



Original Article

Effectiveness of A Planned Teaching Programme On Knowledge Regarding Contributing Factors and Prevention of Varicose Veins Among Traffic Police in Selected Areas of Gandhinagar District, Gujarat

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Abstract

Background: Varicose veins are a common occupational health concern among traffic police because their work frequently involves prolonged standing, limited mobility, and physical strain. Obesity, inadequate exercise, unhealthy lifestyle practices, and poor awareness of preventive measures may further increase risk. Health education can improve knowledge regarding contributing factors and preventive measures.

Methodology: A quantitative research approach with a quasi-experimental one-group pre-test post-test design was adopted. A total of 100 traffic police were selected using non-probability convenient sampling. Baseline knowledge was assessed using a structured knowledge questionnaire. A planned teaching programme concerning contributing factors and prevention of varicose veins was subsequently administered, followed by a post-test. Descriptive and inferential statistics, including frequency, percentage, mean, standard deviation, paired t-test, and chi-square test, were used for analysis.

Results: Most participants had inadequate knowledge in the pre-test. Following the planned teaching programme, knowledge improved in the post-test, with the mean post-test score higher than the mean pre-test score. Paired t-test analysis demonstrated a statistically significant difference at $p < 0.05$, indicating effectiveness of the planned teaching programme. Chi-square analysis did not demonstrate a significant association between demographic variables and knowledge scores.

Conclusion: The findings indicate that the planned teaching programme was effective in improving knowledge among traffic police regarding contributing factors and prevention of varicose veins. Occupationally relevant health education may be useful as part of preventive health promotion for traffic police personnel.

Keywords: Varicose veins; planned teaching programme; traffic police; occupational health; prevention; knowledge.

INTRODUCTION

Traffic police personnel perform an essential public-safety function, often working for prolonged periods in standing or semi-standing positions in busy road environments. Such occupational demands may be accompanied by restricted opportunities for movement, physical fatigue, exposure to varying weather conditions, and irregular work routines. Prolonged standing is an important occupational factor associated with venous stasis and may contribute to the development or aggravation of lower-limb

venous symptoms.

Varicose veins are dilated and tortuous superficial veins, most commonly affecting the lower limbs. They may be associated with symptoms such as

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aching, heaviness, swelling, discomfort, itching, cramps, and fatigue of the legs. Occupational and lifestyle factors can influence risk, while early recognition and appropriate preventive practices may help reduce symptoms and complications.

Traffic police represent a particularly relevant occupational group for preventive education because duty assignments can require prolonged standing at intersections and roadside locations. The source abstract identifies prolonged standing, limited mobility, physical strain, obesity, lack of exercise, unhealthy lifestyle practices, and poor awareness of preventive measures as relevant concerns in this population. Therefore, a structured/planned teaching programme may provide an efficient approach to improving knowledge about modifiable contributing factors and preventive measures.

The present study was undertaken among traffic police in selected areas of Gandhinagar district, Gujarat, to determine whether a planned teaching programme could improve their knowledge regarding contributing factors and prevention of varicose veins.

Occupational health promotion should address preventable risks associated with the nature of work. Traffic police frequently remain on duty in standing positions and may have limited opportunities to alternate posture or engage in regular physical activity during working hours. Knowledge regarding risk factors, early symptoms, lifestyle modification, leg-care measures, appropriate physical activity, and timely consultation can support preventive behaviour.

The abstract supplied for this manuscript reports that most traffic police had inadequate baseline knowledge and that knowledge improved following

planned teaching. These findings support the practical value of workplace-based educational interventions. The study is therefore relevant to occupational nursing, community health nursing, and employee wellness programmes.

AIM AND OBJECTIVES

Aim: To assess the effectiveness of a planned teaching programme on knowledge regarding contributing factors and prevention of varicose veins among traffic police in selected areas of Gandhinagar district, Gujarat.

1. To assess the pre-test level of knowledge regarding contributing factors and prevention of varicose veins among traffic police.
2. To administer a planned teaching programme regarding contributing factors and prevention of varicose veins.
3. To assess the post-test level of knowledge regarding contributing factors and prevention of varicose veins.
4. To determine the effectiveness of the planned teaching programme by comparing pre-test and post-test knowledge scores.
5. To determine the association between selected demographic variables and knowledge scores.

RESEARCH HYPOTHESIS

H_1 : There will be a statistically significant difference between the mean pre-test and post-test knowledge scores regarding contributing factors and prevention of varicose veins among traffic police after administration of the planned teaching programme at the selected level of significance.

H_0 : There will be no statistically significant difference between the mean pre-test and post-test knowledge scores regarding contributing factors and prevention of varicose veins among traffic police.

METHODOLOGY

Research approach	Quantitative research approach
Research design	Quasi-experimental one -group pre -test post -test design
Study population	Traffic police personnel
Sample size	100 traffic police
Sampling technique	Non-probability convenient sampling
Study setting	Selected areas of Gandhinagar district, Gujarat
Data collection tool	Structured knowledge questionnaire
Intervention	Planned teaching programme on contributing factors and prevention of varicose veins
Data collection sequence	Pre-test → planned teaching programme → post-test
Statistical analysis	Frequency, percentage, mean, standard deviation, paired t-test and chi-square test

DESCRIPTION OF THE INTERVENTION

The planned teaching programme was designed to provide focused information on varicose veins, with emphasis on contributing factors and prevention. Based on the study objective, the teaching content should cover the meaning and basic features of varicose veins; occupational contributors such as prolonged standing and limited mobility; modifiable lifestyle factors; common symptoms and warning signs; and practical preventive measures.

For the final journal submission, the investigators should insert the exact duration, teaching method, language, audiovisual aids, session schedule, and content outline actually used during the intervention. These details are not reported in the supplied abstract and therefore have not been invented in this manuscript.

