

## Review Article

# REVIEW OF WORK-RELATED STRESS AND THE INCIDENCE OF HYPERTENSION AMONG NURSES

### ABSTRACT

Work-related stress is a prevalent concern across various professions. Demands often exceed coping capacities, leading to physical and mental strain. This stress frequently results from overwhelming workloads, unrealistic deadlines, and a lack of control. The constant connectivity of modern technology blurs the boundaries between work and personal life, causing chronic stress for those who are always available. Inadequate job security, fear of unemployment, and a lack of autonomy contribute to this stress. Stress impacts individuals' well-being and strains organizations through decreased productivity and higher turnover. To address this issue, organizations can prioritize employee well-being by promoting work-life balance and communication. Offering flexible work arrangements and promoting mindfulness can aid in reducing stress. Health check-ups and effective support systems assist individuals.

Nurses, who comprise a significant portion of the healthcare workforce, face unique stressors. However, research on stress across different nursing roles is limited. Work stress significantly impacts nurses' cardiovascular health, with hypertension being a notable concern. Factors contributing to nurses' hypertension include demanding work hours, heavy patient loads, and emotional strain. Nurses' unique challenges necessitate targeted interventions, including stress reduction initiatives and flexible schedules. Sedentary lifestyles among nurses are aggravated by irregular eating habits and limited exercise opportunities, increasing the risk of hypertension. Organizations can encourage healthier habits by providing nutritious options and exercise opportunities. The implications of hypertension extend to nurses' productivity, job satisfaction, and overall health. Work-related stress and hypertension collectively jeopardize nurse well-being and strain healthcare systems. Effective management requires both individual and organizational efforts. Nurses should prioritize self-care through balanced nutrition, exercise, and stress management. Healthcare organizations should ensure manageable workloads, create a supportive environment, offer wellness programs, and establish communication channels. Regular health check-ups and training for managers can aid early detection and support.

In conclusion, hypertension among nurses due to work-related stress is a pressing issue. Recognizing the unique stressors of nursing, both nurses and organizations can adopt strategies to manage stress and reduce the risk of hypertension. Prioritizing nurses' health ensures quality patient care and sustains the integrity of the healthcare system. Effective management necessitates comprehensive approaches, combining individual self-care and organizational support.

**Keywords:** work-related stress, job demands, coping capacity, workplace boundaries, stress management, support systems, job satisfaction, patient care.

## **1. Introduction**

Work-related stress is a pervasive concern in modern society, affecting individuals across a diverse range of professions and industries. The intricate interplay between job demands and an individual's capacity to cope creates an environment where physical, emotional, and mental strain can flourish. As the demands of work surpass the ability to effectively manage them, the consequences of work-related stress reverberate not only on an individual's well-being but also on organizational dynamics and overall societal health. This paper delves into the intricate relationship between work-related stress and its impact on nurses, a profession uniquely susceptible to the challenges of high-stress environments. By exploring the contributing factors, consequences, and potential interventions for work-related stress among nurses, this study seeks to shed light on the pressing issue of nurses' well-being and its implications for both individual healthcare professionals and the larger healthcare system.

Modern work environments have evolved with the advent of technology and the blurring of boundaries between work and personal life. This shift has led to a complex landscape where employees are constantly connected, leading to increased difficulty in disconnecting and recharging. Nurses, forming a critical backbone of the healthcare system, are not immune to the pervasive effects of work-related stress. Their demanding roles, characterized by long hours, high patient loads, and emotionally charged situations, present a fertile ground for stress to take root. While nursing plays a pivotal role in healthcare delivery, it is essential to recognize the intricate web of factors contributing to work-related stress among nurses and its potential implications. This paper delves into the unique stressors faced by nurses, their relationship with hypertension – a significant cardiovascular condition, and the interventions that can mitigate the detrimental effects of work-related stress on nurses' well-being and the broader healthcare landscape. Through a comprehensive exploration of these aspects, a holistic understanding of the challenges and opportunities for promoting nurses' health and effective patient care emerges.

