Chelonian Conservation And Biology

Vol. 17No.2 (2022) | https://www.acgpublishing.com/ | ISSN - 1071-8443

DOI:doi.org/10.18011/2022.04(1) 1586.1595

ROLE OF NURSES IN PROMOTING PHYSICAL ACTIVITY AND NUTRITION

Altayawi, Nawaf Judaya F, Najwan Fraih Alanazi, Helah Fraih Alanazi, Alanoud Fayadh Alruwaili, Fareed Muadhid Munahi Alotaibi, Yousef Fahad Monahi Alotaibi, Azza Ahmed Hamed Alghamdi, Nawal Mohsen Altheyabi, Fadia Ali Aishi, Sattam Majed, Almutairi, Amani Mazyad Almutairi, Lolo Saleh Alhamed, Tahani Ayed Al-otaibi

Abstract

Prior studies have explored many approaches to enhance the health, wellness, and job-related results of nurses. Nevertheless, the extent of this evidence remains ambiguous, and the specific interventions that are most likely to provide favorable results are still unclear. Purpose: To provide a comprehensive analysis and amalgamation of the efficacy of treatments used to enhance the health, well-being, and job-related results for nurses. Most of the therapies prioritized education, physical exercise, mindfulness, or relaxation. Twenty-seven percent of the studies used a multimodal therapeutic method. The overall results were inconclusive, as several research reported positive outcomes while others saw no discernible impact. The outcome that showed the highest success rate of change (8 out of 9) was dietary habits. This was followed by body composition indices (20 out of 24), physical activity (PA) (11 out of 14), and stress (49 out of 66). In each of these categories, over 70% of the relevant studies reported improvements. The work-related outcomes had the lowest success rate, with 16 out of 32 cases being successful. Individual analysis of randomized controlled trials (RCTs) suggests that treatments that only prioritize education may have a lower likelihood of producing beneficial results compared to therapies that specifically target behavioral change. Interventions that focus on food, body composition, physical activity, or stress management are the most likely to have favorable results for the health and wellbeing of nurses. The most rigorous data, based on randomized controlled trials (RCTs), is available for the assessment of body composition and stress. Interventions that only depend on instructional methods are the least certain to be successful. Modifying organizational results via lifestyle intervention seems to be a more difficult task, necessitating more intricate solutions that include altering the work environment. Additional high-quality evidence is required due to the prevalence of studies with moderate or high risk of bias and poor reporting quality.

Keywords: lifestyle intervention; systematic review; nurses; employee wellness; workplace intervention

1. Introduction

Nurses play a crucial role in public health and dedicate a significant amount of time to advocating for healthy living habits among patients and their families. Nevertheless, research on the lifestyle habits of nurses has consistently shown a tendency to disregard public health recommendations for physical activity (PA), sedentary behavior (SB), nutrition, smoking, and alcohol intake [1,2,3,4,5,6,7,8]. Nurses had a much greater prevalence of overweight and obesity compared to other healthcare professionals and those working in non-health-related jobs [9].

According to a nationwide study, 25% of nurses in England had a body mass index (BMI) of 30.0 or more, which is considered obese. The obesity rates among nurses are greater compared to other healthcare workers [9]. Obesity heightens the likelihood of developing illnesses such as diabetes, heart disease, osteoarthritis, and cancer [10]. Additionally, it raises the risk of musculoskeletal (MSK) issues. Musculoskeletal (MSK) conditions are a primary reason for illness absence [9,11] and are common among nurses [12,13]. However, these conditions may be alleviated with lifestyle modifications, particularly regular exercise [14]. An examination of current data from the United Kingdom (UK) has shown that nurses have been exhibiting improved health-related behaviors compared to the broader working population. This study demonstrated improved behaviors in regards to smoking, consumption of fruits and vegetables, and engagement in physical activity. However, there was no significant improvement seen in alcohol consumption. It is important to note that total compliance with public health recommendations is still insufficient [15].

Nurses' understanding of healthy lifestyle behaviors does not automatically translate into adopting healthier lifestyle behaviors [7]. Additionally, lifestyle choices made outside of work, such as engaging in low levels of physical activity during leisure time, are not necessarily offset by the nature of their job, which primarily involves light-intensity physical activity [16].

