

# “Awareness About Basics Life Support In Sports In Coaches And Fitness Trainers”

(A Project report submitted towards partial fulfilment of internship requirement for the Bachelor of Physiotherapy)

UNDER THE GUIDANCE OF

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## INTRODUCTION

Physical activity, sports training, and fitness routines have become increasingly popular worldwide, contributing significantly to improved health, well-being, and quality of life. However, sport and fitness settings also carry inherent risks: athletes, trainees, and even spectators may suffer from sudden medical emergencies—such as sudden cardiac arrest (SCA), choking, heat stroke, traumatic injuries, or collapse due to underlying cardiovascular conditions. In such situations, the first minutes are crucial; survival often depends heavily on whether immediate and appropriate Basic Life Support (BLS) is rendered. <sup>(1)</sup>

What is Basic Life Support (BLS)?

BLS refers to the set of non-invasive, immediate life-saving steps taken by a bystander, coach, trainer or first responder to maintain circulation and breathing until professional help arrives. Core components include assessing situation safety, checking responsiveness and breathing, calling for help, performing chest compressions, rescue breaths (where applicable), and using an automated external defibrillator (AED) if available. <sup>(2)</sup>

Basic Life Support (BLS) is essential in sports due to the inherent risks associated with physical exertion and athletic activities, which can abruptly trigger life-threatening emergencies such as sudden cardiac arrest, choking, traumatic injuries, or heat stroke. In these critical situations, the immediate response is often the difference between life and death, with survival heavily dependent on the timely initiation of BLS interventions. Coaches and fitness trainers, who are almost always present at practices, competitions, and training sessions, become the first line of defense and immediate responders during such emergencies,

thereby necessitating strong BLS knowledge and skills to provide effective aid until professional medical help arrives. <sup>(2)</sup>

Sports activities place athletes under physical stress, which can unmask underlying health conditions, particularly cardiovascular issues. Sudden cardiac arrest is recognized as a leading cause of death among young athletes and can happen unexpectedly regardless of age or fitness level. Since emergency medical services often take several minutes to arrive on the scene, coaches and trainers equipped with BLS and CPR competencies can deliver crucial chest compressions and use automated external defibrillators (AEDs) to sustain life and increase survival chances. BLS training ensures that these professionals not only act swiftly but also apply appropriate techniques, reducing the risk of complications and improving outcomes during emergencies.

Beyond the life-saving importance, incorporating BLS training for coaches and trainers fosters a culture of safety, responsibility, and preparedness within the sports community. It enhances athlete confidence and provides peace of mind to families knowing that trained personnel are ready to respond effectively. Moreover, many sports organizations and regulatory bodies increasingly mandate BLS certification, recognizing it as a fundamental requirement for ensuring athlete welfare and compliance with safety standards. Continuous BLS education and skill refreshers ensure that trainers remain proficient with evolving guidelines and maintain readiness to act decisively in urgent situations, underscoring its critical importance in sports settings.

#### Why coaches and fitness trainers are critical actors

Sport coaches and fitness trainers spend prolonged time in close contact with individuals engaged in physical exertion—which can unmask underlying cardiovascular issues. They are often first witnesses to emergencies on playing fields, gym floors, swimming pools, or outdoor training grounds. Since response time in a medical emergency is often the difference between life and death, the coach or trainer being capable and willing to act is of great importance. <sup>(3)</sup>

Given their essential role, it is imperative to ensure that coaches and fitness trainers possess a high level of **knowledge and awareness regarding BLS protocols and procedures**. This study, therefore, aims to evaluate the current level of **Basic Life Support awareness and competency among coaches and fitness trainers** in sports settings to identify potential knowledge gaps and inform the development of targeted, mandatory training programs necessary to enhance safety and emergency preparedness within the sports and fitness community.

The findings of this research have direct implications for athlete safety and health policy. By assessing knowledge gaps and attitudes toward BLS, sport organizations and governing bodies can tailor training

programs, enforce certification requirements, and allocate resources such as automated external defibrillators (AEDs) more effectively. Improved BLS awareness among coaches and trainers fosters a culture of safety, responsibility, and readiness, ultimately safeguarding not only athletes but also spectators and other participants. This research also supports compliance with evolving sports safety regulations and contributes to standardizing emergency protocols across facilities and teams.<sup>(5)</sup>

Finally, this study promotes professional growth and credibility for coaches and trainers, underscoring the role of continuous education and recertification in maintaining competency. It emphasizes the transition from willingness to act to competent, effective action during emergencies—reducing morbidity and mortality risks associated with delayed or improper care. Overall, the study serves as a catalyst for systematic improvements in sports emergency preparedness, highlighting that saving lives in sports is not just a possibility but an achievable standard through informed, trained, and confident caregivers on the field.<sup>(5)</sup>

## **NEED OF STUDY**

The need of study is to find out the awareness and knowledge about the basic life support in sports in coaches and fitness trainers.

Targeted Interventions the study will identify gaps in BLS knowledge, enabling targeted interventions to improve awareness and skills. Lack of BLS Training many coaches and trainers lack adequate BLS training, which can lead to delayed or inappropriate response in emergency situations.

### **Aim**

To assess and identify the awareness and knowledge about Basic Life Support among sport coaches and fitness trainers.

### **Objectives**

To evaluate the level of knowledge of sport coaches and fitness trainers regarding BLS by Using a structured, pre-validated questionnaire.

### **Hypothesis**

Alternative Hypothesis (H<sub>1</sub>)-

- There is a significant lack of awareness and gaps in knowledge about Basic Life Support among sport coaches and fitness trainers.

## **PROCEDURE**

Identify the sports facilities, gyms, clubs, and academies in the study area.

Approach eligible sport coaches and fitness trainers aged 18-60 year and explain the purpose of the study. Obtain written informed consent from willing participants. Administer a structured, pre-validated questionnaire covering. Demographics (age, gender) Knowledge of BLS (recognition of cardiac arrest, CPR steps, AED use) Attitude toward performing BLS training and experience with emergencies. Collect completed questionnaires and check for completeness on-site. Enter data into a secure database for analysis. Calculate the prevalence of adequate BLS awareness among participants. Maintain confidentiality and store all data securely

## **REVIEW OF LITERATURE**

1. Aranda-García S, Herrera-Pedroviejo E, Abelairas-Gómez C. et.al., Basic life-support learning in undergraduate students of sports sciences: efficacy of 150 minutes of training and retention after eight months. International journal of environmental research and public health. 2019 Dec;16(23):4771. Several professional groups, which are not health professionals, are more likely to witness situations requiring basic life support (BLS) due to the nature of their job. The aim of this study was to assess BLS learning after 150 min of training in undergraduate students of sports science and their retention after eight months. Participants trained on BLS (150-min session: 30 theory, 120 practice). After training (T1) and after 8 months (T2), we evaluated their performance of the BLS sequence and two minutes of cardiopulmonary resuscitation (CPR). At T1, the 23 participants presented a mean score of  $72.5 \pm 21.0\%$  in the quality of the CPRs (compressions:  $78.6 \pm 25.9\%$ , ventilation:  $69.9 \pm 30.1\%$ ). More than 90% of the participants acted correctly in each step of the BLS sequence. At T2, although the overall quality of the CPR performed did not decrease, significant decreases were observed for: correct hand position (T1:  $98.2 \pm 8.8$ , T2:  $77.2 \pm 39.7\%$ ), compression depth (T1:  $51.4 \pm 7.9$ , T2:  $56.0 \pm 5.7$  mm), and compression rate. They worsened opening the airway and checking for breathing. In conclusions, participants learned BLS and good-quality CPR after the 150-min training session. At eight months they had good retention of the BLS sequence and CPR skills. Training on airway management and the position of the hands during CPR should be reinforced.

2. Sanati A, Jaber A A, Bonabi TN. Et.al., 2022. High school basic life support training: Is the trainer's experience of cardiopulmonary resuscitation in the actual setting important? A randomized control trial. Journal of Education and Health Promotion. 2022 Jan 1;11(1):165. Although basic life support (BLS) has been taught in school by a variety of professionals, it is still unclear that, whether the instructor's previous cardiopulmonary resuscitation (CPR) experience is an important factor. This study aimed to compare the effect of BLS training, based on trainer experience in actual situations, on knowledge and skills of secondary high school students. Although basic life support (BLS) has been taught in school by a variety of professionals, it is still unclear that, whether the instructor's previous cardiopulmonary resuscitation (CPR) experience is an important factor. This study aimed to compare the effect of BLS training, based on trainer experience in actual situations, on knowledge and skills of secondary high school students.

3. Yazla M, Şafak T, Koçak AO, Katipoglu B. et.al., 2025. Retention of knowledge after basic life support course for professional football coaches: A prospective study. The European Research Journal. 2025 Mar 1:1-9 Knowledge gain was significant immediately after the BLS course. There was no difference between the two groups in the post-training test results. Overall level of knowledge decreased significantly after three and six months. While there was a 5-point decrease in the retention test performed after three months, a 12-point reduction after six months..

4. Ahmed Sayed Khashaba, Mogbel Khalaf Alharbi1, et.al., 2020. Introduction: Sudden cardiac arrest is a life-threatening emergency and a leading cause of mortality worldwide. According to the World Health Organization, cardiovascular disease is the most common cause of death in Saudi Arabia. Results and Discussion: A total of 429 respondents completed the questionnaire: 80% were females and majority were 21–30 years old (39.4%). Our results demonstrated that only 22% had previous BLS training of which 43% had good knowledge and 56% had poor knowledge about BLS. There was a significant association between the level of BLS knowledge with gender ( $P = 0.007$ ), education ( $P = 0.006$ ), and occupation ( $P = 0.049$ ). Nearly 84.4% of the respondents were aware that their knowledge in BLS was insufficient. Conclusions: Overall, the level of knowledge and awareness among nonhealth-care professionals in Riyadh are poor. Introduction of BLS courses in the education curriculum is highly recommended.

5. Subki AH, Mortada HH, Alsallum MS, et.al., 2018. Basic Life Support Knowledge Among a Nonmedical Population in Jeddah, Saudi Arabia: Cross-Sectional Study. Background: Providing basic life support (BLS) at the site of an accident is crucial to increase the survival rates of the injured people. It is especially relevant when health care is far away. Conclusions: This study demonstrated that the theoretical knowledge level of BLS among the general population in Jeddah was below average. There is a critical need to increase the public's exposure to BLS education through raising awareness campaigns and government-funded training programs that aim to curb the incidence of out-of-hospital cardiac arrest mortalities in the Saudi community.

## **METHODOLOGY**

Study design: A cross-sectional study.

Study type: prevalence

Setting & duration 3-4 months : Conducted in sports academies, gyms, and clubs in Pune.

Population: sport coaches and fitness trainers. Sample Size: 100

## **MATERIALS**

Pen and paper

Consent form

## **INCLUSION AND EXCLUSION CRITERIA**

### **Inclusion criteria:**

Age 18-60 currently working as coach/trainer, consented.