## **2. Overview of Work-Related Stress**

Work-related stress has emerged as a prevalent issue in contemporary society, affecting individuals across diverse professions and industries [1]. It arises when the demands and pressures of a job exceed an individual's capacity to cope, resulting in physical, emotional, and mental strain [1]. One of the primary causes of work-related stress is an overwhelming workload. When employees face excessive tasks and responsibilities within limited time frames, their stress levels tend to escalate. Furthermore, unrealistic deadlines and a lack of control over one's workload can exacerbate the situation, leaving individuals feeling overwhelmed and unable to meet expectations [2].

The advent of constant connectivity through technology has blurred the boundaries between work and personal life, making it increasingly challenging to disconnect and relax. Employees who feel obligated to be available outside of regular working hours often struggle to find time for leisure activities, family, and self-care, leading to chronic stress and burnout [3]. Moreover, inadequate job security and the fear of unemployment contribute significantly to work-related stress. In today's fiercely competitive job market, individuals may experience anxiety regarding their job stability, especially in industries prone to layoffs and downsizing [4]. This fear can manifest as persistent stress, negatively impacting job satisfaction, performance, and overall well-being [5]. Additionally, a lack of control and autonomy within the workplace is another significant stressor. When employees feel excessively monitored, restricted in decision-making, or lack autonomy over their tasks, they are prone to increased stress levels [5, 6]. Autonomy is crucial for fostering a sense of empowerment, job satisfaction, and personal growth. Without it, employees may feel powerless and overwhelmed by the demands imposed upon them [6].

The consequences of work-related stress extend far beyond individuals and also affect organizations. On a personal level, prolonged exposure to stress can lead to physical symptoms such as headaches, fatigue, insomnia, and weakened immune function. Mental health can also be affected as evidenced by the occurrence of signs and symptoms of anxiety, depression, irritability, and difficulty concentrating [7]. These symptoms not only impair job performance but also spill over into personal relationships and overall quality of life. At the organizational level, work-related stress can result in decreased productivity, increased absenteeism, and higher turnover rates. Stressed employees are more likely to make mistakes, experience conflicts with colleagues, and exhibit reduced engagement with their work [8]. This, in turn, can create a negative work environment, diminish team cohesion, and lead to a decline in overall organizational performance.

To effectively manage work-related stress, organizations can implement various strategies. Fostering a positive work culture that places a high priority on employee well-being is crucial. This can be achieved by promoting work-life balance, providing opportunities for skill development, and encouraging open communication and feedback channels [9]. By valuing employees' mental and physical health, organizations can create an environment that supports stress reduction [8]. Additionally, offering flexible work arrangements, such as remote work options or flexible schedules, can significantly alleviate work-related stress. Granting employees more control over their work environment and time management enhances their ability to effectively balance personal and professional responsibilities [10].

Promoting mindfulness and stress management techniques within the workplace can also be beneficial. Providing resources such as relaxation spaces, meditation programs, or workshops on stress reduction equips employees with tools to effectively manage their stress levels. Encouraging regular breaks and promoting physical activity further

contribute to stress reduction and improved well-being [11]. Moreover, effective communication and support systems are essential for addressing work-related stress. Encouraging employees to express their concerns and providing access to counselling or employee assistance programs helps individuals cope with stress and seek assistance when needed. Managers should also receive training in recognizing the signs of stress in their team members and be equipped with the skills to offer support and appropriate resources [12].

### **3. Nurses' Situation in The Place**

Nurses make up a majority of the healthcare workforce, accounting for over 50% of healthcare professionals worldwide [13, 14]. However, predictions suggest that there will be significant worldwide deficits in the number of nurses in the coming years, a shortage that is currently being emphasized. This shortage is partly attributed to the ageing workforce and the high prevalence of chronic diseases among nurses, mirroring trends in the general population [14]. The impending decline in the number of nurses will have a significant impact on healthcare availability and quality [15, 16]. Recognizing this concern, international efforts have been intensified to safeguard the health of nurses.

