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ORIGINAL ARTICLE

Efficacy of Video -based Teaching Versus Lecture cum Demonstration Regarding Compression Only Life Support: A Multi-Arm Randomized Control Study

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Abstract

Introduction: In sudden cardiac arrests, early initiation of chest compression by bystanders increases the survival rate by two to three times. Hence training lay population in COLS is imperative. However, due to limited resources, alternate training modes for COLS must be explored. Aim: To evaluate efficacy of video-based teaching compared to traditional lecture-cum-demonstration (LCD) for teaching COLS. **Material & Methods:** A multi-arm parallel-group non-inferiority randomized control study was conducted among 85 first year physiotherapy students. The participants were randomly allocated to three arms. Traditional LCD was control while video song (VS) and video-based LCD (VLCD) were test arms. Post intervention, psychomotor skill gain as well as cognitive assessment was done using objective methods. **Results:** The mean age of the 85 participants was 19.04 years (S.D.= 0.932; Range: 17 to 22). Of these, 63 (74.11%) were females and 22 (25.88%) were males. One way ANOVA for psychomotor assessment showed no statistically significant difference between the 3 groups (F value: 1.918, p = 0.153). One way ANOVA showed that there is no statistically significant difference in knowledge gained among the three groups (F value: 0.056, p = 0.946). **Conclusion:** Skill and knowledge acquisition using VS and VLCD is not as good as LCD.

Keywords: cardiopulmonary resuscitation, COLS, audio-video demonstration, randomized controlled trial, non-inferiority trial, simulation training

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Graphical Abstract

Efficacy of Video -based Teaching Versus Lecture cum Demonstration Regarding Compression Only Life Support: A Multi-Arm Randomized Control Study

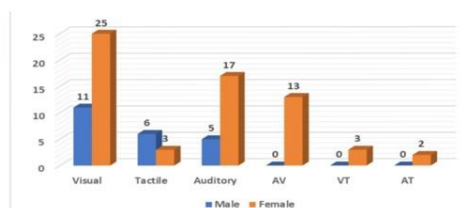
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Figure 2 Gender wise distribution of participants according to learning style



Results: The mean age was 19.04 years. Of these, 63 (74.11%) were females and 22 (25.88%) were males. One way ANOVA showed that there is no statistically significant difference in knowledge gained among the three groups.

Conclusion: Skill and knowledge acquisition using VS and VLCD is worse than LCD.

Introduction

Globally, 15 – 20% of all deaths are caused by sudden cardiac arrest, amounting to nearly half of all cardiovascular deaths [1]. Over the past five years, a steep rise in sudden cardiac deaths has been witnessed in India; experts believe due to COVID-19 pandemic. The salient features of these deaths include accelerated build up, early age of disease onset and high case fatality rate [2]. However, the case fatality rate can be brought down through basic cardio-pulmonary resuscitation (CPR). CPR is a simple yet critical method through which life can be sustained until medical help arrives. After cardiac arrest, there is short window of time before irreversible damage occurs to vital organs. Hence, role of bystanders in providing CPR becomes crucial. Compression only life support (COLS) is the simplest method to administer CPR. Early initiation of chest compressions

increases chances of survival by two to three times [3].

Training of laypersons will enable them to administer COLS timely. The COLS training is usually imparted using didactic lectures, lecture cum demonstration (LCD) or simulation-based training [4,5]. However, scarcity of health professionals and manikins; which leads to exorbitant course fees; pose many challenges. In India less than 1-5% of citizens are aware of COLS [4].

Taking into consideration the hurdles with traditional method, it is mandatory to find other suitable alternate method of training which can be easily implemented, available at low cost even in remote areas and is user friendly. Such method should also be helpful to refresh the skill as it decays within months [6].

Solution to this problem can be found in video-based teaching. It is one of the modern and dramatic means for learning

[7,8]. It can reach large audience with minimal cost. Video can be saved on personal devices for self-paced learning and as ready reckoner. Previous studies provide evidence that video-based teaching can improve learning outcomes [9,10]. However, there is dearth of research on whether such method can be utilized for COLS.

