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Assess the Knowledge regarding the Road Traffic Signals among the Male and Female Middle Adolescents

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Abstract: ***Road traffic accidents (RTAs) are considered as one of the important public health problems around the world. 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, road traffic accidents are the 9th leading cause of death and are predicted to become the 5th leading cause of death by the year 2020. Globally road traffic injuries are the leading cause of death among young people aged 15-19 years and second leading cause among 5-14 year olds. Ninety percent of world's road traffic fatalities occur in developing countries. The various research studies are done to identify the knowledge level of children and adolescent regarding road traffic signals to reduce the incidence of road traffic accidents. This study was based on the comparative study approach. The method used for this study was Descriptive Comparative Design. 100 samples were selected with simple random sampling technique which divided into two comparative groups that is female adolescent (50) and male adolescent (50). Sample selection was based on inclusive and exclusive criteria. The tools used for this study was Structured knowledge questionnaire and pictorial questionnaires with including selected Demographic variables, which was prepared on the basis of review of literature, various information & informal discussion with the patients. While data collection process followed the ethical consideration such as written permission was obtained from school authority and informed written consent obtained from male and female middle adolescent. Based on the objectives and the hypothesis the data were analyzed by using various statistical tests. Analysis of data showed that there is significant difference between the knowledge level among the male and female middle adolescent. Hence it is statistically interpreted that 9ithere is a significant association between the knowledge score of the male and female middle adolescents regarding the road traffic signals with their demographic variable and significant difference between the knowledge score of male and female middle adolescent.***

Keywords: Traffic signals, Middle adolescent, Road traffic accidents, Road safety, pedestrians

1. Introduction

*"**Traffic is only one of side effects of growth**"*

-Roy Barnes

The world's first traffic light was short lived. It was a manually operated gas-lit signal installed in London in December 1868. It exploded less than a month after it was implemented, injuring[1].Its policeman operator. Traffic control started to seem necessary in the late 1890s and Earnest Serine from Chicago patented the first automated traffic control system in 1910. It used the words "STOP" and "PROCEED", although neither [2].

Traffic lights alternate the right of way accorded to users by displaying lights of a standard color (red, amber (yellow), and green) following a universal color code. In the typical sequence of color phases :The green light allows traffic to proceed in the direction denoted, if it is safe to do so and there is room on the other side of the intersection .The amber (yellow) light warns that the signal is about to change to red. In a number of countries – among them the United Kingdom – a phase during which red and yellow are displayed together indicates that the signal is about to change to green.[3]

According to WHO estimates, RSA is the 9 th leading cause of death as per on the basis of Daly. However, this is likely to reach at no. 3 by 2020. It was estimated that over 75% of RSA occur in the so called developing countries, even though these countries account for only 32% of total motor vehicle fleet, which involves 65% of pedestrians and 35% of school children. Child pedestrian injury, an important cause of morbidity and mortality remains one of the leading causes of death in developed and developing countries. The chances of RSA can be averted to a large extent, if school children who are going to be adults of tomorrow are made aware of road safety measures. Hence present study was focused on school children to study knowledge of various risk factors pertaining to road side accidents and their practices.[4]

A review of safety at single controlled junctions and mid block crossings was undertaken for transport for London with the aim of informing practice and policy .It covers all aspects of signal design and strategy . A large number of studies on all aspects of signal control were reviewed; the most common topics being red light running and countdown timers. The behaviour of pedestrians has been most widely studied than their safety.[5]

2. Literature Survey

Traffic lights alternate the right of way accorded to users by displaying lights of a standard color (red, amber (yellow), and green) following a universal color code. In the typical sequence of color phases :The green light allows traffic to proceed in the direction denoted, if it is safe to do so and there is room on the other side of the intersection .The

amber (yellow) light warns that the signal is about to change to red. In a number of countries – among them the United Kingdom – a phase during which red and yellow are displayed together indicates that the signal is about to change to green. Actions required by drivers on a yellow light vary, with some jurisdictions requiring drivers to stop if it is safe to do so, and others allowing drivers to go through the intersection if safe to do so. A flashing amber indication is a warning signal. In the United Kingdom, a flashing amber light is used only at pelican crossings, in place of the combined red–amber signal, and indicates that drivers may pass if no pedestrians are on the crossing.[9]

