"EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE REGARDING USE OF MOBILE PHONES AND DRIVING SAFETY AMONG ADOLESCENTS OF SELECTED COLLEGE."

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Abstract : **INTRODUCTION:** Adolescence is like a bridge between childhood and adulthood, during which the individual is gaining further physical maturity, further education, and training that will enable him/her to fulfil a useful role in adult society. Mobile phones and the connectivity they provide have become a part of everyday life. In recent years, mobile phone use, in particular communication by text messaging has dramatically increased in prevalence and popularity across the world. Effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college. In view of the nature of the problem under study and to accomplish the objectives of the study, evaluative approach was found to be appropriate to describe the knowledge on use of mobile phone and driving safety among adolescents. In this study, study design was used quasi experimental, one group pre-test and post-test. The study was conducted from selected college.

METHODOLOGY: In the present study, pre-experimental one group pre-test, post-test research design was used. Total 100 early adolescent girls sample were selected by Probability simple random sampling technique as per the inclusion criteria. Structured Knowledge Questionnaire was used to evaluate the knowledge in this study.

FINDING: The comparisons of pre-test and post-test means of knowledge regarding use of mobile phones and driving safety among adolescents of selected college were done by the paired t test. The test was conducted at 5% level of significance. The pre-test average score was 10.51 with standard deviation of 3.10. The post-test average score was 14.38 with standard deviation of 1.30. The test statistics value of the paired t test was 12.85 with p value 0.00. The p value is less than 0.05, hence null hypothesis is rejected. That means there is significant difference in pre and post-test knowledge score.

CONCLUSION: The study concludes that the structured teaching program on knowledge regarding use of mobile phones and driving safety is effective.

INTRODUCTION

"Any form of art is a form of power, it has impact, it can affect change-it can not only move us it makes us move"

- Ossie Davis

Adolescence is like a bridge between childhood and adulthood, during which the individual is gaining further physical maturity, further education, and training that will enable him/her to fulfil a useful role in adult society.[1]

Mobile phones and the connectivity they provide have become a part of everyday life. In recent years, mobile phone use, in particular communication by text messaging has dramatically increased in prevalence and popularity across the world.[2]

Soft blocker apps on smartphones, such as those that mute or hide incoming messages and notifications and/ or automate messages to the caller indicating the driver is unable to respond; have been found to reduce driver screen touches by 20 per cent per minute of driving.[3]

Cell phone use while driving has been linked to increased crash and near-crash risk. Despite bans on handheld cell phone use while driving in many states, crash reduction results are inconsistent. One explanation may be that those who use cell phones while driving are more likely to engage in other intentionally risky behaviours. Instead of solely addressing the use of cell phones while driving, many researcher suggest training young drivers to avoid all risky behaviours associated with impulsivity and sensation seeking.[4]

In 2019 though the registration of new vehicles dipped by 15% as compared to 2018, more than 23 lakh vehicles were registered in Maharashtra State out of which around 16.92 lakh are two-wheelers and around 3.66 lakh are 4 wheelers LMV(Light motor vehicle). As of 2019, around 3.5 crore vehicles are registered in the State out of which 2.41 crore are two wheelers and 46.32 lakhs 4-wheeler in LMV (Light motor vehicle) category. Road accidents are the most unwanted events to happen to a road user, though they happen quite often. The most unfortunate thing is that we don't learn from our mistakes on the road. The laxity on part of road users causes accidents and crashes. The main cause of accidents and crashes are human errors.[5]

Use of mobile phones while driving is a contributing factor to many serious traffic accidents. It is difficult to adequately concentrate on driving while many are engaged in a conversation. The best defence against accidents caused by distractions is prevention. If you don't let any other activity interfere with your driving, there's less chance for a crash. However, if you must talk on your mobile phone, there is only one safe way to do so; stop the car safely on the side of the road as far away from traffic as possible, and then place or receive a call. Remember, mobile phones are a distraction no matter what type you use (hands free or hand held).If you see other drivers talking on a cell phone while driving, increase your following distance and remain alert.[6]

Driving tasks mainly include controlling the stability of vehicles and monitoring the driving environment, which are directly related to driver's manual operation and visual attention. Some previous studies tend to take visual distraction behaviour as the main factor of accident.[7]

According to the mean percentage of "total eyes-off-road time" (TEORT) is 33.1% and 59.5% when the driver performs answering and dialling operations on a hand-held call. However, the percentage of TEORT is 9.5% or 15.6% when the driver communicates by phone in the hand-held or hands-free mode.[8]

In addition, most operations of using mobile phones are manual–visual distractions, such as texting and dialling. The effect of manual–visual distractions on driving performance is negative and of greater impact than just visual distraction.[9]

Therefore, many countries or regions, when formulating relevant laws and regulations, believe that manual–visual interference in handheld phone calls will have a significant impact on driving safety, while ignoring the impact of cognitive interference on driving behaviour. However, the cognitive distraction caused by using mobile phones will affect the performance of driving tasks from two aspects according to ergonomics theory. Cognitive psychology holds that driver's attention during driving is limited. Driver's attention typically splits between performing control operations and processing driving environment information. When the distraction demand caused by mobile phone use was high, a part of attention was required to be allocated to deal with the distracted operation, thus causing interference to the driver's control behaviour and environmental monitoring ability.[10]

According to Wickens' Multiple Resource theory, although conversation is auditory and driving tasks are visual, cognitive distraction interferes with visual behaviour as the conversation triggers driver's visual memory. As a result, drivers' ability to process visual information became more sluggish, and less sensitive to performing control operations and monitoring the driving environment.[11]

BACKGROUND OF THE STUDY

Generally, adolescents report that texting or talking on a handheld phone while driving is dangerous. In a focus group study of 16–18 year olds with less than 1 year of licensure, participants indicated that they understand the dangers of mobile phone use while driving, however, they still reported driving while engaging in talking, texting and social media app use.[12]

As per Ministry of Road Transport and Highways, India, the road accident report for 2019, mentioned that a total number of 449,002 accidents took place in the country during the year leading to 151,113 deaths and 451,361 injuries. In percentage terms, the number of accidents decreased by 3.86 % in 2019 over that of the previous year, while the accident related deaths decreased by 0.20 % and the persons injured decreased by 3.86. The decline in road accidents, killings and injury reported during the calendar year 2019 appear to have been a result of the Motor Vehicle Act implemented in states from September 1st 2019 which focused on road safety and included, inter-alia, stiff hike in penalties for traffic violations as well as electronic enforcement. Like in the previous years, the working age group of 18 – 60 accounted for a share of 84 percent in the total road accident deaths. Under the category of Traffic Rule Violations, over speeding continued to be a major killer in 2019, accounting for 67% of the persons killed followed by driving on the wrong side of the road which accounted for 6% of the accident related deaths.[13]

Motor vehicle crashes were the leading cause of adolescent death. Cell phone use while driving was a contributor to adolescent motor vehicle crash risk. Objective and directly observable measures of cell phone use while driving are needed to implement interventions aimed at reducing cell phone-related crash risk.[14]

A growing cause of distraction for pedestrians is the use of mobile technology, such as mobile phones, smartphones, and music players. Research has established that mobile phones can cause a dangerous distraction to drivers and legislation against using a hand-held phone while driving. Safely negotiating traffic as a pedestrian requires a range of cognitive and perceptual skills including visual search, auditory localisation and attention. Attention in pedestrian contexts involves the ability to focus on relevant information, sustaining attention to traffic, switching attention, and ignoring distractions. Phones and other portable technology can be a distraction for pedestrians, affecting their safety.[15]

According to data released by the Ministry of Road Transport and Highway in November 2019, there were about 13,261 deaths resulting from road fatalities in Maharashtra in 2018. This accounted for an 8.1% increase in the total number of accidental deaths, as compared to 2017.Further, this increase in the number of fatalities put Maharashtra in the second place of the list of states with the highest number of road accident deaths. According to traffic officials, this rapid increase in the number of fatalities due to road accidents could be owed, to quite an extent, to over-speeding. To curb this increasing number of accidents, not just in Maharashtra, but on a pan-India basis, the Government of India brought several amendments to the existing Motor Vehicles Act, 1988. Following is a look at the amendments proposed under this Motor Vehicles (Amendment) Act, 2019, with instances of how it has affected the state.[16]

It was found from the driving simulator test that the reaction time for drivers using mobile phones is significantly longer. Age and gender were also found to affect the reaction time. For a four-month period in three selected cities, 3,075 accident reports were examined to reveal that either involved driver carried a mobile phone in 676 cases, or either involved driver was using it in 133 cases. Unsurprisingly, drivers who do not own mobile phones are more inclined to support the ban of using mobile phones while driving. Although the majority of the general public is aware of the adverse effects of using a mobile phone while driving, only 44.2 percent of the responders support a legislative ban.[17]

According to Global Status Report on Road Safety-2009, over 1.2 million people die each year on the roads worldwide and between 20 and 50 million suffer non-fatal injuries. Currently, RTAs are the 9th leading cause of death and are predicted to become the 5th leading cause of death by the year 2020.The problem of RTAs is compounded by the fact that, the age groups primarily involved in RTAs belong to the most productive age group of 15-40 years.[18]

NEED FOR THE STUDY

As children grow and their world extends beyond the home and out into local roads, they are exposed to hazards and risks. Despite the fact that children use roads as pedestrians, cyclists, motorcyclists and vehicle passengers, the road environment is rarely developed with consideration for their needs. Children work, play or live on the road and this exposure along with other risk factors inherent to childhood makes them particularly vulnerable in traffic. Accident is an unfortunate incident that happens unexpectedly and unintentionally, resulting in damage or injury.[19]

On June 21, 2022 Mumbai, data released by the transport department showed an 11 per cent increase in the number of deaths caused by road accidents in Mumbai. According to data, 37 deaths on roads across Maharashtra were seen each day last year, which means three deaths every two hours, the highest in recent years. Speeding was the number one cause of accidents, followed by drunk driving and lane cutting. Maharashtra has recorded the highest number of deaths in five years while Mumbai saw an 11 per cent rise in one year.[20]

On July 26, 2022 the Times of India revealed the news that another life was lost due to a pothole in Thane district. A 22 year old pillion rider on his friend's motor cycle died after it hit a pothole and he fell on the Mumbai -Nashik -highway near Ranjnoli Naka in Bhiwandi.[21]

The times of India dated August 20, 2022 revealed the news in Maharashtra that a youth was killed in an accident at Kasara ghat, two others were injured after the car they were travelling in went off the road.[22]

Bhat (2013) conducted an epidemiological study on road traffic accidents in Kashmir Valley. The findings revealed that 97.6% were grievously hurt and 60% had head injuries. Also, the recommendations of the study were that young people and students should remain the priority target group for a comprehensive educational program on driving principles, traffic rules & regulations, adoption of safe driving behavior.[23]

As per Police records in J&K RTAs have emerged as a major global public health problem of this century and are now recognized as "veritable neglected pandemic." In 2011, a total of 6644 RTAs were reported of which 1120 persons were killed and 10108 were injured in J & K. During 2011 in Kashmir valley alone 2164 road accidents were reported in which 326 persons killed and 3113 persons were injured whereas in 2009 and 2010, 319 and 264 people were killed and 3050 and 2077 persons were injured in 2076 and 1677 RTAs respectively.[24]

Taking into consideration the above incidents as a health care provider I decided to educate the youth in order to prevent accidents. As Nurses, we have a dual role to play by creating public awareness to follow the traffic rules and dealing with patients, casualties of road accidents, and help them recuperate from the trauma of suffering from moral support. Hence, as per the information and references as a researcher I had planned to provide structured teaching program regarding use of mobile phone and driving safety among adolescents.

TITLE OF THE STUDY

"Effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college."

OBJECTIVE OF THE STUDY

Primary objectives

1. To assess the existing knowledge regarding use of mobile phone and driving safety among adolescents.

Secondary objectives

2. To evaluate the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college.
3. To find out the association between knowledge score regarding use of mobile phone and driving safety among adolescents with their selected socio demographic variables.

OPERATIONAL DEFINITIONS

EFFECTIVENESS

According to Oxford dictionary "effectiveness" refers to the fact of producing the result that is wanted or intended; the fact of producing a successful result.[25]

In this study it refers to the extent to which the structured teaching programme on use of mobile phones and driving safety yield the desired outcome in improving the level of knowledge among adolescent as evidenced by gain of knowledge as measured by structured knowledge questionnaire.

STRUCTURED TEACHING PROGRAM

According to Cambridge dictionary "Structured teaching program" means an educational program designed to impart particular knowledge and practical education through interrelated studies and supervised training.[26]

In this study it refers to the communication regarding use of mobile phones and driving safety between researcher and adolescent in the age group of 16-19 years.

KNOWLEDGE

According to Oxford dictionary "knowledge" refers to facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject.[27]

In this study it refers to the estimation of level of understanding of adolescence regarding use of mobile phones and driving safety as measured by structured knowledge questionnaire.

USE

According to Cambridge dictionary "Use" refers to put something such as a tool, skill or building to a particular purpose[28]

In this study it refers to the action of using mobile phone for a purpose.

MOBILE PHONE

According to Cambridge dictionary "Mobile phone" means phone that does not have wires and works by radio that you can carry with you and use anywhere.[29]

In this study it refers to a wireless handheld device that allows users to make and receive call.

DRIVING

According to Cambridge dictionary "Driving" means the ability to drive a car, the activity or the way someone drives.[30]

In this study it refers to the control and operation of a motor vehicle.

SAFETY

According to Cambridge dictionary "Safety" means state in which or a place where you are safe and not in danger or at risk.[31]

In this study it refers to the freedom from the occurrence or risk of injury, danger, or loss.

ADOLESCENTS

According to Cambridge dictionary "Adolescents" means young person who is developing from child into an adult.[32]

It refers to adolescents aged 16 years to 19 years of a selected college.

RESEARCH QUESTION

Will there be effect of structured teaching programme on knowledge regarding use of mobile phones and driving safety among adolescents?

How effective is structured teaching programme on improving knowledge regarding use of mobile phones and driving safety among adolescents?

HYPOTHESIS

H_{01} - There will be no significant difference between pre-test and post-test score level of knowledge regarding use of mobile phones and driving safety.

H_{11} - There will be significant difference between pre-test score and post-test score of level of knowledge regarding use of mobile phones and driving safety.

H_{02} - There will be no significant association between pre-test and post-test knowledge regarding use of mobile phones and driving safety among adolescents with selected socio demographic variables.

H_{12} - There will be significant association between pre-test and post-test knowledge regarding use of mobile phones and driving safety among adolescents with selected demographic variables.

SCOPE OF THE STUDY

1. The study would help the respondents to know the level of knowledge that they possess regarding use of mobile phones and driving safety.

