleep problems within this group. The sleep quality of night-shift nurses was categorized into four latent profiles: "good sleep quality" (44.4%), "moderate sleep quality" (40.7%), "sleep disorder-low sleeping pills" (9.6%), and "sleep disorder-high sleeping pills" (5.3%). A multivariate logistic regression analysis revealed that several factors were significantly associated with these sleep quality profiles. These factors included perceived stress, sleep chronotype, monthly night shifts, weekly working hours, age, and years of nursing experience, and marital status ($p < 0.05$). CONCLUSION: The sleep quality of shift-working nurses varies significantly. Nursing administrators should develop tailored management strategies and adopt targeted sleep interventions based on the identified patterns in nurses' sleep quality to improve their overall sleep quality.

Lien vers l'article

Evaluating the Effect of Nursing Interventions on Restless Leg Syndrome among Staff Nurses.

Adhyapak S, Mokase KK, Khurshid J, Ashwini C. *Ann Afr Med*. 2026 Jul 1.

INTRODUCTION: Sleep issues are among the most often reported concerns and shift work is linked to poor health. In particular, employment patterns that require working at night are linked to sleep issues. Problems with sleep initiation and maintenance resulted in shorter sleep durations and excessive drowsiness at work. Approximately 95% of night shift workers report having trouble sleeping compared to 40% of day workers. Restless legs syndrome is a frequent sleep-related movement disorder that is characterized by unpleasant leg sensations, such as crawling, pulling, and creeping, as well as a need to move the legs. When walking, stroking, and massaging the legs, the discomfort is at least temporarily alleviated. METHODOLOGY: The quantitative research approach was employed. One group preexperimental pretest-posttest study design was employed. Selected hospitals' critical care units served as the study's sites. Restless leg syndrome nursing interventions are the independent factors. Symptoms of restless leg syndrome were the dependent variable employed in this investigation. The population that was used consists of staff nurses who work in critical care units for 3 years. The study sample was made up of staff nurses who work in critical care units. A sample size was employed. Sixty critical care unit staff nurses made up the study's sample size. AIMS AND OBJECTIVES: The aim was to control restless leg syndrome among staff nurses. The objectives of the study were to determine the effect of nursing interventions on restless leg syndrome. RESULTS: The findings indicate that the mean score of effect of nursing interventions in the pretest was 11.05 with a standard deviation of 2.02 or 55.25% of the mean percentage, while the mean score in the posttest-1 was 7.95 with a standard deviation of 2.03, or 39.75% of the mean percentage. With a standard

deviation of 1.42 and a mean score of 5.27, the posttest-2 results indicate a mean percentage of 26.33%. The F value of 147.41 and P = 0.0001 indicate a substantial change in scores, indicating a marked improvement between the pretest, posttest-1, and posttest-2 outcomes. Relationships among the pretest knowledge level, demographic variables and the Chi-square P values for the different types of intensive care units were 0.535, 0.258, 0.713, 0.716, 0.610, and 0.200.and 0.342, respectively, therefore the significance level of 0.05 is not met. CONCLUSION: The findings indicate that various nursing interventions such as massage therapy, stretch therapy, and application of heating pad are effective in reducing the symptoms of restless leg syndrome. Such nonpharmacological interventions can be easily practiced by nurses working in critical areas.

Lien vers l'article

Impact of Pre-Test Sleep Duration on Audiometric Testing Outcomes.

Dizdar SK, Ece M, Günay G, Aktürk K, Kamer Ü, Memioğlu M, et al. *J Int Adv Otol*. 2025 Dec 26;21(6):1-6.

BACKGROUND: Sleep deprivation affects vigilant attention and may influence audiological test performance. This study aims to evaluate the effects of pre-test sleep duration on audiological findings. METHODS: This prospective study was conducted at the University of Health Sciences Hamidiye Sisli Etfal Education and Research Hospital's Ear, Nose, Throat, and Audiology Department from August 2024 to November 2024, involving 35 participants. Hearing thresholds, test durations, and psychomotor vigilance attention were measured and compared under 2 conditions: after night shifts (less than 6 hours of sleep) and after normal sleep (more than 6 hours). Vigilance attention was assessed using the psychomotor vigilance test (PVT). Sleep duration, PVT results, and audiological findings were analyzed. RESULTS: After night shifts, air conduction levels were significantly higher compared to measurements after normal sleep at 500 Hz (8.10 ± 4.43 vs. 5.19 ± 3.96 dB), 1000 Hz (8.16 ± 4.01 vs. 5.07 ± 3.6 dB), and 2000 Hz (8.16 ± 4.43 vs. 5.04 ± 3.38 dB) (P=.007, P= .021, P=.018 respectively). The PVT prolongation duration was significantly greater in participants showing ≥5 dB shifts in air conduction hearing thresholds after sleep deprivation compared to those with <5 dB shifts (405.93 ± 476.51 ms vs. 360.9 ± 910.95 ms, P=.05). CONCLUSION: Sleep deprivation affects vigilance, attention, and consequently impacts audiological test performance. Adequate sleep duration should be recommended prior to audiological testing to ensure more accurate results.

Lien vers l'article

HA comme facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Prevention of sickness absence through early identification and rehabilitation of at-risk patients with musculoskeletal disorders (PREVSAM): 12-month follow-up of a randomised controlled trial.

Larsson ME, Ekhammar A, Grönkvist R, Bornhöft L, Nordeman L, Holmgren K, et al. *BMC Musculoskelet Disord*. 2026 Apr 27;27(1).

BACKGROUND: The team-based, interdisciplinary rehabilitation model, PREVention of Sickness Absence for Musculoskeletal disorders (PREVSAM), was developed and evaluated in a Swedish primary care context. The purpose of this follow-up study was to assess 12-month effects of rehabilitation according to the PREVSAM model on sickness absence and patient-reported health outcomes in patients initially assessed as being at increased risk for sickness absence. METHODS: This was a two-armed randomised controlled trial at eight primary care rehabilitation clinics, comparing rehabilitation according to the PREVSAM model with treatment as usual (TAU). In this 12-month follow-up, sickness absence and patient-reported health outcomes were assessed in 249 participants. Analyses were performed using logistic regression, zero-inflated negative binomial regression, and Cox regression. RESULTS: Most participants remained in full- or part-time work (PREVSAM 67.7%, TAU 60.7%) and had zero registered sickness benefit days during the 12 months' follow-up period (PREVSAM Md;0; IQR 0-10.5, TAU 0;0-20.4), with no statistically significant difference between the groups. Improvements over time were seen in all patient-reported outcomes in both groups, but no significant between-group differences were found. CONCLUSIONS: The PREVSAM model was not shown to be more effective than TAU in reducing sickness absence amongst patients with musculoskeletal disorders who were identified to be at risk for long-term sick leave or to reduce risk for sickness absence. Patient-related health outcomes improved significantly over time in both groups, suggesting that the interventions, regardless of type, contributed positively to participants' health and recovery. The findings are nevertheless encouraging as most participants—regardless of group—remained in full- or part-time work, with no registered sickness benefit days during the 12 months' follow-up period. This finding suggests that most individuals who initially present with risk factors for long-term pain and sick leave do not go on to develop prolonged sickness absence. TRIAL REGISTRATION: The trial was registered with ClinicalTrials.gov, Protocol ID: NCT03913325. Study Registration Date, First Submitted 09/04/2019, First Posted 12/04/2019.

Lien vers l'article

Autres pathologies

Vitamin D levels, general health status, and work productivity among healthcare workers-a scoping review of published literature (2010-2025).

Vasileiou E, Nena E, Ntolios P, Zissimopoulos A, Constantinides T. *Front Nutr*. 2026;13:1816046.

INTRODUCTION: The risk for Vitamin D deficiency has been reported to be elevated among healthcare workers (HCWs), a fact that raises concerns about their health, resilience, and work performance. The objective of the study is to review published literature on Vitamin D deficiency among HCWs, reported health implications as well as the association with productivity. METHODS: A comprehensive search of two databases (2010-2025), PubMed and Scopus was conducted with Google Scholar used as a

supplementary source following PRISMA-ScR guidelines. The inclusion criteria were full-text studies in English enrolling HCWs per WHO definition, measuring serum 25(OH)D, and reporting health or work-related outcomes. RESULTS: Thirty-six studies met the criteria 30 cross-sectional, 2 prospective, 4 interventional studies, 2 of which were Randomized Controlled Trials (RCTs). Vitamin D deficiency was highly prevalent across studies with reported prevalence ranging from 30% to over 90% varying by geographic region, season, professional role, deficiency threshold and assay method, particularly among nurses and shift workers. Key determinants included indoor work, long shifts, night duties, limited sun exposure, female sex, younger age, higher Body Mass Index (BMI), veiling, and lack of supplementation. Seasonal variation was confirmed. Deficiency was linked to immune vulnerability (higher SARS-CoV-2 infection), musculoskeletal issues, and mixed evidence for mental health outcomes. Limited data suggest higher Vitamin D levels may reduce presenteeism. RCTs demonstrated that high-dose supplementation improved serum levels and reduced respiratory infections. CONCLUSION: Existing literature points that Vitamin D inadequacy among HCWs represents significant occupational health concern highlighting important evidence gaps and future research priorities.

Lien vers l'article

Occupational Exposure Profiles and Respiratory Health Outcomes Among Surface and Underground Miners: A Comparative Epidemiological Analysis.

Masekameni MD, Mbonane TP, Mphaga KV, Sigudu TT, Rathebe PC. *Int J Environ Res Public Health*. 2026 Jun 17;23(6).

Occupational lung diseases remain a significant public health concern in mining populations, particularly in high-exposure environments. This study examined occupational exposure profiles and respiratory health outcomes among surface and underground miners in Mpumalanga Province. A cross-sectional analytical design was employed among 239 mine workers. Data on socio-demographic characteristics, occupational exposures, behavioural factors, and respiratory outcomes were analysed using descriptive statistics, chi-square tests, and logistic regression models. Underground miners were significantly more likely to report high dust exposure (44.9% vs. 24.1%), poor ventilation (60.6% vs. 39.3%), and longer working hours (>8 h: 68.5% vs. 50.0%) compared to surface miners. They also reported a higher prevalence of respiratory symptoms, including chronic cough (45.7% vs. 25.9%), shortness of breath (41.7% vs. 23.2%), wheezing (34.6% vs. 18.8%), and diagnosed lung disease (23.6% vs. 9.8%). Multivariable analysis showed that underground mining (AOR = 1.92; 95% CI: 1.08-3.41), smoking (AOR = 1.78; 95% CI: 1.02-3.11), and high dust exposure (AOR = 2.89; 95% CI: 1.45-5.76) were independent predictors of chronic cough. A significant interaction between smoking and underground mining (AOR = 2.74; 95% CI: 1.32-5.68) further amplified respiratory risk. Additionally, underground miners demonstrated lower levels of knowledge (48.8% vs. 66.1%) and poorer preventive practices (44.1% vs. 64.3%). These findings highlight the combined influence of occupational and behavioural factors on respiratory health and highlight the need for integrated interventions to reduce the burden of occupational lung diseases.

Lien vers l'article

Prevalence and determinants of metabolic syndrome among long-shift healthcare professionals in primary hospitals of Central Gondar Zone, Northwest Ethiopia.

Chane E, Amlaku Y, Mekuanint A, Worede A, Baynes HW, Fetene G. *PLoS One*. 2026;21(6):e0350807.

BACKGROUND: Metabolic syndrome (MetS) is a group of interrelated metabolic aberrations that significantly elevates the risk of poor cardiovascular outcomes and type 2 diabetes mellitus. Healthcare professionals, particularly those working long shifts, may have elevated risk due to the demanding nature of their work, irregular lifestyles, and associated stress. This study aimed to assess the prevalence and associated factors of MetS among healthcare professionals working long shifts in

primary hospitals in the Central Gondar Zone, Northwest Ethiopia. METHODS: An institutional-based cross-sectional study was conducted among a total of 271 healthcare professionals working in three primary hospitals (from September to December 2023). Study data were collected using structured questionairs, anthropometric measurements, and biochemical assessments. Five mililiters of fasting blood sample was collected from each participant; and serum lipid profile and glucose analyzed on Beckman Coulter DXC 700 AU chemistry analyzer. MetS was defined using the National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III) criteria. Independent ttest and one-way ANOVA were used for intra and inter group comparison; and Logistic regression model was fitted to identify factors associated with MetS, and adjusted odds ratios (AORs) with 95% confidence intervals (CIs) were reported to determine the strength of associations. RESULTS: The prevalence of MetS among healthcare professionals was 11.44% (95% CI 8.14-15.83). Dyslipidemias were observed to be the most common forms of metabolic derangement with 145 (53.51%) of study subjects having at least one lipid profile abnormality; whereas, hyperglycemias was the least common 27 (9.96%) form of metabolic abnormalities. Age ≥ 35 years (AOR = 6.75; 95% CI: 2.34-19.46), a family history of diabetes among first-degree relatives (AOR = 7.78; 95% CI: 2.57-23.53), and short sleep duration (<6 hours per day) (AOR = 7.78; 95% CI: 2.35-25.70) were significant factors associated with MetS ($p < 0.05$). CONCLUSION AND RECOMMONDATION: Metabolic syndrome is prevalent among healthcare professionals particularily those working long shifts; with age, family history of diabetes, and insufficient sleep identified as key risk factors. Hospital administrators and occupational health units should implement routine metabolic screening, optimized shift scheduling, and sleep hygiene support programs specifically for healthcare professionals working prolonged shifts, with particular attention to high-risk staff groups. Further workplace-based research is also needed to evaluate the effectiveness of these targeted interventions.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Employer-provided workplace health promotion activities in Poland: evidence from a nationwide cross-sectional survey of full-time employees.

Olearczyk A, Sękowski K, Jankowski M, Gujski M, Grudziąż-Sękowska J. *BMC Public Health*. 2026 Jun 22.

BACKGROUND: Workplace health promotion (WHP) is voluntary activity of employers aimed at improving health and well-being of employees. This study aimed to assess the employees' perceptions of employer-provided WHP activities in Poland as well as to identify factors associated with reported WHP provision and the use of WHP activities among full-time employees aged 18-60 years. METHODS: This questionnaire-based cross-sectional survey was carried out in December 2025 among 1030 full-time employees aged 18-60 years in Poland using the computer-assisted web interview (CAWI) methodology. Quota sampling was used, with gender, age, and place of residence included into stratification model. RESULTS: Among the respondents, 49.8% worked in private Polish company,

26.6% worked in companies with more than 500 employees. Most of the respondents rated their job satisfaction as rather satisfied (61.2%), 64.2% had non-manual work, and 58.5% worked on fixed daytime hours. Among the respondents (n = 1030), 42.2% declared that their employer offers WHP - 20.1% regularly and 22.1% occasionally. Half of respondents, often (40.7%) or very often (9.9%) used WHP activities available in their workplace. Lack of time was the most common (34.5%) barrier in the use of WHP activities. Job satisfaction was the only socio-demographic variable that differentiated ($p < 0.001$) uptake of employer-provided WHP activities. Age 18-54 ($p < 0.05$), living in cities over 500,000 residents (aOR: 1.58; 95%CI: 1.02-2.45; $p = 0.04$), working in private foreign-owned company (aOR: 2.56; 95%CI:1.72-3.79; $p < 0.001$), working in company with more than 500 employees (aOR: 2.74; 95%CI: 1.59-4.73; $p < 0.001$), being rather satisfied (aOR: 3.90; 95%CI: 1.94-7.72; $p < 0.001$) or very satisfied (aOR: 5.66; 95%CI: 2.65-12.11; $p < 0.001$) from the current job; manager, director level or executive position ($p < 0.05$), as well as shift work including night shifts (aOR: 1.90; 95%CI: 1.16-3.11; $p = 0.01$) or flexible working hours (aOR: 1.95; 95%CI:1.30-2.94; $p = 0.001$) were significantly associated with higher odds of reporting access to WHP activities. CONCLUSIONS: This study provides an overview of WHP activities in Poland. Less than half of full-time employees in Poland reported access to employer-provided WHP, with significant differences by sociodemographic and job-related factors.

Lien vers l'article

Qualitative insights into career perception of female community pharmacists in Saudi Arabia.

Aloola NA, Alsabhan JF, Alhinti S, Alkalaf R, Alnaim LS, Bawazeer GA, et al. *BMC Health Serv Res*. 2026 Feb 9;26(1).

BACKGROUND: Studies assessing the perspectives and job satisfaction of female community pharmacists working in community pharmacies in Saudia Arabia are limited. Therefore, this study aimed to investigate female pharmacists' perception of working in community pharmacies in Saudi Arabia. METHODS: Qualitative, in depth, semi-structured interviews were conducted between January and March 2022 with a convenience sample of female pharmacists working in community pharmacies. All interviews were audio-recorded, transcribed verbatim, translated, and then thematically organized and analyzed using NVivo (QSR International) software. RESULTS: A total of 20 interviews were conducted and analyzed. Seventeen themes related to the perceptions of female pharmacists working in community pharmacies were identified and grouped into three main categories: (1) job satisfaction, (2) job benefits, and (3) job barriers and areas that need improvement. Participants reported overall moderate to high job satisfaction, attributing this to direct interaction with the community, exposure to diverse professional experiences, and opportunities to expand their knowledge. Additionally, community pharmacy practice was perceived as offering greater job stability and family-friendly working conditions. Despite these positive aspects, participants identified high workload, long working hours, limited opportunities for promotion, low salaries, and negative societal perceptions as major barriers to continuing work in community pharmacies. Participants also emphasized the need for enhanced training during both university education and employment, improved workplace security and availability of resources, and the provision of private work areas for female pharmacists. Furthermore, they highlighted the importance of Saudization policies and increasing staffing levels to support sustainable community pharmacy practice. Moreover, there is a need for Saudization and an increase in the number of working staff. CONCLUSIONS: This research provides evidence-based identification of priority areas for improvement in the working conditions of female community pharmacists.

Lien vers l'article

Santé psychique

Development of a visualized calculation nomogram for comorbid depression and anxiety symptoms among nurses based on second victim experience and support-A cross-sectional study.

Zhang K, Gu Z. *BMC Nurs*. 2026 Jun 24.

BACKGROUND: This cross-sectional study aimed to explore factors associated with comorbid depression and anxiety symptoms (CADS) among nurses who had experienced adverse medical events, and to develop a visualized calculation nomogram for estimating the probability of CADS in individuals. METHODS: A total of 2,457 nurses from the Northeastern Three Provinces China were enrolled based on Wenjuanxing from March to July 2024. Depression and anxiety were evaluated using the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7), and CADS was defined using prespecified clinical thresholds (PHQ-9 ≥ 10 and GAD-7 ≥ 7). Latent class analysis (LCA) was conducted to identify subgroups of second victim experience and support (SVES). Multivariate logistic regression was performed to screen independent associated factors, and a visualized calculation nomogram was constructed and internally validated using a 70/30 split sample and bootstrap resampling. RESULTS: 40% of the nurses exhibited CADS. Four classes were identified: "Low SVE and Low Support" (21.6%), "Low SVE and High Support" (10.2%), "Moderate SVE and Moderate Support" (50.4%), and "High SVE and Low Support" (17.8%). Independent risk factors for CADS included Moderate/High SVE with corresponding Support, age 30 ~ 40 years and >40 years, ≥3 weekly coffee drinks, weekly working hours 45 ~ 50 and >50 hours, and ≥6 monthly night shifts. Protective factors included psychological detachment, psychological empowerment, weekly physical exercise, and monthly income ≥ 8001 CNY. Internal evaluation of the nomogram showed good discriminative ability (AUC = 0.734), calibration, and clinical applicability, and the validation cohort confirmed robust performance (AUC = 0.938) with excellent calibration and clinical value. CONCLUSIONS: CADS is prevalent among nurses. This study provides a user-friendly visualized calculation nomogram to help non-specialists quickly estimate individual probabilities of CADS in a cross-sectional sample. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

Burnout among neurosurgical professionals: a systematic review and meta-analysis of prevalence and determinants.

Váscones-Román FF, Hemeryth-Rengifo MA, Rodriguez-Aguilar NA, Vilca-Salas MI, Barrios-Trujillo LCR. *Neurosurg Rev*. 2026 Mar 9;49(1).

INTRODUCTION: Burnout is a major concern in neurosurgery, residents and attending neurosurgeons and linked to impaired performance and patient safety. OBJECTIVE: To estimate the prevalence of burnout among neurosurgical professionals, summarize Maslach Burnout Inventory (MBI) subscale scores, and explore geographic, temporal, and determinant patterns. METHODS: We performed a PRISMA 2020–compliant systematic review and meta-analysis of observational studies reporting burnout in neurosurgical residents and/or attendings using validated instruments, searched through April 2025. The primary analysis pooled studies using a standardized MBI-based definition (emotional exhaustion ≥ 27 or depersonalization ≥ 10). Random-effects models (restricted maximum likelihood, Hartung–Knapp adjustment) were applied to logit-transformed prevalences, reporting pooled prevalence with 95% confidence intervals (CI), 95% prediction intervals (PI), and I^2. Risk of bias was assessed with Joanna Briggs Institute checklists. RESULTS: Twenty-nine studies including 8,063 neurosurgical professionals were identified, of whom 6,077 contributed to the primary MBI-based meta-analysis. The pooled prevalence of burnout was 45% (95% CI 36–55%), with extreme heterogeneity (I^2 = 97.4%; τ^2 = 0.53) and a wide 95% PI (14–80%), indicating marked variability across settings. Point estimates were higher among residents than attending neurosurgeons, but uncertainty was substantial and subgroup differences were not supported under random-effects models.

Differences across pre-, during, and post–COVID-19 periods were inconclusive. Excessive workload, long working hours, sleep deprivation, poor work–life balance, and limited institutional support were the most frequent risk factors, while protective factors were less consistently reported. CONCLUSION: Burnout is common among neurosurgical professionals worldwide, but prevalence estimates vary widely, and extreme between-study heterogeneity indicates that the dominant signal in the literature is methodological inconsistency rather than a single universal prevalence. More standardized measurement and context-sensitive, system-level interventions are urgently needed to mitigate burnout and safeguard neurosurgeon well-being, patient safety, and the long-term sustainability of the neurosurgical workforce.

Lien vers l'article

Psychological Distress Among Oral and Maxillofacial Surgery Professionals: A Systematic Review.

Swaminathan K, T S, Nangia T, Rajendran G, Tayab T, Haridoss S. *Cureus*. 2026 May;18(5):e108390.

Psychological distress among oral and maxillofacial surgery (OMFS) professionals is increasingly recognized as a concern due to the demanding nature of training and clinical practice. This systematic review aimed to synthesize available evidence on perceived stress and psychological distress among OMFS surgeons, residents, and trainees. A comprehensive search of PubMed/MEDLINE, Scopus, Web of Science, and Google Scholar was conducted up to April 10, 2026. Six cross-sectional studies comprising 1,149 OMFS participants met the inclusion criteria. Due to substantial heterogeneity in measurement instruments, study populations, and outcome reporting, a meta-analysis was not performed, and findings were synthesized narratively in accordance with Synthesis Without Meta-analysis (SWiM) principles. Across studies, a consistently high burden of psychological distress was observed, with moderate-to-severe anxiety reported in a substantial proportion of trainees and nearly half of surgeons classified as at risk of burnout. Residents demonstrated higher perceived stress levels compared to practicing surgeons. Workload-related factors, including long working hours and frequent on-call duties, were strongly associated with increased stress and burnout risk. In contrast, psychosocial factors such as academic pressure and workplace dynamics further contributed. Despite variability in measurement approaches, a consistent relationship was observed between increased occupational demands and reduced well-being. The findings highlight the need for standardized assessment tools and targeted interventions addressing both individual and institutional factors to improve mental health outcomes and support workforce sustainability in OMFS.

Lien vers l'article

Prevalence of Burnout and Associated Work-Related Factors Among Intensive Care Unit Nurses at Tertiary Healthcare Setting, Riyadh, Saudi Arabia.

Ndlovu B, Taderera BH. *Int J Environ Res Public Health*. 2026 Jun 4;23(6).

Burnout among intensive care unit (ICU) nurses is an escalating occupational health concern due to the high psychological and physical demands of critical care, with implications for staff well-being, patient safety, and healthcare quality. Despite its importance, limited evidence exists on burnout among ICU nurses in Saudi Arabian tertiary hospitals. This study investigated the prevalence of burnout, associated factors, and potential interventions to reduce stigma and support mental health among ICU nurses at a tertiary healthcare setting, Saudi Arabia. A quantitative cross-sectional design was employed using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). Simple random sampling selected 250 registered ICU nurses with at least six months of experience. Data was analysed using SPSS v30 with descriptive statistics, and chi-square tests at a significance level of $p < 0.05$. Findings indicated a high prevalence of burnout, with 52% of nurses reporting elevated emotional exhaustion. Burnout was significantly associated with overtime hours ($\chi(2) = 29.155$, $df = 12$, $p = 0.015$), nurse-to-patient ratios ($\chi(2) = 36.170$, $df = 20$, $p = 0.015$), shift patterns (day: $\chi(2) = 4.931$, $df = 8$, $p =$

0.765; night: χ(2) = 263 4.226, df = 8, p = 0.836; rotating: χ(2) = 3.739, df = 4, p = 0.442), living arrangements ((χ(2) = 13.153, df = 16, p = 0.662), and perceived impact on patient outcomes. Participants identified mental health education, anonymous support programmes, psychological check-ins, and leadership encouragement as helpful coping strategies. The study concludes that burnout among ICU nurses is influenced by workload, work schedules, and organisational support, underscoring the need for systemic interventions to enhance nurse well-being and sustain healthcare quality.