The red signal prohibits any traffic from proceeding. A flashing red indication is treated as a stop sign. Road accidents are 9thleading cause of deaths and are estimated to become the 5th leading cause of death by 2020. Globally road traffic injuries are leading cause of death among the young people aged 15-19 years and second leading cause 5-14 years old, according to WHO road traffic accidents stands as 6th rank of leading causes of death in children and adolescent. The death toll is on the higher side for the countries .Where pedestrians, motor cyclist and passengers are vulnerable and vehicles lack the safety norms like India Tamil Nadu accounts for 14.5% of total road accident cases in the country. Every day one person dies every 6 minutes on Indian roads.[10]

Ms. Indhumathy et al (2016) A study findings concluded that the primary school children have lack of knowledge on road traffic regulations and few students though they have the knowledge but have poor practice in the day today life. Parent and teachers create awareness regarding road safety regulations by video presentation or conducting exhibition. Prevention of road traffic accidents and road traffic regulations should be incorporated in the curriculum which enables the students to develop advanced knowledge thereby road traffic accident can be prevented.[16]

Dong X, et al. (2011) A study was conducted on the effects of education regarding road safety among middle school students .200 samples were included in the study .Education was provided to the middle school student. Questionnaire was administered regarding knowledge, attitude and practice on road safety was measured. The study concluded that significant increase in knowledge of middle school students' .There was a positive attitude and practice regarding road safety.[17]

Germeni et al (2010) A survey was conducted on parental knowledge and perceptions of the use of road safety systems for children. A total of 1,263 parents reported among 2,199 children use of safety systems. The study revealed that only 68% of children used correct seats for their weight. The study concluded that parents had a limited knowledge concerning the correct use of safety seats. The study suggested that nurses develop a comprehensive and systematic strategy to ensure that families to understand how to secure children in vehicles using the correct safety seat for the child's height, weight and age.[18]

A study state that school based study was conducted among 485 high school students in Anaichikuppam area of Villupuram district in Tamil Nadu. Majority of study population were girls and 34.6% of the students were aware of the legal age for driving but 55% were unable to identify even one of the five given mandatory road signs. 98.1% of the children were aware of the risks of drunken driving. Only 33 students were using helmets while riding motorized two-wheelers and 55 school children had been involved in road-related accidents in the past 1 year. Study revealed poor knowledge of traffic rules and unsafe traffic behavior among the school children.[21]

3. Problem Definition

"A comparative study to assess the knowledge regarding the road traffic signals among the male and female middle adolescents in selected junior colleges of urban areas".

Objectives

1) To assess the knowledge of male and female middle adolescent regarding the road traffic signals.
2) To compare the knowledge of male and female middle adolescent regarding the road traffic signals.
3) To find out the associate between the knowledge score of road traffic signals with their selected demographic variables of male and female middle adolescent.

4. Material and Methods

Descriptive Comparative Design was chosen for this study. In the present study sample were divided into two group female middle adolescent and male middle adolescent group in which pre test was administered by means of Structured knowledge questionnaire and pictorial questionnaires for both the group depicted as P1.The study design is depicted as –

Group	Pre Test
Female middle adolescent	P1
Male middle adolescent	P1

A simple comparative approach was found to be more appropriate to assess the knowledge regarding road traffic signals. The proposed study was undertaken in at selected urban area. The population and samples were female and male middle adolescent who were fulfilling the inclusion and exclusion criteria and the sample consisted of hundred middle adolescent which is divided into two female middle adolescent and male middle adolescent group equally. The sampling technique used in this study was simple random sampling. Tools used for data collection include three section namely demographic variable and structured knowledge questionnaire and pictorial questionnaires.

5. Results

Structured knowledge questionnaire and pictorial questionnaires is used for data collection. The analysis was done with the help of descriptive and inferential statistics.

SN	Data Analysis	Method	Remarks
	Descriptive	Frequency and percentage	To describe the distribution of demographic variables

1	statistics	Mean, median, standard deviation,	To determine the knowledge of male and female middle adolescent regarding road traffic signals.
2	Inferential statistics	t- test	To compare the level of knowledge of male and female middle adolescent regarding road traffic signal
		Chi square	To find out the association between the level of knowledge of male and female middle adolescent regarding road traffic signals with demographic variables

The data was analyzed and is presented in the following sections:-

Section I: Distribution of sample with regard to demographic variable of male to female middle adolescents.

