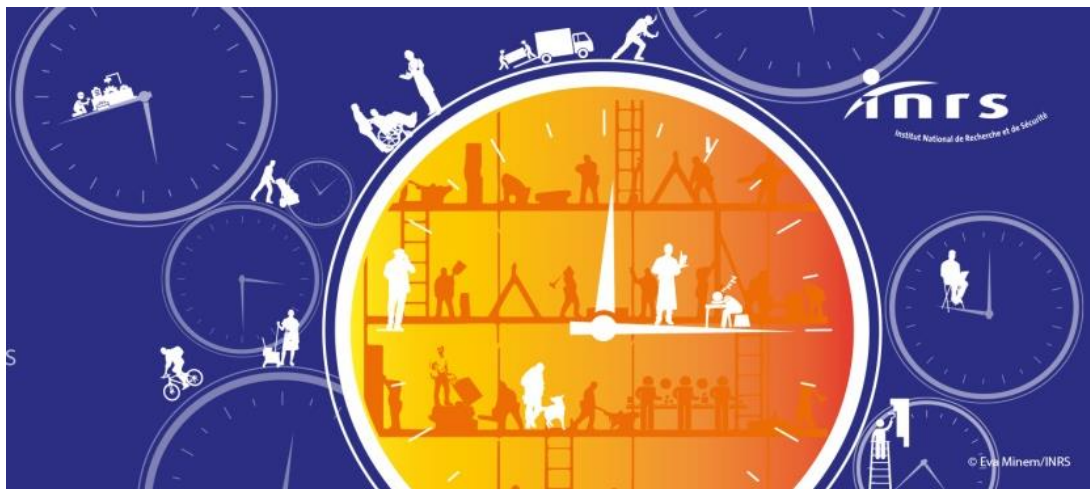# LES HORAIRES ATYPIQUES

Bulletin de veille scientifique : Février 2025

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).

Horaires atypiques (HA)

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

The association between working hours and working type with non-alcoholic fatty liver disease: results from the NHANES 1999-2014.

Wang R, Wu N, Qu H, Zheng X, Zhang H, Zhu L, et al. *Front Endocrinol (Lausanne)*. 2024;15:1499735.

BACKGROUND: Previous research has indicated that long working hours are connected to a variety of health conditions, including nonalcoholic fatty liver disease (NAFLD). However, this association which has been observed in more population is limited. Our research is designed to evaluate the association between working hours, working type, and NAFLD. METHODS: The study comprised adults with complete details on working hours, working type, and NAFLD from the NHANES 1999-2014. We employed the hepatic steatosis index (HSI) to evaluate NAFLD and examined the relationship between working hours or working type and hepatic steatosis using weighted multiple-variable regression models and restricted cubic spline (RCS) analysis. In addition, further subgroup analysis was performed based on sex, age, ratio of family income to poverty (PIR), education, and diabetes. RESULTS: Long working hours were significantly linked to an elevated risk of NAFLD (OR: 1.57, 95%CI: 1.21-2.05), even after controlling for confounding factors. RCS analysis suggested that there was no nonlinear relationship between them. When weekly working hours > 50, the likelihood of NAFLD among the population heightened to 57% and this risk increased to 99% in the female population. As for working type, increasing physical intensity of work was associated with higher NAFLD risk, but only heavy manual labor continued to show significance after adjustment (OR:1.39, 95%CI: 1.06-1.81). We observed that the relationship between heavy manual labor and NAFLD was more significant in the older and male populations. CONCLUSION: Our results indicate that long working hours and engaging in heavy physical labor are independent risk factors for NAFLD. As working hours increase and individuals engage in heavy physical labor for extended periods, the risk of developing NAFLD significantly rises.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Gender and remote work: associations between mental health and hours of remote work and housework.

Silva-Costa A, Rotenberg L, Aquino EML, Cardoso LO, Patrão AL, Fonseca M, et al. *Cien Saude Colet*. 2025 Jan;30(1):e04892023.

To investigate the association between hours of remote work (RWHs) and housework (HWHs), independently, as well as the combined total of work hours (WHs), with gender and mental health of remote workers during the COVID-19 pandemic. Cross-sectional study with data from the ELSA-Brasil (N = 2,318). On average, women reported more time spent on HWHs and WHs than men, while no difference was found in RWHs. Depression, anxiety and stress were more prevalent among women. Women with longer working hours (RWHs, HWHs and WHs) had higher odds of displaying anxiety or stress symptoms than men with shorter working hours. For symptoms of depression, the highest odds ratios were found only among those women with medium or long HWHs and long WHs. A gender perspective into studies of remote work effects has contributed to the recognition of health inequalities between men and women.

Lien vers l'article

Santé psychique

Gender and remote work: associations between mental health and hours of remote work and housework.

Silva-Costa A, Rotenberg L, Aquino EML, Cardoso LO, Patrão AL, Fonseca M, et al. *Cien Saude Colet*. 2025 Jan;30(1):e04892023.

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Lien vers l'article

Long working hours and depression: Gender and age effect?

Descatha A, Sembajwe G, Fadel M. *Maturitas*. 2025 Feb;193:108194.

In 2021, the World Health Organization (WHO) and the International Labor Organization (ILO) officially declared: "With working long hours now known to be responsible for about one-third of the total estimated work-related burden of disease, it is established as the risk factor with the largest occupational disease burden." However, these data were extrapolated only for cardiovascular pathologies (myocardial infarction and stroke), because the data on alcohol consumption and depressive states were not sufficiently homogeneous for definitive levels of proof.

Lien vers l'article

Gender differences in the association between long working hours and the onset of depressive symptoms in middle-aged and older workers in Korea: A population-based longitudinal study (2006-2022).

Baek SU, Lee YM, Won JU, Yoon JH. *Maturitas*. 2025 Feb;193:108175.

BACKGROUND: Korean society is projected to undergo a rapid aging of its workforce. We explored gender differences in the association between working hours and the onset of depressive symptoms among middle-aged and older workers. STUDY DESIGN: This study included workers aged ≥45 years from a nationwide panel study with biennial follow-ups (n = 4941, observations = 18,531). Weekly working hours were self-reported. We employed generalized estimating equations with log link function to explore the association between working hours and the onset of depressive symptoms at the two-year follow-up. MAIN OUTCOME MEASURES: The 10-item version of the Center for Epidemiologic Studies Depression Scale. RESULTS: The incidence of onset of depressive symptoms was 10.7 % among those working 35-40 h/week and 13.0 % among those working ≥55 h/week. In the overall sample, those working ≥55 h/week had increased risk of the onset of depressive symptoms at the two-year follow-up (risk ratio: 1.12, 95 % confidence interval: 1.01-1.24). There was a positive interaction between being female and working ≥55 h/week in their effect on the risk of onset depressive symptom (P = 0.010). In the gender-stratified analysis, working ≥55 h/week was associated with an increased risk of the onset of depressive symptoms at the two-year follow-up among women (risk ratio: 1.29, 95 % confidence interval: 1.08-1.53); however, we observed no clear associations among men. CONCLUSION: Long working hours are positively associated with the of onset depressive symptoms in middle-aged and older workers, and this association is pronounced among women.

Lien vers l'article

Shift Work, Psychological Health Disorders, and Job Security Among Nurses: A Cross-Sectional Study.

Alghamdi R, Bahari G. *Healthcare (Basel)*. 2025 Jan 22;13(3).

BACKGROUND/OBJECTIVES: Shift work is prevalent among nurses, often leading to adverse psychological effects, such as fatigue, depression, anxiety, and stress. Understanding how shift work contributes to psychological health disorders can help healthcare organizations identify critical areas where support should be offered. This study aimed to determine the relationships between shift work, psychological health disorders, and job security among nurses in Saudi Arabia. METHODS: This cross-sectional study included 163 nurses, recruited via convenience sampling. The participants completed an online questionnaire that assessed demographic variables, psychological disorders, fatigue, and job security. The data were analyzed using descriptive statistics as well as bivariate analyses to explore relationships between variables. RESULTS: Most participants (73%) worked 12 h shifts, and 67.5% reported fair sleep quality. We found significant correlations among shift work, fatigue, and common psychological disorders. Significant differences were also observed for fatigue (p = 0.007) and depression (p = 0.008). Both nationality (p < 0.001) and shift work (p = 0.015) were correlated with anxiety. Similarly, significant differences were found for nationality (p = 0.001) and shift work (p = 0.002) regarding stress. CONCLUSIONS: These findings underscore the psychological challenges faced by nurses related to shift work, emphasizing the importance of addressing fatigue and mental health. Healthcare organizations should implement strategies to enhance job security and support nurses' well-being to ultimately improve both nurse satisfaction and patient care outcomes. Further research is warranted to explore effective interventions and the long-term effects of shiftwork on nursing professionals.

Lien vers l'article

Troubles cognitifs et de la vigilance

Better sleep hygiene is associated with better sleep health in mining shift workers in Australia.

Australia's mine sites are largely situated in remote locations and operate around the clock. Many shift workers fly to site, where they work 12-hr shifts and sleep in camp accommodation before they return home for the period rostered off work. Mining shift workers experience poor sleep, yet limited research is available on contributing factors. This study investigated, for the first time, the relationship between the sleep health and sleep hygiene in this population. A survey was disseminated to shift workers in the mining industry, utilising a cross-sectional study design. The Sleep Health Index and Sleep Hygiene Index questionnaires were used to evaluate their sleep health and sleep hygiene, respectively. In total, 470 shift workers (mean age [years]: 39 ± 12, mean body mass index [kg m(-2)]: 28 ± 5) were included, which involved 132 females. Average scores for the Sleep Health Index and Sleep Hygiene Index were 76 ± 15 and 30 ± 7, respectively. Better sleep health was observed in shift workers with better sleep hygiene ($\beta = -0.52$, SE $= 0.09$ [-0.71, -0.34], $p < 0.001$). Differences in Sleep Health Index scores were found for individual Sleep Hygiene Index items related to "sleep regularity", "sleep environment", "mental health" and "time in bed extension". However, no differences in Sleep Health Index scores were found for items related to "caffeine, alcohol or nicotine consumption" or "exercise" close to bedtime and "bedtime activities" ($p > 0.05$ for all). These findings demonstrate a relationship between sleep hygiene and sleep health; therefore, it may be possible to improve the sleep of shift workers by improving their sleep hygiene.

Lien vers l'article

Shift Work, Psychological Health Disorders, and Job Security Among Nurses: A Cross-Sectional Study.

BACKGROUND/OBJECTIVES: Shift work is prevalent among nurses, often leading to adverse psychological effects, such as fatigue, depression, anxiety, and stress. Understanding how shift work contributes to psychological health disorders can help healthcare organizations identify critical areas where support should be offered. This study aimed to determine the relationships between shift work, psychological health disorders, and job security among nurses in Saudi Arabia. METHODS: This cross-sectional study included 163 nurses, recruited via convenience sampling. The participants completed an online questionnaire that assessed demographic variables, psychological disorders, fatigue, and job security. The data were analyzed using descriptive statistics as well as bivariate analyses to explore relationships between variables. RESULTS: Most participants (73%) worked 12 h shifts, and 67.5% reported fair sleep quality. We found significant correlations among shift work, fatigue, and common psychological disorders. Significant differences were also observed for fatigue ($p = 0.007$) and depression ($p = 0.008$). Both nationality ($p < 0.001$) and shift work ($p = 0.015$) were correlated with anxiety. Similarly, significant differences were found for nationality ($p = 0.001$) and shift work ($p = 0.002$) regarding stress. CONCLUSIONS: These findings underscore the psychological challenges faced by nurses related to shift work, emphasizing the importance of addressing fatigue and mental health. Healthcare organizations should implement strategies to enhance job security and support nurses' well-being to ultimately improve both nurse satisfaction and patient care outcomes. Further research is warranted to explore effective interventions and the long-term effects of shiftwork on nursing professionals.

Lien vers l'article

Travail posté et de nuit
Généralités et prévention

Physical activity patterns, sleep quality, and stress levels among rotating-shift nurses during the COVID-19 pandemic.

Chiang SL, Tzeng WC, Chiang LC, Lee MS, Lin CH, Lin CH. *Int Nurs Rev*. 2025 Mar;72(1):e12997.

AIM: To examine the associations between physical activity patterns, sleep quality, and stress levels among rotating-shift nurses during the COVID-19 pandemic. BACKGROUND: Stress adversely impacts hospital nurses, particularly those on rotating shifts. The effects of physical activity patterns and sleep quality on the stress levels of these nurses during the COVID-19 pandemic warrant investigation. METHODS: A multicenter cross-sectional study was conducted with 550 eligible registered hospital nurses, randomly selected from four hospitals during the COVID-19 pandemic in Taiwan. The work schedule type of these nurses was categorized into rotating shifts (working at least two shifts in a month, involving day, evening, and night shifts) or fixed-day shifts (working only the day shift). Data were collected on sociodemographic characteristics, physical activity patterns (sedentary or active), sleep quality (poor or adequate), and stress levels for analysis. RESULTS: Rotating-shift nurses with active physical activity patterns exhibited lower stress levels compared with those with sedentary patterns. Nurses who experienced adequate sleep quality had lower stress levels compared with those with poor sleep quality among rotating and fixed-day shift nurses. CONCLUSIONS: Active physical activity patterns and adequate sleep quality were associated with lower stress levels among rotating-shift nurses during the pandemic. Promoting active physical activity and enhancing sleep quality are essential strategies for reducing stress in these nurses. IMPLICATIONS FOR NURSING AND HEALTH POLICY: Strategies aimed at promoting physical activity and improving sleep quality should be integral components of health promotion programs and policymaking efforts directed at nursing leaders, to foster a healthy and supportive work environment and enhance the welfare of rotating-shift hospital nurses. REPORTING METHOD: The study is reported using the statement of Strengthening the Reporting of Observational Studies in Epidemiology (STROBE).

Lien vers l'article

American Academy of Nursing Policy Recommendations to Reduce and Prevent Negative Health Outcomes and Health Care Costs Among Night Shift Nurses: An AAN Consensus Paper.

Baldwin CM, Tucker SJ, Imes CC, Reynaga-Ornelas L, Trinkoff AM, Weinstein SM, et al. *Nurs Outlook*. 2025 Jan-Feb;73(1):102344.

A growing body of evidence demonstrates occupational night shift hazards. Decades of research point to health risks for nurses contributing to chronic diseases, including diabetes, cardiovascular disease, cognitive/mental health, and cancers-all associated with earlier mortality. Patient safety, recruitment and retention of quality nursing workforce, and related costs are important concerns associated with night shift work. Post COVID-19, nurses have advocated and lobbied for many changes in their work environments, yet little emphasis has been placed on addressing night shift health and patient safety hazards, and concomitant personal, insurer, organizational, and federal costs. Nurses are also recipients of health care, and their work-related risks must be prioritized. Innovative solutions targeting individuals, work environments, novel schedules, virtual nursing, and artificial intelligence have been examined and must continue to be studied and implemented. Policy and legislation must be among the strategies for nurses, no different than other night shift workers (e.g., flight crews).

Lien vers l'article

Unveiling the challenges encountered by newly graduated nurses during night shifts: A descriptive qualitative study.

OBJECTIVES: Newly graduated nurses commence night shifts during a phase of heightened vulnerability to reality shock, exacerbating the challenges faced by these graduates. Therefore, this study aimed to identify the challenges experienced by newly graduated nurses when undertaking night shifts in order to help identify a strategy for supporting their adaptation to these shifts. METHODS: Semi-structured personal interviews were used to collect data. Fifteen newly graduated nurses were selected to participate in the study by purposive sampling method from November 2021 to March 2022 in one of four general hospitals situated in the southwestern region of Japan. Semi-structured interviews were analyzed by using thematic analysis. RESULTS: The analysis revealed five central themes and nine subthemes: challenges in task efficiency (task organization challenges, challenges in time-constrained task performance), challenges in responding to patients' changing conditions (challenges in responding to patients' irregular conditions, challenges in responding to nighttime changes in patients' behaviors), challenges in independent practice (challenges in engaging in independent nursing practice, challenges in dealing with unexpected events), challenges in establishing collaborative relationships (challenges in working closely with other staff, challenges in establishing collaborative relationships during night shifts with limited resources), challenges in adapting to shift work (challenges in managing physical conditions for shift work). CONCLUSIONS: Newly graduated nurses often encounter challenges in performing their tasks during the transition period. When working night shifts, they face additional hurdles unique to nocturnal duties. The findings underscore the necessity for these graduates to develop night shift-specific readiness to effectively navigate the demands inherent in such work schedules.

[Lien vers l'article](#)

Work conditions and determinants of health status among industrial shift workers: a cross-sectional study.

INTRODUCTION: This study investigated potential health status differences among forging, manufacturing, and logistics workers. METHODS: We included 403 participants (age: 41 ± 12 years) from a medium-sized steel company (forge: 64, manufacturing: 299, logistics: 99). Health status was multifactorial assessed: (1) Frequency of musculoskeletal complaints (German Pain Questionnaire). (2) Pain intensity, physical and psychological load [visual analog scales (VAS) 0-100 points]. (3) Occupational moderate-to-vigorous physical activity (MVPA), total MVPA, and sedentary behavior [Global Physical Activity Questionnaire (GPAQ)]. (4) Quality of life [Short Form Health Survey (SF-36)]. Between-group effects were analyzed via one-way ANOVAs with post-hoc Tukey correction. RESULTS: 308 workers (76.4%) reported at least one musculoskeletal issue. A significant between-group difference was revealed for left shoulder [$F_{(2,40)} = 5.40$; $p = 0.008$; $\omega(2) = 0.17$], occupational MVPA [$F_{(2,368)} = 9.49$; $p < 0.001$; $\omega(2) = 0.04$] and total MVPA [$F_{(2,368)} = 6.90$; $p = 0.001$; $\omega(2) = 0.03$]. Post-hoc tests revealed a difference ($p \leq 0.007$) between manufacturing (left shoulder: n = 22; 42.5 ± 24.8; occupational MVPA: n = 219; 6,978 ± 5,137 METs min/week; total MVPA: n = 219; 8,471 ± 5,390 METs min/week) and logistics workers (left shoulder: n = 14; 70.4 ± 26.3 au; occupational MVPA: n = 96; 9,640 ± 4,605 METs min/week; total MVPA: n = 96; 10,856 ± 4,680 METs min/week). No other between-group differences were observed. DISCUSSION: Variations in health disparities across work conditions were observed. Yet, clear distinctions between work conditions and health outcomes remain a challenge. Effective interventions should be focused on job-specific and personalized health

profiles rather than a stratification of work conditions to enhance health, productivity, and workforce sustainability.

Lien vers l'article

Activités physiques

Aucun article dans ce bulletin.

Autres pathologies

Dietary intake and risk assessment of nitrosamine in processed meat products among medical staff during their night shift.

Tayel DI, Farrag NK, Aborhyem SM. *Sci Rep*. 2025 Jan 14;15(1):1898.

The study aims to evaluate the levels of nitrosamine, a known carcinogenic compound, in processed meat products and to assess its dietary intake and margin of exposure among medical staff, including physicians, pharmacists, and nurses working night shifts at Alexandria University Hospitals. Additionally, the study seeks to evaluate the participants' knowledge of dietary sources and regulatory limits of carcinogens. A cross-sectional study was conducted with 420 participants. Results showed that hotdogs contained the highest nitrosamine levels (159.24 ± 87.99 µg/g) with a consumption pattern of 0.02126 µg/kg BW/day. In contrast, sausages and burgers had the lowest nitrosamine content (2.36 µg/g and 2.37 µg/g, respectively). Luncheon meat also exhibited low nitrosamine levels and consumption patterns, at 18.53 µg/g and 0.00141 µg/kg BW/day, respectively. The Margin of Exposure (MOE) was calculated to assess risk, with a Benchmark Dose Lower Confidence Limit (BMDL)10 value of 29 µg/kg BW/day as the reference point. MOE values $\geq 17,000$, derived for nitrosamine exposure in this study, indicate a low level of concern for carcinogenic risk. A statistically significant difference in dietary nitrosamine intake was observed across different professions among the medical staff ($p < 0.001$).

Lien vers l'article

The impact of time-restricted eating on health-related quality of life: a systematic literature review.

Sones BE, Devlin BL. *Nutr Rev*. 2025 Feb 1;83(2):230-48.

CONTEXT: Time-restricted eating (TRE) is a novel dietary intervention shown to facilitate weight loss and improve metabolic health. However, like any dietary intervention, long-term success largely depends on individual adherence, which can be influenced by whether the intervention impacts the individual's health-related quality of life (HR-QoL). Despite the growing body of research investigating TRE as a dietary approach and its potential impact on HR-QoL in adults, to date there has been no systematic review to summarize these findings. OBJECTIVE: To examine the impact of TRE on HR-QoL in adults. DATA SOURCES: All randomized controlled trials, pre-post and pilot/feasibility studies were searched in PubMed, EMBASE via Ovid, CINAHL, Cochrane Library, and PsycINFO via Ovid until March 20, 2023. DATA EXTRACTION: Two researchers were involved in the screening and paper selection process. A single researcher extracted all relevant data from eligible studies. CONCLUSION: Overall, 10 studies were eligible for inclusion in this systematic review. Four studies reported improvements in overall HR-QoL scores among participants with type 2 diabetes, middle-aged women with obesity, generally healthy adults, and generally healthy adult employees. Three studies reported significant and nonsignificant improvements in some domains of HR-QoL assessment tools among overweight, sedentary older adults, overweight or obese adults, and 24-hour shift workers. No studies reported

that TRE adversely affected HR-QoL. Improvements in HR-QoL appeared to occur primarily at 12 weeks/3 months. There was no clear relationship between HR-QoL scores and TRE protocol, additional study outcomes, participant health status, age, or adherence. Although further research is required to elucidate the impact of TRE on HR-QoL, the findings reveal that no studies show that TRE adversely affects HR-QoL. SYSTEMATIC REVIEW REGISTRATION: Open Science Framework (OSF) (The Impact of Time-Restricted Eating on Health-Related Quality of Life: A Systematic Review; https://doi.org/10.17605/OSF.IO/9NK45).

Lien vers l'article

Associations between work characteristics and osteoarthritis: A cross-sectional study of 285,947 UK Biobank participants.

Hashmi A, Scott S, Jung M, Meng QJ, Tobias JH, Beynon RA, et al. *Osteoarthr Cartil Open*. 2025 Mar;7(1):100565.