Hence, this study was undertaken to find whether video-based training in COLS is as effective as the usually practiced method. Aim of this study is to evaluate efficacy of video-based teaching compared to instructor-based LCD for teaching COLS to lay people. The objectives are 1. To develop video-based training material for teaching COLS. 2. To teach COLS to study participants using video and instructor-based LCD training methods. 3. To evaluate the efficacy of each teaching method. 4. To compare efficacy of video-based teaching with efficacy of instructor-based LCD method. 5. To report feedback of participants and faculty about teaching methods.

Null hypothesis

The gain of psychomotor skill for COLS in test arms is not as good as that in instructor-based LCD arm

Alternate hypothesis

The gain of psychomotor skill for COLS in test arms is as good as in instructor-based LCD arm.

Material and Methods

Study design

Multi-arm parallel-group randomized control study (2 test and 1 control arm).

Research setting: A tertiary care teaching hospital.

Study area: Skill Development Unit

Study period: March to June 2024

Study population: Undergraduate students enrolled in first year of bachelor of

physiotherapy course. These students were chosen as COLS was not yet taught to them.

Hence, these students nearly match untrained lay people.

Inclusion criteria: 1. Students willing to provide written informed consent to participate in the study 2.

Students well versed in English as well as Hindi and Marathi, the languages used as medium of instruction for training.

Exclusion criteria: Students who have had previous (in school, etc) information/training in COLS or resuscitation.

Sample size: Calculated using online sample size calculator by Department of quantitative health sciences, Cleveland Clinic. For this, significance level was considered to be 0.05 and power to be 0.8 for non-inferiority trial, dichotomous outcome. Expected proportion in each arm was taken to be 0.5. Sample size came to be 78 (26 in each arm).

The investigators included 90 students taking into consideration non response.

Randomization: All the students meeting inclusion criteria were listed and were assigned a number. Allocation into the 3 arms was done in 1:1:1 ratio using computer generated random sequence.