### **Exclusion criteria:**

Healthcare professionals acting as trainers,

## **DATA ANALYSIS**

Table No. 1: Distribution of subjects according to gender

Response	No. of responses Given By Participants
Yes	68
No	32
Total	100

Graph No. 1: Distribution of subjects according to gender

### **Distribution of subjects according to gender.**

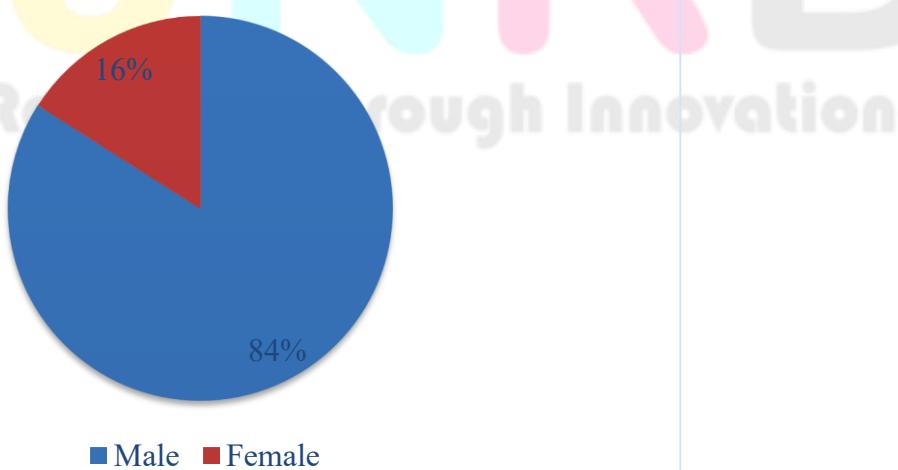
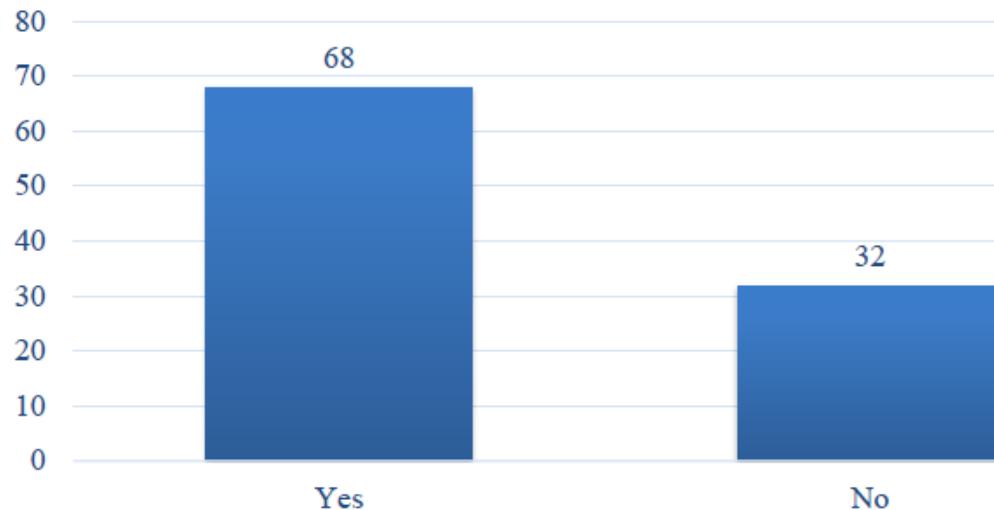


Table No. 2: Have you ever taken a BLS training course?

Response	No. of responses Given By Participants
Yes	68
No	32
Total	100

training course ?

### Have you ever taken a BLS training course ?

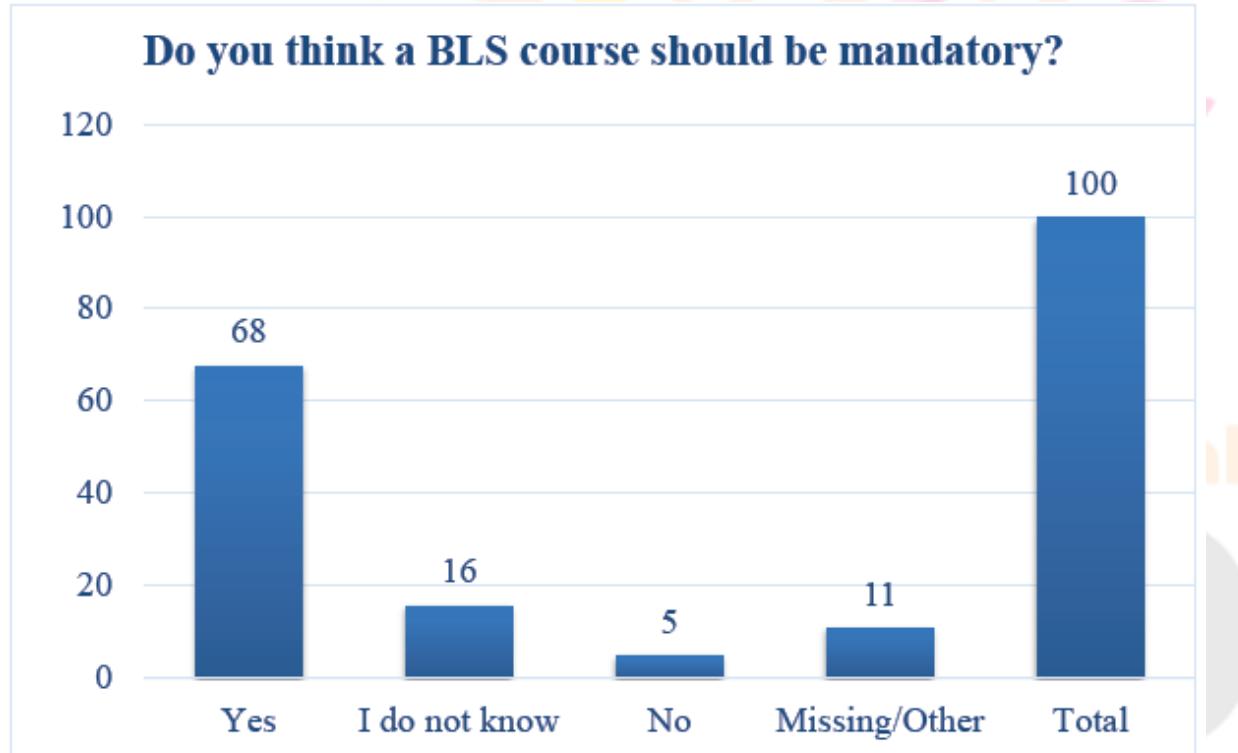


**Research Through Innovation**

Table No. 3: Do you think a BLS course should be mandatory?

Response	No. of responses Given by Participants
Yes	68
I do not know	16
No	5
Missing/Other	11
Total	100

Graph No. 3: Do you think BLS course should be mandatory?

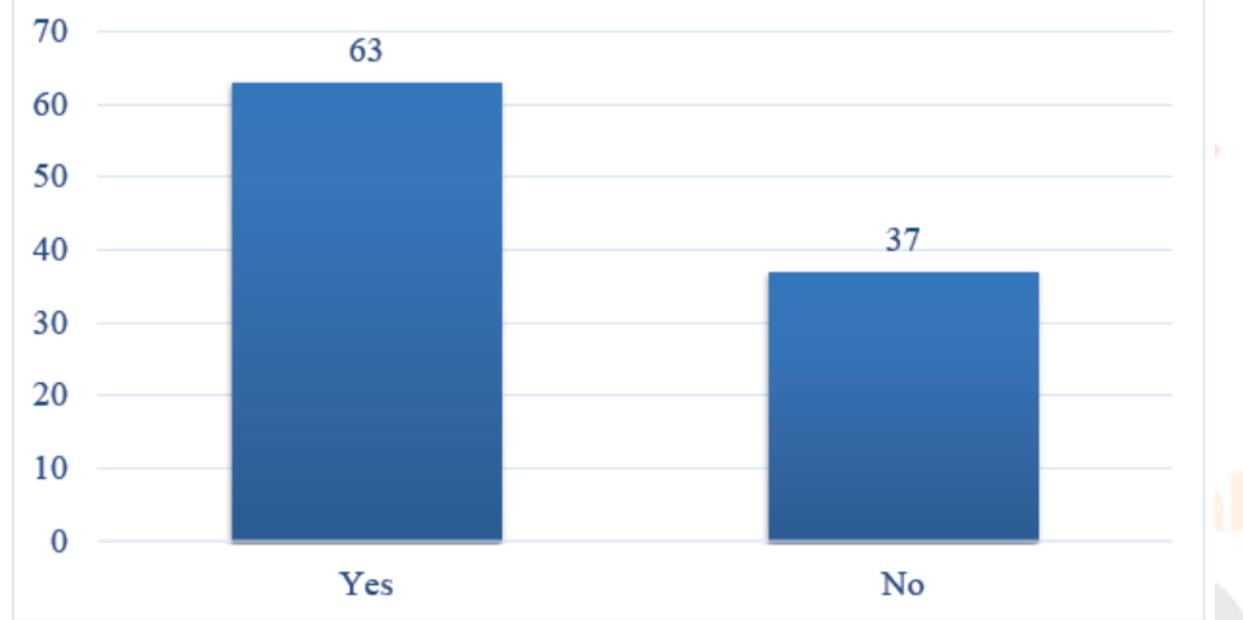


**Research Through Innovation**

Table No. 4: Have you ever been in a situation that required you to do CPR?

Response	No. of Responses Given By Participants
Yes	63
No	37
Total	100

### Have you ever been in a situation that required you to do cardiopulmonary resuscitation?



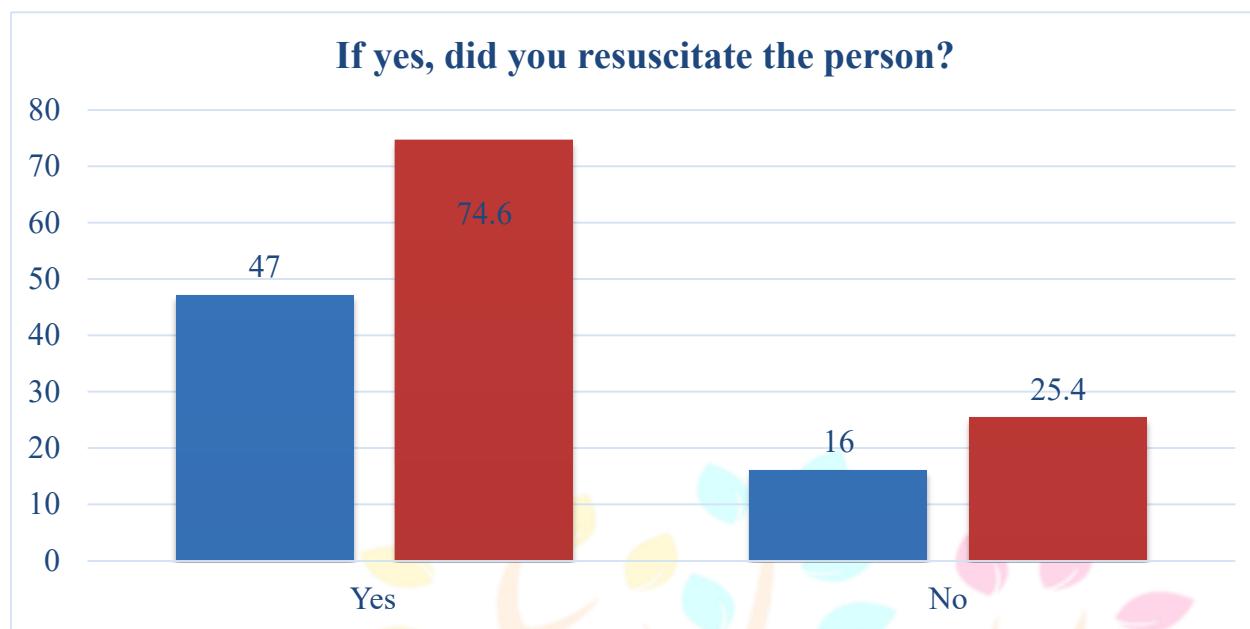
### CONCLUSION

Among the 63 individuals who encountered a situation requiring CPR, 47 individuals attempted resuscitation, while 16 individuals did not.