The nursing profession encompasses various roles, each with its own unique set of stressors that nurses must navigate. However, there is a lack of comprehensive research that thoroughly examines and compares the job stress experienced by nurses in different positions, as well as the chronic conditions associated with these stressors [17]. Understanding the specific stressors faced by nurses in different roles is crucial for developing targeted interventions and support systems to promote their well-being. For instance, nurses working in emergency departments may encounter high levels of acute stress due to the urgent and critical nature of the cases they handle [18]. On the other hand, nurses are called upon to care for patients who need long-term care but also require end-of-life decisions which can result in emotional and psychological strain [19].

Nursing is widely acknowledged as a highly stressful profession in many countries, and work-related stress has been a persistent issue in the healthcare industry. Studies have identified a correlation between work stress and various diseases, including hypertension [20]. However, the strength of these associations across different nursing positions has not been adequately established. Within the healthcare system, nursing staff assumes diverse roles and responsibilities, resulting in varying stressors and work-related stress levels depending on their job responsibilities [16, 21].

In modern work environments, work-related stress has become all too common, with healthcare professionals, especially nurses, being particularly susceptible to its harmful effects. Nursing work is known for its demanding nature, long hours, heavy workloads, and emotional demands, all of which can contribute to chronic stress among nurses [22]. Numerous studies have highlighted the negative impact of work-related stress on various aspects of nurses' health, including their cardiovascular well-being [23].

Hypertension, commonly known as high blood pressure, is one of the most significant cardiovascular conditions affecting a substantial portion of the global population. It poses serious health risks if left unmanaged [24]. Given the prevalence of hypertension and the unique challenges faced by nurses in their profession, it is imperative to explore the link between work-related stress and the incidence of hypertension among nurses [25]. Research has demonstrated a clear association between work-related stress and adverse health outcomes, including cardiovascular diseases [26]. Prolonged exposure to high levels of stress can disrupt the body's physiological processes, leading to an increased risk of developing hypertension. Stress triggers the release of stress hormones like cortisol, which can elevate blood pressure levels and contribute to the development of hypertension over time [1]. Understanding the connection between work-related stress and hypertension incidence among nurses is vital for several reasons.

Firstly, it can help identify potential risk factors specific to the nursing profession, such as long shifts, heavy patient loads, and emotional exhaustion [27]. By recognizing these factors, healthcare organizations can implement targeted interventions and preventive measures to alleviate stress and reduce the risk of hypertension among nurses [28]. Additionally, this understanding can facilitate the development of effective strategies to promote nurses' well-being [28]. By implementing comprehensive stress management programs, providing support systems, and fostering a positive work environment, healthcare institutions can mitigate the detrimental effects of work-related stress on nurses' health [22]. These initiatives can include implementing flexible work schedules, promoting work-life balance, offering counselling services, and providing opportunities for professional development and self-care.

Nurses play an indispensable role in healthcare settings, providing patient care, advocating for patients' needs, and managing complex healthcare situations. Their dedication and commitment to improving individuals' well-being are invaluable [29]. Given their substantial presence in the healthcare industry, nurses' well-being and health are of utmost importance. However, nurses face diverse responsibilities that encompass direct patient care, medication administration, monitoring vital signs, and coordinating with healthcare teams. They often work in fast-paced and high-stress environments, where they are required to make critical decisions quickly and efficiently [30]. The demanding nature of their work, combined with long working hours and irregular shifts, exposes them to moderate to high levels of work stress [30, 31].

Numerous studies have examined the relationship between work-related stress and various health outcomes among nurses. Researchers have found a significant association between work stress and hypertension, a condition characterized by high blood pressure. Hypertension is a prevalent global health concern that increases the risk of cardiovascular diseases, stroke, and other chronic conditions [32]. Healthcare professionals, including nurses, are not immune to the effects of hypertension, and addressing this issue is crucial for both their well-being and the quality of healthcare

delivery. The incidence of hypertension among nurses can be attributed to a combination of factors. Work-related stress plays a significant role, as the demanding nature of nursing work can lead to heightened stress levels [29]. Additionally, irregular work schedules, inadequate staffing, and limited control over work conditions can contribute to increased stress levels among nurses. These factors, coupled with lifestyle challenges such as poor dietary habits, limited physical activity opportunities, and irregular sleep patterns, further increase the risk of developing hypertension [33].