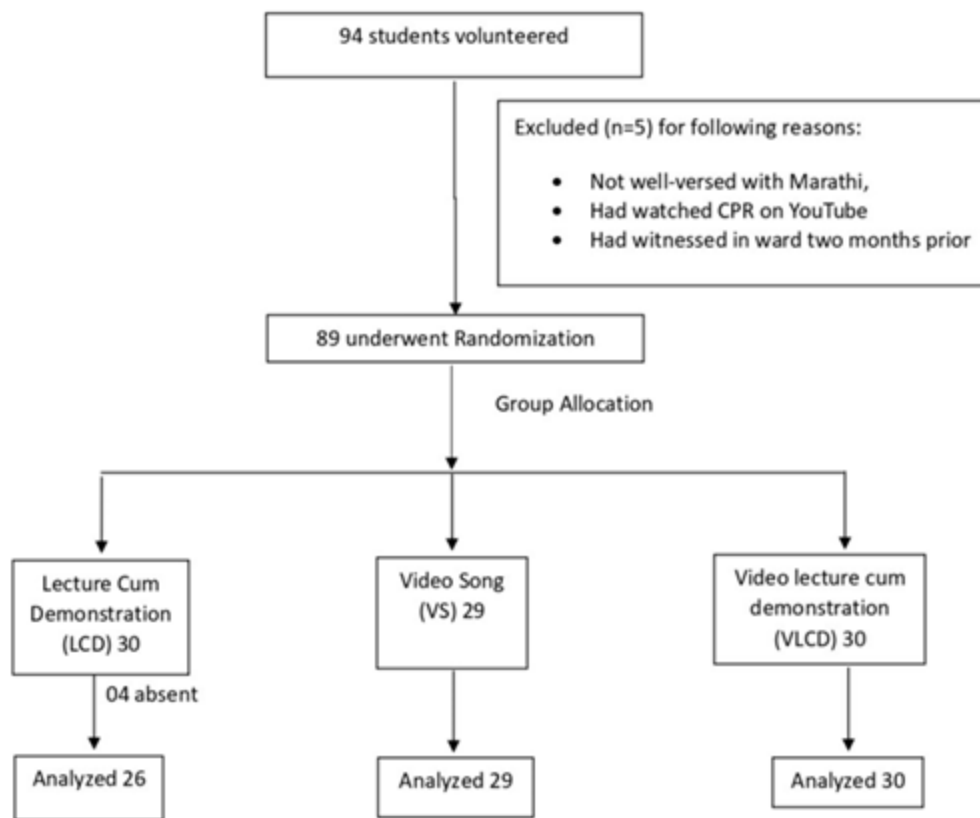


Figure 1. Flow chart depicting randomization process.

After randomization, the learning styles of all participants was evaluated using scale which was developed based on quiz by Pennsylvania Higher Education Assistance Agency (PHEAA) [11]. It was found that all learning styles were equally distributed among the three arms. The three teaching modality interventions were as follows- 1. Video explaining the procedure of COLS with help of visuals and song with music [video song (VS)] [test arm]. The song used is Jeevan Sanjeevani CPR song as per Indian Society of Anaesthesiologists (ISA) and Indian Resuscitation Council (IRC) guidelines and directed by Dr Rajan Joshi. 2. Video explaining the procedure of COLS with help of instructions by qualified COLS

trainer followed by enactment and simulation [video lecture cum demonstration (VLCD) [test arm] In case of VLCD, content and enactment were approved by 10 subject experts (IRC/AHA accredited instructors from Skill lab of institute). 3. Instructor based live lecture cum demonstration using simulation manikins (LCD), [control arm]. For live LCD, instructor for training was an accredited faculty of IRC and American Heart Association. Laerdal half body manikin with CPR feedback was used.

The 3 groups of participants were shown the allotted video or demonstration separately in sound proof hall. Duration of all interventions was similar (4 min 15 sec to

4 min 35 sec). The participants who reported that they understood the content in first attempt were asked to wait outside the hall in separate designated areas. Remaining participants were again shown the content. Two such extra chances were given. The number of times content was shown to the participant was recorded. After this, assessment (cognitive and psychomotor) of participants was done by the principal investigator, one by one.

Primary outcome assessed was psychomotor skill gained by the participant. This was done by asking them to perform COLS on a manikin (Laerdal Simpad Plus Q-CPR). A pre-validated binary checklist for assessment of psychomotor skill was used (Annexure A). A score between 0 and 6 was assigned based on their performance. *Secondary outcome* was cognitive assessment of students done with help of pre-validated multiple-choice questionnaire (Annexure B).

Feedback from the participants & investigators was collected regarding quality of training. (Annexure C).

The ethical approval for the study was obtained from the institutional ethics

committee (letter no MGM/ECRHS/2024/133; dated 30 March 2024). Formal administrative permission to conduct the study was obtained from the Principal of concerned institute. Written informed consent of students was obtained after explaining purpose of study. Confidentiality was maintained. *Data analysis:* Data was cleaned and entered into Microsoft excel. SPSS version 25 was used for analysis. Quantitative data was presented in form of frequency and percentage. A p value of less than equal to 0.05 was deemed significant. Chi square test was applied to analyze categorical variables. One way ANOVA was applied to test for difference in means of continuous variables across groups. Post hoc test was applied as per requirement.

Observation and Results

There were total 85 participants. The mean age was 19.04 years with standard deviation of 0.932 and range between 17 to 22 years. Of 85 participants, 63 (74.11%) were females and 22 (25.88%) were males.

