Knowledge, Attitude, And Practice Regarding Road Traffic Safety Measures Among First-Semester Bsc Nursing Students

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***Abstract*—Background: Road traffic injuries are a major public health concern and a leading cause of morbidity and mortality among young people. Adherence to speed limits, the use of helmets and seat belts, avoidance of mobile phone use while driving, and the use of designated pedestrian crossings are important measures for preventing road traffic injuries and deaths. Adequate knowledge, a positive attitude, and appropriate practices regarding road traffic safety are essential, particularly among young adults and future healthcare professionals.**

Aim: To assess the levels of knowledge, attitude, and practice regarding road traffic safety measures among first-semester Bachelor of Science in Nursing (BSc Nursing) students and to determine the association between the level of practice and selected demographic variables.

Methods: A descriptive research design was adopted. The study was conducted among 100 first-semester BSc Nursing students at KMCT College of Nursing, Manassery, Kozhikode, Kerala, India. Participants were selected using a convenience sampling technique. Data were collected using a baseline proforma to obtain demographic information, a self-structured knowledge questionnaire, and Likert scales to assess attitudes and practices regarding road traffic safety measures. The data were analysed using descriptive and inferential statistics.

Results: The findings revealed that 4% of the students demonstrated inadequate practices, 8% demonstrated moderately adequate practices, and 88% demonstrated adequate practices regarding road traffic safety measures. Statistically significant associations were reported between the level of practice and selected demographic variables, including gender, academic year, and previous knowledge of road traffic safety measures.

Conclusion: The majority of first-semester BSc Nursing students demonstrated adequate practices regarding road traffic safety measures. However, the identification of students with inadequate and moderately adequate practices highlights the need for continued road traffic safety education and awareness programmes. Strengthening knowledge and promoting positive attitudes may help improve road-use practices and contribute to injury prevention among young adults.

***Index Terms*—Knowledge, Attitude, Practice, Road Traffic Safety, Road Traffic Safety Measures, BSc Nursing Students**

I. INTRODUCTION

Road traffic injuries are a major public health concern worldwide, contributing significantly to mortality, disability, and socioeconomic burden, particularly among children, adolescents, and young adults. Road traffic injuries are largely preventable through adherence to traffic regulations and the consistent implementation of appropriate road safety measures.

A study conducted among 150 young adults at St. Peter's College, Kolenchery, Ernakulam District, Kerala, assessed awareness, practices, and perceptions regarding road safety rules. The findings revealed that 76% of the participants had an average level of awareness, while 22.66% had good awareness. Additionally, 72.66% demonstrated good practices regarding road safety rules. These findings highlighted the need for continued road safety education and awareness programmes among young adults. [1]

A cross-sectional study conducted among 132 college students in Telangana assessed their knowledge, attitudes, and practices regarding road safety

regulations. The study found that 81.1% of the students were aware of the minimum age requirement for obtaining a driving licence; however, only 16% reported strict adherence to road signs. Approximately 76% reported wearing helmets during long-distance rides. The study also identified unfavourable attitudes towards helmet use during short-distance travel, helmet use among pillion riders, and drinking and driving. These findings highlighted the gap between knowledge and the adoption of safe road-use practices among young people. [2]

Similarly, a cross-sectional study conducted among 260 medical students at a medical college in South India assessed awareness and practices regarding road safety measures. The findings indicated inadequate awareness of certain safety measures, particularly those related to alcohol consumption and driving, seat-belt use, and mobile phone use while driving. Approximately 68% of the students reported exceeding speed limits on multiple occasions. The study emphasised the need to strengthen road safety education and promote safe road-use practices among medical students. [3]

A study involving 500 medical undergraduate students in Chengalpattu District, Tamil Nadu, assessed knowledge of road traffic rules and factors associated with road traffic accidents. The findings revealed that 30.4% of the students had experienced a road traffic accident during the preceding two years, while 75% had good knowledge of road traffic rules. Risky behaviours, including speeding, jumping traffic signals, driving under the influence of alcohol, and mobile phone use while driving, were significantly associated with road traffic accidents. [4] These findings suggest that knowledge of road traffic regulations alone may not be sufficient to ensure safe road-use practices.