2. The study will be helpful to bring awareness among adolescents about use of mobile and driving safety.

LIMITATIONS

1. The study is limited to only group of adolescents aged between 16 to 19.

2. The finding of the study was restricted to the respondent under study only from one selected college.

3. Adolescent who are available during the study.

ETHICAL ASPECTS

Ethical issue was addressed by taking institutional ethical committee approval for ethical consideration. Permission to conduct research study was obtained from concerned authority of selected college. Written consent was taken from adolescent group for their willingness to participate in the study. The confidentiality of the data was maintained. Fair non discriminating selection of participants was done. No harm or injustice was done while dealing with the samples and data.

CONCEPTUAL FRAMEWORK

This study is focused on effectiveness of structured teaching programme on knowledge regarding use of mobile phone and driving safety. The conceptual framework adopted for the present study is based on Nola J Pender's (1982) health promotion model. Health promoting behaviour is desired outcome when providing client care and education. In order to promote wellness use of mobile phone and driving safety will be taught to adolescents.

This theory represents an expansion of Nola J Pender ideas to health promotion means give awareness to people to choose healthy lifestyle and encouraging them to do things themselves. To achieve this, one should focus on health promoting strategies, such as daily physical activity, healthy nutrition, stress reduction related to the use of mobile phone and driving safety.

Components of Model

Individual characteristics and experiences:

Prior related behaviour: Frequency of the same or similar health behaviour in the past which directly or indirectly effect on health promotion.

In this study, adolescents previous experience and knowledge regarding use of mobile phones and driving safety was taken into consideration.

Personal factors (biological, psychological, sociocultural): General characteristics of the individual that influence health behaviour, promotion such as age, gender, BMI, self-esteem, personality structure, race, ethnicity, education, and socioeconomic status.

In this study age, gender, family monthly income, training of driving, driving license was considered as a general characteristic.

Behaviour-specific cognitions and affect:

Perceived benefits of action: Perceptions of the positive or reinforcing of undertaking a consequences health behaviour. Prior positive experience with the behaviour is a motivational factor.

In this study the benefits anticipated by adolescents in meaning of distracted driving, impact of mobile phone use, essential techniques of driving and driving safety measures were considered.

Perceived barriers to action: Theorist emphasize on perceptions of the blocks, hurdles, and personal costs of undertaking a health behaviour. It affects the health promoting behaviour by decreasing individual commitment to a plan of action.

In this study adolescents, carrying the licence for driving safety and their skills in driving was regarded as hurdles of undertaking a health behaviour.

Perceived self-efficacy: Judgment of personal capability to organize and execute a particular health behaviour; self-confidence in performing the health behavior successfully. Perceived high self- efficacy help to reduce the perceived barriers to action. People who have less confidence in their performance decrease their efforts for health promotion.

In this study adolescents awareness about impact of mobile phone and driving safety decrease the efforts to execute a health behaviour.

Activity-related affect: Subjective feeling states or emotions occurring prior to, during and following a specific health behaviour. It affects perceived self-efficacy that means more positive subjective feeling help to achieve more self-efficacy.

In this study, the interest demonstrated by adolescent to improve knowledge about driving safety from structured teaching programme was taken into account.

Interpersonal influences: Norms, social support, role models - perceptions concerning the behaviors, beliefs, or attitudes of relevant others in regard to engaging in a specific health behavior.

In this study, interpersonal influences include friends & mass media.

Situational influences: Perceptions of the compatibility of life context or the environment with engaging in a specific health behavior. It has direct or indirect effect on health behavior. If one has good options, safe and interesting environment helps in promoting health behavior.

In this study situational influences need pressure to learn and keen interest in participation for structured teaching program.

Behaviour outcome-health promoting behavior:

Health promoting behavior: The desired behavioural end point or outcome of health decision-making and preparation for action.[33]

In this study behaviour outcome-health promoting behavior involves adolescents supporting and engaging in safe driving resulting in high level wellness in adolescents.
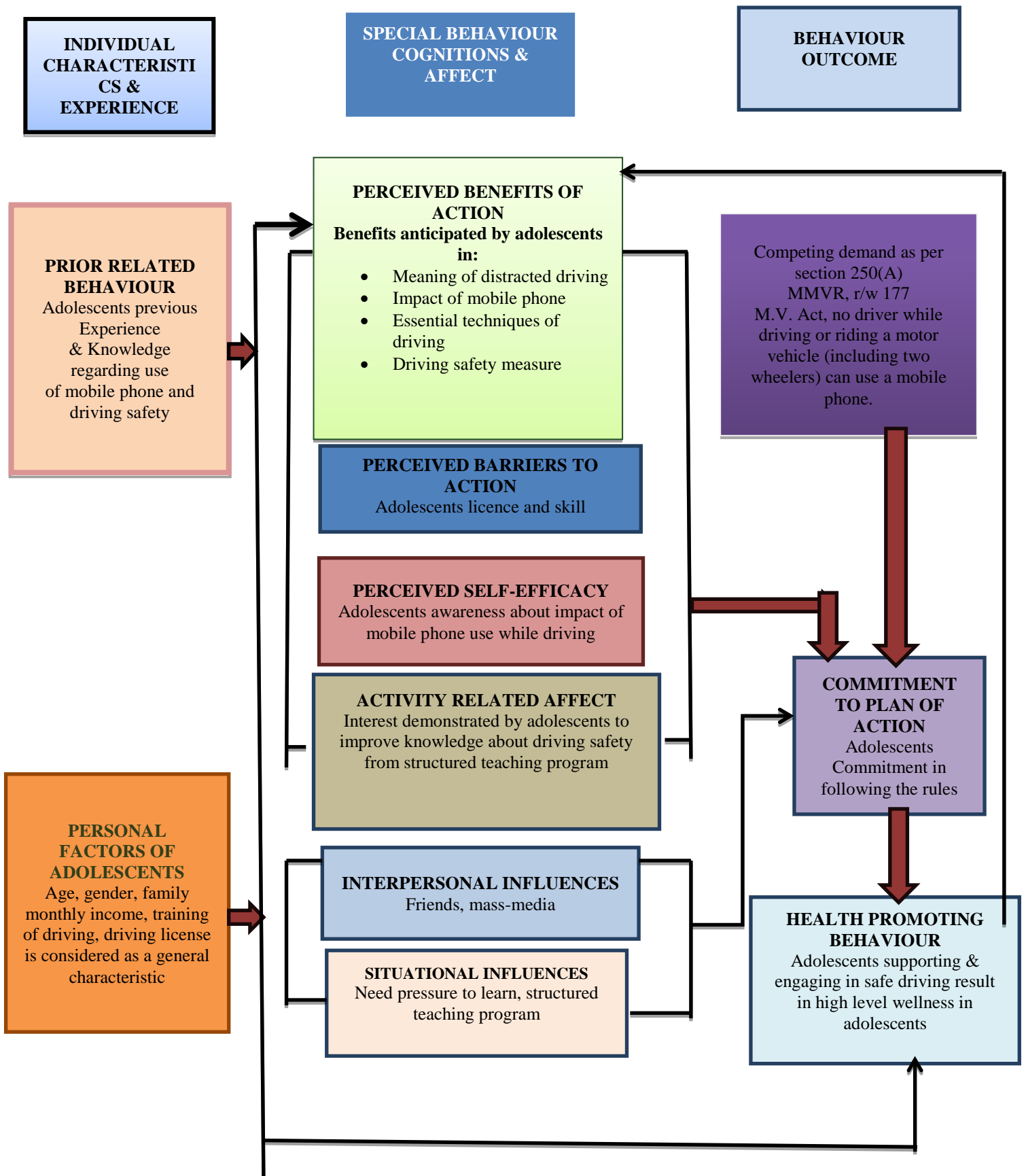
INDIVIDUAL CHARACTERISTICS & EXPERIENCE

SPECIAL BEHAVIOUR COGNITIONS & AFFECT

BEHAVIOUR OUTCOME

PRIOR RELATED BEHAVIOUR
Adolescents previous Experience & Knowledge regarding use of mobile phone and driving safety

PERCEIVED BENEFITS OF ACTION
Benefits anticipated by adolescents in:
- Meaning of distracted driving
- Impact of mobile phone
- Essential techniques of driving
- Driving safety measure

Competing demand as per section 250(A) MMVR, r/w 177 M.V. Act, no driver while driving or riding a motor vehicle (including two wheelers) can use a mobile phone.

PERCEIVED BARRIERS TO ACTION
Adolescents licence and skill

PERCEIVED SELF-EFFICACY
Adolescents awareness about impact of mobile phone use while driving

ACTIVITY RELATED AFFECT
Interest demonstrated by adolescents to improve knowledge about driving safety from structured teaching program

COMMITMENT TO PLAN OF ACTION
Adolescents Commitment in following the rules

PERSONAL FACTORS OF ADOLESCENTS
Age, gender, family monthly income, training of driving, driving license is considered as a general characteristic

INTERPERSONAL INFLUENCES
Friends, mass-media

SITUATIONAL INFLUENCES
Need pressure to learn, structured teaching program

HEALTH PROMOTING BEHAVIOUR
Adolescents supporting & engaging in safe driving result in high level wellness in adolescents

FIGURE NO: I (1) CONCEPTUAL FRAMEWORK BASED ON NOLA J. PENDER (1982)

SUMMARY

This chapter dealt with the introduction, background, need of the study, title of the study, objectives, operational definition, scope of the study, limitations, ethical aspects and conceptual framework emphasizing mobile phone use while driving is common but it is considered dangerous due to its potential for causing distracted driving and subsequent crashes. The structured teaching program was used as an intervention as health teaching to educate the adolescents in selected college.

CHAPTER II
REVIEW OF LITERATURE

The purpose of literature review is to discover what has previously been done about the problems to the studied study, what remains to, what methods have been employed in other research and how the result of other research in the area can be combined to develop knowledge.[34]

A literature review helps to lay the foundation for a study, and can also inspire new research ideas. In this study the literature was collected extensively and organized under the following headings.

1. Review of literature related to knowledge regarding use of mobile phone and driving safety.
2. Review of literature related to effectiveness of structure teaching program regarding use of mobile phones and driving safety.

1. Review of literature related to knowledge regarding use of mobile phone and driving safety.

Angelo fraschetti, et.al. (2021), conducted an extensive research study on mobile phone use "on the road" which showed that multitasking negatively affects driving performance. The sample consisted of 424 Italian students (56% males) with an age range of 18–21 years. A self-report questionnaire was specifically developed to assess variables such as: attitude toward multitasking, perceived self-efficacy in multitasking, accident risk perception, general multitasking habits, and sensation seeking. Through SEM modelling, researcher found the attitude to multitasking while driving to be largely explained by the considered variables. Using multigroup analysis (MGSEM), the researcher developed the behaviours of both male and female young drivers. Furthermore, data comparison showed that females were more likely to risk perception toward multitasking, and risk perception when using a mobile phone while driving, while males obtained higher mean scores in sensation seeking, perceived self-efficacy in multitasking, and in multitasking caused by mobile phone use while driving. This research showed how some variables had influenced the inclination of some subjects to engage in multitasking while driving.[35]

Oluwaseun Adeyemi, et.al. (2021), conducted a cross-sectional analytical survey in order to develop and validate KAP-modelled survey instruments that measure the knowledge of mobile phone hazards while driving (KMPHD), the attitude of drivers towards mobile phone use while driving (AMPUD), and the practice of mobile phone use while driving (PMPUD)in Ibadan, Nigeria. Three instruments were designed to measure KMPHD, AMPUD, and PMPUD. Content validity, item analysis, exploratory factor analysis were conducted, and items were excluded based on the collective results of the analysis. The domains of the constructs and the reliability of the instruments were reported. A confirmatory factor analysis was used to assess the regression weights of each item and the model fit. From an original list of 13, 12, and 10 items in the KMPHD, AMPUD, and PMPUD instruments, a final list of 7, 5, and 7 items were generated in each survey instrument, respectively. Two domains of the knowledge of hazards and practice of mobile phone use were obtained, and attitude to phone use while driving was a single domain. The reliabilities (Cronbach alpha) of the KMPHD (0.881), AMPUD (0.954), and PMPUD (0.920) were sufficiently high. Also, all items in the three instruments had moderate-to-high regression coefficients, and the model fits of the instruments were good. This study provided KAP-modeled survey instruments can be used to assess a population-based knowledge, attitude, and practice of mobile phone use while driving. [36]

Amal baswail et.al. (2019), conducted a study on phones and other portable technology which can be a distraction for pedestrians, affecting their ability to cross a road safely. This study focused on adolescents and investigated whether using a phone distracts attention while crossing the road. A field observation outside a secondary school in the north of England was

carried out over a four-week period in 2018 with permission from the school. Observations included recording what accessories the pedestrian was carrying (phone, headphones or another electronic device) and their associated action (whether they were holding the device, speaking into a phone, looking at it, holding it to their ear or interacting with it manually). Researcher observed whether the pedestrian looked (or failed to look) left and right before crossing the road, whether they crossed when the pedestrian light was on green or red, and whether they crossed within the cross-walk. Researcher found that 31.37% of road crossings were made by adolescents with a phone or other device. They looked left and right before crossing less frequently when they had an electronic device with them, when looking at the screen and when texting or swiping. Study concluded that, the safety of adolescent pedestrians is affected by mobile phones and music players.[37]

Hossien nasr esfahani, et. al. (2019), conducted an online survey study in Tehran with an aim to investigate driver attitudes toward and prevalence of cell phone use while driving among Iranian drivers, which resulted in 824 responses. Among those, 567 respondents (63.8% male; 36.1% female) have answered all the questions. These responses formed data set, which contained driver attitudes, consequences, and driver involvement in various reckless behaviours pertaining to the use of mobile phones while driving. Overall, 88% of respondents use cell phones while driving. They either make calls, answer calls, read text messages, or write text messages, along with other possible types of usage such as navigating and reading news. About half of the participants (51%) reported experiencing near-crashes. In addition, 13.3% reported that they experienced vehicle crashes. Statistical models were also used to investigate the safety impacts of cell phone

use while driving using the occurrence of near-crash experiences as the response variable. The results demonstrated a significant association between the occurrence of near-crashes and cell phone use while driving.[38]

John Symons, et.al. (2019), conducted a preliminary investment analysis on new data on deaths and injuries by age, gender and accident type for the 75 countries, and on the road safety experience of developed and, more recently, of developing countries. Researcher incorporate impact and cost estimates in a modelling framework to calculate the reduction in deaths and serious injuries achieved out to 2030, relative to the base case. Finally, established methods were used to value the economic and social benefits arising from these reductions, and hence to calculate benefit- cost ratios. For the unchanged policy case, researcher estimate that there will be about 3 million deaths and 7.4 million serious injuries from road accidents for persons aged 10–24 years in the 75 countries to 2030. The preferred interventions avert one million of these deaths and 3 million serious injuries, at a cost of $6.5 billion per annum over 2016–30, or $1.2 per capita across the total population of these countries. After valuing the benefits of the deaths and serious injuries averted, it is found that a benefit/cost ratio of 7.6 for 2016–30, but of 9.9 if the interventions continued to 2050.[39]

Scarlett Mia, et. al. (2019), conducted a study to identify predictors and risk perceptions of using cell phones while driving among young adult drivers. The objectives of this study were to determine the predictors, risk perceptions and the prevalence of cell phone use while driving among trainee residents of the University of the Philippines-Philippine General Hospital. This cross-sectional study employed total enumeration. A survey was first distributed to the target population, followed by a focus group discussion. Chi-square and multiple logistic regressions were used to analyse data. Included in the final analysis were 175 drivers aged 25-30 years (mean =27.90 + 1.34). There was no significant difference in the risk perceptions of cell phone users vs. non-users, and most perceived hands-free devices safer to use (p = 0.030). The reported prevalence is 90.68%; drivers have a significant overall unsafe attitude (p =0.007), and an unsafe attitude when using handsets when driving, even when this is known to be dangerous (p = 0.003). In conclusion, driving with hands-free devices was perceived to be safer, although drivers have a high overall unsafe attitude. Driving for more than two years and having an unsafe attitude were found to be significant predictors of cell phone use while driving. Study concluded that countermeasures must be taken into account when instituting behavioural modification strategies and road safety policies concerning unsafe and distracted driving.[40]

Oscar Oviedo-Trespalacios, et. al. (2017), conducted a study to identify risk factors of mobile phone use while driving in Queensland. The study investigated characteristics of usage, risk factors, compensatory strategies in use and characteristics of high-frequency offenders of mobile phone use while driving. A series of questions were administered to drivers in Queensland (Australia) using an on-line questionnaire. A total of 484 drivers (34.9% males and 49.8% aged 17–25) participated anonymously. At least one of every two motorists surveyed reported engaging in distracted driving. Drivers were unable to acknowledge the increased crash risk associated with answering and locating a ringing phone in contrast to other tasks such as texting/browsing.