OBJECTIVES: Shift work-induced circadian rhythm disruption has been identified as a risk factor for specific diseases. Additionally, physically demanding work has been linked to osteoarthritis. This study investigated the independent associations of shift work and physical work with risk of osteoarthritis. DESIGN: UK Biobank participants completed questionnaires detailing their employment status, including shift work, night shifts, heavy manual work and prolonged non-sedentary work. Responses were categorised into binary and categorical variables. Knee and hip osteoarthritis diagnoses were extracted from hospital records and osteoarthritis (any site) was self-reported. Logistic regression models, adjusted for age, sex, BMI, Townsend Deprivation Index and other work factors, were used to investigate the relationships between work characteristics and osteoarthritis outcomes. RESULTS: This study included 285,947 participants (mean age 52.7 years; males 48.0 %). Shift work and night shifts were associated with knee osteoarthritis (fully adjusted OR: 1.12 [95 % CI:1.07-1.17] and 1.12 [1.04-1.20], respectively), and self-reported osteoarthritis but there was little evidence of an association with hip osteoarthritis (1.01 [0.95-1.08] and 1.03 [0.93-1.14]). Heavy manual work and prolonged non-sedentary work were associated with increased risk of all osteoarthritis outcomes. CONCLUSIONS: Shift work showed independent associations with knee osteoarthritis and self-reported osteoarthritis but not hip osteoarthritis, suggesting circadian rhythm dysfunction may play a role in knee osteoarthritis pathogenesis. Heavy manual work and prolonged non-sedentary work were associated with all outcomes, with stronger associations in knee osteoarthritis, possibly reflecting the knee's higher susceptibility to biomechanical stress. Further research is needed to explore workplace interventions for reducing these risks.

Lien vers l'article

Cancers

Genetic and epigenetic alterations in night shift nurses with breast cancer: a narrative review.

Li X, Hu Y, Aslanbeigi F. *Cancer Cell Int*. 2025 Jan 20;25(1):20.

This narrative review explores the link between breast cancer and night shift work in nurses, focusing on genetic and epigenetic factors. Breast cancer disproportionately affects women globally, and night shift work is increasingly recognized as a potential risk factor. Nurses who work consecutive overnight shifts face elevated risks due to disruptions in their circadian rhythms. Studies suggest that working six or more successive night shifts, particularly over five years or more, may increase breast cancer risk. This review hypothesizes that disruptions in the sleep-wake cycle, such as changes in melatonin production and telomere length, could contribute to breast cancer susceptibility. Currently, there is limited genetic evidence to support this hypothesis. However, it is plausible that genetic and epigenetic

alterations, including changes in genes like ER and HER2, may heighten the risk for night shift nurses. These alterations may involve variations in telomere length, DNA methylation, and disruptions in critical breast cancer-related genes. We highlight various genetic and epigenetic changes that may influence this increased susceptibility. Further research is needed to explore the underlying mechanisms and contributing factors in this association.

Lien vers l'article

Risque routier, accidentologie

Aucun article dans ce bulletin.

RPS et QVT

Airport security personnel's working hour characteristics and associations with sickness absence-a retrospective cohort study in 2016-2019.

Ropponen A, Hirvonen M, Sallinen M. *Ind Health*. 2025 Jan 24;63(1):84-92.

We aimed to investigate the associations of working hour characteristics based on the international and local definitions with sickness absence (SA) among airport security personnel. The payroll-based registry data of daily working hours for 2016-2019 at one airport was limited to those with ≥30 work shifts in a year (n=377-687 employees). The conditional Poisson model for incidence rate ratios (IRR) with 95% confidence intervals (CI) was used for analyses. Based on the international definitions, only a few associations were found: each one-unit increase in weekly working hours and the number of consecutive working days were associated with a lower likelihood of SA. The local definitions were more consistently associated with SA: Each one-unit increase in shift length and time between shifts, higher variation in shift length, and the number of consecutive evening and night shifts were associated with a higher likelihood of SA. To conclude, especially the local definitions of working hour characteristics seem to be important limits for short SA. Thus, high variability of shift lengths and prolonged shifts could be avoided to reduce the risk of SA. Overall, keeping the working hours within any of the recommendations among airport security personnel could support well-being and health.

Lien vers l'article

Improving Communication and Workflow Among Advanced Practice Providers and Nurses on Night Shift in an Intensive Care Unit.

Massey CAD, Selph MJ, Mitchell S. *Crit Care Nurse*. 2025 Feb 1;45(1):36-51.

BACKGROUND: In critical care settings during night shift, the number of staff members is reduced and a designated time for structured patient care discussions is often absent. The absence of organized collaboration and shared decision-making strains professional relationships. LOCAL PROBLEM: In a 21-bed cardiovascular intensive care unit, advanced practice providers were frequently interrupted by night shift nurses to discuss nonurgent clinical matters while engaged in patient care activities. METHODS: This quality improvement project used a preintervention-postintervention design. Surveys were distributed to advanced practice providers and nurses to determine perceptions of communication. All advanced practice providers and nurses working night shift in the cardiovascular intensive care unit were included. Nightly bedside rounds for advanced practice providers and nurses using a goal sheet to improve communication were implemented in the cardiovascular intensive care unit. Preintervention and postintervention scores on survey subscales (perceptions of collaboration, workflow, and communication) were examined with analysis of variance for both groups. RESULTS:

Mean scores increased after the intervention for both advanced practice providers and nurses. Scores for perception of collaboration significantly increased for both advanced practice providers and nurses (both P = .01). The score for perception of workflow significantly increased for nurses (P < .001) but not for advanced practice providers. Scores for perception of communication did not significantly change for either group. CONCLUSION: Implementation of bedside rounds using a goal sheet for advanced practice providers and nurses working night shift in the cardiovascular intensive care unit improved perceptions of collaboration and workflow.

Lien vers l'article

Investigating the impact of nursing shift change audit on the safety of emergency department patients.

Kazemi S, Hashemi S, Rahmani A, Mahmoudi H. *Int Emerg Nurs*. 2025 Feb;78:101551.

INTRODUCTION: Nursing care is complex and critical, emphasizing the importance of standardized communication methods for conveying health information. Nurses working different shifts exchange treatment details and patient information during shift handover. By utilizing the SBAR method for shift handover, nurses can ensure that the receiving nurse has a comprehensive understanding of the patient's condition. Conducting shift change audits allows for comparison of the current shift practices with standard protocols, enabling the identification and resolution of any issues. Implementing targeted reporting strategies during shift changes can help address challenges and improve the effectiveness of health information transfer. OBJECTIVE: The study was conducted to investigate the impact of auditing nursing shift changes on patient safety in the emergency department of a hospital in Tehran. METHODS: The present study is a semi-experimental study conducted on 35 nurses and 70 patients in a convenience sample before and after the intervention. The study took place in the emergency department of a hospital in Tehran during 2023-2024. Initially, nurses' shift work, patient safety, and nurses' satisfaction were assessed using a questionnaire. The current situation was then compared with the SBAR checklist, and an SBAR training program was developed for nurses. Interventions included theoretical training sessions on using the SBAR method during shift changes and the presentation of a training video. After completing the educational interventions, the materials were reviewed, problems were addressed, and nurses' shift changes were evaluated using the SBAR checklist, along with completion of a patient safety questionnaire. RESULTS: The study found that the SBAR score significantly increased after the intervention (49.49) compared to before (21.31) (P < 0.05). Additionally, patient safety scores significantly improved after the intervention (P < 0.05). CONCLUSION: Implementing a targeted and integrated approach to shift work based on the SBAR method can help address challenges in nursing shift delivery, improve the nursing care process, and enhance patient safety.

Lien vers l'article

Santé psychique

The interplay between personal traits and coping strategies on shift-work tolerance: a cross-sectional study.

Kim SH, An K, Bluhm MDL, Lee M, Shin SH. *Ind Health*. 2025 Jan 27.

The ability to adapt to night shift work varies greatly among individuals, but little is known about how personal traits and coping strategies interact to affect shift-work tolerance. This study aimed to identify how certain personal traits (e.g., flexibility, languidness, chronotype, and neuroticism) and behavioral and coping strategies influence shift-work tolerance. Additionally, it explored whether behavioral and coping strategies moderate the association between neuroticism and shift-work tolerance. In this

cross-sectional study, nurses (N=297) working rotating shifts consisting of either three 8-hour shifts or two 12-hour shifts at two university hospitals and one training hospital in South Korea completed a survey on shift work. Data were analyzed using hierarchical multiple linear regression analysis. Nurses with personal traits of lower flexibility, higher languidness, evening-oriented chronotypes, and higher neuroticism had less shift-work tolerance. Engagement-coping decreased fatigue, whereas disengagement-coping increased insomnia. Among those with higher levels of neuroticism, disengagement-coping further reduced alertness, while engagement-coping aggravated insomnia. Addressing the complex interplay between personal traits and coping strategies is essential to enhance adaptations to shift work without adverse consequences.

Lien vers l'article

Shift Work, Psychological Health Disorders, and Job Security Among Nurses: A Cross-Sectional Study.

Alghamdi R, Bahari G. *Healthcare (Basel)*. 2025 Jan 22;13(3).

BACKGROUND/OBJECTIVES: Shift work is prevalent among nurses, often leading to adverse psychological effects, such as fatigue, depression, anxiety, and stress. Understanding how shift work contributes to psychological health disorders can help healthcare organizations identify critical areas where support should be offered. This study aimed to determine the relationships between shift work, psychological health disorders, and job security among nurses in Saudi Arabia. METHODS: This cross-sectional study included 163 nurses, recruited via convenience sampling. The participants completed an online questionnaire that assessed demographic variables, psychological disorders, fatigue, and job security. The data were analyzed using descriptive statistics as well as bivariate analyses to explore relationships between variables. RESULTS: Most participants (73%) worked 12 h shifts, and 67.5% reported fair sleep quality. We found significant correlations among shift work, fatigue, and common psychological disorders. Significant differences were also observed for fatigue ($p = 0.007$) and depression ($p = 0.008$). Both nationality ($p < 0.001$) and shift work ($p = 0.015$) were correlated with anxiety. Similarly, significant differences were found for nationality ($p = 0.001$) and shift work ($p = 0.002$) regarding stress. CONCLUSIONS: These findings underscore the psychological challenges faced by nurses related to shift work, emphasizing the importance of addressing fatigue and mental health. Healthcare organizations should implement strategies to enhance job security and support nurses' well-being to ultimately improve both nurse satisfaction and patient care outcomes. Further research is warranted to explore effective interventions and the long-term effects of shiftwork on nursing professionals.

Lien vers l'article

Chronotype and Nursing Shift Work.

Kalra Y. *Am J Nurs*. 2025 Mar 1;125(3):64.

The relief of finding an explanation for night shift exhaustion.

Lien vers l'article

Optimising lighting conditions to enhance seafarer adaptation to the '6-h on/6-h off' shift pattern: a balanced crossover study.

Zhao C, Li N, Yi X, Wang X, He Y, Shen H, et al. *J Sleep Res*. 2025 Jan 12:e14450.

The '6-h on/6-h off' shift pattern could potentially disrupt the physiological rhythms and cognitive performance of seafarers, attributed to its shorter and more frequent shifts. Conversely, light exposure has been demonstrated to enhance cognitive abilities and synchronise physiological processes. Therefore, we studied the fatigue, cognition, sleep and rhythm of seafarers with different shifts to determine how light can benefit their performance. A total of 16 seafarers participated in a 2×2 crossover study, which involved two shift types (Morning-Evening and Day-Night) and two lighting conditions (static lighting and dynamic lighting). Sleepiness, cognition and fatigue were assessed every 2 h during '6-h on' period, using the Karolinska Sleepiness Scale, psychomotor vigilance task, critical flicker frequency and visual analogue scale for fatigue. Sleep was monitored during '6-h off' period, core body temperature was continuously tracked for rhythm throughout the shift protocol. For the Day-Night shift, the static mode with stable higher illuminance than dynamic lighting significantly reduced sleepiness (p = 0.01), objective fatigue (p = 0.001), subjective fatigue (fatigue level [p = 0.004] and visual fatigue [p = 0.001]) during the night period, while increasing sleep duration during the day (6:00 a.m. to 12:00 p.m.) and delaying the rhythm. For the Morning-Evening shift, dynamic lighting with lower illuminance significantly increased sleep duration during the night (12:00 a.m. to 6:00 a.m.) without causing a significant difference in performance. Overall, static lighting is more suitable for Day-Night shift seafarers due to lower sleepiness, fatigue and longer daytime sleep duration, while dynamic lighting is more suitable for Morning-Evening shift seafarers due to longer night-time sleep duration. Therefore, different lighting patterns should be adopted for seafarers during different shifts.

Lien vers l'article

Quantity and quality of napping to mitigate fatigue and sleepiness among nurses working long night shifts: a prospective observational study.

Watanabe K, Shishido I, Ito YM, Yano R. *J Physiol Anthropol*. 2025 Jan 6;44(1):1.

BACKGROUND: Napping during night shifts is a countermeasure against fatigue and sleepiness, which both impact patient safety. However, there is insufficient evidence on how nurses nap, especially concerning their napping quality. This study explored night-shift napping and its associated factors among nurses, considering napping quantity and quality, to mitigate fatigue and sleepiness. METHODS: This month-long prospective observational study included 32 nurses working 16-h night shifts in a general ward. All nurses responded to questions on individual factors, while fatigue and sleepiness were checked four times during night shifts. Night-shift napping was measured using a wearable device and classified into six groups: time in bed [TIB] > 180 min and sleep efficiency [SE] ≥ 70%, TIB > 180 min and SE < 70%, TIB 120-180 min and SE ≥ 70%, TIB 120-180 min and SE < 70%, TIB < 120 min and SE ≥ 70%, and TIB < 120 min and SE < 70%. RESULTS: Most nurses (81.2%) worked four night shifts per month, and 105 night shifts in which nurses intended to nap were analyzed. The two nap conditions (TIB 120-180 min and SE ≥ 70%, TIB > 180 min and SE ≥ 70%) were not worse than other nap conditions in fatigue and sleepiness at the end of the night shift and change in fatigue from the start to the end of the night shift. Sleep reactivity, pre-nap time on electronic devices, and prophylactic naps taken before the night shift were each the common factors related to napping for TIB ≥ 120 min and SE ≥ 70%. CONCLUSIONS: Nurses working long night shifts should consider both sufficient napping quantity and good napping quality. We suggest aiming for a TIB of at least 120 min and a SE of at least 70% to mitigate fatigue and sleepiness at the end of a night shift. Assessing sleep reactivity, pre-nap time on electronic devices, and prophylactic naps may be useful in achieving both quantity and quality

effectively. Nurses and their managers should have a better understanding of napping and consider strategically taking naps during night shifts.

Lien vers l'article

Shift work sleep disorder in nurses: a concept analysis.

Yu L, Zhou H, Li J, Yu X. *BMC Nurs*. 2025 Jan 7;24(1):18.

AIM: This study seeks to elucidate the concept of shift work sleep disorder (SWSD) among nurses, thereby offering a comprehensive understanding that can inform future research and practical interventions. METHODS: Walker and Avant's concept analysis method was employed to guide the study. A systematic literature review was conducted utilizing various databases, including PubMed, Embase, EBSCO, Web of Science, CNKI, WanFang, and Sino Med. The inclusion criteria were specifically designed to focus on studies that define SWSD, along with its attributes, antecedents, consequences, and assessment tools relevant to nursing professionals. RESULTS: The analysis identified four key attributes of SWSD: internal/external circadian rhythm imbalance, impaired sleep, multidimensional health problems, and dynamic changes in symptoms. Antecedents include individual factors like personal health, lifestyle, family support, shift patterns, work environment, and other organizational factors. Consequences of SWSD encompass physiological health issues, mental health challenges, impaired social adaptability, and decreased nursing performance. CONCLUSION: SWSD has a significant impact on the health and performance of nurses. Understanding its attributes, antecedents, and consequences is crucial for developing targeted interventions. Enhancing sleep hygiene, fostering supportive work environments, and implementing appropriate shift scheduling can help mitigate the adverse effects associated with SWSD.

Lien vers l'article

Relationship between shift type and sleep quality in rotating-shift nurses with chronotype as a moderator variable.

Weng PW, Chang WP. *Int Nurs Rev*. 2025 Mar;72(1):e13010.

BACKGROUND: Rotating-shift nurses are susceptible to sleep disorders due to numerous factors, such as their biological clock, emotions, and age. At present, a lack of research exists on whether chronotype and shift type jointly influence the sleep quality of nurses. AIM: To verify whether chronotype is a moderator variable of the relationship between shift type and sleep quality in nurses in order to provide empirical evidence for future mental and physical health improvement. METHOD: Clinical rotating-shift nurses at a medical center in northern Taiwan were recruited as participants between November 1, 2023, and December 13, 2023. All of the nurses were working a monthly rotating shift schedule. Hierarchical multiple regression analysis was employed to investigate whether the influence of shift type on sleep quality in nurses varied with chronotype. The STROBE checklist was used for reporting this study. RESULTS: The participants were 255 rotating-shift nurses in this study. Hierarchical multiple regression results revealed that rotating-shift nurses who were older (B = 0.19, p = 0.029), had greater physical fatigue (B = 0.27, p = 0.016), and had more negative emotions (B = 0.17, p = 0.011) suffered from poorer sleep quality. After controlling the above factors, we further found that chronotype indeed had moderating effects on the influence of shift type on sleep quality (B = -1.83, p = 0.049). CONCLUSIONS: This study demonstrates that early- and intermediate-type nurses are more suitable for working the day and evening shifts, whereas late-type nurses are more suitable for working the night shift. IMPLICATION FOR NURSING AND HEALTH POLICY: Coordinating chronotype with shift type will ensure that shift schedules better match the biological clocks of nurses; such individual considerations could help to improve their sleep quality.

Lien vers l'article

Shiftwork and insulin resistance in professional drivers: exploring the association using non-insulin-based surrogate measures.

Tawfik MY, Amer S, Fouad AM. *BMC Public Health*. 2025 Jan 16;25(1):191.

BACKGROUND: Previous research has made use of the Homeostatic Model Assessment for Insulin Resistance (HOMA-IR) index to explore the association between shiftwork (SW) and insulin resistance (IR). However, the limitations of the HOMA-IR index restrict its use. This study aimed to investigate the relationship between SW and IR in professional drivers using four alternative non-insulin-based IR surrogate measures (NIRS), and to determine the predictors of elevated NIRS. METHODS: A comparative cross-sectional study was conducted on professional drivers at four Egyptian companies, where 187 SW were compared to 193 dayworkers (DW). Measurements included: sociodemographic, work, and clinical characteristics. Laboratory and NIRS data included: triglyceride glucose (TyG), triglyceride glucose-body mass index (TyG-BMI), triglyceride to high density lipoprotein cholesterol (TG/HDL-C), and metabolic score of insulin resistance (METS-IR). Further assessments included insomnia severity index (ISI), and perceived stress scale (PSS-10). RESULTS: Shiftwork-drivers showed significantly higher levels of NIRS compared to DW-drivers. Shiftwork was significantly associated with elevated TyG (OR: 5.04, 95% CI: 1.98-12.84), TyG-BMI (OR: 4.50, 95% CI: 2.45-8.26), and METS-IR (OR: 6.30, 95% CI: 2.72-14.58). Significant interactions between SW and insomnia or meal-timing habits existed, where SW-drivers with clinically significant insomnia had 11 times higher odds of elevated TyG compared to DW drivers without insomnia. Likewise, SW-drivers experiencing poor meal timing habits had 5.5- and 6.8-times higher odds of elevated TG/HDL-C and METS-IR, respectively, compared to DW divers without poor meal timing habits. Other significant predictors for elevated NIRS included: age, income, stress, overweight/obesity, and poor meal timing habits. CONCLUSIONS: This study demonstrates a significant association between shiftwork and elevated insulin resistance in professional drivers. Insomnia and poor meal timing habits significantly increases the odds of insulin resistance among professional drivers, suggesting interventions targeting sleep quality, meal timing, and stress management.

Lien vers l'article

Shift work sleep disorder.

Moreno CRC. *Handb Clin Neurol*. 2025;206:89-92.

Shift work sleep disorder (SWSD) is a circadian rhythm sleep-wake disorders affecting individuals who work in nonstandard hours, particularly night shifts. It manifests as difficulty sleeping during the day and staying awake during work hours, leading to health issues. SWSD is not universally experienced by all shift workers, with about 30% affected. Diagnosing SWSD involves monitoring sleep patterns and differentiating it from other disorders such as sleep apnea. Prevention and treatment include collective measures such as optimizing shift schedules and individual strategies such as sleep/circadian hygiene, light therapy, melatonin use, and, if necessary, prescription medications. Despite these interventions, the primary recommendation is to switch to daytime work, although this may not be feasible for all workers.

Lien vers l'article

High sleep reactivity in shift workers is associated with increased sleep disturbance, mood problems, and reduced quality of life.

Kim H, Lee KH, Shin J, Seo WW, Jeon JE, Lee HY, et al. *Sleep Med*. 2025 Feb;126:275-81.

INTRODUCTION: Shift work disrupts circadian rhythms, causing sleep and mood problems. Sleep reactivity-the sensitivity of sleep to stress-may affect how shift workers cope with these disruptions.

This study investigated the relationship between sleep reactivity and shift work, exploring associations between sleep reactivity and sleep disturbance, mood symptoms, and quality of life in shift workers. METHODS: In a cross-sectional design, 132 participants (79 shift workers and 53 controls) were assessed using the Ford Insomnia Response to Stress Test (FIRST), Insomnia Severity Index (ISI), Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), and World Health Organization Quality of Life (WHOQOL). We compared the self-reported measurements between shift workers and controls. Two-way ANOVA was performed to explore the interaction effects between shift work and sleep reactivity on sleep, mood parameters, and quality of life. Multiple linear regression analysis was conducted to identify factors associated with sleep, mood, and quality of life among shift workers. RESULTS: Shift workers scored higher on ISI and BDI compared to controls. Two-way ANOVA revealed an interaction effect between shift work and sleep reactivity on WHOQOL. Regression analysis indicated that high sleep reactivity was associated with higher ISI, BDI, BAI, and lower WHOQOL among shift workers. CONCLUSION: Sleep reactivity significantly affected shift worker's quality of life. Our findings indicate that high sleep reactivity in shift workers was associated with increased sleep disturbance, mood problems, and decreased quality of life, implying that sleep reactivity may predict shift work tolerance.

Lien vers l'article

Examining Shift Length and Fatigue: A National Study of Neonatal Advanced Practice Providers.

Farmer ML, Hoffman J, Vance A, Li Y, Bell TR. *Adv Neonatal Care*. 2025 Feb 1;25(1):70-6.

BACKGROUND: Neonatal advanced practice providers (APPs) often work prolonged hours in high-acuity neonatal intensive care units (NICUs). It is imperative to understand how fatigue affects the APP's ability to react quickly following long shifts. There is a lack of data on the effects of shift length and fatigue on neonatal APP job performance and clinical decision-making. PURPOSE: The purpose of this study was to describe the variation in shift length, knowledge-based competency, personal well-being, and behavioral alertness for neonatal APPs. METHODS: This study evaluated neonatal APPs before and after a clinical shift. Provider well-being was assessed during the pre-survey. Pretest-posttest surveys evaluated neonatal APP's psychomotor vigilance skills and knowledge. Participants completed an online, anonymous questionnaire to answer a series of knowledge-based questions before and after their shift, along with a psychomotor vigilance test (PVT). A paired t test analysis evaluated the pre- and post-shift PVT values and knowledge-based test scores. RESULTS: Overall, 61 pre-surveys and 42 post-surveys were completed; 36 were matched by participants pre- to post-survey. The mean between pre- and post-knowledge-based questions was statistically significant, with higher posttest scores. There was no statistical difference noted in the paired t test analysis of the PVT values. IMPLICATIONS FOR PRACTICE AND RESEARCH: The small sample size may limit the generalizability of findings, but these results may indicate that shift length does not affect psychomotor vigilance or knowledge-based competency. It is vital that future work assess the associations between APP shift length, fatigue, and critical decision-making.