Work-related stress and hypertension among nurses are pressing issues in the healthcare industry. Nurses face unique stressors depending on their roles, and the demanding nature of their work increases their susceptibility to chronic stress [21]. Understanding the link between work-related stress and hypertension incidence among nurses is crucial for developing targeted interventions and support systems to promote their well-being. By addressing work-related stress and implementing comprehensive stress management programs, healthcare organizations can mitigate the negative impact on nurses' health, improve healthcare quality, and ensure the well-being of these valuable healthcare professionals.

#### **4. Hypertension among Nurses**

Hypertension, commonly known as high blood pressure, is a chronic medical condition that poses a significant threat to individuals' cardiovascular health. It is characterized by abnormally high levels of blood pressure within the arteries, which can lead to severe complications such as heart disease and stroke [34]. While various factors contribute to the development of hypertension, recent studies have shed light on the potential link between work-related stress and its prevalence among nurses [35]. Nursing is a demanding profession that often involves long hours, a high workload, and exposure to emotionally charged situations. These factors can create a stressful work environment, which, when experienced chronically, may have detrimental effects on nurses' health [35]. Chronic stress triggers a cascade of physiological and psychological responses within the body, including the release of stress hormones like cortisol and adrenaline. Over time, these responses can disrupt the delicate balance of the cardiovascular system, leading to an increased risk of hypertension [36].

The demanding nature of nursing work is a primary contributor to the high incidence of hypertension in this profession [20]. Nurses often face long working hours, irregular shifts, and high levels of job-related stress. The physically and emotionally demanding nature of patient care, coupled with the need for constant vigilance and quick decision-making, can create a high-pressure environment that takes a toll on nurses' health [37]. In addition to the inherent stress of the job, various workplace factors can further exacerbate the risk of hypertension among nurses. Poor staffing levels and inadequate resources can lead to increased workloads and prolonged periods of high stress [38]. Limited control over work schedules and lack of autonomy in decision-making can also contribute to heightened stress levels among nurses, which, in turn, can increase the risk of developing hypertension [39].

Irregular eating habits and limited opportunities for physical activity are prevalent challenges faced by nurses due to the demanding nature of their work [40]. Nurses often work long shifts that can extend beyond regular meal times, making it difficult to maintain a consistent and healthy eating routine. The time constraints and urgency of their responsibilities may lead nurses to rely on quick and easily accessible food options, which are often less nutritious [35, 41, 42]. These irregular eating patterns, coupled with inadequate hydration, can have negative implications for their overall health, including the risk of developing hypertension[43]. In addition to dietary challenges, the nature of nursing work can also impact nurses' ability to engage in regular physical activity [41, 43]. While some nursing tasks require prolonged periods of standing or walking, other administrative responsibilities may involve a more sedentary lifestyle. Nurses may find themselves spending extended hours at desks or workstations, completing paperwork, updating patient records, or coordinating care [44]. These sedentary activities, combined with the demanding nature of patient care, may leave nurses with limited opportunities for physical exercise during their shifts [45, 46].

The cumulative effect of irregular eating habits and limited physical activity can contribute to a more sedentary lifestyle among nurses, which in turn increases the risk of developing hypertension. Sedentary behavior has been associated with various health issues, including elevated blood pressure levels[47, 48]. Regular physical activity plays a vital role in maintaining cardiovascular health, as it helps to regulate blood pressure, improve circulation, and manage stress[49]. However, the challenging work schedules and demands placed on nurses may make it difficult for them to prioritize and engage in regular exercise. To address these challenges, healthcare organizations can promote initiatives that support nurses' well-being and encourage healthy habits[50]. Providing access to nutritious food options and promoting awareness of healthy eating habits can help nurses make better choices during their shifts. Additionally, creating opportunities for physical activity within the workplace, such as designated exercise areas or breaks for stretching and movement, can help mitigate the sedentary nature of nursing work[51]. Education and support programs that highlight the importance of regular exercise and provide practical strategies for incorporating physical activity into busy schedules can also be beneficial. By addressing the dietary and physical activity challenges faced by nurses, healthcare organizations can contribute to their overall health and well-being[52]. These efforts not only have the potential to reduce the risk of hypertension but also improve nurses' resilience to work-related stress, enhance job satisfaction, and ultimately enhance the quality of care they provide to their patients[53].