Attitudes towards mobile phone usage were more favourable for talking than texting or browsing. Lowering the driving speed and increasing the distance from the vehicle in front were the most popular task-management strategies for talking and texting/browsing while driving. On the other hand, keeping the mobile phone low (e.g. in the driver's lap or on the passenger seat) was the favourite strategy used by drivers to avoid police fines for both talking and texting/browsing. Logistic regression models were fitted to understand differences in risk factors for engaging in mobile phone conversations and browsing/texting while driving. For both tasks, exposure to driving, driving experience, driving history (offences and crashes), and attitudes were significant predictors. Study concluded that future mobile phone prevention efforts would benefit from development of safe attitudes and increasing risk literacy.[41]

M. Kit Delgado, et.al. (2016), conducted a study to identify the cause of motor vehicle crashes in adolescents, and drivers aged 16–19.Focusing on the crash risk, incidence, risk factors for engagement, and the effectiveness of current mitigation strategies handheld manipulation of the phone while driving has been shown to have a 3 to 4-fold increased risk of a near crash or crash, and eye glance duration greater than 2 seconds crash risk exponentially. Nearly half of U.S. high school students admitted to texting while driving in the last month, but the frequency of use according to vehicle speed and high-risk situations remains unknown.[42]

Jing shi, et.al. (2016), conducted a study on analysis of factors affecting drivers' choice to engage with a mobile phone while driving in Beijing. Researcher examined reasons that drivers choose to engage with a mobile phone while driving in Beijing. An internet survey was administered to collect data about talking and texting while driving. Conversations were sorted into different types. Respondents were requested to indicate the frequency of initiating a call or text, perceived risk, perceived importance and emotionality of the call or text. A structural equation model of talking and texting while driving was developed with perceived risk, perceived importance and emotionality of the call as predictors and compared to a similar model with U.S. drivers. Unlike the U.S. data, perceived risk has a significant negative impact on the choice to call or text among drivers in Beijing. Results also showed that perceived importance of the call was a major factor affecting the usage of phone while driving. Even though drivers know it was dangerous and illegal, Beijing driver's choose to talk on mobile phones while driving, but they preferred not to text.[43]

Ronggang zhou, et.al. (2016), conducted a study on drivers to investigate the contribution of compensatory beliefs (i.e., the belief that the negative effects of an unsafe behaviour can be "neutralized" by engaging in another safe behaviour e.g., "I can use a mobile phone now because I will slow down" on drivers' mobile phone use while driving. The effects of drivers' personal characteristics on compensatory beliefs, mobile phone use and self-regulatory behaviours were also examined. A series of questions were administered to drivers, which included personal measures, scales that measured compensatory beliefs generally in substance use and with regard to driving safety and questions to measure drivers' previous primary mobile phone usage and corresponding self-regulatory actions. Overall, drivers reported a low likelihood of compensatory beliefs, prior mobile phone use, and a strong frequency of self-regulatory behaviours. Respondents who had a higher tendency toward compensatory beliefs reported more incidents or crash involvement caused by making or answering calls and sending or reading messages. The findings provided strong support for the contribution of compensatory beliefs in predicting mobile phone usage in the context of driving. Compensatory beliefs could explain 41% and 43% of the variance in the active activities of making calls and texting/sending messages compared with 18% and 31% of the variance in the passive activities of answering calls and reading messages. Among the regression models for predicting self-regulatory behaviours at the tactical or operational level, compensatory beliefs emerged as significant predictors only in predicting shorter conversations while on a call.[44]

Raju thapa. (2014), conducted a study during and after event analysis of cell phone talking and texting. The primary objective of this study is to analyse the post event effect of cell phone usage in order to verify whether the distracting effect lingers on after the actual event had ceased. The research utilized a driving simulator study of thirty-six participants to test whether a significant decrease in driver performance occurred during and after cell phone usage (texting and conversation).The standard deviations of lane position and mean velocity was used as dependent measures to represent lateral and longitudinal control of the vehicle respectively. Linear mixed model with subject as a random factor and F-test for the equality of variance were used as statistical measures. The results from the study suggested that there was no significant decrease in driver performance during and after the cell phone conversation both laterally and longitudinally. On the contrary, during the texting event, it was found that there was a significant decrease in driver performance both in the lateral and longitudinal control of the vehicle. The diminishing effect of

texting on longitudinal control ceased immediately after the texting event but the diminishing effect of texting on lateral control lingered on for an average of 3.388 seconds. The number of text messages exchanged did not affect the magnitude and duration of the diminished lateral control. This study indicated that the distraction and subsequent elevated crash risk of texting while driving linger on even after the texting event had ceased. Such finding has safety and policy implications in the fight to reduce distracted driving.[45]

Khairil Anuar, et. al. (2012), conducted a cross- sectional study with an aim to describe the mobile phone usage behaviour while driving among educated young adults.In Klang Valley and their participation was on voluntary basis. It was found that 66.6% of the participants used a mobile phone while driving where male drivers were more often to use it on urban road. Results from this study informed policy maker to design specific campaigns to minimise this unsafe behaviour term.[46]

2. Review of literature related to effectiveness of structure teaching program regarding use of mobile phones and driving safety.

Steve O'Hern, et.al. (2022), conducted a study on mobile phone use while driving in Finland. The aim of this research was to explore the Finnish sample of responses from ESRA2 (E-Survey of Road users' Attitudes) with a specific focus on the distracting behaviours related to mobile phone usage while driving. ESRA2 data is derived from online surveys amongst a representative sample of the adult populations in each participating country. In total a sample of 994 responses were collected in Finland for ESRA2, which included 703 responses from participants who held a driver's licence and reported driving a car in the 30 days prior to the survey. The results provide evidence of the problematic usage of mobile phones while driving in Finland. Mobile phone use was considered across three specific types of usage: handheld phone calls while driving; hands free phone calls while driving; texting, emailing or social media use while driving. Almost half (49.4 %) of the sample reported using a handheld mobile phone to make a call while driving at least once in the 30 days prior to the survey. A similar percentage (41.4 %) of the sample had used a phone hands-free and 35.6 % had texted, emailed, or used social media. The study highlighted how mobile phone usage was a complex and multifaceted issue and that there were a broad range of underlying factors that influence mobile phone usage depending on the way in which people engage with their mobile phone while driving. The findings suggested that a systematic approach to reducing mobile phone distraction is needed that addresses the issue through a combination of legislation, enforcement, and education.[47]

Michelle Nicolls, et.al. (2022), conducted a study on the impact of descriptive and injunctive norms on engagement in mobile phone use while driving in young drivers. However, the extent to which younger adults perceive their peers' approval of, and engagement in, road traffic violations (such as mobile phone use while driving) is yet to be clearly identified. Further, the influence of such perceptions on subsequent mobile phone use while driving behaviours remains unclear. Accordingly, the aim of this systematic review was to (a) examine young drivers' perceptions regarding their peers' approval of (injunctive norms), and engagement in (descriptive norms) mobile phone use while driving and (b) to identify whether such perceptions increase young drivers own engagement in the behaviour. Studies were eligible for review if they measured (a) perceived social norms (descriptive/injunctive) and (b) the relationship between such norms and mobile phone use while driving in younger adults aged 16–25 years. Searches were conducted in December 2021, using PubMed, Scopus, Web of Science, and TRID. Five articles were included in the review. Overall, the results indicate that young drivers perceive their peers to engage in mobile phone use while driving on a frequent basis, however they typically believe that their peers disapprove of the behaviour. The majority of studies indicated that descriptive norms were significantly associated with increasing engagement in mobile phone use while driving (including distracted driving behaviours). Finally, studies that investigated injunctive norms on mobile phone use while driving indicated positive correlations between perceived peer approval and increasing distracted driving behaviour.[48]

Natakorn Phuksuksakul, et. al. (2021), conducted a study on factors affecting behaviour of mobile phone use while driving and effect of mobile phone use on driving performance. The study analysed factors affecting behaviour of mobile phone use while driving and its effects on driving performance, in terms of speed, lateral position, steer deviation, steer speed, following distance, perception reaction time, and occurrence of a near miss situation. To investigate the factors affecting behaviour of mobile phone use while driving, 1106 respondents from four different regions in Thailand participated in the questionnaire survey study. Theory

of Planned Behaviour (TPB) was used to explain these factors including two additional extended factors which are risk perception and law enforcement knowledge. The outcome of this part shows that attitude, norm, and law enforcement knowledge significantly affect the intention and behaviour of the drivers. Even though approximately 90 percent of drivers realized that using a mobile phone while driving was dangerous and against the law, they have reported that they still use mobile phone while driving. To determine the effect of mobile phone use on driving performance, a 2-lane, straight rural highway, with a leading vehicle and an unexpected "STOP" sign, were simulated in order to examine the driving performance of drivers "without a phone", "talking on a phone call", and "texting a message" conditions. The results found that using mobile phone while driving could reduce speed and following distance, but increase lateral deviation, steer deviation, steer speed, perception-reaction time, and number of near misses leading to higher risks for road crashes.[49]

Philip R. K. Turnbull, et.al. (2021), conducted a study to identify the effect of cell phone position on driving and gaze behaviour. Legislation frequently restricts the use of cell phones while driving. Despite this, many people continue to interact with cell phones covertly while driving, typically by concealing their device in their lap. This strategy lead to frequent diversion of the drivers' gaze from the road ahead, potentially reducing their driving performance. To evaluate the influence of cell phone use on driving, 30 participants were involved in three randomly ordered 7-min virtual reality driving simulations. In each condition, drivers were presented with either (a) no cell phone, (b) a cell phone fixed to the windscreen, or (c) a cell phone positioned at lap level. Their task was to maintain road position and observe speed limits while answering maths problems (delivered intermittently via 'text message') and searching for external target objects. Outcome measures included speed, lane position standard deviation (LPSD), and fixation behaviour, which were compared between trials. In trials where a cell phone was present, participants shifted fixation more frequently, drove approximately 6 km/h faster, exhibited a lower LPSD and spent more time in the correct lane on the road (compared to the no-cell phone condition; all $p < 0.001$). Cell phone position influenced eye gaze behaviour, with drivers looking at the cellophane less frequently, and the speedometer more frequently. When the cell phone was in their lap compared to when the cell phone was positioned on the windscreen. The researcher's results were consistent with participants driving more cautiously checking speed and lane position more frequently when they have a cell phone in the lap. Study suggested that real-world driving data would be useful to determine whether this change in driving behaviour observed is sufficient to offset the increased risk introduced by spending less time looking at the road ahead.[50]

Carlos A, et.al. (2021), conducted an experimental study of workload and traffic violations. The data was collected from 39 young participants who underwent a dual-task while driving a simulator, i.e. respond to a call, text on whatsapp, and check Instagram. Findings confirmed that there were significant differences in the driving performance of young drivers in terms of vehicle control (i.e., lateral distance and hard shoulder line violations) between distracted and non-distracted drivers. Furthermore, the overall workload score of young drivers increased with the use of their mobile phones while driving. The obtained results contributed to a better understanding of the driving performance of distracted young drivers and thus they could be useful for further improvements to traffic safety strategies.[51]

K. Arivuselvi,et.al.(2020), conducted a study to assess the effectiveness of structured teaching program on knowledge regarding road traffic accidents among secondary school students at selected school. The sample for this study comprised of around 50 school children in secondary school at Vadalur. Convenient sampling technique was used for selecting the sample for the study. A pre-test and post-test was conducted to assess the level of knowledge using a structured questionnaire. The study subject, 42% of students were having inadequate knowledge on road traffic accident, 48% of students were having moderate knowledge on road traffic accident and 10% (5) of students were having adequate knowledge on prevention of road traffic accident.[52]

Yunxing Chen, et. al. (2020), conducted a study to identify mobile phone use in a car-following situation and impact on time headway and effectiveness of driver's rear-end risk compensation behaviour via a driving simulator study. The study investigated the impact of speech-based texting and handheld texting (two difficulty levels in each task) on car-following performance in terms of time headway and collision avoidance capability; and further examined the relationship between time headway increase strategy and the corresponding accident frequency. Fifty-three participants completed the car-following experiment in a driving simulator. A generalized estimating equation method was applied to develop the linear regression model for time headway and the binary logistic regression model for accident probability. The results of the model for time headway indicated that drivers adopted compensation behaviour to offset the increased workload by increasing their time headway by 0.41 and 0.59 s while conducting

speech-based texting and handheld texting, respectively. The model results for the rear-end accident probability showed that the accident probability increased by 2.34 and 3.56 times, respectively, during the use of speech-based texting and handheld texting tasks. Additionally, the greater the deceleration of the lead vehicle, the higher the probability of a rear-end accident. Further, the relationship between time headway increased the patterns and the corresponding accident frequencies showed that all drivers' compensation behaviours were different, and only a few drivers increased their time headway by 60% or more, which could completely offset the increased accident risk associated with mobile phone distraction. The findings provided a theoretical reference for the formulation of traffic regulations related to mobile phone use, driver safety education programs, and road safety public awareness campaigns. Moreover, the developed accident risk models contributed to the development of a driving safety warning system.[53]

