

BASIC LIFE SUPPORT KNOWLEDGE OF UNIVERSITY STUDENTS AND EFFECT OF A SINGLE TWO DAYS TRAINING SESSION: A PROSPECTIVE STUDY

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The First Aid (FA) and Basic Life Support (BLS) have vital role in saving lives. In the last few years, traffic accidents and terrorist activities have tremendously increased in Pakistan. Objective of the study was to compare the level of awareness and attitude towards Basic Life Support (BLS) training among the students of different departments of the G.C. University and to evaluate the effects and benefits of a single training session of FA and BLS on their previous knowledge and attitude. A cross sectional study was conducted among the first year students at three departments of G.C. University Faisalabad, two of which were related to Health Sciences and one non- Health Sciences department. Knowledge regarding FA and BLS was assessed with the help of a detailed questionnaire before the training sessions (Pre-test). Training sessions were conducted for two days and the data regarding post- training evaluation was gathered (post-test). There was remarkable improvement in the knowledge and attitude of all the students towards FA and BLS as assessed by post-test (> 85% score). Although the pre-training responses and knowledge by the Health Sciences students were significantly better (> 65% score) than the other students (< 50% score), yet the mean of post-training evaluation of students were almost similar (> 85% score). The study effectively depicts that students are highly benefitted from the single training session of FA and BLS without any departmental differences as shown by the post-test scores.

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Keywords: Basic life support, First aid, Students.

INTRODUCTION

Cardiac arrests and accidents are the most common emergencies with outcomes of serious morbidities and mortalities (1). Medical emergencies can arise in any setup such as home, community, hospital wards and clinics. Due to unavailability of urgent medical aid, thousands of lives are lost in medical emergencies every year as a result of both man-

made and natural disasters (2). The 2005 earthquake in Pakistan, floods in Sindh, Punjab, recent fire accidents in factories in Karachi and Lahore are some examples. These emergencies can be easily prevented or at least managed properly by some very simple maneuvers and skills; by knowledge and practice of resuscitation skills (3).

Resuscitation and first aid techniques are practiced since long as earlier records from Egyptian history, suggests that mouth to mouth and mouth to nose respiration were among the earliest resuscitative efforts in this direction (4). The technique has also been used for many centuries by midwives in attempts to revive apparently stillborn infants (5). Over time, resuscitation skills have evolved into a proper protocol, commonly known as Basic Life Support (BLS) which involves cardiopulmonary resuscitation (CPR). BLS is the maintenance of the ABCs (airway, breathing and circulation) through cardiopulmonary resuscitation (CPR) without auxiliary equipment includes both prompt recognition, immediate support of ventilation and circulation in case of respiratory or cardiac arrest (6). Since its invention, Basic Life Support (BLS) has proved to be a simple but effective procedure that allows almost anyone to sustain life in the early critical minutes after cardiopulmonary arrest due to heart attack or any other trauma. BLS has a combination of skills including mouth-to-mouth breathing to support ventilation and chest compression to normalize blood circulation to the brain and vital organs (7). A first aid provider should be able to assess the situation quickly and calmly, deal with life threatening conditions meanwhile protecting him/herself from the danger, obtain medical aid and call an ambulance in case of serious injury or illness (8). Knowledge of BLS and practice of first aid techniques ensure the survival of the patient long enough till experienced medical help arrives and in most cases is itself sufficient for survival (9).

BLS requires nothing as far as resources are concerned and its importance is undeniable. Proper practice of the techniques and maneuvers enable a person to resuscitate a victim effectively. Ideally everyone should know BLS and CPR but its awareness to medical and health related personnel should be a pre-requisite for entering into this field. Newly qualified doctors and even allied health professionals and paramedics are expected to take part in resuscitation from their first day (5).

The importance of BLS is acknowledged all over the world, in many international medical universities of USA and other countries formal training in first aid management is a compulsory part of the undergraduate medical curriculum and there is rising trend to extend these sort of training programs to allied health professionals/students as well as non-medical/health students (10). Unfortunately, in Pakistan, professional training of Emergency dealing in medical students is often neglected or not done effectively according to international standards. Furthermore, the awareness and training programs should not only be limited to the medical personnel but also to the paramedics and allied health personnel and as well as general population (11). In Pakistan very little data is available addressing the level of awareness of the medical and allied health personnel, including the pre-graduate students, regarding these highly effective and easy maneuvers of FA and BLS (12).

