ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 01, pp.45060-45063, January, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

A CROSS SECTIONAL STUDY TO ASSESS THE KNOWLEDGE, ATTITUDE AND PRACTICE OF BASIC LIFE SUPPORT IN INTERNS IN A TERTIARY CARE HOSPITAL IN DELHI

***,[1]Anika Sulania and [2]Dr. Anika Khokhar**

[1]Assistant Professor, Community Medicine, Dr.BSA Medical College, Delhi
[2]Professor, Community Medicine, VMMC &SJH, Delhi

ARTICLE INFO

Article History:
Received 18th October, 2016
Received in revised form
14th November, 2016
Accepted 29th December, 2016
Published online 31st January, 2017

Key words:

CPR,
Emergency Response,
Medical Curriculum,
Interns,
Health Professionals.

ABSTRACT

Introduction: Knowledge of BLS and practice of simple CPR techniques ensures the survival of the patient long enough till experienced medical help arrives and in most cases is itself sufficient for survival.Ideally, everyone should know BLS and CPR, but its awareness to medical personnel is invaluable as they face many such situations in their life especially in buddings doctors who will have tackle this kind of emergencies in their medical practice and it has been part of their teaching. With this the study was planned to assess the awareness of medical interns regarding BLS and understanding the deficits was planned with the objectives to assess the knowledge, awareness and practices of Basic Life Support in medical interns in a tertiary care Hospital of Delhi and to assess the need of including BLS in the medical curriculum.

Material and Methods: A cross-sectional study was done with pre designed and pretested interview schedule based on AHA, 2015 guidelines. Consent was taken and those who consented were asked to fill the schedule in the presence of investigator to clear the doubts in understanding any question.

Results: Response rate was 93.7 with 60 % males study participants. Significant knowledge gap was found which was depicted in proportions and knowledge score. Self-grading regarding BLS (22.7% above average) or Initiating was low (41.4% were confident) with lack of professional training (67%) was considered to be the main cause of that.

Conclusion: Our findings suggest inadequate basic life support knowledge and need of regular trainings and workshops.

Citation: Anika Sulania and Dr. Anika Khokhar, 2017. "A cross sectional study to assess the knowledge, attitude and practice of basic life support in interns in a tertiary care hospital in Delhi", *International Journal of Current Research*, 9, (01), 45060-45063.

INTRODUCTION

Basic life support (BLS)/Cardiopulmonary Resuscitation (CPR includes recognition of signs of sudden cardiac arrest (SCA), heart attack, stroke and foreign-body airway obstruction (FBAO), as well as performing CPR and defibrillation with an automated external defibrillator (AED) (Chandrasekaran *et al*., 2010) and is a part of emergency medical care. Timely provision of BLS/CPR can save a precious life. (Beck *et al*., 2005; Robert, 2010; Vaillancourt, 2004; Caffrey *et al*., 2002; Russeler, 2010). Knowledge of BLS and practice of simple CPR techniques ensures the survival of the patient long enough till experienced medical help arrives and in most cases is itself sufficient for survival. Ideally, everyone should know BLS and CPR, but its awareness to medical personnel is invaluable as they face many such situations in their life especially in buddings doctors who will have tackle this kind of emergencies in their medical practice and it has been part of their teaching.

Corresponding author: Anika Sulania,
Assistant Professor, Community Medicine, Dr.BSA Medical College, Delhi

However, low confidence among medical students in performing BLS has been reported from Europe. (Freund *et al*., 2013) Poor training among undergraduate medical students has also been reported from UK and Poland. (Freund *et al*., 2013; Mastoridis *et al*., 2011) Inadequate knowledge of BLS has been reported from Switzerland and Pakistan. (Chojnacki *et al*., 2011; Businger *et al*., 2010; Zaheer, 2009). Data from India also suggests that the awareness of BLS among students, doctors, and nurses of medical, dental and homeopathy is very poor.(13) Structured pattern of BLS/ALS is lacking even in our medical curriculum (Aroor, 2010; Asad Abbas, 201; Yunus *et al*., 2015). As a result many may find it difficult when they suddenly come across an emergency situation. In India, very little data are present which addresses the awareness of the medical interns regarding this highly effective and easy manoeuvre. Moreover no data is present for northern India. Hence this study was conducted to assess the awareness of medical interns regarding BLS and understanding the deficits was planned with the objectives to assess the knowledge, awareness and practices of Basic Life Support in medical

interns in a tertiary care Hospital of Delhi and to assess the need of including BLS in the medical curriculum.