Table No. 5: If Yes, did you resuscitate the person?

Response	No. of Responses Given By Participants	Percentage (%)
Yes	47	74.60
No	16	25.40
<b>Total Relevant Count</b>	<b>63</b>	<b>100.00</b>

Graph No. 5: If Yes, did you resuscitate the person ?



#### CONCLUSION

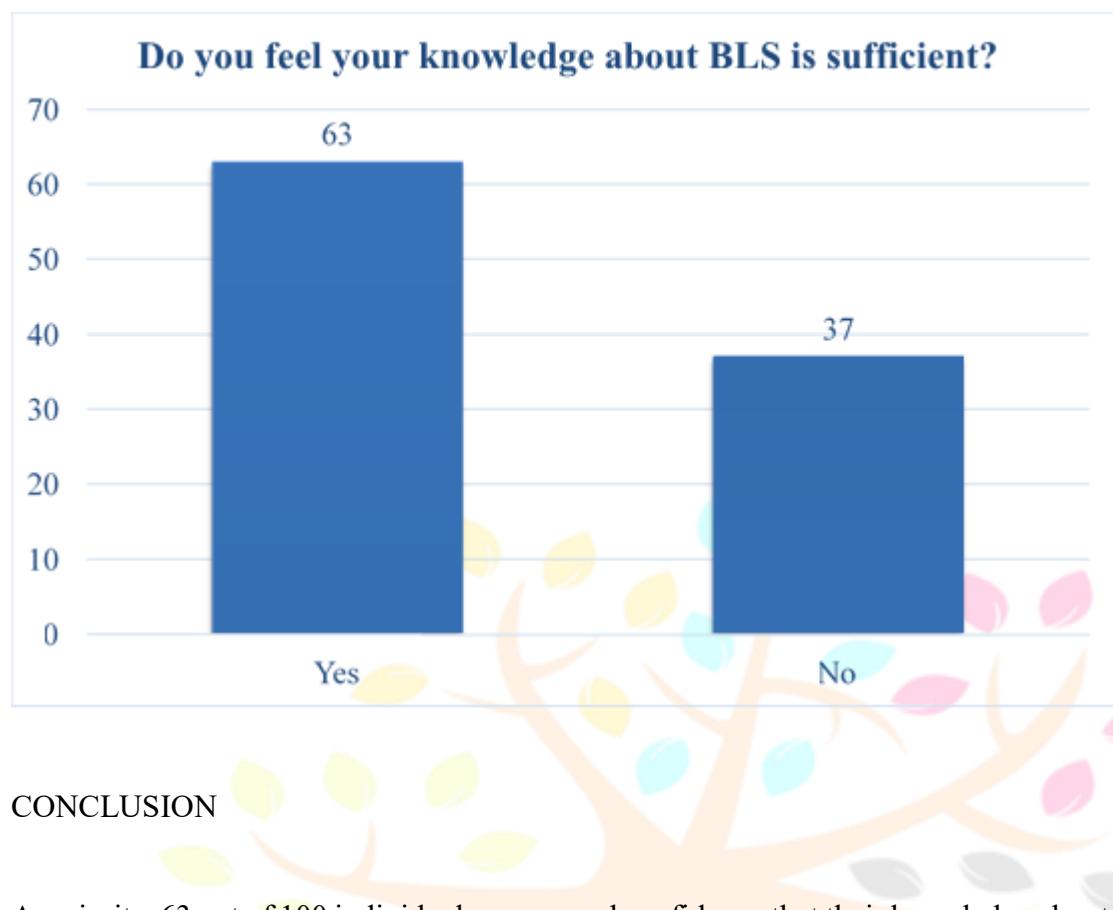
Among the 63 individuals who encountered a situation requiring CPR, 47 individuals attempted resuscitation while 16 individuals did not.

Table No. 6: Do you feel your knowledge about BLS is sufficient?

Response	No. of Responses Given By Participants
Yes	63
No	37
Total	100

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Research Through Innovation

Graph No. 6: Do you feel your knowledge about BLS is sufficient ?



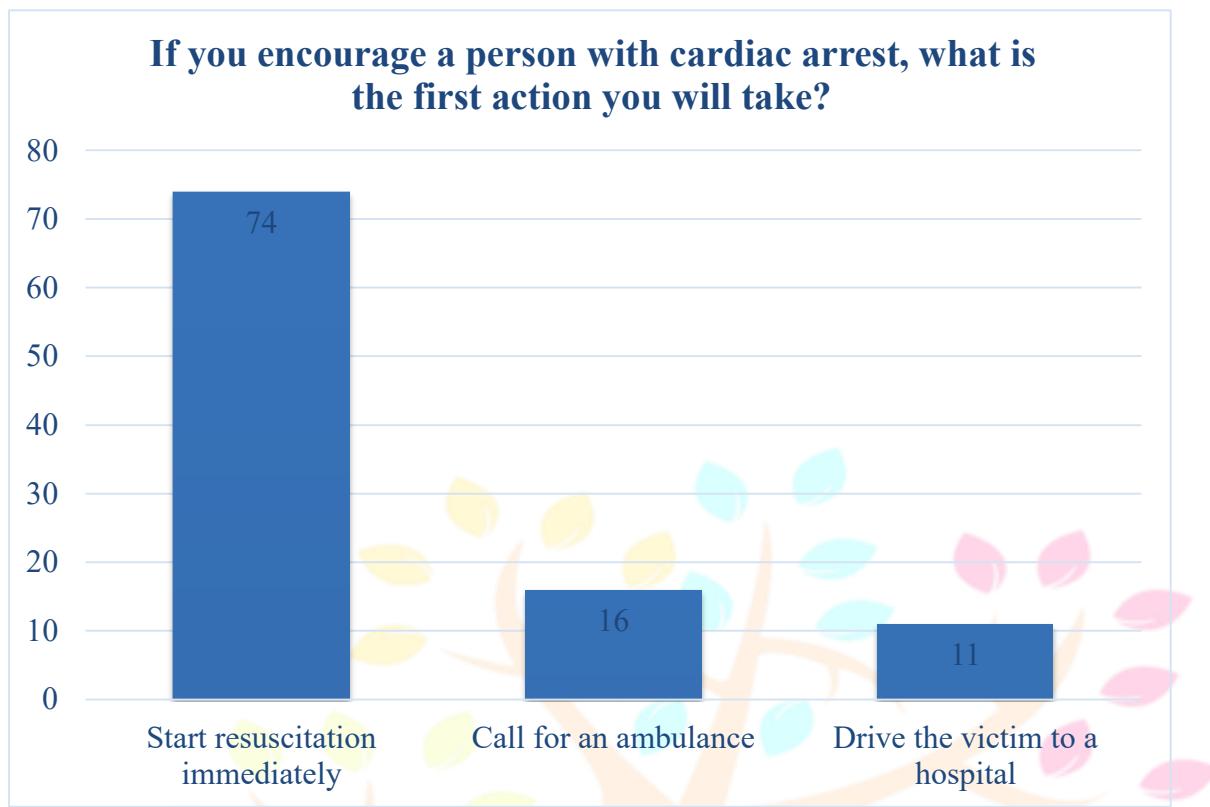
## CONCLUSION

A majority, 63 out of 100 individuals, expressed confidence that their knowledge about Basic Life Support (BLS) is sufficient. This finding suggests a high degree of self-assessed competence within the surveyed group

Table No. 7: If you encourage a person with cardiac arrest, what is the first action you will take?

Response	No. of Responses Given by Participants
Start resuscitation immediately	74
Call for an ambulance	16
Drive the victim to a hospital	11
<b>Total</b>	<b>100</b>

Graph No. 7: If you encourage a person with cardiac arrest, what is the first action you will take?



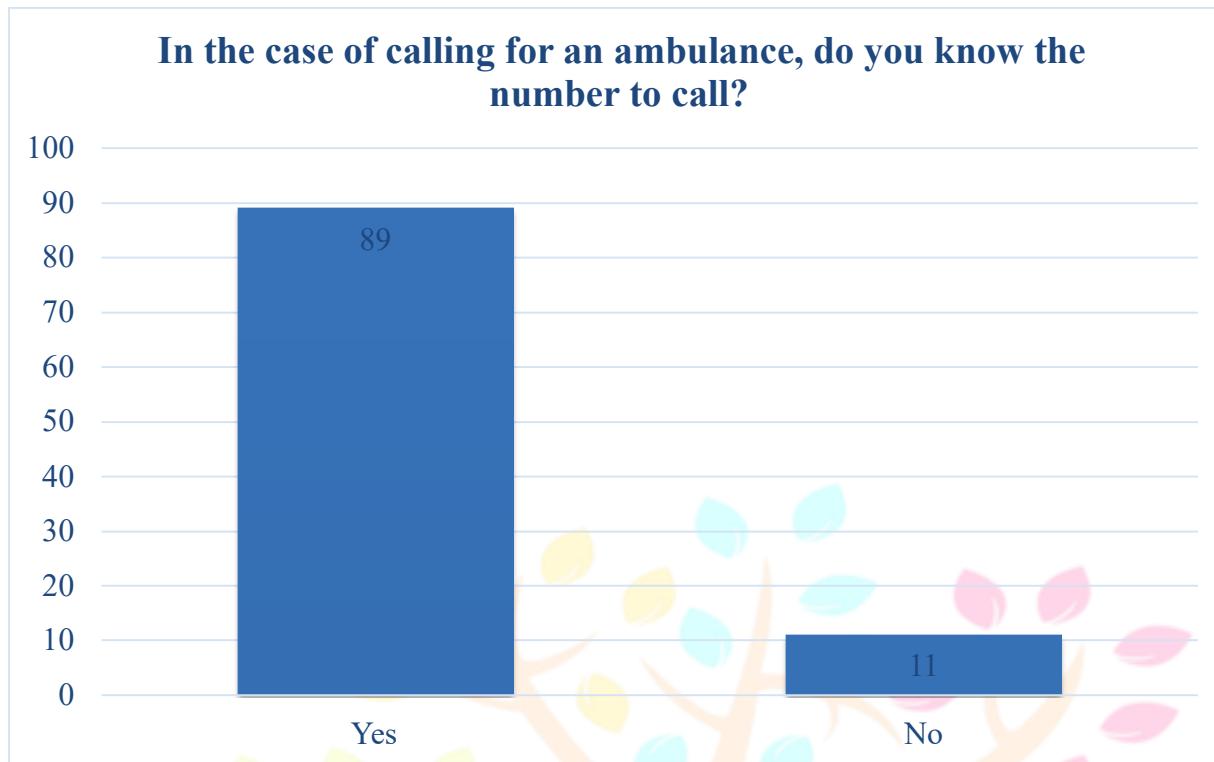
#### CONCLUSION

A large majority of 74 out of 100 individuals correctly identified "Start resuscitation immediately" as the first action. The remaining 26 individuals would choose less effective first steps (calling an ambulance first or driving to a hospital), potentially delaying life-saving compressions.