Lien vers l'article

A scoping review on the mental health of disaster responders for natural disasters in Japan.

Ito Y, Takahashi S, Tachikawa H, Midorikawa H, Arai T. *PCN Rep*. 2026 Jun;5(2):e70346.

This study addressed a significant gap in the literature on disaster responders' mental health. Numerous studies have examined disaster victims' mental health. However, reviews on the mental health of disaster responders are limited. Thus, this study reviewed the existing literature and clarified the mental health effects according to disaster type and occupation in Japan. The PubMed, CiNii, Web of Science, Google Scholar, and PsycInfo databases were searched. The inclusion criteria were natural disasters in Japan and reports on the mental health status of disaster support workers. The search period was from 1997 to 2025. Among 664 studies, 55 met the inclusion criteria. The research methods included 39 cross-sectional and 16 longitudinal studies. Various types of disasters were identified. The main reported mental health symptoms were post-traumatic stress state (PTSS) and psychological distress. The prevalence of and factors contributing to worsening PTSS and psychological distress varied across occupations. PTSS and psychological distress were relatively high among medical personnel, local government employees, and nuclear power plant workers and relatively low among firefighters and Japan Ground Self-Defense Force personnel. Several personal, disaster-related, and occupational factors were identified as exacerbating PTSS and psychological distress. These included home damage, experiences of discrimination and abuse, long working hours, lack of rest, and poor workplace communication. The prevalence rates and identified stressors should be used to enhance training and preparedness measures during peacetime.

Lien vers l'article

Longitudinal employment patterns and parental health: A cross-country look.

Han WJ, Carrasco Saravia J, Pollmann-Schult M, Doan T, Li J. *PLoS One*. 2026;21(6):e0350945.

STUDY AIMS: Using a cross-country lens, we investigate the links between longitudinal work trajectories and health among parents with children under age 18. BACKGROUND: Employment serves as a valuable resource, affording us a decent standard of living. The rising dominance of digital and technology, together with the service economy since the 1980s, has transformed the utility of employment from a resource to a vulnerability, subjecting more families to uncertain, unstable, and insecure work. Nonstandard work schedules or shiftwork, which often fall outside regular 9-to-5 daytime hours and can be unpredictable, carry potential health consequences. METHODS: Using the longitudinal data from Australia (HILDA), Germany (SOEP), the UK (UKHLS), and the US (NLSY79), we used sequence analysis to first chart parental work schedule patterns between three stages of the life course, 25-34, 35-44, and 45-54, to show the changes and transitions in work patterns. We then conducted multivariate regression analysis to examine how variations in parental work patterns may shape individual health (i.e., physical and mental health) at ages 35/40, 45/50, and 55/60 while controlling for a rich set of sociodemographic characteristics. RESULTS: Our sequence analyses uncovered roughly 4-6 work patterns during those three periods, revealing the heterogeneities of parental work trajectories that might correspond to childrearing demands and their sociodemographic backgrounds. We also found that mainly not-working pattern or volatile work arrangements (e.g.,

switching between daytime and non-daytime hours) were associated with significantly poorer physical and mental health; however, the persistence and magnitude of these associations varied by country. CONCLUSIONS: This study advances our understanding of the critical role of employment in our health from a cross-country perspective and bears important implications for the intergenerational transmission of employment and health vulnerabilities.

Lien vers l'article

Anxiety, depression and psychological distress among small and medium-scale entrepreneurs in Lagos state, Southwest Nigeria.

Balogun M, Clayson A. *BMC Public Health*. 2026 Jun 22.

BACKGROUND: Entrepreneurs play a vital role in economic development but are exposed to significant psychosocial stressors, including financial uncertainty, long working hours, and job insecurity, which may adversely affect mental health. Evidence on anxiety, depression, and psychological distress among entrepreneurs in Nigeria remains limited. This study assessed the prevalence and predictors of anxiety, depression, and psychological distress among small and medium-scale entrepreneurs in Lagos State, Southwest Nigeria. METHODS: A cross-sectional study was conducted among 156 entrepreneurs registered with the National Association of Small and Medium Enterprises (NASME). Data were collected electronically using a structured questionnaire incorporating the Hospital Anxiety and Depression Scale (HADS), the General Health Questionnaire (GHQ-12), and a work-related stress scale based on the Job Demand-Control model. Descriptive statistics, Chi-square tests, and multivariable logistic regression analyses were used to examine associations between socio-demographic and occupational factors and mental health outcomes. RESULTS: Overall,12.9% of respondents had anxiety,12.3% had depression, and 17.9% had psychological distress. High work-related stress was reported in 25.6% of participants, while 60.6% reported feeling stressed at work. Male entrepreneurs were less likely to have depression. (AOR 0.13, 95% CI: 0.03-0.54). Entrepreneurs who had dependents were more likely to have psychological distress (AOR = 4.50; 95% CI: 1.08-18.78). Good job control was protective against anxiety (AOR 0.17, 95% CI: 0.05-0.57), depression (AOR 0.10, 95% CI: 0.02-0.40), and psychological distress (AOR = 0.13; 95% CI: 0.04-0.40). High work-related stress significantly increased the odds of anxiety (AOR 3.43, 95% CI: 1.10-10.69) and psychological distress (AOR 5.33, 95% CI: 1.70-16.72). Working more than 40 h per week was protective against depression and psychological distress. (AOR = 0.24; 95% CI: 0.08-0.73) CONCLUSION: A substantial proportion of entrepreneurs in Southwest Nigeria experienced anxiety, depression, and psychological distress, largely associated with having dependents, high work-related stress and low job control while male entrepreneurs were less likely to have depression. These findings highlight the need for targeted mental health interventions, stress management support, and policies that promote healthier and more supportive work environments for entrepreneurs.

Lien vers l'article

Burnout among healthcare professionals in Bangladesh: a narrative review.

Arafat SMY, Hossain S. *Discov Ment Health*. 2026 Jun 16;6(1).

BACKGROUND: Healthcare professionals are particularly vulnerable due to heavy workloads, long duty hours, and emotionally demanding work environments. In Bangladesh, structural constraints within the healthcare system may further increase the risk of burnout. This article synthesizes existing evidence on burnout among healthcare professionals in the country. METHODS: A structured narrative review was conducted using a comprehensive literature search without time restrictions in PubMed, Scopus, Google Scholar, and BanglaJOL up to 02 February, 2026. Studies were screened using predefined inclusion and exclusion criteria, and eligible studies were thematically synthesized. RESULTS: Eight cross-sectional studies were included with sample sizes ranged from 50 to 2705 and

encompassed various healthcare professional groups, including intern doctors, medical officers, postgraduate trainees, consultants, nurses, dentists, Intensive Care Unit (ICU) physicians, and hospital attendants. The Maslach Burnout Inventory was the most frequently used assessment tool. Moderate to high burnout prevalence ranged from approximately 20% to over 55%, with particularly elevated levels reported among female physicians, ICU physicians, and early-career professionals. Domain-specific findings showed extremely high levels of emotional exhaustion (up to 95%) and depersonalization in some cohorts. Consistently identified risk factors were long working hours, excessive workload, frequent night shifts, poor work-life balance, inadequate remuneration, limited organizational support, and pandemic-related stressors. CONCLUSION: Burnout appears to be common among healthcare professionals in Bangladesh, particularly in high-risk subgroups, and is associated with occupational and organizational factors.

Lien vers l'article

Troubles cognitifs et de la vigilance

The Effect of Sleep Environment on Sleep Quality and Behavior in Firefighters: A Cross-Sectional Study.

Zera JN, Esper E, Simonson AP, Clausen AN, Paterno S. *Int J Environ Res Public Health*. 2026 May 23;23(6).

Firefighters face high-stress occupational demands and irregular shift work that negatively impact sleep quality, which is intrinsically linked to long-term physical and psychological health. This cross-sectional study examines how the physical sleep environment (home vs. work) and station sleeping arrangements (bunk-style vs. individual dorm-style quarters) influence subjective sleep quality in this population. Sixty-six career firefighters (Age = 40.89 ± 11.05 years), completed the Pittsburgh Sleep Quality Index (PSQI) to assess their sleep in both home and fire station environments, with data analyzed using Wilcoxon Signed Ranks and Mann-Whitney U tests. The results reveal significant differences ($p < 0.001$), with sleep duration, efficiency, subjective quality, and global PSQI scores all performing significantly better at home than at work. Notably, no significant differences were found between bunk-style and dorm-style sleeping quarters at the station. These findings suggest that firefighters experience poorer sleep while on duty regardless of room design, indicating that operational stressors like call volume and nocturnal arousal may be more influential on sleep quality than the physical arrangement of sleeping quarters, and could inform organizational policies and wellness programs aimed at reducing occupational fatigue.

Lien vers l'article

Occupational Fatigue and Cognitive Performance Among Front-Line Nurse Leaders: The Interplay of Personal and Work Factors.

Farag A, Watson C, Perkhounkova Y, Abad P, Bani Younes A, Hein M. *J Nurs Adm*. 2026 Jul 1;56(7):376-83.

OBJECTIVE: This study examined factors associated with front-line nurse leaders (managers and assistant managers) occupational fatigue and its relationship with cognitive performance. BACKGROUND: Front-line nurse leaders face substantial work demands that can contribute to occupational fatigue. This fatigue can impact their cognitive performance. However, limited research has explored those relationships. METHODS: A cross-sectional descriptive correlational study was conducted in a Midwestern academic medical center and a large community hospital. Data were collected from 75 front-line leaders using self-report scales measuring fatigue and cognitive performance. RESULTS: Participants reported high levels of acute, mental, and total fatigue, which

were significantly associated with their cognitive performance. Poor sleep quality and long working hours were major contributors to fatigue. Older front-line leaders with tenure in their units reported better intershift recovery and low fatigue levels. CONCLUSION: The findings underscore the need for targeted interventions to mitigate fatigue and improve front-line nurse leaders' cognitive performance. Hospitals should prioritize fatigue management strategies for novice leaders.

Lien vers l'article

Travail posté et de nuit facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Relationship Between Occupational Characteristics and Telomere Length in Female Nurses Aged 20-39 Years: A Cross-Sectional Study.

Yun J, Lee H. *Healthcare (Basel)*. 2026 Jun 11;14(12).

Background: Korean registered nurses face substantial cumulative occupational stress. Telomere length, a biomarker of cellular aging, is increasingly used in occupational stress research, but evidence on early-career Korean nurses is scarce. This study examined the association between occupational characteristics and telomere length in female nurses aged 20-39 years. Methods: Sixty-eight female nurses from a tertiary hospital in South Korea completed the questionnaires. We assessed demographics, occupational factors, burnout (Maslach Burnout Inventory), and sleep quality (Pittsburgh Sleep Quality Index-Korean [PSQI-K]). Salivary telomere length was measured using quantitative polymerase chain reaction (qPCR). Data were analyzed using t-tests, ANOVA with a Bonferroni post hoc test, Pearson correlations, and multivariable linear regression. Results: Participants showed moderate to high burnout levels (Emotional Exhaustion [EE] = 24.78 ± 10.96), with 41.2% exceeding the high EE threshold. Sleep quality was poor (PSQI-K = 7.90 ± 3.07), with 82.4% exceeding the cut-off. Univariable analyses revealed that younger age, unmarried status, shorter work experience, and higher personal accomplishment were associated with longer telomeres (all $p < 0.05$); multivariable analysis identified only age group as a significant predictor (B = -2.055 kb for nurses aged ≥30 years compared to those <30 years, $p < 0.001$). The model explained 83% of the variance in telomere length. Shift work, burnout, and sleep quality were not significantly associated with telomere length after controlling for age. Conclusions: Age was the main factor associated with telomere length in young female nurses, suggesting that biological manifestation of occupational effects may require longer exposure. The high prevalence of burnout and sleep disturbances warrants immediate organizational intervention. Saliva-based qPCR demonstrated reliable precision as a non-invasive method for biological monitoring in occupational health research. These findings provide a basis for future longitudinal studies examining the cumulative effects of occupational stress and inform targeted wellness interventions for early-career nurses.

Lien vers l'article

Development and internal validation of a risk score for incident obesity among Peruvian formal workers.

Vera-Ponce VJ, Ballena-Caicedo J. *Obes Pillars*. 2026 Sep;19:100285.

BACKGROUND: Adult obesity is a growing public health problem, and workplace settings offer opportunities for early identification of individuals at increased risk. Longitudinal evidence to predict the transition from normal weight or overweight to obesity among workers remains limited in Latin America. This study aimed to develop and internally validate an interpretable score to estimate incident obesity risk among Peruvian formal workers with a baseline body mass index of 18.5 to

<30 kg/m(2). METHODS: This was a retrospective cohort study using occupational health records and Cox survival modeling to develop and internally validate a risk score predicting incident obesity over time among Peruvian workers without obesity at baseline. The outcome was the first subsequent assessment with BMI ≥30 kg/m(2). Candidate Cox models were fitted using baseline clinical, behavioral, and occupational predictors. Performance was assessed using the C-index, Brier score, 36-month calibration, internal bootstrap validation with 500 successful replicates, and decision curve analysis. The score was derived from the coefficients of the final model. RESULTS: The primary cohort included 9390 workers; 987 developed incident obesity. The final model included age, sex, baseline BMI, waist circumference, occupation, night work, smoking, alcohol use, and high baseline blood pressure. Among 7979 participants with complete data, the model had an apparent C-index of 0.857, an optimism-corrected C-index of 0.855 after 500 successful bootstrap replicates, and a 36-month IPCW Brier score of 0.091. The observed 36-month risk was 0.91%, 5.62%, and 37.05% in the low-, intermediate-, and high-risk categories, respectively. CONCLUSION: The score showed high discrimination and acceptable calibration for stratifying occupational risk of incident obesity. External validation and local recalibration in other occupational populations are required before routine implementation outside the source setting.

Lien vers l'article

Vitamin D levels, general health status, and work productivity among healthcare workers-a scoping review of published literature (2010-2025).

Vasileiou E, Nena E, Ntolios P, Zissimopoulos A, Constantinides T. *Front Nutr*. 2026;13:1816046.

INTRODUCTION: The risk for Vitamin D deficiency has been reported to be elevated among healthcare workers (HCWs), a fact that raises concerns about their health, resilience, and work performance. The objective of the study is to review published literature on Vitamin D deficiency among HCWs, reported health implications as well as the association with productivity. METHODS: A comprehensive search of two databases (2010-2025), PubMed and Scopus was conducted with Google Scholar used as a supplementary source following PRISMA-ScR guidelines. The inclusion criteria were full-text studies in English enrolling HCWs per WHO definition, measuring serum 25(OH)D, and reporting health or work-related outcomes. RESULTS: Thirty-six studies met the criteria 30 cross-sectional, 2 prospective, 4 interventional studies, 2 of which were Randomized Controlled Trials (RCTs). Vitamin D deficiency was highly prevalent across studies with reported prevalence ranging from 30% to over 90% varying by geographic region, season, professional role, deficiency threshold and assay method, particularly among nurses and shift workers. Key determinants included indoor work, long shifts, night duties, limited sun exposure, female sex, younger age, higher Body Mass Index (BMI), veiling, and lack of supplementation. Seasonal variation was confirmed. Deficiency was linked to immune vulnerability (higher SARS-CoV-2 infection), musculoskeletal issues, and mixed evidence for mental health outcomes. Limited data suggest higher Vitamin D levels may reduce presenteeism. RCTs demonstrated that high-dose supplementation improved serum levels and reduced respiratory infections. CONCLUSION: Existing literature points that Vitamin D inadequacy among HCWs represents significant occupational health concern highlighting important evidence gaps and future research priorities.

Lien vers l'article

Sleep, lipids, and metabolic health in the Indian obesity epidemic: an integrative review of mechanisms, burden, and breakthroughs.

Varghese RT, Akurati S. *Diabetes Res Clin Pract*. 2026 Jul;237:113319.

BACKGROUND: India faces a growing obesity epidemic within the context of persistent undernutrition, creating a dual burden with major cardiometabolic consequences. This population is particularly vulnerable to metabolic disease because of the "Asian Indian phenotype," characterized by increased

visceral adiposity and higher metabolic risk at lower body mass index thresholds. OBJECTIVE: To review current evidence on the relationship between sleep health, lipid dysregulation, and metabolic dysfunction in the obesity epidemic in India, with emphasis on epidemiology, biologic mechanisms, and implementation relevance. METHODS: PubMed-indexed literature published from 2015 through February 2026 was reviewed, prioritizing India-specific epidemiologic studies, national reports, and policy-relevant publications. International mechanistic studies were included when relevant to biologic plausibility and translational understanding. RESULTS: Obesity in India shows substantial regional and urban-rural variation, while dyslipidemia remains highly prevalent and inadequately controlled, particularly in people with type 2 diabetes mellitus. Sleep disturbances, including short sleep duration, circadian misalignment, shift work, and obstructive sleep apnea, are increasingly recognized as contributors to metabolic dysfunction. Mechanistic evidence suggests that sleep disruption may impair metabolic health through clock gene dysregulation, bile acid-lipid desynchronization, microbiome-derived short-chain fatty acid signaling, inflammation, and neuroendocrine stress pathways. However, India-specific lipidomic, longitudinal, and sleep-focused interventional data remain limited. CONCLUSIONS: Sleep health disturbances appear to be important and potentially modifiable contributors to metabolic dysfunction in India. Improving access to obstructive sleep apnea diagnosis and continuous positive airway pressure therapy, strengthening dyslipidemia management, and integrating sleep health into broader noncommunicable disease frameworks may improve prevention and care in high-risk Indian populations.

Lien vers l'article

Work-Related Factors, Sleep Problems, and Metabolic Syndrome among Taiwanese Workers: Sex-Specific Implications for Occupational Health Nursing.

Hu CW, Tsai YC, Lin KP. *ANS Adv Nurs Sci*. 2026 Jul 1.

This cross-sectional study examined associations among work-related characteristics, sleep problems, and metabolic syndrome in Taiwanese workers. A total of 348 workers undergoing routine occupational health examinations were analyzed using multivariate logistic regression. The prevalence of metabolic syndrome was 26.4%, higher in men (33.3%) than in women (19.3%). Among women, shift work and body mass index were associated with metabolic syndrome, whereas among men, sleep disturbances, sleep latency, and body mass index were significant predictors. These findings suggest sex-specific pathways linking occupational conditions, sleep characteristics, and metabolic risk and highlight the importance of targeted occupational health nursing interventions.

Lien vers l'article

Developing and evaluating machine learning-based risk models for metabolic syndrome among nurses: a cross-sectional study.

Feng X, Zhu X, Peng J, Huang Y, Huang H, Tan Y, et al. *Front Public Health*. 2026;14:1767549.

BACKGROUND: Metabolic syndrome is a group of risk factors that increase the risk of cardiovascular disease. Nurses have a higher risk of metabolic syndrome due to high work pressure and irregular lifestyle. Early recognition of metabolic syndrome is essential to prevent related complications and improve nurse health. METHODS: A cross-sectional survey was used to collect valid questionnaire data of 900 nurses. Univariate analysis and multivariate Logistic regression analysis were used to screen the key variables. Logistic regression, random forest, XGBoost, support vector machine and neural network were used to predict and evaluate the performance of the model. SHAP values were also used to explain the importance of model features. In addition, 227 nurses were collected for external validation of the optimal model. RESULTS: The random forest model had the best performance on the test set [AUC = 0.890 (0.855-0.925)], and the AUC of the external validation was 0.80 [0.762-0.838]. Among them, BMI, job burnout, shift work, age and other 9 characteristics were the key factors

affecting the prediction. DISCUSSION: The superior performance of the random forest model and identification of BMI and job burnout as core predictors provide evidence-based support for integrating machine learning-based screening into nurse occupational health policies, enabling early identification and targeted intervention for high-risk nurses. CONCLUSION: This study successfully established the prediction model of metabolic syndrome in nurses. The random forest model has high accuracy. The key factors identified provide theoretical support for early intervention, provide quantitative tools for identifying high-risk nurses, support personalized health intervention, and help to improve the overall health level and work efficiency of nurses.

Lien vers l'article

Unhealthy sleep patterns and irregular night shift work are associated with increased risk of allergic rhinitis: a large prospective cohort study.

Lyu W, Wen Y, Chen L, Huang Z, Chen C, Liao J, et al. *BMC Public Health*. 2026 Mar 3;26(1).

BACKGROUND: The influence of circadian disruption from night shift work and poor sleep on allergic rhinitis (AR) risk remains inadequately characterized. The objective of this study was to advance the understanding of how circadian disruption influence AR risk, thereby providing new insights into the prevention and management of AR. METHODS: This prospective cohort study analyzed data from the UK Biobank, comprising 256,945 participants for shift work analysis and 374,672 for sleep pattern assessment. Shift work and sleep behaviors were self-reported at baseline. AR incidents were identified through linked hospital records. Multivariable Cox proportional hazards models were employed to estimate hazard ratios (HRs) and 95% confidence intervals (CIs). Mediation analysis was conducted to assess the potential role of metabolic biomarkers. RESULTS: Irregular night shift work was associated with an increased risk of AR (HR = 1.21, 95% CI: 1.01–1.45), whereas permanent night shifts showed no clear association. Each categorical decrease in sleep pattern quality corresponded to a 16% increase in AR risk (HR = 1.16, 95% CI: 1.08–1.25). Specific unhealthy sleep behaviors—including evening chronotype, short sleep duration (≤ 6 h), insomnia, and snoring—were also associated with higher AR risk. Small HDL particle concentration partially mediated the association between sleep patterns and AR, accounting for 1.59% of the effect (95% CI: 0.12–5.28). CONCLUSION: Both irregular night shift work and poor sleep patterns are associated with an increased risk of AR, with small HDL particles acting as a partial mediator. These findings underscore the importance of maintaining circadian rhythm stability and improved sleep hygiene in the prevention and management of AR.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Differential sensitivity of self-reported driving and collision measures to aspects of shiftwork, sleep, and fatigue.

Goodwin PJ, Pilkington-Cheney F, Taylor Y, Groeger JA. *Accid Anal Prev*. 2026 Sep;235:108630.

Sleepiness, fatigue, and shiftwork are three aspects of daily life that might affect individuals' safety when driving. Driving behaviours are commonly assessed via self-report measures. In this study, different self-reported measures of driving behaviours are compared to test their sensitivity to measures of sleepiness, fatigue, and night shiftwork. Police shiftworkers from English forces completed

a survey that included questions about shiftwork, sleep, fatigue, and included three measures of driving behaviour: The Driver Behaviour Questionnaire (DBQ - Lawton et al., 1997; Reason et al., 1990), Smith's (2016) measures of poor and fatigued driving, and self-reported collision frequencies. Hierarchical regressions confirmed that the driving behaviour measures were differentially sensitive to aspects of sleepiness, fatigue, and shiftwork. Responses to Smith's components of driver fatigue and risk taking, and questions on collision frequencies, but not responses to the DBQ, could be predicted from the proportion of night shifts a person worked. Conversely, only the DBQ was sensitive to fatigue as a predictor of poor driving. All measures were sensitive to aspects of sleepiness and the extent to which it predicted driving outcomes (Adj. R(2)) differed between scales. Self-reported collision data was least sensitive to contexts of shiftwork, sleepiness and fatigue and such data should be used cautiously to explore effects of sleep and shiftwork on driving behaviour. The present findings highlight the importance of using scales that are sensitive to the context of investigations (e.g., shiftwork). Relying on inappropriate scales could lead to the underreporting of poor driving behaviours in sleepy and shiftworking drivers.

Lien vers l'article

RPS et QVT

Explainable AI for Equitable Nurse Scheduling: Pragmatic Pre-Post Implementation Study.

Shia BC, Peng SM, Zhang QY, Lo CY, Wang SR. *JMIR Nurs*. 2026 Jul 2;9:e94450.