Table 1. Distribution of Participants According to Baseline Characteristics

Characteristic	Categories	VS (N= 29)	VLCD (N= 30)	LCD (N= 26)	Total (N= 85)	Chi square value, degree of freedom, p value
Age (in years)	17 – 19	19	22	20	61	$\chi^2 = 0.9365$, d.f. = 2, p = 0.626
	19 – 22	10	08	06	24	
Gender	Male	05	05	12	22	$\chi^2 = 8.026$,

	Female	24	25	14	63	d.f.= 2, p= 0.018
Learning style	Auditory + Tactile	01	01	00	02	$\chi^2= 4.752$, d.f. = 10, p= 0.907
	Auditory + Visual	06	03	04	13	
	Auditory	07	08	07	22	
	Tactile	02	03	04	09	
	Visual + Tactile	01	02	00	03	
	Visual	12	13	11	36	

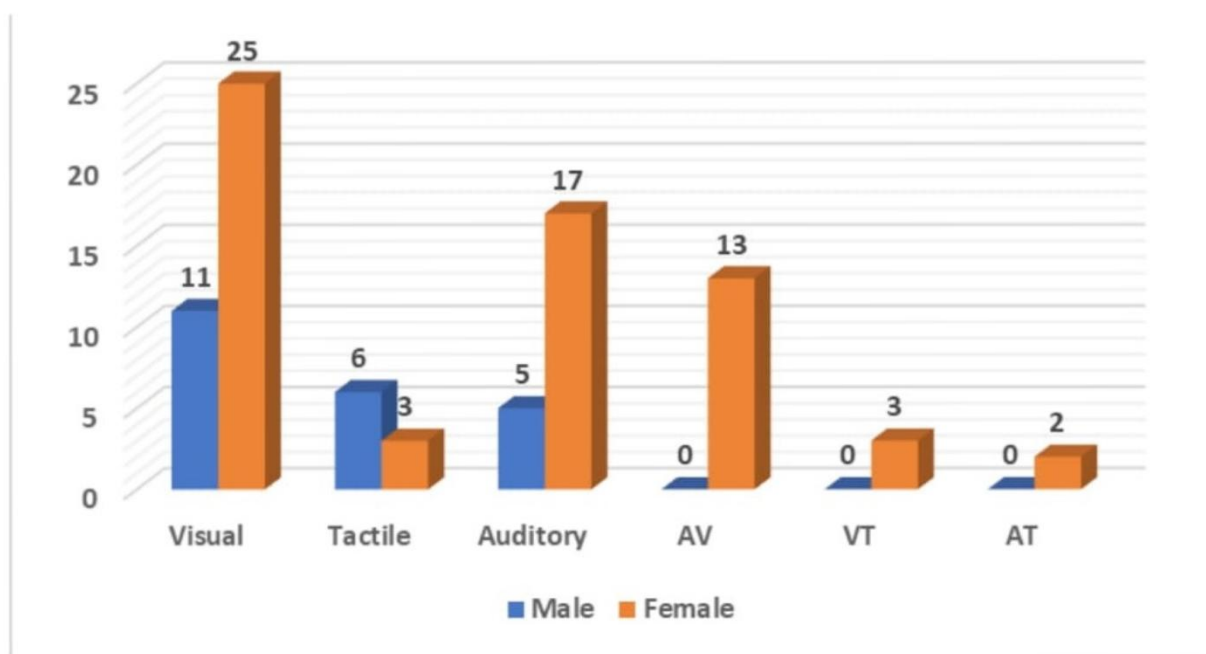


Figure 2. Gender wise distribution of participants according to learning style

Majority of the students reported that they understood the content in first attempt [53 (62.35%)] while remaining reported the same after two attempts [32 (37.64%)]. None of the students required third attempt. For instructor-based group, most of the

participants i.e. 16 (61.53%) required two attempts. For video lecture group, 23 (76.66%) students felt confident in the first attempt itself. Similarly, 19 (65.51%) students from video song group felt confident in first attempt.

In the LCD group, one participant scored 0 in psychomotor skill checklist, while 7 (26.92%) students scored 4 or above. Majority [9 (34.61%)] of this group scored 2 points. When tested for knowledge gained, majority i.e. 9 (34.61%) scored 8 points. 2 (7.69%) students scored a perfect score of 10. 25 (96.15%) students scored 7 and above points.