Lien vers l'article

Better sleep hygiene is associated with better sleep health in mining shift workers in Australia.

Beranek P, Dunican IC, Cruickshank T, Turner M. *J Sleep Res*. 2025 Jan 10:e14457.

Australia's mine sites are largely situated in remote locations and operate around the clock. Many shift workers fly to site, where they work 12-hr shifts and sleep in camp accommodation before they return home for the period rostered off work. Mining shift workers experience poor sleep, yet limited research is available on contributing factors. This study investigated, for the first time, the relationship between the sleep health and sleep hygiene in this population. A survey was disseminated to shift workers in the mining industry, utilising a cross-sectional study design. The Sleep Health Index and

Sleep Hygiene Index questionnaires were used to evaluate their sleep health and sleep hygiene, respectively. In total, 470 shift workers (mean age [years]: 39 ± 12, mean body mass index [kg m(-2)]: 28 ± 5) were included, which involved 132 females. Average scores for the Sleep Health Index and Sleep Hygiene Index were 76 ± 15 and 30 ± 7, respectively. Better sleep health was observed in shift workers with better sleep hygiene (β = -0.52, SE = 0.09 [-0.71, -0.34], p < 0.001). Differences in Sleep Health Index scores were found for individual Sleep Hygiene Index items related to "sleep regularity", "sleep environment", "mental health" and "time in bed extension". However, no differences in Sleep Health Index scores were found for items related to "caffeine, alcohol or nicotine consumption" or "exercise" close to bedtime and "bedtime activities" (p > 0.05 for all). These findings demonstrate a relationship between sleep hygiene and sleep health; therefore, it may be possible to improve the sleep of shift workers by improving their sleep hygiene.

[Lien vers l'article](#)

Shift Work, Psychological Health Disorders, and Job Security Among Nurses: A Cross-Sectional Study.

Alghamdi R, Bahari G. *Healthcare (Basel)*. 2025 Jan 22;13(3).

BACKGROUND/OBJECTIVES: Shift work is prevalent among nurses, often leading to adverse psychological effects, such as fatigue, depression, anxiety, and stress. Understanding how shift work contributes to psychological health disorders can help healthcare organizations identify critical areas where support should be offered. This study aimed to determine the relationships between shift work, psychological health disorders, and job security among nurses in Saudi Arabia. METHODS: This cross-sectional study included 163 nurses, recruited via convenience sampling. The participants completed an online questionnaire that assessed demographic variables, psychological disorders, fatigue, and job security. The data were analyzed using descriptive statistics as well as bivariate analyses to explore relationships between variables. RESULTS: Most participants (73%) worked 12 h shifts, and 67.5% reported fair sleep quality. We found significant correlations among shift work, fatigue, and common psychological disorders. Significant differences were also observed for fatigue (p = 0.007) and depression (p = 0.008). Both nationality (p < 0.001) and shift work (p = 0.015) were correlated with anxiety. Similarly, significant differences were found for nationality (p = 0.001) and shift work (p = 0.002) regarding stress. CONCLUSIONS: These findings underscore the psychological challenges faced by nurses related to shift work, emphasizing the importance of addressing fatigue and mental health. Healthcare organizations should implement strategies to enhance job security and support nurses' well-being to ultimately improve both nurse satisfaction and patient care outcomes. Further research is warranted to explore effective interventions and the long-term effects of shiftwork on nursing professionals.

[Lien vers l'article](#)

Determinants of sleep quality and their impact on health outcomes: a cross-sectional study on night-shift nurses.

Xiao Q, Huang X, Yang T, Huang L, Li N, Wang J, et al. *Front Psychiatry*. 2024;15:1506061.

PURPOSE: This study aimed to identify determinants of sleep quality and explore their adverse health outcomes among night-shift nurses in China. METHOD: Through convenience sampling, this cross-sectional study enrolled a total of 711 night-shift nurses aged 20-55 years who completed questionnaires from which details regarding their sociodemographic characteristics, health-related indicators and sleep quality based on the Pittsburgh Sleep Quality Index (PSQI) were extracted. A generalized linear regression analysis was then created to identify factors influencing sleep quality. Pearson correlation analysis was used to analyze the relationship between sleep quality and chronic fatigue. RESULTS: The prevalence rate of poor sleep quality among night-shift nurses reached as high as 90.1%. Our results showed that education level, years of working experience, quality of make-up

sleep before and after night shifts, daily routine and diet were the primary factors affecting sleep quality (p < 0.01). Nurse fatigue had a significant positive correlation with subjective sleep quality, sleep latency, sleep duration, sleep disturbance, medications to sleep, daytime dysfunctions and global sleep quality (p < 0.01). However, nurse sleep efficiency had a significant negative correlation with fatigue (p < 0.01). CONCLUSIONS: Higher education level, longer working years, worse quality of make-up sleep before and after night shifts, daily routine and daily diet were risk factors for poor sleep quality among nurses. Poor sleep among night-shift nurses is strongly correlated with chronic fatigue.

[Lien vers l'article](#)

Personalized Sleep Hygiene and Structured Rest Interventions Improve Sleep Quality and Energy in a Rotating Shift Worker: A Case Report.

Jogie JA. *Cureus*. 2024 Dec;16(12):e76497.

A 38-year-old paint technician who worked rotating shifts reported mild sleep disruptions and increased fatigue. The company's medical staff reviewed his work patterns, rest habits, and home environment. They introduced a personalized sleep hygiene program and adjusted his break schedule, allowing short, structured rest periods. They also provided simple handouts on proper home lighting, relaxation methods, and guidance on coordinating family meals. Within a few weeks, his sleep quality improved, and his energy levels stabilized. This case shows that a focused, family-oriented approach can help workers adapt to challenging shift patterns and maintain better health.

[Lien vers l'article](#)

HA comme facteur de risque

Généralités et prévention

Aucun article dans ce bulletin.

Activités physiques

Prevalence of musculoskeletal disorders among garment workers: a systematic review and meta-analysis.

Gebrye T, Mbada C, Apeagyei P, Fatoye F. *BMJ Open*. 2025 Jan 28;15(1):e085123.

BACKGROUND: Garment workers are at high risk of musculoskeletal disorders (MSDs) due to repetitive physical tasks, long working hours and varying workstations. As there is no existing epidemiological overview of MSDs among garment workers, this systematic review aimed to evaluate the global evidence on prevalence of MSDs in this population. METHODS: A systematic review of the literature was conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Medline, Cumulative Index to Nursing and Allied Health Literature, PubMed, Scopus and Web of Science electronic databases were searched to identify studies published in English up to November 2022. Random-effects meta-analysis was used to estimate pooled prevalence. RESULTS: The search yielded 258 published studies, of which 14 were deemed relevant and were included in this review. The included studies reported prevalence from India (n=3), Bangladesh (n=2), Ethiopia (n=2), Thailand (n=2), Botswana (n=1), Iran (n=1), Sri Lanka (n=1), Cambodia (n=1) and Denmark (n=1) and involved 15 029 garment workers. Most of the included studies (79%) were assessed to be methodologically sound (low risk of bias). The mean age of participants ranged from 24.2 to 40 years. The prevalence of MSDs ranged from 15.5% to 92%. The pooled prevalence of MSDs from nine studies was 65.6% (95% CI 44.5% to 51.9%). Low back pain and neck pain were reported as the common MSDs in the included studies. CONCLUSIONS: The findings highlight the considerable risk of MSDs, especially low back and neck pain, linked to repetitive tasks, extended hours and inconsistent workstations. Given the heavy toll of MSDs on this workforce, targeted interventions and ergonomic improvements are crucial to mitigate the risks and improve garment workers' well-being.

Lien vers l'article

Autres pathologies

Aucun article dans ce bulletin.

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Aucun article dans ce bulletin.

Risk and Causative Factors of Psychological Harm Among Construction Workers: A Systematic Review.

Rahman A, Leifels K, Adakporia KO. *Workplace Health Saf*. 2025 Jan 23:21650799241303529.

BACKGROUND: The construction industry, known for its high-risk environment, increasingly acknowledges the psychological risks to workers. Despite well-documented physical hazards, mental health challenges within this workforce have garnered attention. This systematic review provides a scholarly synthesis of literature on psychological risks and their causative factors affecting construction workers, adhering to PRISMA protocols. METHODS: An exhaustive literature search was conducted across PubMed, Scopus, PsycINFO, and Google Scholar using relevant keywords. Rigorous screening of selected studies focused on the psychological aspects of construction work, with systematic data extraction and analysis. FINDINGS: From 1992 to 2022, 68 studies met inclusion criteria, identifying key psychological harm factors: job insecurity, long working hours, high demands, poor work-life balance, and workplace bullying. A lack of mental health support and awareness in the sector was noted, with a significant correlation between these factors and increased stress, anxiety, and depression levels among workers. CONCLUSIONS: The review highlights the urgent need for industry recognition of psychological hazards and the relationship between work conditions and mental health issues. It calls for supportive policies, awareness programs, and counseling services, with a suggestion for future longitudinal research on the long-term impacts and intervention efficacy. APPLICATION TO PRACTICE: This study provides an overview of psychological risks in the construction sector from 1994 to 2022, aiming to identify causative factors for mental health issues. It seeks to pave the way for targeted interventions and policy changes to improve mental health outcomes in the industry.

Lien vers l'article

It is time for reform: Results from a questionnaire survey on the current status of next generation HBP surgeons in Japan.

Kosai-Fujimoto Y, Yoh T, Hara T, Umezawa S, Maekawa A, Matsuo Y, et al. *J Hepatobiliary Pancreat Sci*. 2025 Jan;32(1):17-25.

A questionnaire survey was designed and performed to assess the current status of "next generation" hepatobiliary and pancreatic (HBP) surgeons regarding surgical training, career, recruiting, and work-life balance in Japan. Using a valid email address, a questionnaire was sent to members of the Japanese Society of Hepato-Biliary-Pancreatic Surgeons (JSHBPS) who were under 45 years old. The questionnaire comprised 50 questions across the following four sections: (i) board certification of JSHBPS, (ii) research activity and overseas study, (iii) recruiting, and (iv) work-life balance. A questionnaire survey was sent to 1735 HBP surgeons and responses were received from 303 members (17.5%). In a survey with 303 respondents, over 45.9% were above 41 years old, 93.7% were male, and 91.0% were affiliated with university surgery departments. About 25.1% were JSHBPS board-certified, while 72.7% of uncertified doctors aspired for the certification. Research activity was deemed crucial by 74.9%. Recruitment targeting postgraduate years 1-5 was recommended, with the technical difficulty of surgery being the main reason for choosing HBP. Regarding work-life balance, excessive work and classical work style were regarded as a hindrance to the sustainability of working practices. This survey highlighted that next generation HBP surgeons are highly motivated to acquire advanced surgical skills and recognize the importance of research experience. However, they are facing long working hours and insufficient training opportunities. Fundamental reforms, such as revising the training curriculum, improving work styles, and enhancing recruitment, are necessary steps forward to ensure the sustainability of HBP surgery in Japan.

Lien vers l'article

Current status of the surgical training system in Japan: results of a nationwide questionnaire survey of graduating surgical trainees.

PURPOSE: To identify the problems trainees face during surgical training in Japan. METHODS: A nationwide online questionnaire survey was conducted targeting newly certified surgical trainees. RESULTS: The response rate was 53.8% (758/1410). Among those respondents, 25.6% were women, 71.4% were either married or had a partner, 41.3% had children, 72.7% had performed over 200 surgeries under general anesthesia, and 54.1% had chosen, before graduating from medical school, to become a surgeon. While 88.8% were interested in learning surgical techniques, 63.8% were hesitant to become a surgeon for fear of a compromised quality of private life (QOL). Conversely, only 1.4% chose their surgical training programs based on QOL. Overall, 84.6% of the trainees were satisfied with their training and this correlated with the number of surgeries performed. Only 29.9% received non-technical skill training. The average number of night shifts per month was 5.6, and 10.6% worked over 80 h per week. Harassment was reported by 41.5% of the respondents. Moreover, 33.0% had considered dropping out at some time, primarily because of their QOL (51.1%) or the harassment they had encountered (50.4%). CONCLUSION: This survey revealed that while trainees were satisfied with the overall training system, issues such as long working hours and harassment are prevalent. Working to improve these issues could make surgery more attractive for young trainees.

[Lien vers l'article](#)

Occupational Factors Influencing Turnover Intention in Working Women With Lower Urinary Tract Symptoms.

OBJECTIVE: This study aimed to identify the occupational factors that influence turnover intention among working women with lower urinary tract symptoms (LUTS). METHODS: This cross-sectional study targeted 410 working women with LUTS from a 2022 survey. Occupational characteristics, including working hours, shift work, bathroom accessibility, sitting time, musculoskeletal strain, job stress, and emotional labor, were assessed through a structured self-reported questionnaire using validated tools. Multiple logistic regression was applied to analyze the association of these factors with turnover intention. RESULTS: Women who worked >52 hours per week had an odds ratio of 2.02 for turnover intention compared to those who worked fewer hours. Higher job stress and emotional labor scores also were associated with increased turnover intention. CONCLUSIONS: Women with LUTS have higher turnover intention due to vulnerability to long hours, job stress, and emotional labor.

[Lien vers l'article](#)

Perceived barriers to physical activity and their predictors among adults in the Central Region in Saudi Arabia: Gender differences and cultural aspects.

OBJECTIVE: To assess the perceived barriers hindering physical activity among adult residents of Riyadh, Saudi Arabia, and to identify associated sociodemographic and health-related factors, focusing on gender differences and cultural aspects. METHODS: A cross-sectional survey was conducted from the 9th of January 2022 to the 2nd of February 2023, involving 7,903 physically inactive participants aged 18 to 80. Participants were recruited using a two-stage cluster sampling method from the Central Region of Saudi Arabia. In the first stage, subregions based on the administrative distribution by the

Medical Service Department were selected. In the second stage, private and public entities within these subregions were identified from governmental agency lists. Participants were then conveniently approached within these entities. Data were collected using a validated questionnaire, the Perceived Barriers to Being Active Questionnaire (PBAQ), assessing sociodemographic characteristics, health history, dietary habits, and perceived internal and external barriers to physical activity. RESULTS: Of the participants, 67.2% were male, with a mean age of 36.45 ± 13.69 years. Approximately one-third (35%) reported experiencing at least one internal barrier to physical activity, while 64.3% reported 1-2 internal barriers. For external barriers, 76.5% faced 1-2 barriers. The most common internal barriers were laziness (40.2%) and lack of self-motivation (27.5%); the most prevalent external barriers were lack of facilities (20.2%) and long working hours (19.6%). Females were significantly more likely than males to report cultural reasons (odds ratio [OR] = 4.83; 95% confidence interval [CI]: 4.06-5.76; p < 0.001) and religious reasons (OR = 3.31; 95% CI: 2.59-4.23; p < 0.001) as internal barriers. Multivariate analysis revealed that females were 14% more likely than males to report external barriers to physical activity (OR = 1.14; 95% CI: 1.04-1.25; p = 0.018), suggesting gender plays a role in perceived external obstacles. Additionally, older age, higher body mass index, higher education level, marriage, certain employment statuses, and chronic diseases were significantly associated with increased reported internal and external barriers. These findings highlight the complex interplay of demographic and health-related factors influencing physical activity participation. CONCLUSIONS: There is a high prevalence of both internal and external barriers to physical activity among Saudi adults, with notable gender differences influenced by cultural factors. Females were more likely to report cultural and religious reasons as barriers. Tailored policies and interventions are urgently needed to address these barriers, such as promoting gender-specific physical activity programs, integrating physical activity into workplaces, enhancing public facilities, and conducting culturally sensitive educational campaigns. Addressing both internal motivations and external obstacles is essential to increase physical activity levels and combat the rising burden of non-communicable diseases in Saudi Arabia.

Lien vers l'article

Santé psychique

Reliability and validity of the Japanese version of the Overwork Climate Scale.

Ochiai Y, Otsuka Y. *Ind Health*. 2025 Jan 24;63(1):40-52.

This study aimed to investigate the validity and reliability of the Japanese version of the Overwork Climate Scale. Japanese workers were invited to participate in online surveys at baseline and 1-month follow-up. The Overwork Climate Scale was translated into Japanese, according to international guidelines. Reliability was assessed using Cronbach's alpha and the intra-class correlation coefficient (ICC), while structural validity was evaluated through confirmatory factor analysis (CFA). Psychological job demands, work engagement, psychological safety, and workaholism were assessed for convergent validity. The number of respondents was 302 at baseline and 169 at follow-up. Results indicated robust Cronbach's alpha values of 0.86 (for overwork endorsement) and 0.80 (for lacking overwork reward) at baseline, complemented by ICC of 0.89 and 0.82, respectively. CFA confirmed the suitability of the two-factor model. Moreover, the Japanese Overwork Climate Scale exhibited significant correlations with anticipated constructs. Structural equation modeling revealed a consistent association between overwork climate and both workaholism and work engagement, similar to the original version. In conclusion, the Japanese version of the Overwork Climate Scale demonstrates acceptable levels of reliability and validity, warranting its potential adoption among Japanese workers.

Lien vers l'article

Risk and Causative Factors of Psychological Harm Among Construction Workers: A Systematic Review.

Rahman A, Leifels K, Adakporia KO. *Workplace Health Saf*. 2025 Jan 23:21650799241303529.

BACKGROUND: The construction industry, known for its high-risk environment, increasingly acknowledges the psychological risks to workers. Despite well-documented physical hazards, mental health challenges within this workforce have garnered attention. This systematic review provides a scholarly synthesis of literature on psychological risks and their causative factors affecting construction workers, adhering to PRISMA protocols. METHODS: An exhaustive literature search was conducted across PubMed, Scopus, PsycINFO, and Google Scholar using relevant keywords. Rigorous screening of selected studies focused on the psychological aspects of construction work, with systematic data extraction and analysis. FINDINGS: From 1992 to 2022, 68 studies met inclusion criteria, identifying key psychological harm factors: job insecurity, long working hours, high demands, poor work-life balance, and workplace bullying. A lack of mental health support and awareness in the sector was noted, with a significant correlation between these factors and increased stress, anxiety, and depression levels among workers. CONCLUSIONS: The review highlights the urgent need for industry recognition of psychological hazards and the relationship between work conditions and mental health issues. It calls for supportive policies, awareness programs, and counseling services, with a suggestion for future longitudinal research on the long-term impacts and intervention efficacy. APPLICATION TO PRACTICE: This study provides an overview of psychological risks in the construction sector from 1994 to 2022, aiming to identify causative factors for mental health issues. It seeks to pave the way for targeted interventions and policy changes to improve mental health outcomes in the industry.

[Lien vers l'article](#)

Network of job demands-resources and depressive symptoms in critical care nurses: a nationwide cross-sectional study.

Li X, Tian Y, Yang J, Ning M, Chen Z, Yu Q, et al. *Crit Care*. 2025 Jan 21;29(1):39.

BACKGROUND: Critical care nurses are vulnerable to depression, which not only lead to poor well-being and increased turnover intention, but also affect their working performances and organizational productivity as well. Work related factors are important drivers of depressive symptoms. However, the non-liner and multi-directional relationships between job demands-resources and depressive symptoms in critical care nurses has not been adequately analyzed. Understanding these relationships would be helpful for reducing depression, increasing nurses' well-being and retain healthcare forces. METHODS: This was a cross-sectional study using baseline data from the Nurses' mental health study (NMHS), a prospective cohort study on nurses from 67 tertiary hospitals in 31 province-level administrative regions in China. Only clinical nurses working in the ICU were included (n = 13,745). Data were collected using online questionnaires, and analyzed using network analysis and structural equation model. Job demands (average working hours per week, average number of night shifts per month, paperwork burden and work-life balance), job resources (supervisor support, co-worker support, leader justice, organizational climate satisfaction, work meaning, and career prospect), personal resource (resilience) and depressive symptoms were main variables in the networks, while demographic data and social health (social-emotional support and loneliness) were covariates. RESULTS: The prevalence of severe, moderately severe, moderate, mild, and none or minimum depressive symptoms in critical care nurses of this study were 1.21, 3.42, 9.76, 42.88, and 42.07% respectively. In the final network, 132 of 210 possible edges (62.8%) were not zero. "Fatigue" had the highest expected influence, followed by "Motor", and "Appetite". Meanwhile, in terms of job demands-resources and personal resources, the node with the highest expected influence was "Supervisor support", followed by "Work meaning" and "Co-worker support". Three bridge variables were identified: "Resilience-adaptation", "Average working hours per week", and "Co-worker

support". The final structural equation model basically supported the results of network analysis with an acceptable model-fit (GFI = 0.918, AGFI = 0.896, PCFI = 0.789, PNFI = 0.788, NFI = 0.909, IFI = 0.911, CFI = 0.911, SRMR = 0.040, and RMSEA = 0.064). CONCLUSIONS: There was a rather strong interconnectedness between depressive symptoms and job demands-resources. Fatigue, motor, and appetite were core depressive symptoms of critical care nurses. Close attention to those symptoms could help recognize depression in critical care nurses. Supervisor support, work meaning, and co-worker support played vital roles as job resources in reducing depression, while negative impact of long average working hours per week were more contagious. Resilience, as personal resources, could help mediate the associations between job demands-resources and depression. In clinical practice, it's recommended for nursing managers to (1) encourage critical care nurses to find their "meaning in work", (2) implement resilience enhancing programs for nurse, (3) build and maintain meaningful relationships with nurses and support them in daily work, and (4) create a harmonious and dedicated working environment where co-workers are willing to help and support each other. Improvements in those modifiable aspects could help reduce risk and prevent exacerbations of depressive symptoms in critical care nurses.

Lien vers l'article

Troubles cognitifs et de la vigilance

Aucun article dans ce bulletin.

Département EAM

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

Association between individual occupational noise exposure and overweight/obesity among automotive manufacturing workers in South China.

Yu J, Cui J, Huang H, Zhang J, Li X, Ruan Y, et al. *BMC Public Health*. 2025 Jan 21;25(1):249.

BACKGROUND: Occupational noise has been associated with numerous adverse health outcomes. However, limited evidence exists regarding its association with obesity. We aim to investigate the effect of occupational noise exposure on the risk of overweight/obesity among workers, providing scientific evidence for the prevention and management of overweight/obesity in the occupational population. METHODS: This study included 3427 participants from two factories in Guangzhou, China. Individual occupational noise exposure levels were assessed using cumulative noise exposure (CNE). Body mass index (BMI) data were obtained from physical examinations. Linear and logistic regression models, restricted cubic spline, as well as subgroup analyses, were used to explore the association. RESULTS: In continuous models, each 1 dB-year increase in CNE was significantly associated with a 0.03 (95% confidence interval (CI): 0.00, 0.05) kg/m² increase in BMI. In categorical models, higher CNE levels were significantly associated with BMI (β = 0.54, 95% CI: 0.16, 0.92) and overweight/obesity (odd ratio (OR) = 1.57, 95%CI: 1.21, 2.04). Restricted cubic splines (RCS) analysis demonstrated a linear dose-response relationship between CNE and overweight/obesity (P(for overall)=0.013, P(for non-linear)=0.175). Additionally, shift and night work were identified as critical moderating factors, with a stronger association observed among workers engaged in shift and night work. CONCLUSION: Occupational noise exposure is positively associated with overweight/obesity, particularly among those engaged in shift and night work. Thus, enhancing noise source management and promoting awareness among workers for prevention are imperative.