According to the World Health Organization, approximately 1.19 million people die annually as a result of road traffic crashes, making road traffic injuries a leading cause of death among people aged 5–29 years. Major risk factors include speeding, non-use of helmets and seat belts, mobile phone use while driving, driving under the influence of alcohol, and non-compliance with traffic regulations. [5] These statistics underscore the importance of promoting awareness, positive attitudes, and safe practices to prevent road traffic injuries and their associated consequences.

Nursing students constitute an important population for assessing road traffic safety knowledge and practices because they are young adults and future healthcare professionals. Developing adequate knowledge, positive attitudes, and safe road-use practices among nursing students may help protect their own safety and enable them to contribute to injury prevention and health promotion in the community.

Therefore, the present study was undertaken to assess the knowledge, attitude, and practice regarding road traffic safety measures among first-semester BSc Nursing students at KMCT College of Nursing, Manassery, Kozhikode, Kerala, and to determine the association between the level of practice and selected demographic variables.

II. PROBLEM STATEMENT

A descriptive study to assess the knowledge, attitude and practice regarding road traffic safety measures among first semester BSc nursing students in KMCT college of nursing, Kozhikode

Objectives

- To assess the knowledge regarding road traffic safety measures among first semester BSc nursing students
- To assess the attitude regarding road traffic safety measures among first semester BSc nursing students
- To assess the practice regarding road traffic safety measures among first semester BSc nursing students
- To find out association between level of practice regarding road traffic safety measures and selected demographic variables

Hypothesis

H1: There is significant relationship between selected demographic variables and practice regarding road safety measures.

Conceptual Framework

The conceptual framework of the present study is based on the Health Belief Model,

III. METHODOLOGY

Research Approach

A quantitative research approach was adopted for the study.

Research Design

A descriptive research design was used to assess the knowledge, attitude, and practice regarding road traffic safety measures among first-semester BSc Nursing students.

Setting of the Study

The study was conducted at KMCT College of Nursing, Manassery, Kozhikode, Kerala, India.

Population

The target population comprised first-semester BSc Nursing students

Sample Size

The sample consisted of 100 first-semester BSc Nursing students.

Sampling Technique

A non-probability convenience sampling technique was used to select the participants.

Study Variables

Research variables: Knowledge, attitude, and practice regarding road traffic safety measures.

IV. TOOL FOR DATA COLLECTION

Data were collected using a structured tool comprising four sections.

Section A: Demographic Data

This section consisted of seven items designed to collect information regarding the participants' age, gender, educational status of the father and mother, possession of a driving licence, parental occupation related to the motor vehicle sector, and previous knowledge of road traffic safety measures.

Section B: Structured Knowledge Questionnaire

This section consisted of 10 questions designed to assess the knowledge of nursing students regarding road traffic safety measures.

Section C: Attitude Scale

This section consisted of 15 items designed to assess the attitudes of nursing students towards road traffic safety measures.

Section D: Practice Scale

This section consisted of 15 items designed to assess the road traffic safety practices of nursing students.

V. DATA COLLECTION PROCEDURE

Data collection was initiated after obtaining approval from the institutional research committee, ethical clearance from the appropriate ethics committee, and the necessary administrative permissions from KMCT College of Nursing. The participants were selected using a non-probability convenience sampling technique. Informed consent was obtained from the participants before data collection. The data were collected using the structured data collection tool.

Ethical Considerations

The research proposal was presented to the research committee of KMCT College of Nursing for review and approval. Ethical clearance was obtained from the appropriate ethics committee before the commencement of data collection. Informed consent was obtained from the participants after explaining the purpose of the study. Participation was voluntary, and the participants' confidentiality and privacy were maintained throughout the study.

VI. RESULTS

Section 1 – Sample characteristics

Demographic variables of selected nursing students: According to age, the majority of the nursing students (37%) were in the age group of 19–20 years, followed by 28% in the 21–22 years group, 26% in the 17–18 years group, and 14% in the 23–24 years group. Regarding gender, 80% of the students were female and 20% were male. With respect to educational status of the father, the majority (43%) had primary and secondary education, followed by 31% with degree and above education and 27% with higher secondary education, while none were illiterate. Regarding educational status of the mother, 39% had higher secondary education, followed by 38% with degree and above education and 25% with primary and secondary education, while none were illiterate. In terms of driving licence, 61% of the students had a driving licence, whereas 39% did not have a driving licence. Regarding parental occupation related to the motor vehicle department, the majority of the students

(95%) reported that their parents were not related to the motor vehicle department, while 5% reported that their parents were related to it. Concerning previous knowledge regarding road traffic safety measures, the majority of the students (83%) reported having previous knowledge, whereas 19% had no previous knowledge.

