

Effectiveness of Planned Teaching on Programme Basic Life Support Among Gymnasium Users - A Quasi-Experimental Study

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ABSTRACT

The current study evaluates the efficacy of a structured teaching program aimed at enhancing knowledge and skill in Basic Life Support among Gymnasium users in selected facilities in Wayanad. The objectives include assessing the knowledge and skill levels of Gymnasium users in Basic Life Support, evaluating the effectiveness of the structured teaching program, and determining any associations between post-test knowledge and specific demographic variables. Employing a quantitative research approach with a one-group pre-test and post-test design, the study utilized a convenient sampling technique, resulting in a sample size of 50 participants. A Knowledge Questionnaire was administered to assess knowledge, while a Checklist was used to evaluate the skill level of Gymnasium users. Data analysis involved descriptive and inferential statistics, revealing no significant association between post-test knowledge and most demographic variables, except for age group and marital status. The findings indicate a notable effectiveness of the planned teaching program in enhancing knowledge and skill related to Basic Life Support among Gymnasium users in selected facilities in Wayanad.

Keywords - Basic life support, assess, skill, knowledge, gymnasium users

INTRODUCTION

In the world, cardiac diseases stand as the leading causes of death^[1]. The incidence of sudden cardiac arrest has risen across all age groups, underscoring the need for prompt emergency interventions. Effective cardiopulmonary resuscitation (CPR) at the scene significantly reduces mortality rates associated with cardiac arrest^[2].

According to recommendations from the American Heart Association and the Centre for Disease Control and Prevention, engaging in 150 minutes of moderate exercise daily is advised for adults and children to mitigate the risk of cardiovascular diseases and strengthen heart muscles^[3].

However, intense exercise and overexertion may elevate the risk of acute cardiac problems^[4].

This study focuses on the significance of learning and practicing Basic Life Support (BLS) and CPR techniques among non-medical professionals, particularly gymnasium users. Acquiring knowledge about BLS is crucial for gymnasium users to perform life-saving actions in emergencies before the arrival of medical teams. The study aims to assess the knowledge and skills of gymnasium users regarding BLS.

The data from the National Crime Records Bureau (NCRB) for the year 2022 highlights the alarming number of deaths in India

attributed to heart attacks, indicating the urgency of addressing this issue [5]. A study conducted by Rao et al. in 2012 estimated the mortality rate due to Sudden Cardiac Death in India at 10.3%, with a significant proportion occurring in individuals under 50 years of age [6].

Recent incidents, such as the untimely death of actor Siddhaanth Vir Surryavanshi while exercising at a gymnasium, underscore the urgency of CPR training for gymnasium users [7]. Several other cases of sudden cardiac arrest during gym workouts have been reported, emphasizing the need for preparedness in such situations.

CPR, as part of basic life support, plays a critical role in saving lives when faced with a cardiac emergency. The rising incidence of heart attacks during exercise highlights the necessity of CPR training for gymnasium users. Proper education and training in these life-saving skills are essential to prevent fatalities and adverse outcomes [8].

A study conducted by Raymond Pranata et al. in Indonesia found that a majority of participants from the general public expressed a keen interest in learning basic life support techniques, emphasizing its importance [9].

Problem Statement

"A study to assess the effectiveness of planned teaching program on knowledge and skill regarding basic life support among gymnasium users at selected gymnasium in Wayanad"

Objectives

1. To assess the knowledge and skill on basic life support among gymnasium users at selected gymnasiums in Wayanad.
2. To determine the effectiveness of the planned teaching program on basic life support among gymnasium users.
3. To find the association between post-test knowledge with selected demographic variables.

MATERIALS AND METHODS

To accomplish the study's aim, a quasi-experimental investigation was conducted. The study instrument comprised three sections: Tool 1 consisted of demographic variables with 12 items, Tool 2 was a structured questionnaire assessing knowledge regarding basic life support with 30 questions, and Tool 3 was a checklist evaluating the skill of basic life support among gymnasium users with 20 criteria. Prior permission was obtained from the manager of the concerned gymnasium, and institutional ethical committee clearance was secured. The sample size was set at 50, selected through convenient sampling technique based on inclusion and exclusion criteria. A pre-test was conducted to evaluate existing knowledge. Subsequently, a planned teaching program about Basic Life Support, including a 30-minute demonstration, was administered. After 14 days, a post-test was conducted. Data analysis will be performed using SPSS 26.0.