Lien vers l'article

Shift work, thyroid function and liver function among subway workers.

Yu F, Liu J, Qu T, Zhao M, Wang J, Jiang S, et al. *Occup Med (Lond)*. 2025 Jan 16;74(9):668-75.

BACKGROUND: Shift work is associated with an increased risk of liver injury. However, whether and how shift work alters liver function remains unclear. AIMS: This study aimed to investigate the associations between shift work and the liver function parameters, and further explore the mediating roles of thyroid function indicators. METHODS: We conducted a cross-sectional study involving a convenience sample of 724 subway workers. Multivariate linear regression models were adopted to approximate the effect values for the associations of shift work with liver function parameters and thyroid function indicators. Mediation analyses were used to explore the roles of thyroid function indicators in the association between shift work and liver function parameters. RESULTS: Shift work was associated with increased levels of alkaline phosphatase (ALP), total triiodothyronine (TT3) and free thyroxine (FT4) (β = 6.309, 95% confidence interval [CI] 2.739-9.879, β = 0.328, 95% CI 0.242-0.415 and β = 2.913, 95% CI 1.502-2.884, respectively). In stratification analysis, the positive association

between shift work and TT3, FT3 and FT4 was more pronounced among people >30 years old. The increase in shift worker FT3 and aspartate transaminase levels was stronger among alcohol users. Mediation analysis showed that TT3 and FT4 mediated 39% and 29% of the associations between shift work and the increased level of ALP, respectively (all P < 0.05). CONCLUSIONS: The results suggest that shift work is associated with increased ALP levels of subway workers, which is partly mediated by the increase of TT3 and FT4 levels.

Lien vers l'article

Fitness-to-work considerations in the paradigmatic pain condition of headache disorder.

Fan X, Lytvyak E, Els C, Straube S. *J Headache Pain*. 2025 Jan 31;26(1):21.

Headache disorders are common, including in the working population. Clinicians caring for patients with headache need to be aware of work-related factors as potential causes or triggers of headache disorders, and consider the impact of headache on fitness-to-work, especially in safety-sensitive and decision-critical roles. Such fitness-to-work determination should include individualized consideration of the nature of the headache disorder itself, the pattern of the headache, the impact of sleep deprivation on the headache as it relates to fitness to do shiftwork, medication and substance side effects, fitness-to-work implications of associated medical or psychiatric conditions, and the potential of symptom feigning or malingering for secondary gain. As clinicians often struggle with fitness-to-work determinations, a structured approach to fitness-to-work assessments in headache conditions and other pain conditions would improve clarity for clinicians and increase the quality of care provided to patients, with potential benefits for workplace safety and policy in this arena as well.

Lien vers l'article

Investigating the risk and protective factors of ageing at work: A reflexive thematic analysis.

Bacci G, Viotti S, Guidetti G, Sottimano I, Converso D, Edge C. *Work*. 2025 Jan 21:10519815241300411.

BACKGROUND: The ageing of the working population and the sustainability of work throughout the life cycle represent a significant challenge for many European countries, particularly in relation to the implementation of legislation raising the retirement age. OBJECTIVE: The objective of this study was to examine the physical, psychological and social risk and protective factors that influence the sustainability of work during the ageing process. METHODS: Twenty-five interviews were conducted, followed by a reflexive thematic analysis, with the aim of gathering the perspectives of a company's employees regarding factors related to ageing in the workplace. RESULTS: Two key themes emerged from the analysis, encapsulating the participants' different perceptions of risk and protective factors. Among the physical risk factors were those related to stress caused by job characteristics, which affect physical health. In addition, the study identified continuous shift work as a significant risk factor, which affects both physical health and the ability to reconcile work and family life. In addition, the responsibility of caring for dependent elderly family members and childcare responsibilities were highlighted as social factors that may affect employees' well-being. CONCLUSIONS: The study provides a useful basis for the implementation of company interventions to improve the work sustainability of older employees, with possible applications in other similar companies.

Lien vers l'article

Cancers

Aucun article dans ce bulletin.

Risque routier, accidentologie

Differences in injury severities between elderly and non-elderly taxi driver at-fault crashes: Temporal instability and out-of-sample prediction.

The population of elderly individuals (over 64 years) in Seoul, South Korea, grew from 1.4 million to 1.7 million between 2018 and 2023. During the same period, the number of elderly taxi drivers rose from 27,739 to 35,166. Additionally, the number of fatal and severe injury (FSI) crashes caused by at-fault elderly taxi drivers has steadily increased, surpassing those caused by non-elderly taxi drivers since the onset of the COVID-19 pandemic. This shift has raised safety concerns among transportation authorities and the public. Previous studies have explored the factors influencing taxi driver crash injury severity outcomes; however, there has been little focus on investigating the stability of these factors over time and across taxi driver age groups. This study examines the stability of factors influencing taxi driver at-fault crash injury severity outcomes and the differences between elderly and non-elderly taxi driver at-fault crash severities using data from Seoul, South Korea (2017-2023). Risk factor stability across taxi driver at-fault age groups and time periods was assessed using log-likelihood ratio tests, which revealed that these factors were not stable, highlighting the need for estimating separate models. Separate statistical models were developed using the random parameters binary logit framework to examine the associations between risk factors and FSI outcomes. This approach allowed us to account for potential heterogeneity in the means of the random parameters for both elderly and non-elderly taxi driver at-fault crashes across different periods: pre-, during, and post-COVID-19. Factors such as midnight to early morning hours, dry roads, signal violations, elderly not-at-fault parties, and posted speed limits of 80 km/h increased the likelihood of FSI outcomes in most models. The results showed that the indicator for elderly not-at-fault drivers increased the probability of FSI outcomes the most when involved in a crash with elderly at-fault taxi drivers. Additionally, the probability of FSI outcomes was highest for elderly at-fault taxi drivers who violated traffic signals. Heterogeneity analysis revealed that intersection-related taxi driver at-fault crashes were likely to be more FSI on weekdays. Out-of-sample simulations demonstrated a clear difference in injury severities between elderly and non-elderly taxi drivers, with non-elderly taxi drivers predicting fewer FSI outcomes in recent years. Key measures to improve taxi safety for drivers over 64 include introducing free and mandatory assessments to ensure that taxi drivers are fit for the profession. Additionally, taxi management companies could implement fatigue and distracted driving detection systems to monitor driving behavior, especially during midnight and early morning hours. Collected data could be used to incentivize elderly taxi drivers to maintain safe driving practices. Further, introducing more flexible or reduced hours, part-time shifts, and retirement incentives for unfit taxi drivers would further reduce risks. Attracting younger drivers through incentives could also lessen reliance on elderly drivers, lowering the risk of FSI crashes. Finally, championing enhanced safety training, improved lighting and signal visibility at intersections-especially at night-stricter enforcement on high speed roads, and lower speed limits in high-risk areas would further increase safety.

Lien vers l'article

Quality of life among healthcare workers in the hospitals and primary healthcare centers in Gaza Strip: a cross-sectional study.

Younis J, Wang L, Abed A, Jiang H, Fan Y, Li Z, et al. *BMC Psychol*. 2025 Jan 24;13(1):69.

BACKGROUND: Quality of life (QoL) is an important measure of overall well-being linked to physical, mental, social, and environmental aspects of health. This study aimed to assess the QoL among healthcare workers (HCWs) in hospitals and primary healthcare centers (PHCs) in Gaza Strip, Palestine. METHODS: A cross-sectional study was conducted among 1850 HCWs in Gaza Strip, Palestine. Data were collected by using self-administered questionnaires in the paper-based format containing a sociodemographic profile and the World Health Organization Quality of Life Brief questionnaire. Factors associated with QoL were examined using an independent t-test, Chi-square test, and multivariate logistic regression models. RESULTS: The study included HCWs with a mean age of 38.62 years old, of whom 61.9% were male. The mean QoL score was 55.98 (standard deviation: 11.50), with 55.5% reporting a good QoL. Multivariate logistic regression analysis revealed that age, smoking status, workplace, and work shifts were associated with the overall QoL score ($p < 0.05$). Older age (≥ 35 years), working in a hospital, and working the morning shifts were identified as protective factors for QoL, while smoking and working the evening-night shifts were inversely associated with QoL. CONCLUSIONS: This study found that HCWs in Gaza Strip exhibited moderate levels of QoL. Age, smoking status, workplace, and work shifts were associated with overall QoL. Strategies to improve HCWs' QoL, such as lifestyle interventions, additional support through training or educational programs, and reducing work schedules, could be considered under high-pressure situations.

[Lien vers l'article](#)

Profiles of innovative behavior and associated predictors among clinical nurses: a multicenter study using latent profile analysis.

Li H, Qiao Y, Wan T, Shao CH, Wen F, Liu X. *BMC Nurs*. 2025 Jan 22;24(1):77.

BACKGROUND: Innovative Behavior (IB) is a key prerequisite for nurses in solving clinical problems. However, existing research on IB among clinical nurses is relatively limited. OBJECTIVE: To identify profiles and characteristics of IB among clinical nurses and explore the associated predictors, as well as the relationships with research outputs. METHODS: A multicenter cross-sectional study was conducted on 354 clinical nurses in Shanghai from April 2023 to May 2023 (response rate 98.06%). IB was measured by the Innovative Behavior Scale for Nurses (IBSN), future time perspective was measured by the Future Time Perspective Scale (FTPS), and work engagement was measured by the Utrecht Work Engagement Scale-9 (UWES-9). Socio-demographic and professional data and research output indicators were measured by a self-designed questionnaire. We used latent profile analysis (LPA) by Mplus 7.0 to identify latent classes of IB. Ordinal logistic regression analysis was used to analyze the relevant predictors on the different profiles. And then Pearson's chi-squared was used to analyze the association between IB level and research output. RESULTS: Among the respondents, individuals aged 25 to 35 accounted for 55.9%, and females comprised 94.6%. IB of clinical nurses can be identified into 3 groups: low-level (n = 108, 30.51%), moderate-level (n = 149, 42.09%), and high-level (n = 97, 27.40%) groups. Based on the results of LPA, marital status, education level, work experience, monthly income, night shifts, future time perspective scores, and work engagement scores can be the predictors of IB among different profiles. Statistically significant associations were found between IB level and research productivity, including publishing academic papers ($\chi(2) = 15.307$, $p < 0.001$), registering patents ($\chi(2) = 17.163$, $p < 0.001$), and winning Sci. & Tech awards ($\chi(2) = 27.814$, $p < 0.001$). CONCLUSION: According to our research, clinical nurses have three unique IB profiles. The current level is predominantly at a moderate level, with less than 30% demonstrating a high level of innovation. It revealed that better socio-demographic status and professional characteristics, future

time perspective, and work engagement positively influenced innovative behavior among clinical nurses. The findings also highlight the potentially important role of IB in contributing to nurses' research output. PRACTICAL IMPLICATIONS: As far as we know, it might be the first study to employ LPA to clarify the heterogeneity in the levels of IB and their specific distribution among nurses. Our findings may provide a new viewpoint for promoting IB among clinical nurses. Nursing administrators should pay attention to IB of clinical nurses and develop targeted interventions to enhance their IB levels.

Lien vers l'article

The impact of time-restricted eating on health-related quality of life: a systematic literature review.

Sones BE, Devlin BL. *Nutr Rev*. 2025 Feb 1;83(2):230-48.

CONTEXT: Time-restricted eating (TRE) is a novel dietary intervention shown to facilitate weight loss and improve metabolic health. However, like any dietary intervention, long-term success largely depends on individual adherence, which can be influenced by whether the intervention impacts the individual's health-related quality of life (HR-QoL). Despite the growing body of research investigating TRE as a dietary approach and its potential impact on HR-QoL in adults, to date there has been no systematic review to summarize these findings. OBJECTIVE: To examine the impact of TRE on HR-QoL in adults. DATA SOURCES: All randomized controlled trials, pre-post and pilot/feasibility studies were searched in PubMed, EMBASE via Ovid, CINAHL, Cochrane Library, and PsycINFO via Ovid until March 20, 2023. DATA EXTRACTION: Two researchers were involved in the screening and paper selection process. A single researcher extracted all relevant data from eligible studies. CONCLUSION: Overall, 10 studies were eligible for inclusion in this systematic review. Four studies reported improvements in overall HR-QoL scores among participants with type 2 diabetes, middle-aged women with obesity, generally healthy adults, and generally healthy adult employees. Three studies reported significant and nonsignificant improvements in some domains of HR-QoL assessment tools among overweight, sedentary older adults, overweight or obese adults, and 24-hour shift workers. No studies reported that TRE adversely affected HR-QoL. Improvements in HR-QoL appeared to occur primarily at 12 weeks/3 months. There was no clear relationship between HR-QoL scores and TRE protocol, additional study outcomes, participant health status, age, or adherence. Although further research is required to elucidate the impact of TRE on HR-QoL, the findings reveal that no studies show that TRE adversely affects HR-QoL. SYSTEMATIC REVIEW REGISTRATION: Open Science Framework (OSF) (The Impact of Time-Restricted Eating on Health-Related Quality of Life: A Systematic Review; https://doi.org/10.17605/OSF.IO/9NK45).

Lien vers l'article

Stress by Design: A Scoping Review of Structural Stress of Emergency Telecommunicators.

Oliver TS, Flanigan C, Holmes MR. *Workplace Health Saf*. 2025 Feb;73(2):85-94.

BACKGROUND: Most agree that occupational stress is caused by workplace strains, tensions, and demands that originate from characteristics of the work. The accumulation of multiple types of stress has been found to have calamitous effects on health and well-being. One such occupation, emergency telecommunicators, experiences a multitude of stressors within their day-to-day work environment. Structural stressors are the sources of stress that are embedded in the way the work is designed and reinforced through workplace policies, practices, and procedures. This scoping review aimed to analyze occupational stressors directly promulgated by the structure and work design that impact emergency telecommunicators and to identify recommended organizational interventions. METHODS: This scoping review utilized the methodological framework of Arksey and O'Malley which examined research literature, identified gaps in the literature, and mapped key concepts. Electronic databases of CINAHL, MEDLINE, PsychINFO, PychNET, PubMed, Social Index, and Academic Search Complete

were used to identify relevant literature on occupational stress of emergency telecommunicators. RESULTS: Across 17 included articles, four key themes related to workplace stressors of emergency telecommunicators were identified: (a) staffing problems, (b) poor physical work environment, (c) career development issues, and (d) inequity. The four themes were derived from literature to extract stressors related to workplace policies, procedures, and practices. Implications for stakeholders to reduce stress were interwoven in the themes. This review aimed to expand on existing literature pertaining to structural stressors that have an impact on emergency telecommunicators.

Lien vers l'article

Impact of Nurse Staffing Levels on Patient Fall Rates: A Retrospective Cross-Sectional Study in General Wards in Japan.

Moriwaki M, Kakehashi M, Hayashida K, Koizumi M, Horiguchi H. *Healthcare (Basel)*. 2025 Jan 6;13(1).

Background: Falls are common adverse events among hospitalized patients, affecting outcomes and placing a financial burden on patients and hospitals. This study investigated the relationship between nurse staffing/workload and patient falls during hospitalization. Methods: The patients studied were hospitalized in the general wards (excluding pediatrics and obstetrics/gynecology) of 11 National Hospital Organization institutions between April 2019 and March 2020. The data were obtained from the Diagnosis Procedure Combination Work Record and institutional fall reports. The variables used in the analyses included patient conditions, number of hospitalization cases, emergency hospitalizations, surgeries/examinations, disease composition ratio, patient attributes, hospital stay duration, hospital bed size, and nursing time per patient (day and night) on a ward-day basis. Multivariate analysis was performed to determine the effects of these factors on fall events. Results: A total of 36,209 ward days were analyzed, with falls reported on 2866 days (fall event rate of 9.0%). The mean nursing times per patient were 1.99 h (day) and 1.47 h (night). The nursing time per patient in the fall group compared to the non-fall group showed an odds ratio of 1.19 (p < 0.01) during day shifts and 0.17 (p < 0.02) during night shifts. An increase in nursing time per patient during the night was associated with fewer fall events, whereas during the day, increased nursing time appeared to contribute to more falls. Common background factors that increased nurse staffing and patient falls simultaneously could be suggested to exist during the day. Conclusions: Increased nursing time was correlated with reduced fall incidence, indicating the need for policy improvements in nurse staffing practices in Japan to enhance patient safety and outcomes. Further research is needed to accumulate evidence reflecting policies regarding nurse staffing.

Lien vers l'article

Poor Nurses' Work Environment Increases Quiet Quitting and Reduces Work Engagement: A Cross-Sectional Study in Greece.

Moisoglou I, Katsiroumpa A, Katsapi A, Konstantakopoulou O, Galanis P. *Nurs Rep*. 2025 Jan 13;15(1).

Background/Objectives: The nursing work environment, encompassing accessible resources and established processes, might affect nurses' professional behavior. Our aim was to examine the effect of nurses' work environments on quiet quitting and work engagement among nurses. Methods: We performed a cross-sectional study with nurses in Greece. We used the "Practice Environment Scale-5" to measure nurses' work environments, the "Quiet Quitting Scale" to measure quiet quitting, and the "Utrecht Work Engagement Scale-3" to measure work engagement among nurses. We developed multivariable regression models adjusted for gender, age, understaffed wards, shift work, and work experience. Results: The study population included 425 nurses. The mean age of the nurses was 41.1 years. After controlling for confounders, we found that lower nurse participation in hospital affairs, less collegial nurse-physician relationships, worse nursing foundations for quality of care, and lower levels of nurse manager ability, leadership, and support were associated with higher levels of quiet

quitting among nurses. Moreover, our multivariable analysis identified a positive association between nurse manager ability, leadership, and support, collegial nurse-physician relationships, nursing foundations for quality of care, and work engagement among nurses. Conclusions: Our findings highlight the poor work environment, elevated levels of quiet quitting, and moderate work engagement among nurses. Moreover, we found that a poor nurses' work environment was associated with higher levels of quiet quitting. Moreover, our findings showed that nurses' work environments had a positive impact on work engagement. The ongoing endeavor to enhance all aspects of nurses' working conditions by healthcare organization administrations is essential for optimizing nurses' performance, facilitating organizational operations, and ensuring service quality.

Lien vers l'article

Subtypes of Job Satisfaction and Health-Related Quality of Life in Chinese Male Nurses: A Latent Profile Analysis.

Kong W, Li M, Chen X, Feng D. *Res Nurs Health*. 2025 Feb;48(1):17-29.

In this cross-sectional study, we aimed to identify subgroups of job satisfaction and health-related quality of life (HRQoL) in Chinese male nurses and examine the factors associated with subgroup profiles. A convenience sample of 626 Chinese male nurses were enrolled from January to October 2021. Latent profile analysis was performed to identify profiles based on self-esteem, psychological resilience, social support, neuroticism, perceived prejudice, occupational stress, job satisfaction, and HRQoL. Chi-squared tests were used to examine predictors of profiles. Results indicated that a three-profile model provided the best fit: low job satisfaction and health (9.90%), moderate job satisfaction and health (64.06%), and high job satisfaction and health (26.04%). The average number of monthly night shifts was negatively correlated with the male nurses' subgroups. Psychological resilience, social support, and neuroticism were the key factors associated with the HRQoL of male nurses, while perceived prejudice, occupational stress, and self-esteem were the key factors associated with job satisfaction. Nurse administrators could improve their job satisfaction and health by reducing perceived prejudice, and job stress, increasing organizational support and resilience.

Lien vers l'article

Experiences With a Substitution System for Clinical Nurses' Leave of Absence: A Qualitative Study.

Kim AR, Hong JH, Oh S, Cho S, Baek HJ. *Res Nurs Health*. 2025 Feb;48(1):63-72.

Insufficient staffing often makes it difficult for nurses in South Korea to adjust their schedules when they have illnesses or other health problems, resulting in presenteeism. This study aimed to explore the experiences of the Acknowledged Care Expert (ACE) team as a substitution system for clinical nurses taking leave because of illness or health problems from the perspectives of ACE nurses, nurse managers, and shift nurses. We collected data for this qualitative study through individual in-depth interviews with six ACE nurses, a focus group interview with five nurse managers, and two focus group interviews with five nurses who shared their experiences with the ACE team. Thematic analysis of the data identified the following four themes: expected and unexpected benefits of the ACE team; challenges in operating the ACE team; characteristics and competencies required of the ACE team; and recommendations for the ACE program. The findings showed that the ACE team was highly valued and received positive feedback from colleagues and administrators with whom they worked. Such positive impacts were made possible by team members' clinical expertise and the collective engagement of both coworkers and team members. Further research to evaluate such substitute systems is necessary to establish a more stable and encouraging environment for clinical nurses, as well as for patient care.

Lien vers l'article

Current status of the surgical training system in Japan: results of a nationwide questionnaire survey of graduating surgical trainees.

PURPOSE: To identify the problems trainees face during surgical training in Japan. METHODS: A nationwide online questionnaire survey was conducted targeting newly certified surgical trainees. RESULTS: The response rate was 53.8% (758/1410). Among those respondents, 25.6% were women, 71.4% were either married or had a partner, 41.3% had children, 72.7% had performed over 200 surgeries under general anesthesia, and 54.1% had chosen, before graduating from medical school, to become a surgeon. While 88.8% were interested in learning surgical techniques, 63.8% were hesitant to become a surgeon for fear of a compromised quality of private life (QOL). Conversely, only 1.4% chose their surgical training programs based on QOL. Overall, 84.6% of the trainees were satisfied with their training and this correlated with the number of surgeries performed. Only 29.9% received non-technical skill training. The average number of night shifts per month was 5.6, and 10.6% worked over 80 h per week. Harassment was reported by 41.5% of the respondents. Moreover, 33.0% had considered dropping out at some time, primarily because of their QOL (51.1%) or the harassment they had encountered (50.4%). CONCLUSION: This survey revealed that while trainees were satisfied with the overall training system, issues such as long working hours and harassment are prevalent. Working to improve these issues could make surgery more attractive for young trainees.

[Lien vers l'article](#)

Associations between 24/7 workforce coverage, organizational challenges, and well-being of emergency radiologists: a national survey.