BACKGROUND: Inequitable and time-consuming shift scheduling contributes to nurse burnout, dissatisfaction, and turnover. In Taiwan, annual nurse turnover reaches 11.6%, with rigid 3-shift systems and unfair workload distribution frequently cited as key drivers. Although artificial intelligence (AI) scheduling tools exist, most lack transparency and do not formally address algorithmic bias, limiting clinical adoption. OBJECTIVE: This study aimed to design, deploy, and evaluate a transparent, fairness-audited, explainable AI-enabled nurse scheduling decision support system (XAI-NSDSS) to reduce administrative burden, eliminate experience-based algorithmic bias, and enhance staff acceptance in a real-world hospital setting. METHODS: A pragmatic before-after implementation study was conducted at a 671-bed teaching hospital in Taiwan (January-December 2023), involving 8 departments and 156 nurses (42 novice, 78 midlevel, and 36 experienced). A 6-month manual scheduling baseline (January-June 2023) was compared with a 6-month AI-assisted period (July-December 2023). The XAI-NSDSS integrates a random forest workload prediction model (R^2=0.887), Shapley Additive Explanations-based explainability, a hybrid integer programming and binary differential evolution (IP+ BDE) optimizer, and a multidimensional fairness monitoring dashboard. A formal weight sensitivity analysis (WSA) was conducted across 7 prespecified weight configurations using full-factorial repeated-measures ANOVA to assess outcome robustness. Primary outcomes were scheduling time, error rate, and user satisfaction. Statistical analyses used linear mixed effects models (LMMs) and generalized estimating equations (GEE) with department as a random effect. RESULTS: Monthly scheduling time decreased by 81.2% (mean 32.0, SD 8.0-mean 6.0, SD 2.0) hours; P<.001; Cohen d=4.33) and error rate decreased by 73.8% (mean 18.3, SD 4.3%-mean 4.8, SD 1.2%; P<.001; Cohen d=4.12). Nurse satisfaction improved from a mean of 3.2 (SD 0.8) to a mean of 4.4 (SD 0.6; P<.001), with 148 out of 156 nurses (94.9%) adopting the system by Month 3. Preexisting experience-based bias was fully eliminated: workload coefficient of variation (CV) decreased 50% (0.18-0.09; P<.001), disparate impact ratios normalized from 1.35-1.56 to 1.01-1.04, and preference satisfaction equity was achieved across experience tiers (ANOVA P=.38). Among 156 nurses, 82 (52.6%) regularly engaged with Shapley Additive Explanations; this engagement was positively associated with satisfaction (Pearson r=0.456; P<.001). The WSA across 7 configurations confirmed that the consensus-derived default weights achieved the highest composite quality score (mean 82.1, SD 3.2) and that disparate impact ratios remained within the 0.80-1.25 fairness threshold across all configurations

(P=.12), demonstrating structural robustness of the fairness-auditing module. CONCLUSIONS: This study presents the first longitudinally validated explainable AI implementation framework for nurse scheduling with formal algorithmic fairness auditing and WSA. The XAI-NSDSS framework is replicable, scalable, and provides a practical blueprint for responsible AI adoption in health care workforce governance, with fairness guarantees that are robust to institutional customization of optimization priorities.

Lien vers l'article

Occupational exposure limits for psychosocial hazards: A promising concept or a premature leap?

Guseva Canu I, van der Molen HF. *Scand J Work Environ Health*. 2026 Jul 1;52(4):462-5.

OBJECTIVES: We critically examined the proposal to establish occupational exposure limits (OEL) for psychosocial hazards, evaluating its scientific feasibility, methodological challenges, and implications for occupational health practice. METHODS: We reviewed the conceptual framework and recommendations by Pauli et al and compared them with established approaches for chemical and physical hazards. Key obstacles were analyzed, including the reliance on latent constructs, terminological ambiguity, and the absence of objective exposure metrics, while considering the advent of the exposome in epidemiology, emerging technologies and political economy factors. RESULTS: Our analysis shows that analogies with physical and chemical OEL offer useful insights but cannot be directly applied to psychosocial hazards. Unlike traditional hazards, psychosocial hazards are context-dependent, socially constructed, and often measured through self-reported surveys, limiting the derivation of adverse effect levels. Current psychosocial models of occupational stress aggregate diverse stressors under broad constructs, impeding actionable risk assessment. While organizational hazards such as shift work and long working hours can be objectively quantified using human resource data and sensors, social and moral dimensions remain elusive. Individual biomarkers might not offer adequate diagnostic value, while using multiple biomarkers in combination introduces challenges related to cost and feasibility. Furthermore, regulatory decisions are shaped by economic interests and stakeholder conflicts, complicating consensus and OEL adoption. CONCLUSIONS: A paradigm shift is required: moving from generic theoretical models to specific, measurable indicators, integrating multi-source data, and harmonizing methodologies. Without this transformation, OEL risk over-simplifying complex psychosocial phenomena and failing to achieve meaningful preventive outcomes. For occupational safety and health practice, work organizations should prioritize the more specific identification and measurement of psychosocial hazards, using context-specific data and harmonized methods, to enable more effective risk management and prevention, pending the establishment of formal occupational exposure limits for psychosocial hazards.

Lien vers l'article

Association Between Electronic Health Record-Based Nursing Workload and Turnover: Retrospective Cohort Study.

Xia L, Lew D, Tessmer L, Eiden E, Lou S, Kannampallil T. *JMIR Nurs*. 2026 Jun 12;9:e89645.

BACKGROUND: Nurse turnover remains a major challenge for health systems, yet objective, scalable measures of workload that predict turnover are limited. Electronic health record (EHR) audit logs offer a potential data source to quantify nursing work patterns. OBJECTIVE: This study aimed to evaluate the association between EHR-derived measures of nursing workload and turnover among inpatient nurses. METHODS: We analyzed work-related activities of staff nurses from medical and surgical inpatient units at a large academic medical center from January 1, 2022, to December 31, 2022. Data included deidentified demographics (age, sex, years since licensure, and service group), shift characteristics (number of shifts worked, proportion of night shifts, timing, and location), and measures of work activities derived from EHR audit logs. Audit logs were used to develop measures

related to nurse workload, including (1) nurse activities (information review, medication administration, alert management, navigation, documentation, and communication), (2) patient load (based on the number of unique patient charts accessed), and (3) cognitive load (based on the number of patient switches). For nurses who left, we excluded the 6 weeks immediately preceding termination (washout period) and measured workload during the preceding 6-week period; for those who remained, a random 6-week working period was selected. Associations between workload measures and turnover were assessed using mixed-effects logistic regression, adjusting for demographics and shift-related characteristics. RESULTS: Among 432 nurses (n=363, 84% female; median age 27, IQR 23-36 years), contributing 6812 shifts and approximately 13 million audit log actions, 84 (19%) left the institution in 2022. A higher proportion of medication administration actions was associated with higher odds of turnover (odds ratio [OR] 2.20, 95% CI 1.36-3.54), whereas greater alert engagement (OR 0.48, 95% CI 0.32-0.72) and more years since licensure (OR 0.57, 95% CI 0.38-0.84) were associated with lower odds of turnover. CONCLUSIONS: EHR-derived workload measures, particularly greater medication administration burden and lower alert engagement, were independently associated with the risk of nurse turnover. Patterns of EHR use may help identify nurses at higher risk of leaving an institution and can potentially inform targeted workforce retention strategies.

Lien vers l'article

Prevalence and correlates of perceived stress and psychological health among residents receiving standardized training: a multicenter cross-sectional survey study in China.

Wang M, Liu M, Wang J, Zuo H, Wang B, Xiong J, et al. *BMC Public Health*. 2025 Nov 26;25(1):4325.

BACKGROUND: Medical residents are increasingly conscious of psychological discomfort. However, comprehensive epidemiology on the prevalence and modifiable factors for their perceived stress and psychological health within China's standardized residency training is lacking. METHODS: The multicenter cross-sectional survey used convenience sampling to recruit participants from 177 teaching hospitals across 28 Chinese regions. Anonymous online questionnaires assessed demographics, training routines, subjective stress levels, and validated measures, including the Chinese Perceived Stress Scale and the Symptom Checklist-90 (SCL-90). A psychological health issue was defined as an SCL-90 total score ≥ 160, ≥ 43 positive items, or ≥ 2 in any symptom dimension. RESULTS: Among 2,104 respondents, 49.6% reported a psychological health concern, with no significant differences by gender or training duration ($P > 0.05$). Modifiable risk factors included staying up late (OR = 1.300; 95% CI: 1.059–1.595), frequent night shifts (OR = 1.304; 95% CI: 1.058–1.608), CPSS score (OR = 1.179; 95% CI: 1.157–1.201), and worsening sleep quality (graded effect: relatively poor sleep quality, OR = 1.503; 95% CI: 1.089–2.074; inferior sleep quality, OR = 2.720; 95% CI: 1.395–5.305). CPSS score ≥ 27 best predicts morbidity (AUC = 0.796, sensitivity = 67.4%, specificity = 75.6%), with interpersonal stress ($\beta = 0.149$, $P < 0.001$) and clinical work stress ($\beta = 0.139$, $P < 0.001$) identified as key stressors. CONCLUSION: Approximately 50% of Chinese medical residents exhibit psychological morbidity, primarily influenced by modifiable stressors. A CPSS score ≥ 27 serves as a preliminary screening threshold, indicating the necessity for training reforms focused on workload modulation and the enhancement of interpersonal skills.

Lien vers l'article

Factors associated with work-life balance among emergency physicians, nurses, and paramedics: a systematic review.

Pryba B, Wieczorek-Wójcik B, Pietrzak K, Gaworska-Krzemińska A. *Front Public Health*. 2026;14:1830270.

INTRODUCTION: This systematic review aimed to identify and synthetically evaluate factors asso ciated with work-life balance (WLB) among emergency physicians, emergency nurses, and paramedics.

METHODS: The review was conducted in accordance with the PRISMA 2020 guidelines and was prospectively registered in the PROSPERO database. A comprehensive search of PubMed, Scopus, Web of Science, and CINAHL was performed, encompassing English-language publications from 2015 to 2025. Inclusion criteria were defined using the PICOS framework. Methodological quality was appraised using Joanna Briggs Institute (JBI) critical appraisal tools. Furthermore, the overall certainty and confidence in the evidence were assessed using the GRADE (for quantitative data) and GRADE-CERQual (for qualitative data) frameworks. RESULTS: From 202 identified records, 11 studies met the inclusion criteria: 10 quantitative cross-sectional studies and one qualitative study. The findings indicate that the primary determinants of WLB impairment among emergency personnel include high occupational stress, Effort-Reward Imbalance (ERI), Work-Family Conflict (WFC), shift-work patterns, and adverse organizational characteristics, such as staffing shortages and limited team support. Numerous studies demonstrated robust associations between WLB disturbances and professional burnout, deterioration of somatic and mental health, sleep disorders, and diminished job satisfaction. According to GRADE criteria, the certainty of quantitative evidence was predominantly rated as low or very low; however, the qualitative study provided evidence of moderate-to-high confidence (GRADE-CERQual). DISCUSSION: The findings underscore the critical necessity of implementing multilevel organizational interventions aimed at enhancing working conditions, mitigating work-family conflict (WFC), and bolstering team-based support. Such strategies are pivotal for safeguarding the occupational well-being of the emergency medicine workforce. Addressing these structural determinants is essential to ensure long-term staff retention and the sustainability of emergency care systems. SYSTEMATIC REVIEW REGISTRATION: https://www.crd.york.ac.uk/PROSPERO/view/CRD420251237774, identifier: CRD420251237774.

Lien vers l'article

Employer-provided workplace health promotion activities in Poland: evidence from a nationwide cross-sectional survey of full-time employees.

Olearczyk A, Sękowski K, Jankowski M, Gujski M, Grudziąż-Sękowska J. *BMC Public Health*. 2026 Jun 22.

BACKGROUND: Workplace health promotion (WHP) is voluntary activity of employers aimed at improving health and well-being of employees. This study aimed to assess the employees' perceptions of employer-provided WHP activities in Poland as well as to identify factors associated with reported WHP provision and the use of WHP activities among full-time employees aged 18-60 years. METHODS: This questionnaire-based cross-sectional survey was carried out in December 2025 among 1030 full-time employees aged 18-60 years in Poland using the computer-assisted web interview (CAWI) methodology. Quota sampling was used, with gender, age, and place of residence included into stratification model. RESULTS: Among the respondents, 49.8% worked in private Polish company, 26.6% worked in companies with more than 500 employees. Most of the respondents rated their job satisfaction as rather satisfied (61.2%), 64.2% had non-manual work, and 58.5% worked on fixed daytime hours. Among the respondents (n = 1030), 42.2% declared that their employer offers WHP - 20.1% regularly and 22.1% occasionally. Half of respondents, often (40.7%) or very often (9.9%) used WHP activities available in their workplace. Lack of time was the most common (34.5%) barrier in the use of WHP activities. Job satisfaction was the only socio-demographic variable that differentiated ($p < 0.001$) uptake of employer-provided WHP activities. Age 18-54 ($p < 0.05$), living in cities over 500,000 residents (aOR: 1.58; 95%CI: 1.02-2.45; $p = 0.04$), working in private foreign-owned company (aOR: 2.56; 95%CI:1.72-3.79; $p < 0.001$), working in company with more than 500 employees (aOR: 2.74; 95%CI: 1.59-4.73; $p < 0.001$), being rather satisfied (aOR: 3.90; 95%CI: 1.94-7.72; $p < 0.001$) or very satisfied (aOR: 5.66; 95%CI: 2.65-12.11; $p < 0.001$) from the current job; manager, director level or executive position ($p < 0.05$), as well as shift work including night shifts (aOR: 1.90; 95%CI: 1.16-3.11; $p = 0.01$) or flexible working hours (aOR: 1.95; 95%CI:1.30-2.94; $p = 0.001$) were significantly associated with higher odds of reporting access to WHP activities. CONCLUSIONS: This study provides an overview

of WHP activities in Poland. Less than half of full-time employees in Poland reported access to employer-provided WHP, with significant differences by sociodemographic and job-related factors.

Lien vers l'article

Job satisfaction and factors involved in transitioning from the clinical practice of interventional radiology.

Neitzel E, vanSonnenberg E, Irwin C, Sze D, Towbin R. *Abdom Radiol (NY)*. 2026 Jul;51(7):3622-9.

PURPOSE: To assess the factors that affect interventional radiologists' decision to transition from interventional radiology (IR), and to determine what activities they pursue following this transition. MATERIALS AND METHODS: An online questionnaire gauging influences on interventional radiologists' decision to transition from IR was posted to the Society of Interventional Radiology Connect Forum. 167 questionnaires were completed; 27/167 (16%) had fully transitioned from clinical IR, 28/167 (17%) were in the process of transitioning, and 112/167 (67%) had not transitioned. RESULTS: Among respondents who had fully transitioned or were in the process of transitioning from clinical IR, nighttime call responsibilities (30/55, 55%), burnout (23/55, 42%), and age (20/55, 36%) were the most frequent factors cited in the decision to make the transition. Increased diagnostic radiology (DR) workload was reported by 23/55 (42%) respondents during their transition. Other than DR, the most commonly pursued activities following transition were athletics (17/55, 31%) and mentorship to students/trainees (15/55, 27%). Among respondents who had not transitioned, nighttime call responsibilities (81/112, 72%), burnout (64/112, 57%), and age (59/112, 53%) were considered the most influential factors regarding when to transition from clinical IR. Among all respondents, job satisfaction decreased for 82/167 (49%) during their IR career. 136/167 (81%) reported they would pursue the field of IR again. CONCLUSION: Nighttime call responsibilities, burnout, and age were the major influences in the decision to transition from clinical IR. Job satisfaction decreased for nearly half of respondents during their career in IR, yet over 80% would pursue the field of IR again.

Lien vers l'article

Work engagement profiles of rural nurses: a multicentre cross-sectional study.

Liu Y, Huang H, Xu E, Zhou Y, Tang W. *BMJ Open*. 2026 Jun 29;16(6):e114298.

BACKGROUND: Existing research on work engagement among rural nurses is relatively limited. Based on the job demands-resources (JD-R) model, this study aims to identify profiles of work engagement among rural nurses, explore associated factors and derive actionable policy implications. METHODS: A multicentre cross-sectional study was conducted on 848 rural nurses in Hunan from June to August 2024. The survey used self-administered general information questionnaires and work engagement scales. Latent profile analysis (LPA) was used to identify latent profiles of work engagement. Multinomial logistic regression analysis was used to analyse the associated factors on the different profiles. RESULTS: Among the respondents, 50.9% had an educational attainment of college degree or below, 16.0% received a monthly income of less than 3000 CNY and 26.7% engaged in more than five night shifts per month. Work engagement of rural nurses could be classified into three profiles: low (n=99, 15.8%), moderate (n=410, 66.6%) and high (n=116, 18.6%). Multinomial logistic regression revealed that marital status, number of children, night shifts and leadership position were significantly associated factors of work engagement across different profiles. CONCLUSION: Using latent profile analysis, this study identified three distinct work engagement profiles among rural nurses-low, moderate and high-with the moderate group being the most prevalent. It confirms the applicability of the JD-R model in explaining work engagement among rural nurses while identifying context-specific associated factors-particularly marital status, family structure, leadership role occupancy and night shift intensity. These findings suggest three actionable policies: adjusting night shift allocation based

on family structure, offering leadership resilience training for nurses and incorporating marital/family status into retention planning.

Lien vers l'article

Risk Factors for Job Stress Among Older Korean Security Workers With Hypertension: A Multilevel Analysis.

Lee Y, Chae D, Kim SH, Byun SY. *Workplace Health Saf*. 2026 Jul;74(7):374-84.

BACKGROUND: In South Korea, apartment security jobs are commonly held by older men. The high prevalence of chronic conditions in this population, combined with the job's long hours and shift work, may increase risks of job stress and cardiovascular disease. This study aimed to identify individual and work environment factors that influence job stress among middle-aged and older security workers with hypertension. METHODS: A cross-sectional study used self-reported questionnaires to collect data from 146 security workers with hypertension at 45 apartment complexes in South Korea. The data were analyzed through descriptive analysis and multilevel modeling. FINDINGS: Higher educational attainment, lower sleep satisfaction, and lower social support were significantly ($p < .05$) associated with increased job stress, as were a lack of dedicated break areas and a higher number of households per worker. CONCLUSIONS: This study identified significant individual and workplace factors influencing job stress among older Korean security workers with hypertension. Education level, sleep satisfaction, and social support were key personal factors. The number of assigned households per security worker and the availability of break areas were critical workplace factors. These findings highlight the need for targeted interventions that address both personal and workplace conditions to manage job stress effectively. APPLICATION TO PRACTICE: Age-sensitive policies are essential to reducing job stress. Providing rest areas, adjusting workloads, and fostering a supportive work culture can alleviate environmental stressors. Tailoring roles based on education and physical ability and providing health education on sleep hygiene and effective break use may reduce fatigue and stress.

Lien vers l'article

Operational and demographic predictors of leaving without being seen in a high-volume tertiary emergency department: a five-year case-control study.

Kadioglu E, Özkan A. *Postgrad Med*. 2026 Jun 27:1-7.

BACKGROUND: Patients who leave the emergency department (ED) without being seen (LWBS) represent a critical quality and safety metric. Although most LWBS cases involve low-acuity presentations, some may have time-sensitive conditions, leading to delayed diagnoses, adverse outcomes, and increased healthcare utilization. To determine the prevalence, characteristics, and predictors of LWBS over a multi-year period in a high-volume tertiary ED in Türkiye. METHODS: This retrospective case-control study included all adult ED visits between 1 January 2020, and 30 June 2025, at Taksim Training and Research Hospital. LWBS cases were identified from electronic medical records and compared with controls presenting during the same timeframes. Demographic, triage, temporal, and operational factors were analyzed, and binary logistic regression identified independent predictors. RESULTS: From a total of 1,058,817 adult emergency department (ED) visits during the study period, 9,737 LWBS cases were identified, corresponding to an overall LWBS incidence of 1.0%. Annual LWBS counts ranged from 1,447 (14.9%) in 2020 to a peak of 2,995 (30.8%) in 2022, before declining to 450 (4.6%) in 2024. Patients who left without being seen were younger (mean 36.1 ± 15.0 years) and predominantly male (61.6%).The highest frequency of LWBS occurred during the evening shift (16:00-00:00) and among green-triage patients, with multivariable analysis confirming increased odds in these groups (evening shift OR = 4.99; 95% CI, 3.18-8.09). Night-shift presentations were associated with reduced LWBS risk (OR = 0.54; $p < 0.001$). CONCLUSION: Younger age, evening presentation, and triage category were associated with LWBS in this high-volume tertiary

emergency department. However, the predictive performance of the regression model was modest (AUC = 0.584), suggesting that additional patient-related, behavioral, and system-level factors may contribute to LWBS. Further studies are needed to better understand the determinants of this phenomenon.

Lien vers l'article

Factors influencing health-promoting lifestyle among medical personnel: A mixed-methods systematic review.

Huang P, Abang Abai DSB, Latip MB, Xiao H, Zhang Q, Yang L, et al. *Public Health*. 2026 Jul 3;258:106407.

OBJECTIVES: Medical personnel have high health literacy; however, research suggests they experience barriers to engaging in health-promoting practices, and limited systematic research on influencing factors exists. This study aims to identify the factors influencing health-promoting lifestyle among medical personnel to inform targeted multi-level interventions. STUDY DESIGN: A mixed-methods systematic review. METHODS: PubMed, Scopus and Web of Science were searched from inception to 21 January 2025, using keywords and Medical Subject Headings (MeSH) terms related to health-promoting lifestyle and medical personnel. English-language, peer-reviewed original studies were eligible. Two reviewers independently screened records, extracted data, and appraised study quality with the Mixed Methods Appraisal Tool (MMAT). Findings were synthesized narratively, with candidate factors organised using the Ecological Model of Health Behaviour (EMHB). Quantitative, qualitative and mixed-methods designs were included. RESULTS: Twenty-seven studies (21 quantitative, 4 qualitative, 2 mixed-methods) were included. Most focused on nurses (18/27) and were cross-sectional. Studies spanned multiple countries (e.g. five from the USA, four from South Korea, four from Iran). Influencing factors emerged at intrapersonal, interpersonal, organizational, and community levels, with few policy-level factors reported. Intrapersonal factors included demographics (gender, age, tenure, income), health attitudes, and self-efficacy. Interpersonal support (e.g. encouragement by family or colleagues) was important. Major organizational barriers were shift work, heavy workload, and lack of workplace wellness resources. Few studies examined community or policy influences. CONCLUSIONS: Health-promoting lifestyles among medical personnel are shaped by multi-level determinants, with organisational factors (shift work, work stress, lack of support) being most frequently reported. Interventions should target these barriers: institutions can reduce job stress and improve resources (wellness programs, healthy food, exercise opportunities), while training and education can improve staff knowledge and motivation. Future research should diversify samples beyond nurses, use longitudinal or experimental designs, and explore policy-level influences.

Lien vers l'article

Construction and validation of nomogram model for high-risk early warning of medical complaints based on occupational characteristics and workload of medical staff.

Huang J, Gou T, Cui Y, Yang F, Zhang J. *Front Public Health*. 2026;14:1816281.

BACKGROUND: The escalation of medical disputes and patient complaints represents a critical challenge to healthcare systems globally, particularly in high-volume tertiary hospitals in China. While patient-related risk factors are well-documented, the contribution of healthcare professionals' (HCPs) occupational characteristics, burnout levels, and legal awareness to dispute risk remains under-explored. This study aims to identify these provider-side risk factors and develop a predictive nomogram to quantify the risk of medical complaints. METHODS: A single-center, cross-sectional retrospective study was conducted at the Fourth Affiliated Hospital of Harbin Medical University between May 2024 and August 2025. A total of 406 HCPs (187 physicians and 219 nurses) from high-risk departments (e.g., Neurosurgery, Orthopedics, Emergency Surgery) participated. Data on

demographics, workload, Maslach Burnout Inventory (MBI) scores, defensive medical behaviors, and frequency of legal training were collected. The Least Absolute Shrinkage and Selection Operator (LASSO) regression was employed to screen variables, followed by multivariate logistic regression to identify independent predictors. A nomogram was constructed based on the final model and validated using the Concordance Index (C-index), calibration plots, and Decision Curve Analysis (DCA). RESULTS: Of the 406 participants, 78 (19.2%) reported experiencing formal medical complaints in the past year. Multivariate analysis revealed that high emotional exhaustion (OR = 1.85, 95% CI: 1.23-2.78), depersonalization (OR = 2.10, 95% CI: 1.45-3.05), excessive night shifts (>5/month) (OR = 1.65, 95% CI: 1.12-2.43), and low frequency of legal training (0-1 time/year) (OR = 2.45, 95% CI: 1.56-3.89) were independent risk factors for complaints. Interestingly, defensive medical behaviors showed a U-shaped association. The developed nomogram demonstrated excellent discrimination with a C-index of 0.82 (95% CI: 0.76-0.88). Calibration curves showed good agreement between predicted and observed probabilities, and DCA confirmed the clinical utility of the model. CONCLUSION: The risk of medical complaints is significantly associated with HCP burnout, workload, and legal literacy. The proposed nomogram serves as an effective screening tool for hospital management to identify high-risk staff. Interventions focusing on psychological support and practical legal education are essential for mitigating medicolegal risks.

Lien vers l'article

Rational Prescribing Under Pressure: A World Health Organization Indicator and National Medical Commission Compliance Audit With Shift-Based Analysis of Emergency Prescriptions at a Tertiary Care Hospital in North India.

Kaur B, Goel A, Bharti B, Vashisht T, Lanjewar S, Singh B. *Cureus*. 2026 May;18(5):e109912.

BACKGROUND: Rational prescribing is essential for patient safety and cost-effective healthcare. Good prescription writing is important from a treatment, documentation, and medico-legal point of view. The World Health Organization (WHO) prescribing indicators and the National Medical Commission (NMC) guidelines provide standardized benchmarks to evaluate and monitor prescription quality. However, these are mainly applicable to outpatient department (OPD) setups. The high patient volumes, time constraints, and high-pressure, resource-limited environment might alter doctors' prescribing behavior in emergency settings, particularly in developing countries. OBJECTIVES: This study aims to evaluate prescribing practices in a government emergency department using WHO core prescribing indicators and assess prescription completeness against NMC standards. A secondary objective was to evaluate shift-based variation in prescribing quality. METHODS: This retrospective cross-sectional study analyzed 648 prescriptions collected over one year as part of a quality improvement initiative. WHO prescribing indicators, NMC compliance parameters, and prescription completeness metrics were assessed. Statistical analysis included non-parametric tests, chi-square tests, and multivariate regression models. RESULTS: A total of 1719 drugs were prescribed, with a mean of 2.65 drugs per prescription. Of these, 1115 (64.9%) were prescribed by generic name, and 1500 (87.6%) adhered to the National List of Essential Medicines (NLEM). Antibiotics were prescribed in 42 (6.5%) prescriptions, whereas injections were used in 585 (90.3%) prescriptions. Documentation gaps were significant, with diagnosis recorded in only 55 (8.5%) and complete prescriber identification in just 5 (0.8%) prescriptions. Only 21 (1.2%) drug entries met conventional completeness criteria; it improved to 960 (55.8%) after adjusting for stat-dose prescriptions. Shift-based analysis revealed a significant decline in diagnostic documentation from morning to night shifts, while vital recording remained relatively stable. After adjusting for age, gender, and total medications, night shift was independently associated with higher odds of injection use and lower odds of antibiotic prescribing as compared to morning. Older age and higher total medications were also independent predictors of injection use. CONCLUSION: Prescribing practices in the emergency department showed significant deviations from WHO indicators and NMC standards, particularly in documentation and injection use. While low antibiotic prescribing reflects cautious antimicrobial use, high injection rates

and poor documentation highlight areas for improvement. Shift-based variation suggests an "off-hours effect" influencing clinical decision-making. Targeted interventions, including structured prescription formats, audit-based feedback, and shift-specific strategies, are needed to enhance prescribing quality and patient safety.