RESULT

Table 1: Distribution of Demographic variables n=50

Sl. no	Demographic characteristics	Categories	Frequency	Percentage
1.	Age	18-28	29	58%
		28-38	7	14%
		Above 38	14	28%
2.	Educational status	Primary	2	4%
		Secondary	4	8%
		Higher secondary	10	20%
		Under graduate	34	68%
3.	Gender	Female	10	20%
		Male	39	78%
		Others	1	2%
4.	Occupation	Farmer	12	24%

		Business	12	24%
		Professional	19	38%
		Others	7	14%
5.	Place of residence	Municipality	20	40%
		Panchayat	30	60%
6.	Monthly income	5001-10000	21	42%
		10001-25000	19	38%
		25001-50000	7	14%
		50001-100000	3	6%
7.	Duration of exercise per day	less than 1hour	27	54%
		1-2 hour	22	44%
		2-4 hours	1	2%
8.	Reason for using gymnasium	Personal preference	35	70%
		Health condition	14	28%
		Peer group influence	1	2%
9.	Marital status	Married	27	54%
		Unmarried	20	40%
		Divorced	3	6%
10.	Religion	Muslim	13	26%
		Christian	19	38%
		Hindu	17	34%
		Others	1	2%
11.	BLS knowledge	Yes	14	28%
		No	36	72%

Out of the 50 participants, 58% fall into the 18-28 age group, 14% belong to the 28-38 age bracket, and the remaining 28% are above 38 years old. Regarding educational attainment, 4% have completed primary education, 8% have attained secondary education, 20% have completed higher secondary education, and the majority, accounting for 68%, have an undergraduate level of education.

In terms of gender distribution, 20% of the gymnasium users are female, while the majority, comprising 78%, and are male, with the remaining 2% falling into other categories. Regarding occupation, 24% are farmers, another 24% are engaged in business, 38% are employed in professional jobs, and 14% fall into other categories.

Regarding residential location, 40% reside in municipalities, while the remaining 60% live in panchayats. In terms of monthly income, 42% fall into the category of 5000-10000,

38% belong to the 10001-25000 bracket, 14% earn 25001-50000, and the remaining 6% earn 50001-100000.

In terms of exercise duration per day, 54% engage in exercise for less than 1 hour, 44% exercise for 1-2 hours, and the remaining 2% exercise for 2-4 hours. The primary reasons for using the gymnasium are personal preference (70%), health conditions (28%), and peer group influence (2%).

Regarding marital status, 54% of the gymnasium users are married, 40% are unmarried, and 6% are divorced. Religious affiliation shows that 26% identify as Muslim, 38% as Christian, 34% as Hindu, and the remaining 2% belong to other religions.

In terms of previous knowledge of Basic Life Support (BLS), 28% of gymnasium users have prior knowledge, while the majority, accounting for 72%, do not.

Figure 1 illustrates the pre- and post-test knowledge scores for Basic Life Support (BLS). n=50

