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RESEARCH ARTICLE
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"UNLOCKING LIFE-SAVING SKILLS: BASIC LIFE SUPPORT AWARENESS AMONG FUTURE GRADUATES OF UNIVERSITIES IN PUNJAB"

Dr. Tamjeed Ghaffar[1]*, Dr. Muhammad Khan Bugti[2], Rizwan Munir[3], Dr. Mahnoor Bugti[4], Dr. Zeeshan Saeed[5], Sumbal Salik[6], Hufsa Tariq[7], Zeeshan Mushtaq[8], Quratulain Sherazi[9]

[1]Lecturer at college of Physiotherapy Government college university Faisalabad
[2]Assistant professor at Department of Human and Rehabilitation science's in The Begum Nusrat Bhutto woman University Sukkur
[3] Jiangxi University of Finance and Economics, Nanchang city. Jiangxi province. China
[4]Deputy director at Baqai institute of physical therapy Rehabilitation and medicine.
[5]Assistant Professor at Lahore medical and dental college
[6]Lecturer, LCPT, LMDC
[7]Senior lecturer at Lahore medical and dental college
[8]Demonstrators LCPT, LMDC
[9]Lecturer LCPT, LMDC

[1]*tamjeedghaffar@gcuf.edu.pk [2]Muhamma.khan@bnbwu.edu.pk [3]rizwanstat@gmail.com
[4]Deputydirector.biptrm@baqai.edu.pk [5]zeeshans475@gmail.com [6]Sumbalsalik1@gmail.com
[7]Hufsatariq5@gmail.com [8]ZzeeshanMushtaq904@gmail.com [9]mazharainy@gmail.com

***Corresponding Author: -** Dr. Tamjeed Ghaffar
*Email: tamjeedghaffar@gcuf.edu.pk

ABSTRACT

Background: Basic life support is the ultimate first-line treatment given to save the lives of persons who have a circulatory arrest or cardiopulmonary arrest, a cerebrovascular accident, or choking or abrupt blockage of the airways.

Objective: To determine adult basic life support knowledge and awareness among undergraduate (Medical and Non-medical) students of different universities of Punjab.

Materials and Methods: The study design was cross-sectional. Study period was six months, from April 2022 to September 2022. By using convenient sampling technique, 1500 participants were recruited from various universities of Punjab. Inclusion criteria of the study were undergraduate medical and non-medical students of age between 18 to 26 years. Modified BLS Questionnaire was used for data collection. Data was analyzed by version 20 of SPSS.

Results: Out of 1500 students, 55.2% were males and 44.8% were females. Chi-square test between BLS awareness & knowledge and subject specialty showed statistically significant association with p value of 0.008. Chi-square test between gender and BLS awareness & knowledge showed no statistical significant association with p value 0.052.

Conclusion: The study concluded that while there is a significant association between students' knowledge & awareness of Basic Life Support (BLS) and their subject specialty, gender does not influence BLS knowledge levels. BLS awareness programs should be regularly conducted across

various academic specializations to boost students' knowledge and preparedness for emergency situations.

Key Words: Basic life support; BLS; Cardiopulmonary resuscitation; Emergency; Punjab

INTRODUCTION

Basic life support is the ultimate first-line treatment given to save the lives of persons who have a circulatory arrest or cardiopulmonary arrest, a cerebrovascular accident, or choking or abrupt blockage of the airways (1)**.** BLS includes chest compressions and circumvolution, regulating blood outpouring, artificial respiration, and maintaining airway management maneuvers without the use of any tool other than a basic breathing maneuver (2, 3). It is critical that everyone in the area considers learning BLS in order to save lives and enhance the quality of the surrounding environment, as a devastating and fatal tragedy can occur at anytime, anywhere, and to anybody. Students should consider it, and the material on BLS will be really useful. BLS (basal life support) maintains work capability until full CPR may be initiated (4, 5).