Table No. 8: In the case of calling for an ambulance, do you know the number to call?

Response	No. of Responses Given by Participants
Yes	89
No	11
Total	100

Graph No. 8: In the case of calling for an ambulance, do you know the number to call?



#### CONCLUSION

A very large majority of 89 out of 100 individuals are projected to know the number to call for an ambulance, indicating high awareness of emergency contact information.

Table No. 9. Which of the following methods would help to increase the skills and awareness of the community towards CPR and BLS?

Response	No. of Responses Given by Participants
Mandatory courses in schools and universities	50
Training courses at certified centers	27
Social Media	17
Social Media, Training courses at certified centers	6
<b>Total</b>	<b>100</b>

Graph No. 9. Which of the following methods would help to increase the skills and awareness of the community towards CPR and BLS?

**Which of the following methods would help to increase the skills and awareness of the community towards CPR and BLS?**



**CONCLUSION**

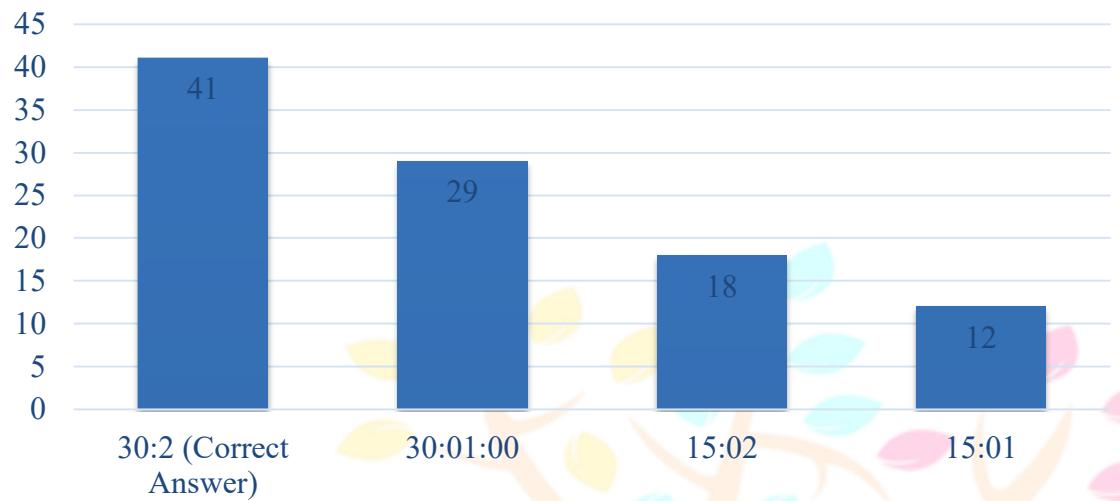
The most preferred method for increasing BLS skills and awareness is the implementation of Mandatory courses in schools and universities, chosen by 50 out of 100 individuals.

Table No 10. The compression to ventilation ratio for one rescuer giving CPR to individuals of any age is:

Response	No. of Responses Given by Participants
30:2 (Correct Answer)	41
30:1	29
15:2	18
15:1	12
Total	100

Graph No 10. The compression to ventilation ratio for one rescuer giving CPR to individuals of any age is:

### The compression to ventilation ratio for one rescuer giving CPR to individuals of any age is



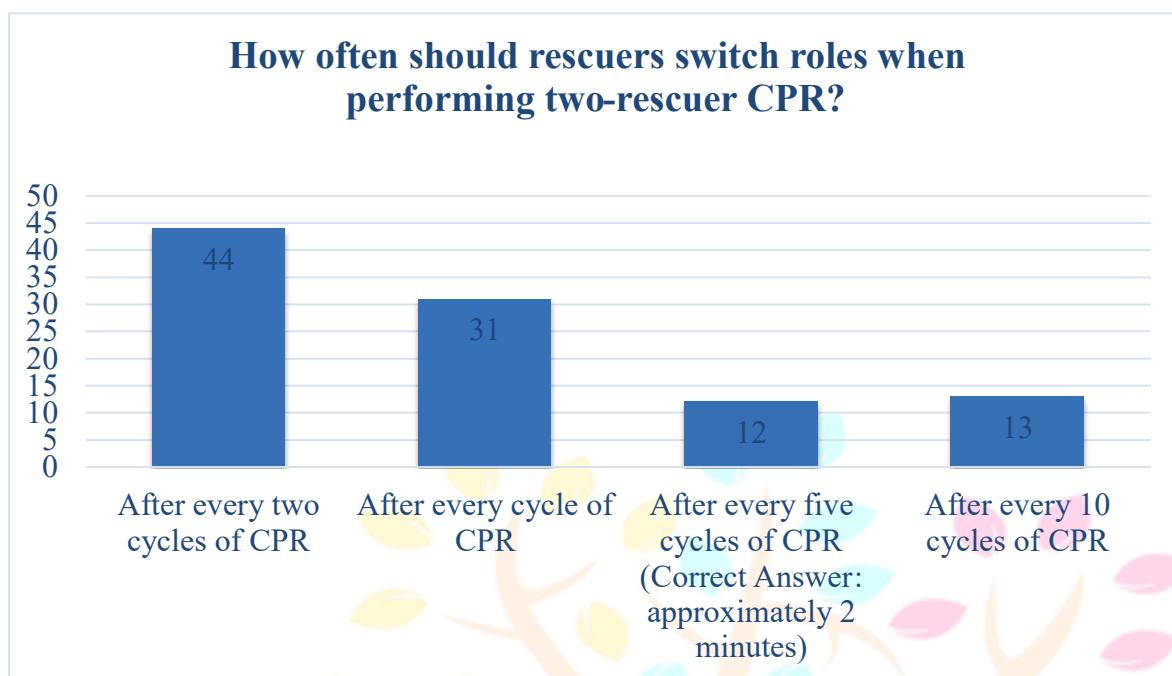
#### CONCLUSION

Only 41 out of 100 individuals know the correct compression-to-ventilation ratio for one rescuer (30:2). This indicates a significant knowledge gap in a fundamental area of Basic Life Support (BLS).

Table No.11. How often should rescuers switch roles when performing two-rescuer CPR?

Response	No. of Responses Given by Participants
After every two cycles of CPR	44
After every cycle of CPR	31
After every five cycles of CPR (Correct Answer: approximately 2 minutes)	12
After every 10 cycles of CPR	13
<b>Total</b>	<b>100</b>

Graph.11. How often should rescuers switch roles when performing two-rescuer CPR?



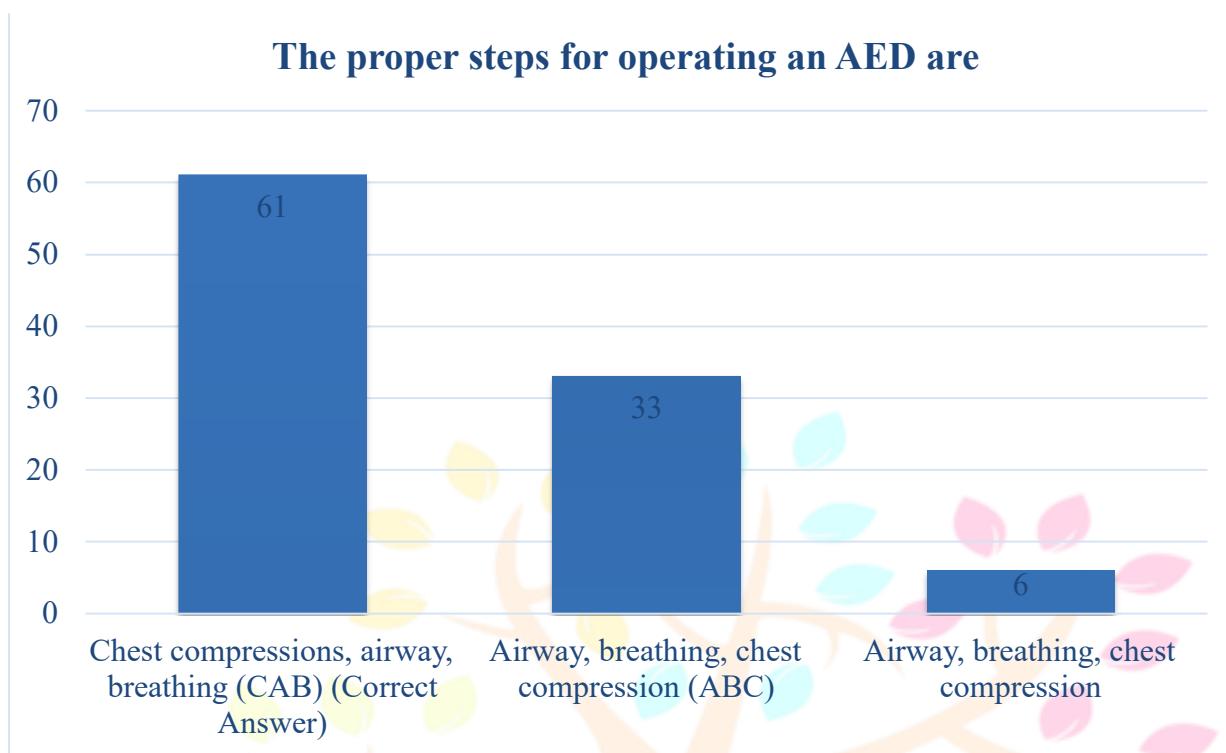
#### CONCLUSION

The correct answer, "After every five cycles of CPR" (to prevent rescuer fatigue, which occurs after approximately 2 minutes), was chosen by only 12 out of 100 individuals. This indicates a major knowledge gap in effective, high-quality, team-based resuscitation.