In the VLCD group, only 01 (03.33%) student scored perfect 6 points in psychomotor skill assessment. 11 (36.66%) students scored 4 or above. Majority of this

group i.e. 07 (23.33%) students scored 9 points in test for knowledge gained. 3 (10.00%) students scored perfect 10 points. 26 (86.66%) students scored 7 and above points.

For the VS group, none scored perfect 6 while one student scored 0 in psychomotor skill assessment. Only 6 (20.68%) students scored 4 or above. In the test for knowledge gained, majority i.e. 19 (65.51%) scored 8 points. 28 (96.55%) scored 7 or above. 01 (3.44%) student scored perfect 10.

Table 2. Number of participants performing each step in COLS

Name of group	Assessed safety	Assessed response	Called for help	Initiated chest compression	Rate 120/min	Adequate depth
LCD	06	14	12	13	25	12
VLCD	10	25	09	13	08	08
VS	08	16	08	17	21	24

One way ANOVA test was applied to compare means of psychomotor skill gained based on checklist scores among the

three groups. The results are shown in table 3.

Table 3. Comparison of psychomotor skill gained in control and test arms

Group	N	Mean	Standard deviation	Standard error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
LCD	26	2.69	1.436	0.282	2.11	3.27	0	6
VS	30	3.30	1.088	0.199	2.89	3.71	1	6

VLCD	29	2.79	1.264	0.235	2.31	3.27	0	5
Total	85	2.94	1.276	0.138	2.67	3.22	0	6

	Sum of squares	Df	Mean square	F	P value
Between groups	06.109	2	03.054	1.918	0.153
Within groups	130.597	82	1.593		
Total	136.706	84			

As F value is 1.918 and difference between the 3 groups is not significant ($p = 0.153$), the post hoc test was not applied.

The one way ANOVA test shows that there is no statistically significant difference between the groups. Hence, null hypothesis i.e. the gain of psychomotor skill for COLS in test arms is worse than in instructor-based simulation arm, is accepted.

The secondary outcome of this study was knowledge gained by the participants. Table 4 shows frequency distribution of right answers in cognitive assessment.

Table 4 shows the comparison of means of knowledge gained scores between the three groups.

Table 4. Comparison of knowledge gained among the control and test arms

Group	N	Mean	Standard deviation	Standard error	95% Confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
IBD	26	7.96	1.113	0.218	7.51	8.41	5	10
VS	30	7.87	1.332	0.243	7.37	8.36	5	10
VL	29	7.93	0.753	0.140	7.64	8.22	6	10
Total	85	7.92	1.082	0.117	7.68	8.15	5	10

	Sum of squares	Df	Mean square	F	P value
Between groups	0.133	2	0.067	0.056	0.946
Within groups	98.290	82	1.199		
Total	98.424	84			

The one way ANOVA shows that there is no statistically significant difference in knowledge gained among the three groups ($p = 0.946$).

Feedback was collected from participants after completion of assessment. All participants in all three groups agreed that content was adequately helpful in understanding COLS as well as that time of training was adequate. Highest number of participants from LCD group reported that they liked the method of training. Participants from VS group remarked that training required very little time. One participant from VLCD felt that site of compression should be communicated more clearly.

Similarly, feedback from investigators was also collected. The following were the main points highlighted by them: 1. Time was less to reinforce important points in LCD. 2. Most of students enjoyed video song when it was played. 3. Skill acquisition practice on manikin and feedback is essential. 4. VLCD and VS can be used after LCD to reinforce and for further practice. 5. Power point

should be used in LCD to clarify the technical details.

Discussion

This study was conducted in order to test efficacy of video-based training as against standard instructor-based LCD training for COLS. No statistically significant difference was found among the three groups with respect to both gain in psychomotor skill as well as knowledge. Hence, null hypothesis is accepted.

Many researchers have observed that digital technologies can enhance learning by offering flexibility, self-paced learning as well as luxury of environment of choice [12]. Moreover, videos offer a medium where learner can observe instructor up close, which is difficult in large group setting. Another advantage is that they can view them repeatedly until satisfactory understanding is achieved [12]. All observations recorded in the feedback of present study are comparable.