The implications of hypertension among nurses are significant, both for the individuals affected and the healthcare system as a whole[25]. Nurses with hypertension may experience reduced productivity, decreased job satisfaction, and increased absenteeism due to related health issues[25, 54]. The physical symptoms of hypertension, such as fatigue, headaches, and dizziness, can impair nurses' ability to provide optimal patient care and make critical decisions. Moreover, untreated hypertension increases the risk of cardiovascular diseases, stroke, and other chronic

health conditions[55]. This situation not only jeopardizes the welfare of nurses but also burdens healthcare resources. Issues like absenteeism decreased productivity, and higher healthcare demand can all affect the effectiveness and quality of healthcare provision. This underscores the importance of implementing proactive management approaches[54].

To effectively address the incidence of hypertension among nurses, comprehensive management strategies are necessary both at individual and organizational levels.

(i) At the individual level, nurses must prioritize self-care and adopt healthy lifestyle practices. This includes maintaining a balanced diet, regular exercise, adequate hydration, and sufficient rest. Nurses should be encouraged to engage in stress-reducing activities such as mindfulness, meditation, and relaxation techniques. Education programs can provide information on hypertension prevention and management, empowering nurses to take control of their health[56].

(ii) Organizational interventions are equally crucial in addressing hypertension among nurses. Adequate staffing levels should be maintained to prevent excessive workloads and stress. Employers should promote a supportive work environment that values work-life balance, offers flexible scheduling options, and encourages regular breaks. Creating wellness programs that provide access to exercise facilities, healthy food options, and stress management resources can contribute to nurses' overall well-being and reduce the risk of hypertension[57].

Regular health screenings and check-ups should be provided to nurses, ensuring early detection and intervention for hypertension and related health issues. Employers can collaborate with healthcare providers to offer on-site health assessments and educational sessions[58]. Additionally, nurses should be encouraged to utilize available resources such as employee assistance programs and counselling services for emotional and mental well-being support[59]. Also, Effective communication channels and feedback mechanisms should be established to allow nurses to voice their concerns and suggestions regarding workplace conditions. Managers and supervisors should undergo training to recognize signs of stress and hypertension among their staff, providing support and appropriate resources when needed[60].

## **5. Conclusion and Recommendation**

The incidence of hypertension among nurses is a significant concern that requires attention from both individuals and healthcare organizations. The demanding nature of nursing work, coupled with workplace factors and lifestyle challenges, increases the risk of hypertension in this profession. It is crucial to recognize the unique stressors faced by nurses, such as long working hours, heavy patient loads, and emotional exhaustion. By acknowledging these factors, healthcare organizations can implement targeted interventions and preventive measures to alleviate stress and reduce the risk of hypertension among nurses.

Individual nurses also play a vital role in managing their well-being and reducing the risk of hypertension. Adopting self-care practices is essential for nurses to cope with the challenges of their profession effectively. This can include prioritizing proper nutrition by planning and preparing healthy meals in advance, staying hydrated throughout the day, and seeking opportunities for physical activity during breaks or outside of work hours. By prioritizing the health and well-being of nurses, healthcare organizations not only protect their valuable workforce but also ensure the provision of high-quality patient care. Healthy and engaged nurses are more likely to deliver safe and effective care, leading to better patient outcomes. By adopting comprehensive management strategies that focus on individual self-care and organizational support, the incidence of hypertension among nurses can be effectively addressed. This not only benefits the well-being of nurses but also ensures the provision of high-quality patient care and the overall sustainability of the healthcare system.

