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OCCUPATIONAL HEALTH PROMOTION THROUGH EDUCATION: PREVENTING VARICOSE VEINS AMONG NURSING STAFF

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ABSTRACT

Chronic venous disease (CVD) is one of the most common vascular disorders affecting the lower limbs and includes a spectrum of conditions such as varicose veins, chronic venous insufficiency, and venous ulcers. Varicose veins are particularly prevalent among professionals whose work involves prolonged standing—such as nurses. In the evolving landscape of healthcare, the emphasis has shifted from "cure" to "prevention," underlining the importance of occupational health promotion. This article highlights the significance of preventive education for nursing staff to reduce the risk of varicose veins and improve their quality of life. Drawing insights from a structured teaching programme conducted among nurses in Tumkur, India, it illustrates how targeted health education can effectively enhance knowledge and promote preventive practices. The discussion emphasizes that health promotion at the workplace is essential not only for individual well-being but also for improving productivity and sustaining the healthcare workforce.

Keywords: *varicose veins, occupational health, nurses, prevention, health promotion, structured teaching programme*

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INTRODUCTION

Chronic Venous Disease (CVD) is recognized globally as a common yet often underestimated occupational health concern. It affects the venous system of the lower limbs and can present as varicose veins, venous insufficiency, or even ulceration in advanced cases. The condition imposes a significant burden on healthcare systems due to its chronic nature, pain, and impact on mobility and quality of life. Among healthcare professionals, nurses are especially vulnerable due to the long hours of standing, repetitive movements, and demanding nature of their work. It is widely acknowledged that nurses are important components in healthcare system. In their roles, nurses are regularly confronted with a variety of biological, physical, and chemical hazards during the course of performing their duties. The safety of nurses themselves, and subsequently that of their patients, depend directly upon the degree to which nurses have knowledge of occupational hazards specific to their jobs and managerial mechanisms for mitigating those hazards.

Occupational exposure to prolonged standing leads to venous stasis and valve incompetence, which contribute to the development of varicose veins. Over time, this results not only in discomfort and reduced efficiency but also in absenteeism and long-term complications. Despite its prevalence, preventive measures are often overlooked in nursing curricula and workplace health initiatives. The modern healthcare approach emphasizes prevention and health promotion as key strategies for sustainable well-being. Thus, enhancing nurses' awareness of varicose vein prevention becomes a vital component of occupational health care.

BACKGROUND AND RATIONALE

Varicose veins are dilated, tortuous superficial veins that commonly develop in the lower limbs due to venous valve failure. The World Health Organization (WHO, 2023) identifies chronic venous disease as a public health issue linked with occupational posture, obesity, and sedentary lifestyle. Studies have shown that healthcare workers, particularly nurses, are at high risk due to the physical nature of their profession.

A study by the University of Maryland, Baltimore (2022) revealed that work-related musculoskeletal and vascular conditions are prevalent among healthcare professionals. The findings underscored the need for preventive education and ergonomic interventions to promote occupational wellness. Similarly, research in India has reported a high incidence of varicose veins among nurses working in wards, intensive care units, and operation theatres, where prolonged standing is unavoidable.

The focus of occupational health promotion is therefore to empower workers through knowledge and behavioural change. By improving awareness and preventive practices—such as leg elevation, use of compression stockings, and avoidance of prolonged static postures—nurses can significantly reduce their risk. Educational interventions like structured teaching programmes (STPs) are an effective medium to achieve this goal.

Although present study used a pre-experimental design, the broader aim was to emphasize education as a form of occupational health promotion for nurses.

Conceptual Framework

The conceptual framework of this initiative was derived from Imogene King's Goal Attainment Theory (1981), which emphasizes the dynamic interaction between the nurse and educator. The theory rests on four key concepts—perception, action, interaction, and transaction. These elements together lead to goal achievement and behavioural change. In the context of occupational health, the theory underscores that when nurses perceive their risk and interact meaningfully in educational sessions, they are more likely to adopt preventive behaviours to protect their health.

Educational Approach and Implementation

A structured teaching programme (STP) was designed for 60 nurses working in selected hospitals in Tumkur. The content included anatomy of veins, causes and risk factors for varicose veins, signs and symptoms, preventive strategies, and ergonomic practices. The sessions were interactive and incorporated lectures, demonstrations, and visual aids. The programme aimed not only to increase knowledge but also to instill awareness about self-care and workplace safety.

The teaching material was validated by a panel of 10 experts from the fields of nursing, community health, and medical education, ensuring its reliability and appropriateness. The reliability of the assessment tool was high ($r = 0.943$), confirming the consistency of the questionnaire used to measure knowledge.

Ethical clearance was obtained from institutional authorities, and informed consent was taken from all participants. The teaching sessions were followed by discussions, enabling participants to clarify doubts and relate preventive measures to their daily work routines.