Table No.12. The proper steps for operating an AED are:

Response	No. of Responses Given by Participants
<b>Chest compressions, airway, breathing (CAB) (Correct Answer)</b>	61
<b>Airway, breathing, chest compression (ABC)</b>	33
<b>Airway, breathing, chest compression</b>	6
<b>Total</b>	100

Graph No.12. The proper steps for operating an AED are:



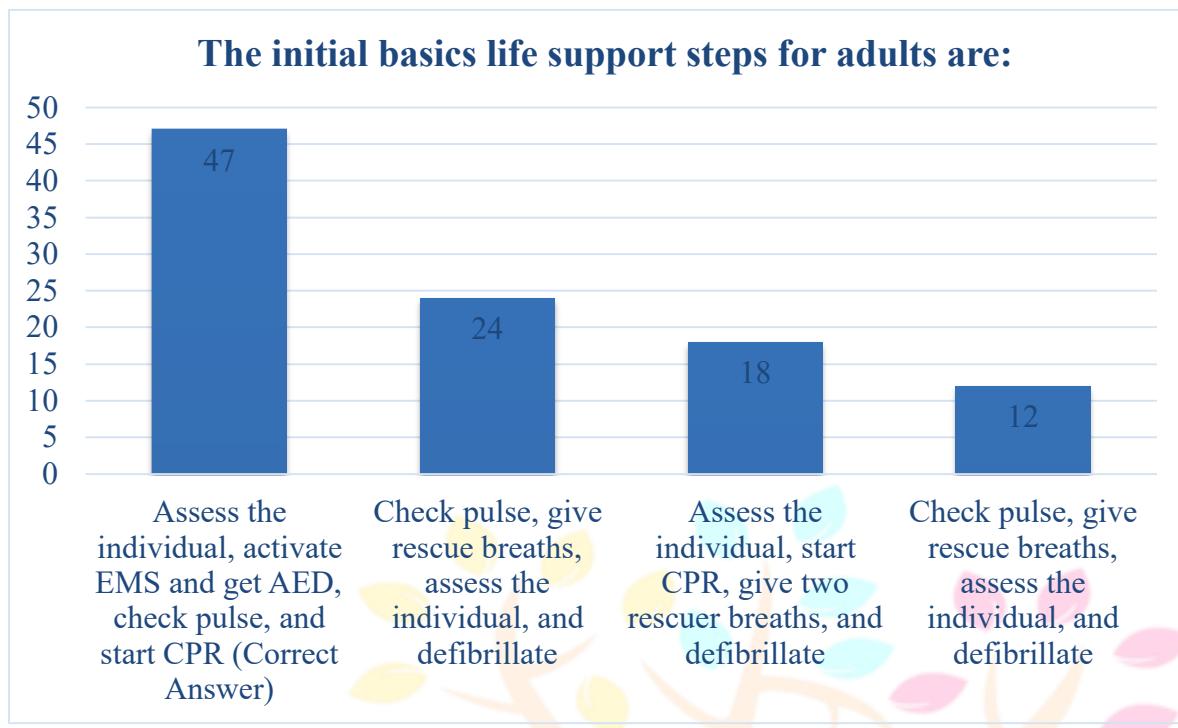
## CONCLUSION

A majority of 61 out of 100 individuals correctly identify the current recommended Basic Life Support sequence as CAB (Chest compressions, Airway, Breathing). However, a significant portion (39 individuals) still adhere to the outdated ABC (Airway, Breathing, Chest compressions) sequence, which can delay life-saving chest compressions.

Table No.13. The initial basics life support steps for adults are:

Response	No. of Responses Given by Participants
Assess the individual, activate EMS and get AED, check pulse, and start CPR (Correct Answer)	47
Check pulse, give rescue breaths, assess the individual, and defibrillate	24
Assess the individual, start CPR, give two rescuer breaths, and defibrillate	18
Check pulse, give rescue breaths, assess the individual, and defibrillate	12
<b>Total</b>	<b>100</b>

Graph No.13. The initial basics life support steps for adults are:



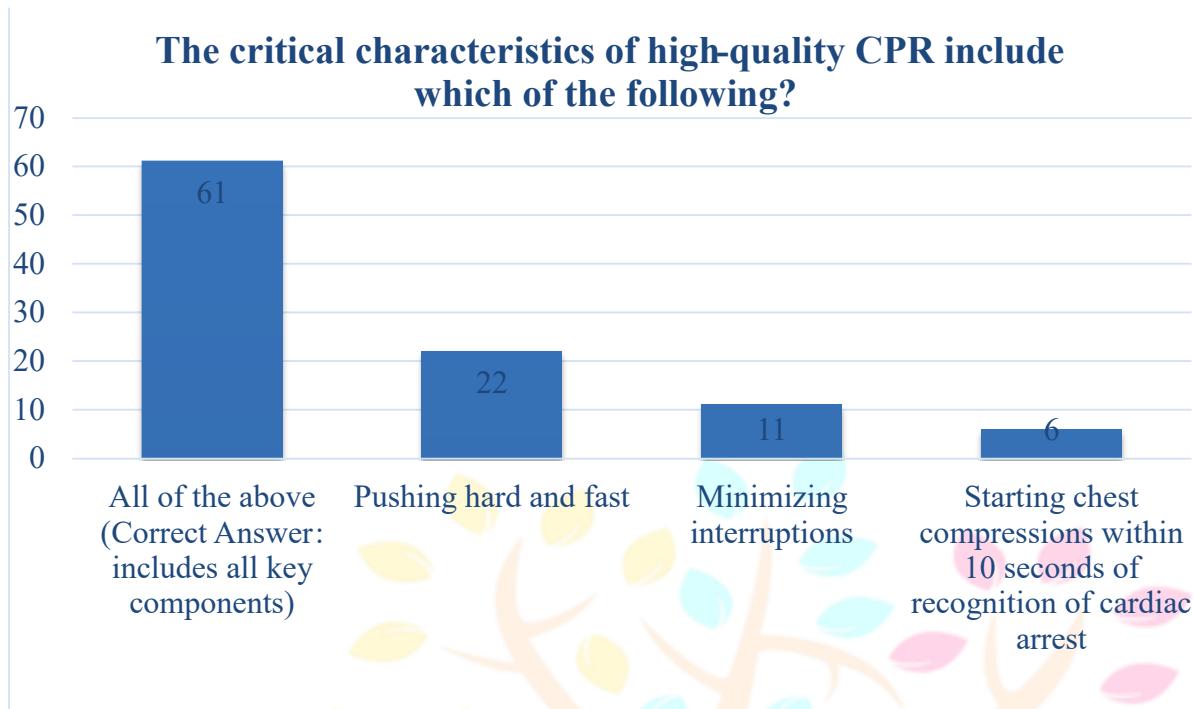
#### CONCLUSION

Only 47 out of 100 individuals are projected to know the correct initial basic life support steps for adults. This means 53 individuals would likely perform critical steps out of order, potentially delaying the most life-saving actions

Table No.14. The critical characteristics of high-quality CPR include which of the following?

Response	No. of Responses Given by Participants
All of the above (Correct Answer: includes all key components)	61
Pushing hard and fast	22
Minimizing interruptions	11
Starting chest compressions within 10 seconds of recognition of cardiac arrest	6
<b>Total</b>	<b>100</b>

Graph No.14. The critical characteristics of high-quality CPR include which of the following?



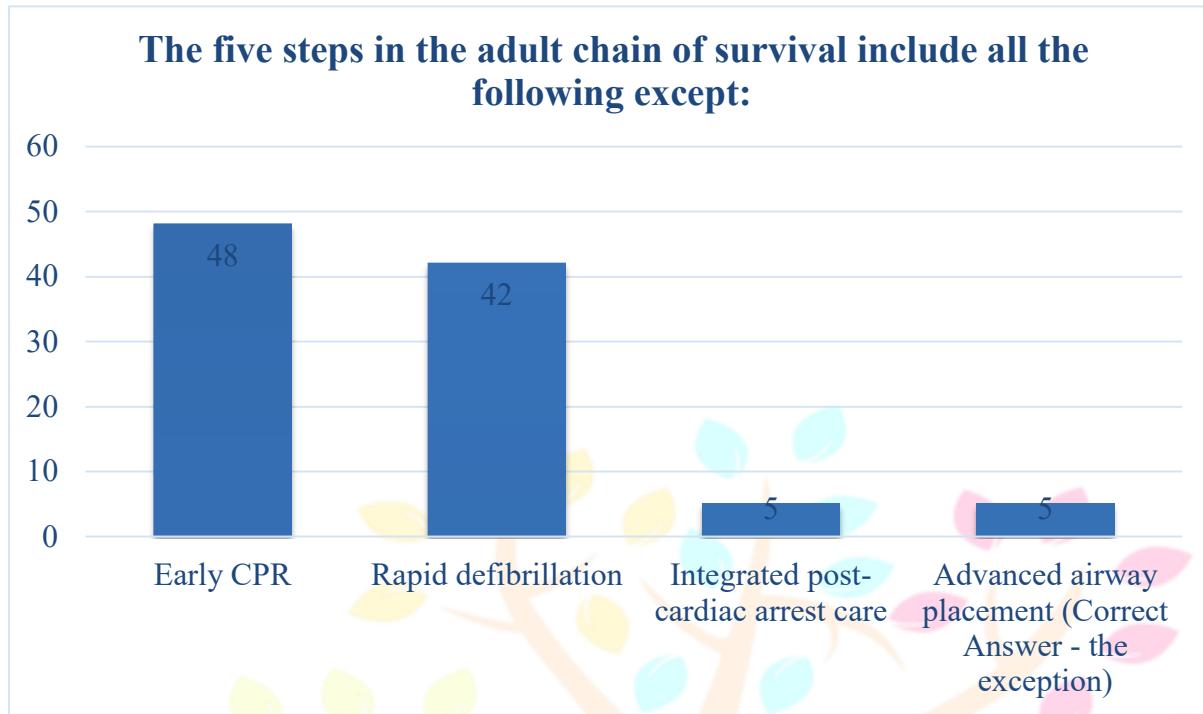
## CONCLUSION

Majority of 61 out of 100 individuals correctly identify "All of the above" as the critical characteristics of high-quality CPR. This is a positive finding, as it suggests good recognition of the comprehensive nature of effective chest compressions

Table No.15. The five steps in the adult chain of survival include all the following except:

Response	No. of Responses Given by Participants
Early CPR	48
Rapid defibrillation	42
Integrated post-cardiac arrest care	5
Advanced airway placement (Correct Answer - the exception)	5
Total	100

Graph No.15. The five steps in the adult chain of survival include all the following except:



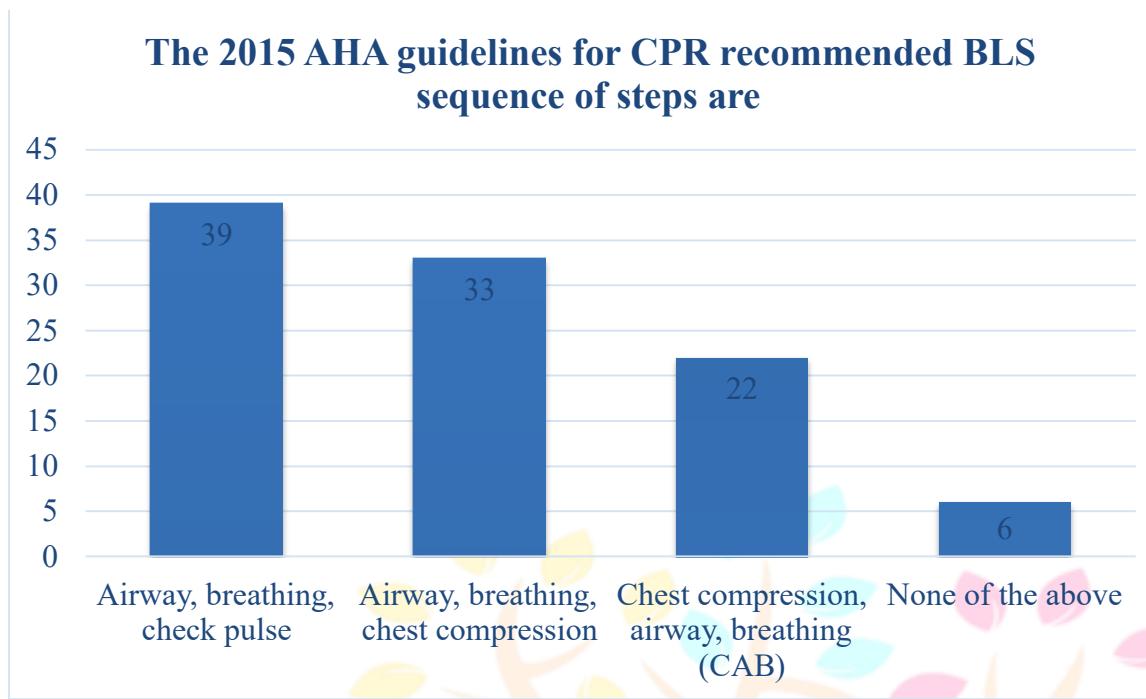
#### CONCLUSION

The correct answer, "Advanced airway placement" was chosen by only 5 out of 100 individuals. The majority, 95 out of 100, chose one of the items that are core steps in the Chain (Early CPR, Rapid defibrillation, or Integrated post-cardiac arrest care). This indicates a critical lack of knowledge in identifying the correct exception, suggesting poor understanding of the fundamental structure of the Adult Chain of Survival.