In this study, it was observed that gain of psychomotor skill was poor irrespective of learning styles across all three groups. However, gain in knowledge

was found to be satisfactory among all participants having different learning styles. Several other studies show that the relationship between learning outcome and medium of instruction for persons with various learning styles is complex [13-16].

Martisorov et al. compared preference and performance among first year pharmacy students using traditional and non-traditional presentation methods. The authors found that students preferred the traditional lecture method over other methods like podcast, escape room and video. Also, students taught with lecture method performed better in examination. The present study also supports the indispensable role of traditional teaching methods [17].

A randomized controlled trial comparing video-based learning and traditional lecture methods for teaching disaster medicine core competencies among resident doctors was conducted by Curtis et al. The authors found that knowledge and comfort score did not show statistically significant difference between the two groups. In practical skills assessment, the difference between groups was found to have statistically significant difference. This is in contrast with the finding of present study [18].

A 2024 study from Korea, reports result of quasi experimental pre and post test study employing video assisted training for advanced cardiac life support (ACLS) among 110 nursing students. The researchers found that supplementary training using simulation videos was an effective method for maintaining and enhancing nurses' ACLS competency,

offering a sustainable approach to repetitive CPR training. On the contrary, the present study attempted to test whether video based training can replace instructor based training. If findings of both study are compared, it can be concluded that although video based training cannot replace traditional training methods, it can be used as supplementary training material to refresh knowledge and skill [19].

Similarly, another cluster randomized trial from Uganda reported that adding a video-debriefing to standard training was effective in skill attainment and retention of neonatal resuscitation among birth attendants. This study also supports the view that videos can act as supplementary training material [20]. An important finding of present study is that majority of the students in video-based training groups felt confident about providing COLS in the first attempt itself. It might be due to greater audio-visual appeal of videos. Ronny Lehmann et al also found similar results for pediatric basic life support training [21].

Kerketta et al. conducted COLS training for 300 non-medical staff and found that lecture along with audio-visual display, demonstration and hands on training were effective [22]. Present study findings also suggest that multiple methods need to be employed in training lay persons regarding COLS.

Waffa (2017) conducted a study among nursing students to investigate the effect of using simulation-based blood pressure measurement on practice competency. Simulation by video, demonstration method, simulation by video & demonstration were the three methods

used. It was concluded that demonstration is the best method for teaching the skill of blood pressure measurement and that simulation by video is not enough alone [23]. This is similar to the conclusion of present study.

There are some advantages of LCD method like it utilizes several senses where learners experience an actual event, better stimulation of learner's interest, teacher can adjust the pace along with voice modulations based on real time observation of learner engagement and understanding. Personal presence of teacher makes the session more engaging through eye contact. On the other hand, engagement with videos may wane as learner passively consumes the content, offering limited depth.

Conclusion

The study found that psychomotor skill gain ($F = 1.918$, $p = 0.153$) as well as knowledge gain ($F = 0.056$, $p = 0.946$) did not show statistically significant difference across the three groups. Thus, non-inferiority is not demonstrated. Hence, it is concluded that skill and knowledge acquisition using video song with music and video explaining the procedure of COLS with help of enactment, simulation and instructions is not as good as than that using instructor based simulation.

Strength of study

It is a randomized controlled trial conducted among physiotherapy students who had never been exposed to COLS before, thus chances of bias are reduced significantly. It is unique in testing video song featuring COLS as well as video with

simulation and instructions. The assessment of outcome is objective based on score.

Limitations

The study population does not accurately represent general population. Hence, the results cannot be generalised.

Implications

The study implies that video assisted training cannot replace the traditional instructor-based training. There is need to focus on capacity building of institutes imparting COLS training. Further research needs to be conducted among general lay population to see whether technology based training modes are useful for teaching COLS. Another aspect that needs exploration is whether such modes can act as refresher after COLS training by traditional method.

Recommendations

Future studies exploring role of videos as supplementary material along with traditional method in training of COLS need to be conducted. A follow up after 3 and 6 months can be done to study the usefulness of videos in retention of skill and knowledge.