Lien vers l'article

Predictive role of psychological resilience on disaster preparedness among psychiatric nurses: a cross-sectional study.

Geylani M, Göral Ş. *BMC Nurs*. 2026 Jun 20.

BACKGROUND: Nurses play a pivotal role in disaster response processes; to manage these processes effectively, they require not only technical skills but also robust psychological resilience. Elucidating the relationship between psychological resilience and disaster preparedness is crucial for strengthening the preparedness of psychiatric nurses. This study was conducted to determine the predictive role of psychological resilience on disaster preparedness among psychiatric nurses. METHODS: This descriptive and cross-sectional study was conducted with 140 psychiatric nurses. Data were collected using a "Personal Information Form," the "Psychological Preparedness for Disaster Threat Scale," and the "Brief Resilience Scale." Descriptive statistics, Pearson correlation analysis, simple linear regression, independent samples t-test, and one-way analysis of variance (ANOVA) were employed for data analysis. RESULTS: The mean disaster preparedness score of the participants was 62.77 ± 13.79. Psychological resilience was a positive and significant predictor of disaster preparedness (β = 0.272, p = 0.001), explaining 6.7% of the variance. Disaster preparedness scores were significantly higher among nurses who had received formal disaster training (p = 0.003) and among those with five years or more of professional experience (p = 0.028). Nurses working exclusively on night shifts had lower disaster preparedness scores than those working day shifts or rotating shifts (p = 0.024); however, this finding should be interpreted cautiously due to the very small number of participants in the night-shift-only group. CONCLUSION: Although psychological resilience is a significant internal resource associated with nurses' disaster preparedness, it is not solely sufficient. Healthcare institutions should integrate psychological empowerment programs with applied and simulation-based disaster training and ensure that such training is accessible to all personnel regardless of shift schedules. Further studies with larger and more balanced shift groups are needed to clarify the role of shift schedules in disaster preparedness. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

Stay or leave? Retention factors in intensive care medicine from a multiprofessional cross-sectional nationwide survey in Germany.

Deininger MM, Freund D, Jahnke L, Schumann-Stoiber KM, Haehn N, Hoffmann F, et al. *J Crit Care*. 2026 Aug;94:155599.

BACKGROUND: Intensive care unit (ICU) demand is increasing, while healthcare professional shortages and turnover threaten capacity, care quality, and patient safety. This nationwide survey quantified intention to stay (ITS), leave (ITL), or being undecided among ICU professionals in Germany and assessed associated determinants. METHODS: An anonymous, nationwide, cross-sectional online survey of ICU physicians, registered nurses, and allied health professionals was conducted by the Young German Interdisciplinary Association of Critical Care and Emergency Medicine between December 2024 and February 2025. Primary outcome was ITS in the ICU for at least three years. Determinants were examined using multinomial logistic regression. RESULTS: Of 1524 questionnaires, 1243 were eligible; median ICU experience was 7 years. 51.1% of respondents were physicians, 39.1% registered nurses and 9.8% allied health professionals. Overall, 45.4% reported ITS, 23.2% ITL, and 31.2% were undecided. A 10-point higher job satisfaction was associated with greater ITS versus being undecided

(OR 1.34, 95%-CI[1.24-1.45], p < 0.001) and ITL (OR 1.49, 95%-CI[1.37-1.62], p < 0.001). Similarly, higher perceived family-friendliness was associated with greater ITS versus ITL (OR 1.11, 95%-CI[1.02-1.20], p = 0.013). Rotating day-night shift work was associated with higher ITL (OR 0.56, 95%-CI[0.34-0.92], p = 0.021). Association of annual career development dialogues were attenuated after adjustment, consistent with indirect effects via job satisfaction. CONCLUSIONS: More than half of ICU professionals were at risk of leaving intensive care within three years. Job satisfaction and family-friendliness emerged as key correlates of retention. Prospective studies are needed to determine whether these aspects are potentially modifiable factors to improve retention.

Lien vers l'article

Workplace violence in a conflict zone: a study from Syria's healthcare frontline.

Al-Bitar A, Nasra AB, Alsaoub L, Dayoub A, Hmidan A, Barghouth R, et al. *BMC Public Health*. 2025 Dec 30;26(1):485.

BACKGROUND: Workplace violence (WPV) is a significant occupational hazard for healthcare workers. This study aimed to examine the prevalence, nature, and associated factors of WPV among resident doctors and nurses in Syrian public university hospitals to inform institutional policies and protective strategies. METHODS: A cross-sectional study was conducted in public, Ministry of Higher Education-affiliated teaching hospitals in Damascus, Aleppo, and Lattakia, Syria. A total of 832 healthcare workers (68.1% physicians/residents, 31.9% nurses) completed a self-administered electronic questionnaire, distributed using a multi-stage, non-probability sampling strategy. The main outcome measures were the prevalence of psychological, physical, and sexual harassment in the last year, and factors associated with experiencing violence. Data were analyzed using logistic regression. RESULTS: The overall prevalence of exposure to at least one form of WPV was 64.78%. Psychological violence was most common (55.3%), followed by physical violence (19.8%) and sexual harassment (9.5%). Most workers (87.3%) had received no training on handling WPV, and although 56.1% of workplaces had reporting procedures, only 25% of participants had used them. Significant risk factors for WPV included being a physician/resident (AOR = 2.72), working night shifts (AOR = 1.82), and having direct patient contact (AOR = 2.63). A very strong association was found with the level of concern about violence; those who were “extremely concerned” had 22.7 times the odds of reporting WPV exposure. CONCLUSION: Workplace violence is a crisis-level occupational hazard for healthcare workers in Syria, exacerbated by a lack of preventive training and a culture of underreporting. These findings represent an urgent call for health policymakers and hospital administrators to implement robust, multifaceted interventions, including fostering a culture of safety, to protect the workforce as an essential prerequisite for a functioning healthcare system.

Lien vers l'article

Santé psychique

Development of a visualized calculation nomogram for comorbid depression and anxiety symptoms among nurses based on second victim experience and support-A cross-sectional study.

Zhang K, Gu Z. *BMC Nurs*. 2026 Jun 24.

BACKGROUND: This cross-sectional study aimed to explore factors associated with comorbid depression and anxiety symptoms (CADS) among nurses who had experienced adverse medical events, and to develop a visualized calculation nomogram for estimating the probability of CADS in individuals. METHODS: A total of 2,457 nurses from the Northeastern Three Provinces China were enrolled based on Wenjuanxing from March to July 2024. Depression and anxiety were evaluated using the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7), and CADS was defined

using prespecified clinical thresholds (PHQ-9 ≥ 10 and GAD-7 ≥ 7). Latent class analysis (LCA) was conducted to identify subgroups of second victim experience and support (SVES). Multivariate logistic regression was performed to screen independent associated factors, and a visualized calculation nomogram was constructed and internally validated using a 70/30 split sample and bootstrap resampling. RESULTS: 40% of the nurses exhibited CADS. Four classes were identified: "Low SVE and Low Support" (21.6%), "Low SVE and High Support" (10.2%), "Moderate SVE and Moderate Support" (50.4%), and "High SVE and Low Support" (17.8%). Independent risk factors for CADS included Moderate/High SVE with corresponding Support, age 30 ~ 40 years and >40 years, ≥3 weekly coffee drinks, weekly working hours 45 ~ 50 and >50 hours, and ≥6 monthly night shifts. Protective factors included psychological detachment, psychological empowerment, weekly physical exercise, and monthly income ≥ 8001 CNY. Internal evaluation of the nomogram showed good discriminative ability (AUC = 0.734), calibration, and clinical applicability, and the validation cohort confirmed robust performance (AUC = 0.938) with excellent calibration and clinical value. CONCLUSIONS: CADS is prevalent among nurses. This study provides a user-friendly visualized calculation nomogram to help non-specialists quickly estimate individual probabilities of CADS in a cross-sectional sample. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

The cost of caring: emotion regulation difficulties mediate burnout and emotional overeating in nurses.

Zhang H, Wu X, Qiu S. *Front Nutr*. 2026;13:1831265.

BACKGROUND: Nurses are a high-risk group for occupational burnout due to chronic work-related stress, which may contribute to maladaptive eating behaviors, particularly emotional eating. However, the underlying mechanism linking burnout and emotional eating remains unclear. This study aims to examine the mediating role of difficulties in emotion regulation in the relationship between occupational burnout (emotional exhaustion and depersonalization) and emotional overeating among nurses. METHODS: A cross-sectional survey was conducted among 280 nurses from a tertiary hospital between October and December 2025. The emotional exhaustion and depersonalization subscales of the Chinese version of Nurse Burnout Inventory, the 16-item Difficulties in Emotion Regulation Scale (DERS-16), and the Emotional Overeating subscale of the Adult Eating Behavior Questionnaire (AEBQ) were administered. Mediation analysis was performed using bias-corrected percentile bootstrap method with 5,000 resamples, adjusting for covariates including monthly night shifts, body mass index, years of work experience, and sex. RESULTS: Both emotional exhaustion and depersonalization were positively associated with difficulties in emotion regulation ($\beta = 0.462$, $p < 0.001$; $\beta = 0.268$, $p < 0.001$, respectively), and difficulties in emotion regulation significantly predicted emotional overeating ($\beta = 0.285$, $p < 0.001$). The indirect effects of emotional exhaustion [indirect effect = 0.132, 95% BootCI (0.047, 0.224)] and depersonalization [indirect effect = 0.077, 95% BootCI (0.025, 0.141)] on emotional overeating via difficulties in emotion regulation were significant, whereas the direct effects were non-significant, indicating full mediation. The total indirect effect of both burnout dimensions through emotion regulation difficulties was 0.208 [95% BootCI (0.079, 0.339)]. CONCLUSION: Difficulties in emotion regulation mediate the relationship between occupational burnout and emotional overeating among nurses. Burnout may increase the risk of emotional overeating by impairing nurses' capacity for emotion regulation. Interventions targeting emotion regulation skills may help disrupt the pathway from occupational burnout to maladaptive eating behaviors. IMPLICATION FOR NURSING MANAGEMENT: These findings highlight the critical need for nurse managers to address emotional regulation as a key intervention target in mitigating burnout-related maladaptive eating behaviors. Nursing administrators should consider implementing regular screening programs to identify nurses with elevated burnout and emotion regulation difficulties, alongside developing targeted training workshops on emotion regulation strategies-such as cognitive reappraisal and mindfulness-as part of employee assistance programs. Furthermore, organizational efforts to reduce systemic stressors (e.g.,

optimizing shift schedules, improving nurse-to-patient ratios) remain essential, as they address the root causes of resource depletion. By integrating emotion regulation support into routine occupational health initiatives, nursing management can help disrupt the psychological pathway from burnout to emotional overeating, thereby promoting both the psychological well-being and long-term health of nursing staff.

Lien vers l'article

Psychological Distress Among Oral and Maxillofacial Surgery Professionals: A Systematic Review.

Swaminathan K, T S, Nangia T, Rajendran G, Tayab T, Haridoss S. *Cureus*. 2026 May;18(5):e108390.

Psychological distress among oral and maxillofacial surgery (OMFS) professionals is increasingly recognized as a concern due to the demanding nature of training and clinical practice. This systematic review aimed to synthesize available evidence on perceived stress and psychological distress among OMFS surgeons, residents, and trainees. A comprehensive search of PubMed/MEDLINE, Scopus, Web of Science, and Google Scholar was conducted up to April 10, 2026. Six cross-sectional studies comprising 1,149 OMFS participants met the inclusion criteria. Due to substantial heterogeneity in measurement instruments, study populations, and outcome reporting, a meta-analysis was not performed, and findings were synthesized narratively in accordance with Synthesis Without Meta-analysis (SWiM) principles. Across studies, a consistently high burden of psychological distress was observed, with moderate-to-severe anxiety reported in a substantial proportion of trainees and nearly half of surgeons classified as at risk of burnout. Residents demonstrated higher perceived stress levels compared to practicing surgeons. Workload-related factors, including long working hours and frequent on-call duties, were strongly associated with increased stress and burnout risk. In contrast, psychosocial factors such as academic pressure and workplace dynamics further contributed. Despite variability in measurement approaches, a consistent relationship was observed between increased occupational demands and reduced well-being. The findings highlight the need for standardized assessment tools and targeted interventions addressing both individual and institutional factors to improve mental health outcomes and support workforce sustainability in OMFS.

Lien vers l'article

Occupational burnout and depression among emergency medical service providers in Switzerland and Liechtenstein: a cross-sectional nationwide web-based study.

Stuby L, Spichiger T, Van Aarsen K, Heymann EP. *BMC Public Health*. 2026 Jan 19;26(1).

BACKGROUND: Emergency medical services (EMS) providers face elevated burnout risk due to job-related stressors, organizational challenges, and physical and emotional demands. Stigma and limited support further endanger EMS providers' wellbeing. Burnout not only affects providers but can also compromise care recipients, and system sustainability. Research on EMS providers' wellbeing remains limited and subject to moderate generalisability. This study examines the prevalence of burnout, depression, suicidal thoughts, and turnover intention among Swiss EMS providers, offering a national multicentre perspective across all 26 cantons plus Liechtenstein. METHODS: A web-based survey was distributed to all active EMS providers in Switzerland and Liechtenstein between May and June 2024. The questionnaire included validated patient-reported outcome measures of burnout (Maslach Burnout Inventory (MBI) and Copenhagen Burnout Inventory (CBI)), and depression (Patient Health Questionnaire-9). The primary outcome was the prevalence of burnout, and secondary outcomes were prevalences of depression, suicidal thoughts (measured using two dedicated additional questions) and turnover intention (evaluated with a specific frequency-based question). Multivariable logistic regressions were run separately for MBI and CBI outcomes to identify burnout determinants. RESULTS: Of 3669 eligible providers, 1485 completed the questionnaire (40.5%). Burnout prevalence was 43.4% (MBI) and 36.5% (CBI), with regional variations. Night shift frequency was consistently associated with

increased burnout risk across both MBI and CBI in a dose-dependent manner. Age, gender, professional title categorized as “Other”, canton of work and childlessness, were associated with burnout in a scale-specific manner. Turnover intention was high, with 67.7% of respondents reporting having considered leaving their job at least once. A total of 13.4% of participants reported moderate to severe depression, and 10.2% indicated they had contemplated suicide, of which 46.7% within the past year. CONCLUSIONS: Burnout is a significant concern among Swiss EMS providers. Night shift frequency emerged as the only predictor consistently associated with burnout, showing a dose-dependent effect, and highlighting it as a priority target for intervention. Scale-specific associations reflect the multidimensional nature of burnout. These findings underscore the urgent need for targeted, evidence-based interventions to protect EMS providers’ wellbeing and mitigate cascading effects on prehospital care quality, safety, and the sustainability of the healthcare system.

Lien vers l'article

Psychiatric comorbidity of depression and anxiety in medical trainees: prevalence and predictors in Ecuador.

Sánchez X, Carrera P, Cortez MD, Cruz A, Merchán I, Jimbo-Sotomayor R. *BMC Psychiatry*. 2026 Jan 10;26(1):135.

BACKGROUND: Depression and anxiety are highly prevalent among medical trainees, yet their comorbidity remains underexplored. Comorbid symptoms are linked to greater severity, functional impairment, and poorer outcomes than either disorder alone. This study examined the prevalence and predictors of depression–anxiety comorbidity among medical trainees in Ecuador. METHODS: We conducted a cross-sectional survey of 700 students (393 undergraduates, 307 postgraduates) at a private university in Quito from January to March 2025. Depressive symptoms were assessed with the PHQ-9, anxiety with the GAD-7, and alcohol use with the AUDIT. Comorbidity was defined as PHQ-9 ≥10 and GAD-7 ≥10. Logistic regression identified sociodemographic, academic, and clinical predictors. RESULTS: Clinically significant depression was reported by 47.71%, anxiety by 44.57%, and comorbidity by 36.71%. Prevalence was higher among undergraduates than postgraduates for depression (54.71% vs. 38.76%), anxiety (52.92% vs. 33.87%), and comorbidity (43.26% vs. 28.34%) (all $p < 0.001$). In multivariable analysis, higher odds of comorbidity were independently associated with female gender (AOR = 1.66, 95% CI: 1.15–2.40), chronic illness (AOR = 1.89, 95% CI: 1.30–2.77), and undergraduate status (AOR = 2.67, 95% CI: 1.55–4.65). Tobacco use and night shifts showed positive but nonsignificant associations. CONCLUSION: More than one-third of medical trainees reported depression–anxiety comorbidity, highlighting a distinct and underrecognized challenge in Latin America. Findings emphasize the need for early, stage-sensitive, and gender-responsive interventions, as well as accommodations for students with chronic illness. Addressing comorbidity is critical to improving trainee well-being and sustaining medical education quality.

Lien vers l'article

Prevalence of Burnout and Associated Work-Related Factors Among Intensive Care Unit Nurses at Tertiary Healthcare Setting, Riyadh, Saudi Arabia.

Ndlovu B, Taderera BH. *Int J Environ Res Public Health*. 2026 Jun 4;23(6).

Burnout among intensive care unit (ICU) nurses is an escalating occupational health concern due to the high psychological and physical demands of critical care, with implications for staff well-being, patient safety, and healthcare quality. Despite its importance, limited evidence exists on burnout among ICU nurses in Saudi Arabian tertiary hospitals. This study investigated the prevalence of burnout, associated factors, and potential interventions to reduce stigma and support mental health among ICU nurses at a tertiary healthcare setting, Saudi Arabia. A quantitative cross-sectional design was employed using the Maslach Burnout Inventory-Human Services Survey (MBI-HSS). Simple random

sampling selected 250 registered ICU nurses with at least six months of experience. Data was analysed using SPSS v30 with descriptive statistics, and chi-square tests at a significance level of $p < 0.05$. Findings indicated a high prevalence of burnout, with 52% of nurses reporting elevated emotional exhaustion. Burnout was significantly associated with overtime hours ($\chi(2) = 29.155$, $df = 12$, $p = 0.015$), nurse-to-patient ratios ($\chi(2) = 36.170$, $df = 20$, $p = 0.015$), shift patterns (day: $\chi(2) = 4.931$, $df = 8$, $p = 0.765$; night: $\chi(2) = 263\ 4.226$, $df = 8$, $p = 0.836$; rotating: $\chi(2) = 3.739$, $df = 4$, $p = 0.442$), living arrangements (($\chi(2) = 13.153$, $df = 16$, $p = 0.662$), and perceived impact on patient outcomes. Participants identified mental health education, anonymous support programmes, psychological check-ins, and leadership encouragement as helpful coping strategies. The study concludes that burnout among ICU nurses is influenced by workload, work schedules, and organisational support, underscoring the need for systemic interventions to enhance nurse well-being and sustain healthcare quality.

Lien vers l'article

Longitudinal employment patterns and parental health: A cross-country look.

Han WJ, Carrasco Saravia J, Pollmann-Schult M, Doan T, Li J. *PLoS One*. 2026;21(6):e0350945.

STUDY AIMS: Using a cross-country lens, we investigate the links between longitudinal work trajectories and health among parents with children under age 18. BACKGROUND: Employment serves as a valuable resource, affording us a decent standard of living. The rising dominance of digital and technology, together with the service economy since the 1980s, has transformed the utility of employment from a resource to a vulnerability, subjecting more families to uncertain, unstable, and insecure work. Nonstandard work schedules or shiftwork, which often fall outside regular 9-to-5 daytime hours and can be unpredictable, carry potential health consequences. METHODS: Using the longitudinal data from Australia (HILDA), Germany (SOEP), the UK (UKHLS), and the US (NLSY79), we used sequence analysis to first chart parental work schedule patterns between three stages of the life course, 25-34, 35-44, and 45-54, to show the changes and transitions in work patterns. We then conducted multivariate regression analysis to examine how variations in parental work patterns may shape individual health (i.e., physical and mental health) at ages 35/40, 45/50, and 55/60 while controlling for a rich set of sociodemographic characteristics. RESULTS: Our sequence analyses uncovered roughly 4-6 work patterns during those three periods, revealing the heterogeneities of parental work trajectories that might correspond to childrearing demands and their sociodemographic backgrounds. We also found that mainly not-working pattern or volatile work arrangements (e.g., switching between daytime and non-daytime hours) were associated with significantly poorer physical and mental health; however, the persistence and magnitude of these associations varied by country. CONCLUSIONS: This study advances our understanding of the critical role of employment in our health from a cross-country perspective and bears important implications for the intergenerational transmission of employment and health vulnerabilities.

Lien vers l'article

Comparative effectiveness of individual-level psychosocial interventions for nurse burnout and its core dimensions: A systematic review and network meta-analysis.

Liu X, Wang H, Tian S, Guo X, Cao H. *Int J Nurs Stud*. 2026 Jun 18;182:105622.

BACKGROUND: Nurses face heavy workloads, emotional labor, and frequent shift work, contributing to physical and mental stress. This stress leads to burnout, negatively impacting their health and the quality of patient care. Effective interventions are essential to mitigate nurse burnout, but the relative efficacy of these strategies remains unclear. OBJECTIVES: This study systematically evaluates the relative efficacy of different interventions in alleviating nurse burnout and its core dimensions-emotional exhaustion, depersonalization and personal achievement. METHODS: A comprehensive

search across nine databases was conducted for studies published from inception to January 15, 2026. A network meta-analysis using a frequentist approach was employed to rank the efficacy of interventions. Inconsistencies between direct and indirect comparisons were examined using the node-splitting method. The surface under the cumulative ranking curve was used to assess the probability of each intervention's ranking. The risk of bias was evaluated using the revised Cochrane Risk of Bias Tool. RESULTS: A total of 40 studies involving 3119 participants were included in the analysis. The network meta-analysis revealed that mindfulness ranked highest for reducing overall nurse burnout (SMD = -0.89, 95% CI: -1.39, -0.39), with a ranking probability of 78.2%. Social support ranked second (SMD = -0.78, 95% CI: -1.34, -0.22) with a ranking probability of 68.1%, followed by cognitive behavioral therapy, which ranked third (SMD = -0.69, 95% CI: -1.50, 0.12) with a ranking probability of 60.6%. For the dimensions of emotional exhaustion and depersonalization, mindfulness showed the highest ranking probabilities, with 88.1% (SMD = -2.89, 95% CI: -4.75, -1.03) for emotional exhaustion and 73.0% (SMD = -1.53, 95% CI: -2.74, -0.33) for depersonalization. For enhancing personal achievement, social support had the highest ranking probability (SMD =2.88, 95% CI: 0.19, 5.57), with a ranking probability of 65.5%. CONCLUSIONS: The results of this network meta-analysis suggest that mindfulness emerged as the most strongly supported intervention for improving nurse burnout. Mindfulness also showed the highest ranking probabilities for addressing emotional exhaustion and depersonalization, while social support emerged as the most strongly supported intervention for enhancing personal achievement. However, due to study limitations, further research, including multi-arm, large-sample, and long-term follow-up trials, is necessary to strengthen the evidence and guide clinical decision-making in developing more precise intervention strategies. REGISTRATION: This review was registered with PROSPERO (CRD420261297209).

Lien vers l'article

Burnout in medical residents: the combined influence of on-call burden, somatic symptomatology, insomnia severity, and physical activity.

Henchiri H, Chaabeni A, Znazen H, Hamaidi J, Srem-Sai M, Hagan JE, et al. *Front Sports Act Living*. 2026;8:1779677.