MATERIALS AND METHODS

A *C*ross-sectional observational study was done in July 2016 among interns of the hospital.The objectives of the study were explained to them. All interns willing to fill the questionnaire were taken into study population.For sample size complete enumeration of the population was done i.e. all the 160 interns were included in the study. A predesigned , pretested semi structured, self-administered questionnaire with 36 questions based on and in accordance with" AHA(AMERICAN HEART ASSOCIATION) GUIDELINES FOR BLS,2015" (Robert, 2010)was used to assess the levels of knowledge, attitude and practice of BLS. The first part of the questionnaire consisted of basic sociodemographic information and the questionnaire regarding exposure to BLS previously. The second part consisted of the questions regarding Knowledge, attitude and practice of the BLS Interns were approached in the wards and in the outpatient department.

Those posted in the emergency or operation theatre were approached in the hostel. Only consented participants were provided the questionnaire and same were taken back with marked answers on the spot after completion. Equal marks were given for each question and the scores were converted to percentage scale for each of knowledge and practice of BLS. Then the knowledge of the interns was classified on the basis of scores greater than or less than 50% of knowledge. The knowledge score for each participant was calculated with a maximum possible score of 21 and minimum score of 0, where a higher score indicates a greater knowledge.

Statistical Analysis

Data was assembled in Microsoft Excel 2010.Furthen analysis was done using Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, version 15.0 for Windows). Categorical variables were expressed as numbers and percentages.and p value <0.05 is considered as significant.

RESULTS

Out of 160 study subjects, 10 didn't gave consent so were excluded from study giving the response rate of 93.75%.Out of 150participants 90 (60%) were males and 60 (40%) were females.The age of the subjects ranged from 22 to 27 years (mean 23.7±1.15 years). In parameters used to assess the knowledge study participants, in most of them the score is good with more than 50% responded correctly.

Table 1. Distribution of the study subjects according to their knowledge and attitude regarding BLS