Table No.16. The 2015 AHA guidelines for CPR recommended BLS sequence of steps are:

Response	No. of Responses Given by Participants
Airway, breathing, check pulse	39
Airway, breathing, chest compression	33
Chest compression, airway, breathing (CAB) (Correct Answer)	22
None of the above	6
<b>Total</b>	<b>100</b>

Graph No.16. The 2015 AHA guidelines for CPR recommended BLS sequence of steps are:



## CONCLUSION

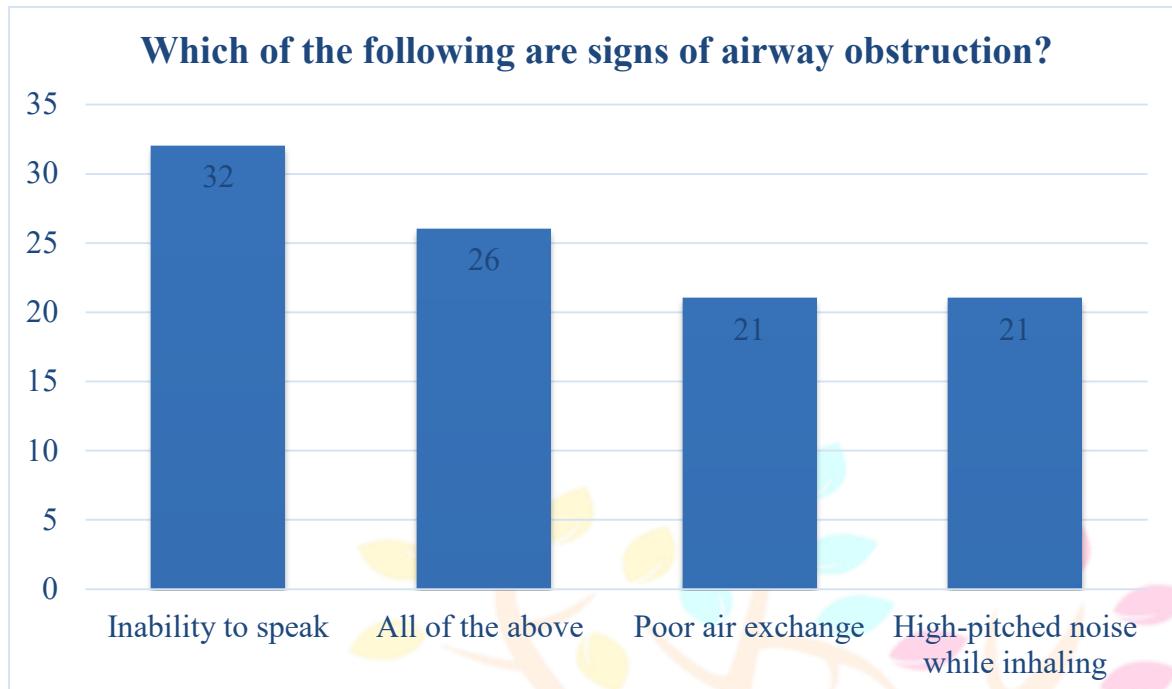
The correct sequence, **Chest compressions, airway, breathing (CAB)**, was chosen by **41 out of 100** individuals.

However, the majority of respondents (**53 out of 100**) chose a sequence that starts with **Airway and Breathing** (ABC or a variation), indicating a significant adherence to the **outdated ABC sequence**. This suggests that a large portion of the community would likely delay critical chest compressions during a cardiac emergency.

Table No.17. Which of the following are signs of airway obstruction?

Response	No. of Responses Given by Participants
Inability to speak	32
All of the above	26
Poor air exchange	21
High-pitched noise while inhaling	21
<b>Total</b>	<b>100</b>

Graph No.17. Which of the following are signs of airway obstruction?



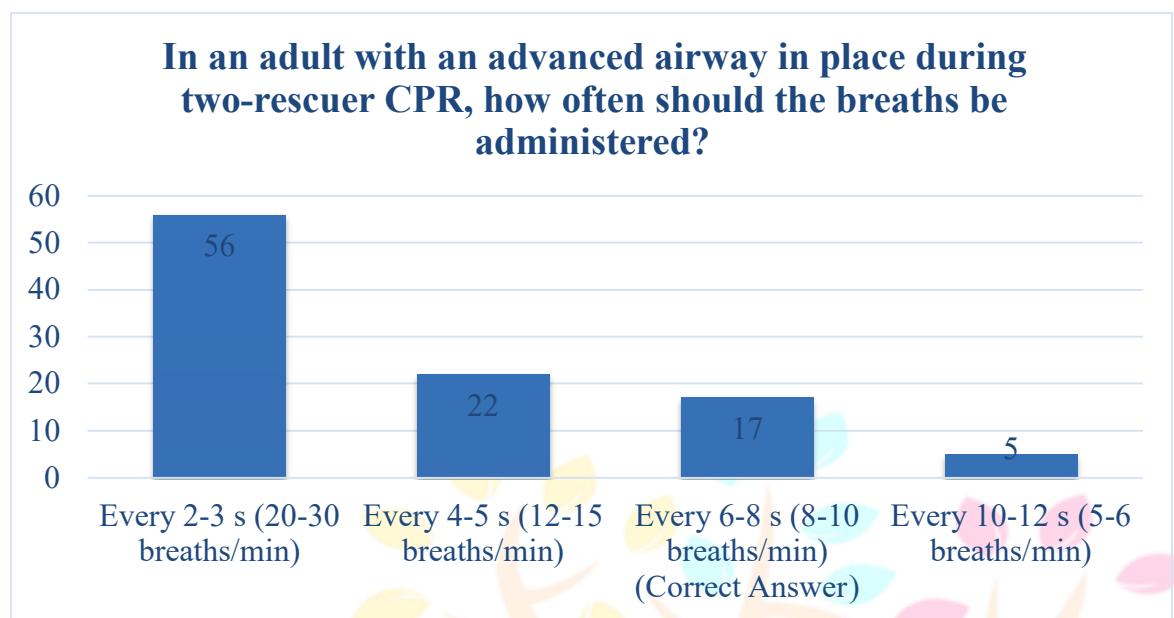
## CONCLUSION

"All of the above" is the most complete correct answer, chosen by 26 out of 100 individuals, the most common single response was Inability to speak, selected by 32 out of 100. All listed options are signs of airway obstruction, a combined 74 out of 100 individuals selected the most common or complete correct signs, indicating good general awareness of the symptoms of airway obstruction among the surveyed group.

Table No.18. In an adult with an advanced airway in place during two-rescuer CPR, how often should the breaths be administered?

Response	No. of Responses Given by Participants
Every 2-3 s (20-30 breaths/min)	56
Every 4-5 s (12-15 breaths/min)	22
Every 6-8 s (8-10 breaths/min) (Correct Answer)	17
Every 10-12 s (5-6 breaths/min)	5
<b>Total</b>	<b>100</b>

Graph No.18. In an adult with an advanced airway in place during two-rescuer CPR, how often should the breaths be administered?



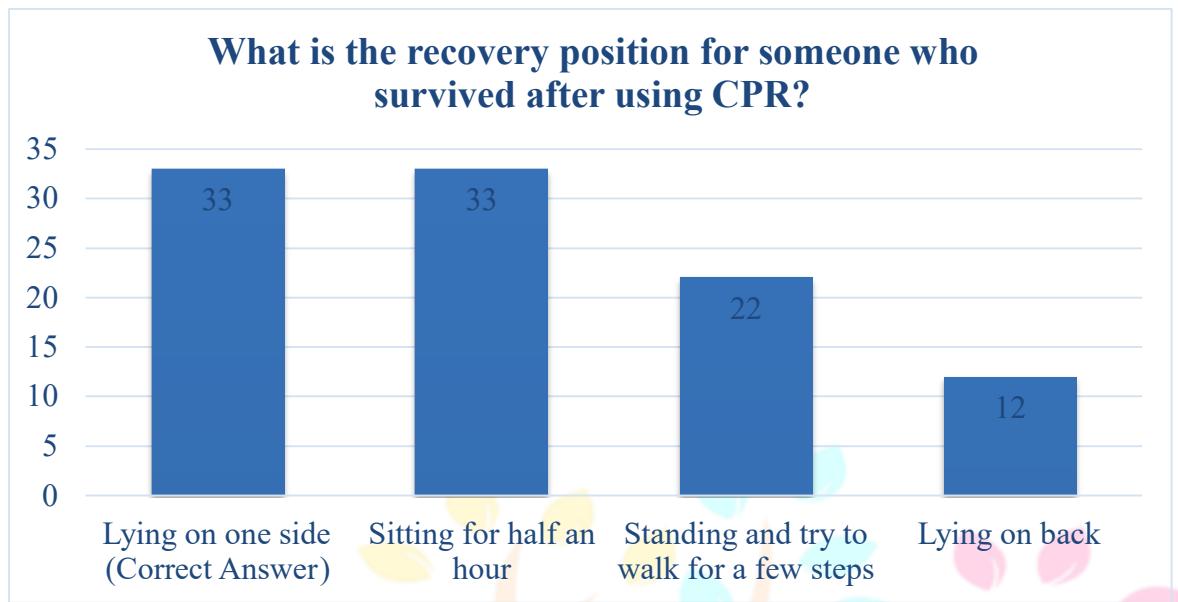
## CONCLUSION

The correct answer, every 6-8 seconds (8-10 breaths/min), was chosen by only 17 out of 100 individuals. A large majority of 78 out of 100 individuals chose a rate that is too fast (Every 2-3 s or Every 4-5 s). This indicates a critical and potentially harmful knowledge gap in Advanced Cardiovascular Life Support (ACLS) procedures.

Table No.19. What is the recovery position for someone who survived after using CPR?

Response	No. of Responses Given by Participants
Lying on one side (Correct Answer)	33
Sitting for half an hour	33
Standing and try to walk for a few steps	22
Lying on back	12
Total	100

Graph No.19. What is the recovery position for someone who survived after using CPR?