Kona pushpalatha, et. al. (2020), conducted a study to evaluate the effectiveness of structured teaching program on child-to-child approach on knowledge regarding prevention of accidents among high school children at selected high school. The research approach used for this study was evaluation approach and the design selected Quasi Experimental study with pre-test–post-test design. A total of 50 students of high school children participated in the study as sample. Out of 50 students, 41 (82 %) were under below average knowledge level in pre-test whereas in post-test were found nil, 9 (18 %) were under average knowledge level in pre-test whereas 8 (13.3 %) were average knowledge level in post-test, above average knowledge level in pre-test were found nil whereas 42 (84. %) were under above average knowledge level in post-test. These differences indicated that structured teaching programme highly affected in students of high school children. Study revealed that there was significant association between pre-test knowledge scores on prevention of accidents with education, income and source of information among mothers where the obtained chi square values significant at 0.05 level of significance. Whereas there was no significant association between age, religion and type of family where they obtained chi square values was not significant. By this study high school children gained knowledge regarding effectiveness of prevention of accidents.[54]

S. Bhaktiswarupa, et.al. (2020), conducted a study on effectiveness of structured teaching programme on knowledge regarding prevention of road traffic accident among adolescents in a selected higher secondary school, Bhubaneswar. An evaluative approach single group pre experimental pre-test post-test design was selected for the study .The sample for this study comprised of 50 students. The study findings revealed that, in pre-test 96% had poor score, 4% had average score and 0% had good score. Where as in post-test 14 % had poor score, 36% had average scores and 50 % had good scores. The analysis showed that there was statistically significant comparison between pre-test and post-test knowledge score.[55]

Gianfranco Fancello, et.al. (2020) conducted a comparative analysis of the effects of mobile phone use on driving performance using ANOVA and ANCOVA. This study discussed the results of a simulated driving experiment that explores the effects of four smartphone usages on driving performance across a range of driver ages and experiences also considering the gender factor. Using ANOVA and ANCOVA it had emerged that: (i) Age seem to significantly affect driving behaviour, older drivers tend to reduce their speed when using smartphones. (ii) Consistently with previous research, the risk of collision increased for all age groups when using smartphones. (iii) Drivers tend to increase their speed during a phone conversation. This interesting result indicated how much the perception of risk associated with smartphone use has changed alarmingly in short time. Outcomes provided new knowledge based on experimental evidence and could support legislators towards introducing effective measures to counteract the widespread use of the phone when driving.[56]

Sujatha V, et.al. (2019), conducted a study on effectiveness of structured teaching programme on road safety among adolescents boys of higher secondary school at Ussoor, Vellore Road. A pre experimental one group pre and post-test research design was used. The samples of 60 adolescents were selected studying in government boy's higher secondary school at Ussoor by probability randomized sampling technique and data were collected by using structured multiple choice- questionnaires and demographic variables. The data was analysed by descriptive and inferential statistics. The results revealed that the pre-test knowledge mean score was 10 and the post-test knowledge mean score was 16.08 and the calculated paired "t" test value,18.96 which was higher than the table value 3.4632 which was significant at p<0.001 level. Regarding the association between post-test levels of knowledge and selected demographic variables such as age, religion, using vehicle were statistically significant at p<0.001 level. The study concluded that, there was significant increase in the level of knowledge of adolescent boys after structured teaching program.[57]

Mrs. Dilshada Rashid, et. al. (2017), conducted a study on effectiveness of structured teaching programme on knowledge regarding prevention of road traffic accidents among adolescents (13-18years) in selected schools of Baramulla Kashmir. Pre-experimental one group pre-test and post-test research design was used. The sample included 62 adolescents studying in selected schools of selected by stratified simple random sampling technique and data was collected by administering structured knowledge questionnaire. Data was analysed and interpreted by using both descriptive and inferential statistics. Using SPSS: V-20, all the inferences were checked at 0.05 level of significance. The mean pre-test knowledge score was (19.40) which improved to (35.25) in post-test at (p< 0.001).A significant association was found between age (p≤ 0.010), education (p≤0.004), residence (p≤0.001), occupation of father(p≤0.014), monthly family income (p≤0.010) of study subjects and the pre-test knowledge scores. Whereas no association was found between genders, occupation of mother and the pre-test knowledge scores (p > 0.05). Structured teaching program improved the knowledge of adolescent students regarding prevention of RTAs.[58]

Ludovic Gicquel, et.al. (2017), conducted a study description of various factors contributing to traffic accidents in youth and measures proposed to alleviate recurrence. Traffic accidents were the leading cause of hospitalization in adolescence, with the 18–24-year-old age group accounting for 23% of deaths by traffic accidents. Researcher decided to set up an innovative strategy consisting of a therapeutic post accident group intervention, entitled the ECARR2 protocol, to prevent recurrence among adolescents and young adults identified at risk, considering the multiple risk factors.[59]

Rajasthan Maharaja Singh (2017), conducted a cross sectional study on awareness and practice of road safety rules among Secondary School Students in Jaipur. Samples of 150 secondary school students aged between 13-17 years were selected through simple random sampling technique. A pre-designed and pre-tested structured multiple choice questionnaire and checklist was used for assessment of awareness and practice of road safety rules. The collected data was analysed by using descriptive and inferential statistics. Results found that with regards to awareness regarding road safety rules, 9 (6 %) had poor awareness, 103 (68.7 %) had average awareness and 38 (25.3 %) had good awareness. With regards to practice regarding road safety rules, 6 (4 %) had had unsatisfactory practice, 108 (72 %) had partially satisfactory practice and 36 (24 %) had satisfactory practice. It was concluded that majority of secondary school students had average awareness and partially satisfactory practice regarding road safety rules. Study concluded that education reminding and strict enforcement of traffic rules can increase awareness and motivate them to strictly adhere to the traffic norms and help to reduce the morbidity and mortality due to road traffic accidents. [60]

Thenmozhi P. (2016), conducted a cross sectional research study to assess the knowledge and practice on road safety regulations among primary school children in rural Community. A sample of 50 primary school children of rural community was selected by using purposive sampling technique. Data was collected through knowledge questionnaire and practice checklist. Collected data were analysed by using descriptive and inferential statistics. Results revealed that out of 50 samples, 16 (32 %) of them had inadequate knowledge, 20 (40 %) of them had moderately adequate knowledge and 14 (28 %) of them had adequate knowledge. Regarding practice on road traffic regulations out of 50 samples, 22 (44 %) of them had poor practice, 24 (48 %) had good practice and 4 (8 %) had best practice. It was concluded that the primary school children had lack of knowledge on road traffic regulations and few students though they had the knowledge but had poor practice in day today life.[61]

Dazhhi sun, et. al. (2016), conducted a study to identify the impacts of cell phone use on driving safety and drivers' perception of risk in this study, the factors influencing phone related driving safety and drivers' perceptions of cell phone usage were analysed. A representative sample of more than 500 licensed drivers in Texas who own a cell phone was interviewed based on a well-design questionnaire. Logistic regression model showed that the impact of using cell phone on driving safety varies depending on the characteristics of drivers, such as gender, age, driving experience, and use intensity. Additionally, the results indicated that the strong determinants of phone-related hazard are different from that of phone-related accidents. Regarding the drivers' perception of cell phone usage, there were two key findings. First, there was no explicit belief among the drivers about whether cell phone usage impairs driving safety regardless of the drivers' age, gender, driving education experience etc. Second, most of drivers had not realized that cell phone use while driving would increase their perception reaction time. Based on the analysis of these results, implications of cell phone use on driving safety along with some safety counter measures, such as selective bans and non-cell phone zones, were discussed in the paper.[62]

Ramin anvir, et. al. (2017), conducted a study on mobile phone use while driving in a sample of Iranian drivers. The use of cell phone is a significant source of driver distraction. The objective of this paper was to investigate the frequency of using cell

phones while driving in Iran's roads through an observational survey with a random sample of drivers, to recognize contributing factors to cell phone usage and to understand the magnitude of the problem. A total of 1794 observations were collected from 12 sites at controlled intersections, entrance and exit points of highways. The cell phone use rate among drivers (talking or texting) was estimated at 10% which is significantly higher than that in other countries such as Australia, USA and Canada. Rate of cell phone use among younger drivers (14.15%) was higher in comparison with other groups. In order to identify factors affecting cell phone use while driving, a binary legit model is estimated. Variables which significantly contributed to the rate of using cell phone were found to be the age of driver, number of passengers, presence of kids under the age of 8, time of observation, vehicle price and type of car.[63]

Catherine C. McDonald, et. al.(2015), conducted a study to identify the teen drivers perceptions of inattention and cell phone use while driving inattention to the roadway, including cell phone use while driving (cell phone calls, sending and reading texts, mobile app use, and Internet use), was a critical problem for teen drivers and increased risk for crashes. Effective behavioural interventions for teens were needed in order to decrease teen driver inattention related to cell phone use while driving. The purpose of this study was to describe teen drivers' perceptions of cell phone use while driving in order to inform future interventions to reduce risky driving. Researcher conducted 7 focus groups with a total of 30 teen drivers, ages 16–18, licensed for ≤1 year in Pennsylvania. The focus group interview guide and analysis were based on the Theory of Planned Behaviour, identifying the attitudes, perceived behavioural control, and norms about inattention to the roadway. Directed descriptive content analysis was used to analyse the focus group interviews. All focus groups were coded by 2 research team members and discrepancies were reconciled. Themes were developed based on the data. Teens had a mean age of 17.39 (SD = 0.52), mean length of licensure of 173.7 days (SD = 109.2; range 4–364), were 50% male and predominately white (90%) and non-Hispanic (97%). From the focus group data, 3 major themes emerged: recognizing the danger but still engaging; considering context; and formulating safer behaviours that might reduce risk. Despite recognizing that handheld cell phone use, texting, and social media app use are dangerous and distracting while driving, teens and their peers often engaged in these behaviours. Teens described how the context of the situation contributed to whether a teen would place or answer a call, write or respond to a text, or use a social media app. Teens identified ways in which they controlled their behaviours, although some still drew attention away from the roadway.[64]

Veronique Huth, et.al, (2014), conducted a study on drivers' adaptation to mobile phone use. The increasing use of the mobile phone while driving raises a safety concern due to its distractive potential and its consequent effects on crash risk. The way phone use affects driving depends on the usage of behaviour of the driver. Firstly, drivers could actively regulate their exposure to phone interactions. Secondly, they could make choices on the strategic level of the driving task so as to ensure the compatibility of the phone use with driving. Strategies could aim at lowering the demands in one of the concurrent tasks, e.g. by using assistance systems or a hands-free device. Thirdly, the phone use while driving could impair the driving performance because of the distractive nature of the dual task situation. With the aim to mitigate this impairment and to uphold an acceptable driving performance, drivers could deliberately adapt their behaviour on the tactical level of the driving task. These driver adaptation strategies to mobile phone use were discussed along with their actual implementation and effectiveness.[65]

SUMMARY

This chapter dealt with the review of research related to the present study. Literature search from primary and secondary sources were done and comprised in this study. The above reviews indicate that the teaching technique via structured teaching program is an effective technique to provide information and the incidences of fatal death because of mobile phone use while driving was taken into due consideration to improve knowledge among adolescents.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology is the way to systematically solve the research problem. It may understand as the science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode and the median or the standard deviation or chi square, how to apply particular research techniques, but they also need to know which of these methods or techniques are relevant and which are not, and what would they mean and indicate and why.[66]

This chapter deals with methodology used by the researcher to study the "Effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college."

RESEARCH APPROACH

Research approaches is a plan and procedure that consists of the steps of broad assumptions to detailed methods of data collection, analysis, and interpretation. This plan involves several decisions, and they need to be taken in order in which they make sense to me and the order of their presentation here. The overall decision involves which approach should be used to study a topic informing this decision should be philosophical assumptions the researcher brings to the study, procedures of inquiry (called research designs) and specific research methods of data collection, analysis and interpretation. The selection of the research approach is also based on the research problem or issue being addressed, the researcher's personal experience, and the audiences for the study.[66]

In view to the nature of problem selected for the study and the objectives to be accomplished, an explanatory quantitative approach was used for the present study. This approach was considered to be the most suitable one to conduct the study because it helped the investigator to use one group and observe the difference in the knowledge score before and after imparting of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college.

RESEARCH DESIGN

A research design is the frame work or guide used for planning, implementation and analysis of the study. It is a systematic plan of what is to be done, how it will be done, and how the data will be analysed.[67]

In view to the nature of the problem and to accomplish the objective of the study, one group pre-test-post-test pre-experimental research design was used to evaluate the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college. The design did not include any control group. In this study structured knowledge questionnaire was used to assess the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college.

According to the research design a single case is observed at two time points, one before the intervention and one after the intervention. Similarly in this study on first day (day1) pre-test was given to assess the existing knowledge regarding use of mobile phones and driving safety among adolescents of selected college. The structured teaching programme was also administered on the same day following pre-test. After the seventh day (day7) post test was conducted to assess the knowledge regarding use of mobile phones and driving safety among adolescents with the help of same structured knowledge questionnaire. The study design is systematically represented is as follows.

TABLE NO: III.1 Pre experimental one group pre-test post-test research design.

SAMPLE	PRE-TEST	INTERVENTION	POST TEST
Adolescents	Administration of structured knowledge questionnaire. (DAY 1)	Administration of structured teaching programme on use of mobile phones and driving safety. (DAY 1)	Administration of structured knowledge questionnaire. (DAY 7)
	O_1 PRE-INTERVENTION MEASUREMENT.	X	O_2 POST-INTERVENTION MEASUREMENT.

KEY:

O_1: Administration of demographic data and structured knowledge questionnaire to assess the pre-test knowledge regarding use of mobile phones and driving safety before structured teaching program.

X: Intervention (structured teaching programme on use of mobile phones and driving safety day 1)

O_2: Administration of demographic data and structured knowledge questionnaire to assess the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety.

SETTING OF THE STUDY

Setting of the study refers to "physical location and condition in which data collection takes place in study".[69]

In this study, it was conducted in selected college

VARIABLE OF THE STUDY

Variables are qualities, properties or characteristics of person, things or situations that changes or vary Chinn and Kramer stated that variables are concepts at different level of abstraction that are concisely defined to promote their measurement or manipulation within the study.[69]

These variables are focus of the study or reflected the empirical aspect of the concept being studied.

Independent variable:

"Independent variables are believed to cause or influence the dependent variable, in experimental research, the manipulated variable."[70]

In this study independent variable is structured teaching programme regarding use of mobile phones and driving safety among adolescents.

Dependent variable:

"Dependent variable is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain."[70]

In this study dependent variable is knowledge regarding use of mobile phones and driving safety among adolescents.