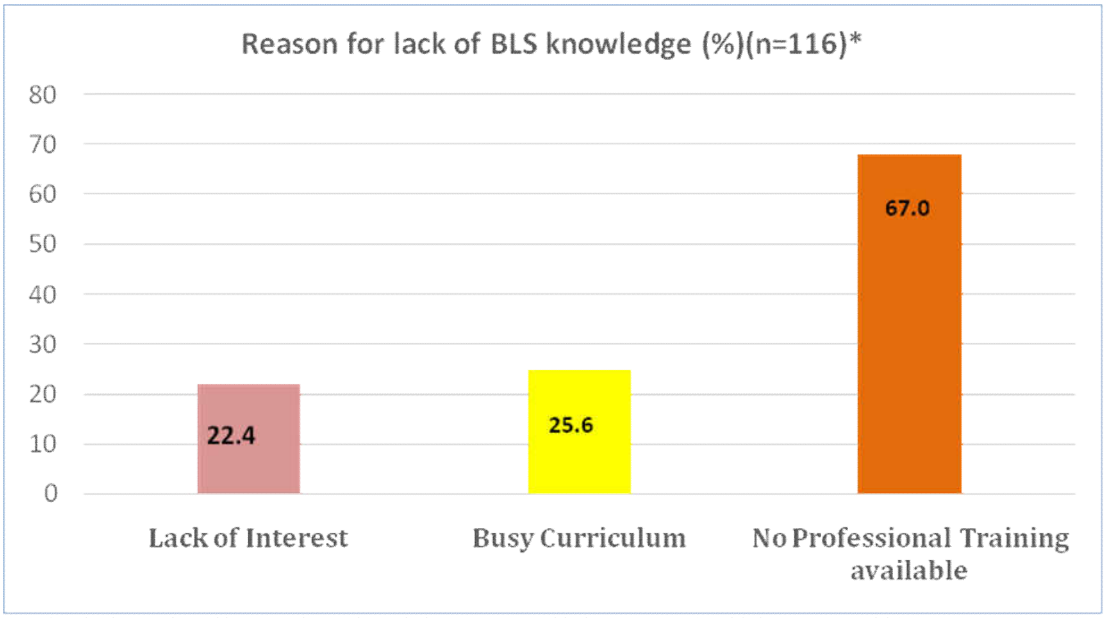
N=150

Q.No.	Parameters	Yes (%)	No (%)
1	Heard about BLS	143 (95.3)	07 (4.7)
2	Have you ever had any prior training in BLS	54 (36)	96 (54)
3	BLS stands for Basic Life Support	127 (84.7)	23 (15.3)
4	The first step in BLS for adults is to assess the victim	62 (41.3)	88 (59.7)
5	The helpline number for National Ambulance Services (NAS) is 108/102	109 (72.7)	41 (27.3)
6	Pulse check is recommended for not more than 10 seconds	78 (52)	72 (48)
7	Pulse check in infants is performed at the Brachial Artery	80 (53.3)	70 (46.7)
8	Characteristics of high quality CPR- Minimum interruptions, starting within 10 seconds of cardiac arrest and To push hard and fast	109 (72.7)	41 (27.3)
9	Rate of chest compression in adults is 100 per minute.	97 (64.7)	53 (35.3)
10	Chest compression: Ventilation in adults is 30:2	87 (58)	63 (42)
11	Chest compression: Ventilation in infants is 30:2	46 (30.7)	104 (69.3)
12	Location for chest compression in adults is mid-chest.	88 (58.7)	62 (41.3)
13	Location for chest compression in infants is One finger Breadth below the nipple line.	47 (31.3)	103 (69.7)
14	Depth of chest compression in adults is 2-3 inches	51 (34)	99 (67)
15	Depth of chest compression in infants is one-half to one-third of the depth of chest	47 (31.3)	103 (68.7)
16	AED stands for Automatic External Defibrillator.	61 (40.7)	89 (59.3)
17	AED is used for checking the hearth rhythm and sending electric shock	10 (6.7)	140 (93.3)
18	Manoeuvre used to open the airways is Head tilt-chin lift.	107 (71.3)	43 (28.7)
19	If somebody is not responding even after shaking and shouting at him, the immediate action is to Call An Ambulance	84 (56)	66 (44)
20	First response to a choking adult is to Confirm Foreign Body Aspiration by talking to him	18 (12)	132 (88)
21	First response to a choking infant is Back blows and chest compression followed by foreign body removal if it is seen.	99 (66)	51 (44)
22	Have you ever performed BLS/CPR on a patient	48 (32)	102 (68)
23	If organised, willing to attend a BLS workshop	138 (92)	12 (08)
24	All interns need to know about BLS	143 (95.3)	07 (04.7)
25	BLS training should be a part of Medical Curriculum.	145 (96.7)	05 (3.3)
26	Confidence in initiating BLS/CPR	62 (41.4)	88 (58.6)

Table 2. Self-grading of BLS Knowledge Level

Self-Rating of BLS Knowledge	Frequency (n=150)	Percentage (%)
Above average	34	22.7
Average	77	51.3
Below average	39	26
Total	150	100

The attitude towards seeking knowledge for BLS excelled with more than 90% of the population gave positive response to willingness to attend such kind of workshops and that it should be made as a part of medical curriculum. It was noted that only 41.4% of the study subjects has full confidence in initiating BLS/CPR on their own (Table 1).



*Only those who self-reported BLS knowledge average and below average.(Multiple response table)

Figure 1. Bar Graph showing the distribution of reasons for lack of BLS Knowledge

Table 3. Distribution of Participants according to Knowledge Scores

Knowledge	Frequency (n=150)	Percentage
Score < 50%	63	42
Score > 50%	87	58

Table 4. Distribution of the study subjects according to association of few selected practices related variables and knowledge score

BLS knowledge score	BLS prior training		Performing BLS		Self-grading of BLS knowledge		Confidence on Initiating BLS	
	Yes (%)	No(%)	Yes(%)	No (%)	≥average	Above average	Yes(%)	No(%)
Score > 50%	40(74.1)	47(49)	36(75)	51 (50)	59 (50.8)	28 (82.4)	46(74.2)	41(46.6)
Score < 50%	14(25.9)	49(51)	12(25)	51 (50)	57 (49.1)	06 (17.6)	16(25.8)	47(53.4)
Chi-sqvalue	8.949		9.411		41.06		11.37	
p-value	0.003		0.004		0.000		0.001	
Total	54 (36)	96(64)	48(32)	102(66)	116(77.3)	34 (22.7)	62(41.4)	88(58.6)