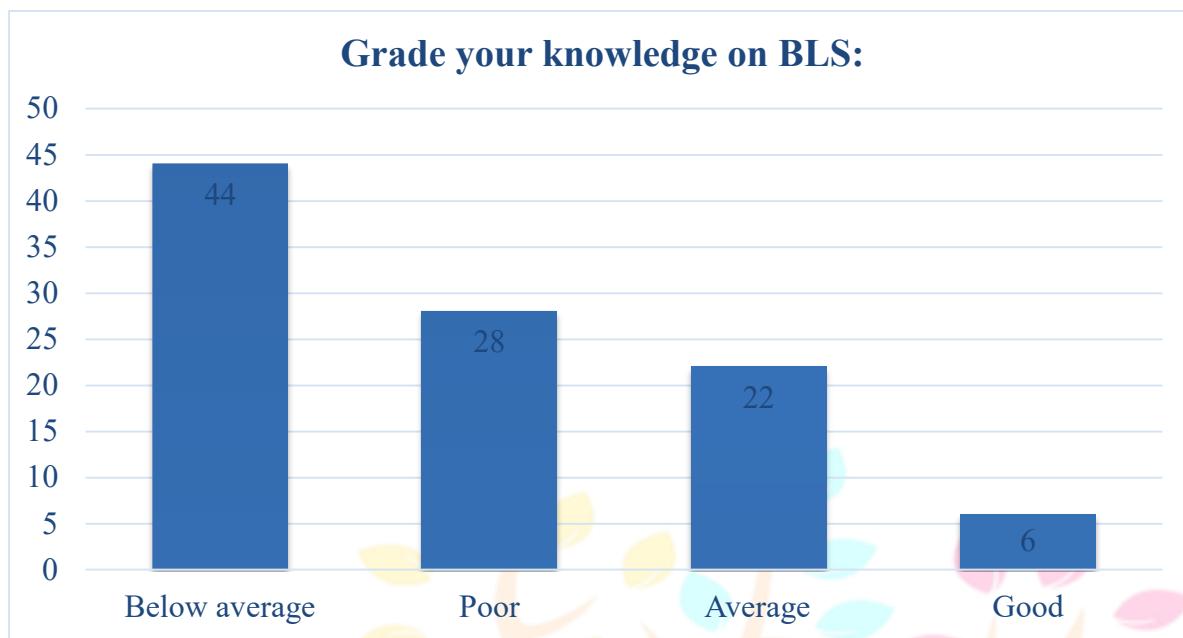
## CONCLUSION

**Lying on one side** (the standard **recovery position**), was chosen by only **33 out of 100** individuals. This choice was tied with the incorrect option of "**Sitting for half an hour**" (33 out of 100). The fact that the correct answer is chosen by only one-third of the population highlights a major knowledge gap in crucial **post-resuscitation care**. The recovery position is essential for maintaining an open airway in a person who is breathing but unresponsive.

Table No.20. Grade your knowledge on BLS:

Response	No. of Responses Given by Participants
Below average	44
Poor	28
Average	22
Good	6
Total	100

Graph No.20. Grade your knowledge on BLS:



## CONCLUSION

The majority of respondents, a combined **72 out of 100**, self-assessed their knowledge of BLS as "Below average" or "Poor." This is a critical finding, indicating a low level of selfperceived competence within the surveyed population. Only **6 individuals** rated their knowledge as "Good," highlighting a clear need for increased education and training.

Table No.21. Distribution of demographic variables

VARIABLES	FREQUENCY, n=100
Age Group	
18-20	8 (8%)
21-30	62 (62%)
31-40	30 (30%)
41-50	0
51-60	0
Above 60	0
Gender	
Male	81 (81%)
Female	19 (19%)

Table No.22. The total numbers and percentages of respondents who have taken basic life support course according to demographic background

VARIABLES		FREQUENCY, n=100	
AGE GROUP	Have you ever taken a BLS training course?		
	No n=100	Yes n 100	
18-20	3(37.5%)	5(62.5%)	
21-30	21(33.9%)	41(66.1%)	
31-40	12(40.0%)	18(60.0%)	
41-50	0	0	
51-60	0	0	
Above 60	0	0	
GENDER	No n (%)		
Male	26(31.3%)	57(68.7%)	
Female	8(38.1%)	13(61.9%)	

### Interpretation

The majority of respondents across all age groups reported having taken a BLS training course. Among participants aged 21–30 years, 66.1% had undergone BLS training, followed by 60% in the 31–40 years group and 62.5% in the 18–20 years group, indicating higher awareness and participation among younger adults.

Regarding gender, 68.7% of males and 61.9% of females had received BLS training, showing slightly higher participation among male respondents. Overall, the findings suggest good awareness and training exposure among younger individuals and males, emphasizing the importance of extending similar opportunities across all age groups.

Table 23: Self-perception on basic life support knowledge among respondents who underwent basic life support training

VARIABLES	FREQUENCY, n=100				
	Grade your knowledge on BLS				
AGE GROUP	Poor, n=100	Below Average, n=100	Average, n=100	Good, n=100	Statistical Value
18-20	4	7	2	0	$\chi^2 (6, n = 100) = 4.13$ p-value = 0.66 R = 0.144
21-30	19	39	26	1	
31-40	8	11	7	0	
41-50	0	0	0	0	
51-60	0	0	0	0	
Above 60	0	0	0	0	

GENDER	Poor, n=100	Below Average, n=100	Average, n=100	Good, n=100	Statistical Value
Male	12	46	32	1	$\chi^2 (3, n = 100) = 0.99$ p-value = 0.80 R = 0.099
Female	6	8	3	0	

## Interpretation

The association between age group and BLS knowledge level was found to be statistically insignificant ( $\chi^2 = 4.13$ , df = 6, p = 0.66, r = 0.144), indicating that participants' knowledge of Basic Life Support did not significantly vary across different age groups. Although respondents aged 21–30 years showed relatively higher proportions of "average" and "below average" knowledge levels, this difference was not statistically meaningful.

Similarly, the association between gender and BLS knowledge level was also not statistically significant ( $\chi^2 = 0.99$ , df = 3, p = 0.80, r = 0.099), suggesting that the level of BLS knowledge was comparable between males and females, with no meaningful variation based on gender.

Table 4: The level of awareness among the respondents

Variables	Frequency, n=100
Do you think a BLS course should be mandatory?	
Yes	90 (90%)
No	3 (3%)
	7 (7%)
Total	100 (100%)
If you encounter a person with cardiac arrest, what is the first action you will take?	
Start resuscitation immediately	85 (85%)
Call for an ambulance	8 (8%)
Drive the victim to a hospital	7 (7%)
Wait for someone to help the victim	0
Total	100 (100%)
Do you feel your knowledge about BLS is sufficient?	
No	34 (34%)
Yes	66 (66%)
Total	100 (100%)
Have you ever been in a situation that required you to do CPR?	
No	26 (26%)
Yes	74 (74%)
Total	100 (100%)

In the case of calling for an ambulance, do you know the number to call?	
No	7 (7%)
Yes	93 (93%)
Total	100 (100%)
Which of the following methods would help to increase the skills and awareness of the community towards CPR and BLS?	
Mandatory courses in schools and universities	57 (57%)
Television	34 (34%)
Training courses at certified centers	9 (9%)
Others	0
Total	100 (100%)

### Interpretation

Most respondents demonstrated good awareness regarding Basic Life Support (BLS). A majority (90%) agreed that BLS training should be mandatory, and 85% correctly identified starting resuscitation immediately as the first action during cardiac arrest. About 66% felt their BLS knowledge was sufficient, and 74% had previously encountered a CPR situation. Additionally, 93% knew the ambulance number. Over half (57%) believed that introducing mandatory BLS courses in schools and universities would best improve community awareness. Overall, respondents showed positive attitudes but highlighted the need for more structured BLS training programs.

## **DISCUSSION**

These figures point to substantial gaps in both technical and procedural BLS knowledge among coaches and trainers. While most are willing to act in emergencies, their understanding of current protocols is insufficient—potentially hampering effectiveness in real-life scenarios. The majority rate themselves poorly, emphasizing a need for more comprehensive and frequent training.

Previous research backs these findings: even among trained individuals, BLS knowledge decays rapidly without regular refreshers, and large proportions of coaches and trainers lack specifics, especially regarding AED use and advanced airway management. Comparative studies show that even after dedicated BLS workshops, less than half of sport science students attain mastery of technical CPR standards without hands-on practice and feedback. Willingness to act is generally high post-training, but proficiency in correct procedure is not, matching the low correct-response rates recorded here. <sup>(2)</sup>

Educational gaps increase the risk of suboptimal or incorrect care during emergencies. Without accurate knowledge, coaches or trainers may delay life-saving intervention or use outdated techniques. There is a clear, practical need for frequent, scenario-based training, supported by institutional mandates for regular certification and recertification.

This analysis is limited by self-report bias—respondents may over- or underestimate their skill and willingness. The sample is also mostly male and geographically narrow, meaning results may not represent broader populations. Responses to technical questions may be affected by ambiguous survey wording or participant fatigue.

In summary, most sports coaches and fitness trainers have limited BLS knowledge, especially regarding technical details, despite a strong willingness to respond to emergencies. To improve outcomes, institutions must provide frequent, practical BLS training and integrate mandatory recertification into professional standards. Thoughtful investment in education and accessibility will ultimately safeguard athlete health and enhance emergency response in sports settings.

The analysis of sports coaches and fitness trainers reveals a critical and dangerous mismatch between their high willingness to act in a cardiac emergency and their low technical competence in Basic Life Support (BLS). While a substantial 63% reported being present in a CPR situation, and 75% of that group attempted resuscitation, demonstrating strong motivation and real-world exposure, their objective knowledge is critically low. A large majority (72%) self-assessed their BLS knowledge as below average or poor, a concern justified by the survey results. Only 41% correctly identified the current CAB (Compressions, Airway, Breathing) sequence, indicating a persistent reliance on the outdated ABC method that delays crucial chest compressions. Furthermore, knowledge of technical specifics necessary for high-quality CPR is alarmingly low: only 41% knew the correct 30:2 CPR ratio, only 12% knew the correct timing to switch rescuers (essential for preventing fatigue), and a mere 17% knew the appropriate advanced airway breathing rate (necessary to avoid harmful hyperventilation). The lack of conceptual understanding of the broader emergency framework is also evident, as only 5% correctly identified the exception not in the basic chain of survival, and only 26% could accurately describe the AED operation steps. These findings highlight that current training protocols are failing to provide both the up-to-date knowledge and the high level of skill retention required to translate their high willingness into effective, lifesaving interventions.<sup>(1)</sup>

## **RESULTS**

The survey reveals a significant and dangerous dichotomy among sports coaches and fitness trainers: while a substantial 63% reported being present in a CPR situation, and 75% of that group attempted resuscitation, demonstrating strong motivation and real-world exposure (Willingness to Respond), their objective knowledge is critically low. This lack of proficiency is anticipated by their own assessment, as 72% rated their BLS knowledge as "Below Average" or "Poor" (Self-Assessment). The results show significant lapses in CPR Protocol Knowledge, with only 41% correctly identifying the current CAB (Compressions, Airway, Breathing) sequence, indicating a persistent reliance on outdated methods. Furthermore, understanding of Technical Details necessary for high-quality CPR is alarmingly poor: only 41% knew the 30:2 CPR ratio, only 12% knew the correct timing to switch rescuers for efficiency, and a mere 17% could specify the proper advanced airway breathing rate. Finally, deficits in Emergency Action Skills were highlighted by the fact that only 26% described the correct sequence for using an AED, and a negligible 5% understood the emergency framework well enough to identify the exception not in the basic chain of survival. These findings collectively indicate that current training is insufficient, leaving a highly exposed group without the necessary technical skills to translate their strong willingness into effective, life-saving interventions.