Demographic variable:

"The term demographics refer to particular characteristics of population. Demographic information provides data regarding research participants and is necessary for the determination of whether the individual in a particular study are representative sample of a target population for generalization purposes".[71]

In this study, demographic variables were age, gender, family monthly income, training for driving, driving license, type of driving license, drive vehicle, type of vehicle, class of vehicles, mobile phone.

POPULATION STUDY

"Population is the aggregation of all the units in which a researcher interested. In other world population is the set of people or entities to which the result of a research is to be generalized".[71]

In the present study, the population consisted of adolescent boys and girls from 11th standard to F.Y degree studying in selected colleges.

TARGET POPULATION

"A target population consists of the total number of people or objects who meet the designated set of criteria. In other words, it is aggregate of all the cases with certain phenomenon about which the researcher would like to make generalization".[67]

In the present study, the target population were the adolescent boys & girls from 11th standard to F.Y degree studying in selected college.

ACCESSIBLE POPULATION

"The accessible population refers to the aggregate of cases that confirm to designate criteria".[67]

In the present context of study, the accessible population were adolescent boys and girls from selected colleges, available at the time of data collection who met inclusion criteria and exclusion criteria which is framed by the researcher.

SAMPLING:

SAMPLE:

"A sample is the subset of population selected to participate in the research study.[71]

In the present study, sample comprises of adolescents boys & girls from 11th standard to F.Y degree of selected college who fulfilled the inclusion criteria and present on the day of data collection.

Sampling technique:

Sampling technique is the process of selecting a portion of a population to represent the entire population for study in research.[70]

In this study, researcher used probability simple random sampling technique.

Sample size:

"Sample size refers to the number of people who participate in the study."[70]

The sample size selected for this study was 100 samples who fulfilled the sampling criteria and who were willing to participate in the study.

Minimum sample size (n) = to estimate population mean

$$n= \frac{z1s2}{d^2}$$

Where

M= guess of population mean =14.25

S= standard deviation= 1.48

Z_1= 1.96 at α= 5% level of significance

d = absolute precision = ± 0.3

$$n = \frac{(1.96)2\ (1.48)2}{(0.3)2}$$

n = 94

Minimum sample size for the study = 94

Researcher have taken n = 100

SAMPLE SELECTION CRITERIA:

Inclusion criteria: Adolescents who were:

- Aged between 16 to 19 years.

Exclusion criteria: Adolescents who were not:

- Willing to participate in this study.
- Present at the time of data collection.

TOOL AND TECHNIQUE FOR THE STUDY

"Tool is a research instrument used to measure the concept of Interest in a researcher's project that a researcher used to collect data".[67]

In this present study, the researcher used a structured knowledge questionnaire to assess the knowledge regarding use of mobile phone and driving safety.

Section A: Socio demographic data

It consisted of 10 items regarding demographic variables of the adolescent that were developed to collect the background information of the adolescent.

The items included in the demographic variables were age, gender, family monthly income, training for driving, driving license, type of driving license, drive vehicle, type of vehicle, class of vehicles, mobile phone.

Section B: Structured knowledge questionnaire
It consisted of 20 items to assess the knowledge of adolescent boys and girls regarding use of mobile phones and driving safety.

Structured knowledge questionnaire were asked based on the following aspects:

Part A- Structured knowledge questionnaire related to meaning of distracted driving.

Part B- Structured knowledge questionnaire based on impact of mobile phone

Part C- Structured knowledge questionnaire based on essential techniques of driving.

Part D- Structured knowledge questionnaire based on driving safety measures.

   SCORING

Section B of the questionnaire dealt with objective type (multiple type questions) items. The scores of the section B were based on worth of correct answers. The correct were given '1' and the wrong response '0'. Knowledge was graded from poor knowledge to good knowledge. In the self- structured knowledge questionnaire for each questions, 4 options were given out of 3 were distracters and with only one correct response. The highest score was 20.

TABLE NO. III.2 SCORE INTERPRETATION FOR STRUCURED KNOWELDGE QUESTIONNARE

Marks	Knowledge assessment
15-20	Good
08-14	Average
0-07	Poor

   TESTING OF THE TOOL:

The tool prepared for the data collection was tested for its feasibility, content, validity and reliability.

FEASIBILITY:

Feasibility is a detailed analysis that considers all of the critical aspects of a proposed project in order to determine the likelihood of it succeeding. In this study permission was obtained from respective authority of selected college.[71]

Samples and their parents were cooperative and written informed consent for the study was taken.

VALIDITY:

   "Validity means an extent to which an instrument accurately reflects the concept being examined".[70]

The construct validity of the tool was established   in consultation with 24 experts which included 15 experts from child health nursing department, 2 expert from paediatric department,2 expert from community health nursing department, 1 expert from obstetrics and gynaecological nursing department, 3 expert from medical surgical nursing and 1 expert of statistician. Experts were requested to give their opinions and suggestions regarding relevant, not relevant, and need to modify in each item of tool. After reviewing the opinion from the experts and consultation with guide some modifications were done in demographic variable, options of some questions and wording were reconstructed in the tool.

RELIABILITY:

"Reliability means the extent to which an instrument consistently measures a concept. [70]

In this study reliability was assessed using split half method. The tool was administered to 11 adolescents, other than actual samples of the study. The tool was found to be reliable (knowledge r=0.88).

$$r= (n (\textstyle\sum xy)- (\sum x)(\sum y))/(\surd \, [n \textstyle\sum x2\text{-}(\sum x)2] [n \textstyle\sum y2- (\sum y)2)$$

Reliability (y)=2r/1+r

PILOT STUDY:

"Pilot study is the smaller version of the proposed research study conducted to revise and refine the data collection process, the treatment intervention. The research tool it is the miniature final run of the methodology planned for the major project."[70]

In the present study, pilot study was conducted with the prior permission from higher authority of selected college, which was not included in the final study.

In present study, pilot study was conducted as per the following steps:

Steps I: Researcher obtained permission from competent authority of selected college on 29/11/2022

Step II: Keeping in view, the inclusion & exclusion criteria, researcher introduce about the self and purpose of the study. According 11 adolescent girls and boys were selected. Consent from girls and boys taken in English on 1/12/2022.

Steps III: Researcher selected total 11 adolescent boys and girls as per the inclusion criteria of the study.

Steps IV: Researcher assess the actual knowledge of adolescent boys and girls regarding use of mobile phones and driving safety using structured knowledge questionnaire on day 1 dated 02/12/2022.

Steps V: On the same day structured teaching program was administered to adolescent boys and girls related to use of mobile phones and driving safety.

Steps VI: Post test was conducted on the same sample using the same structured knowledge questionnaire on day 7 after administering the structure teaching program regarding use of mobile phones and driving safety dated on 09/12.2022.
 The collected data was analysed by using descriptive and inferential statistics. After conducting the pilot study, it was found that the study was feasible and effective.

The collected data was analysed by using descriptive and inferential statistics. The significant difference between pre-test and post -test was found by using paired "t" test. The difference found was highly significant (t-14.25)

After conducting the pilot study, it was found that the study was feasible and effective, the concerned authority and the samples were found to be cooperative, the questionnaire and structured teaching programme were relevant and the time and the cost of the study was within the limit.

DATA COLLECTION PROCESS

ETHICAL CONSIDERATION:

- Prior to collection of the data, the researcher obtained permission from competent authority of the selected college.

- Informed consent was taken from all the subjects prior to data collection.

- The period of data collection commenced on 19/12/2022.

Administration of Tool Pre-Test and planned health teaching

Data was collected as per following steps:

Step I: Researcher obtained permission from competent authority of selected colleges on 17th Dec 2022

Step II: Keeping in view, the inclusion & exclusion criteria, researcher introduce about the self and purpose of the study. According 11 adolescent girls and boys were selected. Consent from girls and boys taken in English on 18/12/2022.

Step III: Researcher selected total 100 adolescent boys and girls as per the inclusion criteria of the study.

Step IV: Researcher done assessment of knowledge of adolescents by conducting pre-test on 19th Dec 2022 & 20th Dec 2022.

Step V: Administration of structured teaching programme was conducted on same day of pre-test.

- After each session structured teaching programme on use of mobile phone and driving safety after pre-test. The teaching was interactive session where adolescent boys and girls were encouraged to come with own thoughts, opinions and feedback.

- Sessions were completed within 40-45 minutes. Doubts were asked by adolescent boys and girls and it was cleared by researcher. As it was interesting topic.

Step VI: Post-test assessment was done after the administration of structured teaching programme on day 7 dated on 26th Dec 2022 & 27th Dec 2022.

Data analysis was done on data of 100 adolescents by descriptive and inferential statistics.

PLAN FOR DATA ANALYSIS:

1. Descriptive statistics
2. Inferential statistics

1. Descriptive statistics

It refers to a set of methods use to summarise and describe the main feature of a data set.[72]

In this study descriptive statistics allowed the researcher to organize the data in ways that gave a meaning and facilitated insight: examples are frequency distribution and measure of central tendency and dispersion.

- The data obtained was analysed on the basis of the objectives of the study using descriptive statistics.

- The data was arranged in master sheet.

- Description of the subject with respect to demographic variables were presented using frequency and presentation

- Data were presented in tables, graphs and diagrams. The level of knowledge was grouped from poor to good.

- Mean and standard deviation was used to evaluate, the effectiveness of structured teaching programme regarding use of mobile phone and driving safety.

2. Inferential statistics

- Inferential statistics consists of techniques that allow to study samples and to make generalization about the population from which they were selected.

- Further statistical significance of the effectiveness of structured teaching programme method was done by using paired 't' test.

- The association between the post-test knowledge score of adolescents and selected demographic variables was tested using chi- square test.

- The data was arranged in data sheet.

- Description of the subjects with respect to demographic variable was presented using frequency and percentage.

- Mean, standard deviation and mean score was used to assess the knowledge. Paired "t" test was used to assess the effectiveness of structured teaching program.

- Data was presented in tables, graphs and diagrams. The score interpretation of structured knowledge questionnaire was grouped as excellent, average and poor.

- The association between pre-test and post-test practice score of the adolescent was tested using chi square test for data interpretation.

SUMMARY

This chapter of methodology dealt with research approach, research design, identification of target population, accessible population, sampling, sample, sampling technique, sample size, inclusion and exclusion criteria of subjects, tool preparation, feasibility of the study, validity and reliability of research tool, pilot study, data collection process and plan for data analysis, which helped the researcher in a better way to collect data from the subjects so as to make the study effective.

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

Data analysis is the process of collecting, modelling and analysing data using statistical and logical methods and techniques.[73]

The analysis of data collection was done with the help of descriptive and inferential statistics. The data was first coded and entered into computer, frequency, percentage, mean, standard deviation, paired 't' test, Chi square test were used to fulfil the objectives of the study.

STATEMENT OF THE PROBLEM

"Effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college."

OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE

1. To assess the existing knowledge regarding use of mobile phone and driving safety among adolescents.

SECONDARY OBJECTIVE

1. To evaluate the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college.

2. To find out the association between knowledge score regarding use of mobile phone and driving safety among adolescents with selected socio demographic variables.

HYPOTHESIS

H_{01} - There will be no significant difference between pre-test and post-test score level of knowledge regarding use of mobile phones and driving safety.

H_{11} - There will be significant difference between pre-test score and post-test score of level of knowledge regarding use of mobile phones and driving safety.

H_{02} - There will be no significant association between pre-test and post-test knowledge regarding use of mobile phones and driving safety among adolescents with selected socio demographic variables.

H_{12} - There will be significant association between pre-test and post-test knowledge regarding use of mobile phones and driving safety among adolescents with selected demographic variables.

ORGANIZATION OF STUDY FINDINGS

The data collected by researcher during the data collection from 100 adolescent boys and girls were analysed as per the objectives of the study and presented in following manner:

SECTION I

Demographic data of the adolescents from selected college in terms of frequency and percentage.
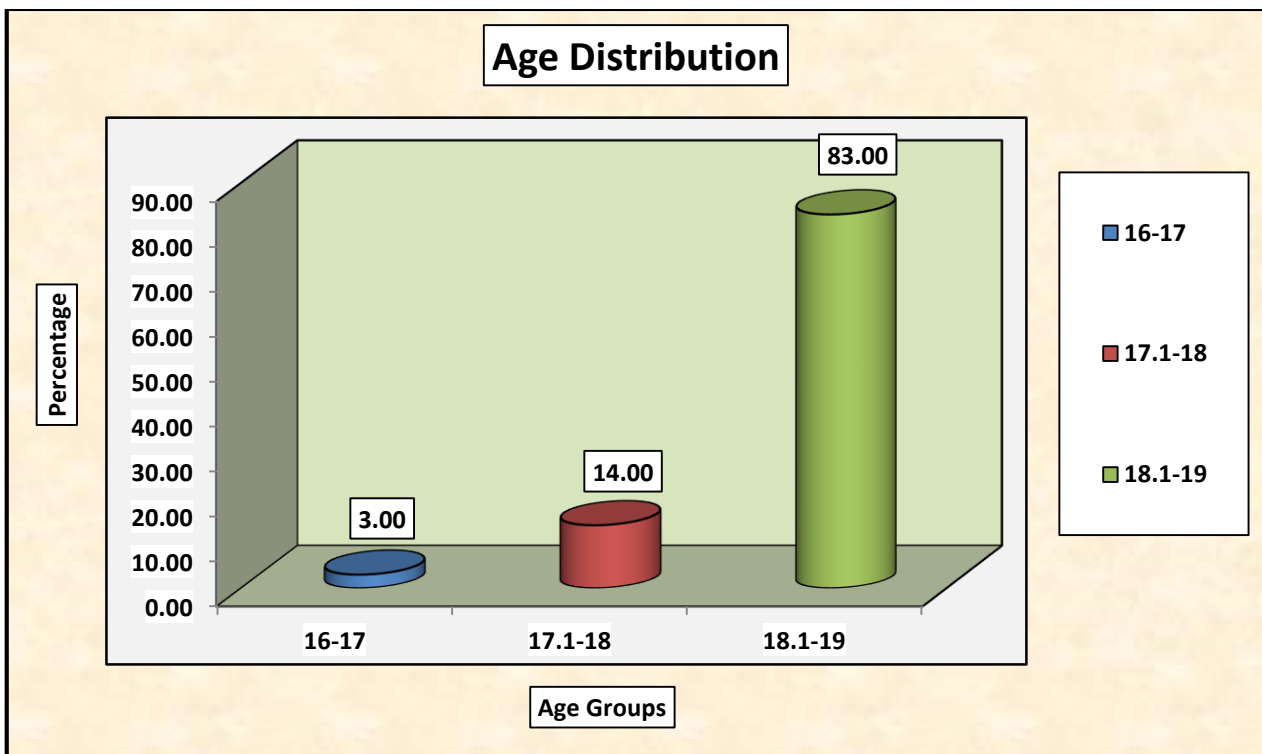
$n = 100$

