



A PRE EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF NURSE LED EDUCATION ON KNOWLEDGE AND ATTITUDE REGARDING PREVENTION OF ROAD TRAFFIC ACCIDENT AMONG COLLEGE STUDENTS IN A SELECTED COLLEGE, CHENNAI

Lydia Jasmine A	Assistant Professor, Venkateswara Nursing College, Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Guindy, Chennai
Vanvaguladevi J	Professor, Venkateswara Nursing College, Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Guindy, Chennai
Lakshmi J	Professor, Venkateswara Nursing College, Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Guindy, Chennai
Ciby Jose	Principal, Venkateswara Nursing College, Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Guindy, Chennai
Abirami P.	Vice Principal, Venkateswara Nursing College, Affiliated to the Tamil Nadu Dr. M.G.R. Medical University, Guindy, Chennai

ABSTRACT **Background:** Road Traffic Accidents (RTAs) are fatal or non-fatal injuries caused by collisions involving at least one moving vehicle on a public road. According to the World Health Organization, about 1.35 million people die each year due to RTAs. **Aims and Objectives:** To assess the effectiveness of nurse-led education on knowledge and attitude regarding the prevention of road traffic accidents among college students. **Methods and Materials:** A quantitative research approach with a pre-experimental one group pre-test and post-test design was used. A total of 271 samples were selected using a convenient sampling technique from Venkateswara Nursing College. Data were collected using a semi-structured knowledge questionnaire and a Likert scale. **Results:** The findings showed improvement in knowledge and attitude after the intervention. The pre-test mean knowledge score was 14.13 and increased to 19.86 in the post-test, with a paired t value of 17.785 ($p < 0.001$). The pre-test mean attitude score was 63.92 and increased to 71.09 in the post-test, with a paired t value of 8.602 ($p < 0.001$). The Karl Pearson's correlation value ($r = 0.340$) indicated a positive correlation between post-test knowledge and attitude. **Conclusion:** Nurse-led education on the prevention of road traffic accidents among college students was effective in improving their knowledge and attitude in the post-test.

KEYWORDS : Road Traffic Accident, Nurse Led Education, College Student, Knowledge And Attitude.

INTRODUCTION

Road traffic accidents (RTAs) are a major public health concern worldwide and remain one of the leading causes of injury and death, particularly among young adults. College students are considered a high-risk group due to factors such as lack of driving experience, risk-taking behavior, mobile phone use while driving, and poor adherence to traffic safety measures. According to the World Health Organization, road traffic injuries include fatal or non-fatal injuries resulting from collisions involving at least one moving vehicle on a public road. In countries like India, increasing vehicle numbers, heavy traffic, and limited awareness of road safety rules further contribute to the rising incidence of RTAs. Although college students represent a significant proportion of road users, targeted educational interventions focusing on RTA prevention are still limited. Nurse-led education programs can play an important role in improving knowledge and shaping positive attitudes toward road safety. Therefore, this pre-experimental study aims to evaluate the effectiveness of nurse-led education on knowledge and attitude regarding the prevention of road traffic accidents among college students in a selected college in Chennai.

Statement of the Problem

A pre-experimental study to evaluate the effectiveness of nurse-led education on knowledge and attitude regarding prevention of road traffic accident among college students in selected college, Chennai.

Objectives

- To assess and compare the pre-test and post-test level of knowledge and attitude regarding prevention of road traffic accident among college students.
- To evaluate effectiveness of nurse led education on knowledge and attitude regarding prevention of road traffic accident among college students.
- To find out the relationship between knowledge and attitude regarding prevention of road traffic accident among college students.
- To associate the post-test level of knowledge and attitude regarding prevention of road traffic accident among college students with their selected demographic variables.

HYPOTHESES

RH1 - There is a difference between the pre and post-test level

knowledge and attitude among College Students.

RH2 - There is a significant relation between the mean difference level of knowledge and attitude among College Students.

RH3 - There is a significant association between the post-test level of knowledge and attitude score with their selected demographic variables.

MATERIALS AND METHODS

A quantitative research approach with a pre-experimental one group pre-test and post-test design was used to evaluate the effectiveness of nurse-led education on the prevention of road traffic accidents. A total of 271 nursing students from Venkateswara Nursing College were selected using a convenient sampling technique. Nursing students aged 17–21 years of both genders who were willing to participate were included in the study, while those not available during data collection were excluded. Data were collected using a semi-structured knowledge questionnaire and a Likert scale. The tool consisted of two parts: Part A included demographic variables such as age, gender, locality, religion, stream and programme of study, monthly family income, availability of a motor vehicle in the family, driving knowledge, possession of a driving license, mode of transport to college, type of vehicle driven, participation in first aid programmes, and history of road traffic accidents. Part B consisted of a structured knowledge questionnaire with 30 questions to assess knowledge on prevention of road traffic accidents (1 mark for correct answer and 0 for wrong answer) and a 20-item Likert scale to assess students' attitudes toward road traffic accident prevention.

Data Collection Procedure

Data collection was carried out over one week after obtaining written permission from the principal and oral consent from the students. A pre-test was conducted on the first day for 30 minutes, followed by a 20-minute nurse-led educational session using a PowerPoint presentation on road traffic accident prevention for groups of 60 students, a 10-minute video on the impact of road traffic accidents, and a 15-minute "Find Me" game related to road traffic rules. A post-test using the same questionnaire was conducted on the seventh day for 30 minutes to evaluate the effectiveness of the nurse-led education program.