## **CONCLUSION**

The survey of sports coaches and fitness trainers reveals a critical and potentially dangerous discrepancy in their readiness for cardiac emergencies. While a high percentage of respondents demonstrate a strong willingness to intervene (75% attempted resuscitation when faced with a CPR situation), their technical knowledge of current BLS guidelines is severely insufficient. This is evidenced by the fact that 72% self-assessed their knowledge as poor or below average, a concern validated by objective scores. Only 41% correctly identified the current CAB sequence, indicating a widespread reliance on the outdated ABC method that delays crucial chest compressions.

Knowledge gaps were particularly pronounced in areas critical for high-quality, effective team resuscitation. Alarmingly low scores were found for essential metrics: only 41% knew the 30:2 ratio, only 12% knew the correct timing for switching rescuers to prevent fatigue, and a mere 17% knew the proper advanced airway breathing rate. Furthermore, the lack of conceptual understanding was highlighted by the fact that only 26% described the correct AED sequence, and a negligible 5% could identify the exception in the basic Chain of Survival framework. These persistent technical failures and reliance on outdated protocols significantly compromise the quality of care provided in an emergency setting.

In conclusion, the data confirms a systemic failure in current BLS education to maintain upto-date and technically proficient skills within this highly exposed group. To translate their commendable willingness to act into successful, life-saving outcomes, there is an urgent need for mandated, targeted, and frequent

skills-based refresher training that addresses the specific technical deficits and moves decisively beyond reliance on outdated protocols, ensuring competence is maintained long after initial certification.

## **FUTURE SCOPE**

1. Future studies should include larger, more diverse populations to improve generalizability across gender, age, type of sport, and different regions.
2. Research is needed to assess how well BLS and CPR knowledge and skills are retained over time. Studies should compare the effectiveness of regular refresher training versus one-time instruction.
3. Incorporate simulation-based assessments or direct observation, not just self-reported data, to accurately measure actual competency in real-world scenarios.
4. Explore factors that affect willingness and confidence to perform BLS, such as psychological barriers, resource availability, and institutional support. Studies should also address how to boost confidence through targeted interventions.
5. Evaluate the long-term impact of mandatory BLS certification, frequency of recertification, and emergency action plan drills in sports organizations.
6. Investigate the integration of practical emergency drills, AED accessibility, and formal emergency protocols in sports settings as part of routine coach and trainer education.

By addressing these research gaps, future work can refine BLS education strategies, ensure higher competence among coaches and trainers, and ultimately improve athlete safety across all sporting environments.

Future studies should:

- Include direct observation and objective skill assessment.
- Examine knowledge retention over time post-training.
- Evaluate training strategies (e.g., blended learning, simulation-based workshops).
- Explore perceived barriers to BLS education and individual confidence in emergencies.
- Expand sampling to increase gender and regional diversity for greater generalizability.

## **LIMITATIONS**

1. The sample was predominantly male (81%), limiting generalizability to all coaches and trainers, especially females and diverse age groups.
2. Data may reflect local practices or training accessibility that differ from broader or international norms, limiting wider applicability.
3. Skill retention and knowledge change over time were not captured, and only a snapshot was provided—not long-term trends.
4. Competence was measured via questionnaire, not direct observation or simulation, leading to possible discrepancies between reported and actual abilities.
5. Factors such as institutional support, availability of AEDs, and hands-on training were not comprehensively evaluated due to dataset constraints.

These limitations highlight the importance of interpreting findings with caution and underscore the need for more rigorous, longitudinal, and diverse future studies.

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## **ANNEXURE: 1**

### **Informed Consent Form**

1. I have read or have had read to me the information given in the informed consent document for this study entitled, "Awareness about Basic Life Support (BLS) in Sports Coaches and Fitness Trainers."
2. I have received an explanation of the nature, purpose (to assess current BLS knowledge), duration (estimated time to complete the survey/assessment), and any potential effects or minimal risks (e.g., time commitment, mild mental stress from self-assessment) associated with the study. My questions have been answered satisfactorily.
3. I understand that my participation in this study is voluntary and that I may refuse to participate or withdraw from the study at any time without penalty or loss of benefits to which I am otherwise entitled (such as employment or certification status).
4. I further understand that any information that becomes available during the course of the study that may affect my willingness to take part in the study will be informed to me.
5. Institutional Review Board (IRB) or ethics committee authorities may wish to examine the collected data for audit purposes. By signing this document, I give permission for this review of my non-identifiable responses.
6. I understand that my identity and my individual responses will not be revealed in any report, publication, or public presentation. Data will be analyzed and reported in aggregate form only.
7. I agree to take part in the above study.

<b>Name of research participant:</b>	
<b>Signature of the participant:</b>	
<b>Date:</b>	



## **ANNEXURE: 2**

### **Self -Assesment Questionnaires**

#### **1. Have you ever taken a BLS training course?**

Yes

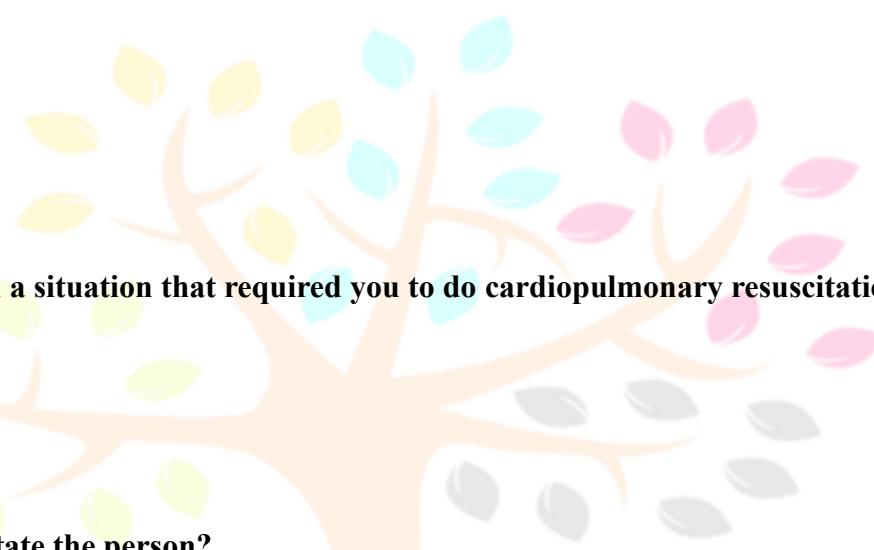
No

#### **2. Do you think a BLS course should be mandatory?**

Yes

No

I do not know



#### **3. Have you ever been in a situation that required you to do cardiopulmonary resuscitation?**

Yes

No

#### **4. If yes, did you resuscitate the person?**

Yes

No, please state the reason:

#### **5. Do you feel your knowledge about BLS is sufficient?**

Yes

No



**6.If you encounter a person with cardiac arrest, what is the first action you will take?**

Start resuscitation immediately

Call for an ambulance

Drive the victim to a hospital

Wait for someone to help the victim

**7.In the case of calling for an ambulance, do you know the number to call?**

Yes

No

**8.Which of the following methods would help to increase the skills and awareness of the community towards CPR and BLS?**

Mandatory courses in schools and universities

Social Media

Television

Training courses at certified centers

Others:

**9.The compression to ventilation ratio for one rescuer giving CPR to individuals of ANY age is:**

30:1

30:2

15:1

15:2

**10. How often should rescuers switch roles when performing two-rescuer CPR? After every cycle**

of CPR

After every two cycles of CPR

After every five cycles of CPR

After every 10 cycles of CPR

**11. The proper steps for operating an AED are:**

Power on the AED, attach electrode pads, shock the individual, and analyze the rhythm

Power on the AED, attach electrode pads, analyze the rhythm, clear the individual, and deliver shock

Attach electrode pads, check pulse, shock individual, and analyze rhythm

Check pulse, attach electrode pads, analyze rhythm, shock patient

**12. The initial basic life support steps for adults are:**

Assess the individual, give two rescue breaths, defibrillate, and start CPR

Assess the individual, activate EMS and get AED, check pulse, and start CPR

Check pulse, give rescue breaths, assess the individual, and defibrillate

Assess the individual, start CPR, give two rescue breaths, and defibrillate

**13. The critical characteristics of high-quality CPR include which of the following?**

High-pitched noise while inhaling

Starting chest compressions within 10 seconds of recognition of cardiac arrest

Pushing hard and fast

Minimizing interruptions All of the above

**14. The five steps in the Adult Chain of Survival include all the following except:**

- Early CPR
- Rapid defibrillation
- Advanced airway placement
- Integrated post-cardiac arrest care

**15. The 2015 AHA guidelines for CPR recommended BLS sequence of steps are:**

- Chest compressions, airway, breathing
- Airway, breathing, check pulse
- Airway, breathing, chest compressions
- None of the above

**16. Which of the following are signs of airway obstruction?**

- Poor air exchange
- Inability to speak
- All of the above

**17. In an adult with an advanced airway in place during two-rescuer CPR, how often should the breaths be administered?**

- Every 2–3 s (20–30 breaths/min)
- Every 4–5 s (12–15 breaths/min)
- Every 6–8 s (8–10 breaths/min)
- Every 10–12 s (5–6 breaths/min)

**18. What is the recovery position for someone who survived after using CPR? Sitting for half an**

hour

Lying on one side

Standing and try to walk for a few steps

Lying on back

### 19. Grade your knowledge on BLS:

Poor

Below average

Average



## **ANNEXURE: 3**

## **MASTER CHART**









S. No	Age	Gender	Occupation	Contact number	1. Has you ever been in a car accident that is 1-10% fatal?	2. Do you think taking a 1-10% course required you to do more to make sure that it is not fatal?	3. Do you think that a 1-10% course should be making "sense"?	7. In the case of a collision, which of the following methods would you use to increase the odds and chances of your community members (CR) to not be injured?	8. The compensation to you in case of a collision for one reason or another, what is the last action you will take?	9. Do you encourage a friend with car knowledge to do more to make sure that it is not fatal?	10. Who else should receive which information about CR to make sure that it is not fatal?	11. The proper steps for operating an AED are:	12. The initial steps to report any CRs are:	13. The official characteristics of high-quality CRs include which of the following target groups:	14. Which of the following are steps of emergency treatment?	15. The 2015 AHA guidelines for CPR recommended that a sequence of steps are:	16. What is the severity of knowledge in SLS?	17. The 2015 AHA guidelines for CPR recommended that a sequence of steps are:	18. What is the severity of knowledge in SLS?
9)	28	Male	Opinion 1	70357023	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
10)	30	Male	Opinion 1	71202009	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
11)	24	Male	Opinion 1	68700003	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
12)	21	Male	Opinion 1	68121010	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
13)	31	Male	Opinion 1	70000017	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
14)	31	Male	Opinion 1	68121011	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
15)	28	Male	Opinion 1	70001147	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	