INTRODUCTION: Burnout has emerged as a critical threat to healthcare systems, particularly among medical residents who face intense workloads, recurrent night shifts, and emotionally demanding clinical environments. In Tunisia, evidence on the interplay between occupational, psychological, and lifestyle determinants of burnout remains limited. This study aimed to determine the prevalence of burnout among Tunisian medical residents and to identify key predictors, including on-call burden, somatic symptomatology, insomnia severity, substance use, and physical activity, using a multidimensional analytic approach. METHODS: A multi-center cross-sectional study was conducted across six Tunisian university hospitals from March 2024 to January 2025. Medical residents aged 25-35 years completed validated instruments, including the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), Insomnia Severity Index, Somatic Symptom Scale-8, and Ricci-Gagnon physical activity questionnaire. Sociodemographic, professional, and behavioral factors were also collected. Pearson correlation analyses and multivariate logistic regression were performed to identify factors associated with burnout. RESULTS: Among 320 residents, burnout prevalence was 45.9%, with pathological mean scores across all MBI-HSS subscales. Emotional exhaustion strongly correlated with somatic symptom burden ($r = 0.84$), insomnia severity ($r = 0.75$), and inversely with physical activity ($r = -0.82$). Logistic regression revealed that the number of monthly on-call shifts was associated with burnout (OR = 2.72; $p < 0.001$). Intrinsic motivation for choosing medicine was associated with lower odds of burnout (OR = 0.13; $p = 0.001$). Higher somatic symptoms were associated with burnout risk (OR = 1.20; $p = 0.013$), whereas physical activity may reduce it (OR = 0.82; $p = 0.001$). CONCLUSIONS: Burnout is highly prevalent among Tunisian medical residents and is shaped by a combination of occupational strain, psychosomatic distress, and lifestyle behaviors. On-call overload, somatic symptoms, and poor sleep were associated with the increase of burnout risk, while regular physical

activity and intrinsic career motivation may serve as protective factors. These findings support the implementation of targeted preventive strategies and early screening tools within residency training programs.

Lien vers l'article

Burnout among healthcare providers and its association with patient safety management: when exhaustion breaks safety.

Elshouny HM, Elattar MA, Farag RS. *BMC Psychol*. 2026 Jun 5;14(1).

INTRODUCTION: Burnout, a pervasive phenomenon among healthcare providers, has been linked to both clinicians' and patient safety. This study aimed to assess the association between burnout and patient safety. METHODS: This cross-sectional study was conducted at Al Nahda General Hospital in Saudi Arabia from 2023 to 2024. A total of 399 healthcare providers (HCPs) completed an online survey. Burnout was measured using the Copenhagen Burnout Inventory (CBI). The primary outcomes were evaluating the prevalence of burnout among HCPs and measuring its association with Patient Safety Management Activities (PSMA). The secondary outcome was to identify potential risk factors affecting PSMA practice. RESULTS: Of the study group, 64.4% of HCPs aged 30 to 45 years, 61.2% were physicians, and 50.1% had over 10 years of experience. The prevalence of burnout among participants was 41%. HCPs under 30 years old exhibited a significantly lower prevalence of burnout compared to those aged 30-45 years (Prevalence ratio (PR) = 0.63, 95% CI: 0.46-0.86, P = 0.003). Work schedule played a significant role, with night-shift workers showing a higher burnout prevalence compared to those on morning shifts (PR = 1.38, 95% CI: 1.09-1.74, P = 0.007). Respondents experiencing burnout showed a significantly higher likelihood of being suboptimal in complying with infection control guidelines (Odds ratio (OR) = 3.78, 95% CI: 1.04-13.69, P = 0.04) and were less likely to be familiar with standard precautions for preventing the spread of infections (OR = 0.30, 95% CI: 0.11-0.82, P = 0.02) compared to those who were not experiencing burnout. HCPs burnout was significantly associated with higher moderate patient involvement in decision-making (OR = 9.69, 95% CI: 2.53-37.10, P = 0.001), speaking up about patient safety concerns within teams and departments (OR = 3.62, 95% CI: 1.18-11.07, P = 0.02), and documentation and record-keeping (OR = 5.17, 95% CI: 1.22-21.81, P = 0.03). Healthcare setting and depression were significant risk factors associated with reduced PSMA. CONCLUSIONS: HCPs burnout was prevalent among middle-aged staff (aged 30-45 years) and night shift workers. It is potentially associated with patient safety practices, including lapses in infection control, patient involvement, safe communication, and record documentation. Further research is required to include multiple centers and multi-pronged interventions to mitigate burnout and improve patient safety.

Lien vers l'article

Burnout among healthcare professionals in Bangladesh: a narrative review.

Arafat SMY, Hossain S. *Discov Ment Health*. 2026 Jun 16;6(1).

BACKGROUND: Healthcare professionals are particularly vulnerable due to heavy workloads, long duty hours, and emotionally demanding work environments. In Bangladesh, structural constraints within the healthcare system may further increase the risk of burnout. This article synthesizes existing evidence on burnout among healthcare professionals in the country. METHODS: A structured narrative review was conducted using a comprehensive literature search without time restrictions in PubMed, Scopus, Google Scholar, and BanglaJOL up to 02 February, 2026. Studies were screened using predefined inclusion and exclusion criteria, and eligible studies were thematically synthesized. RESULTS: Eight cross-sectional studies were included with sample sizes ranged from 50 to 2705 and encompassed various healthcare professional groups, including intern doctors, medical officers, postgraduate trainees, consultants, nurses, dentists, Intensive Care Unit (ICU) physicians, and hospital

attendants. The Maslach Burnout Inventory was the most frequently used assessment tool. Moderate to high burnout prevalence ranged from approximately 20% to over 55%, with particularly elevated levels reported among female physicians, ICU physicians, and early-career professionals. Domain-specific findings showed extremely high levels of emotional exhaustion (up to 95%) and depersonalization in some cohorts. Consistently identified risk factors were long working hours, excessive workload, frequent night shifts, poor work-life balance, inadequate remuneration, limited organizational support, and pandemic-related stressors. CONCLUSION: Burnout appears to be common among healthcare professionals in Bangladesh, particularly in high-risk subgroups, and is associated with occupational and organizational factors.

Lien vers l'article

Prevalence and correlates of perceived stress and psychological health among residents receiving standardized training: a multicenter cross-sectional survey study in China.

Wang M, Liu M, Wang J, Zuo H, Wang B, Xiong J, et al. *BMC Public Health*. 2025 Nov 26;25(1):4325.

BACKGROUND: Medical residents are increasingly conscious of psychological discomfort. However, comprehensive epidemiology on the prevalence and modifiable factors for their perceived stress and psychological health within China's standardized residency training is lacking. METHODS: The multicenter cross-sectional survey used convenience sampling to recruit participants from 177 teaching hospitals across 28 Chinese regions. Anonymous online questionnaires assessed demographics, training routines, subjective stress levels, and validated measures, including the Chinese Perceived Stress Scale and the Symptom Checklist-90 (SCL-90). A psychological health issue was defined as an SCL-90 total score ≥ 160, ≥ 43 positive items, or ≥ 2 in any symptom dimension. RESULTS: Among 2,104 respondents, 49.6% reported a psychological health concern, with no significant differences by gender or training duration ($P > 0.05$). Modifiable risk factors included staying up late (OR = 1.300; 95% CI: 1.059–1.595), frequent night shifts (OR = 1.304; 95% CI: 1.058–1.608), CPSS score (OR = 1.179; 95% CI: 1.157–1.201), and worsening sleep quality (graded effect: relatively poor sleep quality, OR = 1.503; 95% CI: 1.089–2.074; inferior sleep quality, OR = 2.720; 95% CI: 1.395–5.305). CPSS score ≥ 27 best predicts morbidity (AUC = 0.796, sensitivity = 67.4%, specificity = 75.6%), with interpersonal stress ($\beta = 0.149$, $P < 0.001$) and clinical work stress ($\beta = 0.139$, $P < 0.001$) identified as key stressors. CONCLUSION: Approximately 50% of Chinese medical residents exhibit psychological morbidity, primarily influenced by modifiable stressors. A CPSS score ≥ 27 serves as a preliminary screening threshold, indicating the necessity for training reforms focused on workload modulation and the enhancement of interpersonal skills.

Lien vers l'article

Troubles cognitifs et de la vigilance

Occupational Exposure to Blue Light Emitted from Neonatal Phototherapy Devices Alters the Sleep Quality of NICU Nurses.

Zahadatpour Z, Razavinejad SM, Eslaminejad A, Vafapour H, Mortazavi SMJ, Mortazavi SAR. *J Biomed Phys Eng*. 2026 Jun;16(3):259-64.

Exposure to blue light, primarily from light-emitting devices like LEDs, has raised concerns regarding its potential health effects. Neonatal intensive care unit (NICU) nurses, frequently exposed to both digital screens and blue light from phototherapy devices, face particular risks. This study aimed to investigate the influence of blue light exposure from neonatal phototherapy devices on the sleep quality of NICU nurses, presenting the first examination of this issue. NICU nurses and matched controls were studied, comparing their sleep quality using the Pittsburgh Sleep Quality Index (PSQI).

General health and reaction time were also assessed using standard questionnaires and benchmark software, respectively. The light intensities of active phototherapy devices were recorded. Statistical analysis included an independent t-test, with a P-value of ≤0.05 considered statistically significant. The study found that exposure to blue light from neonatal phototherapy devices adversely affected sleep disturbances and daytime dysfunction in NICU workers. This aligns with research indicating that reducing ambient blue light can improve cognitive performance, alertness, and sleep quality, especially for night shift workers. It also corresponds with studies linking pre-sleep use of light-emitting devices to higher rates of insomnia in various countries. Amber lenses that block blue light have been proposed as a viable solution for sleep issues. This pioneering research underscores the importance of reducing blue light exposure for NICU nurses. Encouraging the use of blue light-blocking glasses is a practical step that can be taken to mitigate the adverse effects of blue light exposure.

Lien vers l'article

Identifying Change Fatigue in Nurses From Southwestern China via Latent Profile Analysis: A Multicenter Cross-Sectional Study.

Wang L, Chai D, Wu M, Tang Y, Mi J. *J Nurs Manag*. 2026;2026(1):e7461404.

OBJECTIVE: To identify latent profiles of change fatigue among nurses in Southwestern China and explore factors associated with distinct profiles. BACKGROUND: Healthcare resources in Southwestern China are unevenly distributed, and the region features considerable ethnic diversity. Against the backdrop of ongoing reforms in the healthcare system, nurses-as frontline implementers-are constantly exposed to intensive and frequent updates in policies, technologies, and workflows, making them susceptible to change fatigue. This sustained exposure precipitates "change fatigue," a syndrome that erodes psychological resilience and professional identity, and is prospectively linked to heightened turnover intention, measurable deterioration in nursing quality and an increased incidence of patient-safety events. METHODS: From July to September 2025, we recruited nurses from various tiers and types of medical institutions across Southwestern China. Data were collected using a general information questionnaire, the Change-Related Stress Scale, the Grandey Emotional Labor Strategy Scale, the Connor-Davidson Resilience Scale (CD-RISC), and the Chinese Nurse Job Stressors Scale. Latent profile analysis (LPA) was employed to identify subgroups of change fatigue. Univariate analysis and multinomial logistic regression with Firth's penalized likelihood estimation were used to examine factors associated with profile membership. RESULTS: A total of 1383 valid questionnaires were included. LPA revealed three distinct profiles of change fatigue: low fatigue (17.5%, n = 242), moderate fatigue (61.6%, n = 852), and high fatigue (20.9%, n = 289). Multinomial logistic regression showed that nurses in the high fatigue group were significantly more likely to work in the intensive care unit (OR = 2.31, 95% CI: 1.40-3.85, p = 0.001) and internal medicine (OR = 2.12, 95% CI: 1.26-3.61, p = 0.005). Working 1-2 night shifts per week increased odds of high fatigue by 53% (OR = 1.53, 95% CI: 1.03-2.27, p = 0.034). Compared with minimal emotional labor (Level 1, 14-30 points), both moderate (Level 2, 31-50 points: OR = 0.14, p = 0.030) and high (Level 3, 51-70 points: OR = 0.09, p = 0.010) emotional labor levels were associated with significantly lower odds of high fatigue, suggesting that deficient emotional labor engagement may represent a risk configuration. Work stress Level 3 increased odds of high fatigue 33-fold (OR = 32.71, 95% CI: 13.27-103.37, p < 0.001). Psychological resilience showed no independent significant association with profile membership in multivariate models. CONCLUSION: Change fatigue exhibits a heterogeneous tripartite structure. Minimal emotional labor engagement (Level 1) was associated with higher odds of high fatigue compared with moderate and high levels, suggesting that deficient emotional labor may represent a distinct risk configuration. Both modifiable workplace factors (ICU/internal medicine placement, night shifts, and job stress) and emotional labor patterns were associated with profile membership, supporting the potential value of organizational interventions and targeted emotional labor training. IMPLICATIONS FOR NURSING MANAGEMENT: These findings provide an evidence-based foundation for precision prevention. Nursing leaders should integrate the six-item Change Fatigue Measurement Scale into routine occupational health

surveillance to enable profile-based risk stratification. High-fatigue nurses (20.9%) require immediate workload relief and mental health referral; moderate-fatigue nurses (61.6%) represent a critical prevention window for resilience training and peer support; low-fatigue nurses (17.5%) should serve as peer mentors and change champions. Priority interventions should target ICU and internal medicine units given the 2- to 2.3-fold increased high-fatigue risk. Leaders should limit consecutive night duties to ≤ 2 shifts, ensure ≥ 11 h rest between shifts, and enforce weekly overtime caps (≤ 8 h). Differentiated emotional labor training is essential: Nurses with minimal engagement need professional identity strengthening and authentic expression workshops, while those with excessive engagement require boundary-setting training and mindfulness-based stress reduction. Resilience-building interventions must be embedded within organizational support initiatives rather than implemented as standalone programs. In ethnically diverse, resource-constrained contexts, culturally tailored change communications and phased implementation timelines are critical to avoid "reform stacking."

Lien vers l'article

Sleep Quality and Influencing Factors of Nurses in Fever Clinics During Closed-Loop Management: An Exploratory Mixed-Methods Study.

Wang F, Hu Y, Wei D, Zhou F, Liu Y, Wang W. *Healthcare (Basel)*. 2026 May 29;14(11).

BACKGROUND: During the COVID-19 pandemic, fever clinic nurses under closed-loop management faced high occupational stress and strict isolation, which may impair sleep quality. However, evidence in this population remains limited. This study investigated the sleep quality of fever clinic nurses during closed-loop COVID-19 management and identified associated factors. METHODS: A sequential explanatory mixed-methods design approach was employed. Quantitative data were collected using the Pittsburgh Sleep Quality Index (PSQI) and Nurses' Psychological Capital Scale from 33 front-line nurses, acknowledging the limited sample size. Semi-structured in-depth interviews were conducted with six nurses to provide qualitative insights. RESULTS: The mean PSQI score was 8.16 ± 4.25, indicating moderate sleep disturbances among nurses. Factors associated with sleep quality included demographic and occupational factors (e.g., night shifts, work pressure) and psychological capital (self-efficacy, resilience, hope, and optimism). Qualitative analysis identified three themes: the impact of personal circumstances on sleep quality, psychological pressures during closed-loop management, and the role of self-regulation in coping. CONCLUSIONS: During the closed-loop management for COVID-19 pandemic prevention and control, the sleep quality of nurses in fever clinics was poor. This study identified personal circumstances, work pressure, and psychological capital as potential factors associated with sleep quality, suggesting that further research is needed to develop and test targeted interventions. These findings provide preliminary evidence that may inform future management strategies, but do not support definitive intervention recommendations.

Lien vers l'article

Multiple exposure sources and occupational fatigue profiles among healthcare workers: a cross-sectional latent profile analysis.

Tan L, Zhang R, Liao Y, Liu S, Fang F, Liu L, et al. *Front Public Health*. 2026;14:1811642.

BACKGROUND: Occupational fatigue is a complex and widespread issue among healthcare workers, yet its heterogeneous manifestations remain inadequately studied. This study aimed to identify distinct fatigue profiles and examine the multifaceted determinants that differentiate these profiles. METHODS: A cross-sectional survey was conducted among 734 healthcare workers. The assessment was conducted using the newly developed Healthcare Worker Occupational Fatigue Scale that has undergone reliability and validity tests. Latent profile analysis was used to identify occupational fatigue subgroups, and multiple logistic regression analysis was conducted to explore the influencing factors of each subgroup. RESULTS: Latent profile analysis identified four distinguishable occupational fatigue

subgroups: the compensated group (17.97%), the prodromal-symptomatic group (35.29%), the decompensated diffuse group (37.87%), and the systemic crisis group (8.86%). Multivariate logistic regression analysis revealed that perceived workload, department affiliation, number of night shifts per month, low intention to stay, noisy environment, commuting time, and individual-level factors, including gender and health status, were significant risk factors for occupational fatigue. CONCLUSION: Occupational fatigue among healthcare workers exhibits substantial heterogeneity and can be categorized into four distinct profiles, with multiple contributing factors. It is necessary to adopt hierarchical and personalized intervention strategies based on precise subgroup characteristics, such as systematically reducing the workload and optimizing the acoustic environment for the severe fatigue group, in order to effectively alleviate the occupational fatigue of healthcare workers.

Lien vers l'article

Occupational Fatigue and Cognitive Performance Among Front-Line Nurse Leaders: The Interplay of Personal and Work Factors.

Farag A, Watson C, Perkhounkova Y, Abad P, Bani Younes A, Hein M. *J Nurs Adm*. 2026 Jul 1;56(7):376-83.

OBJECTIVE: This study examined factors associated with front-line nurse leaders (managers and assistant managers) occupational fatigue and its relationship with cognitive performance. BACKGROUND: Front-line nurse leaders face substantial work demands that can contribute to occupational fatigue. This fatigue can impact their cognitive performance. However, limited research has explored those relationships. METHODS: A cross-sectional descriptive correlational study was conducted in a Midwestern academic medical center and a large community hospital. Data were collected from 75 front-line leaders using self-report scales measuring fatigue and cognitive performance. RESULTS: Participants reported high levels of acute, mental, and total fatigue, which were significantly associated with their cognitive performance. Poor sleep quality and long working hours were major contributors to fatigue. Older front-line leaders with tenure in their units reported better intershift recovery and low fatigue levels. CONCLUSION: The findings underscore the need for targeted interventions to mitigate fatigue and improve front-line nurse leaders' cognitive performance. Hospitals should prioritize fatigue management strategies for novice leaders.

Lien vers l'article

Chronobiologie

Animal

Prenatal circadian rhythm disruption induces sex-specific substance use and mood-related phenotypes in mice.

Saferin N, Stowe T, Vadnie CA, Petersen KA, Scott MR, Chen E, et al. *bioRxiv*. 2026 Jun 28.

20% of Americans are at risk for environmental circadian rhythm disruptions (CRD) due to shift work, leading to substantial negative health outcomes. However, females are especially affected with greater vulnerability for substance use (SU) and adverse outcomes associated with pregnancy, including for offspring at birth and later in life. In mice, prenatal CRD (pCRD) recapitulates these risks, but it is unknown whether pCRD affects SU in mature offspring. To investigate this, C57BL/6J dams were disrupted by reversing the light/dark cycle during gestation. Following pCRD, reward- (cocaine conditioned place preference, intravenous self-administration) and mood-related behaviors (open field, elevated plus maze, light/dark box, forced swim) were measured in adult offspring. Adult female offspring of dams exposed to CRD developed an anhedonic-like phenotype with decreased food self-administration, cocaine intake and reinforcing properties of cocaine. Opposingly, pCRD male offspring showed a SU-like phenotype with increased cocaine preference, higher order food self-administration and cocaine reinforcement. Interestingly, these divergent behavioral outcomes were not specific to reward. While female pCRD mice showed increased anxiety-like behavior, pCRD males showed decreased anxiety/increased risk-taking behavior, as well as decreased immobility in the forced swim test. Rhythms in corticosterone were also sex-specifically affected by pCRD. These results suggest that pCRD may predispose individuals to distinct psychiatric disorders based on sex with mood disorders developing in females and SU disorders developing in males. By better understanding how disrupted rhythms during pregnancy affect behavior in adulthood, we can develop novel therapeutic approaches for SU and mood disorders in adults.

Lien vers l'article

Impact of social isolation on stress, neuroinflammation, endocrine dysregulation, and antioxidant defense in mice exposed to rotational shiftwork/jetlag.

Mishra M, Gupta R, Singaravel M. *Chronobiol Int*. 2026 Jun 17:1-18.

Circadian disruption and social isolation are increasingly prevalent stressors in modern societies, each known to impair behavioral and physiological homeostasis. However, their concurrent influence remains poorly characterized. This study investigated the effects of social isolation and chronic circadian misalignment on affective behavior, neuroinflammatory signaling, endocrine function, and antioxidant defense in male AKR mice. Animals were housed either in groups or isolation under a stable 12:12 h light-dark cycle or subjected to six successive 8 h phase delays or advances every fourth day, modeling rotational shiftwork/jetlag exposure. Behavioral analyses revealed that isolated mice displayed pronounced anhedonia and anxiety-like behavior across all lighting regimens, with maximal impairment under phase advances. Molecular and biochemical assessments revealed significant elevations in pro-inflammatory cytokines (TNF-α, IL-6, IL-1β) in the prefrontal cortex, hippocampus, and serum, accompanied by reduced melatonin levels, elevated corticosterone, and decreased antioxidant enzyme activity (SOD, CAT). These effects were observed across lighting conditions, indicating that circadian disruption and social isolation independently contribute to neuroendocrine stress, inflammation, and oxidative imbalance. Collectively, the results underscore the importance of social synchrony in maintaining circadian and physiological stability and highlight the impact of concurrent social and temporal desynchronization on health risks associated with chronic shiftwork/jetlag.

Lien vers l'article

Biological Rhythms in Coronavirus Pneumonia Pathogenesis.

Mok H, Gierasch C, Ostendorf E, Jaiswal A, Adler AJ, Ganninger A, et al. *J Biol Rhythms*. 2026 Jun 16:7487304261449284.

Night shift work is linked to more severe coronavirus pneumonia, suggesting that host resilience to these pathogens may depend on the timing of exposure. Here, we examined how the time of day influences the severity of coronavirus pneumonia in mice, using mouse hepatitis virus-1 (MHV-1) as a natural infection model. We found that the timing of infection influenced MHV-1 severity, with the highest mortality, peak viral load, and lung inflammation occurring with midday infection, which corresponds to the mid-rest phase in mice and is comparable with nighttime in humans. The time-of-day dependence in disease severity occurred prominently in males and was sensitive to global disruption of the clock gene Bmal1. Midday infection correlated with increased MHV-1 binding to and replication within alveolar macrophages (AM). Depleting AMs with clodronate or loading them with neutral liposomes before MHV-1 infection eliminated differences in pneumonia survival and peak viral load related to the timing of infection. These data suggest an immunologic rhythm underlying coronavirus outcomes, in which oscillations in "first contact" interactions between AMs and the virus shape subsequent pneumonia severity.

Lien vers l'article

Time-restricted feeding counters brown adipose tissue whitening and inflammation in obese mice under chronic light exposure.

Oh E, Nah JY, Yun N, Lee MN, Pae M. *Nutr Res Pract*. 2026 Jun;20(3):417-34.

BACKGROUND/OBJECTIVES: Time-restricted feeding (TRF) is a promising dietary strategy to improve the metabolic parameters associated with obesity, but its potential benefits in obesity linked to nighttime light exposure remain largely unclear. This study examined whether chronic light exposure alone, or in combination with TRF, modulates brown adipose tissue (BAT) in lean and obese mice. MATERIALS/METHODS: Six-week-old male C57BL/6J mice were fed a low-fat diet (LFD) or a high-fat diet (HFD) for six weeks, and were assigned to one of three experimental conditions for an additional 6 weeks: control light exposure, continuous 24-h light exposure, or 24-h light exposure combined with TRF. This yielded 6 experimental groups: LC, L24h, L24hT, HC, H24h, and H24hT. RESULTS: Histological analyses showed that chronic light exposure alone induced BAT whitening, characterized by lipid droplet accumulation and structural disorganization, even in LFD-fed mice. This whitening occurred without a decrease in uncoupling protein 1 mRNA and protein levels, suggesting mechanisms independent of thermogenic suppression. Instead, lipid accumulation and elevated Lep mRNA expression were associated with increased expression of various inflammatory markers (Adgre1, Itgax, and Pycard) and F4/80-positive macrophage infiltration. Importantly, TRF intervention attenuated BAT whitening and markedly suppressed the inflammatory responses, restoring the tissue structure and reducing macrophage infiltration, particularly in HFD-fed mice. CONCLUSION: These findings suggest that TRF may have clinical implications for obese night workers by preventing BAT from shifting toward an inflammatory and metabolically dysfunctional phenotype associated with nighttime light exposure.

Lien vers l'article

Circadian disruption induces slow-to-recover cognitive impairment and hippocampal myelin loss: a study in human beings and mice.

Luo S, Wang L, Dai Y, Luo S, Tang L, Yang Y, et al. *Neurobiol Dis*. 2026 Jul;225:107431.

Circadian disruption, a common consequence of shift work, is associated with neuropsychiatric disorders and cognitive impairment. However, existing occupational studies lack generalizability and

the underlying structural mechanisms remain unclear. The present study aimed to investigate the relationships between circadian disruption, cognitive impairment and hippocampal white matter integrity, as well as their changes following circadian rhythm restoration. We analyzed UK Biobank longitudinal cohort data, comparing cognitive performance (including reaction time, numeric memory, fluid intelligence, and prospective memory) and structural connectivity derived from diffusion magnetic resonance imaging (MRI) between shift and non-shift workers. Mouse models of chronic circadian disruption and recovery were established to complement the human findings. Compared with non-shift workers, shift workers exhibited cognitive impairment, with a maximum decrease of 14.81% in fluid intelligence scores; notably, their cognitive performance remained lower than that of never-shift workers even after ceasing shift work, with a maximum reduction of 7.73% in fluid intelligence. Higher Criticism analysis indicated alterations in whole-brain structural connectivity in shift workers, including the hippocampus, with approximately 90% of structural connectivity in the bilateral hippocampi showing a decrease (Cohen's $d < 0$). Murine models of 8-week circadian disruption confirmed cognitive impairment and myelin loss; furthermore, mice with 8 weeks of circadian rhythm restoration following chronic circadian disruption also displayed hippocampus-related cognitive function inferior to that of controls, as well as slow-to-recover myelin structure. This study indicates that circadian disruption induces slow-to-recover cognitive impairment; this impairment is hippocampus-associated, and the myelin architecture of the hippocampus also exhibits a slow-to-recover pattern.