The process for removing a foreign-body airway obstruction (FBAO) must be taught to the student since it requires immediate attention (6). Choking is commonly related with eating. It can produce either mild or severe airway obstruction. The individual, who can speak, cough, and breathe in, has a minor impairment. The patient who is unable to speak, has a severe cough, is having difficulty breathing, and has a substantial airway blockage (7).

The International Liaison Committee declared in 2005 that a person or student with no CPR training or expertise must check for Agonal Gasps, which is the major indicator of cardiac arrest. When students notice that the patient is exhausted, they should immediately request assistance or send someone to activate the ERS. If the causality is not breathing and the responder is unsure, CPR should be started regardless of whether the subject takes periodic gasps. Agonal breaths are superficial and soft breaths that lack depth and produce a wheezing sound. These breaths originate in the brain stem. Despite the lack of oxygen, the skull region remains active and functional for a few minutes. As a result, this breath is abnormal and is misinterpreted as an indicator of circulation (8, 9).

Perkins et al. discussed various ventilation strategies during CPR in 2015. The danger of infection transmission through mouth-to-mouth air flow is extremely minimal, and it is miles worth of respiratory breathing with or without difficulties. The person described breathes through their mouths, which provides oxygen and ventilation. To offer a sigh of relief, open the victim's airline, press down on the alarm, and seal the mouth with an indestructible seal. Preventing a regular breath from being prioritised over a full breath keeps the person from having a puffy checkout or fainting again, and it predicts a rise in anxiety lungs. Some Clinical Advantages Carriers and rescuers state unequivocally that they may hesitate to inhale orally and prefer to utilise a block device. A bag mask device offers positive pressure air flow, which is necessary to prevent excessive stage airway. A bag mask device can thus give gastric expansion and accompanying problems. Supraglottic airway devices, for example, are now recognised within the scope of basic life support practise (10).

In 2020, a cross-sectional study was undertaken to review fundamental life guide information and related factors among non-clinical people who visited the Outpatient Branch. The observation was attended by 412 people, with a response rate of 97.4%. 46.4% of the members have been informed through the use of almost basic existence. The result reveals that participants' information assessments are lower than average (11). A research undertaken in Turkey had the same goal, comparing differences in BLS practical and theoretical knowledge. It was discovered that those with prior training and clinical experience performed better on the theoretical questions. However, there was no significant difference in scores across groups for the practical problems, and all groups' outcomes were below acceptable. Despite the fact that practical experience and prior training had a good effect on grades, there was no significant difference in performance between the two groups (12).

Therefore, the aim of the study was to determine basic life support knowledge and awareness among undergraduate students of different universities of Punjab. The emphasis was on understanding the associations between the demographic data and the level of BLS knowledge. The rationale for investigating Basic Life Support (BLS) awareness among university undergraduates in Punjab stems from the critical importance of immediate emergency response in life-threatening situations. Evidence suggests a pervasive lack of knowledge and preparedness regarding BLS among this demographic, illuminating a significant study gap. Addressing this void, the study holds paramount significance as it aims to enhance BLS understanding, readiness, and ultimately, the survival rates during medical emergencies. By promoting BLS awareness, the research indirectly fosters a community-oriented health and safety culture among the youth, preparing them as responsible, proactive citizens, contributing positively to public health infrastructure and emergency management in the region.

Materials and Methods

A cross-sectional design was used to capture undergraduate student's awareness and knowledge about basic life support at the study site. Study population was students enrolled in different universities of Punjab. Convenient sampling strategy was used to recruit participants in the study. The total sample used in the present study was 1500 students. The duration of the study was 6 Months. Data was collected from different universities of Punjab. Inclusion criteria of the study were undergraduate medical and non-medical students of age between 18 to 26 years. Study was conducted by using Modified BLS Questionnaire containing 18 questions including demographic details, awareness, knowledge, attitudes, towards BLS. Study was conducted by sending BLS questionnaire containing 18 questions including demographic data, awareness, knowledge, and attitudes, towards BLS. Data collection was started after taking permission from the selected universities. The students were selected on the basis of inclusion criteria. Participants who showed their willingness were given consent form. Consent form was in simple language and discussed all the procedure. Data collection took place between April and September, 2021, during which 1500 questionnaires were filled using Google form. Questionnaires were distributed to students by posting it on their batches' groups on what's app. Data was collected from different universities of Punjab.