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(Director of Jeevan Sanjivani song), IRC and ISA for composing Jeevan Sanjivani Song for public education.

Ethical Approval

The ethical approval for the study was obtained from the institutional ethics committee (letter no MGM/ECRHS/2024/133; dated 30 March 2024).

Statements and Declarations

Conflicts of interest

The authors declare that they do not have conflict of interest.

Funding

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References

1. Wong CX, Brown A, Lau DH, Chugh SS, Albert CM, Kalman JM, et al. Epidemiology of sudden cardiac death: Global and regional perspectives. *Heart Lung Circ* 2019; 28:6–14.
2. Clarence D. Heart attack deaths increased by 12% in 2022: Government data. *India Today*. 2023. Available from: <https://www.indiatoday.in/health/story/sudden-heart-attack-deaths-increased-by-12-in-2022-government-data-2471760-2023-12-04>.
3. Bobrow BJ, Vadeboncoeur TF, Spaite DW, Potts J, Denninghoff K, Chikani V, et al. The effectiveness of ultrabrief and brief educational videos for training lay responders in hands-only cardiopulmonary resuscitation: implications for the future of citizen cardiopulmonary resuscitation training. *Circ Cardiovasc Qual Outcomes* 2011 Mar;4(2):220-6. doi: 10.1161/CIRCOUTCOMES.110.959353.
4. Ali S, Athar M, Ahmed SM. A randomised controlled comparison of video versus instructor-based compression only life support training. *Indian J Anaesth* 2019 Mar;63(3):188-193. doi: 10.4103/ija.IJA_737_18.
5. Ramavel AR, Banu N, Areeb A, Premkumar EM. Effectiveness of Teaching and Demonstration in Improvement of Knowledge and Skill on CPR among School-going Adolescents: A Quasi-experimental Study. *NJEM* 2023; 1 (1):18-22. DOI: 10.5005/njem-11015-0009
6. Cheng A, Nadkarni VM, Mancini MB, Hunt EA, Sinz EH, Merchant RM, et al. Resuscitation education science: Educational strategies to improve outcomes from cardiac arrest: A scientific statement from the American Heart Association. *Circulation* 2018;138(6):e82–122. Available from: <http://dx.doi.org/10.1161/CIR.0000000000000583>.
7. Mohamed El-Sayed HE, M Elmashad HA, Ibrahim AA. The effectiveness of utilizing video-assisted and lecture cum demonstration method on the nursing students' knowledge and skills in using partograph. *IOSR-JNHS* Sep–Oct2017;6(5):61–70.
8. Kumar N. Postpartum hemorrhage; a major killer of woman: review of