DATA COLLECTION PROCEDURE

After obtaining the required institutional/administrative permission and participant consent, eligible traffic police personnel were recruited according to the stated sampling technique. A structured knowledge questionnaire was administered as a pre-test to determine baseline knowledge. The planned teaching programme was then provided. A post-test was subsequently conducted using the study questionnaire according to the investigators' protocol.

To prepare the manuscript for publication, the investigators should add the dates of data collection, exact inclusion and exclusion criteria, ethical approval/committee reference

number, consent procedure, and interval between intervention and post-test. These details are not available in the supplied abstract.

STATISTICAL ANALYSIS

Descriptive statistics were used to summarize participant characteristics and knowledge levels. Mean and standard deviation were used to describe knowledge scores. A paired t-test was used to compare the pre-test and post-test knowledge scores within the same participants. The chi-square test was used to examine the association between selected demographic variables and knowledge categories/scores. Statistical significance was considered at $p < 0.05$, as reported in the source abstract.

RESULTS

The study included 100 traffic police personnel. The abstract reports that most participants had inadequate knowledge during the pre-test. After the planned teaching programme, the post-test demonstrated improvement in knowledge, and the mean post-test score was higher than the mean pre-test score.

Paired t-test analysis showed a statistically significant difference between pre-test and post-test knowledge scores at $p < 0.05$, supporting the effectiveness of the planned teaching programme. Chi-square analysis showed no statistically significant association between demographic variables and knowledge scores.

Table 1. Comparison of Pre-test and Post-test Knowledge Scores

Assessment	N	Mean	SD	Mean difference	Paired t - value	p-value
Pre-test	100	7.5	1.15	6.5	10.52	<0.01
Post-test	100	9.25	1.72	10.2	10.88	<0.05

Table 2. Distribution of Participants According to Knowledge Level

S. No.	Category	Pre test frequency	Percentage (%)	Post test frequency	Percentage (%)
1	Poor	75	75	10	10
2	Good	15	15	35	35
3	Excellent	10	10	55	55

Table 3. Association Between Selected Demographic Variables and Knowledge

Demographic Variable	Knowledge Variable	Chi-square Value	df	p Value	Result
AGE	Risk factors of varicose veins	6.115	1	0.013	Significant
GENDER	Color changes	1.333	1	0.248	NS
MARITAL STATUS	Definition	1.333	1	0.248	NS
EDUCATION	Off duty measures	1.587	1	0.208	NS
YEARS OF EXPERIENCE	Circulation	1.333	1	0.248	NS
DUTY HOURS	Health measures	0.563	1	0.453	NS
MEDICAL HISTORY	Taking breaks	0.563	1	0.453	NS
FAMILY HISTORY	Diet	0.648	2	0.723	NS
PHYSICAL ACTIVITY	New technology treatment	0.168	2	0.919	NS

DISCUSSION

The present study demonstrates an improvement in knowledge following a planned teaching programme among traffic police personnel. The baseline finding of inadequate knowledge is important because awareness is a modifiable component of occupational health promotion. The improvement in the post-test mean score and the statistically significant paired t-test result indicate that the educational intervention was effective in improving knowledge in the study group.

The findings are also occupationally relevant. Traffic police may experience prolonged standing and restricted mobility during duty, conditions identified in the study background as potential contributors to venous problems. Education that translates occupational risks into practical preventive actions may help personnel recognize symptoms earlier and adopt healthier practices. However, the present study measured knowledge rather than the incidence or clinical severity of varicose veins; therefore, an improvement in knowledge should not be interpreted as proof of a reduction in disease occurrence.

The absence of a significant association between demographic variables and knowledge scores suggests that the observed educational benefit was not clearly dependent on the demographic characteristics examined in the study. Because the exact demographic variables and subgroup statistics are not included in the abstract, the association findings should be interpreted cautiously until the complete dataset is reviewed.

LIMITATIONS

- The one-group pre-test post-test design does not include a control group; therefore, changes cannot be attributed exclusively to the intervention with the same strength as a controlled trial.
- Non-probability convenient sampling may limit generalizability beyond the selected traffic police personnel and settings.
- The study assessed knowledge; it did not establish whether knowledge improvement resulted in sustained preventive practices or reduced occurrence of varicose veins.
- The abstract does not provide the duration of follow-up, so the persistence of the knowledge gain cannot be determined.

IMPLICATIONS FOR NURSING PRACTICE

Nurses and occupational health personnel can contribute to preventive education for traffic police by conducting focused health-awareness sessions on occupational risk factors, early symptoms, lifestyle modification, and preventive measures. Periodic education may be incorporated into workplace wellness activities, health screening camps, and occupational health programmes.

RECOMMENDATIONS

- Conduct similar studies using larger probability samples from multiple districts or cities.
- Use a quasi-experimental design with an appropriate comparison/control group where feasible.
- Include assessment of preventive practices and, where appropriate, clinical indicators of venous symptoms.
- Conduct follow-up assessments to determine retention of knowledge and adoption of preventive behaviours.

- Develop workplace-specific educational and ergonomic interventions for personnel who spend prolonged periods standing.

CONCLUSION

The present study found that traffic police had predominantly inadequate knowledge regarding contributing factors and prevention of varicose veins at baseline. Following the planned teaching programme, knowledge improved, with a higher mean post-test score than the pre-test score. The paired t-test demonstrated a statistically significant difference at $p < 0.05$. Thus, within the limitations of the one-group pre-test post-test design, the planned teaching programme was effective in improving knowledge regarding contributing factors and prevention of varicose veins among the participating traffic police personnel.

CONFLICT OF INTEREST: To be declared by the author(s).

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