## REFERENCES

1. Ornek, O.K. and M.N. Esin, *Effects of a work-related stress model based mental health promotion program on job stress, stress reactions and coping profiles of women workers: a control groups study*. BMC Public Health, 2020. **20**(1): p. 1658.
2. Michie, S., *CAUSES AND MANAGEMENT OF STRESS AT WORK*. Occupational and Environmental Medicine, 2002. **59**(1): p. 67.
3. Tennakoon, U.S., *Crossing the Work/Life Boundary with ICT: Moderating Effect of ICT Perception on the Relationship between Cross-domain ICT Use and Work/Life Conflict*. South Asian Journal of Human Resources Management, 2018. **5**(2): p. 194-215.
4. Jung, H.S., Y.S. Jung, and H.H. Yoon, *COVID-19: The effects of job insecurity on the job engagement and turnover intent of deluxe hotel employees and the moderating role of generational characteristics*. Int J Hosp Manag, 2021. **92**: p. 102703.
5. Obrenovic, B., et al., *The Threat of COVID-19 and Job Insecurity Impact on Depression and Anxiety: An Empirical Study in the USA*. Frontiers in Psychology, 2021. **12**.
6. Clausen, T., et al., *Job autonomy and psychological well-being: A linear or a non-linear association?* European Journal of Work and Organizational Psychology, 2022. **31**(3): p. 395-405.
7. Marconcin, P., et al., *The association between physical activity and mental health during the first year of the COVID-19 pandemic: a systematic review*. BMC Public Health, 2022. **22**(1): p. 209.
8. Bui, T., et al., *Workplace Stress and Productivity: A Cross-Sectional Study*. Kans J Med, 2021. **14**: p. 42-45.
9. Gautam, P., *Work-Culture for Employee Work-Behaviour: Mediating Role of Satisfaction*. PYC Nepal Journal of Management, 2020. **13**: p. 17-32.
10. Aczel, B., et al., *Researchers working from home: Benefits and challenges*. PLOS ONE, 2021. **16**(3): p. e0249127.
11. Dinesh, T.K., et al., *Effectiveness of mindfulness-based interventions on well-being and work-related stress in the financial sector: a systematic review and meta-analysis protocol*. Systematic Reviews, 2022. **11**(1): p. 79.
12. Ganapathi, N., *Workplace Stress: The need for Communication and Knowledge Sharing*. 2012.
13. Godsey, J.A., D.M. Houghton, and T. Hayes, *Registered nurse perceptions of factors contributing to the inconsistent brand image of the nursing profession*. Nurs Outlook, 2020. **68**(6): p. 808-821.