Figure. No. IV. I. (1) Cylinder bar graph showing distribution of adolescents from selected college according to Age

Cylinder bar graph showing the age distribution. According to their age depicts that the highest percentage (83%) were in the age group 18.1-19 years. 14% of them were in the age group of 17.1-18 years. Lowest percentage 3% was in the age group 16-17 years of age. Hence it can be interpreted that majority of the participants under study belonged to 18.1-19 years of age.(Fig.No:1).
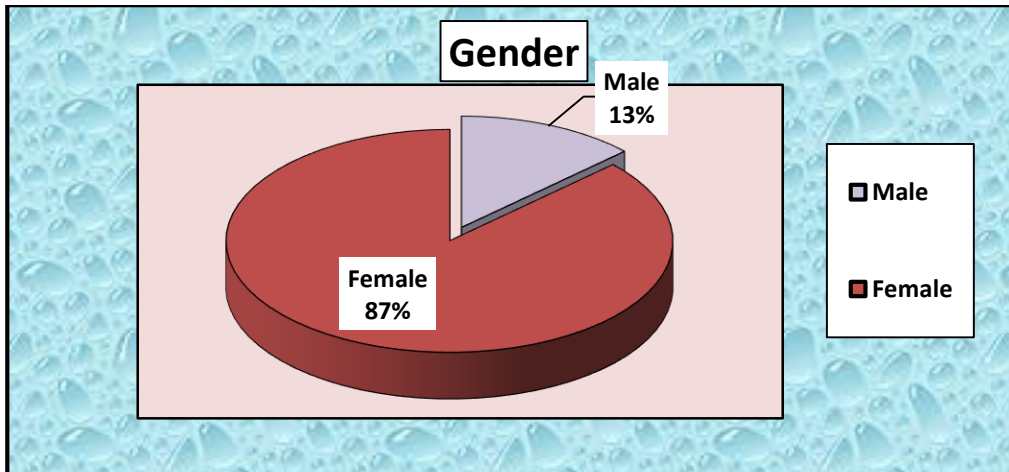

Figure No. IV. I. (2) Pie diagram showing distribution of adolescents from selected college according to gender

Among the samples, gender wise distribution showed that, 13% of them were males and 87% of them were females. Hence it can be interpreted that the females were majority among the samples. (Fig.No.2)
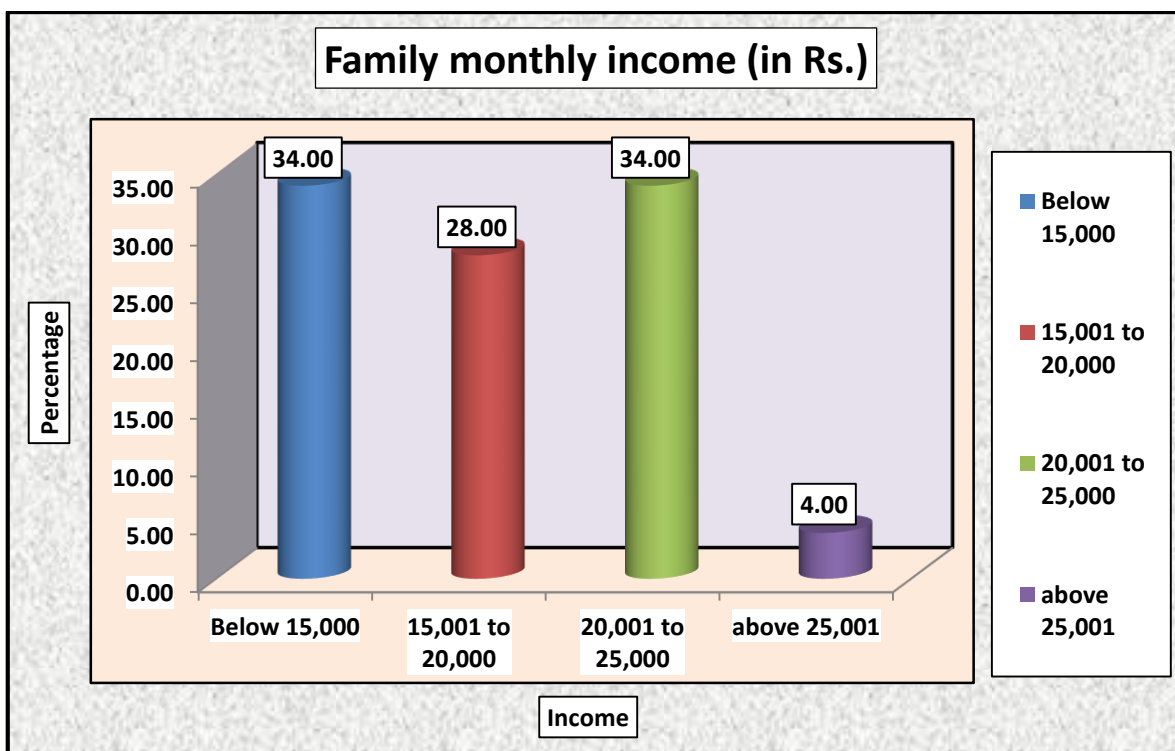
n = 100

Figure No. IV. I. (3): Cylinder bar graph showing of distribution of adolescents from selected college according to family monthly income

Monthly family income showing a majority (34%) of them had income below 15,000. 28% had income between 15001 to 20000, 34% had income between 20001 to 25000 and 4% had income above 25001. It showed that the majority under study belonged to middle class of economy. (Fig.No.3)
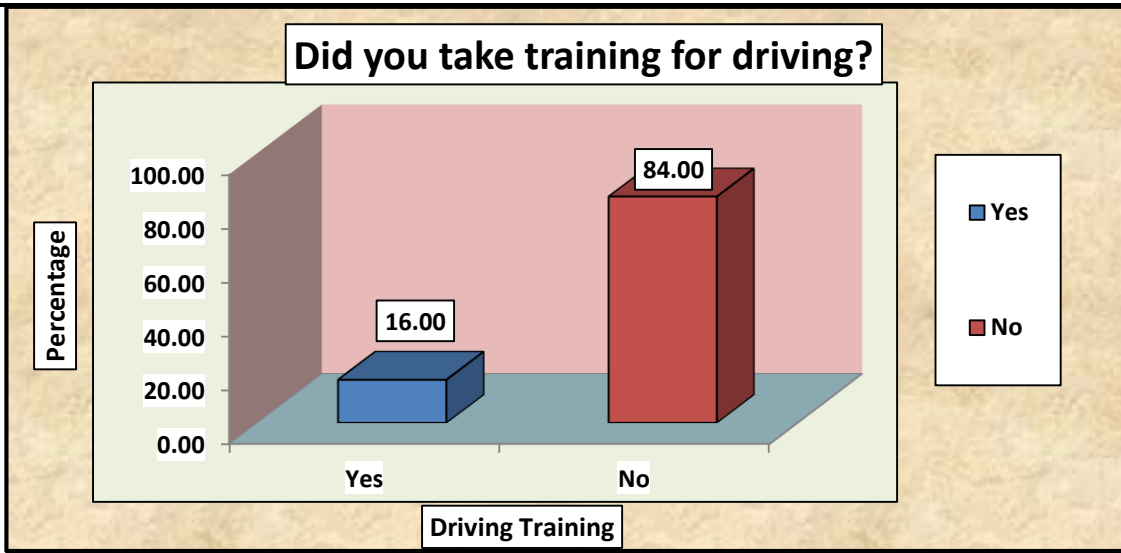
n = 100

Figure No. IV. I. (4): Cylinder bar graph showing distribution of adolescents from selected college according to driving training

Bar diagram showing percentage wise distribution of participant, in the study, to the question did you take training for driving, 16% of the adolescents from selected colleges, answered "yes" and 84% of them answered "no". (Fig no.4)
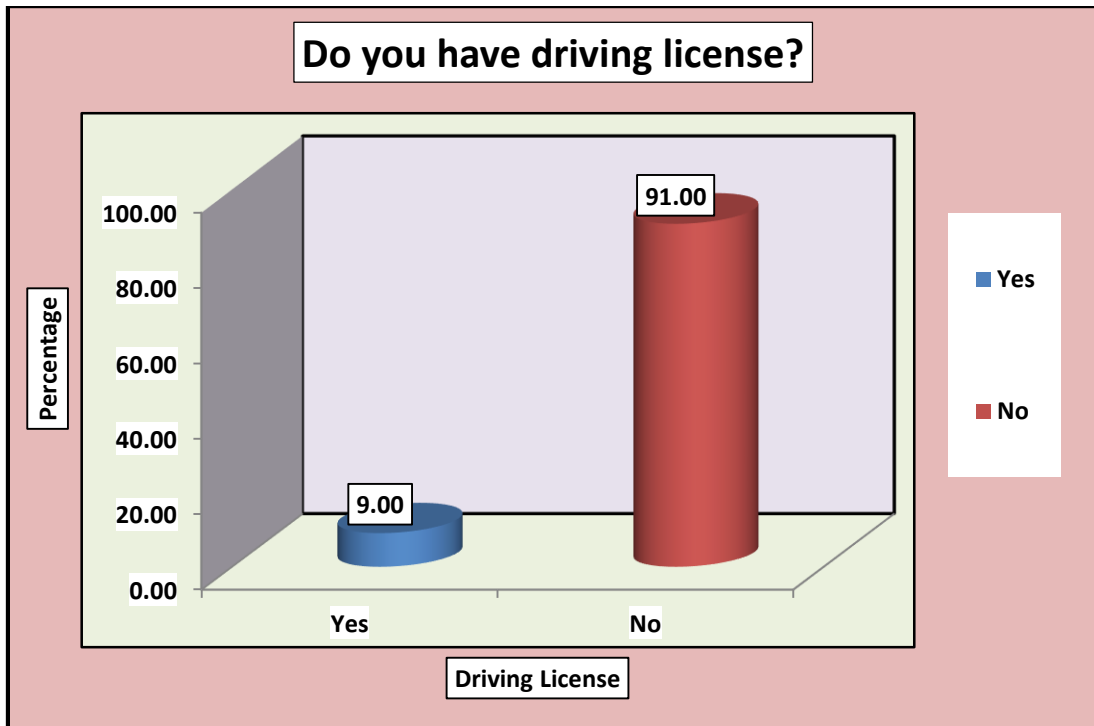
n = 100

Figure No.IV. I. (5): C

Cylinder bar graph showing distribution of adolescents from selected college according to driving license

Cylinder bar graph showing, percentage wise distribution of participant in the study, to the question do you have driving license, 9% of the adolescents from selected colleges, answered "yes" and 91% of them answered "no".(Fig no. 5)
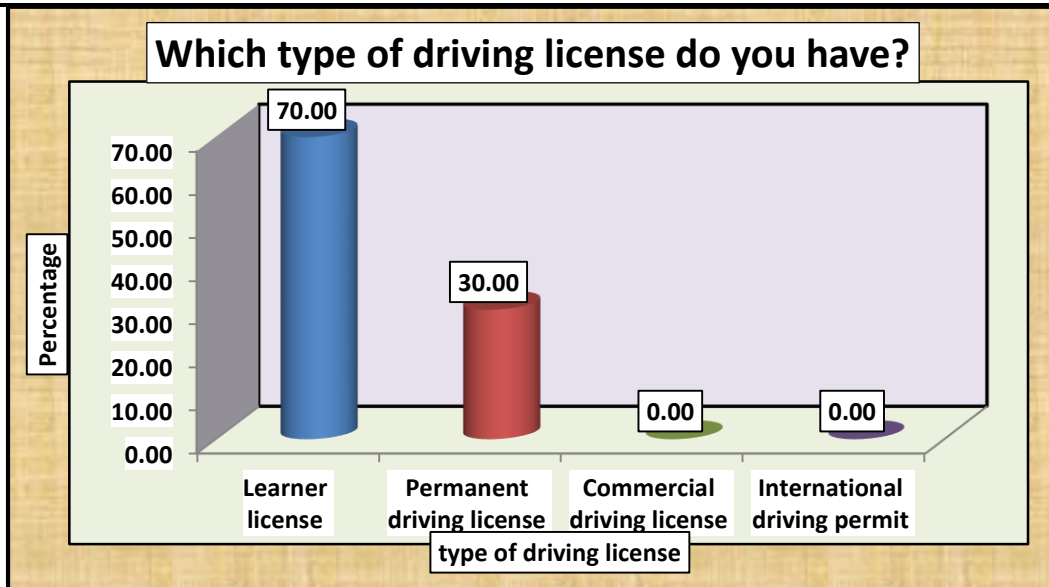
n = 100

Figure No. IV. I. (6): cylinder bar graph showing distribution of adolescents from selected college according to type of driving license

Cylinder bar graph showing that, percentage wise distribution of participant in the study, to the question d which type of driving license do you have, majority 70% of the adolescents from selected colleges answered Learner license and 30% of them answered Permanent driving license and no one of them answered Commercial driving license or international driving permit. (Fig no.6)
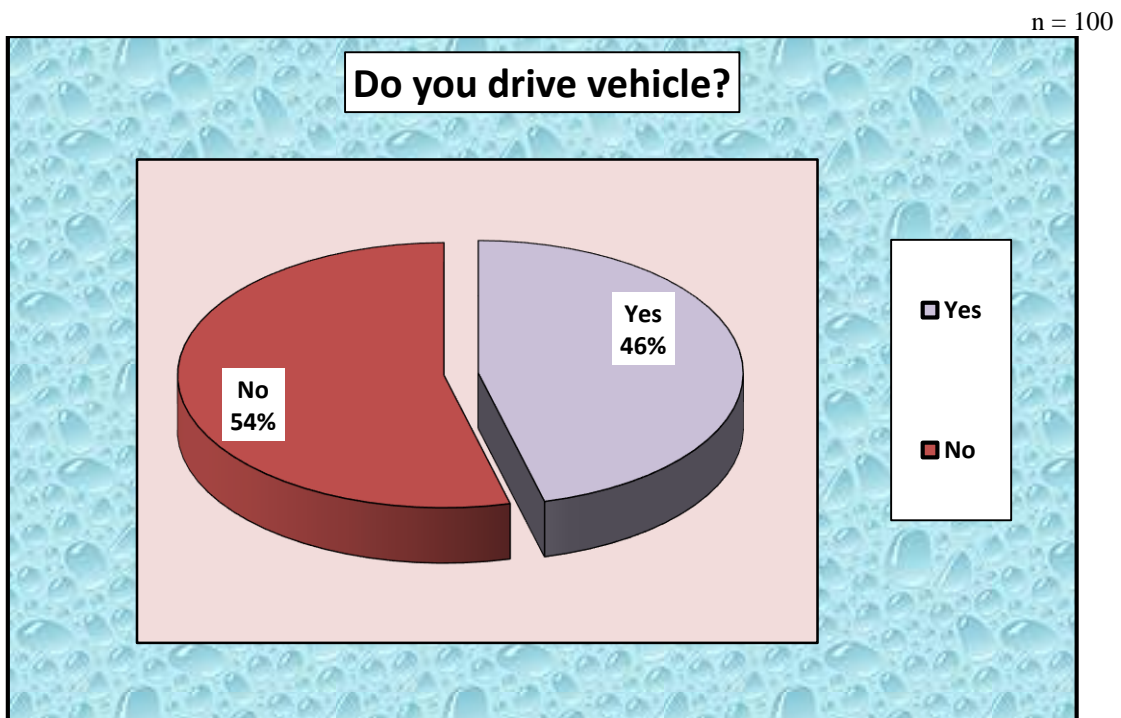
n = 100