Various obstacles may impede the adoption of healthy lifestyle choices in nursing work settings. The factors contributing to these challenges include limited availability of exercise facilities [17], obstacles to maintaining good eating habits caused by demanding work schedules, personal barriers, and elements of the physical work environment and social eating habits [18]. The nursing profession is greatly affected by mental ill-health, which is a major issue [19,20,21,22]. It is among the primary reasons for sickness absence in the UK National Health Service (NHS), resulting in a substantial cost burden on healthcare services [11]. The incidence of work-related stress, emotional tiredness, and burnout is significantly elevated [23,24], and there is a possibility of a greater occurrence of depression among nurses compared to the general population [25].

Nurses' mental wellness and care quality may be affected by several intricate organizational difficulties, such as staffing shortages, heavy workload, high turnover rates, inability to retain personnel, and challenging shift patterns. Nevertheless, there is the possibility of creating healthier work environments that enable lifestyle interventions to enhance aspects such as stress levels, job satisfaction, and retention of nursing staff, eventually leading to an improvement in the quality of care being delivered.

2. The health and welfare of nurses

The health and welfare of nurses have a substantial influence on healthcare organizations. Healthcare organizations have significant financial burdens due to illness absenteeism [26] and presenteeism (working when unwell) [27,28], in addition to the impact on workers' physical and emotional wellbeing. Nurses have a fourfold higher likelihood of displaying presenteeism compared to other professions [29], and the cost of presenteeism is twice as high as that of illness absenteeism [30]. The poor health of nurses has negative effects on several aspects of their work, including productivity, quality of care, absenteeism, turnover, continuity of care, and patient safety. These effects manifest in higher incidents of patient falls, medication mistakes, and staff-to-patient disease transmission.

Unhealthy lifestyle behaviors, stress, work engagement, and job satisfaction have been shown to be interconnected [37,38,39,40]. Nurses believe that being overweight negatively impacts their job performance [41] and affects their motivation to promote health to others [42,43,44]. In addition, overweight nurses have indicated that the general public would be less inclined to have confidence in their health promotion messaging [43]. This demonstrates that the lifestyle and health behavior choices of nurses may have an influence on the quality of care they provide, and ultimately, the clinical results of patients.

No systematic studies have been undertaken on health promotion programs that target both the individual (including physical and psychological health outcomes) and organizational outcomes of working-age nurses. Chan and Perry [45] conducted a comparable evaluation that included intervention trials published till 2011. However, their study specifically focused on individual health outcomes. Prior evaluations have mostly examined a single result or have limited their analysis to a certain kind of nurse work function [46,47,48]. The available studies include a limited number of included articles, and the conclusions are inconclusive. The quality of research in these reviews ranges from poor to moderate, and there is a lack of comprehensive description of the complete spectrum of lifestyle interventions for nurses. In addition, the efficacy of interventions for registered nurses is often uncertain due to the inclusion of student samples in some studies [49], despite the potential influence of demographic differences on their health, lifestyle choices, attitudes, and behaviors.

Providing services and facilities inside healthcare organizations to support the health and wellbeing of nurses is highly justified. It is necessary to identify the interventions that are most likely to have a positive impact on individual outcomes, such as lifestyle behavior and physical

and psychological health, as well as organizational outcomes, such as employee engagement, job satisfaction, performance, productivity, sickness absence, patient safety, and care. This information will help in making decisions about the provisions to be offered through health and wellbeing programs.

3. Exercise and Inactivity

The intervention in studies [50-52] resulted in better outcomes linked to the degree of physical activity. The studies showed that lifestyle interventions led to an increase in the frequency of physical activity, measured by the number of days walking per week [53]. They also resulted in a longer duration of physical activity, measured by steps walked, number of sessions, or minutes/hours per day/session [50,53]. Additionally, the intensity of physical activity, categorized as light, moderate, or vigorous, was found to be higher [54]. The interventions also led to a higher number of kilocalories burnt per week, and increased awareness of one's activity, including stretching, walking, and standing [52]. The majority of the research used self-report questionnaires, such as the Health-Promoting Lifestyle Profile (HPLP), or other similar instruments [52,53], to evaluate their results. The use of objective indicators to assess activity level was less prevalent, such as the use of activity monitors. However, two additional studies employed a combination of methods, such as self-report and pedometer, or self-report and an exercise task conducted in a laboratory setting. Remarkably, a research used both self-report and pedometer records, although the authors neglected to disclose the pedometer findings [55].