Lien vers l'article

Circadian dysregulation as a factor in impaired hepatic protein-synthetic function under chronic photoperiod disruption: the role of sex and chronobiotic correction.

Areshidze DA, Kozlova MA, Anurkina AI, Chernikov VP, Gladyshev NS. *Biol Sex Differ*. 2026 Jul 4.

BACKGROUND: Liver metabolism is under tight control of the circadian system. Disruption of key clock gene expression (desynchronosis) leads to the misalignment of metabolic pathways. However, the relationship between circadian dysregulation and hepatic protein-synthetic function, as well as its sexual dimorphism, remains poorly understood. To evaluate the effect of chronic photoperiod disruption on hepatic protein-synthetic function (total protein, albumin) and to establish its relationship with the expression of key circadian proteins (BMAL1, CLOCK, PER2) in male and female rats, as well as to assess the efficacy of exogenous melatonin in correcting the identified disturbances. METHODS: The study was performed on 240 adult Wistar rats (120 males, 120 females). Animals were divided into 3 groups: control (light: dark 10:14 h), dark deprivation (LL, constant light for 21 days), and LL + melatonin (12 mg/L drinking water). Plasma levels of total protein and albumin were measured. Immunohistochemistry was used to assess the percentage of positively stained hepatocytes for BMAL1, CLOCK, and PER2. Statistical analysis included two-way ANOVA, Pearson correlation analysis, ANCOVA, and ROC analysis. RESULTS: Dark deprivation reduced albumin levels by 15.7% in males and by 15.9% in females compared to controls. Two-way ANOVA revealed significant effects of "lighting conditions" ($F = 145.3$, $p < 0.0001$), "sex" ($F = 18.7$, $p < 0.01$), and their interaction ($F = 7.2$, $p < 0.05$). BMAL1 and CLOCK expression decreased by more than 70% in both sexes, whereas PER2 expression paradoxically increased by 28.9-35.0%. Strong correlations were found between albumin levels and expression of BMAL1 ($r = 0.79$-0.81, $p < 0.001$), CLOCK ($r = 0.69$-0.74, $p < 0.001$), and PER2 ($r = -0.68$ to -0.71, $p < 0.001$). ANCOVA ($R^2=0.71$, $p < 0.0001$) identified BMAL1 expression as the most significant independent predictor of albumin levels ($\beta = 0.52$, $p < 0.0001$), with sex retaining independent significance ($p = 0.02$). ROC analysis demonstrated high predictive performance of BMAL1 expression for hypoalbuminemia (AUC = 0.87-0.89, $p < 0.0001$). Melatonin treatment fully restored the expression of all examined circadian proteins and normalized protein synthetic parameters to control levels in both sexes. CONCLUSION: Chronic photoperiod disruption induces profound hepatic desynchronosis characterized by suppression of BMAL1/CLOCK and accumulation of PER2, which is associated with decreased protein synthetic function. A pronounced sexual dimorphism in susceptibility to

desynchronosis was identified. BMAL1 expression is a highly informative predictor of hypoalbuminemia. Exogenous melatonin fully restores the impaired parameters, supporting its use as an effective chronobiotic.

Lien vers l'article

Homme

Circadian rhythm: The hidden "puppet master" behind musculoskeletal disorders.

Zhong S, Cheng Y, Li F, Li D, Chang X, Zhang B, et al. *J Orthop Translat*. 2026 Jul;59:101142.

Circadian rhythm (CR), regulated by the central biological clock in the hypothalamus and synchronized with local clocks in peripheral tissues, orchestrates the physiology of localized tissues in response to the periodic rhythmic variations of the environment. Environmental cues and behavioral factors, such as light exposure, feeding, and exercise, can synchronize or desynchronize these rhythms, and abnormalities can lead to disruption of the human CR. Certain modern behaviors, such as traveling across time zones, shift work, and irregular eating patterns, disrupt the body's natural CR, thereby potentially contributing to the development of musculoskeletal disorders through multiple pathways. In this review, we summarize the role of CR in the physiology of the musculoskeletal system-encompassing bone, cartilage, tendons, and muscles-alongside the mechanisms by which CR disruption contributes to various musculoskeletal disorders. Additionally, we discuss interventions for treating musculoskeletal disorders based on CR, including resetting biological clocks or optimizing medication administration times. The translational potential of this articleA comprehensive understanding of the role of CR in the physiology and pathology of the musculoskeletal system offers significant therapeutic and preventative opportunities for musculoskeletal disorders, holding considerable importance for advancing the prevention and treatment of such conditions.

Lien vers l'article

Association of real-time noise exposure with rest-activity circadian rhythms and sleep health: a 7-day longitudinal measure among Hong Kong nurses with night-shifts.

Weng X, Tang NHY, Ma JYT, Wan CCM, Liu Y, Wang F, et al. *Environ Pollut*. 2026 Jun 29;406:128644.

Circadian rhythms play a crucial role in regulating the sleep-wake cycle, with environmental light acting as the primary entraining factor. However, it remains unclear how environmental noise, particularly the persistent low-intensity noise common in urban environments, modulates circadian rhythms and sleep health. This study utilized real-time noise monitoring to evaluate average noise levels and noise variability, and to assess their effects on actigraphy-based rest-activity circadian rhythms and sleep characteristics across different time intervals among Hong Kong nurses working different shifts, using multivariable logistic regression models and interaction analysis. Among 360 nurses included in the analysis, 281 of them (78.1%) were required to work night shifts. A gradually reduced tendency in noise levels was observed approaching sleep, with the lowest levels recorded during the sleep period. Weakened rest-activity circadian rhythms and restless sleep were positively associated with noise exposures occurring within a 1-h pre-sleep window (eg, Amplitude, OR = 1.037, 95%CI: 1.005-1.074) or during sleep (eg, Amplitude, OR = 1.055, 95%CI: 1.017-1.101), with noise variability exerting the greatest effect size. Individuals with a shorter career of night-shift work were more vulnerable to noise-induced circadian disturbances. Neither sleep duration nor efficiency was significantly associated with any noise variables. This study indicated that noise exposure, especially fluctuations in noise levels, disrupted circadian rhythms and led to restless sleep even if individuals did not fully awaken. These effects were predominantly more pronounced among workers with shorter night-shift tenure. Further

intervention programs aimed at mitigating noise hazards should focus on reducing intensity and fluctuations, while prioritizing protection for early-career night shift workers.

Lien vers l'article

Circadian Rhythms, Metabolic Disorders, and Cardiovascular Aging: Molecular Crosstalk and Clinical Translation.

Wang J, Xu Q, Zhou D, Zhang B, Hu X, Chen T. *Aging Dis*. 2026 Jun 6.

Circadian rhythms play a crucial role in regulating physiological processes, and disruptions caused by aging, shift work, or irregular schedules are closely associated with metabolic dysfunction and accelerated cardiovascular aging. Age-related declines in circadian clock function contribute to metabolic imbalances and cardiovascular decline through pathways involving inflammation, oxidative stress, and mitochondrial dysfunction. Research has identified complex molecular networks linking circadian dysregulation to metabolic disorders and cardiovascular diseases, highlighting potential therapeutic targets such as sirtuin 1, peroxisome proliferator-activated receptor α, and reverse erythroblastosis virus α. Interventions based on circadian principles-such as time-restricted eating, chronotherapy, lifestyle modifications, and light therapy-exhibit promise in mitigating cardiovascular aging. However, several of these strategies require further validation in older adults, and challenges persist in clinical implementation owing to a lack of large-scale trials, population diversity, and real-world barriers. This review synthesizes current mechanistic evidence and underscores the necessity for personalized circadian-based approaches to enhance cardiovascular health in aging populations.

Lien vers l'article

Circadian control of innate immunity: molecular mechanisms and implications for allergic disorders.

Nahas A, Zammit Lupi D, Nunez Colao B, Sacco K. *Curr Opin Allergy Clin Immunol*. 2026 Jun 9.

PURPOSE OF REVIEW: Circadian clocks are increasingly recognized as fundamental regulators of innate immune function, yet their relevance to allergy and clinical immunology has only recently been clarified. This review summarizes emerging evidence linking circadian regulation of innate immune cells to allergic inflammation and highlights the translational potential of circadian-informed therapeutic strategies. RECENT FINDINGS: Core clock components are rhythmically expressed in macrophages, mast cells, neutrophils and innate lymphoid cells, where they regulate inflammatory signalling, immunometabolism and activation thresholds. Disruption of these rhythms exaggerates cytokine production, inflammasome activation and mast cell mediator release, contributing to diurnal patterns of allergic disease such as nocturnal asthma. Human and experimental studies demonstrate that circadian misalignment driven by shift work, irregular sleep and mistimed feeding amplifies innate inflammation and worsens allergic outcomes. SUMMARY: Circadian regulation represents an underappreciated dimension of innate immunity in allergic disease. Aligning immunomodulatory therapies, vaccination, and lifestyle interventions with endogenous immune rhythms offers a rational approach to improving efficacy and reducing inflammatory burden. Future studies should prioritize time-stratified clinical trials and direct circadian phenotyping in allergic populations.

Lien vers l'article

Exploring chronotype, sleep patterns, and health in petrochemical shift workers.

Mokarami H, Bolghanabadi S, Kazemi R, Smith A. *Aten Primaria*. 2026 Jul;58(7):103480.

OBJECTIVE: Chronotype is a personal characteristic affecting an individual's adaptability to shift work. The present study aimed to investigate the relationship between chronotype, shift work-related health disorders and sleep quality in shift workers in the petrochemical industry in southern Iran. DESIGN:

This was a cross-sectional study. SITE: The study was conducted in a petrochemical complex located in southern Iran. PARTICIPANTS: 250 male shift workers with at least five years of shift work experience, no major physical or mental health issues, and no use of alcohol, drugs, or sleep medications. INTERVENTIONS: No interventions were applied, as this was an observational cross-sectional study. MAIN MEASUREMENTS: Data were collected using the Shift Work Impact on Health and Social Disorders (SOS) Questionnaire, the Pittsburgh Sleep Quality Index (PSQI), the Morningness-Eveningness Questionnaire (MEQ), and the Cognitive Failure Questionnaire. RESULTS: The prevalence of musculoskeletal, gastrointestinal, and cardiovascular disorders was significantly higher in morning types than evening types ($p<0.05$). Cognitive failures and sleep quality also differed significantly between the two groups ($p<0.05$). CONCLUSIONS: Evening-type individuals showed higher adaptability to shift work and lower vulnerability to negative consequences. Circadian typology should be considered when assigning workers to shifts, especially for sensitive jobs.

Lien vers l'article

Circadian rhythm sleep disorders and changes in cognitive function and sleepiness among healthcare workers.

Maghsoudipour M, Moradi R, Moghimi S, Ancoli-Israel S, Vahidi MT, Malhotra A. *Sleep Breath*. 2026 Jun 16;30(4).

BACKGROUND: Circadian rhythm sleep disorders (CRSDs) are common among healthcare workers (HCWs) and may impair alertness and cognitive performance during night shifts. This study examined CRSDs associations with cognitive function and sleepiness during overnight duty. METHODS: Seventy-six hospital employees (80.3% female; mean age 31.8 ± 7.5 years) participated in this cross-sectional study. Based on clinical evaluation, participants were classified as normal circadian rhythm, delayed sleep phase syndrome (DSPS), and shift work sleep disorder (SWSD). Sleepiness was measured using Karolinska Sleepiness Scale (KSS) and Epworth Sleepiness Scale (ESS). Cognitive and psychomotor performance were assessed at the start and end of an 8-hour night shift using reaction time, minor lapses, memory span, and digit span tests. Statistical analyses included ANOVA, paired t-tests, Wilcoxon, and Kruskal-Wallis tests. RESULTS: The prevalence of DSPS and SWSD was 13.2% and 15.7%. Total sleep duration did not differ significantly between CRSDs ($P > 0.05$). Reaction times and minor lapses increased significantly after the night shift ($P < 0.05$). Memory span, forward and reverse digit recall, and total correct responses all declined post-shift ($P < 0.01$). KSS scores increased significantly ($P = 0.001$). Reaction times and minor lapses differed significantly between CRSD subgroups, with SWSD participants demonstrating the greatest decline in performance. CONCLUSIONS: HCWs with SWSD, exhibited greater cognitive deterioration and sleepiness during night shifts compared with normal circadian rhythms, whereas individuals with DSPS show relatively preserved performance. These findings highlight the importance of early recognition and occupational strategies to mitigate cognitive fatigue and associated risks in shift-working HCWs.

Lien vers l'article

Unhealthy sleep patterns and irregular night shift work are associated with increased risk of allergic rhinitis: a large prospective cohort study.

Lyu W, Wen Y, Chen L, Huang Z, Chen C, Liao J, et al. *BMC Public Health*. 2026 Mar 3;26(1).

BACKGROUND: The influence of circadian disruption from night shift work and poor sleep on allergic rhinitis (AR) risk remains inadequately characterized. The objective of this study was to advance the understanding of how circadian disruption influence AR risk, thereby providing new insights into the prevention and management of AR. METHODS: This prospective cohort study analyzed data from the UK Biobank, comprising 256,945 participants for shift work analysis and 374,672 for sleep pattern assessment. Shift work and sleep behaviors were self-reported at baseline. AR incidents were

identified through linked hospital records. Multivariable Cox proportional hazards models were employed to estimate hazard ratios (HRs) and 95% confidence intervals (CIs). Mediation analysis was conducted to assess the potential role of metabolic biomarkers. RESULTS: Irregular night shift work was associated with an increased risk of AR (HR = 1.21, 95% CI: 1.01–1.45), whereas permanent night shifts showed no clear association. Each categorical decrease in sleep pattern quality corresponded to a 16% increase in AR risk (HR = 1.16, 95% CI: 1.08–1.25). Specific unhealthy sleep behaviors—including evening chronotype, short sleep duration (≤ 6 h), insomnia, and snoring—were also associated with higher AR risk. Small HDL particle concentration partially mediated the association between sleep patterns and AR, accounting for 1.59% of the effect (95% CI: 0.12–5.28). CONCLUSION: Both irregular night shift work and poor sleep patterns are associated with an increased risk of AR, with small HDL particles acting as a partial mediator. These findings underscore the importance of maintaining circadian rhythm stability and improved sleep hygiene in the prevention and management of AR.

Lien vers l'article

A Chrono-Metabolic Approach to Mental Health: Current Perspectives on Circadian Rhythms, Gut Microbiota, and Microbial Metabolites in Mood Disorders.

Marano G, Acanfora M, Conci L, Traversi G, Mazza O, Capristo E, et al. *Metabolites*. 2026 Jun 9;16(6).

Growing evidence indicates that the gut microbiota is not a static ecosystem but a rhythmic metabolic organ whose oscillatory activity is tightly coordinated with host circadian biology. Disruption of this temporal alignment, through irregular diet, sleep disturbance, shift work, or social jet lag, may profoundly alter microbial composition and the production of neuroactive metabolites. These alterations have emerged as potential contributors to the pathophysiology of mood disorders. This review introduces the concept of chrono-metabolic psychiatry, a framework integrating circadian rhythms, gut microbiota dynamics, and host metabolic signaling in the development and course of depressive and bipolar disorders. In this framework, the term "chrono-metabolic" refers to the integration of biological timing, host metabolic regulation, and microbiota-derived metabolic signaling. Chrono-metabolic psychiatry therefore shifts the focus from static dysbiosis or neurotransmitter imbalance alone to the time-dependent interactions among circadian misalignment, microbial rhythmicity, immune regulation, metabolite production, and affective instability. Diurnal fluctuations in short-chain fatty acids, tryptophan-kynurenine metabolites, bile acids, and microbial-derived neurotransmitters interact with clock gene regulation, hypothalamic-pituitary-adrenal axis activity, neuroinflammation, and synaptic plasticity. Chrono-disruption may represent a transdiagnostic vulnerability factor and may confirm the bidirectional relationship between mood instability and microbiota rhythmicity. Emerging therapeutic implications, including chrono-nutrition, time-restricted feeding, targeted probiotic administration ("chronobiotics"), and the microbiota-modulating effects of psychotropic medications are discussed. By shifting from a compositional to a temporal-metabolic perspective, this model highlights the importance of microbial oscillations rather than static dysbiosis alone. Integrating circadian biology into microbiota research may enable metabolomic stratification and pave the way for precision psychiatry approaches grounded in host-microbe metabolic crosstalk. Future longitudinal and time-resolved multi-omics studies are needed to validate this framework and to translate it into clinically actionable interventions.

Lien vers l'article

Clocking immunity: circadian modulation of NK cells and emerging timing perspectives.

Liu K, Lv X, Wen W. *Front Immunol*. 2026;17:1739723.

Natural killer (NK) cells show day-night variation in both number and effector function. We compile findings from human cohorts, animal models, and cell studies on how circadian timing shapes NK biology. Evidence spans daily changes in counts and readouts such as degranulation and IFN-γ; links to

core clock modules (PER1/2, NFIL3/E4BP4, STRA13); and neuroendocrine inputs (sympathetic tone, glucocorticoids, melatonin). Acute sleep loss can transiently raise NK activity, whereas multi-day sleep deprivation or circadian misalignment lowers counts or function. Shift work studies and laboratory night-shift simulations show reductions in NK activity and phase-sensitive changes in transcriptional programs (e.g., AP-1/STAT), with effects amplified by irregular schedules and accumulated fatigue. Across cancer, depression, vitiligo, and infection, alterations are heterogeneous, often presenting as peak shifts or amplitude flattening rather than loss of rhythmicity. Photoperiod, season, age, and sex can modify these patterns. Current data support a circadian influence on NK biology, but the direction and magnitude of reported effects vary across species, sampling schedules, circadian phase definitions, tissue compartments, and NK-cell readouts. This heterogeneity underscores the need for longitudinal, high-frequency sampling with complementary continuous monitoring to define phase, amplitude, and stability across physiological and clinical contexts.

Lien vers l'article

Diurnal Variation and Impairment of Postprandial Glucose-Insulin Responses and Lipid Rhythms in Simulated Shift Work.

Khan Sullivan AM, Isherwood CM, Hassanin H, Skene DJ, van der Veen DR. *Nutr Bull*. 2026 Jun 21.

Shift work is associated with insulin resistance, dyslipidaemia and metabolic syndrome, but how consecutive meals at the same clock times differentially shape postprandial metabolism in day- and night-shifts remains unclear. This study used a unique simulated shift work intervention with four consecutive meals and high-resolution sampling to examine interactions of endogenous rhythms and behavioural timing on postprandial metabolism. Nine healthy non-shift-worker participants (age 21-33 years, 3 females) completed a strictly-controlled laboratory protocol with a day-shift followed by two night-shifts of 10-h delayed sleep and mealtimes. Participants consumed four identical, isoenergetic, mixed-composition meals per shift. Three of four mealtimes (08:00, 18:00, 22:00) were fixed across conditions; the first and last meals were 1 h after waking and before bedtime. Plasma glucose, insulin, triglycerides, HDL-cholesterol and total cholesterol were measured hourly, with continuous interstitial glucose monitoring. Subjective hunger and appetite were assessed throughout. Plasma lipid rhythms shifted with the 10-h delay in sleep-wake times: acrophases delayed ~10-13 h and amplitudes lowered 46%-54% (all $p < 0.01$). Night-shifts elevated postprandial glucose (+165 mmol/L·min, 95% CI 1.05-34.31, $p = 0.05$) and insulin (+7678.7 mmol/L·min, 95% CI 3671.02-11686.38, $p < 0.01$). Time-of-day effects persisted irrespective of shift, with 18:00 meals producing the highest glycaemic responses (+261 mmol/L·min, 95% CI 124.37-398.01, $p < 0.01$). Insulin dynamics did not fully compensate for elevated glycaemia in night-shifts, indicating lower glucose tolerance and insulin sensitivity. Mistimed meals suggest a mechanism by which circadian disruption may increase metabolic disease risk.

Lien vers l'article

Casino schedules reduce inflammatory biomarkers and improve sleep in emergency medicine physicians during shift work.

Kendrick E, Morales ED, Nathan P, Stilley J, Eubanks J, Helming D, et al. *Am J Emerg Med*. 2026 Sep;107:65-70.

BACKGROUND: Shift work is essential to hospital operations but disrupts circadian rhythms and is associated with increased metabolic, cardiovascular, and sleep health risks. Medications, naps, etc. may reduce symptoms but do not solve the underlying problem of an unstable sleep schedule. Anchor sleep, where an individual maintains a core daily sleep period, is recommended to reduce circadian misalignment but is difficult to maintain. Casino schedules, which use a 4:00 a.m. turnover, provide a practical way to preserve anchor sleep, particularly during dark hours. Reports suggest casino

schedules benefit wellness and cognition in healthcare workers, but other potential benefits have not yet been evaluated. METHODS: We completed a pilot study to assess inflammatory biomarkers and sleep in 12 emergency medicine physicians over a 6-month period. Each participant was studied under three conditions: baseline (96 h without overnight shifts), traditional overnight shifts, and casino shifts. We measured white blood cell and platelet counts, erythrocyte sedimentation rates, hemoglobin, and hematocrit. We also measured minutes of deep sleep using Fitbits and post-shift sleepiness using surveys. RESULTS: Traditional overnight shifts were associated with higher inflammatory markers and worse sleep outcomes, while casino shifts showed improvement. White blood cell and platelet counts increased during traditional overnight shifts and returned to baseline during casino shifts. Hemoglobin and hematocrit were unchanged. Deep sleep was better-preserved and participants reported less sleepiness during casino shifts. CONCLUSION: Casino shifts may improve sleep and inflammatory markers. These preliminary findings support larger, long-term studies on implementing casino shifts in healthcare.

Lien vers l'article

Mitochondrial Dysfunction Unravels the Potential Molecular Link Between Night Shift Work-Related Circadian Disruption and Elevated Blood Pressure in Human and Mouse Models.

Jiang Z, Dou Y, Lei Y, Liu S, Zhou J, Li J, et al. *Adv Sci (Weinh)*. 2026 Jun 19:e20318.

This study demonstrates that circadian rhythm disruption induced by night-shift work is associated with elevated blood pressure in both murine models and human subjects. By integrating rodent and human epidemiological data, we identify mitochondrial dysfunction as the principal mechanistic contributor to this relationship. In mice, data were obtained at 4 and 10 weeks, with sampling performed at both ZT0 and ZT12. Simulated night shift work elevates blood pressure, induces circadian gene dysregulation (e.g., PER1, BMAL1), and precipitates mitochondrial dysfunction and oxidative stress. These findings are corroborated in human night shift workers, where exposure duration is quantitatively associated with increased systolic and diastolic blood pressure and concomitant dysregulation of circadian and mitochondrial markers. Furthermore, the expression levels of these markers correlate with both night shift work exposure and blood pressure. Collectively, the results establish mitochondrial dysfunction as a critical pathway linking circadian disruption to an elevated blood-pressure phenotype, offering new insights into the cardiovascular consequences of shift work.

Lien vers l'article

Circadian clock regulation of hemostasis: a systematic review of molecular pathways.

Ibrahim Z, Murphy RP, Guillaume GC, Arya R, Goswami N. *Res Pract Thromb Haemost*. 2026 May;10(4):106642.

Thrombotic events such as myocardial infarction and stroke exhibit circadian variation with early-morning peaks, implicating intrinsic biological regulation, yet the molecular mechanisms coordinating hemostatic function remain unclear. This systematic review synthesizes evidence linking circadian rhythms and clock genes to hemostatic regulation and highlights the underlying molecular pathways. A comprehensive literature search of PubMed, Scopus, and Web of Science was conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Human and animal studies evaluating circadian rhythm, circadian clock genes, or clock-modulating interventions in relation to platelet function, coagulation, fibrinolysis, or thrombosis were included. Of the 1048 articles screened at the level of title and abstract independently by 2 authors, 26 studies met the inclusion criteria and were categorized into 4 major thematic domains of circadian hemostatic regulation as follows: (1) circadian orchestration of hemostasis across populations and experimental models; (2) genetic and pharmacologic modulation of circadian clock components; (3) circadian gene expression in platelets and megakaryocytes; and (4) environmental and lifestyle influences on

circadian hemostatic coordination. Collectively, the evidence demonstrates that circadian clocks function as active regulators of thrombotic homeostasis. Core clock components, particularly BMAL1 and CLOCK, orchestrate rhythmic expression of coagulation factors and platelet activation pathways, while CRY, PER, and REV-ERBα critically govern fibrinolytic balance through time-of-day-dependent regulation of plasminogen activator inhibitor 1. Circadian disruptions, such as shift work, altered light exposure, dietary patterns, and pharmacologic timing, disrupt these rhythms and promote a persistent prothrombotic state. Circadian clock genes critically regulate platelet activity, coagulation, and fibrinolysis, positioning circadian biology as a translational target for chronotherapy and timing-based strategies to reduce thrombotic and cardiovascular risk.

Lien vers l'article

Body-weight-specific and shared metabolomic responses to acute sleep loss in young adults.

Good L, Brandão LEM, van Egmond LT, Khoonsari PE, Erngren I, Carlsson H, et al. *J Transl Med*. 2026 Jun 3;24(1).