BACKGROUND: The last decade has seen a surge in the demand for imaging exams in emergency radiology (ER), necessitating an evolution in organizational systems for departments offering round-the-clock care, while safeguarding patient care quality and physician well-being to prevent burnout. PURPOSE: To develop a nationwide overview of ER organizations in France and identify structures that promote job satisfaction. MATERIAL AND METHODS: Two surveys were sent to 709 radiological centers across France from March to June 2022, inquiring about organizational aspects and quality of life (QOL), incorporating four validated QOL questionnaires. The organization of each center was mapped, and correlations between respondent characteristics and mental health were analyzed using Pearson's and Wilcoxon tests. RESULTS: A total of 284 centers answered the organizational survey, with a response rate of about 41.6%. Among them, there were 32 university hospitals, 208 general hospitals, 2 teaching army hospitals, and 42 private facilities. Of these, night-time operations showed 14% on-site coverage, 12% on-call from home, 69% utilized external teleradiology, and 4% used in-house teleradiology. These trends persisted over weekends and holidays. Regarding the quality of working life, academic, general, and private radiologists are more satisfied with their practice compared to trainees. Depersonalization, part of the three dimensions of burnout, was high in every class, at 60% (n = 210/350). CONCLUSION: Outside of university hospitals, most radiology centers in France no longer have on-site radiologists during off hours. Residents are prone to lower job satisfaction and quality of life than more experienced radiologists. CLINICAL RELEVANCE STATEMENT: The survey illustrates how French ER is structured, pointing out the escalating significance of teleradiology and noting that radiologists generally experience high job satisfaction while also confronting typical organizational challenges. KEY POINTS: The need for continuous radiology coverage comes with unique logistical challenges, especially in ER. Night shifts show a significant reliance on teleradiology services,

especially by external companies. Pay, shift patterns, and seniority affect the well-being of emergency radiologists, particularly the residents.

Lien vers l'article

Examining the determinants of resilience and mental stress in emergency department nurses.

Kamari Z, Vaisi Raygani AA, Salari N, Khaledi-Paveh B, Mohammadi MM. *BMC Nurs*. 2025 Jan 9;24(1):35.

BACKGROUND: Emergency departments (ED) are characterized by highly dynamic environments. This study aimed to identify determinants of resilience and mental stress among ED nurses. METHODS: A cross-sectional, analytical design was employed to assess 316 emergency nurses in Kermanshah hospitals using a convenience sampling method. The Connor-Davidson Resilience Scale and the Perceived Stress Scale measured resilience and mental stress, respectively. Data were analyzed using independent t-tests, ANOVA, chi-square tests, and Pearson's correlation in SPSS version 25. RESULTS: The average mental stress score was 26.9, and the average resilience score was 64, indicating moderate levels. Significant relationships were found between employment status, emergency responsibility, economic status, and resilience ($P < 0.01$). Additionally, place of residence, number of children, education, shift work, social network presence, employment status, emergency responsibility, and economic status were significantly related to psychological stress ($P < 0.01$). Pearson's correlation showed an inverse relationship between resilience and mental stress ($r = -0.123$, $P = 0.029$). Age was inversely related to mental stress ($r = -0.408$, $P < 0.001$), while overtime hours per month were directly related to resilience ($r = 0.135$, $P = 0.016$) and inversely related to mental stress ($r = -0.482$, $P = 0.029$). CONCLUSION: The research highlights the importance of considering demographic variables in managing nurses' resilience and mental pressure, emphasizing the need for hospital officials to focus on work shifts, employment status, and economic conditions.

Lien vers l'article

Influence of psychological resilience on compassion fatigue in nurses in the operating room: a cross-sectional study in China.

Fu C, Wang Y, Shi X, Wang Y, Liu W, Wang G. *BMC Nurs*. 2025 Jan 24;24(1):90.

OBJECTIVE: To investigate the current state of compassion fatigue among operating room nurses, analyze the factors influencing compassion fatigue (particularly psychological resilience), and provide a basis for developing a compassion fatigue intervention program for operating room nursing managers. METHODS: This cross-sectional study was conducted in February 2022. A total of 258 operating room nurses were surveyed using the Professional Quality of Life (ProQOL) scale and the Resilience Scale for Adults (RSA). The ProQOL demonstrated internal consistency reliability, with Cronbach's α values ranging from 0.75 to 0.88 across its three subscales. The Cronbach's α coefficient for the RSA was 0.91. RESULTS: Scores on various dimensions of compassion fatigue among operating room nurses were as follows: the total score was 84.07 (standard deviation [SD] = 7.74), with a mean score of 28.02. 92 nurses (35.5%) had no compassion fatigue or only mild compassion fatigue, whereas 166 nurses (64.3%) experienced moderate or greater compassion fatigue. The total score for psychological resilience was 112.9 (SD = 6.47), with a mean score of 18.82. Factors influencing compassion fatigue included the relationship between labor and personnel, the number of night shifts per week, and mental resilience. The differences were statistically significant ($P < 0.05$). CONCLUSION: Compassion fatigue among nurses in the operating room is severe and is mainly influenced by factors such as night shift work, the relationship between labor and personnel, and mental resilience. Appropriate interventions are recommended to address these factors and reduce nurses' compassion fatigue. CLINICAL TRIAL NUMBER: Not applicable.

Lien vers l'article

Career calling and safety behavior among nurses: a cross-sectional study based on latent profile analysis.

Xie L, Xie S, Yu Y, Jing J, Shi M, Dai L. *Front Psychol*. 2024;15:1503051.

OBJECTIVE: This study aimed to clarify the subgroups of career calling among Chinese nurses, explore the factors correlated with the subgroups, and investigate the relationship between nurse safety behavior and different profiles of career calling. METHODS: A cross-sectional study of 2,567 nurses from 25 hospitals in China was conducted from February to September 2023. A latent profile model of nurses' career calling was analyzed using Mplus 7.4. The influencing factors of each profile were analyzed by multinomial logistic regression analysis. The hierarchical regression analysis was used to examine the relationship between nurse safety behavior and different profiles of career calling. The STROBE guidelines were followed in this research. RESULTS: Three distinct latent profiles were identified: "low-calling" type (12.4%), "medium-calling" type (54.4%), and "high-calling" type (33.2%) groups, respectively. Gender and number of night shifts per month were identified as factors influencing the latent profiles of nurses' career calling. The different categories of career calling significantly predicted the nurse safety behavior (ΔR (2) = 0.307, p < 0.001). CONCLUSION: This study suggests that nurses experience different types of career calling. The different categories of career calling are significantly associated with the nurse safety behavior. Consequently, administrators should pay attention to the differences in individual career calling and develop targeted intervention strategies to facilitate nurses' career calling based on the influences of the different underlying profiles and develop enhancement strategies to strengthen nurses' safety behaviors to ensure patient safety.

Lien vers l'article

Santé psychique

Network of job demands-resources and depressive symptoms in critical care nurses: a nationwide cross-sectional study.

Li X, Tian Y, Yang J, Ning M, Chen Z, Yu Q, et al. *Crit Care*. 2025 Jan 21;29(1):39.

BACKGROUND: Critical care nurses are vulnerable to depression, which not only lead to poor well-being and increased turnover intention, but also affect their working performances and organizational productivity as well. Work related factors are important drivers of depressive symptoms. However, the non-liner and multi-directional relationships between job demands-resources and depressive symptoms in critical care nurses has not been adequately analyzed. Understanding these relationships would be helpful for reducing depression, increasing nurses' well-being and retain healthcare forces. METHODS: This was a cross-sectional study using baseline data from the Nurses' mental health study (NMHS), a prospective cohort study on nurses from 67 tertiary hospitals in 31 province-level administrative regions in China. Only clinical nurses working in the ICU were included (n = 13,745). Data were collected using online questionnaires, and analyzed using network analysis and structural equation model. Job demands (average working hours per week, average number of night shifts per month, paperwork burden and work-life balance), job resources (supervisor support, co-worker support, leader justice, organizational climate satisfaction, work meaning, and career prospect), personal resource (resilience) and depressive symptoms were main variables in the networks, while demographic data and social health (social-emotional support and loneliness) were covariates. RESULTS: The prevalence of severe, moderately severe, moderate, mild, and none or minimum depressive symptoms in critical care nurses of this study were 1.21, 3.42, 9.76, 42.88, and 42.07% respectively. In the final network, 132 of 210 possible edges (62.8%) were not zero. "Fatigue" had the highest expected influence, followed by "Motor", and "Appetite". Meanwhile, in terms of job demands-resources and personal resources, the node with the highest expected influence was

"Supervisor support", followed by "Work meaning" and "Co-worker support". Three bridge variables were identified: "Resilience-adaptation", "Average working hours per week", and "Co-worker support". The final structural equation model basically supported the results of network analysis with an acceptable model-fit (GFI = 0.918, AGFI = 0.896, PCFI = 0.789, PNFI = 0.788, NFI = 0.909, IFI = 0.911, CFI = 0.911, SRMR = 0.040, and RMSEA = 0.064). CONCLUSIONS: There was a rather strong interconnectedness between depressive symptoms and job demands-resources. Fatigue, motor, and appetite were core depressive symptoms of critical care nurses. Close attention to those symptoms could help recognize depression in critical care nurses. Supervisor support, work meaning, and co-worker support played vital roles as job resources in reducing depression, while negative impact of long average working hours per week were more contagious. Resilience, as personal resources, could help mediate the associations between job demands-resources and depression. In clinical practice, it's recommended for nursing managers to (1) encourage critical care nurses to find their "meaning in work", (2) implement resilience enhancing programs for nurse, (3) build and maintain meaningful relationships with nurses and support them in daily work, and (4) create a harmonious and dedicated working environment where co-workers are willing to help and support each other. Improvements in those modifiable aspects could help reduce risk and prevent exacerbations of depressive symptoms in critical care nurses.

[Lien vers l'article](#)

Prevalence and correlates of severe anxiety among front-line nurses during and after the COVID-19 pandemic: a large-scale multi-center study.

Yang S, Hao Q, Sun H, Yang Y, Liu J, Li C, et al. *BMC Nurs*. 2025 Jan 15;24(1):54.

BACKGROUND: Nurses have been at the forefront of the battle against the COVID-19 pandemic, facing extended work hours and heightened stress, predisposing them to psychological distress. This study aims to investigate the prevalence and correlates of severe anxiety among frontline nurses in China during and after the COVID-19 pandemic. METHODS: A large-scale multi-center survey was conducted from November to December 2022 and from April to July 2023. Data were collected using online surveys, covering demographic characteristics, job-related factors, anxiety, depression, and sleep disorders. Statistical analyses, including chi-square tests, t-tests, and logistic regression, were performed to assess the incidence and factors influencing severe anxiety. RESULTS: The study included 816 nurses during the pandemic and 763 nurses after the pandemic. The prevalence of severe anxiety during the pandemic (52.3%) was significantly higher than after the pandemic (8.0%). Factors such as nursing title, night shift frequency, educational level, exercise frequency, COVID-19 infection status, economic pressure, and work pressure showed significant differences between the two periods. Binary logistic regression revealed associations between severe anxiety and factors such as night shift frequency, COVID-19 infection status, nursing title, depression, and sleep disorders. Receiver Operating Characteristic analysis demonstrated good predictive value for severe anxiety. CONCLUSION: The study underscores the importance of understanding and addressing severe anxiety among frontline nurses during and after the COVID-19 pandemic. Future research should delve into long-term psychological effects and implement effective intervention measures to support nurses' mental health.

[Lien vers l'article](#)

Examining the determinants of resilience and mental stress in emergency department nurses.

Kamari Z, Vaisi Raygani AA, Salari N, Khaledi-Paveh B, Mohammadi MM. *BMC Nurs*. 2025 Jan 9;24(1):35.

BACKGROUND: Emergency departments (ED) are characterized by highly dynamic environments. This study aimed to identify determinants of resilience and mental stress among ED nurses. METHODS: A

cross-sectional, analytical design was employed to assess 316 emergency nurses in Kermanshah hospitals using a convenience sampling method. The Connor-Davidson Resilience Scale and the Perceived Stress Scale measured resilience and mental stress, respectively. Data were analyzed using independent t-tests, ANOVA, chi-square tests, and Pearson's correlation in SPSS version 25. RESULTS: The average mental stress score was 26.9, and the average resilience score was 64, indicating moderate levels. Significant relationships were found between employment status, emergency responsibility, economic status, and resilience ($P < 0.01$). Additionally, place of residence, number of children, education, shift work, social network presence, employment status, emergency responsibility, and economic status were significantly related to psychological stress ($P < 0.01$). Pearson's correlation showed an inverse relationship between resilience and mental stress ($r = -0.123$, $P = 0.029$). Age was inversely related to mental stress ($r = -0.408$, $P < 0.001$), while overtime hours per month were directly related to resilience ($r = 0.135$, $P = 0.016$) and inversely related to mental stress ($r = -0.482$, $P = 0.029$). CONCLUSION: The research highlights the importance of considering demographic variables in managing nurses' resilience and mental pressure, emphasizing the need for hospital officials to focus on work shifts, employment status, and economic conditions.

[Lien vers l'article](#)

Stress and Burnout Among Anesthesia Technologists, Technicians, and Trainees: A Cross-Sectional Study in a Tertiary Hospital in Saudi Arabia.

Alsabani MH, Aljohani F, Alkathiri GR, Alkhonain JS, Aljuhani L, Alanazi S, et al. *Healthcare (Basel)*. 2025 Jan 9;13(2).

Background/Objectives: Occupational burnout poses a significant burden to healthcare personnel, institutions, and service users. Anesthesia technologists and technicians work in the shadow of the perioperative team, and a lack of attention to anesthesia support personnel may pose a significant risk to their wellbeing and the quality of care delivered. To date, only a few studies have investigated the prevalence of burnout among anesthesia technologists and technicians worldwide and in Saudi Arabia. Thus, the aim of this cross-sectional study was to assess the prevalence and contributing factors to burnout among anesthesia technologists and technicians in a single tertiary hospital in Saudi Arabia. Methods: The study utilized the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) to assess burnout and a 10-point scale to assess stress levels. The MBI-HSS inventory consists of three subscales: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Univariate and multivariate linear regression analyses were used to identify correlates of each burnout subscale. Gender was included in the multivariable regression analysis in addition to significant variables from univariable analysis. Results: A total of 89 participants completed the survey. Based on each subscale of the MBI-HSS, more than 60% of the participants reported high to moderate EE, and more than half reported high to moderate DP. For PA, only 25.8% of participants reported low PA. We found that age ($\beta = -0.58$, 95% CI: -0.95, -0.20; $p = 0.003$) and stress ($\beta = 3.3$, 95% CI: 2.1, 4.5; $p < 0.001$) were independently associated with EE. In addition, night shift ($\beta = 3.3$, 95% CI: 0.44, 6.1; $p = 0.024$) and stress ($\beta = 0.73$, 95% CI: 0.13, 1.3; $p = 0.017$) were independently associated with DP. Independent factors for PA were identified including night shifts ($\beta = 6.6$, 95% CI: 1.4, 12; $p = 0.014$) and stress levels ($\beta = -1.3$, 95% CI: -2.4, -0.12; $p = 0.03$). Conclusions: This research underscores the alarmingly high prevalence of burnout and the strong link between elevated EE and DP rates and workplace stress, emphasizing the necessity to identify and mitigate these stressors. It is therefore crucial to evaluate the effectiveness of the current wellbeing and mental health initiatives and programs in Saudi Arabia to ensure that they address evolving challenges and the overall mental health of healthcare personnel.

[Lien vers l'article](#)

The influence of anxiety and depression on critical care nurses' performance: A multicenter correlational study.

BACKGROUND: Anxiety and depression among critical care nurses (CCNs) negatively affect performance because of association with clinical medical errors, ineffective communication, absenteeism from work, and burnout. OBJECTIVES: The aim of this study was to investigate the prevalence of anxiety and depression and their associated factors as well as their impact on the CCNs' performance in Hail city, Saudi Arabia. METHODS: A cross-sectional correlational study was conducted among 262 CCNs from April to June 2023. RESULTS: The mean scores of anxiety and depression were significantly higher among male and Saudi CCNs than among their counterparts ($p < 0.05$). CCNs caring for patients in a ratio of 1:5 or more had significantly higher anxiety scores than those with lower nurse-to-patient ratios ($p = 0.004$). CCNs who were working night shifts had significantly higher mean scores of anxiety ($p = 0.005$) and lower mean scores of performance ($p = 0.041$) than their counterparts. Borderline anxiety and depression were prevalent among 43.1% and 38.5% of CCNs, respectively. In contrast, abnormal anxiety and depression were prevalent among 8.8% and 5.7% of CCNs, respectively. CCNs' mental, general, and total performance showed a significant negative correlation with both anxiety ([r = -0.247, p <0.001], [r = -0.183, p = 0.003], and [r = -0.172, p = 0.005], respectively) and depression (r = -0.287, p <0.001), (r = -0.207, p <0.001), and (r = -0.180, p = 0.003), respectively. CONCLUSIONS: Anxiety and depression levels are significantly higher among male, Saudi CCNs, higher nurse-to-patient ratios, those who work night shifts than among their counterparts. Less than half of CCNs experience borderline anxiety and/or depression that had significantly negative correlation with their performance. Anxiety and depression in shift nurses may be treated by reducing workload, causes of stress during night shifts, and giving practical coping mechanisms for typical nurse job pressures.

Lien vers l'article

Prevalence and factors associated with burnout among healthcare providers at Kasulu district in Kigoma region, 2024: an analytical cross-sectional study in a primary healthcare setting.

BACKGROUND: Burnout among healthcare providers affects their well-being and quality of care. Despite its importance, limited data exist on burnout among primary healthcare providers in Tanzania. OBJECTIVES: To determine the prevalence of burnout and associated factors among healthcare providers in Kasulu district, Kigoma region, 2024. STUDY DESIGN: Analytical cross-sectional study conducted from January to June 2024. STUDY SETTING: Primary health facilities at Kasulu district in Kigoma region. PARTICIPANTS: Healthcare providers working in Kasulu district for more than 6 months before study. PRIMARY OUTCOME: Burnout. RESULTS: Among 266 healthcare providers with a response rate of 99%, 59.4% were male. The median age was 32 years (IQR 27-37). Burnout prevalence was 54.5% (95% CI 48.5% to 60.4%), higher among nurses (61.3%), those living off-site (69.6%) and those considering leaving their careers (86.2%). Significant factors included age 21-30 years (adjusted prevalence ratio (aPR) 1.55, 95% CI 1.06 to 2.27), nursing profession (aPR 2.19, 95% CI 1.07 to 4.48), off-site residence (aPR 1.23, 95% CI 1.02 to 1.49), 6 months to 2 years of experience (aPR 1.44, 95% CI 1.12 to 1.86), dissatisfaction with salary (aPR 1.77, 95% CI 1.02 to 3.07), poor colleague relationships (aPR 1.25, 95% CI 1.03 to 1.51), ≥4 night shifts/week (aPR 2.54, 95% CI 1.33 to 4.86), attending ≥41 patients per day (aPR 1.52, 95% CI 1.06 to 2.19) and lack of academic growth opportunities (aPR 1.62, 95% CI 1.15 to 2.29). CONCLUSION: Rural settings like Kasulu face unique challenges, including limited resources and heavy workloads, exacerbating burnout among healthcare providers. Over half of healthcare providers experienced burnout, with younger providers, nurses, those living off-site, less

experienced staff, poor colleague relationships and high patient loads at higher risk. To mitigate burnout, authorities should provide career counselling, onsite housing, mental health support and increased staffing.

Lien vers l'article

Troubles cognitifs et de la vigilance

Utility of a Wearable Tracker to Assess Sleep Quality in Nurses and Their Spouses: A Prospective Cohort Study.

Ishinuki T, Goda E, Tatsumi H, Kutomi G, Ohyanagi T, Ohnishi H, et al. *SAGE Open Nurs*. 2025 Jan-Dec;11:23779608241267079.

INTRODUCTION: Sleep disturbances among nurses engaged in night duty and their spouses need to be improved to ensure their ability to provide care and perform daily tasks. Therefore, an objective investigation is needed to establish a sleep improvement strategy. OBJECTIVE: To investigate the utility of a sleep tracker to assess sleep quality in nurses and spouses. METHOD: Nurses (n = 30) and spouses (n = 30) wore a sleep tracker for 14 days to investigate sleep scores. Sleep quality and number of steps were evaluated by Fitbit. They responded to the Richards-Campbell Sleep Questionnaire and Pittsburgh Sleep Quality Index. A multiple regression analysis was performed to identify the factors affecting sleep quality. RESULTS: Factors affecting sleep scores in nurses were hypnotic medication, night duty, and steps, while those in spouses were mental instability, hypnotic medication, alcohol, night duty, and steps. Factors affecting the Richards-Campbell Sleep Questionnaire in nurses were household chores, night duty, and steps, while those in spouses were hypnotic medication and steps. CONCLUSION: The sleep quality of nurses was affected by household chores, hypnotic medication, night duty, and steps. Besides the factors of nurses, spouses were affected by mental instability and alcohol. Night duty affected negativity in both nurses and spouses. Steps exerted positive effects in both the sleep tracker and the Richards-Campbell Sleep Questionnaire. The sleep tracker may be useful for identifying factors that improve sleep quality.

Lien vers l'article

A national cross-sectional study on latent profile analysis of occupational fatigue among Chinese nurses in the early post-COVID-19 era.

He Q, Ren J, Wang G, Wang Y. *Front Public Health*. 2024;12:1501417.

BACKGROUND: Occupational fatigue is a widespread condition within the nursing workforce, adversely affecting both nurses' health and patient safety. The protracted duration of the COVID-19 pandemic, approaching 3 years, has exacerbated the challenges faced by nurses globally. The escalation in patient numbers and the high incidence of infections among healthcare workers have intensified occupational fatigue. This study seeks to explore the enduring impact of the pandemic on occupational fatigue among Chinese nurses through a latent profile analysis, and to identify the associated risk factors. METHODS: A comprehensive survey was conducted involving 2,140 nurses from 186 hospitals across China during the initial phase of the post-COVID-19 era. The primary instruments utilized for data collection were the Occupational Fatigue Exhaustion Recovery Scale and the Effort-Reward Imbalance Questionnaire. RESULTS: Three distinct profiles of occupational fatigue were identified: a low fatigue/high recovery group (18.6%), a moderate fatigue/moderate recovery group (48.8%), and a high fatigue/low recovery group (32.6%). The vast majority of nurses reported experiencing moderate to high levels of occupational fatigue during the early stage of the post-coronavirus era. Significant predictors for membership in these fatigue profiles included marital status, possession of a master's degree or higher, working over five night shifts per month, experiencing COVID-19 symptoms, and

exhibiting higher scores in extrinsic effort and overcommitment. CONCLUSION: Chinese nurses exhibit a relatively high level of occupational fatigue in the early post-COVID-19 era, likely influenced by various socio-demographic and work-related factors. It is imperative to develop targeted interventions aimed at alleviating fatigue among specific groups of nurses to effectively address the challenges posed by occupational fatigue in the face of future public health disasters.

Lien vers l'article

Chronobiologie
Animal

Melatonin Alleviates Circadian Rhythm Disruption-Induced Enhanced Luteinizing Hormone Pulse Frequency and Ovarian Dysfunction.

Li Y, Pei T, Zhu H, Wang R, Wu L, Huang X, et al. *J Pineal Res*. 2025 Jan;77(1):e70026.