These therapies did not enhance all of the physical activity (PA) and exercise outcomes. For instance, a particular research [56] shown an enhancement in self-reported leisure physical activity (PA), but did not show any improvement in empirically tested aerobic fitness. Another research [51] did not show any enhancement in aerobic fitness, which is a quantifiable measure of the greatest amount of oxygen that can be taken in. However, it did see gains in muscular strength, which was objectively assessed using a dynamometer. The research [57] showed increases in both the amount of calories burned per week and the number of minutes of activity per week. However, there were no observed changes in the number of steps taken per day. A further research indicated a notable alteration in the amount of time spent sitting each day, but did not see any significant changes in the MET scores.
Out of the 11 studies that reported improvements in physical activity (PA) and/or sedentary behavior, three were randomized controlled trials (RCTs) [52,53], one was a non-randomized controlled research, and seven were uncontrolled studies [52,54,57].

4. Summary

To summarize, this systematic review offers a thorough analysis of the literature on workplace lifestyle interventions that target the enhancement of physical and mental health of individual nurses, as well as the improvement of organizational results. This study emphasizes the presence of substantial methodological constraints in the published literature, characterized

by inadequate reporting quality, particularly in relation to treatments and research procedures. In future research, it is crucial to address this issue by using standardized tools and checklists to guide the design and reporting of interventions. Preliminary inferences are made based on an extensive body of research that includes several study designs and a wide range of outcome measures. However, there is a limited amount of high-quality information from randomized controlled trials (RCTs).

In summary, this research indicates that implementing workplace lifestyle interventions specifically designed for nurses is likely to provide favorable outcomes in several aspects of their individual health and lifestyle, including food and nutrition, body composition, physical activity, and job-related stress. The results on mindfulness, wellbeing/quality of life, burnout/compassion fatigue, depression/anxiety, and work-related outcomes are varied and may need innovative or more intricate organizational strategies. It is necessary to do similar work with other groups of healthcare workers, such as doctors, whose own health may directly affect the healthcare of their patients.

References

1. Terada, T.; Mistura, M.; Tulloch, H.; Pipe, A.; Reed, J. Dietary behaviour is associated with cardiometabolic and psychological risk indicators in female hospital nurses—A post-hoc, cross-sectional study. *Nutrients* **2019**, *11*, 2054.

2. Nilan, K.; McKeever, T.; McNeill, A.; Raw, M.; Murray, R. Prevalence of tobacco use in healthcare workers: A systematic review and meta-analysis. *PLoS ONE* **2019**, *14*, e0220168.

3. Priano, S.M.; Hong, O.S.; Chen, J.L. Lifestyles and health-related outcomes of US hospital nurses: A systematic review. *Nurs. Outlook* **2018**, *66*, 66–76.

4. Reed, J.; Prince, S. Women's heart health: A focus on nurses' physical activity and sedentary behaviour. *Curr. Opin. Cardiol.* **2018**, *35*, 514–520.

5. Schluter, P.; Turner, C.; Benefer, C. Long working hours and alcohol risk among Australian and New Zealand nurses and midwives: A cross-sectional study. *Int. J. Nurs. Stud.* **2012**, *49*, 701–709.

6. Blake, H.; Mo, P.; Lee, S.; Batt, M. Health in the NHS: Lifestyle behaviours of hospital employees. *Perspect. Public Health* **2012**, *132*, 213–215.

7. Mo, P.; Blake, H.; Batt, M. Getting healthcare staff more active: The mediating role of self-efficacy. *Br. J. Health Psychol.* **2011**, *16*, 690–706.

8. Malik, S.; Blake, H.; Batt, M. How healthy are our nurses? New and registered nurses compared. *Br. J. Nurs.* **2011**, *20*, 489–496.