14. Mathieu, B., et al., *The global health workforce stock and distribution in 2020 and 2030: a threat to equity and 'universal' health coverage?* BMJ Global Health, 2022. **7**(6): p. e009316.
15. Tamata, A.T., M. Mohammadnezhad, and L. Tamani, *Registered nurses' perceptions on the factors affecting nursing shortage in the Republic of Vanuatu Hospitals: A qualitative study.* PLoS One, 2021. **16**(5): p. e0251890.
16. Muhamad Robot, R., et al., *Why so stressed? A comparative study on stressors and stress between hospital and non-hospital nurses.* BMC Nursing, 2021. **20**(1): p. 2.
17. Eslami Akbar, R., et al., *How Do the Nurses Cope with Job Stress? A Study with Grounded Theory Approach.* J Caring Sci, 2017. **6**(3): p. 199-211.
18. Carvello, M., et al., *Peer-support: a coping strategy for nurses working at the Emergency Ambulance Service.* Acta Biomed, 2019. **90**(11-s): p. 29-37.
19. Harrad, R. and F. Sulla, *Factors associated with and impact of burnout in nursing and residential home care workers for the elderly.* Acta Biomed, 2018. **89**(7-s): p. 60-69.
20. Babapour, A.-R., N. Gahassab-Mozaffari, and A. Fathnezhad-Kazemi, *Nurses' job stress and its impact on quality of life and caring behaviors: a cross-sectional study.* BMC Nursing, 2022. **21**(1): p. 75.
21. Chang, P.Y., et al., *Stressors and level of stress among different nursing positions and the associations with hyperlipidemia, hyperglycemia, and hypertension: a national questionnaire survey.* BMC Nurs, 2021. **20**(1): p. 250.
22. Søvold, L.E., et al., *Prioritizing the Mental Health and Well-Being of Healthcare Workers: An Urgent Global Public Health Priority.* Frontiers in Public Health, 2021. **9**.
23. Sharma, P., et al., *Occupational stress among staff nurses: Controlling the risk to health.* Indian J Occup Environ Med, 2014. **18**(2): p. 52-6.
24. Kjeldsen, S.E., *Hypertension and cardiovascular risk: General aspects.* Pharmacol Res, 2018. **129**: p. 95-99.
25. Monakali, S., et al., *Prevalence, awareness, control and determinants of hypertension among primary health care professional nurses in Eastern Cape, South Africa.* Afr J Prim Health Care Fam Med, 2018. **10**(1): p. e1-e5.
26. Gerhardt, C., et al., *How are social stressors at work related to well-being and health? A systematic review and meta-analysis.* BMC Public Health, 2021. **21**(1): p. 890.
27. Mudallal, R.H., W.M. Othman, and N.F. Al Hassan, *Nurses' Burnout: The Influence of Leader Empowering Behaviors, Work Conditions, and Demographic Traits.* Inquiry, 2017. **54**: p. 46958017724944.
28. Carey, R.M., et al., *Prevention and Control of Hypertension: JACC Health Promotion Series.* J Am Coll Cardiol, 2018. **72**(11): p. 1278-1293.
29. Kwame, A. and P.M. Petrucka, *A literature-based study of patient-centered care and communication in nurse-patient interactions: barriers, facilitators, and the way forward.* BMC Nursing, 2021. **20**(1): p. 158.
30. Oldland, E., et al., *A framework of nurses' responsibilities for quality healthcare — Exploration of content validity.* Collegian, 2020. **27**(2): p. 150-163.
31. S, T. and G. S.N, *Work-life balance -a systematic review.* Vilakshan - XIMB Journal of Management, 2021. **ahead-of-print**(ahead-of-print).
32. Liu, M.Y., et al., *Association between psychosocial stress and hypertension: a systematic review and meta-analysis.* Neurol Res, 2017. **39**(6): p. 573-580.
33. Costa, G., *Shift work and health: current problems and preventive actions.* Saf Health Work, 2010. **1**(2): p. 112-23.
34. Oparil, S., et al., *Hypertension.* Nat Rev Dis Primers, 2018. **4**: p. 18014.