Ethical Consideration

The study received ethical approval from Institutional review board of "Government college university, Faisalabad. Before data collected, informed consent forms were signed by all participants. The purpose of the study was explained to all students. The participation in the study was entirely voluntary. All personal data of the participants was kept confidential.

Statistical analysis

The results were analyzed using SPSS software version 20. A frequency distribution of descriptive study was used to check the occurrence of each response. Chi square test was used to check the association between two variables in this study.

RESULTS

Demographic Statistics

Table 1 shows demographic statistics of students. Out of 1500 participants, 22.4% were 18-20 years old, 48.8% were 21-23 years old, and 22.8% were 24-26 years old while 6.0% were above 27 years old. 40.0% were related to non-medical subjects while 60.0% were related to medical subjects. Out of total participants, 55.2% were male participants and 44.8% were female participants.

Table 1: Demographic statistics

Demographic statistics		f(%)
Age	18-20 Years	336(22.4)
	21-23 Years	732(48.8)

	24-26 Years	342(22.8)
	Above 27 Years	90(6.0)
Subject	Medical	600(40)
	Non-medical	900(60)
Gender	Male	828(55.2)
	Female	672(44.8

Table 2 demonstrates frequency and percentage of participant's response on questions related to knowledge of BLS.

Table 2: Frequency and percentage of participant's response on questions related to BLS

Questions related to BLS		**f(%)**
Heard about BLS	Yes	921(61.4)
	No	579(38.6)
Interns need to know about BLS	Yes	1146(76.4)
	No	354(23.6)
BLS should be part of curriculum	Yes	1095(73.0)
	No	405(27.0)
BLS should be done only in hospitals	Yes	459(30.6)
	No	1041(69.4)
Heard about BTLS	Yes	723(48.2)
	No	777(51.8)
Reason for lack of knowledge about BLS	No professional training	813(54.2)
	Busy curriculum	396(26.4)
	Lack of Interest	291(19.4)
Seen a BLS (CPR) being done	Yes	447(29.8)
	No	1053(70.2)
Attended a workshop on BLS	Yes	609(40.6)
	No	891(59.4)
No. of compressions/min in adult	100	528(35.2)
	200	114(7.6)
	50	225(15.0)
	30	633(42.2)
Compression to breath ratio	15:2	540(36.0)
	3:2	222(14.8)
	30:2	663(44.2)
	100:2	75(5.0)
Location for chest compressions	Left side of the chest	711(47.4)
	Right side of the chest	186(12.4)
	Mid chest	480(32.0)
	Xiphisternum	123(8.2)
Heard about AED	Yes	699(46.6)
	No	801(53.4)
Dialing no.in medical emergency	1122	1308(87.2)
	1102	87(5.8)
	1104	78(5.2)
	1108	27(1.8)
BLS knowledge	Poor	483(32.2)
	Below average	369(24.6)
	Average	588(39.2)
	Excellent	60(4.0)
Heard of Heimlich maneuver	Yes	507(33.8)
	No	993(66.2)

BLS knowledge is useful	Yes	1173(78.2)
	No	327(21.8)

BLS= Basic Life support, BLTS= Basic traumatic life support, AED= automated external defibrillator

Table 3 shows the cross-tabulation of adult basic life support awareness and knowledge with Subject wise Classification and Gender wise Classification

Table 3: Association between adults BLS awareness and knowledge

		BLS Awareness And Knowledge		**Total**
		Yes	No	
Subject wise Classification	Non-Medical	411	567	600
	Medical	510	390	900
Total		921	579	1500
		Yes	No	
Gender wise Classification	Male	540	288	828
	Female	381	291	672
Total		921	579	1500

Table 4 shows the results of chi square test. Chi-square test between BLS awareness & knowledge and subject specialty showed statistically significant association with p value of 0.008. Chi-square test between gender and BLS awareness & knowledge showed no statistical significant association with p value 0.052.