The objective of this study was to determine the level of awareness regarding BLS and knowledge of implicated skills among the students of the different departments of GCU Faisalabad. The effects of a single practical training session regarding BLS on their awareness and knowledge of involved skills was also assessed and compared with in the students of the different departments that are engaged in the study.

METHODOLOGY:

This was a quasi-experimental study carried out in the students of different departments of GC University Faisalabad after approval from the university ethical committee. Three different departments were involved in the study: The Group1, includes the students from the College of Allied Health Professionals (the students of Allied Health Sciences include students of Medical Lab Technology and Radiography & Imaging Technology); The Group 2, the students

of Food Science Technology (non-medical/ non allied health sciences students); the Group 3, The students from College of Physical Therapy (the students of Allied Health Sciences and includes students of Doctor of Physical Therapy, DPT). A randomization procedure was not applicable because of the predefined grouping of the departments but only those students were taken in the study that never took the BLS training sessions before.

The students of the different departments were put to test two times: once before the training called Pre-test, then after the training called Post-test. Pre-test only checked background knowledge through one-best type multiple choice questions (MCQs). In post-test both knowledge and psychomotor skills were tested that include one-best type multiple choice questions (MCQs). First, all students received a brief introduction (10-15 minutes) of objectives and terminology of the BLS training orientation session. Then they were put through a Pretest to assess their background knowledge and graded out of 100 marks.

The students then received lectures, demonstrations and hands-on training on FA and BLS skills in the training session/workshop, which is lasted for two days according to latest American Heart Association Guidelines. After training, all participants were given post-workshop test, the Post-test, that comprised the same questions as were in pre-test. After the written test, their psychomotor skills were tested by the group of trainers who provided training to them and results were compiled according to a pre-designed checklist. The final Post-test score was converted and graded out of 100 marks for the ease of comparison.

Microsoft office Excel 2007 and Statistical Package of Social Sciences (SPSS) were used for data analysis. Scores are reported as means $\pm$ SD. For statistical analysis, Pearson's correlation was used to compare the groups. P-value less than 0.05 was considered significant.

DISCUSSION:

Basic life support training has efficient results in the health training of community. Accidents,

trauma, hazardous conditions and other health emergencies can be handled on public level after basic life support program training. It is common practice in well developed and developing countries to decrease the mortality rate due to health emergencies. Basic life support program in GCUF is carried on with the help of rescue 1122 service in Faisalabad. It has been observed that basic life support training has increased the emergency handling ability and confidence in students. Fig 1 shows that pre training information about emergency handling is less than post training information. Group 2 containing non-medical students have less information and improved much than the medical students. Medical students also improved emergency handling after training. The ultimate improvement result in medical students is better than non-medical students.

Male and female students were divided in each group as per ratio of participants. In figure 3, it has been observed that emergency handling capacity in male is better than female gender. Figure 6 and 7 shows pre-test and post training test marks. Group1 and 3 are medical groups and show good information in pre-test than the group 2 (non-medical students). In post training test, there is very small difference in medical and non-medical students. The non-medical students have got much more information and showed good result of training while medical students have already some knowledge of health managements therefore they have to learn less to gain the required level of training.

In Europe, basic adult life support programs are launched and public training sessions enable the community to handle health emergencies (13). There are some advance trainings in Europe for the training of cardiac defibrillators. In manikin schools, training program was designed and taught as part of the school curriculum had significant impact on public health (14). In Northern Ireland medical students were deputed to train primary school teachers for emergency handling, further these teachers trained the primary school students and got best results (15). It has also been observed that there are certain barriers and hurdles for basic life training of community

(16). Many European and American Emergency Medical services represented the largest multicenter BLS study of pre-hospital cardiac arrest yet conducted and clearly indicated that patient survival may be improved by optimization of EMS response intervals, bystander CPR, as well as first-responder CPR by fire or police (17). American Heart Association (AHA) has published guidelines for cardiopulmonary resuscitation (CPR) and emergency cardiovascular care (ECC) of patients (18).

CONCLUSION:

Continuous Basic life support training has good effects in community health emergency management. University students have good knowledge and show excellent learning capacity. Regular BLS programs in universities can minimize the health emergency effects in community.

Male gender has more exposure to community and showed good learning results therefore in Pakistani community male gender training should be managed in 1st phase and all gender training in next phase. Medical students can be trained as

trainers and community health education can be widely managed.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

SAM, AS, MRR participated in the design and coordination of the study. AS, NA, MRR participated in the conduct of study and data collection. SAM and AS participated in data analysis. SAM, SA, HA, Q and RA participated in draft of the manuscript. All authors read and approved the final manuscript.