35. Mills, K.T., A. Stefanescu, and J. He, *The global epidemiology of hypertension*. *Nat Rev Nephrol*, 2020. **16**(4): p. 223-237.
36. Liu, Y.Z., Y.X. Wang, and C.L. Jiang, *Inflammation: The Common Pathway of Stress-Related Diseases*. *Front Hum Neurosci*, 2017. **11**: p. 316.
37. Stimpfel, A.W., D.M. Sloane, and L.H. Aiken, *The Longer The Shifts For Hospital Nurses, The Higher The Levels Of Burnout And Patient Dissatisfaction*. *Health Affairs*, 2012. **31**(11): p. 2501-2509.
38. Lukan, J., et al., *Work environment risk factors causing day-to-day stress in occupational settings: a systematic review*. *BMC Public Health*, 2022. **22**(1): p. 240.
39. Glowacka, M., *A little less autonomy? The future of working time flexibility and its limits*. *European Labour Law Journal*, 2020. **12**(2): p. 113-133.
40. Wang, J., et al., *Change in eating habits and physical activities before and during the COVID-19 pandemic in Hong Kong: a cross-sectional study via random telephone survey*. *J Int Soc Sports Nutr*, 2021. **18**(1): p. 33.
41. Gifkins, J., A. Johnston, and R. Loudoun, *The impact of shift work on eating patterns and self-care strategies utilised by experienced and inexperienced nurses*. *Chronobiol Int*, 2018. **35**(6): p. 811-820.
42. Sartorius, K., et al., *Does high-carbohydrate intake lead to increased risk of obesity? A systematic review and meta-analysis*. *BMJ Open*, 2018. **8**(2): p. e018449.
43. Pot, G.K., S. Almoosawi, and A.M. Stephen, *Meal irregularity and cardiometabolic consequences: results from observational and intervention studies*. *Proceedings of the Nutrition Society*, 2016. **75**(4): p. 475-486.
44. Waters, T.R. and R.B. Dick, *Evidence of health risks associated with prolonged standing at work and intervention effectiveness*. *Rehabil Nurs*, 2015. **40**(3): p. 148-65.
45. Dunstan, D.W., et al., *Sit less and move more for cardiovascular health: emerging insights and opportunities*. *Nature Reviews Cardiology*, 2021. **18**(9): p. 637-648.
46. Panahi, S. and A. Tremblay, *Sedentariness and Health: Is Sedentary Behavior More Than Just Physical Inactivity?* *Front Public Health*, 2018. **6**: p. 258.
47. Schneider, S., et al., *Contextual influences on physical activity and eating habits -options for action on the community level*. *BMC Public Health*, 2017. **17**(1): p. 760.
48. Alkhulaifi, F. and C. Darkoh, *Meal Timing, Meal Frequency and Metabolic Syndrome*. *Nutrients*, 2022. **14**(9).
49. Nystoriak, M.A. and A. Bhatnagar, *Cardiovascular Effects and Benefits of Exercise*. *Front Cardiovasc Med*, 2018. **5**: p. 135.
50. Montgomery, A., et al., *Job demands, burnout, and engagement among nurses: A multi-level analysis of ORCAB data investigating the moderating effect of teamwork*. *Burn Res*, 2015. **2**(2-3): p. 71-79.
51. Stern, D., et al., *Facilitators and barriers to healthy eating in a worksite cafeteria: a qualitative study*. *BMC Public Health*, 2021. **21**(1): p. 973.
52. Mak, T.C.T., D.K.C. Chan, and C.M. Capio, *Strategies for Teachers to Promote Physical Activity in Early Childhood Education Settings-A Scoping Review*. *Int J Environ Res Public Health*, 2021. **18**(3).
53. Ahmadi, S., et al., *Lifestyle modification strategies for controlling hypertension: How are these strategies recommended by physicians in Iran?* *Med J Islam Repub Iran*, 2019. **33**: p. 43.
54. Gallagher, R., et al., *The health of working nurses: Hypertension prevalence, awareness, treatment and control by medication*. *J Nurs Manag*, 2018. **26**(4): p. 403-410.

55. Higgins, J.N.P., J.D. Pickard, and A.M.L. Lever, *Chronic fatigue syndrome and idiopathic intracranial hypertension: Different manifestations of the same disorder of intracranial pressure?* *Med Hypotheses*, 2017. **105**: p. 6-9.
56. Linton, M. and J. Koonmen, *Self-care as an ethical obligation for nurses*. *Nursing Ethics*, 2020. **27**(8): p. 1694-1702.
57. Alex, J., et al., *Nurses as key advocates of self-care approaches to chronic disease management*. *Contemporary Nurse*, 2020. **56**(2): p. 101-104.
58. Liss, D.T., et al., *General Health Checks in Adult Primary Care: A Review*. *Jama*, 2021. **325**(22): p. 2294-2306.
59. Turale, S. and W. Kunaviktikul, *The contribution of nurses to health policy and advocacy requires leaders to provide training and mentorship*. *International Nursing Review*, 2019. **66**(3): p. 302-304.
60. Burgess, A., et al., *Feedback in the clinical setting*. *BMC Medical Education*, 2020. **20**(2): p. 460.

UNDER PEER REVIEW