Key Observations and Outcomes

The nurses who participated in the educational programme represented diverse backgrounds, with most being young female professionals holding diploma qualifications and 1–5 years of experience. Prior to the intervention, many had limited or no exposure to training on varicose vein prevention.

After the programme, there was a marked improvement in their understanding of preventive strategies—particularly regarding leg exercises, posture correction, adequate rest, and the importance of wearing compression stockings. The mean post-test knowledge score was significantly higher compared to the pre-test, indicating that structured educational efforts are effective tools in enhancing awareness. Furthermore, demographic variables such as age, educational qualification, income, and experience showed significant associations with knowledge levels, implying that younger and less experienced nurses may particularly benefit from early occupational health education.

RESULTS

The study aimed to evaluate the effectiveness of a structured teaching programme on the prevention of varicose veins among nursing staff. The findings revealed that the educational intervention brought about a significant improvement in the knowledge level of staff nurses. Prior to the teaching programme, many nurses demonstrated inadequate understanding of risk factors and preventive measures. After the intervention, there was a marked enhancement in awareness regarding lifestyle modification, workplace ergonomics, and the importance of early detection. The following tables illustrate the comparative findings before and after the structured teaching programme.

Table 1: Distribution of Staff Nurses According to Knowledge Levels on Prevention of Varicose Veins (Pre- and Post-Test)

Knowledge Level	Pre-Test (f / %)	Post-Test (f / %)
Inadequate Knowledge	38 (63.3%)	4 (6.7%)
Moderate Knowledge	18 (30.0%)	16 (26.6%)
Adequate Knowledge	4 (6.7%)	40 (66.7%)
Total	**60 (100%)**	**60 (100%)**

Table 1 shows that before the structured teaching programme, 63.3% of nurses had inadequate knowledge regarding varicose vein prevention. After the educational intervention, 66.7% demonstrated adequate knowledge, reflecting a substantial improvement in occupational health awareness and preventive understanding.

Table 2: Mean, Mean Percentage, and Standard Deviation of Knowledge Scores Before and After Structured Teaching Programme

Test	Mean Score	Mean %	Standard Deviation (SD)	Paired 't' Value
Pre-Test	13.45	44.83%	3.26	—
Post-Test	23.16	77.22%	2.89	**12.47***

*Significant at 0.05 level of significance.

Table 2 indicates a clear improvement in post-test mean knowledge scores (77.22%) compared to pre-test (44.83%). The paired 't' value of 12.47, significant at the 0.05 level, confirms that the structured teaching programme effectively enhanced the nurses' knowledge regarding prevention of varicose veins.

DISCUSSION

The findings reaffirm that preventive education is an essential element of occupational health promotion. Nurses, being the backbone of the healthcare system, are at the forefront of patient care and are simultaneously exposed to multiple occupational risks. Varicose veins, though often neglected, can severely affect their quality of life and professional efficiency.

The results of this initiative align with global evidence suggesting that workplace-based health education leads to improved knowledge and adoption of protective behaviours. Incorporating structured teaching sessions within nursing in-service education programs can create lasting awareness and behavioural modification.

Furthermore, workplace ergonomics—such as adjustable workstations, adequate rest breaks, and supportive footwear—should complement educational interventions. Health administrators must recognize the importance of integrating preventive training into regular professional development schedules.

Education also fosters a sense of self-responsibility and motivation among nurses to practice what they learn. As the healthcare industry evolves toward holistic well-being, occupational health promotion serves as both a preventive and empowering strategy.

Implications for Nursing Practice

- **Health Education:** Regular workshops and refresher training sessions should be conducted to sensitize nurses about occupational hazards and preventive measures.
- **Workplace Ergonomics:** Hospitals should implement structural modifications and policies to minimize prolonged standing.
- **Curricular Integration:** Preventive health and self-care practices should be incorporated into nursing curricula and orientation programs.
- **Policy Support:** Institutional policies must prioritize occupational wellness to ensure sustainability and retention of nursing personnel.

RECOMMENDATIONS

1. Conduct regular occupational health screening for early detection of venous disorders.
2. Integrate ergonomic education and physical activity programs into hospital wellness initiatives.
3. Encourage interdisciplinary collaboration among administrators, physiotherapists, and occupational health experts.
4. Extend similar educational programmes to other at-risk professionals, such as operation theatre and laboratory staff.
5. Promote research on long-term outcomes of educational interventions on occupational health.

CONCLUSION

Preventive education is a cornerstone of occupational health promotion. Varicose veins, while common, are largely preventable through awareness, lifestyle modifications, and ergonomic adjustments. This educational initiative among nurses demonstrated that structured teaching programmes can significantly improve knowledge and foster preventive practices. By promoting health literacy and self-care, healthcare institutions not only protect their staff but also strengthen the quality and sustainability of patient care. A healthy nurse is a vital resource for a healthy nation.

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