Circadian rhythm disruption (CRD), stemming from sleep disorders and/or shift work, is a risk factor for reproductive dysfunction. CRD has been reported to disturb nocturnal melatonin signaling, which plays a crucial role in female reproduction as a circadian regulator and an antioxidant. The hypothalamic-pituitary-ovarian (HPO) axis regulates female reproduction, with luteinizing hormone (LH) pulse pattern playing a pivotal role in folliculogenesis and steroidogenesis. However, the effect of CRD on the HPO axis and the involvement of melatonin remains unclear. Female CBA/CaJ mice underwent CRD modeling, which involves alternating between standard light conditions and an 8-h advance schedule every 3 days for 8 weeks, whereas control mice were maintained under a standard 12:12-h light/dark (LD) cycle. Subsequent measurements of diurnal melatonin levels, LH pulse patterns assessments via serial tail-tip blood sampling and evaluations of ovarian function were conducted. CRD altered the circadian rhythms of wheel-running activity and melatonin secretion in mice and led to an augmented LH pulse pattern, evidenced by increased LH pulse frequency, mean LH levels, and pituitary LH beta-subunit (LHβ) expression, irregular estrous cycles, abnormal luteal function, altered endocrine function, and ovarian oxidative stress. Melatonin treatment (10 mg/kg/day for 4 weeks) significantly improved the HPO axis disorder in CRD mice, decreasing the enhanced LH pulse frequency and pituitary LHβ expression. These findings were further validated using an in vitro LβT2 cell perfusion model. Furthermore, melatonin restored ovarian function and scavenged reactive oxygen species, thereby preventing apoptosis and preserving ovarian function. This study offers new insights into the impact of CRD on the HPO axis and emphasizes the potential of melatonin supplementation in mitigating its effects on female reproduction.

Lien vers l'article

Shift work schedules alter immune cell regulation and accelerate cognitive impairment during aging.

de Souza KA, Jackson M, Chen J, Reyes J, Muayad J, Tran E, et al. *J Neuroinflammation*. 2025 Jan 8;22(1):4.

BACKGROUND: Disturbances of the sleep-wake cycle and other circadian rhythms typically precede the age-related deficits in learning and memory, suggesting that these alterations in circadian timekeeping may contribute to the progressive cognitive decline during aging. The present study examined the role of immune cell activation and inflammation in the link between circadian rhythm dysregulation and cognitive impairment in aging. METHODS: C57Bl/6J mice were exposed to shifted light-dark (LD) cycles (12 h advance/5d) during early adulthood (from ≈ 4-6mo) or continuously to a "fixed" LD12:12 schedule. At middle age (13-14mo), the long-term effects of circadian rhythm dysregulation on cognitive performance, immune cell regulation and hippocampal microglia were analyzed using behavioral, flow cytometry and immunohistochemical assays. RESULTS: Entrainment of the activity rhythm was stable in all mice on a fixed LD 12:12 cycle but was fully compromised during exposure to shifted LD cycles. Even during "post-treatment" exposure to standard LD 12:12 conditions, re-entrainment in shifted LD mice was marked by altered patterns of entrainment and increased day-to-day variability in activity onset times that persisted into middle-age. These alterations in light-dark entrainment were closely associated with dramatic impairment in the Barnes maze test for the entire group of shifted LD mice at middle age, well before cognitive decline was first observed in aged (18-22mo) animals maintained on fixed LD cycles. In conjunction with the effects of circadian dysregulation on cognition, shifted LD mice at middle age were distinguished by significant expansion of splenic B cells and B cell subtypes expressing the activation marker CD69 or inflammatory marker MHC Class II

Invariant peptide (CLIP), differential increases in CLIP+, 41BB-Ligand+, and CD74 + B cells in the meningeal lymphatics, alterations in splenic T cell subtypes, and increased number and altered functional state of microglia in the dentate gyrus. In shifted LD mice, the expansion in splenic B cells was negatively correlated with cognitive performance; when B cell numbers were higher, performance was worse in the Barnes maze. These results indicate that disordered circadian timekeeping associated with early exposure to shift work-like schedules alone accelerates cognitive decline during aging in conjunction with altered regulation of immune cells and microglia in the brain.

Lien vers l'article

Timing of exercise differentially impacts adipose tissue gain in male adolescent rats.

Kutsenko Y, Iñiguez LP, Barreda A, Pardo-Marín L, Toval A, Garrigos D, et al. *Mol Metab*. 2025 Mar;93:102100.

OBJECTIVE: Circadian rhythms of metabolic, hormonal, and behavioral fluctuations and their alterations can impact health. An important gap in knowledge in the field is whether the time of the day of exercise and the age of onset of exercise exert distinct effects at the level of whole-body adipose tissue and body composition. The goal of the present study was to determine how exercise at different times of the day during adolescence impacts the adipose tissue transcriptome and content in a rodent model. METHODS: Rats were subjected to one of four conditions during their adolescence: early active phase control or exercise (EAC or EAE; ZT13), and late active phase control or exercise (LAC or LAE; ZT23). The effects of exercise timing were assessed at the level of subcutaneous and visceral adipose tissue transcriptome, body composition, hypothalamic expression of orexigenic and anorexigenic genes, blood serum markers and 24-hour core body temperature patterns. RESULTS: We found that late active phase exercise (ZT23) greatly upregulated pathways of lipid synthesis, glycolysis and NADH shuttles in LAE rats, compared to LAC or EAE. Conversely, LAE rats showed notably lower content of adipose tissue. In addition, LAE rats showed signs of impaired FGF21-adiponectin axis compared to other groups. CONCLUSIONS: Finally, LAE rats showed higher post-exercise core body temperature compared to other groups. Our results thus indicate that our exercise protocol induced an unusual effect characterized by enhanced lipid synthesis but reduced adipose tissue content in late active phase but not early active phase exercise during adolescence.

Lien vers l'article

Homme

Steroid hormones, vitamin D and melatonin in rapidly rotating shift female hospital workers.

Fustinoni S, Mercadante R, Polledri E, Consonni D, Campo L, Frigerio G, et al. *Toxicol Lett*. 2025 Jan;403:32-9.

Disruption of circadian rhythm caused by night-shift work has been associated with several disorders, including cancer. Health care personnel often works at night to insure the continuity of care. Aim of this study was to evaluate the influence of night-shift work on serum and saliva levels of steroid hormones, vitamin D, and melatonin in hospital female workers. Ninety-seven female hospital workers were recruited: 46 nurses performing clockwise rapid rotating shift schedule on a 5-day cycle, including one night, and 51 day workers. Thirteen steroid hormones and vitamin D were assessed in morning serum samples; cortisol, cortisone and melatonin were assessed in morning and evening saliva samples. We fitted multiple regression models adjusted for age, BMI, sampling month, ovarian cycle phase, and use of oral contraceptives (OC). Rapidly rotating clockwise shift work was associated with increased levels of serum corticosterone, 11-deoxycortisol, dehydroepiandrosterone (DHEA), and androstenedione, and decreased levels of estradiol and vitamin D. OC modulated the association

between serum cortisol, corticosterone and 11-deoxycortisol and work shift. The normal circadian phase of salivary melatonin, cortisol and cortisone was not affected by shift work. In female hospital nurses, the clockwise rapid rotating shift schedule increases the level of some hormones, likely associated with stress. No increase of estradiol, nor modification of salivary hormones was observed.

Lien vers l'article

Optimising lighting conditions to enhance seafarer adaptation to the '6-h on/6-h off' shift pattern: a balanced crossover study.

Zhao C, Li N, Yi X, Wang X, He Y, Shen H, et al. *J Sleep Res*. 2025 Jan 12:e14450.

The '6-h on/6-h off' shift pattern could potentially disrupt the physiological rhythms and cognitive performance of seafarers, attributed to its shorter and more frequent shifts. Conversely, light exposure has been demonstrated to enhance cognitive abilities and synchronise physiological processes. Therefore, we studied the fatigue, cognition, sleep and rhythm of seafarers with different shifts to determine how light can benefit their performance. A total of 16 seafarers participated in a 2×2 crossover study, which involved two shift types (Morning-Evening and Day-Night) and two lighting conditions (static lighting and dynamic lighting). Sleepiness, cognition and fatigue were assessed every 2 h during '6-h on' period, using the Karolinska Sleepiness Scale, psychomotor vigilance task, critical flicker frequency and visual analogue scale for fatigue. Sleep was monitored during '6-h off' period, core body temperature was continuously tracked for rhythm throughout the shift protocol. For the Day-Night shift, the static mode with stable higher illuminance than dynamic lighting significantly reduced sleepiness (p = 0.01), objective fatigue (p = 0.001), subjective fatigue (fatigue level [p = 0.004] and visual fatigue [p = 0.001]) during the night period, while increasing sleep duration during the day (6:00 a.m. to 12:00 p.m.) and delaying the rhythm. For the Morning-Evening shift, dynamic lighting with lower illuminance significantly increased sleep duration during the night (12:00 a.m. to 6:00 a.m.) without causing a significant difference in performance. Overall, static lighting is more suitable for Day-Night shift seafarers due to lower sleepiness, fatigue and longer daytime sleep duration, while dynamic lighting is more suitable for Morning-Evening shift seafarers due to longer night-time sleep duration. Therefore, different lighting patterns should be adopted for seafarers during different shifts.

Lien vers l'article

Shift work, thyroid function and liver function among subway workers.

Yu F, Liu J, Qu T, Zhao M, Wang J, Jiang S, et al. *Occup Med (Lond)*. 2025 Jan 16;74(9):668-75.

BACKGROUND: Shift work is associated with an increased risk of liver injury. However, whether and how shift work alters liver function remains unclear. AIMS: This study aimed to investigate the associations between shift work and the liver function parameters, and further explore the mediating roles of thyroid function indicators. METHODS: We conducted a cross-sectional study involving a convenience sample of 724 subway workers. Multivariate linear regression models were adopted to approximate the effect values for the associations of shift work with liver function parameters and thyroid function indicators. Mediation analyses were used to explore the roles of thyroid function indicators in the association between shift work and liver function parameters. RESULTS: Shift work was associated with increased levels of alkaline phosphatase (ALP), total triiodothyronine (TT3) and free thyroxine (FT4) (β = 6.309, 95% confidence interval [CI] 2.739-9.879, β = 0.328, 95% CI 0.242-0.415 and β = 2.913, 95% CI 1.502-2.884, respectively). In stratification analysis, the positive association between shift work and TT3, FT3 and FT4 was more pronounced among people >30 years old. The increase in shift worker FT3 and aspartate transaminase levels was stronger among alcohol users. Mediation analysis showed that TT3 and FT4 mediated 39% and 29% of the associations between shift work and the increased level of ALP, respectively (all P < 0.05). CONCLUSIONS: The results suggest that

shift work is associated with increased ALP levels of subway workers, which is partly mediated by the increase of TT3 and FT4 levels.

Lien vers l'article

Relationship between shift type and sleep quality in rotating-shift nurses with chronotype as a moderator variable.

Weng PW, Chang WP. *Int Nurs Rev*. 2025 Mar;72(1):e13010.

BACKGROUND: Rotating-shift nurses are susceptible to sleep disorders due to numerous factors, such as their biological clock, emotions, and age. At present, a lack of research exists on whether chronotype and shift type jointly influence the sleep quality of nurses. AIM: To verify whether chronotype is a moderator variable of the relationship between shift type and sleep quality in nurses in order to provide empirical evidence for future mental and physical health improvement. METHOD: Clinical rotating-shift nurses at a medical center in northern Taiwan were recruited as participants between November 1, 2023, and December 13, 2023. All of the nurses were working a monthly rotating shift schedule. Hierarchical multiple regression analysis was employed to investigate whether the influence of shift type on sleep quality in nurses varied with chronotype. The STROBE checklist was used for reporting this study. RESULTS: The participants were 255 rotating-shift nurses in this study. Hierarchical multiple regression results revealed that rotating-shift nurses who were older (B = 0.19, p = 0.029), had greater physical fatigue (B = 0.27, p = 0.016), and had more negative emotions (B = 0.17, p = 0.011) suffered from poorer sleep quality. After controlling the above factors, we further found that chronotype indeed had moderating effects on the influence of shift type on sleep quality (B = -1.83, p = 0.049). CONCLUSIONS: This study demonstrates that early- and intermediate-type nurses are more suitable for working the day and evening shifts, whereas late-type nurses are more suitable for working the night shift. IMPLICATION FOR NURSING AND HEALTH POLICY: Coordinating chronotype with shift type will ensure that shift schedules better match the biological clocks of nurses; such individual considerations could help to improve their sleep quality.

Lien vers l'article

Shiftwork and insulin resistance in professional drivers: exploring the association using non-insulin-based surrogate measures.

Tawfik MY, Amer S, Fouad AM. *BMC Public Health*. 2025 Jan 16;25(1):191.

BACKGROUND: Previous research has made use of the Homeostatic Model Assessment for Insulin Resistance (HOMA-IR) index to explore the association between shiftwork (SW) and insulin resistance (IR). However, the limitations of the HOMA-IR index restrict its use. This study aimed to investigate the relationship between SW and IR in professional drivers using four alternative non-insulin-based IR surrogate measures (NIRS), and to determine the predictors of elevated NIRS. METHODS: A comparative cross-sectional study was conducted on professional drivers at four Egyptian companies, where 187 SW were compared to 193 dayworkers (DW). Measurements included: sociodemographic, work, and clinical characteristics. Laboratory and NIRS data included: triglyceride glucose (TyG), triglyceride glucose-body mass index (TyG-BMI), triglyceride to high density lipoprotein cholesterol (TG/HDL-C), and metabolic score of insulin resistance (METS-IR). Further assessments included insomnia severity index (ISI), and perceived stress scale (PSS-10). RESULTS: Shiftwork-drivers showed significantly higher levels of NIRS compared to DW-drivers. Shiftwork was significantly associated with elevated TyG (OR: 5.04, 95% CI: 1.98-12.84), TyG-BMI (OR: 4.50, 95% CI: 2.45-8.26), and METS-IR (OR: 6.30, 95% CI: 2.72-14.58). Significant interactions between SW and insomnia or meal-timing habits existed, where SW-drivers with clinically significant insomnia had 11 times higher odds of elevated TyG compared to DW drivers without insomnia. Likewise, SW-drivers experiencing poor meal-timing habits had 5.5- and 6.8-times higher odds of elevated TG/HDL-C and METS-IR, respectively, compared to DW

divers without poor meal timing habits. Other significant predictors for elevated NIRS included: age, income, stress, overweight/obesity, and poor meal timing habits. CONCLUSIONS: This study demonstrates a significant association between shiftwork and elevated insulin resistance in professional drivers. Insomnia and poor meal timing habits significantly increases the odds of insulin resistance among professional drivers, suggesting interventions targeting sleep quality, meal timing, and stress management.

Lien vers l'article

Diurnal timing of physical activity in relation to obesity and diabetes in the German National Cohort (NAKO).

Stein MJ, Weber A, Bamberg F, Baurecht H, Berger K, Bohmann P, et al. *Int J Obes (Lond)*. 2025 Jan 24.

BACKGROUND: Physical activity supports weight regulation and metabolic health, but its timing in relation to obesity and diabetes remains unclear. We aimed to assess the diurnal timing of physical activity and its association with obesity and diabetes. METHODS: We cross-sectionally analyzed hip-worn accelerometry data from 61,116 participants aged 20-75 in the German National Cohort between 2015 and 2019. We divided physical activity into sex- and age-standardized quartiles of total morning (06:00-11:59), afternoon (12:00-17:59), evening (18:00-23:59), and nighttime (00:00-06:00) physical activity. Using multivariable logistic regression, we estimated associations of physical activity timing with obesity (BMI ≥ 30.0 kg/m(2)) and diabetes (self-reported or HbA1c ≥ 6.5%). We accounted for sex, age, study region, education, employment, risky alcohol use, smoking, night shift work, and sleep duration. RESULTS: High afternoon (top vs. bottom quartile, OR: 0.36, 95% CI: 0.33-0.38) and evening physical activity (OR: 0.45, 95% CI: 0.42-0.48) showed lower obesity odds than high morning activity (OR: 0.71, 95% CI: 0.66-0.76), whereas nighttime activity increased obesity odds (OR: 1.58, 95% CI: 1.48-1.68). Associations were similar for diabetes, with the lowest odds for afternoon (OR: 0.47, 95% CI: 0.42-0.53), followed by evening (OR: 0.56, 95% CI: 0.50-0.62) and morning activity (OR: 0.80, 95% CI: 0.71-0.89), and higher odds for nighttime activity (OR: 1.43, 95% CI: 1.29-1.58). Findings were not modified by employment status, night shift work, and sleep duration. CONCLUSIONS: Our cross-sectional findings require longitudinal corroboration but suggest afternoon and evening activity provide greater metabolic health benefits than morning activity, while nighttime activity is discouraged.

Lien vers l'article

Endothelial Dysfunction and Hemostatic System Activation in Relation to Shift Workers, Social Jetlag, and Chronotype in Female Nurses.

Saharov G, Salti B, Bareya M, Keren-Politansky A, Fodi M, Shochat T, et al. *Int J Mol Sci*. 2025 Jan 8;26(2).

Circadian misalignment, due to shiftwork and/or individual chronotype and/or social jetlag (SJL), quantified as the difference between internal and social timing, may contribute to cardiovascular disease. Markers of endothelial dysfunction and activation of the coagulation system may predict cardiovascular pathology. The present study aim was to investigate the effects of shift work, SJL, and chronotype on endothelial function and coagulation parameters. One hundred female nurses underwent endothelial function testing using the EndoPAT and blood sampling for coagulation markers, repeated at 06:00-9:00 and 18:00-21:00. We found that compared with day workers, endothelial function and fibrinogen levels were lower (p = 0.001, p = 0.005, respectively) and the procoagulant parameters of plasminogen activator inhibitor-1 (PAI-1) and heparanase level and activity were higher amongst shift workers (p = 0.009, p = 0.03, p = 0.029, respectively). High SJL was associated with lower endothelial function (p = 0.002) and higher PAI-1, heparanase procoagulant activity, heparanase level, and D-Dimer level (p = 0.004, p = 0.003, p = 0.021, p = 0.006, respectively). In the late chronotype, PAI-1 and heparanase procoagulant activity were higher than in the early

chronotype (p = 0.009, p = 0.007, respectively). Diurnal variation was found for PAI-1, von-Willebrand factor (vWF), heparanase, and heparan-sulfate with higher levels in the mornings. The correlation between shift/day workers and SJL or chronotype was moderately strong, indicating that SJL and chronotype are independent factors. In conclusion, findings suggest endothelial impairment and increased thrombotic risk in nurses working in shifts or with high SJL or late chronotype. The thrombotic risk is increased in the morning independent of circadian misalignment cause. These findings strengthen the importance of the alliance to the biological daily rhythm in daily life. Further research is needed to evaluate inhibitors of heparanase to attenuate the thrombotic risk in individuals with circadian misalignment.

Lien vers l'article

BioClocks UK: driving robust cycles of discovery to impact.

Rees H, Rzechorzek NM, Hughes RB, Dodd AN, Hodge JJL, Stevenson TJ, et al. *Philos Trans R Soc Lond B Biol Sci*. 2025 Jan 23;380(1918):20230345.

Chronobiology is a multidisciplinary field that extends across the tree of life, transcends all scales of biological organization, and has huge translational potential. For the UK to harness the opportunities presented within applied chronobiology, we need to build our network outwards to reach stakeholders that can directly benefit from our discoveries. In this article, we discuss the importance of biological rhythms to our health, society, economy and environment, with a particular focus on circadian rhythms. We subsequently introduce the vision and objectives of BioClocks UK, a newly formed research network, whose mission is to stimulate researcher interactions and sustain discovery-impact cycles between chronobiologists, wider research communities and multiple industry sectors.This article is part of the Theo Murphy meeting issue 'Circadian rhythms in infection and immunity'.

Lien vers l'article

Clockwork conditioning: Aligning the skeletal muscle clock with time-of-day exercise for cardiometabolic health.

Procopio SB, Esser KA. *J Mol Cell Cardiol*. 2025 Jan;198:36-44.

Circadian rhythms have evolved to synchronize gene expression, physiology, and behavior with time-of-day changes in the external environment. In every mammalian cell exists a core clock mechanism that consists of a transcriptional-translational feedback loop that drives rhythmic gene expression. Circadian disruption, as observed in shift workers and genetic mouse models, contributes to the onset and progression of cardiometabolic disorders. The central clock, located in the hypothalamus, is uniquely sensitive to external light cues, while the peripheral clocks are responsive to non-photic stimuli such as feeding and activity in addition to signals from the central clock. Recent research has illustrated the sensitivity of the skeletal muscle circadian clock to exercise timing, offering a promising avenue for therapeutic intervention in cardiometabolic health. Here we provide an in-depth examination of the molecular mechanisms underlying skeletal muscle clock function and its impact on cardiometabolic pathways, including glucose and lipid metabolism, as well as inflammation. To highlight the role of exercise as a time-cue for the skeletal muscle clock, we discuss evidence of exercise-induced shifts in the skeletal muscle clock and the differential response to exercise performed at different times of the day. Furthermore, we present data in support of time-of-day exercise as a potential therapeutic strategy for mitigating cardiometabolic disease burden. By exploring the relationship between the skeletal muscle clock, exercise timing, and cardiometabolic health, we identify new areas for future research and offer valuable insights into novel therapeutic approaches aimed at improving cardiometabolic disease outcomes.

Lien vers l'article

Rhythms of light: Understanding the role of circadian timing in alertness and cognitive performance.

Lok R. *Handb Clin Neurol*. 2025;206:17-26.

The nonimage-forming effects of light are pivotal in regulating cognitive functions, including alertness, sustained attention, and higher-order cognitive processes. These cognitive domains are deeply influenced by the sleep-wake cycle, which are governed by two key processes: the homeostatic process, which builds sleep pressure during wakefulness, and the circadian process, which aligns with environmental light cues to regulate wakefulness and sleep. When these processes fall out of sync-a condition known as circadian misalignment-alertness, sustained attention, and cognitive performance can suffer significantly. This misalignment is often observed in shift workers, individuals experiencing jet lag, and those with circadian rhythm sleep disorders. However, strategic light exposure can help mitigate these cognitive impairments by realigning circadian rhythms, enhancing wakefulness during desired periods, and facilitating sleep when needed. This chapter examines the complex interplay between light, circadian rhythms, the sleep-wake cycle, and cognitive functioning, offering a comprehensive exploration of how these factors shape cognitive performance throughout the day and under conditions of circadian misalignment. It also discusses the broader implications of these interactions for cognitive health and performance.

Lien vers l'article

Associations of maternal night shift work during pregnancy with DNA methylation in offspring: a meta-analysis in the PACE consortium.

Marques IF, Domènech-Panicello C, Geurtsen ML, Hoang TT, Richmond R, Polinski K, et al. *Clin Epigenetics*. 2025 Jan 22;17(1):12.

