

ORIGINAL ARTICLE

KNOWLEDGE AND ATTITUDE TOWARDS BASIC LIFE SUPPORT AMONG MEDICAL AND NURSING STUDENTS IN UNIVERSITI KUALA LUMPUR ROYAL COLLEGE OF MEDICINE PERAK.

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Abstract

Background: This study provides insight into the outcome of Basic life support (BLS) training in medical and nursing students through analysis of their level of knowledge and attitude towards BLS. It is aimed at serving as reference for future improvement in the training and exposure of BLS among the students.

Methodology: This was a cross-sectional study, using stratified random sampling. A structured questionnaire consisting of three parts - socio-demographics, knowledge and attitude on BLS, was used.

Results: Medical students had a significantly higher knowledge score compared to nursing students. Female students had a significantly better attitude score compared to male students. Semester 5 nursing students showed a significantly better attitude than the semester 6 students. Some students (11%) felt reluctant to perform CPR, main reasons being fear of causing harm and lack of confidence.

Conclusion: The knowledge and attitude of medical and nursing students towards BLS were found to be adequate but varied according to academic level of study. Early exposure with more practical training on BLS would improve the students' knowledge, as well as perception. Thus, periodical reinforcement and refresher training courses on BLS are needed.

Keywords: Basic life support, Knowledge, Attitude, Medical students, Nursing students

Introduction

Basic Life Support (BLS) is an emergency procedure that provides training to identify the manifestations of cardiac arrest, stroke, heart attack and foreign body airway obstruction¹. It also includes the role of CPR and defibrillation. The rate of immediate survival and return of spontaneous circulation have been reported to show a significant increase and improvement in post-BLS stage². With the number of emergencies increasing daily, health care professionals are under pressure of heavier workload. They also are facing high expectations from the public regarding their performance because of the increased awareness of the public on CPR. This calls for the willingness on the part of health care professionals to learn to improvise better techniques³.

Even though BLS is believed to substantially recover the social health, a study found out that in spite of the medical students being provided with a proper and structured training they still had a poor knowledge of BLS in emergency situations, especially in a difficult and chaotic scenario⁴. The situation evokes a fear in medical students including the final year students which makes it difficult for them to respond to emergency situations. They are hesitant and unprepared to start the resuscitation⁵. Consequently, junior doctors are incompetent to handle real emergency situations and do not meet the required level as stated in the guidelines for practice of medical education in the Netherlands⁶. There was also a high percentage of low attitude towards BLS among the practitioners as they had inadequate training, which led to lower self-confidence in performing BLS⁷.

A study done by Vausedvan et al. (2016) on knowledge of BLS resuscitation algorithm among medical and nursing students of Medical College Kottayam, Kerala showed that final year medical and first year nursing students had higher knowledge as compared to other students⁸. Aroor et al. (2014) stated that the BLS and other

resuscitation skills should be a part of the undergraduate curriculum⁹.

Another study found that trained groups of undergraduate, graduate and post-graduate medical and nursing students had greater scores in theoretical knowledge and practice of BLS as compared to the untrained groups¹⁰. One study found that 59.6% of medical and nursing students had weak knowledge regarding BLS and 44% were even unable to define the abbreviation of BLS¹¹. Therefore, with the lack of knowledge and awareness, it created a group of graduates who were incapable of conducting BLS or educating the community.

In one study, it was stated that more than one third of the first-year residents at three U.S. training sites never performed CPR and most of them also had never conducted any BLS which reflected lack of retention of skills among the postgraduate¹². This may lead to reluctance of junior doctors to be engaged with the CPR and BLS procedures. Thus this study was aimed at analyzing the level of knowledge and attitude towards BLS among medical and nursing students of UniKL Royal College of Medicine Perak.

Materials and Methods

This study was done on Year 4 and Year 5 medical students and Semester 5 and Semester 6 nursing students of UniKL Royal College of Medicine Perak (UniKL RCMP). A cross-sectional study using stratified random sampling was done. From the total study population of 321 students, random selection was done using the random number generator in Open Epi.com and the *minimum* sample size required was 176. After considering 10% non-responders and incomplete questionnaires, minimum sample size was finally determined as 194.

A structured questionnaire was used to assess the levels of knowledge and attitude towards BLS.

The questionnaire consisted of 3 parts; socio-demographics (7), knowledge (11) and attitude (8) on BLS. The questionnaire covered areas on BLS, Emergency Medical Services (EMS), Automated External Defibrillator (AED), CPR, and prior experience and exposure to BLS training. Statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 24.0. Categorical variables were reported as numbers and percentages while continuous variables were expressed as means and standard deviations. Knowledge and attitude scores among the participants were expressed as mean and standard deviation. The mean scores among students in different years/semesters of study were compared using independent sample t-test and one-way ANOVA test. A p-value of less than 0.05 was considered significant. Ethical approval was obtained from the Institutional Ethical Committee of UniKL RCMP before conducting this study. Written informed consent was obtained from all the participants and all the information gathered was kept confidential.

Results

In the present study, 93.8% (182) of students had exposure to the Basic Life Support (BLS) as it was introduced in their curriculum and repeated in certain medical posting. Although 6.2% (12) of 4th year medical students were not exposed yet, probably due to busy posting schedules their scores regarding knowledge as well as attitude showed no significant difference with the remaining students (Table 1).

Regarding the knowledge, medical students had a significantly higher score compared to nursing students ($p=0.001$) (Table 2).

Regarding the attitude, female students had a significantly higher score compared to male students ($p=0.015$) (Table 3).