Table 1: Frequency and percentage distribution of sample characteristics.
N= 100

Sl. No.	Demographic variable	Category	Frequency (n)	Percentage (%)
1	Age	17–18 years	26	26
		19–20 years	37	37
		21–22 years	28	28
		23–24 years	9	9
2	Gender	Male	20	20
		Female	80	80
		Others	0	0
3	Educational status of father	Primary and secondary	43	43
		Higher secondary	27	27
		Degree and above	30	30
		Illiterate	0	0
4	Educational status of mother	Primary and secondary	25	25
		Higher secondary	39	39
		Degree and above	36	36
		Illiterate	0	0
5	Possession of a driving licence	Yes	61	61
		No	39	39
6	Parental occupation related to the motor vehicle department	Yes	5	5
		No	95	95
7	Previous knowledge of road traffic safety measures	Yes	83	83*
		No	17*	17*

Section II: Knowledge Regarding Road Traffic Safety Measures

The level of knowledge regarding road traffic safety measures was assessed among 100 first-semester BSc Nursing students. The findings revealed that 96 (96%) students had adequate knowledge, 3 (3%) had moderate knowledge, and 1 (1%) had inadequate knowledge regarding road traffic safety measures.

Table 2. Distribution of Participants According to Their Level of Knowledge Regarding Road Traffic Safety Measures (N = 100)

Sl. No.	Level of knowledge	Frequency (n)	Percentage (%)
1	Adequate	96	96
2	Moderate	3	3
3	Inadequate	1	1
	Total	100	100

Section III: Attitude Regarding Road Traffic Safety Measures

The attitude of the participants towards road traffic safety measures was assessed. The findings revealed that 96 (96%) students had a good attitude, while 4 (4%) had an average attitude. None of the participants were classified as having a poor attitude.

Table 3. Distribution of Participants According to Their Attitude Towards Road Traffic Safety Measures (N = 100)

Sl. No.	Level of attitude	Frequency (n)	Percentage (%)
1	Good	96	96
2	Average	4	4
3	Poor	0	0
	Total	100	100

Section IV: Practice Regarding Road Traffic Safety Measures

The level of practice regarding road traffic safety measures was assessed among the participants. The findings showed that 88 (88%) students had adequate practices, 8 (8%) had moderate practices, and 4 (4%) had inadequate practices.

Table 4. Distribution of Participants According to Their Level of Practice Regarding Road Traffic Safety Measures (N = 100)

Sl. No.	Level of practice	Frequency (n)	Percentage (%)
1	Adequate	88	88
2	Moderate	8	8
3	Inadequate	4	4
	Total	100	100

Section V: Association Between Selected Demographic Variables and Practice Regarding Road Traffic Safety Measures

The association between the level of practice regarding road traffic safety measures and selected demographic variables was examined using the chi-square test. According to the reported results, statistically significant associations were identified between the level of practice and age, gender, possession of a driving licence, and previous knowledge of road traffic safety measures. No, statistically significant associations were reported for the educational status of the father, educational status of the mother, or parental occupation related to the motor vehicle department.

The reported chi-square values and their interpretation are presented in Table 5. These findings should be considered provisional until the test statistics, degrees of freedom, and corresponding p-values are verified against the original data.

Table 5. Association Between Selected Demographic Variables and the Level of Practice Regarding Road Traffic Safety Measures (N = 100)

Demographic variable	Reported χ^2 value	Reported df	Critical value provided	Reported interpretation
Age	13.5	2	5.991	Significant*
Gender	14.2	2	5.991	Significant*
Educational status of father	6.9	4	9.488	Not significant*
Educational status of mother	3.8	4	9.488	Not significant*
Possession of a driving licence	10.8	2	5.991	Significant*
Parental occupation related to the motor vehicle department	1.2	2	5.991	Not significant*
Previous knowledge of road traffic safety measures	15.2	2	5.991	Significant*

VII. DISCUSSION

The present study aimed to assess the knowledge, attitude, and practice regarding road traffic safety measures among first-semester BSc Nursing students at KMCT College of Nursing, Kozhikode. A total of 100 students were selected using a non-probability convenience sampling technique. Data were collected using a structured knowledge questionnaire, an attitude scale, and a practice scale.

