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Effectiveness of planned teaching programme on knowledge and skill regarding basic life support among public transport workers at Puducherry

K. Pugazhenthi[1*], R. Sasikala[2] and J. Edna Sweenie[2]

[1]Department of Nursing, Vinayaka Mission's College of Nursing, Vinayaka Mission's Research Foundation (Deemed to be University), Salem, India
[2]Department of Medical Surgical Nursing, Vinayaka Mission's College of Nursing, Vinayaka Mission's Research Foundation (Deemed to be University), Salem, India

***Correspondence:**
K. Pugazhenthi,
045pugazh@gmail.com

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A pre-experimental study to assess the effectiveness of planned teaching programme on knowledge and skill regarding Basic Life Support (BLS) among public transport workers at Puducherry. The objectives of the study were to assess the knowledge regarding BLS among public transport workers. To evaluate the effectiveness of planned teaching programme on knowledge and skill regarding BLS among public transport workers. To find out the impact between pre-test knowledge regarding basic life support with selected socio-demographic variables. A total of 60 public transport workers selected by convenience sampling technique. The data was collected through socio-demographic variables, BLS knowledge questionnaires and BLS observation checklist. Planned teaching programme on BLS with demonstration by using CPR mankini was provided. Post-test was conducted after 5 days. The study findings revealed that in the pre-test, 42(70%) had inadequate knowledge and 18(30%) had moderate knowledge and no one had adequate knowledge. The mean value was 6.53 and standard deviation value was 2.27. Whereas in the post-test 56(93%) had adequate knowledge and 4(6.7%) had moderate knowledge and none of them in, inadequate knowledge. The mean value was 19.15 and standard deviation was 1.64 regarding basic life support among public transport workers. The skill regarding BLS among public transport workers showed that majority, 51(85%) had excellent grading of skill, 9(15%) had good grade of skill and the mean value was 9.57 and standard deviation was 0.74. The socio-demographic variables had not shown statistically significant association between the pre-test level of knowledge regarding basic life support with selected socio-demographic variables. This study concluded that planned teaching programme on knowledge and skill regarding basic life support was found to be effective in improving the level of knowledge and skill in the post test.

Keywords: BLS, public transport workers, planned teaching programme, pre-experimental study, knowledge, skill

Introduction

Globally, Cardiovascular disease (CVD) is the leading cause of death. The prevalence of coronary artery disease (CAD), a major contributor to CVD, is related to the increasing prevalence of modifiable risk factors, such as diabetes mellitus, hypertension, hypercholesterolemia, smoking, alcohol use, obesity and a sedentary lifestyle. However, certain risk factors may predominate in certain regions. Out -of-hospital cardiac arrest (OHCA) is a global public health issue (1).

Basic life support (BLS) is a level of medical care used for victims of life-threatening illnesses or injuries until they can be given full medical care at a hospital. It is generally

provided by trained first responders, including paramedics, emergency medical technicians (EMTs), and bystanders who have received proper training.

Basic life support is the provision of treatment designed to maintain adequate circulation and ventilation to the patient in cardiac arrest. BLS can be given without the use of specialized equipment or drugs and provides oxygenation and prevent brain death. It includes recognition of signs of sudden cardiac arrest, heart attack, stroke and foreign-body airway obstruction and cardiopulmonary rescuscitation (2).

"CPR is an important life-saving skill that may decrease morbidity and mortality associated with OHCA. A significant portion of the country has recognized the importance of implementing CPR training into public people to increase the overall population of those trained" (31).

Cardiovascular disease (CVD) is the leading cause of death globally, taking an estimated 17.9 million people are affected in each year. WHO (2023) reported that more than four out of five people suffered with CVD and deaths are due to heart attacks and strokes and one third of these deaths occur prematurely in people under 70 years of age (32).

When the heart stop beating blood stops flowing throughout the body. Cardiopulmonary resuscitation (CPR) is when a person performs chest compressions and breathing into a patient who has no pulse or who isn't breathing. Thirty chest compressions followed by two rescues breathing into the patient will carry the oxygenated blood throughout the body and into the brain. It's important to note that death is most likely to occur after 10 minutes of loss of oxygen to the brain. From 0 to 4 minutes brain damage is virtually non-existent, from 4 to 6 minutes brain damage is very possible and from 6 to 10 minutes brain damage is expected (33, 44).