Figure No. IV. I. (7): Pie diagram showing distribution adolescents from selected college according to drive vehicle

Pie diagram showing percentage wise distribution of participant in the study, to the question do you drive vehicle, majority 46% of the adolescents from selected college answered "yes" and 54% of them answered "no". (Fig no.7)

n = 100

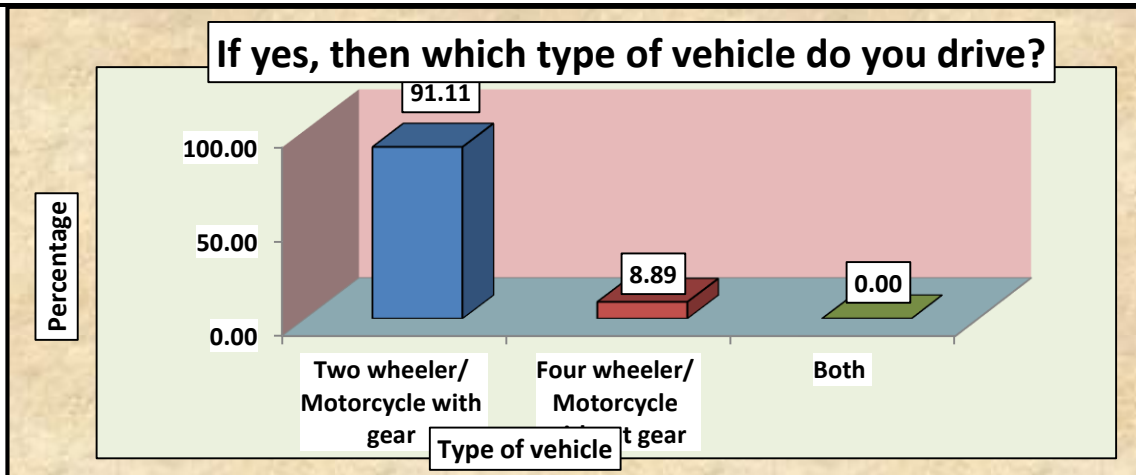**If yes, then which type of vehicle do you drive?**

Figure. No. IV. I. (8): Bar diagram showing distribution of adolescents from selected college according to type of vehicle they drive

Bar diagram showing , percentage wise distribution of participant in the study, to the question which type of vehicle do you drive, majority 91.91% of the adolescents from selected colleges answered Two wheeler/ Motorcycle with gear and 8.89% of them answered Four wheeler/ Motorcycle without gear.(Fig.no 8)

n = 100

Which of the following class of vehicles authorization did you get?
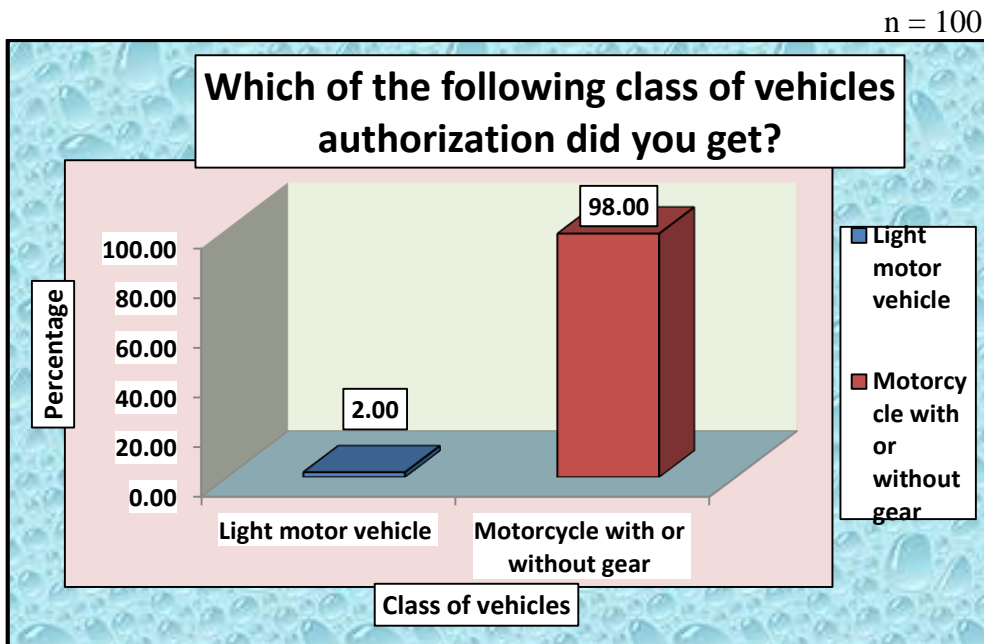
Figure. No. IV. I. (9): Bar diagram showing of distribution of adolescents from selected college according to class of vehicles authorization

Bar diagram showing, percentage wise distribution of participant in the study, to the question which of the following class of vehicles authorization did you get, 2% of the adolescents from selected college answered Light motor vehicle and 98% of them answered Motorcycle with or without gear. (Fig.no. 9)
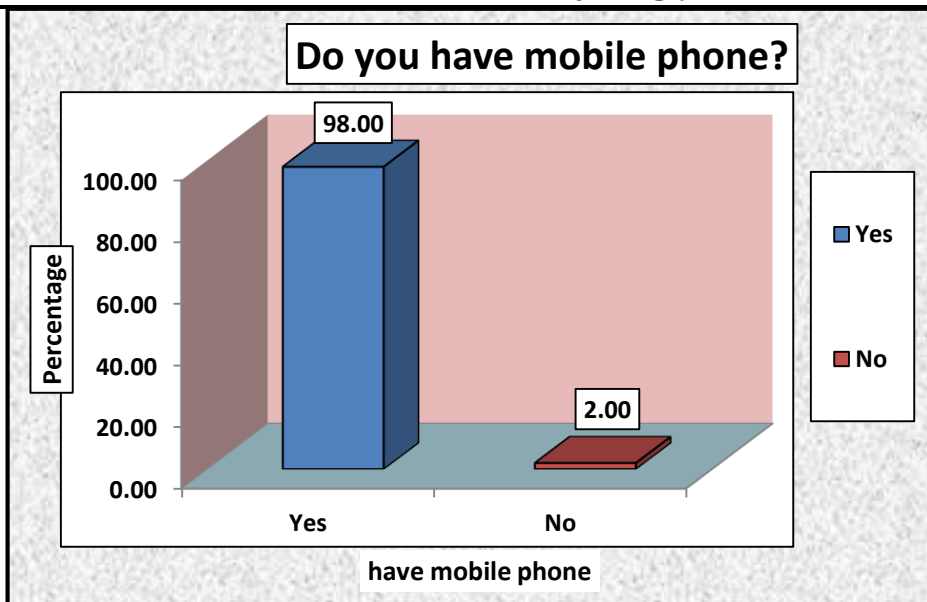
n = 100

Figure No. IV. I. (10): Bar graph showing distribution of the adolescents from selected college according to do you have mobile phone

Bar graph shows that, majority i.e 98% of the adolescents from selected college answered yes and 2% of them answered no. (Fig no. 10)

SECTION II

Assessment of pre-test& post-test knowledge regarding use of mobile phones and driving safety among adolescents of selected college.

Table IV.II.(1): Area wise assessments of Knowledge (Pre-Test)

Parts	KNOWLEDGE	Max Score	Pre-Test	
			Mean	SD
Part A	Meaning of distracted driving	1	0.36	0.48
Part B	Impact of mobile phone	4	1.84	1.17
Part C	Essential techniques of driving	4	1.94	0.83
Part D	Driving safety measures	11	6.37	1.78

Among the adolescent from selected college,

1. At the time of pre-test, average score regarding meaning distracted driving was 0.36 with standard deviation of 0.48.

2. At the time of pre-test, average score regarding impact of mobile phone was 1.84 with standard deviation of 1.17.

3. At the time of pre-test, average score regarding essential techniques of driving was 1.94 with standard deviation of 0.83.

4. At the time of pre-test, average score regarding driving safety measures was 6.37 with standard deviation of 1.78.

   Area wise assessment of the pre-test knowledge regarding use of mobile phones and driving safety among adolescents of selected college

Table IV.II.(2): Area wise assessments of Knowledge Post Test

Parts	KNOWLEDGE	Max Score	Post Test	
			Mean	SD
Part A	Meaning of distracted driving	1	0.62	0.48
Part B	Impact of mobile phone	4	3.03	0.71
Part C	Essential techniques of driving	4	2.61	0.76
Part D	Driving safety measures	11	8.12	0.92

Among the adolescent from selected college,

1.   At the time of post-test, average score regarding meaning distracted driving was 0.62 with standard deviation of 0.48.

2.   At the time of post-test, average score regarding impact of mobile phone was 3.03 with standard deviation of 0.71.

3.   At the time of post-test, average score regarding essential techniques of driving was 2.61 with standard deviation of 0.76.

4.   At the time of post-test, average score regarding driving safety measures was 8.12 with standard deviation of 0.92.

SECTION III

Effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college.

Table IV.III. (1): Comparison of the pre and post-test Knowledge (paired t test)

Group	Frequency	Mean	S.D.	t value	P value
Pre Test	100	10.51	3.10	12.85	0.000
Post Test	100	14.38	1.30		

The comparisons of pre-test and post-test means of knowledge regarding use of mobile phones and driving safety among adolescents of selected college were done by the paired t test.

The pre-test average score was 10.51 with standard deviation of 3.10. The post-test average score was 14.38 with standard deviation of 1.30. The test statistics value of the paired 't' test was 12.85 with p value 0.00. The p value is less than 0.05, hence the null hypothesis is rejected H_{01}. That means there is significant difference between pre-test and post-test knowledge.

Shows that, structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college was effective.
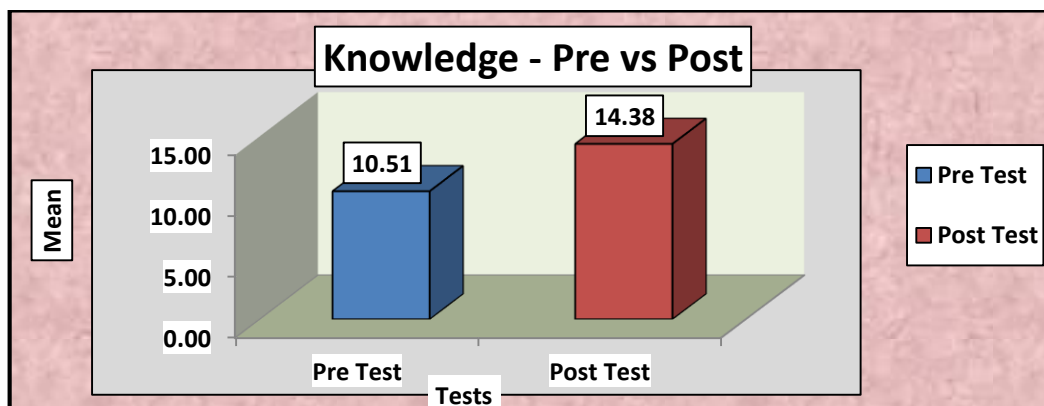
n = 100

Figure IV.III.(1): Bar graph showing comparison of the average pre and post-test Knowledge score

SECTION IV

Association between pretest & posttest knowledge regarding use of mobile phones and driving safety among adolescents of selected college with selected socio-demographic variables.

ASSOCIATION OF KNOWLEDGE IN RELATION TO DEMOGRAPHIC VARIABLES - PRE TEST

Table IV.IV.(1): Association of Knowledge with demographic variables – Pre Test

Variable	Groups	Knowledge - PRE		Chi Square	d. f.	p value	Significance
		below Md	above Md				
Age (in years)	16-17	2	1	0.09	2	0.95	Not Significant
	17.1-18	8	6				
	18.1-19	49	34				
Gender	Male	9	4	0.64	1	0.42	Not Significant
	Female	50	37				
Family monthly income (in Rs.)	Below 15,000	19	15	0.59	3	0.89	Not Significant
	15,001 to 20,000	17	11				
	20,001 to 25,000	20	14				
	above 25,001	3	1				
Did you take training for driving?	Yes	14	2	6.39	1	**0.011**	**Significant**
	No	45	39				
Do you have driving license?	Yes	7	2	1.44	1	0.23	Not Significant
	No	52	39				

Variable	Groups	Knowledge - PRE		Chi Square	d. f.	p value	Significance
		below Md	above Md				
Which type of driving license do you have?	Learner license	5	2	0.023	1	0.88	Not Significant
	Permanent driving license	2	1				
	Commercial driving license	0	0				
	International driving permit	0	0				
Do you drive vehicle?	Yes	20	26	8.48	1	**0.004**	**Significant**
	No	39	15				
If yes, then which type of vehicle do you drive?	Two wheeler/ Motorcycle with gear	23	18	1.41	1	0.23	Not Significant
	Four wheeler/ Motorcycle without gear	1	3				
	Both	0	0				
Which of the following class of vehicles authorization did you get?	Light motor vehicle	1	1	0.068	1	0.79	Not Significant
	Motorcycle with or without gear	58	40				
Do you have mobile phone?	Yes	57	41	1.41	1	0.24	Not Significant
	No	2	0				

Association between pretest & posttest knowledge regarding use of mobile phones and driving safety among adolescents of selected college with selected socio-demographic variables.