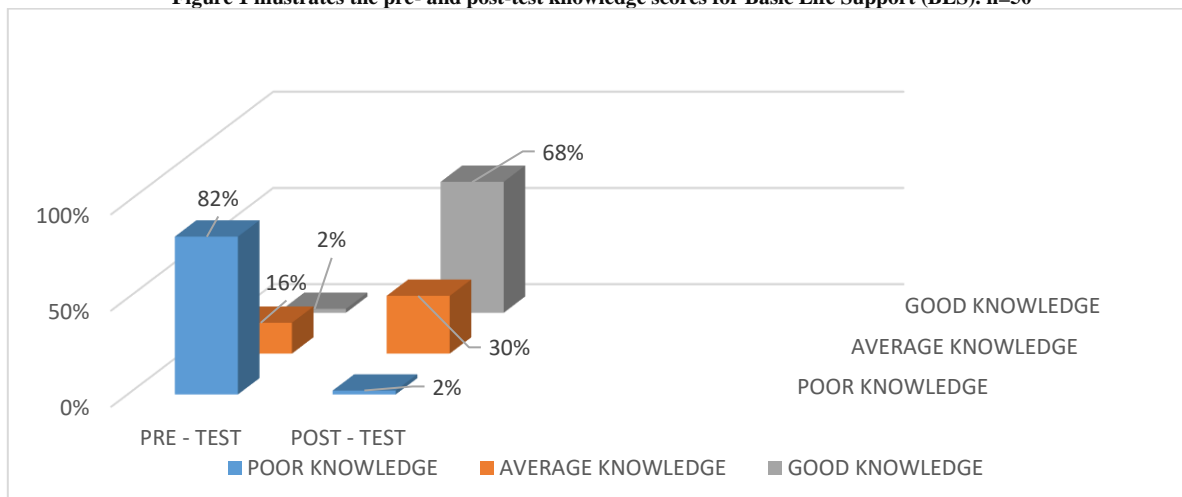


Figure 1 illustrates the knowledge levels of gym users in the pre-test, with 82% exhibiting poor knowledge, 16% displaying average knowledge, and 2% demonstrating

good knowledge. In the post-test, 2% exhibit poor knowledge, 30% show average knowledge, and 68% exhibit good knowledge.

Figure 2 illustrates the pre- and post-test skill scores for Basic Life Support (BLS) n=50

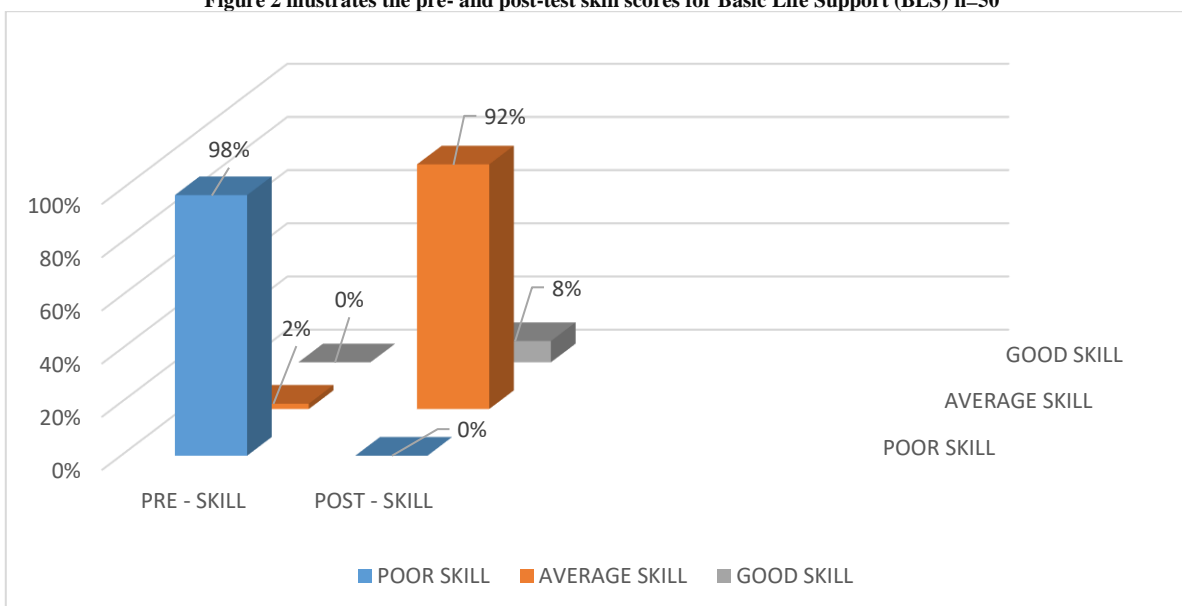


Figure 2 illustrates the pre-test CPR skill levels among gym users, with 98% demonstrating poor skill, 2% exhibiting

average skill, and none displaying good skill. In the post-test, 92% show average skill, while 8% exhibit good skill.

Table 2 depicting the effectiveness of planned teaching programme for basic life support n=50

SL.NO	GROUP	FREQUENCY (N)	MEAN±SD	P- VALUE
1.	pre-test knowledge	50	13.34 ± 3.46	<0.001
2.	post-test knowledge	50	21.60 ± 4.403	
3.	pre-test skill	50	1.56 ± 1.740	
4.	post-test skill	50	12.06± 2.676	

Table 2 shows that the structured teaching programme regarding knowledge on basic life support among gymnasium users is

effective as the subjects on pre-test knowledge has a mean of 13.34 and the standard deviation of 3.46 and it shows the

significant increase in post-test knowledge with estimated mean 21.60 and standard deviation of 4.403 . Regarding skill on basic life support the pre-test skill score has a mean of 1.56 and standard deviation of 1.740 and a

significant increase in post-test skill is noted with mean of 12.06 and standard deviation of 2.676.2.06 and the standard deviation of 2.676.