Table 4: Chi-square test statistics

	Chi-Square Tests			
		Value	**df**	**Asymp. Sig. (2-sided)**
Association b/w subject and BLS awareness & knowledge	Pearson Chi-Square	7.090	1	.008
Association b/w gender and BLS awareness & knowledge	Pearson Chi-Square	3.788	1	.052

DISCUSSION

Basic life support is the ultimate first-line treatment given to save the lives of persons who have a circulatory arrest or cardiopulmonary arrest, a cerebrovascular accident, or choking or abrupt blockage of the airways (1)**.** The purpose of the research was to determine adult basic life support knowledge and awareness among undergraduate medical and non-medical students of different universities of Punjab. The results present study showed that, out of 1500 participants, 22.4% were 18-20 years old, 48.8% were 21-23 years old, and 22.8% were 24-26 years old while 6.0% were above 27 years old. 40.0% were related to non-medical subjects while 60.0% were related to medical subjects. Out of total participants, 55.2% were male participants and 44.8% were female participants. Chi-square test between BLS awareness & knowledge and subject specialty showed statistically significant association with p value of 0.008. Chi-square test between gender and BLS awareness & knowledge showed no statistical significant association with p value 0.052. BLS awareness programs should be regularly conducted across various academic specializations to boost students' knowledge and preparedness for emergency situations.

According to Arsati et al. life-threatening medical emergencies such as anaphylaxis, myocardial infarction, cardiac arrest, and stroke are infrequent in Brazilian dentistry clinics, dentists are not well-organized to handle clinical emergencies, and CPR is inadequate (12). Srinivas et al. (2014) conducted a similar study and found that appearance and training at BLS (attending BLS workshops) led in improved understanding of BLS and higher score patterns, resulting in various clinical interns boosting self-confidence among interns (13). Chowdari et al. in 2013 explored that

students who got training obtained higher scores for 'BLS / CPR Needs Scenario Response' and 'Successful Rehabilitation Signs and Symptoms,' while 'Warning' received the lowest rating. There is a little discrepancy in their understanding of the BLS / CPR indications (14).

Conclusion

In conclusion, the study unveiled a crucial link between undergraduates' BLS knowledge and their academic specialization in Punjab's universities, with no significant gender-based differences identified. Tailoring BLS awareness initiatives to specific academic disciplines, rather than generalizing or focusing on gender, was thus recommended to effectively bridge knowledge gaps and foster a culture of emergency preparedness and lifesaving awareness among students.

Limitations

Since the data was collected via modified BLS questionnaire, it is susceptible to respondent bias, with students potentially over or underestimating their BLS knowledge and awareness. Absence of longitudinal data prevents tracking of changes or trends in BLS knowledge over time or through the progression of students' education, hampering the study's ability to capture the dynamic nature of knowledge acquisition and retention. The study is confined to universities in Punjab, hindering the generalizability of the findings to students in other regions.

Recommendations

- Given the significant association between BLS knowledge and subject specialty, conduct specialized awareness campaigns tailored to the needs and gaps identified within each academic field.
- Integrate BLS education within the undergraduate curriculum for both medical and non-medical students, ensuring that all students, irrespective of their specialty, have a foundational understanding of BLS.
- Implement periodic assessments of students' BLS knowledge and offer refresher courses to maintain and enhance their skills and awareness over time.
- To improve generalizability, future research should be expanded to include universities outside of Punjab, providing a more comprehensive understanding of BLS awareness and knowledge among undergraduates nationwide.

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