A quasi-experimental study was conducted to assess the effectiveness of lecture cum demonstration on knowledge regarding basic life support among auto rickshaw drivers in selected areas of Pune city, with the sample size was 100 rickshaw drivers by using purposive sampling technique. Self- structured questionnaire used to assess the knowledge on basic life support. Lecture cum demonstration was given. The post-test was carried out on same participants using same questionnaire. The study result revealed that scores of pre-test and post-test compared to assess the effectiveness of lecture cum demonstration. In the pretest about 80% has poor knowledge, 20% has average knowledge and 0% has good knowledge. Where during post-test 88 % has good knowledge, 12 % has average knowledge and 0% has poor knowledge. Hence it was proved that lecture cum demonstration is effective. In association of pre-interventional knowledge score, none of the demographic variable showed association. The study concluded that lecture cum demonstration was effective and this increased the knowledge of auto rickshaw drivers and they were confident to perform basic life support during emergency situation and they can save the life of individual (3).

Materials and methods

A pre-experimental one-group pretest and post-test design was conducted at the Public Road Transport Corporation in Puducherry. A total of 60 participants, including drivers and conductors, were selected for the study. The study was carried out in February 2025. Participants were selected based on specific inclusion and exclusion criteria. During the pre-test phase, socio-demographic variables were assessed, and a BLS knowledge questionnaire was administered over two days. The participants were then divided into six groups, and a planned teaching program, including demonstrations using a CPR manikin, was conducted for two days. The post-test data were collected five days later.

Results and discussion

Out of the 60 public transport workers who particiated in the study, Majority of public transport workers 20(33.3%) were in the age group 31 –40years, 43(71.7%) were male, Educational Status 29(48.3%) were High School Education, 29(48.3%) were Rural and 60(100%) were not had Previous knowledge on BLS.

TABLE 1 | Frequency and percentage distribution of socio-demographic variables among public transport workers (n = 60).

Sl. no	Socio-demographic variables	Frequency (n)	Percentage (%)
1	**Age in Years**		
	18–30 years	7	11.7
	31–40years	20	33.3
	41–50years	18	30
	51–60 years	15	25
	>61 years	0	0
2	**Gender**		
	Male	43	71.7
	Female	17	28.3
	Transgender	0	0
3	**Education**		
	No Formal Education	0	0
	Primary Education	0	0
	Middle School Education	4	6.7
	High School Education	29	48.3
	Higher Secondary Education	22	36.7
	Degree (UG, PG, etc.) and above	5	8.3
4	**Place of residence**		
	Urban	31	51.7
	Rural	29	48.3
5	**Previous knowledge on BLS**		
	Yes	0	0
	No	60	100

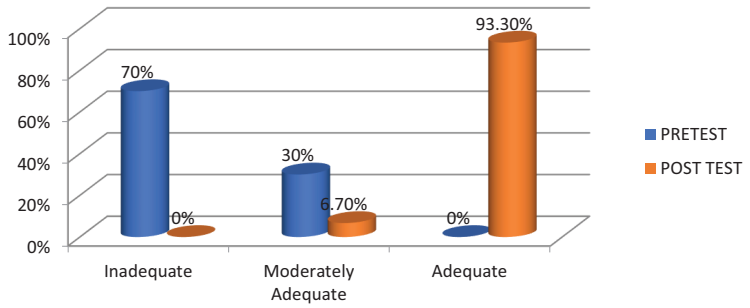

FIGURE 1 | Percentage wise distribution of pre-test and post-test the level of knowledge regarding BLS among public transport workers.

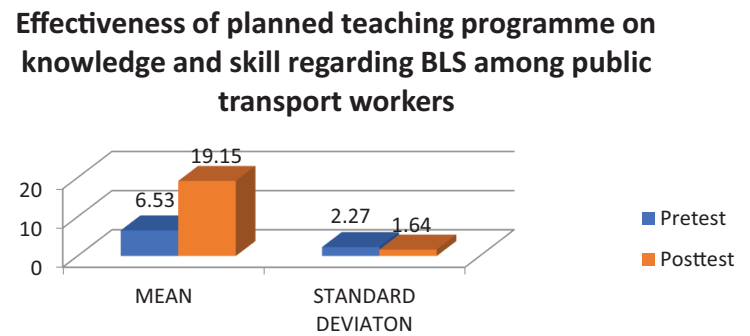

FIGURE 2 | Effectiveness of planned teaching programme on knowledge and skill regarding BLS among public transport workers (n = 60).

In pretest, Majority of public transport workers 42(70%) had Inadequate and 18(30%) had Moderately Adequate knowledge and 0 (0%) had adequate knowledge. The pre-test mean value of knowledge regarding BLS among public transport workers is 6.53 and standard deviation was 2.27.