9. Kyle, R.; Wills, J.; Mahoney, C.; Hoyle, L.; Kelly, M.; Atherton, I. Obesity prevalence among healthcare professionals in England: A cross-sectional study using the Health Survey for England. *BMJ Open* **2017**, *4*, 7.

10. Kings Fund Time to Think Differently. Available online: **https://www.kingsfund.org.uk/projects/time-think-differently/trends-healthy-behaviours-obesity** (accessed on 22 November 2019).

11. Moberly, T. Sickness absence rates across the nhs. *BMJ* **2018**, *361*, 2017–2018.

12. Soroush, A.; Shamsi, M.; Izadi, N.; Heydarpour, B.; Samadzadeh, S.; Shahmohammadi, A. Musculoskeletal disorders as common problems among Iranian nurses: A systematic review and meta-analysis study. *Int. J. Prev. Med.* **2018**, *9*, 27.

13. Yao, Y.; Zhao, S.; An, Z.; Wang, S.; Li, H.; Lu, L.; Yao, S. the Associations of Work Style and Physical Exercise With the Risk of Work-Related Musculoskeletal Disorders in Nurses. *Int. J. Occup. Med. Environ. Health* **2019**, *32*, 15–24.

14. Mynarski, W.; Niestrój-jaworska, M. Physical recreational activity and musculoskeletal disorders in nurses. *Med. Pr.* **2014**, *65*, 181–188.

15. Schneider, A.; Bak, M.; Mahoney, C.; Hoyle, L.; Kelly, M.; Atherton, I.; Kyle, R. Health-related behaviours of nurses and other healthcare professionals: A cross-sectional study using the Scottish Health Survey. *J. Adv. Nurs.* **2019**, *75*, 1239–1251.

16. Chappel, S.; Verswijveren, S.; Aisbett, B.; Considine, J.; Ridgers, N. Nurses' occupational physical activity levels: A systematic review. *Int. J. Nurs. Stud.* **2017**, *73*, 52–62.

17. Al-Tannier, M.; Kobrosly, S.; Elbakri, N. Prevalence and predictors of physical exercise among nurses: A cross-sectional study. *Saudi Med. J.* **2017**, *38*, 209–212.

18. Nicholls, R.; Perry, L.; Duffield, C.; Gallagher, R.; Pierce, H. Barriers and facilitators to healthy eating for nurses in the workplace: An integrative review. *J. Adv. Nurs.* **2017**, *73*, 1051–1065.

19. Maharaj, S.; Lees, T.; Lal, S. Prevalence and risk factors of depression, anxiety, and stress in a cohort of Australian nurses. *Int. J. Environ. Res. Public Health* **2019**, *16*, 61.

20. Haplin, Y.; Terry, L.; Curzio, J. A longitudinal, mixed methods investigation of newly qualified nurses' workplace stressors and stress experiences during transition. *J. Adv. Nurs.* **2017**, *73*, 2577–2586.

21. Adriaenssens, J.; De Gucht, V.; Maes, S. Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *Int. J. Nurs. Stud.* **2015**, *52*, 649–661.

22. Stephenson, J. Specialist Nursing Care 'Improves Life Expectancy of Cancer Patients'. Available online: **https://www.nursingtimes.net/news/research-and-innovation/specialist-nursing-care-improves-life-expectancy-of-cancer-patients-04-07-2018/** (accessed on 15 November 2019).

23. De La Fuente-Solana, E.; Suleiman-Martos, N.; Pradas-Hernandez, L.; Gomez-Urquiza, J.; Canadas-De La Fuente, G.; Albendin-Garcia, L. Prevalence, related factors, and levels of burnout syndrome among nurses working in gynecology and obstetrics services: A systematic review and meta-analysis. *Int. J. Environ. Res. Public Health* **2019**, *16*, 2585.

24. Gomez-Urquiza, J.; Aneas-Lopez, A.; Fuente-Solana, E.; Albendin-Garcia, L.; Diaz-Rodriguez, L.; Fuente, G. Prevalence, risk factors, and levels of burnout among oncology nurses: A systematic review. *Oncol. Nurs. Forum* **2016**, *43*, E104–E120.