- current scenario. *ObstetGynecol Int J* 2016;4(4):130-134. DOI: 1015406/ogij20160400116.
9. Yang SY, Oh YH. Video-assisted versus traditional problem-based learning: A quasi-experimental study among pediatric nursing students. *J Nurs Res* 2023 Jun 1;31(3):e277. DOI: 10.1097/jnr.0000000000000557. PMID: 37167613.
10. Shikino K, Rosu CA, Yokokawa D, Suzuki S, Hirota Y, Nishiya K, et al. Flexible e-learning video approach to improve fundus examination skills for medical students: a mixed-methods study. *BMC Med Educ* 2021 Aug 13;21(1):428. DOI: 10.1186/s12909-021-02857-8.
11. Educationplanner.org. Educationplanner.org. Available from: <http://www.educationplanner.org/>.
12. Katrina Lacey, J Gerard Wall. Video-based learning to enhance teaching of practical microbiology. *FEMS Microbiol Lett* 2021 February 4;368(2):fnaa203. DOI: 10.1093/femsle/fnaa203.
13. Shorey S, Chan V, Rajendran P, Ang E. Learning styles, preferences and needs of generation Z healthcare students: Scoping review. *Nurse Educ Pract* 2021 Nov;57:103247. DOI: 10.1016/j.nepr.2021.103247.
14. Tahir WM, Dol AH, Wahid A, Hussin AH. Students' learning styles and their academic performance in accounting course. *Journal of Academia* 2019 Dec 17;7:10-7.
15. Shamsuddin N, Kaur J. Students' learning style and its effect on blended learning, Does It Matter? *Int J Eval Res Educ* 2020 Mar;9(1):195-202.
16. Oliveira A, Spinola V, Garrido D, Teixeira MM, Salles C, Haddad AE. Influence of learning styles on student performance in self-instructional courses. *PLoS One* 2023 Jul 27;18(7):e0289036. DOI: 10.1371/journal.pone.0289036.
17. Martirosov AL, Alex J, Doane A, Patel R, Aprilliano B, Kale-Pradhan P. Podcasts and videos and slides...oh my!: Traditional vs. nontraditional teaching methods in remote settings. *Curr Pharm Teach Learn* 2023 Jun;15(6):587-592. DOI: 10.1016/j.cptl.2023.06.007.
18. Curtis HA, Trang K, Chason KW, Biddinger PD. Video-based learning vs traditional lecture for instructing emergency medicine residents in disaster medicine principles of mass triage, decontamination, and personal protective equipment. *Prehosp Disaster Med* 2018 Feb;33(1):7-12. DOI: 10.1017/S1049023X1700718X.
19. Jeong HW, Moon SH. Enhancing ACLS training effects through video-assisted boosting methods: A comparative analysis of self-simulation and model simulation videos. *Nurse Educ Pract* 2024 Jul;78:104010. DOI: 10.1016/j.nepr.2024.104010.
20. Odongkara B, Tylleskär T, Pejovic N, Achora V, Mukunya D, Ndeezi G, et al. Adding video-debriefing to Helping-Babies-Breathe training enhanced retention of neonatal resuscitation knowledge and skills

- among health workers in Uganda: a cluster randomized trial. Glob Health Action 2020 Dec 31;13(1):1743496. DOI: 10.1080/16549716.2020.1743496.
21. Lehmann R, Lutz T, Helling-Bakki A, Kummer S, Huwendiek S, Bosse HM. Animation and interactivity facilitate acquisition of pediatric life support skills: a randomized controlled trial using virtual patients versus video instruction. BMC Med Educ 2019 Jan 5;19(1):7. DOI: 10.1186/s12909-018-1442-5.
 22. Kerketta CS, Chhanwal H, Garg R, Diwan R. Impact on awareness and knowledge of resuscitation by structured training of compression-only life support (COLS) among non-medical staff. Indian J Anaesth 2023 Feb;67(Suppl1):S48-S52. DOI: 10.4103/ija.ija_324_22.
 23. Abdullah WH. Effectiveness of simulation-based blood pressure measurement on practice competency among 2nd year nursing students. IOSR JNHS 2017 Mar-Apr;6(2):22-34.

Annexures

Annexure A

Checklist for Compression only life support psychomotor skill assessment

Sr. No.	Checklist	Did not perform 0 mark	Performs 1 mark
1	Assess safety		
2	Assess Response		
3	Calls 108		
4	Chest Compression- Centre of Chest		
5	Rate 100-120per min		
6	Position of Hands (Fingers interlaced, hands straight)		

Annexure B

List of multiple choice questions used for cognitive assessment

Sr no	Question	Yes	No	Not sure
1	I can recognize person who needs resuscitation			
2	I will confirm consciousness by sprinkling water on face			
3	Before starting resuscitation, I will confirm scene safety			
4	Site of chest compression is on left side of chest			
5	Compress chest for at least 5 cm			
6	Chest compression rate should be 1/sec			
7	I will stop compressions if I observe any movement of patient			
8	Single hand should be used for chest compressions for adult patient			
9	Training received today is useful to every one			
10	Emergency ambulance number is			

Annexure C

Feedback form for participants

Sr. No.	Question	Adequate	Inadequate	Can't Tell
1.	Content was			
2.	Time allotted for training was			
3.	Understanding of the contents			
4.	What did I like in today's training?			
5.	What was deficient in today's training?			