As shown in table 2, when asked to self-grade them on BLS knowledge only 22.7% of the study subjects were sure of adequate BLS knowledge. On asking the reasons for the lack of knowledge, it was found that 67% perceived that lack of training in this particular regard is the main responsible factor followed by busy curriculum (25.6%) and lack of interest (22.4%) as shown in Figure 1 On the basis of knowledge score, it was noted that fifty eight percent of the study individuals (58%) has knowledge score above 50.but on comparing this knowledge score with other practice related variable, it was found that those who had scored above fifty percent had some prior training in BLS (74.1%), were more confident in initiating (74.2%) or performing BLS (75%) and also self-grading score about knowledge on BLS were high for them(82.4%).All this was found to be statistically significant with p-value less than 0.005 as shown in Table 4

DISCUSSION

This study emphasizes the Knowledge, attitude, practice and skill of BLS.Health professionals should have sound knowledge and skills regarding BLS. Response rate of the study is good, still in our study we found many knowledge gaps among interns regarding BLS/CPR. Certain domains where majority of study subjects were failed to answer were: Have you ever had any prior training in BLS, Chest compression: Ventilation in infants is 30:2; Location for chest compression in infants is one finger Breadth below the nipple line, depth of chest compression in adults is 2-3 inches, First response to a choking adult is to confirm foreign body aspiration by talking to him, and AED is used for checking the hearth rhythm and sending electric shock. Most of the participants thought that BLS/CPR should be included in the undergraduate dental curriculum. Results were consistent with other studies which were done in similar population Pillow *et al*. (2014) and Roshana *et al*. (2012) Moreover, Zaheer and Haque (2009) showed that a large number of participants (79%) were of the opinion that training of BLS should be a part of the undergraduate curriculum. This study revealed that the 58 %(87) participants scored >50 % in BLS Knowledge and >90 % of them had a positive attitude towards BLS. The results of the present study were consistent with those of the study conducted by Raghav *et al* in 2012. Non availability of professional training was quoted as the main reason for lack of BLS knowledge by maximum interns. Other studies also demonstrated inadequate knowledge about CPR in healthcare professionals, which was due to lack of training (Caffrey, 2002; Chojnacki *et al*., 2011; Businger *et al*., 2010). Our study suggested that those with prior training in BLS had better knowledge. This is consistent with a study conducted by

Sudeep *et al* in 2013 which demonstrated the improvement of knowledge and skills of CPR after a BLS training, Chandrasekaran *et al*., (Sudeep *et al*., 2013; Chandrasekaran *et al*., 2010). But the training of resuscitation skills is difficult because of busy schedules and lack of teachers and resources in India. Our study also showed inadequate retention of knowledge in those with prior BLS training. A significant proportion of trainees do not acquire adequate knowledge in a single session of training. Repeated training, hands-on practice and practical demonstrations are equally necessary for acquiring practical knowledge as suggested by Zaheer *et al* in 2009 (Zaheer, 2009) and Ruesseler (2010), Asadabbas *et al.* (2011) showed that knowledge of trained student was found to be better than untrained student. Also because of the updating of the guidelines every 5 years, repetitive training is needed to ensure that the changes are known to all (Sudeep *et al*., 2013)

Conclusion and Recommendation

The present study encompassed 150 Medical Interns.Almost all the interns (95.33 %) had heard about BLS thus demonstrating a high level of awareness. Only 36 % of the interns had received BLS training, thus suggesting poor exposure to BLS training. Most of the interns favoured inclusion of BLS in their academic curriculum, thus stressing the need for a structured BLS training. Non availability of professional training was quoted as the main reason for lack of BLS knowledge by maximum interns. Knowledge and practice skills of BLS/CPR are poor in medical interns although they have shown an excellent attitude towards it. An organised curriculum for BLS and its training is the need of the hour in medical education. We suggest that inclusion of a BLS course in the undergraduate curriculum with regular reassessment would increase awareness and application of this valuable life-saving skill. Also since it is lifesaving procedure in community workshops should be organized for semiprofessionals and educated unprofessional persons to increase the knowledge of such important procedures which should be known by everyone.