Section II: Assessment of the knowledge regarding the road traffic signals among the male and female middle adolescents.

Section III: Comparison of pre test knowledge regarding the road traffic signals among the male and female middle adolescents**.**

Section IV: Association between the Knowledge score regarding road traffic signals among male and female adolescent with their selected demographic variables.

Testing of Hypothesis

$H_{2:}$ There is a significant association between the knowledge score of the male and female middle adolescents regarding the road traffic signals with their demographic variable.

In that variable like educational qualification, father education, mother education, numbers of year handling vehicles were significantly associated with pre-test knowledge, hence **H2 Accepted.**

6. Discussion

The findings of the study have been discussed with reference to the objectives and hypothesis As per findings of the study it provide the description related to demographic variables which shows majority of the male and female middle adolescents and with secondary education. As well as Majority of middle adolescents having the good knowledge regarding the road traffic signals and source of information is television.

In pre test knowledge scores as well as pictorial knowledge score, majority of the male middle adolescent were having average knowledge and the majority of females middle adolescent were also having average knowledge regarding road traffic signals.

In this study the investigator also assess the knowledge score of male and female middle adolescents regarding the road traffic signals. So, a finding shows that Female middle adolescents pursue the good knowledge regarding the road traffic signals than the male middle adolescent.

The present study also shows the significant correlation between the knowledge score of male and female middle adolescents as correlation coefficient is 0.05

7. Conclusion

The comparisons of the pre test means of the knowledge of males were done by the paired t test. The pre test average score was 5.94 with standard deviation of 0.95. The post test average score was 7.36 with standard deviation of 0.56. The test statistics value of the paired t test was 10.57 with p value 0.00.

The comparisons of the pre test and post test means of the knowledge of females were done by the paired t test. The pre test average score was 6.04 with standard deviation of 0.72. The post test average score was 7.40 with standard deviation of 0.6. The test statistics value of the paired t test was 11.99 with p value 0.00.

The comparisons of the post test means of the knowledge of males and females were done by the unpaired t test. The post test average score for males was 7.36 with standard deviation of 0.56. The post test average score of females was 7.40 with standard deviation of 0.6. The test statistics value of the unpaired t test was 0.34 with p value 0.73.

Nurses can provide health education and counseling to promote awareness about road traffic signals. Nurses can also use this opportunity for the better understanding and cooperation Nurses and other health care workers have begin to provide intensive and long-term services or assess the knowledge regarding the road traffic signals among the middle adolescents.

8. Future Scope

The future scope of this study has implications for nursing administration, nursing education, nursing research and nursing practice.

Nursing Practice

Community health members are the appropriate person for the helping middle adolescents to increase the knowledge regarding road traffic signal. community health workers can conduct health education session to improve the knowledge regarding road traffic signals.

Nursing Education

Nursing education is developing rapidly in India and nurse from our country can be found all over the world providing care and education. The nursing education curriculum must include imparting knowledge about the road traffic accidents or safety. Nowadays much importance is given to awareness and promotion of health the curative aspects. As the needs of society are continuously changing newer components must be incorporated in the nursing curriculum. Nursing education must emphasize on preventive and aspects of road safety.

The nursing teachers can use study as an informative illustration for the students. Nursing education should help

in inculcating values and sense of responsibility in the students to educate about the road traffic signals to prevent the further harm.

Nursing Administration

As a part of administration, the nurse administrator plays a vital role in educating students. The Nurse administrator can utilize this type of road traffic signals to enhance the knowledge of the students. Nursing administration can depute nurses for various workshops, conference, and special courses, and also in services education programs can be arranged for the nursing staff. The findings of the study should be used as a basis of in service education programs for nurses so as to make them aware of the present problems in the road safety.

Nursing Research

Nursing research is essential aspect of nursing as it uplifts the profession and develops new nursing norms and body of knowledge**.** Another research has been added to Nursing literature. Very few studies have been done on a similar basis. The research design, findings and the tool can be used as avenues for further research. There is a need for extended and intensive nursing research in the middle adolescents among the road traffic signals to improve the knowledge of the middle adolescent.

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