BACKGROUND: Night shift work during pregnancy has been associated with differential DNA methylation in placental tissue, but no studies have explored this association in cord blood. We aimed to examine associations of maternal night shift work with cord blood DNA methylation. METHODS: A total of 4487 mother-newborn pairs from 7 studies were included. Maternal night shift work during pregnancy was ascertained via questionnaires and harmonized into "any" versus "no". DNA methylation was measured in cord blood using the Illumina Infinium Methylation arrays. Robust linear regression models adjusted for relevant confounders were run in the individual cohorts, and results were meta-analyzed. RESULTS: Maternal night shift work during pregnancy ranged from 3.4% to 26.3%. Three CpGs were differentially methylated in relation to maternal night shift work during pregnancy at a false discovery rate adjusted $P < 0.05$: cg10945885 (estimate (β) 0.38%, standard error (SE) 0.07), cg00773359 (β 0.25%, SE 0.05), and cg21836426 (β - 0.29%, SE 0.05). Associations of the identified CpGs were found in previous literature for gestational age and childhood and adolescent BMI. In a mouse model of prenatal jet lag exposure, information on offspring DNA methylation of ten homologous genes annotated to the 16 CpGs with $P < 1 \times 10^{(-5)}$ in our analysis was available, of which eight were associated (enrichment P: $1.62 \times 10^{(-11)}$). CONCLUSION: Maternal night shift work during pregnancy was associated with newborn DNA methylation at 3 CpGs. Top findings overlapped with those in a mouse model of gestational jet lag. This work strengthens evidence that DNA methylation could be a marker or mediator of impacts of circadian rhythm disturbances.

Lien vers l'article

Genetic and epigenetic alterations in night shift nurses with breast cancer: a narrative review.

Li X, Hu Y, Aslanbeigi F. *Cancer Cell Int*. 2025 Jan 20;25(1):20.

This narrative review explores the link between breast cancer and night shift work in nurses, focusing on genetic and epigenetic factors. Breast cancer disproportionately affects women globally, and night

shift work is increasingly recognized as a potential risk factor. Nurses who work consecutive overnight shifts face elevated risks due to disruptions in their circadian rhythms. Studies suggest that working six or more successive night shifts, particularly over five years or more, may increase breast cancer risk. This review hypothesizes that disruptions in the sleep-wake cycle, such as changes in melatonin production and telomere length, could contribute to breast cancer susceptibility. Currently, there is limited genetic evidence to support this hypothesis. However, it is plausible that genetic and epigenetic alterations, including changes in genes like ER and HER2, may heighten the risk for night shift nurses. These alterations may involve variations in telomere length, DNA methylation, and disruptions in critical breast cancer-related genes. We highlight various genetic and epigenetic changes that may influence this increased susceptibility. Further research is needed to explore the underlying mechanisms and contributing factors in this association.

[Lien vers l'article](#)

Trauma history and persistent poor objective and subjective sleep quality among midlife women.

Jakubowski K, Riedmann CA, Chang Y, Koenen KC, Maki PM, Thurston RC. *Menopause*. 2025 Mar 1;32(3):207-16.

OBJECTIVES: Whereas some work links trauma exposure to poor subjective sleep quality, studies largely rely upon limited trauma measures and self-reported sleep at one time point. It is unknown whether trauma is related to persistent poor sleep, whether associations differ based on childhood versus adulthood trauma, and whether trauma exposure is related to poorer objectively assessed sleep. We tested whether childhood or adult trauma associated with persistent poor objectively and subjectively measured sleep at two time points in midlife women. METHODS: One hundred sixty-seven women aged 40-60 at baseline were assessed twice 5 years apart. At baseline, women reported childhood trauma (Child Trauma Questionnaire), adult trauma (Brief Trauma Questionnaire), demographics, depressive symptoms, apnea symptoms, and medical history, and provided physical measures. At both visits, women completed 3 days of actigraphy (total sleep time [TST], wake after sleep onset [WASO]) and reported sleep quality (Pittsburgh Sleep Quality Index). Relations of childhood and adult trauma exposure, respectively, with persistent poor sleep at both baseline and follow-up visits (TST [<6 hours], WASO [>30 minutes], Pittsburgh Sleep Quality Index [>5]) were assessed in logistic regression models, adjusted for age, race/ethnicity, education, body mass index, sleep medications, nightshift work, apnea, depressive symptoms, vasomotor symptoms, and alcohol use. RESULTS: Childhood trauma was related to persistent high WASO (odds ratio [95% confidence interval] = 2.16 [1.04-4.50], P = 0.039, multivariable). Adult trauma was related to persistent poor sleep quality (odds ratio [95% confidence interval] = 2.29 [1.07-4.93], P = 0.034, multivariable). Trauma was unrelated to persistent short TST. CONCLUSIONS: Childhood and adult trauma, respectively, were related to persistent poor objective sleep continuity and subjective sleep quality in midlife women, independent of risk factors.

[Lien vers l'article](#)

Circadian disruption of feeding-fasting rhythm and its consequences for metabolic, immune, cancer, and cognitive processes.

Crespo MT, Trebucq LL, Senna CA, Hokama G, Paladino N, Agostino PV, et al. *Biomed J*. 2025 Jan 3:100827.

The circadian system is composed by a central hypothalamic clock at the suprachiasmatic nuclei (SCN) that communicates with peripheral circadian oscillators for daily coordination of behavior and physiology. The SCN entrain to the environmental 24-h light-dark (LD) cycle and drive daily rhythms of internal synchronizers such as core body temperature, hypothalamic-hypophysary hormones, sympathetic/parasympathetic activity, as well as behavioral and feeding-fasting rhythms, which supply

signals setting core molecular clocks at central and peripheral tissues. Steady phase relationships between the SCN and peripheral oscillators keep homeostatic processes such as microbiota/microbiome composition/activity, metabolic supply/demand, energy balance, immunoinflammatory process, sleep amount and quality, psychophysiological stress, etc. Indeed, the risk of health alterations increase when these phase relationships are chronically changed prompting circadian disruption (CD), as occurring after sudden LD cycle changes (so-called jet-lag), or due to changes of activity/feeding-rest/fasting rhythm with respect to LD cycles (as humans subjected to nightwork, or restricting food access at rest in mice). Typical pathologies observed in animal models of CD and epidemiological studies include metabolic syndrome, type-2 diabetes, obesity, chronic inflammation, cancer, sleep disruption, decrease in physical and cognitive performance, and mood, among others. The present review discusses different aspects of such physiological dysregulations observed in animal models of CD having altered feeding-fasting rhythms, with potential translation to human health.

[Lien vers l'article](#)

Personal light treatment devices: a countermeasure to improve sleep, fatigue, and circadian misalignment in an operational setting.

Chabal S, Moslener E, Markwald RR, Chinoy ED. *Sleep Adv*. 2025;6(1):zpae097.

Carefully timed light exposure is a promising countermeasure to overcome the negative sleep and circadian implications of shift work. However, many lighting interventions are static and applied at the group level (e.g. light banks, changes to ambient lighting), which is not appropriate for all populations or settings. This study investigates whether individualized lighting exposure, via personal light treatment devices (PLTDs), can improve sleep, sustain projected performance, and entrain circadian rhythms with the work schedules of US Navy submariners. Submarines are a unique testbed for PLTD intervention because they provide a self-contained environment with little influence from outside schedules or lighting. Forty-two submariners were pseudo-randomly assigned to either the PLTD or Control group. PLTD group participants wore blue-light exposure glasses for ~40 minutes upon waking and blue-blocking glasses for ~2 hours before sleep; Control group participants did not use PLTDs. Both groups completed questionnaires assessing subjective sleep and mood before and after the 12-day intervention, and wore wrist actigraphy devices to objectively assess sleep, projected performance, and predicted circadian phase outcomes. Compared with the Control group, several objective and subjective sleep outcomes and projected performance scores were improved in the PLTD group. The PLTD group's predicted circadian phase (modeled from actigraphy-derived accelerometer data) more rapidly shifted to align with scheduled work periods. Compliance with PLTD use was high, with no major disruptions to operational duties reported. These data provide initial support for the use of PLTDs as a flexible and customizable countermeasure for fatigue, sleep loss, and circadian misalignment in an operational environment.

[Lien vers l'article](#)

Sleep deprivation and corneal chronobiology: reevaluating overnight corneal changes.

Aszalós ZZ, Kolozsvári BL, Lénárt V, Pásztor D, Hassan Z, Surányi É, et al. *Sci Rep*. 2025 Jan 4;15(1):801.

This prospective cohort study is aimed to investigate circadian variations in corneal parameters, focusing on sleep-deprived subjects. Sixty-four healthy individuals (age range: 21-76 years) actively participated in this study, undergoing examinations at least five times within a 24-hour timeframe. The analysis encompassed keratometric parameters of the cornea's front (F) and back (B) surfaces, refractive power in flattest and steepest axes (K1, K2), astigmatism (Astig) and its axis (Axis), aspheric coefficient (Asph), corneal pachymetry values of thinnest corneal thickness (Pachy Min) and corneal thickness in the center of the pupil (Pachy Pupil), volume relative to the 3 and 10 mm corneal diagonal

(Vol D3, Vol D10) and surface variance index (ISV). Circadian changes were assessed using a hierarchical, mixed-effects linear regression adjusted for age and night shift. A total of 1,636 measurements revealed significant circadian changes in various corneal parameters, including K1 F, K2 F/B, Astig F/B, Asph F/B, Pachy Min/Pupil, Vol D3/10, and ISV ($p < 0.0001$). Moreover, K1 B exhibited a significant circadian change ($p = 0.0002$), while Axis F/B remained unchanged. Notably, Corneal thickness peaked before 6 o'clock in the morning and reached its minimum after 12 o'clock. Contrary to previous notions linking corneal diurnal changes with eyelid closure during sleep, our study reveals that these changes persist in the absence of sleep. This research contributes valuable insights into the impact of sleep deprivation on corneal properties, warranting further investigations to deepen our understanding of daily variations in visual quality and guide the planning of refractive eye surgery interventions.

Lien vers l'article

Chronotype and Nursing Shift Work.

Kalra Y. *Am J Nurs*. 2025 Mar 1;125(3):64.

The relief of finding an explanation for night shift exhaustion.

Lien vers l'article

The correlation of shift work and CLOCK, BMAL1, and PER1 gene polymorphisms with hypertension in healthcare workers: A cross-sectional study.

Min Q, Hu W, Lei D, He X, Liu C, Li Q, et al. *Medicine (Baltimore)*. 2024 Nov 22;103(47):e40148.

This study aimed to investigate the polymorphisms of circadian clock genes and the association of shift work and gene polymorphisms with hypertension in healthcare workers. This study recruited 222 healthcare workers, of whom 76 had primary hypertension (Hyp group) and 146 served as controls (Control group). General information and working hours were collected through questionnaires. Next, the identification of specific single nucleotide polymorphism (SNP) loci related to the Circadian locomotor output cycles kaput (CLOCK), brain and muscle arnt-like 1 (BMAL1), and PER1 genes was conducted by literature and PDGene database search. Venous blood samples were then collected for DNA extraction, and polymerase chain reaction-restriction fragment length polymorphism techniques were used to analyze the genotyping and allele frequency of the SNP sites. Finally, multivariate logistic regression was employed to analyze the association between various risk factors and hypertension in healthcare workers. Compared to the control group, the Hyp group had significantly higher proportions of alcohol consumption and family history of hypertension, while the average sleep duration and average exercise time were significantly lower. Shift work analysis showed that the Hyp group had a significantly lower average number of evening shifts per month while a much higher average number of night shifts per month compared to the control group. The GG genotype at the CLOCK rs1801260 locus was associated with a lower risk of hypertension (OR = 0.446), and the TT genotype of the BMAL1 rs11022775 locus also showed a similar protective effect (OR = 0.426). However, the genotype distribution of the PER1 rs2735611 locus was not significantly associated with the risk of hypertension. Multivariate regression analysis revealed that a family history of hypertension and insufficient sleep were significantly associated with the risk of hypertension, and the average number of night shifts per month was positively correlated with the risk of hypertension. Specific polymorphisms in the CLOCK and BMAL1 genes may have a protective effect against hypertension in healthcare workers, while polymorphisms in the PER1 gene are not significantly associated with the risk of hypertension. Additionally, a family history of hypertension, insufficient sleep, and shift work patterns may be significant risk factors for hypertension.

Lien vers l'article

A time for sex: circadian regulation of mammalian sexual and reproductive function.

Aten S, Ramirez-Plascencia O, Blake C, Holder G, Fishbein E, Vieth A, et al. *Front Neurosci*. 2024;18:1516767.

The circadian clock regulates physiological and biochemical processes in nearly every species. Sexual and reproductive behaviors are two processes controlled by the circadian timing system. Evidence supporting the importance of proper clock function on fertility comes from several lines of work demonstrating that misalignment of biological rhythms or disrupted function of the body's master clock, such as occurs from repeated shift work or chronic jet lag, negatively impacts reproduction by interfering with both male and female fertility. Along these lines, dysregulation of clock genes leads to impairments in fertility within mammals, and disruption of circadian clock timing negatively impacts sex hormone levels and semen quality in males, and it leads to ovulatory deficiencies in females. Here, we review the current understanding of the circadian modulation of both male and female reproductive hormones-from animal models to humans. Further, we discuss neural circuits within the hypothalamus that may regulate circadian changes in mammalian sexual behavior and reproduction, and we explore how knowledge of such circuits in animal models may help to improve human sexual function, fertility, and reproduction.

Lien vers l'article

Conduites addictives

Aucun article dans ce bulletin.

Reproduction

Study on the association between night shift work and reproductive functions among male workers: a systematic review and meta-analysis.

Viramgami A, Balachandar R, Bagepally BS, Sheth A. *Endocrine*. 2025 Jan 20.

BACKGROUND: There has been growing interest to study impact of night shift work on male reproductive health, which is regulated by the hypothalamic-pituitary-gonadal axis and influenced by circadian rhythms. This systematic review and meta-analysis aim to explore the association between night shift work and male reproductive health outcomes. METHODS: This systematic review and meta-analysis followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (PROSPERO: CRD42022379770). Studies comparing male reproductive parameters [e.g., semen profile, testosterone, follicle stimulating hormone (FSH), luteinizing hormone (LH)] between night shift workers and non-shift workers were systematically searched in PubMed, Scopus and EMBASE databases. Heterogeneity (I(2) and Cochran-Q test), risk of bias (Newcastle-Ottawa Scale and funnel plots), sensitivity analyses were performed when applicable. RESULTS: Eight studies were included in this review from 6397 citations screened. The pooled mean difference in sperm count was -18.38 × 10(6) sperm (-59.82 to 23.07; n = 3, I(2) = 85.12%) and serum testosterone was 15 ng/dL (-19.3 to 49.39; n = 5, I(2) = 63%), indicating that shift workers had lower sperm counts but marginally higher serum testosterone levels compared to controls. The majority of included studies exhibited a high risk of bias in participant selection, group comparability and exposure assessment. CONCLUSION: The analysis highlights the potential impact of night shift work on sperm parameters and hormone levels. Future research with standardized methods and larger samples is needed to better understand the circadian disruption's effects, informing healthcare practices and policies for male reproductive health.

Lien vers l'article

Associations of maternal night shift work during pregnancy with DNA methylation in offspring: a meta-analysis in the PACE consortium.

Marques IF, Domènech-Panicello C, Geurtsen ML, Hoang TT, Richmond R, Polinski K, et al. *Clin Epigenetics*. 2025 Jan 22;17(1):12.

BACKGROUND: Night shift work during pregnancy has been associated with differential DNA methylation in placental tissue, but no studies have explored this association in cord blood. We aimed to examine associations of maternal night shift work with cord blood DNA methylation. METHODS: A total of 4487 mother-newborn pairs from 7 studies were included. Maternal night shift work during pregnancy was ascertained via questionnaires and harmonized into "any" versus "no". DNA methylation was measured in cord blood using the Illumina Infinium Methylation arrays. Robust linear regression models adjusted for relevant confounders were run in the individual cohorts, and results were meta-analyzed. RESULTS: Maternal night shift work during pregnancy ranged from 3.4% to 26.3%. Three CpGs were differentially methylated in relation to maternal night shift work during pregnancy at a false discovery rate adjusted P < 0.05: cg10945885 (estimate (β) 0.38%, standard error (SE) 0.07), cg00773359 (β 0.25%, SE 0.05), and cg21836426 (β - 0.29%, SE 0.05). Associations of the identified CpGs were found in previous literature for gestational age and childhood and adolescent BMI. In a mouse model of prenatal jet lag exposure, information on offspring DNA methylation of ten homologous genes annotated to the 16 CpGs with P < 1 × 10(-5) in our analysis was available, of which eight were associated (enrichment P: 1.62 × 10(-11)). CONCLUSION: Maternal night shift work during pregnancy was associated with newborn DNA methylation at 3 CpGs. Top findings overlapped with those in a mouse model of gestational jet lag. This work strengthens evidence that DNA methylation could be a marker or mediator of impacts of circadian rhythm disturbances.

Lien vers l'article

Melatonin Alleviates Circadian Rhythm Disruption-Induced Enhanced Luteinizing Hormone Pulse Frequency and Ovarian Dysfunction.

Circadian rhythm disruption (CRD), stemming from sleep disorders and/or shift work, is a risk factor for reproductive dysfunction. CRD has been reported to disturb nocturnal melatonin signaling, which plays a crucial role in female reproduction as a circadian regulator and an antioxidant. The hypothalamic-pituitary-ovarian (HPO) axis regulates female reproduction, with luteinizing hormone (LH) pulse pattern playing a pivotal role in folliculogenesis and steroidogenesis. However, the effect of CRD on the HPO axis and the involvement of melatonin remains unclear. Female CBA/CaJ mice underwent CRD modeling, which involves alternating between standard light conditions and an 8-h advance schedule every 3 days for 8 weeks, whereas control mice were maintained under a standard 12:12-h light/dark (LD) cycle. Subsequent measurements of diurnal melatonin levels, LH pulse patterns assessments via serial tail-tip blood sampling and evaluations of ovarian function were conducted. CRD altered the circadian rhythms of wheel-running activity and melatonin secretion in mice and led to an augmented LH pulse pattern, evidenced by increased LH pulse frequency, mean LH levels, and pituitary LH beta-subunit (LHβ) expression, irregular estrous cycles, abnormal luteal function, altered endocrine function, and ovarian oxidative stress. Melatonin treatment (10 mg/kg/day for 4 weeks) significantly improved the HPO axis disorder in CRD mice, decreasing the enhanced LH pulse frequency and pituitary LHβ expression. These findings were further validated using an in vitro LβT2 cell perfusion model. Furthermore, melatonin restored ovarian function and scavenged reactive oxygen species, thereby preventing apoptosis and preserving ovarian function. This study offers new insights into the impact of CRD on the HPO axis and emphasizes the potential of melatonin supplementation in mitigating its effects on female reproduction.

Lien vers l'article

Effects of the Maternal Work Environment on Psychological Distress During Pregnancy: A Cross-sectional Research-The Japan Environment and Children's Study.

OBJECTIVES: As part of the "Japan Environment and Children's Study (JECS)," a national prospective birth cohort study, we examined the association between the maternal work environment and psychological distress during pregnancy in Japan. METHODS: Employing a cross-sectional design, we analyzed data from 42,797 participants, originally collected between 2011 and 2014. Associations between the maternal work environment and psychological distress (Kessler 6) were examined using generalized estimation equation models adjusted for confounding factors. RESULTS: Pregnant women who worked ≥51 hours/week had a 1.19-fold higher odds ratio (OR) of psychological distress than those who worked 36 to 40 hours/week (95% confidence intervals [CIs], 1.07-1.32). Pregnant women who worked ≥5 days/month of shift work had a 1.11-fold higher OR of psychological distress than those who worked 0 days/month (1.00-1.24). CONCLUSIONS: We observed an association between the maternal work environment and psychological distress during pregnancy.

Lien vers l'article

What are the experiences of nurses returning to work following maternity leave: a scoping review.

BACKGROUND: There are currently significant concerns regarding the shortage and retention of nurses across the globe. Approximately 90% of the global nursing workforce is currently made up of females,

yet there remains a notable absence of literature surrounding the experiences of nurses returning to work following maternity leave. The return-to-work period following maternity leave is a complex transition where women are faced with a multitude of challenges which may lead to increased work-family conflict. This is of concern given that work-family conflict has been identified as a key contributor influencing nurses' intention to leave. Furthermore, it is not uncommon for mothers to take career breaks, work part-time, or leave the workforce altogether following maternity leave. Therefore, it is essential to explore nurses' experiences returning to work following maternity leave and the factors influencing their retention. METHOD: A scoping review was undertaken which was guided by the Arksey and O'Malley (2005) framework, in conjunction with the PRISMA (PRISMA-ScR) (2020) checklist. The search encompassed four databases, focusing on the inclusion of research studies published within the past 5 years. The Mixed Methods Appraisal Tool (MMAT) 2018 was utilised to ensure the inclusion of high-quality articles. RESULTS: In total, six studies were incorporated into the review, comprising of a diverse array of qualitative and quantitative research methodologies. These methodologies encompassed semi-structured interviews, focus groups, surveys, and self-assessments. From these studies, a variety of themes emerged, including the challenges of managing shift work, the level of support provided by supervisors, obstacles encountered in breastfeeding despite existing policies, difficulties associated with childcare, and levels of engagement within the workplace. CONCLUSION: Overall, the review highlighted several challenges and themes that nurses face when returning to work following maternity leave. Despite this, there is a gap in the literature regarding the factors that influence nursing retention following maternity leave. Future research should focus on further exploring the experiences of nurses returning to work following maternity and the factors that influence them to stay or leave.

Lien vers l'article

A bio-psycho-social investigation of menopause transition and job satisfaction.

Atkinson C, Carmichael F, Duberley J. *Maturitas*. 2025 Feb;193:108187.

OBJECTIVES: To examine the implications of menopause transition for job satisfaction within a framework that integrates bio-psycho-social factors and effects. STUDY DESIGN: The study analyses quantitative and qualitative data from a survey of 1684 women in three UK police forces, where growing numbers work during menopause transition within what has been termed a hyper-masculine culture. RESULTS: We evidence that job satisfaction is negatively impacted by experience of menopause symptoms. Attitudes towards age and menopause are also important: job satisfaction is lower for peri- and post-menopausal women with negative attitudes and higher for women with more positive and open attitudes. Some workplace factors such as shift working and the gender balance of the workplace also have a significant impact on the job satisfaction of women transitioning menopause. CONCLUSION: Our results highlight the need for human resource practices that go beyond the typical focus on symptoms. Support mechanisms need to address attitudes towards menopause and develop more inclusive workplaces in order to maintain women's job satisfaction and retain them in the workplace during menopause transition.

Lien vers l'article

Maternal shift work during pregnancy and cardiovascular health impacts on mother and offspring.

Flores RC, Yaffe R, Nhunzwi MM, Nguyen H, Rabinovich-Nikitin I. *J Mol Cell Cardiol*. 2025 Feb;199:126-32.