25. Shahri, S.S.S.; Ghashghaee, A.; Behzadifar, M.; Bragazzi, N.L.; Behzadifar, M.; Mousavinejad, N.; Ghaemmohamadi, M.S.; Ebadi, F.; Seyedin, H. Depression among Iranian nurses: A systematic review and meta-analysis. *Med. J. Islam. Repub. Iran* **2017**, *31*, 860–868.

26. NHS England Simon Stevens Announces Major Drive to Improve Health in NHS Workplace 2015. Available online: **https://www.england.nhs.uk/2015/09/02/nhs-workplace/** (accessed on 21 November 2019).

27. West, M.A.; Dawson, J.F. *Employee Engagement and NHS Performance—Employee-Engagement-NHS-Performance-West-Dawson-Leadership-Review2012-Paper, King's Fund*; NHS South West Leadership Academy: Taunton, MA, USA, 2012; pp. 1–23.

28. Personnel Today. NHS Sickness Absence: HR Must First Address Culture of "Presenteeism" 2009. Available online: **https://www.personneltoday.com/hr/nhs-sickness-absence-hr-must-first-address-culture-of-presenteeism/** (accessed on 22 November 2019).

29. Lui, J.; Johnston, J. Working while sick: Validation of the multidimensional presenteeism exposures and productivity survey for nurses (MPEPS-N). *Health Serv. Res.* **2019**, *19*, 542.

30. Personnel Today. "Presenteeism Costs Twice as Much as Sickness Absence" 2015. Available online: **https://www.personneltoday.com/hr/presenteeism-costs-twice-much-sickness-absence/** (accessed on 12 November 2019).

31. Letvak, S.; Ruhm, C.; Lane, S. The impact of nurses' health on productivity and quality of care. *J. Nurs. Adm.* **2011**, *41*, 162–167.

32. Sarafis, P.; Rousaki, E.; Tsounis, A.; Malliarou, M.; Lahana, L.; Bamidis, P.; Niakas, D.; Papastavrou, E. The impact of occupational stress on nurses' caring behaviors and their health related quality of life. *BMC Nurs.* **2016**, *15*, 1–9.

33. Davey, M.; Cummings, G.; Newburn-Cook, C. Predictors of nurse absenteeism in hospitals: A systematic review. *J. Nurs. Manag.* **2009**, *17*, 312–330.

34. Letvak, S.; Ruhm, C.; Gupta, S. Nurses' presenteeism and its effects on self-reported quality of care and costs. *Am. J. Nurs.* **2012**, *112*, 30–38.

35. Guillaumie, L.; Boiral, O.; Champagne, J. A mixed-methods systematic review of the effects of mindfulness on nurses. *J. Adv. Nurs.* **2017**, *73*, 1017–1034.

36. Garcia, C.; Abreu, L.; Ramos, J.; Castro, C. Influence of burnout on patient safety: Systematic review and meta-analysis. *Medicina* **2019**, *55*, 553.

37. Jordan, T.; Khubchandani, J.; Wiblishauser, M. The impact of perceived stress and coping adequacy on the health of nurses: A pilot investigation. *Nurs. Res. Pract.* **2016**, *2016*, 5843256.

38. Khamisa, N.; Oldenburg, B.; Peltzer, K. Work related stress, burnout, job satisfaction and general health of nurses. *Int. J. Environ. Res. Public Health* **2015**, *12*, 652–666.

39. Pérez-Fuentes, M.; Molero Jurado, M.; Barragán Martín, A.; Simón Márquez, M.; Martos Martínez, Á.; Gázquez Linares, J. The Mediating Role of Perceived Stress in the Relationship of Self-Efficacy and Work Engagement in Nurses. *J. Clin. Med.* **2018**, *8*, 10.

40. Jaradat, Y.; Nielsen, M.; Kristensen, P. Shift work, mental distress and job satisfaction among Palestinian nurses. *Occup. Med. (Chic. Ill)* **2017**, *67*, 71–74.