ACKNOWLEDGEMENT

The study was conducted under the umbrella of Directorate of Medical Sciences GCU Faisalabad with the help and coordination of Community Training Wing of Rescue 1122 Department of Faisalabad. The authors appreciate the help of all the members of Directorate of Medical Sciences GCUF in the conduct of the study.

RESULTS:

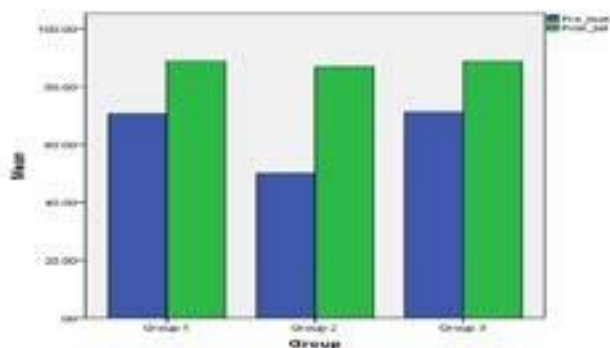


Figure1: Overall comparison of average Pre-test and Post-test marks in each group

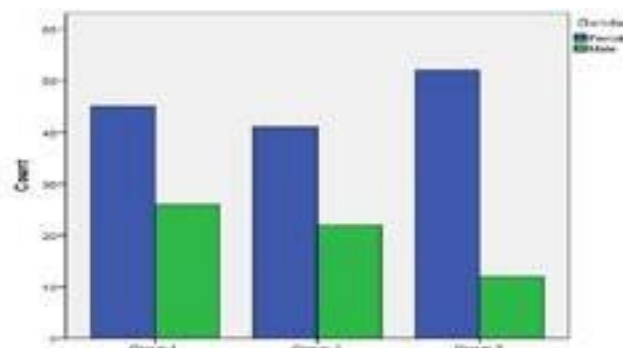


Figure 2: Distribution of Male/Female in each group

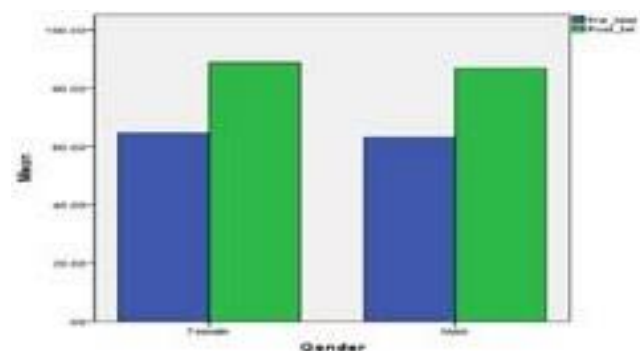


Figure3: Overall comparison of average Pre-test and Post-test marks in each gender category

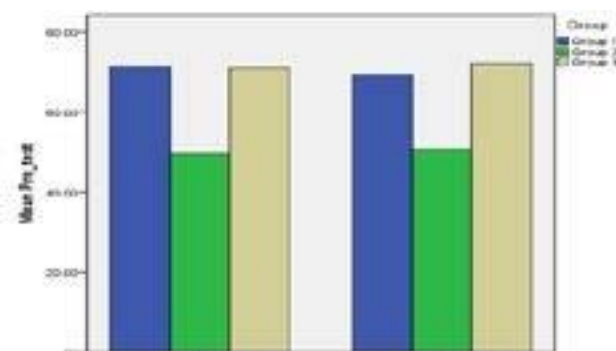


Figure4: Gender-wise comparison of average Pre-test marks in each group. Each bar shows the mean of Pre-Test marks for that category.

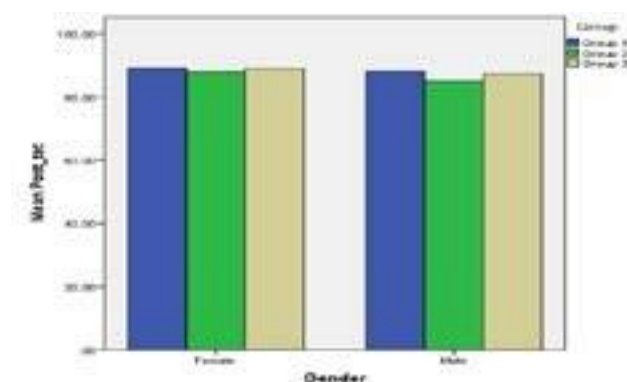


Figure3: Gender-wise comparison of average Post-test marks in each group. Each bar shows the mean of Post-Test marks for that category

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