In post- test, Majority of public transport workers 56(93.3%) had adequate knowledge and 4(6.7%) had Moderately adequate knowledge and none of them (0) had inadequate knowledge and the post-test mean value of the level of knowledge regarding BLS among public transport workers is 19.15 and standard deviation was 1.64 (**Figure 1**).

Table 2 shows that frequency and percentage distribution of skill regarding BLS among public transport workers.

Majority of the public transport workers 51(85%) had Excellent grade of skill and 9(15%) had Very good skill with the mean value of 9.57 and the standard deviation value was 0.74.

Table 3 shows that, Effectiveness of planned teaching programme on knowledge and skill regarding BLS among public transport workers.

TABLE 2 | Frequency and percentage distribution of the grading of skill regarding BLS among public transport workers (n = 60).

GRADING OF SKILL	N	%
Excellent	51	85
Very good	9	15
Mean Standard deviation	9.57± 0.74	

TABLE 3 | Effectiveness of planned teaching programme on knowledge regarding BLS among public transport workers (n = 60).

	Mean	Standard deviaton	Mean difference	't' Value Paired -t test	Df	'p' Value
Pretest	6.53	2.27				0.001**
Posttest	19.15	1.64	12.61	34.61	59	HS

**p < 0.001 highly significant.

The pre-test, the mean score of planned teaching programme on knowledge regarding BLS among public transport workers was 6.53 and standard deviation was 2.27.

The post-test, the mean score was 19.15 and standard deviation was 1.64. The calculated paired 't' test value was 34.61 with the p value of 0.001 which shows highly significant (**Figure 2**).

Table 4 shows that association between the pre-test level of knowledge regarding basic life support with selected socio-demographic variables.

Association between level of knowledge and demographic variables of public transport workers findings depicts that association of age with pre-test knowledge levels at DF = 3, $\chi 2$= 2.02 which is no significant at < 0.56 levels. Associating gender with the pre-test knowledge score at a DF = 1, $\chi 2$ = 0.004, was no significant at > 0.95 levels. Associating education with the pre-test knowledge score at a DF = 3, $\chi 2$ = 3.67, was no significant at > 0.29 levels. Associating place of residence with the pre-test knowledge score at a DF = 1,

TABLE 4 | Association between the pretest level of knowledge regarding BLS with selected socio-demographic variables.

Sl. no.	Socio-demographic variables	Pre-test level of knowledge						Chi-square X^2 and p-value
		Inadequate		Moderate		Adequate		
		N	%	N	%	n	%	
1	**Age in Years**							X^2=2.02
	18–30 years	4	9.5	3	16.7	0	0	Df=3
	31–40years	15	35.7	5	27.8	0	0	p =0.56
	41–50years	14	33.3	4	22.2	0	0	NS
	51–60 years	9	21.5	6	33.3	0	0	
	>61 years	0	0	0	0	0	0	
2	**Gender**							X^2=0.004
	Male	30	71.4	13	72.2	0	0	Df=1
	Female	12	28.6	5	27.8	0	0	p =0.95
	Transgender	0	0	0	0	0	0	NS
3	**Education**							X^2=3.67
	No Formal Education	0	0	0	0	0	0	Df=3
	Primary Education	0	0	0	0	0	0	p =0.29
	Middle School Education	4	9.5	0	0	0	0	NS
	High School Education	22	52.4	7	38.9	0	0	
	Higher Secondary Education	13	31	9	50	0	0	
	Degree (UG, PG, etc.) and above	3	7.1	2	11.1	0	0	
4	**Place of residence**							X^2=0.029
	Urban	22	52.4	9	50	0	0	Df=1
	Rural	20	47.6	9	50	0	0	p =0.86
								NS
5	**Previous knowledge on BLS**							Constant
	Yes	0	0	0	0	0	0	
	No	42	100	18	100	0	0	

*p < 0.05 significant, *p < 0.001 highly significant.

$\chi 2 = 0.029$, was no significant at > 0.86 levels. Depicts that the socio-demographic variables had not shown statistically significant association between the pretest level of knowledge regarding BLS with selected socio-demographic variables.

Conclusion

The main objective of the study was to assess the effectiveness of planned teaching programme on knowledge and skill regarding BLS among public transport workers at Puducherry. The statistical analysis revealed that there is a significant difference between the pre-test and post-test levels of knowledge and skill, which indicated that the given planned teaching programme was effective.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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