Table 3: association of demographic variables with post-test knowledge n=50

SL NO	DEMOGRAPHIC VARIABLE	POOR	AVERAGE	GOOD	p- VALUE
1.	Age				0.012
	18-28	0	14	15	
	28-38	0	1	6	
	Above 38	1	0	13	
2.	Education				0.172
	Primary	1	1	0	
	Secondary	0	2	2	
	Higher secondary	0	1	9	
	Under graduate	0	11	23	
3.	Gender				0.268
	Female	0	4	6	
	Male	0	11	28	
	Others	1	0	0	
4.	Occupation				0.097
	Farmer	1	3	8	
	Business	0	3	9	
	Professional	0	4	15	
	Others	0	5	2	
5.	Place of residents				0.011
	Municipality	0	2	18	
	Panchayat	1	13	16	
6.	Monthly income				0.114
	5000-10000	1	7	13	
	10001-25000	0	8	11	
	25001-50000	0	0	7	
	50001- 100000	0	0	3	
7.	Duration of exercise per day				0.305
	Less than 1 hour	0	9	18	
	1-2 hours	0	6	16	
	2-4 hours	1	0	0	
8.	Reason for using gym				0.730
	Personal preference	1	11	23	
	Health condition	0	4	10	
	Peer group influence	0	0	1	
9.	Marital status				0.003
	Married	0	3	24	
	Unmarried	0	11	9	
	Divorce	1	0	1	
10.	Religion				0.865
	Muslim	0	3	10	
	Christian	0	6	13	
	Hindu	0	6	11	
	Others	1	0	0	
11.	BLS Knowledge				0.726
	Yes	0	5	9	
	No	1	10	25	

Table 3 shows that while associating the demographic variables with post test score there is a significant association between post-test knowledge level and age group with a p-value of 0.012. Additionally, there is a significant association between post-test knowledge with marital status and place of residents with a p-value of 0.003 and 0.011 respectively.

DISCUSSION

Based on the initial objective, 82% of gym users demonstrated a poor level of knowledge in the pre-test, while 16% exhibited an average level of knowledge, and only 2% showed good knowledge. Regarding CPR skills, 98% of gym users initially had poor skills, 2% had average skills, and none had good skills. This was

corroborated by a study conducted among the non-medical population in Ethiopia, led by Mekonnen CK, which indicated that the participants' knowledge scores were below the average. It underscores the necessity for planned interventions aimed at enhancing community knowledge to significantly reduce mortality in emergencies^[10]

The second objective delineates the evaluation of the effectiveness of a structured teaching program among gym users. The results demonstrate the program's efficacy, as indicated by the mean and standard deviation of pre- and post-test knowledge scores (13.34 +- 3.46 and 21.60 +- 4.403, respectively), as well as pre- and post-test skill scores (1.56 +- 1.74 and 12.06 +- 2.67, respectively), showing significant improvement with a P-value 0.001. This observation is corroborated not only by a study conducted among school teachers in West Bengal by Babita Biswas et al, but also by another study conducted among nurses in Nepal by Sapkota S et al. These findings suggest that a structured teaching program on basic life support yields effective outcomes, as evidenced by the pre- and post-test scores of these studies^[11, 12]

The study's third objective aims to explore the relationship between basic life support knowledge and certain demographic factors. Upon analyzing the association of these demographic factors, it was discovered that there is a notable association between age group (0.012) and marital status (0.003) with post-test knowledge. This finding aligns with a study conducted among the general public in an Arab nation by Nour Shaheen et al., which suggests that in structured teaching programs on basic life support, demographic variables such as previous knowledge and age were linked to pre-test knowledge scores.^[13]

CONCLUSION

The results of this study demonstrate the effectiveness of implementing a structured teaching program focused on improving knowledge and skills related to Basic Life Support (BLS) among gymnasium users.

This efficacy is evident in the scores of both pre- and post-tests. Furthermore, a significant association is identified between post-test knowledge and demographic variables such as age and marital status. Continuous reinforcement initiatives within the general public have the capacity to foster significant improvements in their response to emergency situations.

Declaration by Authors

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