41. Phiri, L.P.; Draper, C.E.; Lambert, E.V.; Kolbe-Alexander, T.L. Nurses' lifestyle behaviours, health priorities and barriers to living a healthy lifestyle: A qualitative descriptive study. *BMC Nurs.* **2014**, *13*, 1–11.

42. Blake, H.; Patterson, J. Paediatric nurses' attitudes towards the promotion of healthy eating. *Br. Nurs. J.* **2015**, *24*, 108–112.

43. Kelly, M.; Wills, J. Systematic review: What works to address obesity in nurses? Occup. Med. (Chic. Ill) 2018, 68, 228–238.

44. Duaso, M.; Bakhshi, S.; Muhika, A. Nurses' smoking habits and their professional smoking cessation practices. A systematic review and meta-analysis. Int. J. Nurs. Stud. 2017, 67, 3–11.

45. Chan, C.W.; Perry, L. Lifestyle health promotion interventions for the nursing workforce: A systematic review. J. Clin. Nurs. 2012, 21, 2247–2261.

46. Häggman-Laitila, A.; Romppanen, J. Outcomes of interventions for nurse leaders' well-being at work: A quantitative systematic review. J. Adv. Nurs. 2018, 74, 34–44.

47. Halter, M.; Pelone, F.; Boiko, O.; Beighton, C.; Harris, R.; Gale, J.; Gourlay, S.; Drennan, V. Interventions to Reduce Adult Nursing Turnover: A Systematic Review of Systematic Reviews. Open Nurs. J. 2017, 11, 108–123.

48. Duhoux, A.; Menear, M.; Charron, M.; Lavoie-Tremblay, M.; Alderson, M. Interventions to promote or improve the mental health of primary care nurses: A systematic review. J. Nurs. Manag. 2017, 25, 597–607.

49. Torquati, L.; Pavey, T.; Kolbe-Alexander, T.; Leveritt, M. Promoting diet and physical activity in nurses: A systematic review. Am. J. Health Promot. 2017, 31, 19–27.

50. Tucker, S.; Farrington, M.; Lanningham-Foster, L.M.; Clark, M.K.; Dawson, C.; Quinn, G.J.; Laffoon, T.; Perkhounkova, Y. Worksite physical activity intervention for ambulatory clinic nursing staff. Work. Health Saf. 2016, 64, 313–325.

51. Matsugaki, R.; Kuhara, S.; Saeki, S.; Jiang, Y.; Michishita, R.; Ohta, M.; Yamato, H. Effectiveness of workplace exercise supervised by a physical therapist among nurses conducting shift work: A randomized controlled trial. J. Occup. Health 2017, 62, 477–490.

52. Koehne, K. A new threat to the nursing workforce: Take a stand! Creat. Nurs. 2015, 21, 234–241.

53. Hasson, R.; Stark, A.; Constantini, N.; Polak, R.; Verbov, G.; Edelstein, N.; Lachmi, M.; Cohen, R.; Maoz, S.; Daoud, N.; et al. "Practice what you teach" Public health nurses promoting healthy lifestyles (PHeeL-PHiNe): Program evaluation. J. Ambul. Care Manag. 2018, 41, 171–180.

54. Hess, I.; Borg, J.; Rissel, C. Workplace nutrition and physical activity promotion at Liverpool Hospital. *Health Promot. J. Aust.* **2011**, *22*, 44–50

55. Flanagan, J.; McCord, A.; Cheney, M.; Lundquist, D. The feasibility, safety, and efficacy of using a wireless pedometer to improve the activity level in a cohort of nurses. *J. Holist. Nurs.* **2017**, *35*, 134–141.

56. Becker, A.; Angerer, P.; Müller, A. The prevention of musculoskeletal complaints: A randomized controlled trial on additional effects of a work-related psychosocial coaching intervention compared to physiotherapy alone. *Int. Arch. Occup. Environ. Health* **2017**, *90*, 357–371

57. Nahm, E.S.; Warren, J.; Friedmann, E.; Brown, J.; Rouse, D.; Park, B.K.; Quigley, K.W. Implementation of a participant-centered weight management program for older nurses: A feasibility study. *Online J. Issues Nurs.* **2014**, *19*.