On post-hoc analysis among 182 students who had prior exposure to BLS, an association was

noted between the mean attitude score and the academic levels in 5th and 6th semester nursing students ($p < 0.048$). (Table 4).

In the present study, out of 194 students 178 participants (91.8%) were confident of providing chest compression, 99 (51.0%) were confident of providing mouth to mouth ventilation but 22 (14 medical, 8 nursing) were reluctant to perform CPR and the reasons being; fear of causing harm (59.1%), not confident (22.7%), fear of acquiring infection (9.1%) and fear of taking responsibility (9.1%). Regarding participants' opinion on inclusion of BLS in the medical and nursing programme curricula majority (98.8%) had agreed to the proposal.

Discussion

Our study showed that medical students had a higher knowledge score compared to nursing students ($p=0.001$) and this is similar to a study done in Tamil Nadu¹³ which also found that more than 20% of medical students attained higher than 70% marks while 81% of nursing students only managed to score less than 50% marks.

In the present study the knowledge score of 6th semester nursing students was found to be higher than the 5th semester nursing students showing that the performance improved as the duration of clinical exposure increased. This finding was similar to studies done in Tamil Nadu¹³ and Nepal¹⁴.

In the present study the knowledge score of year 5 medical students was found to be lower than that of the 4th year medical students showing a reduction in retention of memory. A study done in the University of Maribor also reported a similar reduction in retention of skills related to BLS¹⁵.

Overall, it indicated that periodic exposure to BLS increased both the awareness and attitude of students towards BLS. There is a need for optimal refresher training¹⁶ or repeated refresher training

especially for individuals who are not practicing resuscitation on a regular basis¹⁷.

In the present study, 91.8% of participants were confident of providing chest compression in contrast to the study done in Universiti Sains Malaysia¹⁸ where only 57.1% of the participants were confident in providing chest compression alone. However, there were few students who felt reluctant to perform CPR and the main reasons were fear of causing harm and lack of confidence. Similar reasons were also reported in other studies¹⁴.

In this study 98.8% of participants felt that BLS should be included in medical and nursing programme curricula which was in accordance with other studies¹⁹. There is the need of teaching BLS to medical students. Though being a real important issue there is still less attention within the curriculum at medical universities for teaching life support skills in an attractive way²⁰. There was a significantly high attitude score ($p=0.021$) among those who had prior BLS training compared to those who had not. The finding is in consistence with other studies^{21, 22}.

Limitations

Some limitations were encountered in this study. Although the participants were trained in BLS none of them were engaged in active patient care. Despite questions on attitude included evaluation of their confidence in performing BLS, the study did not assess the practical skills of participants. The present study provided an insight into the

state of BLS training outcomes among students in UniKL RCMP which could enable further improvement in the outcomes. However, it will be more informative if the assessment on the knowledge and attitude can be done among the general public untrained in BLS skills. Including only medical and nursing students seriously limits the usefulness of the study.

Conclusion

There was adequate knowledge and appropriate attitude of medical and nursing students towards basic life support (BLS) but varied according to academic level of study. As the present study was a questionnaire-based study, the practical skills of BLS were not assessed. To improve the students' knowledge, attitude as well as their skill, more hands-on practical training on BLS is needed. Thus, implementation of periodical reinforcement and refresher training courses on BLS should be encouraged.

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Table 1: Mean knowledge and attitude scores between medical and nursing students

Student group	Knowledge			Attitude		
	Frequency	Mean \pm SD	P value	Frequency	Mean \pm SD	P value
Total	194	0.6996 \pm 0.12330	0.001	194	1.6458 \pm 0.29525	0.162
Medical	157	0.7209 \pm 0.11468		157	1.6624 \pm 0.29302	
Nursing	37	0.6093 \pm 0.11904		37	1.5753 \pm 0.29831	

Table 2. Association of knowledge scores with other factors - gender, BLS exposure and practice.

Variable	Number	Knowledge		
		Mean score	SD	P value
Gender				
Male	55	0.6959	0.15572	0.572
Female	139	0.7011	0.10848	
Prior exposure to BLS				
Yes	182	0.6998	0.12393	0.671
No	12	0.6970	0.11843	
Practised BLS procedure				
Yes	188	0.7045	0.1169	0.062
No	6	0.5455	0.21513	

Table 3. Association of attitude scores with other factors - gender, BLS exposure and practice, reluctance.

Variable	Number	Attitude		
		Mean score	SD	P value
Gender				
Male	55	1.7091	0.31583	0.015
Female	139	1.6208	0.28401	
Prior exposure to BLS				
Yes	182	1.6538	0.27901	0.569
No	12	1.5238	0.48093	
Practised BLS procedure				
Yes	188	1.6558	0.28978	0.021
No	6	1.3333	0.32156	
Reluctant to perform resuscitation				
Yes	22	1.3442	0.30435	0.002
No	172	1.6844	0.27168	

Table 4. Association of knowledge and attitude scores with academic levels of participants with prior exposure to BSL (n=182).

Academic level	Knowledge			Attitude		
	Frequency	Mean \pm SD	P value	Frequency	Mean \pm SD	P value
4 th Year Medical	69	0.7352 \pm 0.12832	0.111	69	1.7019 \pm 0.26584	0.177
5 th Year Medical	76	0.7117 \pm 0.10001		76	1.6485 \pm 0.27547	
5 th Semester Nursing	13	0.5944 \pm 0.04717	0.123	13	1.7143 \pm 0.22588	0.048
6 th Semester Nursing	24	0.6174 \pm 0.14431		24	1.5000 \pm 0.30956	

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