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To study Effectiveness of Basic Life Support Training among Paramedical Staff at District Hospital

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Abstract: Basic life support (BLS) is the major foundation for saving lives following cardiac arrest. This study was conducted among paramedical staffs at District Hospital who were previously not familiar with the BLS training skills. Aim of this study was to study the effectiveness of BLS training provided for the paramedical staff. **Methods:** Study (n-50) was conducted at Government District Hospital, Chitradurga in November 2023. Knowledge and practices were assessed using structured knowledge questionnaire and practice checklist. Pre-test and post test to assess knowledge regarding BLS was conducted. Pre-test and post test of practices was conducted on same day. On the 7th day, 2nd post test of knowledge was conducted. **Results**: The mean of first post test knowledge score (14.28) was higher than the mean of pre test knowledge score (6.12). The mean of second post test knowledge score (18.45) was higher than the mean of pre test knowledge score (6.12). The mean of post test practice score (17.67) was higher than the mean of pre test practice score (6.45). **Conclusion**: BLS training program was effective in enhancing the knowledge and practices of Paramedical staff. **Keywords:** BLS training, knowledge score, practices score, paramedical staff.

Introduction: Basic Life Support (BLS) is the first level of medical care in sudden cardiac arrest and life-threatening illnesses. Fundamental aspects of BLS include immediate recognition of sudden cardiac arrest and activation of the emergency response system, early chest compressions and breaths and rapid defibrillation with an automated external defibrillator.[1]

Basic life support (BLS) is one of the most fundamental components of emergency medical interventions and is defined as "ensuring an open airway and supporting circulation without any equipment in cases of cardio-respiratory arrest until providing advanced life support." The aim of basic life support is to maintain a distribution of oxygen-rich blood through vital organs, especially the brain and heart, through a temporary artificial circulation until normal cardiac activity and breathing are restored.[2, 3, 4]

Para medical staffs are generally the first responders to an in-hospital cardiac arrest and initiate basic life support while waiting for the advanced cardiac life support to take over. Kavalci, et al., and Ozdogan, et al. pointed out that it was considered amongst the duties of all healthcare team members to possess BLS knowledge and skills. [5, 6] paramedical staff should be involved in BLS training programs and these training programs should be repeated at certain

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intervals and updated in line with up-to-date guidelines including the steps of BLS. It is equally important to assess the effectiveness of the BLS training provided for paramedical staff.

Aim of this study was to study the effectiveness of BLS training provided for the para medical staff at District Hospital.

Materials and method:

A quasi experimental (pretest and posttest) design was used to evaluate the effectiveness of BLS training among paramedical staff. The study was conducted at District Hospital, Chitradurga, Karnataka in November 2023. Study comprised of 50 para medical staff working at District Hospital. Para medical staff, who were willing to participate, were included in the study. Para medical staff who were not willing to participate were excluded from the study. Written informed consent was obtained from all the participants before starting the study

20 structured knowledge questionnaires were used to assess the knowledge regarding BLS. Pre-test assessment for knowledge was done before BLS training for all. Teaching method was 1 hour lecture cum discussion with audio visual aids and demonstration. Post-test assessment for knowledge was done after teaching on same day. Knowledge was assessed before and immediately after teaching by a structured knowledge questionnaire comprised of 20 multiple choice questions (each given 1 mark for correct answer and 0 for wrong answer) validated by experts. Pre-test of practices regarding BLS was conducted using 20 observation checklists. There was 2 hour practice session on adult and infant manikins. Practice sessions were given and post-test was taken on the same day. On the 7th day, 2nd post test of knowledge was conducted for all the groups.

Data analysis

The data was analyzed according to the objectives of the study using both descriptive and inferential statistics. Calculation was carried out with the help of Microsoft Excel and Statistical Package for Social Science (SPSS version 20) Program.

Results

Description of sample characteristics: Frequency and percentage were computed for describing sample characteristics. The data presented in Table 1 showed that all the Paramedical staff were in the age group of 20-46 years. Majority of subjects (52%) were males and 48% were female. Most of the subjects (92%) didn't have previous knowledge about Basic Life Support. Only 8 % of the subjects had practical exposure to Basic Life Support.