Limitations

Practical skills of basic life support could not be assessed in this study.Only 1 hospital was studied. Therefore study results cannot be generalized.

Conflict of interest: The authors have no conflict of interest to declare.

Other disclosures: None.

REFERENCES

Aroor, A.R. *et al*. 2010. Awareness about basic life support and emergency medical services and its associated factors among students in a tertiary care hospital in South India, 14:299–604

Asad Abbas *et al*. 2011. Knowledge of first aid and basic life support amongst medical students: a comparison between trained and untrained students. JPMA 61:613.

Beck, J.D., Eke, P., Heiss, G., Madianos, P., Couper, D., Lin, D. *et al*. 2005. Periodontal disease and coronary heart disease: a reappraisal of the exposure. Circulation. 2005; 112: 19–34.

Businger, A., Rinderknecht, S., Blank, R., Merki, L., Carrel, T. 2010. Students‟ knowledge of symptoms and risk factors of potential life-threatening medical conditions. Swiss Med Wkly. 140:78-84.

Caffrey, S.L., Willoughby, P.J., Pepe, P.E., Becker, L.B. 2002. Public use of automated external defibrillators. *N Engl J Med.,* 347: 1242-1247.

Chandrasekaran, S., Kumar, S., Bhat, S.A., Saravanakumar, Shabbir, P.M., Chandrasekaran, V. 2010. Awareness of basic life support among medical, dental, nursing students and doctors. *Indian J Anaesth.* 54:121–6.

Chojnacki, P., Ilieva, R., Kolodziej, A., Krolikowska, A., Lipka, J., Ruta, J. 2011. Knowledge of BLS and AED resuscitation algorithm amongst medical students--preliminary results. Anestezjol Intens Ter. 43:29-32

Freund, Y., Duchateau, F.X., Baker, E.C., Goulet, H., Carreira, S., Schmidt, M. *et al*. 2013. Self-perception of knowledge and confidence in performing basic life support among medical students. *Eur J Emerg Med.,* 20:145-6.

Mastoridis, S., Shanmugarajah, K., Kneebone, R. 2011. Undergraduate education in trauma medicine: The students‟ verdict on current teaching. *Med Teach,* 33: 585-7.

Raghava Sharma, Nazir, R. 2012. Attar, Adult basic life support (BLS) Awareness and knowledge among medical and dental interns completing internship from deemed university, NUJHS Vol. 2, No.3, September.

Robert A Berg, 2010. American heart association guidelines for Cardiopulmonary resuscitation and Emergency Cardiovascular Care Science, Circulation 2010:122:5685-5705

Russeler, M., Weinlich, M. *et al*. 2010. Simulation training improves ability to manage medical emergencies. *Emerg Med J.,* oct;27(10): 734-8

ShresthaRoshana, Batajoo, K.H., Piryani, R.M., Sharma, M.W. 2012. Basic life support: knowledge andattitude of medical/paramedical professionals. *World J Emerg Med.,* 3(2):141–5.

Steen, P.A., Kramer-Johansen, J. 2008. Improving cardiopulmonary resuscitation quality to ensure survival. Curr Opin Crit Care. 14:299–304.

Sudeep, C.B., Sequeira, P.S., Jain, J., Jain, V., Maliyil, M. 2013. Awareness of basic life support among students and teaching faculty in a dental college in Coorg, Karnataka. *International Dental Journal of Student's Research*, 2: 4–9.

Tyson Pillow Malford *et al*. 2014. Perceptions of basic, advanced, and pediatric life support training in a United States medical school. *J Emerg Med.,* 46(5):695–700.

Vaillancourt, C., Stiell, I.G. 2004. Cardiac arrest care and emergency medical services in Canada. *Can J Cardiol.* 20:1081-1090.

Yunus, M.D., Mishra, A., Karim, H.M.R., Raphael, V., Ahmed, G., Myrthong, C.E. 2015. Knowledge, attitude and practice of basic life support among junior doctors and students in a tertiary care medical institute. *Int J Res Med Sci.,* 3:3644-50

Zaheer, H., Haque, Z. 2009. Awareness about BLS (CPR) among medical students: Status and requirements. J Pak Med Assoc.59:57-9.

****