ASSOCIATION OF KNOWLEDGE IN RELATION TO DEMOGRAPHIC VARIABLES - POST TEST

Table IV.IV.(2): Association of Knowledge with demographic variables – Post Test

Variable	Groups	Knowledge - POST		Chi Square	d. f.	p value	Significance
		below Md	above Md				
Age (in years)	16-17	1	2	1.14	2	0.56	Not Significant
	17.1-18	9	5				
	18.1-19	44	39				
Gender	Male	7	6	0	1	0.99	Not Significant
	Female	47	40				
Family monthly income (in Rs.)	Below 15,000	18	16	0.76	3	0.85	Not Significant
	15,001 to 20,000	17	11				
	20,001 to 25,000	17	17				
	above 25,001	2	2				
Did you take training for driving?	Yes	13	3	5.69	1	**0.017**	**Significant**
	No	41	43				
Do you have driving license?	Yes	6	3	0.63	1	0.42	Not Significant
	No	48	43				

Variable	Groups	Knowledge - POST		Chi Square	d. f.	p value	Significance
		below Md	above Md				
Which type of driving license do you have?	Learner license	4	3	1.83	1	0.18	Not Significant
	Permanent driving license	3	0				
	Commercial driving license	0	0				
	International driving permit	0	0				
Do you drive	Yes	18	28	7.58	1	**0.006**	**Significant**

vehicle?	No	36	18				
If yes, then which type of vehicle do you drive?	Two wheeler/ Motorcycle with gear	19	22	0.02	1	0.88	Not Significant
	Four wheeler/ Motorcycle without gear	2	2				
	Both	0	0				
Which of the following class of vehicles authorization did you get?	Light motor vehicle	1	1	0.013	1	0.91	Not Significant
	Motorcycle with or without gear	52	45				
Do you have mobile phone?	Yes	52	46	1.73	1	0.19	Not Significant
	No	2	0				

SUMMARY

This chapter dealt with the analysis & interpretation of the data collected. The findings of the study depicts that structured teaching programme was effective in increasing knowledge regarding use of mobile phones and driving safety among adolescents and there was significant association between selected demographic variable and knowledge score.

CHAPTER-V

SUMMARY, FINDINGS CONCLUSION IMPLICATIONS AND RECOMMENDATIONS

STATEMENT OF THE PROBLEM

"Effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college."

OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE:

1. To assess the existing knowledge regarding use of mobile phone and driving safety among adolescents.

SECONDARY OBJECTIVE:

1. To evaluate the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college.

2. To find out the association between knowledge score regarding use of mobile phone and driving safety among adolescents with selected socio demographic variables.

HYPOTHESIS

H01 - There will be no significant difference between pre-test score and post-test score level of knowledge regarding use of mobile phones and driving safety.

H11 – There will be significant difference between pre-test score and post-test score level of knowledge regarding use of mobile phones and driving safety.

H02 - There will be no significant association between pre-test and post-test knowledge regarding use of mobile phone and driving safety among adolescents with selected socio demographic variables.

H12 – There will be significant association between pre-test and post-test knowledge regarding use of mobile phone and driving safety among adolescents with selected socio demographic variables.

MAJOR FINDINGS OF THE STUDY

The analysis of demographic data of study samples gave an idea about general characteristics of adolescents from selected college.

The following are the major findings of the study.

SECTION –I

DEMOGRAPHIC VARIABLES

1. According to age of the adolescents from selected college, 3% of them were from the age group 16-17 years of age, 14% adolescents from the 17.1-18 years of age and 83% from the age group 18.1-19 years of age.

2. According to gender of the adolescents from selected college, 13% of them were males and 87% of them were females.

3. According to Family monthly income of the adolescents from selected college, 34% of them were from the Below 15,000 Rs, 28% adolescents from the group 15,001 to 20,000 Rs, 34% of them had income between 20,001 to 25,000 Rs and 4% of them had income above 25,001 Rs.

4. In the study, to the question did you take training for driving, 16% of the adolescents from selected colleges, answered yes and 84% of them answered no.

5. To the question do you have driving license, 9% of the adolescents from selected colleges, answered yes and 91% of them answered no.

6. In the study, to the question d which type of driving license do you have, 70% of the adolescents from selected colleges, answered Learner license and 30% of them answered Permanent driving license and no one of them answered Commercial driving license or international driving permit.

7. In the study, to the question do you drive vehicle, 46% of the adolescents from selected colleges, answered yes and 54% of them answered no.

8. In the study, to the question which type of vehicle do you drive, 91.91% of the adolescents from selected colleges, answered Two-wheeler/ Motorcycle with gear and 8.89% of them answered Four-wheeler/ Motorcycle without gear.

9. To the question which of the following class of vehicles authorization did you get, 2% of the adolescents from selected colleges answered Light motor vehicle and 98% of them answered Motorcycle with or without gear.

10. In the study, to the question do you have mobile phone, 98% of the adolescents from selected colleges answered yes and 2% of them answered no.

SECTION-II

General assessments of Knowledge

For the assessment purpose the total score of knowledge regarding use of mobile phones and driving safety among adolescents of selected college was divided in to three groups like poor (0-7 score), average (8-14 score) and good (15-20 score).

Pre Test:

At the time of pre-test, assessment of the knowledge regarding use of mobile phones and driving safety among adolescents of selected college, 16% of them had poor knowledge, 73% had average knowledge and 11 of them had good knowledge.

Average knowledge score at the time of pre-test was 10.51 with standard deviation of 3.10. The minimum score of knowledge was 4 with maximum score of 16.

Post Test:

At the time of post-test, assessment of the knowledge regarding use of mobile phones and driving safety among adolescents of selected college, no one of them had poor knowledge, 54% had average knowledge and 46% of them had good knowledge.

Average knowledge score at the time of post-test was 14.38 with standard deviation of 1.30. The minimum score of knowledge was 10 with maximum score of 17.

Area wise assessment of the pre-test knowledge regarding use of mobile phones and driving safety among adolescents of selected college

Among the adolescent from selected college,

1. At the time of pre-test, average score regarding meaning distracted driving was 0.36 with standard deviation of 0.48.
2. At the time of pre-test, average score regarding Impact of mobile phone was 1.84 with standard deviation of 1.17.
3. At the time of pre-test, average score regarding Essential techniques of driving was 1.94 with standard deviation of 0.83.
4. At the time of pre-test, average score regarding Driving safety measures was 6.37 with standard deviation of 1.78.

Among the adolescent from selected college,

1. At the time of post-test, average score regarding meaning distracted driving was 0.62 with standard deviation of 0.48.
2. At the time of post-test, average score regarding Impact of mobile phone was 3.03 with standard deviation of 0.71.
3. At the time of post-test, average score regarding Essential techniques of driving was 2.61 with standard deviation of 0.76.
4. At the time of post-test, average score regarding Driving safety measures was 8.12 with standard deviation of 0.92.

SECTION-III

Comparison of the pre and post-test Knowledge

The comparisons of pre-test and post-test means of knowledge regarding use of mobile phones and driving safety among adolescents of selected college were done by the paired t test.

The test was conducted at 5% level of significance.

The pre-test average score was 10.51 with standard deviation of 3.10. The post-test average score was 14.38 with standard deviation of 1.30.

The test statistics value of the paired t test was 12.85 with p value 0.00.

The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and post-test knowledge.

Shows that, structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college was effective.

SECTION IV

ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES – PRE TEST

The chi square test was used to see the association between pre-test knowledge scores regarding use of mobile phones and driving safety with selected demographic variables of adolescents of selected college. The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables training for driving and drive vehicle, p value of the association test with pre-test knowledge was less than 0.05. **Hence null hypothesis H02 rejected and alternate hypothesis H21 accepted.**

That means, knowledge of adolescents regarding use of mobile phones and driving safety was associated with these demographic variables. Concludes that, there was significant association of these demographic variables with the pre-test knowledge.

No Significant Association:

For the demographic variables age, gender, family monthly income, etc. the p value of the association test with pre-test knowledge was more than 0.05. **Hence null hypothesis H02 accepted.**

That means, the knowledge of adolescents regarding use of mobile phones and driving safety was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the pre-test knowledge.

ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES – POST TEST

The chi square test was used to see the association between post-test knowledge scores regarding use of mobile phones and driving safety with selected demographic variables of adolescents of selected college. The test was conducted at 5% level of significance.

Significant Association:

For the demographic variables training for driving and drive vehicle, p value of the association test with post-test knowledge was less than 0.05. Hence null hypothesis H02 rejected and alternate hypothesis H21 accepted.

That means, knowledge of adolescents regarding use of mobile phones and driving safety was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the post-test knowledge.

No Significant Association:

For all the demographic variables age, gender, family monthly income, etc. the p value of the association test with post-test knowledge was more than 0.05. Hence null hypothesis H02 accepted.

That means, the knowledge of adolescents regarding use of mobile phones and driving safety was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the post-test knowledge.

DISCUSSION:

In the present study of effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents of selected college, the researcher thought that structured teaching program will enhance the knowledge regarding use of mobile phone and driving safety. Hence, a pre-experimental one group pre-test post-test research design was used. Total 100 samples were selected by probability simple random technique as per the inclusive criteria. Structured knowledge questionnaire was used as an instrument which consisted of two sections. First section consisted of 10 items regarding demographic variable and second section consisted of questionnaire related to use of mobile phone and driving safety. Prior to the collection of data, researcher obtained permission from the authority of the selected college. Informed consent was taken from the participant. Pre-test was conducted to assess the actual knowledge regarding use of mobile phone & driving safety on day 0 & on the same day structured teaching program was also administered. On 7th day post test was conducted to assess gain in knowledge using the same structured knowledge questionnaire on the same sample.

The finding of the study according to age of the adolescents from selected college, 3% of them were from the age group 16-17 years of age, 14% adolescents from the 17.1-18 years of age and 83% from the age group 18.1-19 years of age. According to gender of the adolescents from selected college, 13% of them were males and 87% of them were females. According to Family monthly income of the adolescents from selected college, 34% of them were from the Below 15,000 Rs, 28% adolescents from the group 15,001 to 20,000 Rs, 34% of them had income between 20,001 to 25,000 Rs and 4% of them had income above 25,001 Rs. In the study, to the question did you take training for driving, 16% of the adolescents from selected colleges, answered yes and 84% of them answered no. To the question do you have driving license, 9% of the adolescents from selected colleges, answered yes and 91% of them answered no. In the study, to the question d which type of driving license do you have, 70% of the adolescents from selected colleges, answered Learner license and 30% of them answered Permanent driving license and no one of them answered Commercial driving license or International driving permit. In the study, to the question do you drive vehicle, 46% of the adolescents from selected colleges, answered yes and 54% of them answered no.In the study, to the question which type of vehicle do you drive, 91.91% of the adolescents from selected colleges, answered Two wheeler/ Motorcycle with gear and 8.89% of them answered Four wheeler/ Motorcycle without gear. To the question which of the following class of vehicles authorization did you get, 2% of the adolescents from selected colleges answered Light motor vehicle and 98% of them answered Motorcycle with or without gear. In the study, to the question do you have mobile phone, 98% of the adolescents from selected colleges answered yes and 2% of them answered no.

In this study, finding shows that pre-test knowledge regarding use of mobile phones and driving safety among adolescents of selected college, 16% of them had poor knowledge, 73% had average knowledge and 11% of them had good knowledge. Average knowledge score at the time of pre-test was 10.51 with standard deviation of 3.10. The minimum score of knowledge was 4 with maximum score of 16. At the time of post-test, assessment of the knowledge regarding use of mobile phones and driving safety among adolescents of selected college, no one of them had poor knowledge, 54% had average

knowledge and 46% of them had good knowledge. Average knowledge score at the time of post-test was 14.38 with standard deviation of 1.30. The minimum score of knowledge was 10 with maximum score of 17.

The comparisons of pre-test and post-test means of knowledge regarding use of mobile phones and driving safety among adolescents of selected college were done by the paired t test. The test was conducted at 5% level of significance. The pre-test average score was 10.51 with standard deviation of 3.10. The post-test average score was 14.38 with standard deviation of 1.30. The test statistics value of the paired t test was 12.85 with p value 0.00. The p value less than 0.05, hence reject the null hypothesis. That means there is significant difference in pre and post-test knowledge.

The study shows that structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescents from selected college was effective.

SUMMARY

The purpose of the present study was to assess the effectiveness of structured teaching program on knowledge regarding use of mobile phones and driving safety among adolescent. The pre-experimental one group pre-test post-test research design was used for the study. This consisted of 100 samples that were selected on the basis of the probability simple random technique. The content validity and reliability of the tool was done, which suggested that tool was reliable. The pilot study was conducted on 11 samples and the feasibility of the study was established. It was found that the tool had no major flaws and used for the final study with the changes as per the experts based on the objectives and de assumptions. The collected data was analysed using descriptive and inferential statistics; Analysis of data was done in accordance with the objectives. The data analysis done by calculating mean frequency and its % and "p" value. The studies found that majority of adolescent's knowledge which was improved after providing structured teaching program on knowledge regarding use of mobile phone and driving safety. This chapter has brought out the various implication of this study and also has provided suggestions for the future studies of this kind should be on-going process make awareness among regarding planned use of mobile phone and driving safety.

CONCLUSION

From the study findings it is concluded that the structured teaching program was effective improving the knowledge of adolescent regarding use of mobile phone and driving safety.

LIMITATIONS

1. The study was confined to area, which imposes larger generalization.

2. The finding of the study was restricted to the respondents under study from selected area.

3. The data was collected from 100 samples to find out the knowledge: It could be done on more samples for the larger generalization.

4. The study was restricted to adolescents.

NURSING IMPLICATIONS

Nursing Education

The nursing curriculum should consist of knowledge related to different methods of teaching. Nursing students should be made aware of their role in health promotion and disease prevention in present and future year, which may help in achieving goal of health for all Nursing students should be made aware of the importance of educating the adolescent regarding use of mobile phone and driving safety.

Nursing at post-Graduate level should develop their skill in preparing health teaching materials according to the community's level of understanding.Improved and newer techniques have to be used for motivating.

Nursing Practice

Nursing is a dynamic process, which involves quality based on scientific body of knowledge and dissemination of research knowledge into practice nursing professionals find the health promotion very relevant because it applies across the span and is useful in of settings. Several implications can be drawn from the present study for adolescent are unaware about related use of mobile phone and driving safety in selected college. The extended and expanded roles of professional nurses emphasize more about the preventing and promotive aspects of the health information can be important through various methods like information booklet, lecture, mass media, pamphlet, planned teaching, program etc. Nurses have position themselves in all areas of community. Hence, nurses should take keen interest in preparing different teaching strategies suitable for the selected college.

Nursing Administration

The nurse administrators should take active and pivotal role in developing teaching modules. The nurse as an administrator should plan and organize educational programs for nursing personnel and motivate them to educate adolescent in the selected college. More nursing research can be undertaken in the selected college. In the field of research, the present study helps to utilize the finding and disseminate the knowledge in the field of work.

RECOMMENDATIONS

The present study findings revealed that the structured teaching program were effective in improving the knowledge of adolescent regarding used of mobile phones and driving safety in selected college. So, the following recommendations were framed for future Study.

1. A similar study can be done using pamphlet.

2. This study can be replicated on larger sample to generalize the findings.

3. A study can be conducted on adolescent in selected area.

4. A follow-up study of structured teaching program could be carried out to find out the effectiveness in terms of retention of knowledge

SUMMARY

This chapter dealt with analysis and interpretation of the data obtained from the response of 100 samples who were studying in 11th std to F.Y in selected colleges. The present study has been taken up to assess the effectiveness of structured teaching programme on knowledge regarding use of mobile phones and driving safety.

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