Table 1: Frequency and Percentage Distribution of Paramedical staff According to Sample Characteristics.

Sl No	Sample Characteristics	Frequency	%
1	**Age in years**		
	<30	20	40.00
	30-40	18	36.00
	>40	12	24.00
2	**Gender**		

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	Male	26	52.00
	Female	24	48.00
3	**Working place**		
	ICU	10	20.00
	NICU/PICU	16	32.00
	Wards	12	24.00
	OT	12	24.00
4	**Years of experience**		
	< 1	8	16.00
	1-5	10	20.00
	5-10	22	44.00
	>10	10	20,00
5	**Previous experience in BLS training**		
	Yes	4	8.00
	No	46	92.00

Table 2: Showing Mean, Standard Deviation of Knowledge Score Before & After BLS Training among Paramedical staff(n-50)

Area	**Mean**	**SD**	**P value**
Pre-test	6.12	3.28	-
Post-test 1	14.28	5.76	<0.01*
Post-test 2	18.45	8.71	<0.01*

Table 3: Mean, Standard Deviation of Pre test to Post test of Practice Scores of Paramedical staff(n-50)

Area	**Mean**	**SD**	**P value**
Pre test	6.45	1.98	-
Post test	17.67	7.93	<0.01*

*compared with the pretest

The mean of first post test knowledge score (14.28) was higher than the mean of pre test knowledge score (6.12). The findings further indicate that the mean of second post test knowledge score (18.45) was higher than the mean of pre test knowledge score (6.12) as shown in table-2. Thus it indicated that training program was effective in increasing the knowledge of Paramedical staff regarding BLS. The knowledge difference between pre and post training of BLS was statistically significant ($p<0.05$).

The mean of post test practice score (17.67) was higher than the mean of pre test practice score (6.45) as shown in table-3. This indicated that the training program was effective in enhancing the practices of paramedical staff. The practical skills between pre and post training of BLS was statistically significant ($p<0.05$).

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Discussion

The current study compared the knowledge and practices of BLS among Paramedical staff at the beginning and the end of the training program. We found that BLS training program could significantly increase the knowledge of paramedical staff who should have the ability to recognize several life-threatening emergencies and provide CPR in a safe, timely, and effective manner.

Our study has shown that the post-test mean knowledge score (14.28) was higher than the pre-test mean knowledge score (6.12). The mean of post test practice score BLS (17.67) was higher than the mean of pre test practice score (6.45). Our study findings are compared with other studies.

Celik, et al. [7] stated the nurses (58.1%) working in an emergency department believed themselves to be incompetent about BLS. Ratha kabina et al [8] conducted a quasi-experimental study to evaluate the effectiveness of Planned Teaching Programme regarding Basic Life Support at Nursing College and findings showed that the Post-test Mean (13.4) was higher than Pre-test Mean. Adedamola et al [9] revealed that the level of pre-training knowledge was 8.9% compared to post training knowledge of 88.6%. The knowledge difference between pre and post training in CPR was statistically significant ($p<0.05$).

Asmita Chaudhary et al [10] conducted a BLS study among medical and paramedical staff and reported that only 3 out of 117 participants had secured80-90% marks in pretest and post workshop assessment showed 70% candidates securing more than 80%.

Unfortunately proper training of BLS is lacking among paramedical staff. Busy hospital work schedules and lack of resources act as barriers. Paramedical staff are still expected to learn resuscitation skills in the hospital setting, where there is opportunity to correct poor techniques.[11]

Conclusion

We conclude that preexisting knowledge of Paramedical staff regarding BLS was poor; BLS training we provided for the Paramedical staff in our study was effective in our hospital. BLS training should be made mandatory for all the Paramedical staff irrespective of their working places in hospital. Training programs should be repeated at regular intervals and knowledge and skills must be kept up-to-date.

Conflict of interest: Nil

Source of support: None

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