INTRODUCTION: Insufficient sleep increases the risk of weight gain and metabolic dysfunction, while obesity is linked to disrupted sleep and metabolic impairment. Although both conditions are tightly interconnected, it remains unclear whether body weight status determines how acute sleep loss alters metabolite levels. We aimed to assess whether acute sleep loss elicits different metabolic responses in individuals with and without obesity, and whether these responses are modified by sex. METHODS: In a within-subject, randomized crossover study, 42 adults (mean age 24.9 years; 18 women, 24 men; 18 with obesity; 24 with normal weight) completed one night of total sleep deprivation (TSD) and one night of normal sleep (NS; 8 h). Morning fasted blood samples were analyzed using targeted metabolomics. Mixed-effects models were used to assess within-individual changes from NS to TSD, and to determine the magnitude and direction of these changes within each body weight group and sex. RESULTS: In response to TSD compared with NS, tryptophan levels increased (+12%, FDR < 0.05) only in participants with obesity, while histidine, L-kynurenine, and creatinine levels decreased (4-21%, FDR < 0.05) only in normal-weight individuals. Notably, the kynurenine-to-tryptophan ratio decreased after TSD in both groups, and levels of circulating medium-chain acylcarnitines (+26-39%) increased within both weight groups - together indicating shared metabolic responses to acute sleep deprivation. Exploratory sensitivity analyses indicated that several of these responses were sex-specific. Polysomnography-based sleep architecture during NS, available in a subset of 36 participants, was largely comparable between body weight groups, suggesting that observed metabolic differences were not attributable to baseline differences in sleep structure. CONCLUSIONS: Acute sleep loss elicits both shared and body-weight-specific changes in circulating metabolites in young adults. These findings indicate that body-weight status shapes which metabolic pathways respond to a single night of sleep loss, and in what direction, but larger studies are required to confirm the body weight- and sex-specific findings. Given that acute sleep loss is a common metabolic stressor that increases cardiometabolic risk, these differences may contribute to mechanistic hypotheses about the heightened vulnerability to metabolic dysregulation in individuals with obesity who are frequently exposed to sleep loss.

Lien vers l'article

Associations of weekly working hours with biological aging and all-cause and cardiovascular mortality: the role of lifestyle.

Föhr T, Kankaanpää A, Heikkinen A, Hukkanen M, Hublin C, Kaprio J, et al. *J Occup Med Toxicol*. 2026 Jun 30.

BACKGROUND: This explorative study investigated the associations between working hours, biological aging, and all-cause and cardiovascular disease (CVD) mortality, and assessed the potential mediating

role of lifestyle factors. METHODS: We utilized data from the Older Finnish Twin Cohort, which comprised 9246 participants who had reported their weekly working hours in 1990. Biological aging was assessed using blood-based epigenetic aging measures in a subsample (n = 740). We used a counterfactual mediation approach. Lifestyle-related factors, including leisure-time physical activity (LTPA), alcohol consumption, body mass index (BMI), smoking, and sleep, were considered potential mediators. Between-within twin models were used to evaluate the extent to which shared familial factors confounded the observed associations. RESULTS: During the mean 28-year follow-up period, 20.5% of the participants died. Long hours were directly associated with decreased risk of all-cause mortality, but only at the between-pair level; there were no associations with biological aging. However, long hours were indirectly associated with an increased risk of all-cause and CVD mortality through a higher BMI and smoking, and with an increased risk of CVD mortality through lower LTPA levels. Long hours were also indirectly associated with accelerated biological aging through smoking. Part-time work was indirectly associated with a lower risk of all-cause and CVD mortality through a lower BMI. CONCLUSIONS: The findings of this explorative study suggest that direct associations between long working hours, biological aging, and mortality are shaped by lifestyle-mediated pathways and shared familial factors.

Lien vers l'article

When owls struggle at work: chronotype, burnout, and work ability in shift and non-shift employees.

Baka Ł, Kapica Ł, Warszawski S, Najmiec A, Bugajska J. *BMC Psychol*. 2026 Mar 14;14(1).

Evening chronotype has been linked to poorer occupational functioning, yet the mechanisms through which circadian preference relates to work ability remain insufficiently understood. This study examined whether job burnout functions as a psychological pathway connecting chronotype to work ability and whether this mechanism operates similarly in day workers and employees working shifts including night work. A cross-sectional Computer-Assisted Web Interviewing (CAWI) survey was conducted among 1,293 employed adults in Poland. Confirmatory factor analyses (CFA) and multi-group CFAs confirmed the factorial validity and full measurement invariance of all measures across both groups. Mediation models controlling for age and gender revealed a consistent mediation pattern in day and shift workers, with no significant between-group differences in path coefficients or indirect effects. Specifically, morningness was associated with lower burnout and higher work ability, burnout was strongly and negatively related to work ability, and the indirect effect of chronotype on work ability via burnout was significant, indicating partial mediation alongside a remaining direct effect. These findings demonstrate a general psychological mechanism linking chronotype to work ability that operates independently of formal shift work. The structural equivalence across groups suggests that chronotype-related vulnerability is not limited to shift work but may emerge under any rigid work schedule misaligned with individual circadian preferences. Chronotype-sensitive work arrangements and burnout-prevention strategies may therefore support sustainable work ability, particularly among employees with evening chronotypes.

Lien vers l'article

Shift work migraine disorder: evidence, mechanisms, and implications for diagnosis, prevention, and management.

Azhar Z, Sadia Z, Yousaf M, Ekouo J, Abbas N, Akram L. *J Headache Pain*. 2026 Mar 30;27(1).

INTRODUCTION/BACKGROUND: Migraine is the leading neurological disorder and the second leading cause of years of life lived with disability (YLDs), affecting roughly 14–15% of the global population. The recognized importance of circadian rhythm disruption, sleep disorders, and occupational stressors as migraine triggers provides justification for studying shift work in connection to migraine. Circadian rhythm disruption has been shown to increase the risk of migraine, with shift workers experiencing a

higher prevalence as compared to non-shift workers. The goal of this review is to support viewing “Shift Work Migraine Disorder” as a possible distinct chrono-neurological subtype of migraine. RESULTS: Epidemiological studies consistently show that night and rotating shift workers have higher migraine prevalence compared with non-shift workers, with meta-analytic estimates indicating more than a 60% increased risk, OR = 1.61, and a 63% increased incidence of migraine, HR = 1.63. Dose-response relationship indicates that a higher number or longer duration of night shifts is associated with a greater risk of developing migraine. Circadian misalignment, reduced melatonin secretion, and sleep disturbances, including insomnia and shift work disorder, are strongly implicated in migraine pathophysiology among shift workers. Neuroimaging, hormonal and genetic evidence implicate common pathways in the hypothalamus, brainstem and suprachiasmatic nucleus (SCN). Clinically, migraine attacks in shift workers are characterized by timing and frequency patterns related to night and rotating schedules, with higher comorbidity of insomnia, anxiety, and metabolic disruption. Diagnosis is limited by the absence, within present classification systems, of criteria describing circadian misalignment and irregular shift patterns. CONCLUSION: Shift work, especially rotating and night shifts, greatly heightens migraine risk and burden; emerging evidence supports the concept of Shift Work Migraine Disorder as a distinct subtype. More longitudinal, neurobiological, and diagnostic validation studies are needed to establish causality and optimize preventive and management strategies.

Lien vers l'article

Inflammation-associated brain functional network topological disruption in female nurses with SWSD: associations with symptoms and transcriptomics.

Gu SY, Wang SF, Wang S, Yang HC, Liu JP, Ji YN, et al. *Front Immunol*. 2026;17:1724276.

INTRODUCTION: Shift work sleep disorder (SWSD) is prevalent among female nurses and is associated with significant health morbidities. While inflammation is implicated in SWSD, how it relates to brain network alterations and clinical symptoms remains underexplored. This study aimed to investigate the associations among peripheral inflammation, brain functional network topological disruptions, clinical symptoms, and transcriptomic signatures in female nurses with SWSD. METHODS: Fifty female nurses with SWSD and 50 healthy daytime-working controls (HCs) comparable in age and education underwent clinical assessments, quantification of peripheral inflammatory markers, and resting-state functional magnetic resonance imaging (rs-fMRI). Graph theory was applied to rs-fMRI data to assess brain network topology. Mediation analyses were used to evaluate the pathways linking inflammation, network topology, and symptoms. Imaging transcriptomics, leveraging the Allen Human Brain Atlas, was used to identify gene expression patterns correlated with network alterations. Machine learning models were employed to assess the utility of these multimodal features in classifying SWSD. RESULTS: Compared with HCs, nurses with SWSD exhibited immune dysregulation (elevated levels of interferon α (IFN-α), IFN-γ, interleukin 4 (IL-4), IL-5, IL-17A, and particularly IL-6). Graph analysis revealed altered global network topology (reduced global efficiency and small-worldness, increased local efficiency, clustering coefficient, and characteristic path length) alongside significant nodal changes, notably increased local efficiency and clustering coefficient in the left medial superior frontal gyrus (SFGmed.L). These topological alterations were significantly correlated with the severity of clinical symptoms. Mediation analyses indicated that global small-worldness mediated the relationship between IL-6 levels and poor sleep quality, whereas the local efficiency of SFGmed.L mediated the associations between IFN-γ levels and anxiety and cognitive performance. The support vector classifier model accurately differentiated nurses with SWSD from HCs (accuracy: 90%). Imaging transcriptomics identified spatial gene-expression patterns associated with altered nodal topology, particularly involving genes related to cytokine signaling and cellular regulation. DISCUSSION: Our findings suggest that systemic inflammation is associated with characteristic brain functional network disruptions in female nurses with SWSD, and that these disruptions are associated with clinical symptoms. These inflammation-related neurobiological alterations, together with spatially associated transcriptomic

signatures, provide novel insights into SWSD pathophysiology and may help identify potential biomarkers and therapeutic targets.

Lien vers l'article

Conduites addictives

Combined associations of tea consumption and smoking with accelerated biological aging among oilfield workers.

Yang B, Liu H, Yu X, Yang L, Li Q, Tang J, et al. *Front Nutr*. 2026;13:1762577.

OBJECTIVES: This study aimed to examine the individual and combined associations of tea consumption and cigarette smoking with accelerated biological aging among oilfield workers. METHODS: Logistic regression was used to assess the associations of tea consumption and cigarette smoking with accelerated biological aging, defined using the PhenoAge algorithm, with results reported as odds ratios (ORs) and 95% confidence intervals (CIs). Interaction and stratified analyses by shift work status were performed to evaluate additive, multiplicative, and context-specific effects. Sensitivity analyses were conducted to assess the robustness of the observed associations. RESULTS: High-level tea consumption was associated with increased odds of accelerated aging (OR = 1.35, 95% CI: 1.06-1.72), whereas low-level or binary tea intake showed no significant effect. Cigarette smoking was strongly linked to accelerated aging (OR = 1.81, 95% CI: 1.42-2.31). In combined analyses, smokers with low or high tea intake had greater odds compared with non-smokers who did not drink tea (low-level: OR = 2.12, 95% CI: 1.49-3.01; high-level: OR = 2.29, 95% CI: 1.64-3.21), while tea alone among non-smokers was not significant. Stratified analyses by shift work indicated stronger combined effects among non-shift workers. Interaction analyses showed a modest additive interaction (RERI = 0.11, AP = 0.09, S = 2.33) and evidence of multiplicative interaction (P = 0.025). CONCLUSIONS: As the first study to investigate the joint effects of tea consumption and cigarette smoking on accelerated biological aging, our analysis revealed that tea consumption may amplify the aging-related risk associated with smoking. These findings highlight the importance of integrated nutritional and behavioral strategies to mitigate accelerated biological aging in occupational populations.

Lien vers l'article

Night shift work exposure shapes neurobehavioral and cardiometabolic profiles in female healthcare workers: a cross-sectional study.

Vivarelli S, Formica T, Fiorino FS, Pollicino M, Savasta S, Oliveri C, et al. *Front Public Health*. 2026;14:1860519.

BACKGROUND: Night shift work has been associated with adverse neurobehavioral and cardiometabolic outcomes, but the role of cumulative and long-term exposure, particularly among female healthcare workers, remains incompletely characterized. This study adopted a multidimensional approach to examine associations between night shift exposure and integrated health profiles. METHODS: This cross-sectional study included 243 female healthcare workers (96 day-shift, 147 night-shift). Night shift exposure was assessed using multiple metrics: status, cumulative lifetime shifts (<500 vs. ≥ 500), and duration (1-10 vs. 11-35 years). Sociodemographic, reproductive, lifestyle, and occupational data were collected. Neurobehavioral outcomes were evaluated using validated questionnaires (sleep quality, psychological well-being, work ability), while cardiometabolic assessment included BMI, WHtR, insulin resistance indices (METS-IR, TyG, WyG), and cardiovascular risk index (IRCV). Analyses comprised stratification, correlation, and multivariable regression adjusted for age, smoking, and menopausal status. RESULTS: Higher cumulative exposure was associated with lower physical activity (p = 0.012), poorer sleep (p = 0.019), reduced work ability (p = 0.023), and early insulin resistance (p = 0.043). Long-term exposure was linked to poorer psychological well-being (p = 0.009), higher adiposity (p = 0.034; p = 0.028), and increased IRCV (p = 0.006). In adjusted models, sleep quality was consistently associated with all exposure metrics, while metabolic outcomes were more strongly linked to duration of exposure and individual factors. Correlation analyses revealed clustering of sleep, neurobehavioral, and cardiometabolic variables, with strength of the associations increasing with exposure level. CONCLUSION: Night shift work, particularly with cumulative and long-

term exposure, is associated with sleep disruption, reduced well-being, and early cardiometabolic alterations in female healthcare workers. Sleep impairment emerges as a robust exposure-related marker, while metabolic risk reflects combined occupational and individual susceptibility. These findings support life-course exposure assessment and suggests the use of early subclinical indicators for implementation of precision prevention, as well as early intervention strategies. Future research may further benefit from a life-course exposome framework integrating environmental, occupational, and biological exposures.

Lien vers l'article

Working against the clock: the impact of shift patterns on cognitive function, mental health, and stimulant use among healthcare workers.

AlSamhori JF, Baniamer AZ, Batat H, Abu Sahyoun AM, Hamasha AM, Alsharqwi MZ, et al. *BMC Psychiatry*. 2026 Jun 13.

BACKGROUND: Shift work is common in healthcare and has been associated with negative physical, cognitive, and mental health consequences. It may also associate with greater dependency on stimulants as a way of overcoming fatigue and a lowered level of alertness. AIM: This study was to investigate an association between shift pattern, cognitive function, mental health (depression and anxiety), and stimulant use among healthcare workers. METHODS: A descriptive cross-sectional design was used. A convenience sampling of 445 healthcare workers was recruited from two university-affiliated and two private hospitals in Jordan. Data was obtained from a self-administered questionnaire of sociodemographic characteristics, clinical symptoms, cognitive function, stimulant use, and validated scales. RESULTS: A total of 445 healthcare workers were included (58.7% night shift, n = 261; 41.3% day shift, n = 184). Night shift workers reported significantly higher levels of fatigue (n = 200, 76.6%), headache (n = 164, 62.8%), and tremors (n = 114, 43.7%) and greater impairment in cognitive functions, especially memory (n = 173, 66.3%) and learning abilities (n = 156, 59.8%), than day shift workers ($p < 0.05$). Caffeine consumption and the use of stimulants were also considerably higher in the night shift workers. The mean depression score showed that the symptoms of depression were mild (M = 9.75, SD = 5.47) and the level of anxiety was moderate (M = 8.97, SD = 5.04). Stronger associations were found between depressive and anxiety symptoms and clinical symptoms and cognitive impairment among night shift workers. CONCLUSION: Night shift work was associated with more physical symptoms, cognitive impairment, and stimulant use and greater associations to depression and anxiety among healthcare workers. These results highlight the need for targeted interventions to ensure the safety of patients by attending to mental health, decreasing fatigue, and improving cognitive performance.

Lien vers l'article

Reproduction

Occupational Reproductive Health Risks Among Women Healthcare Workers: A Narrative Review for Clinical Surveillance, Preconception Counseling, and Prevention.

Kwon OH, Sim GJ, Choi SH. *J Clin Med*. 2026 Jun 15;15(12).

Background/Objectives: Despite well-documented chemical and physical hazards in healthcare settings, existing reviews of occupational reproductive risks have largely focused on single-agent risk estimation and have rarely translated occupational hygiene evidence into clinical decision-making frameworks for reproductive counseling and surveillance. This narrative review synthesizes evidence across multiple occupational exposure categories-antineoplastic agents, high-level disinfectants (HLDs), sterilants, and work-organization factors-and proposes an integrated, clinically operational framework for preconception counseling, pregnancy-sensitive risk stratification, exposure-control verification, and reproductive health surveillance among women healthcare workers. Methods: A structured narrative literature search was conducted across PubMed/MEDLINE, Scopus, Web of Science, and Embase from database inception through January 2025 and updated in March 2026. The review was guided by a Population-Exposure-Comparison-Outcome (PECO) framework and structured using Search-Appraisal-Synthesis-Analysis (SALSA) principles and the Scale for the Assessment of Narrative Review Articles (SANRA). Evidence quality was summarized using a modified hierarchy-of-evidence classification provided as a reader aid. This narrative review employed structured transparency tools but does not claim the methodological status of a systematic review. Quantitative meta-analytic pooling was not performed owing to substantial heterogeneity across study designs, exposure assessment methods, and outcome definitions; findings were synthesized narratively by exposure category. Results: The strongest and most consistent evidence was identified for occupational exposure to antineoplastic agents, which has been associated with spontaneous abortion, stillbirth, congenital abnormalities, impaired fecundability, and selected cancer-related concerns. HLDs and sterilants represent exposure categories warranting precautionary attention, with some evidence suggesting possible adverse effects on fecundability and early pregnancy maintenance; however, findings are considerably more heterogeneous, context-dependent, and reliant on self-reported exposure assessment than those for antineoplastic agents. Broader workplace factors, including shift work, prolonged working hours, physical workload, and mixed exposures, may further contribute to reproductive risk. The synthesis supports task-specific occupational history taking, exposure-control verification, and pregnancy-sensitive risk stratification. Conclusions: This review provides a multi-exposure, clinically operational framework that bridges occupational hygiene evidence with reproductive healthcare delivery, offering practical decision-support tools for clinicians managing women healthcare workers during preconception, pregnancy, and lactation. The framework includes structured occupational history-taking questions, a clinical decision pathway with evidence-tier classification, and a prevention matrix linking exposure sources to workplace controls and clinical actions. Integrating task-specific occupational history taking into routine reproductive care may improve detection of preventable workplace risks and support timely accommodation, while clinicians should calibrate recommendation strength to the underlying evidence quality for each exposure category.

Lien vers l'article

The Strategies to Improve Healthcare Provider - Focus on Nurses.

Huang RB, Su MH, Chiang HY, Wu MP. *Gynecol Minim Invasive Ther*. 2026 Apr-Jun;15(2):108-13.

Nursing requires significant physical and emotional effort, leading to high workplace stress. Most nurses are young, female, and of childbearing age, facing job-related stress and personal health challenges. This review explores three common health issues among female nurses: menstrual disorders, early pregnancy loss, and mental illness, which contribute to absenteeism and reduced job

performance. Nurses experience higher rates of menstrual irregularity, dysmenorrhea, and pregnancy loss than nonmedical workers, along with increased anxiety and depression but lower healthcare-seeking due to stigma. Risk factors include night shifts, long hours, and insomnia. Nurses also prefer minimally invasive treatments for benign uterine conditions due to greater medical knowledge. To enhance nurses' well-being, we suggest strategies promoting diversity, equity, and inclusion to improve their work environment and overall health.

Lien vers l'article

Shift Work as a Potential Risk Factor for Lower Ovarian Reserve: A Study of Fertility Patients.

Banjoko A, Harris N, Mousavi S, Wang S, Huszti E, Ferraro ZM, et al. *J Clin Med*. 2026 Jun 19;15(12).

Background/Objectives: Shift work is a form of circadian dysregulation, which has been associated with adverse reproductive health outcomes. However, the association between circadian dysregulation and ovarian reserve remains uncertain. The present study examines whether shift work is associated with lower AMH levels in women seeking fertility treatment. Methods: This retrospective cohort study includes female patients aged 20-39 years presenting between February 2023 and June 2024. Patients were excluded if they had only one ovary, a current cancer diagnosis, or past chemotherapy use. Demographic and medical data were obtained from the electronic medical record. AMH levels were compared between daytime workers and shift workers. Results: A total of 1135 patients met inclusion criteria. The median age was 35 years (IQR 32-37). Of these, 89% (n = 1014) reported daytime work, and 11% (n = 121) reported shift work, comprising 102 working rotating shifts, seven working night shifts, and 12 working evening shifts. Daytime-only workers had a median AMH of 17.20 pmol/L (9.1-30.0). Combined shift workers had a median AMH of 17.10 pmol/L (8.1-31.0). There was no statistically significant difference in AMH levels between daytime workers and shift workers (p = 0.935). Although not significant, the odds of having low AMH levels (<7 pmol/L) were 25% higher among shift workers compared to daytime workers (OR 1.246, p = 0.345). Conclusions: In this cohort, AMH levels did not significantly differ between daytime and shift workers, offering reassurance to individuals required to engage in shift work. Future research should include larger cohorts and incorporate more comprehensive measures of circadian disruption.

Lien vers l'article

Polyexposition

Nutrition and Human Performance in Military Aviation: A Narrative Review.

Weinstein JL, Cappadona S, Bukhari AS, Herrick M, Hu CG, Matherly AK, et al. *Mil Med*. 2026 Jun 20.

INTRODUCTION: Military aviation imposes physiological and cognitive demands that make nutrition relevant to flight safety, mission performance, aeromedical readiness, and Force Health Protection. Aircrew operate under stressors including hypoxia, high +Gz exposure, thermal strain, circadian disruption, restricted cockpit access to food and fluids, and sustained cognitive burden. This narrative review synthesizes evidence on hydration, macronutrients and nutrient timing, caffeine, dietary supplements, and diet quality as they relate to human performance and aeromedical readiness in military aviation. MATERIALS AND METHODS: We conducted a narrative review of nutrition and human performance in military aviation, using iterative searches of PubMed and Google Scholar supplemented by reference-list review, the Defense Technical Information Center, and relevant Department of War guidance. English-language peer-reviewed studies and authoritative government, military, technical, or policy documents published from 1965 through August 1, 2025 were considered. Evidence was prioritized hierarchically: military aircrew studies, civilian aircrew studies, and extrapolated evidence from related human-performance literature. Findings were weighted qualitatively by directness to aviation operations, realism of operational stressors, and methodological transparency. RESULTS: Hydration was among the clearest military aviation-specific nutrition concerns identified in the reviewed evidence. Aircrew may begin flights dehydrated, with deficits compounded in-flight by cockpit microclimate, thermal load, flight gear, limited fluid access, and deliberate fluid restriction for bladder management. Dehydration and urinary retention are associated with impaired vigilance, flight-simulator performance, visuospatial processing, and selected cognitive outcomes; foundational centrifuge studies show that 1%-3% dehydration-induced body-mass loss can reduce +Gz tolerance, particularly with heat. This vulnerability is most relevant to high-performance tactical aviation, whereas mobility, rotary-wing, bomber, and remotely piloted aircraft communities may be more affected by hydration-associated vigilance, thermal strain, fueling access, circadian disruption, and mission endurance. Aviation nutrition studies support carbohydrate-centered, gastrointestinal-tolerant pre-mission fueling, while surveys identify missed meals, low carbohydrate and fiber intake, micronutrient inadequacies, and diet-quality gaps. Meal-timing evidence, mostly from civilian aviation and shift-work cohorts, suggests irregular eating may contribute to circadian and metabolic strain, but causality remains uncertain. Caffeine is supported as a fatigue countermeasure when dosing and timing are planned to protect sleep. Dietary supplements provide limited aviation-specific performance benefit and introduce aeromedical uncertainty. Sex-specific evidence remains limited but identifies female aircrew bladder-management constraints and equipment-fit considerations in +Gz tolerance. Cardiometabolic risk factors remain relevant to medical qualification and career longevity. CONCLUSIONS: Nutrition is a modifiable operational and aeromedical variable in military aviation. Practical priorities include hydration planning, bladder-management solutions, carbohydrate-centered pre-mission fueling, disciplined caffeine use within fatigue-risk management, conservative supplement oversight, and cardiometabolic-risk surveillance. Evidence gaps remain, particularly sex-specific military aircrew data and intervention studies across aviation communities.

Lien vers l'article

Pathologies cardiovasculaires

The association between shift work, occupational physical activity and cardiovascular-kidney-metabolic syndrome: a cohort study in China.

Zhang X, Wang W, Lu H, Huang C, Jin Y, Xiang M, et al. *Front Public Health*. 2026;14:1831468.