Cardiovascular disease (CVD) is the leading cause of death for women worldwide. One of the risk factors for CVD in women is complications during pregnancy. Pregnancy complications include a wide arena of pathologies, including hypertension, preeclampsia, gestational diabetes, preterm delivery and miscarriage. Interestingly, increased evidence in recent years highlights a novel link between maternal

shift work during pregnancy and increased risk for pregnancy complications, specifically hypertension and diabetes, while knowledge on other CVDs, such heart failure, atherosclerosis, ischemic heart disease, and stroke in pregnant shift working mothers is still scarce. Notably, shift work during pregnancy results in significant changes to the circadian rhythm of both the mother and fetus, therefore, engaging into shift work during pregnancy may adversely affect the cardiovascular health of both the mother and offspring, and carry into adulthood. Herein, we highlight the novel relationship between maternal shift work during pregnancy and the increased risk for pregnancy complications that may increase risk for CVD later in life. Furthermore, we provide mechanistic insights of the hemodynamic processes that are disrupted in response to maternal shift work and may explain the increased risk for cardiovascular disease. Understanding how shift work during pregnancy influences the prevalence for heart disease is of paramount clinical importance for minimizing the risk for cardiovascular disease for both the mother and offspring.

Lien vers l'article

A time for sex: circadian regulation of mammalian sexual and reproductive function.

Aten S, Ramirez-Plascencia O, Blake C, Holder G, Fishbein E, Vieth A, et al. *Front Neurosci*. 2024;18:1516767.

The circadian clock regulates physiological and biochemical processes in nearly every species. Sexual and reproductive behaviors are two processes controlled by the circadian timing system. Evidence supporting the importance of proper clock function on fertility comes from several lines of work demonstrating that misalignment of biological rhythms or disrupted function of the body's master clock, such as occurs from repeated shift work or chronic jet lag, negatively impacts reproduction by interfering with both male and female fertility. Along these lines, dysregulation of clock genes leads to impairments in fertility within mammals, and disruption of circadian clock timing negatively impacts sex hormone levels and semen quality in males, and it leads to ovulatory deficiencies in females. Here, we review the current understanding of the circadian modulation of both male and female reproductive hormones-from animal models to humans. Further, we discuss neural circuits within the hypothalamus that may regulate circadian changes in mammalian sexual behavior and reproduction, and we explore how knowledge of such circuits in animal models may help to improve human sexual function, fertility, and reproduction.

Lien vers l'article

Polyexposition

Aucun article dans ce bulletin.

Pathologies cardiovasculaires

Duration of exposure to night work and cardiovascular risk factors: results from 52,234 workers of the CONSTANCES study.

Bourgkard E, Boini S, Grzebyk M, Dziurla M, Ferrières J, Goldberg M, et al. *BMC Public Health*. 2025 Jan 28;25(1):356.

BACKGROUND: The cardiovascular consequences of night work are increasingly well-known. Implementing effective preventive strategies, however, requires further investigation of the effects of exposure duration. This study sought to assess the cumulative dose-effect of night work exposure on the prevalence of cardiovascular risk factors among current and former night workers in France. METHODS: We used cross-sectional data from the CONSTANCES cohort to design analyses on 52,234 workers exposed or not exposed to night work during their working life. The cumulative duration of night work exposure was assessed among permanent, rotating and former night workers. BMI, blood pressure, lipids, glycaemia and SCORE2 were measured in health screening centres. RESULTS: Excess risks of moderate-high SCORE2 were observed for permanent (+ 43%), rotating (+ 72%) and former night workers (+ 101%). Among male permanent night workers, excess risks for obesity (+ 76%) and central obesity (64%) were recorded at five years of exposure and for T2DM (+ 119%) at 10 years of exposure. Male rotating night workers showed excess risks at five years of exposure for obesity/central obesity (about + 45%) and high triglyceridaemia (+ 52%). Female former night workers were at excess risk at five years of exposure for obesity/central obesity (about + 45%), HBP (+ 34%) and low-HDL-C (+ 35%). CONCLUSIONS: The effects on cardiovascular risk factors varied according to the types of night work and within sex groups. Some effects were observed after five years of exposure. These results support the need for early and appropriate monitoring of cardiovascular risk factors among current and former night workers.

Lien vers l'article

Food consumption patterns and Framingham cardiovascular risk score among shift workers: A Nova-based approach.

Silva ASS, Ribeiro S, Freitas SN, Pimenta FAP, Machado-Coelho GLL, Oliveira FLP, et al. *Clin Nutr ESPEN*. 2025 Feb;65:238-45.

OBJECTIVE: To evaluate the association between dietary quantity and variety, by extent and purpose of processing, and Framingham cardiovascular disease (CVD) risk score among rotating shift workers. METHODS: The cross-sectional study included male shift workers. Dietary intake was assessed using a 24-h recall method conducted by trained interviewers. Food items were classified using two approaches: the first was based on the amount of food consumed in each food group. Fruits, vegetables, and legumes (FVL) intake, is classified as recommended at 400 g per day by WHO guidelines. Ultraprocessed foods (UPFs) were analyzed based on tertiles of daily caloric contribution. The second approach, the Nova dietary diversity score (DDS-Nova) assessed the variety of consumed items within each food group, assigning points for each unique item consumed, irrespective of quantity or frequency. The CVD-risk score was evaluated using the Framingham coronary heart disease risk score, categorizing participants as low risk (<5%) or intermediate to high risk (≥5%). Descriptive, univariate, and multivariate logistic regression were used, with adjustments made for age, skin color, schooling, duration of shift work, physical activity, body mass index and total caloric intake. RESULTS: The study involved 213 participants, with an average age of 38.67 years (±6.96), a minimum of 26 and a maximum of 60. The majority (62.4%) were between 30 and 40 years old; 49.3% identified themselves as brown; 56.8% had completed high school; and 79.3% were married. The Framingham CVD-risk score indicated that 56.2% were at low risk (<5%) and 43.7% at intermediate to high risk

(≥5%). The average consumption of FVL was 272.32 g (±350.43), with 70.4% meeting the recommendation of ≥400 g/day. Participants consumed an average of 3.46 fresh food items, 3.74 minimally processed food items, 2.54 processed food items and 3.39 ultra-processed food items. In the multivariate model, consuming ≥400 g/day of FVL reduced the likelihood of cardiovascular risk ≥5% by 2.12 times (OR: 0.47; 95%CI: 0.23-0.98). Each additional item of fresh food reduced the risk by 49.2% (OR: 0.67; 95%CI: 1.01-1.66), while each additional item of ultra-processed food increased the risk by 30.0% (OR: 1.30; 95%CI: 0.52-0.87). There was no significant association between the calorie intake of ultra-processed foods and cardiovascular risk. CONCLUSION: Both adequate consumption of FVL quantity and a greater variety of fresh-foods were associated with a lower chance of CVD-risk, while a higher variety of consumption of UPF items increased this chance.

[Lien vers l'article](#)

Endothelial Dysfunction and Hemostatic System Activation in Relation to Shift Workers, Social Jetlag, and Chronotype in Female Nurses.

Saharov G, Salti B, Bareya M, Keren-Politansky A, Fodi M, Shochat T, et al. *Int J Mol Sci*. 2025 Jan 8;26(2).

Circadian misalignment, due to shiftwork and/or individual chronotype and/or social jetlag (SJL), quantified as the difference between internal and social timing, may contribute to cardiovascular disease. Markers of endothelial dysfunction and activation of the coagulation system may predict cardiovascular pathology. The present study aim was to investigate the effects of shift work, SJL, and chronotype on endothelial function and coagulation parameters. One hundred female nurses underwent endothelial function testing using the EndoPAT and blood sampling for coagulation markers, repeated at 06:00-9:00 and 18:00-21:00. We found that compared with day workers, endothelial function and fibrinogen levels were lower (p = 0.001, p = 0.005, respectively) and the procoagulant parameters of plasminogen activator inhibitor-1 (PAI-1) and heparanase level and activity were higher amongst shift workers (p = 0.009, p = 0.03, p = 0.029, respectively). High SJL was associated with lower endothelial function (p = 0.002) and higher PAI-1, heparanase procoagulant activity, heparanase level, and D-Dimer level (p = 0.004, p = 0.003, p = 0.021, p = 0.006, respectively). In the late chronotype, PAI-1 and heparanase procoagulant activity were higher than in the early chronotype (p = 0.009, p = 0.007, respectively). Diurnal variation was found for PAI-1, von-Willebrand factor (vWF), heparanase, and heparan-sulfate with higher levels in the mornings. The correlation between shift/day workers and SJL or chronotype was moderately strong, indicating that SJL and chronotype are independent factors. In conclusion, findings suggest endothelial impairment and increased thrombotic risk in nurses working in shifts or with high SJL or late chronotype. The thrombotic risk is increased in the morning independent of circadian misalignment cause. These findings strengthen the importance of the alliance to the biological daily rhythm in daily life. Further research is needed to evaluate inhibitors of heparanase to attenuate the thrombotic risk in individuals with circadian misalignment.

[Lien vers l'article](#)

Clockwork conditioning: Aligning the skeletal muscle clock with time-of-day exercise for cardiometabolic health.

Procopio SB, Esser KA. *J Mol Cell Cardiol*. 2025 Jan;198:36-44.

Circadian rhythms have evolved to synchronize gene expression, physiology, and behavior with time-of-day changes in the external environment. In every mammalian cell exists a core clock mechanism that consists of a transcriptional-translational feedback loop that drives rhythmic gene expression. Circadian disruption, as observed in shift workers and genetic mouse models, contributes to the onset and progression of cardiometabolic disorders. The central clock, located in the hypothalamus, is uniquely sensitive to external light cues, while the peripheral clocks are responsive to non-photic

stimuli such as feeding and activity in addition to signals from the central clock. Recent research has illustrated the sensitivity of the skeletal muscle circadian clock to exercise timing, offering a promising avenue for therapeutic intervention in cardiometabolic health. Here we provide an in-depth examination of the molecular mechanisms underlying skeletal muscle clock function and its impact on cardiometabolic pathways, including glucose and lipid metabolism, as well as inflammation. To highlight the role of exercise as a time-cue for the skeletal muscle clock, we discuss evidence of exercise-induced shifts in the skeletal muscle clock and the differential response to exercise performed at different times of the day. Furthermore, we present data in support of time-of-day exercise as a potential therapeutic strategy for mitigating cardiometabolic disease burden. By exploring the relationship between the skeletal muscle clock, exercise timing, and cardiometabolic health, we identify new areas for future research and offer valuable insights into novel therapeutic approaches aimed at improving cardiometabolic disease outcomes.

Lien vers l'article

Prevention of hypertension due to long working hours and other work hazards is needed to reduce the risk of cardiovascular disease.

Landsbergis P, Gilbert-Ouimet M, Trudel X, Sembajwe G, Schnall P, Dobson M, et al. *Scand J Work Environ Health*. 2025 Jan 1;51(1):48-52.

Hypertension is the foremost risk factor for cardiovascular disease (CVD), which is the leading cause of death globally. In some countries, such as the US, the prevalence of hypertension and working-age CVD mortality are increasing. CVD is also the most common work-related disease worldwide. Long working hours and other psychosocial stressors at work are important modifiable risk factors for hypertension and CVD. However, there has been inadequate attention paid to the primary prevention of work-related hypertension and CVD. The state-of-the art method for blood pressure (BP) measurement is 24-hour ambulatory BP (ABP), necessary for accurate clinical decision making and to assess risk factors for BP elevation. Thus, ABP should be used in workplace screening and surveillance programs (along with surveys) to identify occupational risk factors, high-risk job titles, worksites and shifts, and evaluate programs designed to improve work organization. For example, after 30 months of an organizational intervention designed to lower psychosocial stressors at work among >2000 public sector white-collar workers in Quebec, Canada, BP and prevalence of hypertension significantly decreased in the intervention group, with no change in the control group, and a significant difference between the intervention and control groups. Further research is also needed on mechanisms linking work-related factors to hypertension and CVD, the cardiovascular effects of understudied work stressors, high-CVD risk worker groups, potential "upstream" intervention points, and country differences in working conditions, hypertension and CVD. Important organizational interventions, such as collective bargaining, worker cooperatives, or legislative and regulatory-level interventions, need to be evaluated.

Lien vers l'article

Occupational exposures and coronary heart disease in the Hamburg City Health Study (HCHS) - a cross-sectional study.

Labe F, Twerenbold R, Toprak B, Koch P, Zyriax BC, Affolderbach S, et al. *BMC Public Health*. 2025 Jan 16;25(1):180.

BACKGROUND: Coronary heart disease (CHD) is the leading cause of death among adults in Germany. There is evidence that occupational exposure to particulate matter, noise, psychosocial stressors, shift work and high physical workload are associated with CHD. The aim of this study is to identify occupations that are associated with CHD and to elaborate on occupational exposures associated with CHD by using the job exposure matrix (JEM) BAuA-JEM ETB 2018 in a German study population.

METHODS: Cross-sectional data from 8,070 participants, members of the first sub-cohort of the Hamburg City Health Study (HCHS), was used. To classify occupations, we rely on standard occupational titles (ISCO-08). The level of exposure is assigned to each job using a JEM. CHD is measured by self-reported diagnosis. Absolute and relative frequencies were calculated. Using logistic regression, the association of CHD and standard occupation titles via ISCO-08 and the association of CHD and occupational exposures via JEM were calculated and adjusted for potentially confounding covariates. Multiple imputations with chained equations (MICEs) were applied for missing values. Sensitivity analyses were performed. RESULTS: The CHD prevalence in the study population was 4.6% (95% CI 4.2-5.1). Occupations associated with CHD were Physical and Engineering Science Technicians, Other Health Associate Professionals, General Office Clerks, Secretaries (general), Material Recording and Transport Clerks, Hairdressers, Beauticians and Related Workers, Electronics and Telecommunications Installers and Repairers, Other Craft and Related Workers, Car, Van and Motorcycle Drivers, Mobile Plant Operators and Domestic, Hotel and Office Cleaners and Helpers. Among occupational exposures retrieved from the JEM, Environmental Demands showed an association with CHD in the crude model but not after adjustment. The results remained robust in sensitivity analyses. CONCLUSIONS: This study is the first to assess the association of a wide range of occupations and occupational exposures with CHD in a German study population. We found no association between occupational exposures and CHD after adjustment, but 11 occupations associated with CHD were identified. The results are limited by cross-sectional design, healthy worker effect (HWE), and small group sizes. Further studies with a larger sample and longitudinal design containing data on occupational history, occupational exposures and time of CHD diagnosis are needed.

Lien vers l'article

Understanding the mechanistic interlink between circadian misalignment and heart disease in night shift workers: Therapeutic role of behavioral interventions.

Bou Serhal J, Fayyad-Kazan M, Kabrita CS. *Sleep Breath*. 2025 Feb 18;29(1):109.

BACKGROUND: Rotating and night shift work, especially in older workers, is a growing health concern of modern societies due to the associated high morbidity and mortality rates from cardiovascular disease (CVD). The resulting circadian misalignment disrupts neuroendocrine pathways that regulate cardiovascular physiology, risking myocardial tissue damage and heart dysfunction. AIMS: Considering the gaps in the literature as to how atypical work behaviors may disrupt the temporal link between the central and myocardial oscillators at the level of the proteome and transcriptome, the primary goal of this review is to assess the molecular mechanisms linking disrupted biological rhythms to heart health, with a focus on core clock genes like BMAL1 and cardiac troponin I (cTnI) as a myocardial biomarker. MAJOR FINDINGS: Circadian misalignment can lead to cognitive decline, metabolic dysfunction, and immune disruption, all of which elevate CVD risk. BMAL1 has a key role in maintaining cardiovascular integrity, with its dysfunction associated with hypertension, arrhythmias, and myocardial injury. Additionally, disrupted sleep patterns influence the expression of clock genes, potentially leading to altered heart function and elevated levels of cardiac biomarkers like troponin. CONCLUSION: Circadian misalignment poses significant CVD risks, particularly for older workers. Future research should investigate how the expression of central and peripheral clock genes, as well as cardiac biomarkers is affected by shift work, especially in older individuals. Behavioral interventions such as chronotherapy, light therapy, and scheduled evening sleep may help mitigate these risks, but more studies are needed to assess their long-term effectiveness.

Lien vers l'article

Long working hours and cardiovascular disease mortality: Prospective evidence from the United States.

Gu Y, Matthews TA, Li J. *Prev Med*. 2025 Feb;191:108225.

AIMS: Cardiovascular disease (CVD) is the leading cause of death in the United States (U.S.). This study aimed to explore prospective associations between long working hours with CVD mortality using a large, national study in the U.S. METHODS: Data from the Midlife in the U.S. (MIDUS) Study were used, including 4051 currently employed participants without prior experience of myocardial infarction or stroke at baseline in 1995-1996. Working hours were categorized into: <35 h/week, 35-40 h/week (reference), 41-48 h/week, 49-54 h/week, and ≥ 55 h/week. Mortality data were extracted from the National Death Index (NDI) through Spring 2021. Cox proportional hazards regression was applied to analyze the prospective associations between working hours at baseline and CVD mortality, adjusting for sociodemographic and lifestyle factors. Stratified analyses by socioeconomic status (i.e., education and financial situation) were also conducted. RESULTS: Long working hours (≥55 h/week) were significantly associated with increased CVD mortality (adjusted HR 1.50; 95 % CI 1.03-2.17) compared to the reference group. Subgroup analyses showed that individuals with low education level or poor financial situation had a higher risk of CVD mortality when working long hours. CONCLUSION: Long working hours are a significant risk factor for CVD mortality in this national sample of U.S. workers, and participants with low socioeconomic status are more vulnerable to the effects of long working hours on CVD deaths. These findings highlight the need for considering working hour interventions in public health strategies to improve cardiovascular health outcomes in the workforce.

Lien vers l'article

Maternal shift work during pregnancy and cardiovascular health impacts on mother and offspring.

Flores RC, Yaffe R, Nhunzwi MM, Nguyen H, Rabinovich-Nikitin I. *J Mol Cell Cardiol*. 2025 Feb;199:126-32.

Cardiovascular disease (CVD) is the leading cause of death for women worldwide. One of the risk factors for CVD in women is complications during pregnancy. Pregnancy complications include a wide arena of pathologies, including hypertension, preeclampsia, gestational diabetes, preterm delivery and miscarriage. Interestingly, increased evidence in recent years highlights a novel link between maternal shift work during pregnancy and increased risk for pregnancy complications, specifically hypertension and diabetes, while knowledge on other CVDs, such heart failure, atherosclerosis, ischemic heart disease, and stroke in pregnant shift working mothers is still scarce. Notably, shift work during pregnancy results in significant changes to the circadian rhythm of both the mother and fetus, therefore, engaging into shift work during pregnancy may adversely affect the cardiovascular health of both the mother and offspring, and carry into adulthood. Herein, we highlight the novel relationship between maternal shift work during pregnancy and the increased risk for pregnancy complications that may increase risk for CVD later in life. Furthermore, we provide mechanistic insights of the hemodynamic processes that are disrupted in response to maternal shift work and may explain the increased risk for cardiovascular disease. Understanding how shift work during pregnancy influences the prevalence for heart disease is of paramount clinical importance for minimizing the risk for cardiovascular disease for both the mother and offspring.

Lien vers l'article

The correlation of shift work and CLOCK, BMAL1, and PER1 gene polymorphisms with hypertension in healthcare workers: A cross-sectional study.

Min Q, Hu W, Lei D, He X, Liu C, Li Q, et al. *Medicine (Baltimore)*. 2024 Nov 22;103(47):e40148.

This study aimed to investigate the polymorphisms of circadian clock genes and the association of shift work and gene polymorphisms with hypertension in healthcare workers. This study recruited 222 healthcare workers, of whom 76 had primary hypertension (Hyp group) and 146 served as controls (Control group). General information and working hours were collected through questionnaires. Next, the identification of specific single nucleotide polymorphism (SNP) loci related to the Circadian locomotor output cycles kaput (CLOCK), brain and muscle arnt-like 1 (BMAL1), and PER1 genes was conducted by literature and PDGene database search. Venous blood samples were then collected for DNA extraction, and polymerase chain reaction-restriction fragment length polymorphism techniques were used to analyze the genotyping and allele frequency of the SNP sites. Finally, multivariate logistic regression was employed to analyze the association between various risk factors and hypertension in healthcare workers. Compared to the control group, the Hyp group had significantly higher proportions of alcohol consumption and family history of hypertension, while the average sleep duration and average exercise time were significantly lower. Shift work analysis showed that the Hyp group had a significantly lower average number of evening shifts per month while a much higher average number of night shifts per month compared to the control group. The GG genotype at the CLOCK rs1801260 locus was associated with a lower risk of hypertension (OR = 0.446), and the TT genotype of the BMAL1 rs11022775 locus also showed a similar protective effect (OR = 0.426). However, the genotype distribution of the PER1 rs2735611 locus was not significantly associated with the risk of hypertension. Multivariate regression analysis revealed that a family history of hypertension and insufficient sleep were significantly associated with the risk of hypertension, and the average number of night shifts per month was positively correlated with the risk of hypertension. Specific polymorphisms in the CLOCK and BMAL1 genes may have a protective effect against hypertension in healthcare workers, while polymorphisms in the PER1 gene are not significantly associated with the risk of hypertension. Additionally, a family history of hypertension, insufficient sleep, and shift work patterns may be significant risk factors for hypertension.

Lien vers l'article

Causal Effects of Air Pollution, Noise, and Shift Work on Unstable Angina and Myocardial Infarction: A Mendelian Randomization Study.

Ma Q, Chen L, Xu H, Weng Y. *Toxics*. 2024 Dec 28;13(1).

Cardiovascular disease continues to be a major contributor to global morbidity and mortality, with environmental and occupational factors such as air pollution, noise, and shift work increasingly recognized as potential contributors. Using a two-sample Mendelian randomization (MR) approach, this study investigates the causal relationships of these risk factors with the risks of unstable angina (UA) and myocardial infarction (MI). Leveraging single nucleotide polymorphisms (SNPs) as genetic instruments, a comprehensive MR study was used to assess the causal influence of four major air pollutants (PM(2.5), PM(10), NO(2), and NO(x)), noise, and shift work on unstable angina and myocardial infarction. Summary statistics were derived from large genome-wide association studies (GWASs) from the UK Biobank and the FinnGen consortium (Helsinki, Finland), with replication using an independent GWAS data source for myocardial infarction. The inverse-variance weighted (IVW) approach demonstrated a significant positive correlation between shift work and the increased risk of both unstable angina (OR with 95% CI: 1.62 [1.12-2.33], p = 0.010) and myocardial infarction (OR with 95% CI: 1.46 [1.00-2.14], p = 0.052). MR-PRESSO analysis identified outliers, and after correction, the association between shift work and myocardial infarction strengthened (OR with 95% CI: 1.58 [1.11-2.27], p = 0.017). No notable causal associations were identified for air pollution or noise with either

outcome. The replication of myocardial infarction findings using independent data supported a possible causal link between shift work and myocardial infarction (OR with 95% CI: 1.41 [1.08-1.84], p = 0.012). These results provide novel evidence supporting shift work as a likely causal risk factor for unstable angina and myocardial infarction, underscoring the need for targeted public health strategies to mitigate its cardiovascular impact. However, further investigation is necessary to elucidate the role of air pollution and noise in cardiovascular outcomes.

Lien vers l'article