Ethical Consideration

Ethical principles were followed in the study. Ethical Committee

approval was obtained from the IEC of Venkateswara Nursing College and permission was received from the principal. Informed consent was obtained from the college students, and content validity was ensured by experts. A risk-benefit analysis was conducted, participants were given the right to withdraw at any time, and confidentiality of their information was maintained throughout the study.

RESULTS

Distribution of demographic variables of the college students, The college students, 57(21%) were aged 19 years, 173(63.8%) were female, 138(50.9%) were living in rural area, 178(65.7%) were Hindus, 271(100%) were undergraduates, 87(32.1%) had monthly income of Rs.10,000/- to Rs.20,000/-, 225(83%) had motor vehicle in their family, 194(71.6%) knowns driving, 204(75.3%) not have driving license, 165(60.9%) had come to college through other means, 185(68.3%) had two wheeler, 139(51.3%) had not participated in any first aid programme and 184(67.9%) had no history of road traffic accident (RTA).

Frequency and percentage distribution of pre-test and post-test level of knowledge regarding prevention of road traffic accidents among college students.

N = 271

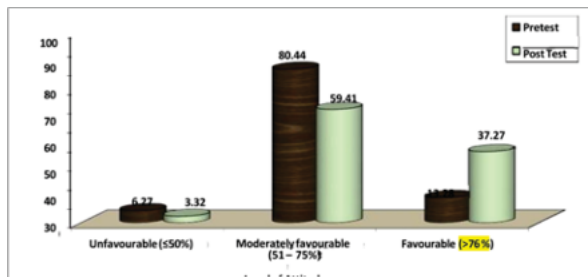


Figure 1: Percentage distribution of pretest and post-test level of attitude regarding prevention of Road Traffic Accident among college students

Frequency and percentage distribution of pre-test and post-test level of attitude regarding prevention of Road Traffic Accident among college students.

N = 271

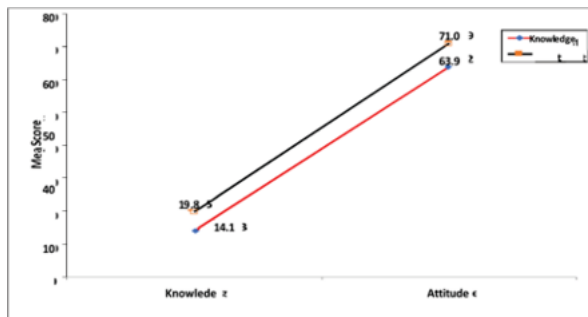


Figure 2: Comparison of pre-test and post-test level of knowledge and attitude regarding prevention of road traffic accident among college students

Effectiveness of Nurses Led Education on Knowledge and Attitude Regarding Prevention of Road Traffic Accident Among College Students.

N = 271

Variables	Pretest		Post Test		Mean Difference Score	Paired 't' Test value
	Mean	S.D	Mean	S.D		
Knowledge	14.13	5.33	19.86	4.28	5.73	t=17.785 p=0.0001 S***
Attitude	63.92	10.22	71.09	12.94	7.18	t=8.602 p=0.0001 S***

The findings revealed that the pre-test mean knowledge score of 14.13 ± 5.33 increased to 19.86 ± 4.28 in the post-test, with a mean difference of 5.73, and the paired t value ($t = 17.785$) was statistically significant at $p < 0.001$. Similarly, the pre-test mean attitude score of 63.92 ± 10.22

increased to 71.09 ± 12.94 in the post-test, with a mean difference of 7.18, and the paired t value ($t = 8.602$) was also statistically significant at $p < 0.001$. These findings indicate that nurse-led education effectively improved the knowledge and attitude of college students regarding the prevention of road traffic accidents.

Association of the Post-test Level of Knowledge Regarding Prevention of Road Traffic Accident Among College Students with Their Selected Demographic Variables

The demographic variables age ($\chi^2=22.265$, $p=0.035$), gender ($\chi^2=6.315$, $p=0.043$) and have participated in any first aid programme ($\chi^2=6.356$, $p=0.042$) had statistically significant association with post-test level of knowledge regarding prevention of road traffic accident among college students at $p < 0.01$ level. The other demographic variables had not shown statistically significant association with post-test level of knowledge regarding prevention of road traffic accident among college students at $p < 0.05$ level.

DISCUSSION

The study used a pre-experimental one group pre-test and post-test design among 271 college students to assess knowledge and attitude regarding prevention of road traffic accidents using a semi-structured questionnaire and a Likert scale. Most students were aged 19 years (21.0%), followed by 21 years (19.9%), 18 years (18.8%), 20 years (18.1%), 22 years (14.0%), 17 years (5.9%), and 23 years (2.2%). The majority were female (63.8%), while 36.2% were male. Regarding locality, 50.9% were from rural areas, 38.4% from urban areas, and 10.7% from semi-urban areas. In religion, 65.7% were Hindu, 26.2% Christian, and 8.1% Muslim. All participants were paramedical undergraduate students. Concerning monthly family income, 32.1% earned Rs.10,000–20,000, 31.7% less than Rs.10,000, 19.9% Rs.20,000–30,000, and 16.2% more than Rs.30,000. Most families (83.0%) owned a vehicle, 71.6% of students knew driving, but 75.3% did not have a driving license. For transportation to college, 60.9% used other means, 22.5% used public or private transport, 10.7% used bikes or scooters, and 5.9% used cars.

CONCLUSION

This study concludes nurse-led education on prevention of road traffic accident among college students was found to be effective in improving knowledge and attitude in post test.

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