BACKGROUND: The relationship between shift work, occupational physical activity (OPA), and CKM syndrome remains unclear. The present study aimed to investigate the independent and joint associations of these two factors with CKM syndrome. METHODS: This study conducted a baseline survey in 2013 and a follow-up in 2023, with a total of 690 workers finally enrolled. CKM syndrome was diagnosed according to the American Heart Association (AHA) criteria. Participants were classified into fixed day shifts and shift work, and OPA into light/moderate and heavy/very heavy groups. Poisson regression was adopted to explore the associations of shift work and OPA with CKM syndrome, as well as their joint effects. RESULT: Compared with fixed day shifts, shift work was associated with CKM syndrome (RR = 1.568, 95% CI: 1.328-1.852); two-shift (RR = 1.677, 95% CI: 1.391-2.022), three-shift (RR = 1.502, 95% CI: 1.223-1.844), four-shift (RR = 1.529, 95% CI: 1.235-1.892). The risk of CKM syndrome showed a dose-response relationship with cumulative night shift exposure. Workers with heavy or very heavy OPA had a higher risk of CKM syndrome (RR = 1.432, 95% CI: 1.239-1.654) than those with light or moderate OPA. CONCLUSION: Both shift work and heavy or very heavy OPA increase the risk of CKM syndrome. The risk rises with increasing cumulative night shift exposure. Workers with both shift work and heavy or very heavy OPA have the highest risk. Therefore, early screening for CKM syndrome should be strengthened among shift workers and those with heavy OPA.

Lien vers l'article

Heart rate variability and heart rate fragmentation among shift workers: The Multi-Ethnic Study of Atherosclerosis.

Sowrin MS, Espinosa A, Heckbert SR, Redline S, Hulsegge G, Harding BN. *Chronobiol Int*. 2026 Jun 24:1-9.

Night shift work is linked with cardiovascular disease (CVD), although underlying mechanisms remain unclear. Heart rate variability (HRV) is a well-established biomarker, but heart rate fragmentation (HRF) may offer additional insights. We conducted a study to compare heart rate metrics, including HRV and HRF, across different types of shift schedules, and to evaluate the influence of sleep duration. In this cross-sectional study, we included 845 participants (mean age 64; 51% women) from the Multi-Ethnic Study of Atherosclerosis Sleep study. Heart rate metrics were compared between the day shift (reference), night/rotating shift, and other shift workers using adjusted linear regression. HRV was measured from overnight bipolar (Electrocardiogram) ECG. HRV (log transformed) and HRF values were reported as % difference with 95% confidence intervals (CIs). Analyses were stratified by sleep duration (short <7 h, recommended 7-<9 h, and long ≥9 h), and tested for interaction. Night/rotating shift workers had higher HRF than day shift workers, particularly a greater percentage of normal-to-normal intervals in alternation segments (PAS) (% difference 11.9, 95% CI 1.8, 22.0). We found differences based on sleep duration for PAS. The difference was most pronounced in workers with short sleep (% difference 20.4, 95% CI 3.0 to 37.9), somewhat smaller in those with recommended sleep (% difference 14.2, 95% CI -1.0 to 29.5), and reversed in long sleepers (% difference -10.8, 95% CI -32.4 to 10.8; interaction p = 0.06) Interaction terms were assessed at $p < 0.10$. HRV metrics showed minimal differences and no consistent patterns across shift groups. Night shift work is related to higher HRF, and sleep duration influences these findings, which may reflect circadian misalignment and autonomic dysregulation.

Lien vers l'article

Impact of night shift work on vascular function in healthy adult workers.

Murata H, Hirasawa A, Sakurai A, Takano D, Saito S, Fukuie M, et al. *J Hypertens*. 2026 Aug 1;44(8):1345-53.

BACKGROUND: Night shift work (NSW) is associated with increased cardiovascular risk, but its impact on vascular function and the role of lifestyle factors in healthy individuals remain unclear. We aimed to compare vascular function between NSW and day workers (DW) and to examine associations with objectively measured lifestyle behaviors. METHODS: In this cross-sectional study, 40 healthy adults (20 DW, 20 NSW) underwent assessments of flow-mediated dilation (FMD), brachial-ankle pulse wave velocity (baPWV), and ankle-brachial index (ABI). Physical activity and sleep status were objectively measured using triaxial accelerometry for 7 consecutive days. Group comparisons and correlation analyses were conducted to evaluate the effects of NSW and its association with lifestyle factors. RESULTS: FMD was significantly lower in the NSW group than in the DW group (4.0% vs. 7.0%, $P < 0.01$), while baPWV and ABI showed no between-group differences. In the overall cohort, FMD was positively correlated with time in bed, total sleep time, and sleep efficiency, and negatively correlated with nocturnal awakening. Subgroup analysis revealed that FMD was associated with sleep quality in DW and with physical activity patterns in NSW. CONCLUSIONS: Chronic night shift work is associated with impaired endothelial function in healthy adults, potentially driven by disrupted sleep and reduced physical activity. Early assessment using FMD and targeted behavioral interventions may help preserve vascular health among shift workers. LAY SUMMARY: This study shows that healthy adults who regularly work night shifts have poorer blood vessel function than people who only work daytime hours, and that sleep and physical activity patterns may help explain this difference.

Lien vers l'article

Association between cardiorespiratory fitness levels and cardiometabolic risk factors among metropolitan police officers: a cross-sectional study.

Muluvhu TC, Hashona TS, Toriola AL, Paul Y, Monyeki MA. *BMC Public Health*. 2026 Feb 6;26(1).

BACKGROUND: Police officers are at increased risk of cardiovascular disease due to shift work, high occupational stress, and prolonged sedentary patrol duties, which can negatively affect cardiorespiratory fitness (CRF). This risk is particularly important in Gauteng Province, South Africa, where CVD prevalence is high, and metropolitan police face unique urban and occupational challenges. Despite the physically demanding perception of law enforcement, CRF levels among metropolitan police officers (MPOs) remain underexplored. This study hypothesised that lower CRF would be associated with a higher prevalence of cardiometabolic risk factors in MPOs from Gauteng Province. METHODS: This cross-sectional quantitative study included 187 purposively selected metropolitan police officers (116 males, 71 females; mean age 39.3 ± 8.2 years) from a municipality in Gauteng Province, South Africa, representing all police ranks. Participants completed informed consent and the Physical Activity Readiness Questionnaire (PAR-Q), with individuals having movement-limiting conditions, recent illness, pregnancy, or ≤ 2 months postpartum excluded. Ethical approval and municipal gatekeeper permission were obtained prior to data collection. Biochemical markers (total cholesterol, triglycerides, low- and high-density lipoprotein cholesterol, and fasting glucose), anthropometric measures (BMI and waist circumference), and blood pressure were assessed. Cardiorespiratory fitness was evaluated using a modified Harvard Step Test. Descriptive statistics were calculated using SPSS version 27.0 to summarize participant characteristics, while correlation analyses assessed associations between cardiorespiratory fitness and cardiometabolic risk factors, with statistical significance set at $p \leq 0.05$. RESULTS: Significant sex differences were observed among 187 metropolitan police officers (62% males), with females showing higher BMI, obesity prevalence, waist circumference risk, and lower cardiorespiratory fitness (CRF), while males exhibited higher systolic blood pressure, lower HDL-C prevalence, and higher fitness scores (all $p \leq 0.05$). Overall, CRF was

significantly inversely associated with BMI, waist circumference, diastolic blood pressure, and triglycerides, with a borderline positive association with HDL-C. Sex-specific analyses showed inverse associations between CRF and BMI, and between CRF and waist circumference in both sexes, with additional significant associations for diastolic blood pressure in females and for triglycerides and HDL-C in males. CONCLUSION: Significant sex differences in cardiometabolic risk and cardiorespiratory fitness (CRF) were observed among metropolitan police officers, with higher CRF associated with more favourable cardiometabolic profiles. These findings highlight the need for sex-specific, structured fitness policies and routine fitness screening to mitigate cardiometabolic risk and support occupational readiness in police officers.

Lien vers l'article

Occupational and Environment-Related Cardiovascular Disease: A Comprehensive Review of the Literature.

Manolis AS, Manolis AA, Manolis TA, Vouliotis A. *Curr Vasc Pharmacol*. 2026 Jun 16.

Work is a social determinant of Cardiovascular (CV) and general health and can both influence and be influenced by health. The type of work, working conditions, and work environment are fundamental social determinants of CV and general health status. Climate change presents an urgent and increasing threat to workers' health, via both direct exposure to environmental risks and the indirect worsening of social and health inequalities. Occupational health, which focuses on the promotion of mental and physical health and well-being of workers, and the avoidance of occupationrelated health risks, is a crucial but less discussed concern and component of human health. Relevant research at the intersection of climate change and occupational health remains scarce. Additionally, mitigation of climate change and adaptation efforts are driving forces for rapid transformations in the workplace, including shifts towards sustainability and circular economy models. These transitions are creating new occupational hazards, including those concerning renewable energy and the circular economy sectors. Investment in occupational health research and surveillance should be increased to address the evolving influences of both climate change and the green transition, to enhance and protect workers' CV and general health. Among the work-related factors that play an important role in patients with CVD, the following seem crucial: work participation, physical and mental work capability, appropriate work, support from and flexibility of the work environment, inter-personal communication, person-centered milieu, and interdisciplinary communication. A moderate leisure-time physical activity combined with moderate occupational physical activity may be a more plausible way to combine these two activities to sustain and/or improve CV health. Such an approach may be able to ameliorate workrelated outcomes in patients with CVD. Finally, lifestyle interventions targeting multiple behaviors are also most important to prevent CVD and attain cardiometabolic health. All these issues of occupational CVD are herein reviewed, and relevant meta-analyses are tabulated and discussed.

Lien vers l'article

Night-Shift Intensity, Duration, Cardiovascular Susceptibility and Incident Cardiovascular Disease: UK Biobank Study.

Lim Y. *Am J Med*. 2026 Jun 22.

OBJECTIVE: Night-shift work has been associated with adverse cardiovascular outcomes. It remains unclear whether the cardiovascular association of night-shift exposure differs according to underlying baseline cardiovascular susceptibility and whether short-term intensity and longer-term duration show similar patterns. METHODS: We analyzed 85,322 UK Biobank participants with occupational night-shift information. Baseline cardiovascular disease risk profile was classified as low, intermediate, or high using a composite score based on cardiovascular disease polygenic risk score tertiles, current smoking, obesity, low moderate-to-vigorous physical activity, and insomnia. Night-shift exposure was evaluated

in two ways: monthly intensity and yearly duration, each categorized as none, low, or high. Incident cardiovascular disease was identified from inpatient records. Cox proportional hazards models were evaluated for the associations. RESULTS: Of 85,322 participants, 24,696 were classified as low cardiovascular disease risk, 49,332 as intermediate risk, and 11,294 as high risk. Across all strata, workers without night-shift exposure generally had the lowest incidence of cardiovascular disease . In the low-risk group, high monthly intensity and high yearly duration were each associated with similar increased risk and having more pronounced in high-risk group. For monthly intensity, the aHR were 1.35 (95% CI 1.19-1.52) and 1.22 (95% CI 1.08-1.37) for low- and high-intensity groups, respectively, whereas for yearly duration the corresponding aHR were 1.21 (95% CI 1.06-1.37) and 1.34 (95% CI 1.19-1.51). CONCLUSIONS: Among workers with occupational night-shift information, the association between night-shift exposure and incident cardiovascular disease was strongest in those with greater baseline cardiovascular susceptibility. Compared with monthly intensity, yearly duration showed a more consistent exposure-response pattern.

Lien vers l'article

Risk Factors for Job Stress Among Older Korean Security Workers With Hypertension: A Multilevel Analysis.

Lee Y, Chae D, Kim SH, Byun SY. *Workplace Health Saf*. 2026 Jul;74(7):374-84.

BACKGROUND: In South Korea, apartment security jobs are commonly held by older men. The high prevalence of chronic conditions in this population, combined with the job's long hours and shift work, may increase risks of job stress and cardiovascular disease. This study aimed to identify individual and work environment factors that influence job stress among middle-aged and older security workers with hypertension. METHODS: A cross-sectional study used self-reported questionnaires to collect data from 146 security workers with hypertension at 45 apartment complexes in South Korea. The data were analyzed through descriptive analysis and multilevel modeling. FINDINGS: Higher educational attainment, lower sleep satisfaction, and lower social support were significantly ($p < .05$) associated with increased job stress, as were a lack of dedicated break areas and a higher number of households per worker. CONCLUSIONS: This study identified significant individual and workplace factors influencing job stress among older Korean security workers with hypertension. Education level, sleep satisfaction, and social support were key personal factors. The number of assigned households per security worker and the availability of break areas were critical workplace factors. These findings highlight the need for targeted interventions that address both personal and workplace conditions to manage job stress effectively. APPLICATION TO PRACTICE: Age-sensitive policies are essential to reducing job stress. Providing rest areas, adjusting workloads, and fostering a supportive work culture can alleviate environmental stressors. Tailoring roles based on education and physical ability and providing health education on sleep hygiene and effective break use may reduce fatigue and stress.

Lien vers l'article

The Hidden Toll of On-Call Shifts: Reduced Heart Rate Variability and Increased Physiological Stress in Residents.

Kılıç Ş, Asal S, Yılmaz Atinkaya A, Babaoğlu M, Yavuz S, Çiçek V, et al. *Turk Kardiyol Dern Ars*. 2026 Jun 5;54(4):316-22.

OBJECTIVE: The aim of this study was to assess autonomic dysfunction via heart rate variability (HRV) in residents with on-call shifts. METHOD: A cross-sectional study of 140 residents (104 on-call, 36 non-on-call) was conducted. HRV parameters, stress indices, and physical activity (International Physical Activity Questionnaire, IPAQ) were compared using parametric and non-parametric tests. RESULTS: On-call residents showed elevated heart rates (84 vs. 79 bpm, P = 0.006), higher stress indices (12.1 vs. 9.96, P = 0.003), and reduced parasympathetic markers (root mean square of successive differences

[RMSSD], standard deviation of normal-to-normal intervals [SDNN], parasympathetic nervous system index [PNS index]; all P ≤ 0.006). Physical activity did not differ between groups. CONCLUSION: An association between on-call shifts and altered autonomic balance was observed, suggesting a potential increase in cardiovascular risk independent of lifestyle factors. These findings may be considered by policymakers when planning resident physician workloads.

Lien vers l'article

Behind hypertension in white-coat heroes: a cross-sectional study exploring the link between burnout, occupational factors with hypertension in Kinshasa's healthcare workers, Democratic Republic of Congo.

Khonde R, Tricas-Sauras S, Labat A, Kianu B, Mafuta E, Kiyombo G, et al. *BMC Public Health*. 2026 Apr 2;26(1).

BACKGROUND: Hypertension remains a leading cause of cardiovascular diseases worldwide. Unfavorable working conditions may lead to detrimental effects on employees' health and work well-being. Healthcare workers are often exposed to sustained high stress levels due to the demands of their occupation, making them more susceptible to burnout. Despite their commitment to caring for others, their health can also be compromised. This study aimed to investigate the prevalence of hypertension and its associated factors among healthcare workers in Kinshasa, focusing on occupational factors. METHODS: A cross-sectional study was conducted through a structured questionnaire based on the modified WHO STEPwise and Maslach Burnout Inventory - Human Services Survey for Medical Personnel among healthcare workers selected via multistage stratified random sampling in Kinshasa's hospitals from December 2023 to January 2024. Weight, height, blood pressure, and fasting blood sugar were measured. The prevalence of hypertension was determined. All associated variables with hypertension were included in a multivariable logistic regression analysis at the 5% significance level. RESULTS: Of 566 healthcare workers enrolled in the study, 55.0% were female and 45.0% were male, with a mean age of 39.0 ± 10.4 years. The prevalence of hypertension was 23.3% (95% CI: 19.9–27.0), with 57.6% (95% CI: 48.7–66.1) of hypertensive participants unaware of their diagnosis at the time of data collection. In the multivariable analysis, the socio-demographic and lifestyle factors associated with hypertension were age ≥ 40 years (aOR = 3.48, 95% CI: 2.02–5.98), physical inactivity (aOR = 1.69, 95% CI: 1.02–2.80), being overweight (aOR = 1.79, 95% CI: 1.05–3.06), and being obese (aOR = 3.80, 95% CI: 2.06–7.01). Regarding occupational factors, seniority ≥ 10 years (aOR = 3.41, 95% CI: 1.94-6.00), night shift work (aOR = 5.00, 95% CI: 2.85–8.78), and burnout syndrome (aOR = 2.02, 95% CI: 1.23–3.31) were associated with hypertension. CONCLUSION: Beyond lifestyle, occupational conditions contribute to hypertension among HCWs. Addressing hypertension requires tackling both lifestyle behaviors and modifiable work-related factors. Integrating healthy practices such as regular physical activity, balanced nutrition, and routine blood pressure monitoring with structured shift schedules, stress management programs, and supportive workplace environments can protect cardiovascular health, prevent burnout, and strengthen HCWs' efficiency and patient care quality.

Lien vers l'article

Mitochondrial Dysfunction Unravels the Potential Molecular Link Between Night Shift Work-Related Circadian Disruption and Elevated Blood Pressure in Human and Mouse Models.

Jiang Z, Dou Y, Lei Y, Liu S, Zhou J, Li J, et al. *Adv Sci (Weinh)*. 2026 Jun 19:e20318.

This study demonstrates that circadian rhythm disruption induced by night-shift work is associated with elevated blood pressure in both murine models and human subjects. By integrating rodent and human epidemiological data, we identify mitochondrial dysfunction as the principal mechanistic contributor to this relationship. In mice, data were obtained at 4 and 10 weeks, with sampling

performed at both ZT0 and ZT12. Simulated night shift work elevates blood pressure, induces circadian gene dysregulation (e.g., PER1, BMAL1), and precipitates mitochondrial dysfunction and oxidative stress. These findings are corroborated in human night shift workers, where exposure duration is quantitatively associated with increased systolic and diastolic blood pressure and concomitant dysregulation of circadian and mitochondrial markers. Furthermore, the expression levels of these markers correlate with both night shift work exposure and blood pressure. Collectively, the results establish mitochondrial dysfunction as a critical pathway linking circadian disruption to an elevated blood-pressure phenotype, offering new insights into the cardiovascular consequences of shift work.

Lien vers l'article

Distinct mental fatigue mechanisms under prolonged work and night shifts Implications for safety management in a real-world oil drilling site.

Hao S, Xin Q, Xiandeng H, Jian W, Hongbin C, Xiaoqin W, et al. *J Occup Environ Med*. 2026 Jun 9.

OBJECTIVE: This study aimed to investigate how shift work and prolonged working hours affect mental fatigue under real-world working conditions, focusing on oil and gas drilling operations. METHODS: Physiological data from drillers, collected via wearable sensors, were analyzed. EEG features and heart rate data were integrated, and a semi-supervised machine learning model was developed to classify mental fatigue. RESULTS: The study revealed distinct heart rate changes under prolonged work and night-shift conditions, reflecting parasympathetic regulation and circadian disruption. EEG analysis showed significant alterations in the α band and increased functional connectivity in the left frontal lobe. The machine learning model achieved a 93.46% classification accuracy. CONCLUSIONS: Night-shift work induces different fatigue characteristics from day shifts, necessitating tailored safety management strategies. The fatigue recognition method offers a proactive approach for early intervention in complex operational environments.

Lien vers l'article

Cardiovascular Risk and Modifiable Risk Factors in Shift-Working Healthcare Workers: A Gender-Stratified Cross-Sectional Study.

d'Ettorre G, Giannelli G, Branda F, Loiacono G, Calcagnile G, Centonze AA, et al. *J Clin Med*. 2026 May 22;15(11).

Background: Shift-working healthcare workers (HCWs) are at elevated cardiovascular (CV) risk due to chronic circadian disruption; however, gender-stratified data on CV risk profiles and modifiable risk factor distribution by occupational exposure duration remain scarce in the Italian hospital setting. This cross-sectional study aimed to characterise the 10-year CV risk profile and the distribution of modifiable risk factors in a hospital-based sample of shift-working HCWs. Methods: A retrospective cross-sectional study was conducted using data from routine occupational health surveillance of shift-working HCWs at a large Italian hospital in Salento, Southern Italy (survey year: 2025). The 10-year CV risk was estimated using the CUORE Project algorithm, validated for the Italian population. Risk was stratified by gender, age group, and shift work duration. Multivariable logistic regression models, adjusted for age, marital status, and presence of children at home, evaluated associations between selected risk factors and CV risk category. The study was reported in accordance with STROBE guidelines. Results: Of 765 HCWs included (320 males, 445 females; mean age 49.3 ± 8.5 years), male workers showed a significantly higher mean 10-year CV risk score (4.98 ± 2.8 vs. 1.34 ± 0.9; $p < 0.05$). Among male workers, the odds of moderate/high CV risk increased progressively with shift work duration (aOR 6.4 for >30 years). Males also showed significantly higher prevalence of arterial hypertension, overweight, and obesity across all strata. Conclusions: Male shift-working HCWs represent a higher-risk subgroup, characterised by a greater burden of modifiable cardiovascular risk

factors. Integration of validated risk assessment tools into occupational health surveillance may support targeted preventive strategies in hospital settings.

Lien vers l'article

Associations of weekly working hours with biological aging and all-cause and cardiovascular mortality: the role of lifestyle.

Föhr T, Kankaanpää A, Heikkinen A, Hukkanen M, Hublin C, Kaprio J, et al. *J Occup Med Toxicol*. 2026 Jun 30.

BACKGROUND: This explorative study investigated the associations between working hours, biological aging, and all-cause and cardiovascular disease (CVD) mortality, and assessed the potential mediating role of lifestyle factors. METHODS: We utilized data from the Older Finnish Twin Cohort, which comprised 9246 participants who had reported their weekly working hours in 1990. Biological aging was assessed using blood-based epigenetic aging measures in a subsample (n = 740). We used a counterfactual mediation approach. Lifestyle-related factors, including leisure-time physical activity (LTPA), alcohol consumption, body mass index (BMI), smoking, and sleep, were considered potential mediators. Between-within twin models were used to evaluate the extent to which shared familial factors confounded the observed associations. RESULTS: During the mean 28-year follow-up period, 20.5% of the participants died. Long hours were directly associated with decreased risk of all-cause mortality, but only at the between-pair level; there were no associations with biological aging. However, long hours were indirectly associated with an increased risk of all-cause and CVD mortality through a higher BMI and smoking, and with an increased risk of CVD mortality through lower LTPA levels. Long hours were also indirectly associated with accelerated biological aging through smoking. Part-time work was indirectly associated with a lower risk of all-cause and CVD mortality through a lower BMI. CONCLUSIONS: The findings of this explorative study suggest that direct associations between long working hours, biological aging, and mortality are shaped by lifestyle-mediated pathways and shared familial factors.

Lien vers l'article

Association between long working hours and all-cause and cardiovascular disease mortality: a cohort study of Korean wage workers.

Baek SU, Yoon JH. *Ind Health*. 2026 Jun 12.

Long working hours are public health concern globally. However, their association with all-cause and cardiovascular disease (CVD) mortality remains underexplored. This cohort study investigated the relationship between long working hours and all-cause and CVD mortality. A nationwide sample of 22,582 Korean workers (10,266 men, 12,316 women) was analyzed. Weekly working hours were measured at baseline. The outcomes were the all-cause and CVD deaths. Cox regression models were used to determine the relation between working hours and mortality outcomes using a sex-stratified analysis, calculating hazard ratios (HRs) and 95% confidence intervals (CIs). During a median follow-up of 9.6 years, 670 all-cause deaths and 129 CVD deaths occurred. In the male workers, the HRs (95% CIs) for the association of working ≥55 h/week with mortality outcomes were 1.52 (1.06-2.17) for all-cause mortality and 2.59 (1.02-6.56) for CVD mortality, compared with working 35-40 h/week. In the female workers, the HRs (95% CIs) for the association of working ≥55 h/week with mortality outcomes were 0.74 (0.41-1.33) for all-cause mortality and 1.11 (0.31-6.92) for CVD mortality, compared with working 35-40 h/week. In conclusion, this study suggests that long working hours are linked to all-cause and CVD mortality among male workers.

Lien vers l'article

Association between occupational stress responses and cardiovascular disease incidence in middle-aged Japanese: findings from the Aichi workers' cohort study.

Song Z, Takada M, Hong YJ, Endale BT, Nishio N, Horikoshi M, et al. *Int Arch Occup Environ Health*. 2025 Dec 24;99(1):3.

OBJECTIVES: This study aimed to investigate the association between occupational stress responses indicated by fatigue and nonspecific physical complaints and the incidence of subsequent cardiovascular disease (CVD) in middle-aged Japanese workers. METHODS: A cohort of 4,820 Japanese workers (3876 men and 944 women) aged 35–65 years was followed up from 2007 to March 2022 for CVD incidence. Fatigue and nonspecific physical complaints were evaluated using the 57-item Brief Job Stress Questionnaire, and each was categorized into two groups based on the presence or absence. Hazard ratios (HRs) and the corresponding 95% confidence intervals (CIs) for stress responses to CVD were estimated using a multivariable Cox proportional hazard model adjusted for age, sex, smoking status, alcohol consumption, regular exercise, sleep duration, working hours, body mass index, systolic blood pressure, total cholesterol, and histories of hypertension, hyperlipidemia, and diabetes, night shift and job type. RESULTS: During the median follow-up of 13.7 years, 116 patients with CVD were identified. The presence of fatigue was independently associated with CVD incidence (HR: 2.28, 95% CI: 1.05–4.94). Similarly, the presence of nonspecific physical complaints was significantly associated with CVD incidence (HR: 2.54, 95% CI: 1.43–4.52). The sex-stratified analysis showed consistent results in men but not in women. CONCLUSIONS: These findings suggest that fatigue and nonspecific physical complaints may serve as early indicators of CVD risk among middle-aged Japanese male workers. Incorporating routine assessment of these stress responses into workplace health screening could facilitate targeted prevention strategies.

Lien vers l'article