The findings revealed that 96% of the students had adequate knowledge, 96% demonstrated a good attitude, and 88% reported adequate practices regarding road traffic safety measures. Although the majority of the participants demonstrated favourable findings across all three domains, the presence of students with moderate or inadequate knowledge and practices indicates that continued road safety education remains important.

A cross-sectional study conducted by Christian DS and Thakkar RK (2025) among 446 undergraduate students in Ahmedabad assessed road safety awareness and attitudes. The study reported that unsafe road-use behaviours remained prevalent despite moderate to good awareness. Approximately 56.8% of the participants reported using mobile phones while driving, only 39.5% consistently used protective equipment such as helmets or seat belts, and 14.1% reported underage driving. Furthermore, 59.2% supported stricter enforcement of traffic laws. The

authors highlighted the gap between road safety awareness and actual practices and emphasised the need for behavioural interventions and effective enforcement of traffic regulations. In comparison, the present study found that 96% of the nursing students had adequate knowledge, 96% had a good attitude, and 88% had adequate practices regarding road traffic safety measures. Differences in the study populations, assessment tools, and classification criteria may account for the differences between the findings.

A study conducted by Joy S et al. (2024) among 150 young adults at St. Peter's College, Kolenchery, Ernakulam District, Kerala, assessed awareness, practices, and perceptions regarding road safety rules. The findings indicated that 76% of the participants had average awareness, while 22.66% had good awareness. Additionally, 72.66% demonstrated good practices regarding road safety rules. The study highlighted the need to improve awareness and promote consistent adherence to road safety regulations. Compared with these findings, the present study identified a higher proportion of students with adequate knowledge (96%) and adequate practices (88%). However, direct comparisons should be interpreted cautiously because the studies may have used different instruments, scoring systems, and participant characteristics.

Overall, the findings of the present study indicate that most first-semester BSc Nursing students demonstrated adequate knowledge, a good attitude, and adequate practices regarding road traffic safety measures. Nevertheless, continued educational initiatives may help reinforce safe road-use behaviours among nursing students, who are both young road users and future healthcare professionals.

VIII. LIMITATIONS

The study had the following limitations:

1. The study was conducted among a relatively small sample of 100 students at a single institution, limiting the generalisability of the findings to nursing students in other settings.
2. Some participants were reportedly reluctant to participate because of concerns about the disclosure of information, which may have influenced their responses.
3. Attrition was identified as a limitation; however, the number of participants who withdrew and its impact on the final sample should be specified if applicable.

IX. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are proposed:

1. Similar studies may be conducted using larger samples across multiple nursing colleges to improve the generalisability of the findings.
2. Quasi-experimental studies may be undertaken to evaluate the effectiveness of structured teaching programmes on knowledge, attitudes, and practices regarding road traffic safety measures.
3. Follow-up studies may be conducted to assess the long-term retention of road safety knowledge and adherence to safe road-use practices following educational interventions.
4. Similar studies may be conducted among students from non-medical undergraduate programmes to compare road safety knowledge, attitudes, and practices across different student populations.
5. Future studies may explore the relationship between road safety knowledge, attitudes, and self-reported practices to identify specific areas requiring educational intervention.

X. CONCLUSION

The present study assessed the knowledge, attitude, and practice regarding road traffic safety measures among first-semester BSc Nursing students at KMCT College of Nursing, Kozhikode. A descriptive research design was adopted, and 100 students were selected using a non-probability convenience sampling technique. Data were collected using a structured knowledge questionnaire, an attitude scale, and a practice scale.

The findings revealed that 96% of the students had adequate knowledge, 96% demonstrated a good attitude, and 88% reported adequate practices regarding road traffic safety measures. However, 4% of the students had inadequate practices, while 8% had moderate practices, indicating that some students may benefit from further road safety education.

The study also reported associations between selected demographic variables and the level of practice. These associations require confirmation through verification of the statistical analysis. Overall, the findings

highlight the importance of reinforcing road traffic safety education and promoting consistent adherence to safe road-use practices among nursing students. Further studies involving larger samples and multiple institutions are recommended to validate and extend these findings.

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