ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 8, Issue, 8, pp. 19618-19621, August, 2017

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

BYSTANDER CARDIOPULMONARY RESUSCITATION: THE ATTITUDE OF SOME NIGERIAN STUDENT TEACHERS

Adedamola Olutoyin Onyeaso[1] and Onyedikachi Oluferanmi Onyeaso[2]

[1]Department of Human Kinetics and Health Education Faculty of Education University of Port Harcourt Port Harcourt, Nigeria
[2]Department of Community Medicine Faculty of Clinical Sciences College of Health Sciences University of Port Harcourt Port Harcourt, Nigeria

DOI: http://dx.doi.org/10.24327/ijrsr.2017.0808.0731

ARTICLE INFO

Article History:

Received 18th May, 2017
Received in revised form 10th June, 2017
Accepted 06th July, 2017
Published online 28th August, 2017

Key Words:

CPR, Attitude, Student teachers, Nigerian University

ABSTRACT

The attitude of the teachers and future teachers to cardiopulmonary resuscitation (CPR) will largely determine how effective they can be as laypeople bystander CPR providers and CPR trainers of the school children and possibly the larger communities. This quasi-experimental study aimed at assessing the attitude of a group of student teachers towards cardiopulmonary Resuscitation before and after the CPR training. The cohort sample consisted of 200 level student teachers in the Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt, Nigeria. One hundred and fifty (152) of them made up the initial cohort but only 150 of them [56(37.33%) male and 94(62.67% female)] with age range and mean of 17-28 and 21.11 + 2.40(SD), respectively completed the study with complete pre-training and post-training data, giving a response rate of 98.68%. In all, the participants showed positive attitudes before and after CPR training with significant better post-training CPR attitude. It was concluded that the student teachers could serve as a good target in having a strong and effective future school CPR training programme and in increasing the number of laypeople CPR bystanders in the communities.

INTRODUCTION

The usefulness of lay person's bystander cardiopulmonary resuscitation (CPR)in out-of-hospital sudden cardiac arrests or as a result of traumatic injuries has been documented.[1-6] Training of school children in CPR is internationally recognized as a major means of increasing the number of potential bystander CPR providers in communities.[7-11]

It is known also that out-of-hospital cardiac arrest (OHCA) has become a public health concern issue with as low as 10% survival rate reported in Europe.[7, 8, 11] Meanwhile, bystander CPR is known to increase the chances of survival from OHCA by about 2-4 times.[7, 8]

The important role of school teachers in training the schoolchildren as well as in providing bystander CPR to victims in school environments and the communities has been emphasized.[12-15]

Although there are three recent reports on the attitude to cardiopulmonary resuscitation in relation to the Nigerian school system,[16-18] there is need for more data in this aspect in Nigeria where much still needs to be done. Across the globe, there are related reports. [19-23]

Student teachers (undergraduates) in the University are the potential future teachers in primary and secondary schools. Their attitude toward cardiopulmonary resuscitation (CPR) will certainly impact on the success or failure of CPR training in schools and ultimately the number of potential layperson bystander providers in communities, especially in Nigeria.

Therefore, this study aimed at assessing the attitude of a group of student teachers at the Department of Human Kinetics and Health Education, Faculty of Education of the University of Port Harcourt, Nigeria. We hypothesized that: 1. the pre-training attitude of the student teachers would not be significantly positive; and 2. the post-training attitude of the same group of student teachers would not be significantly better than their pre-training attitude.

Corresponding author:* **Adedamola Olutoyin Onyeaso
Department of Human Kinetics and Health Education Faculty of Education University of Port Harcourt Port Harcourt. Nigeria

MATERIALS AND METHODS

A quasi-experimental study was conducted involving a cohort group of 152 200-Level student teachers in the Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt. A questionnaire containing 10-item questions testing attitude towards cardiopulmonary resuscitation (CPR) was served to all the participants before training them on CPR and after. The responses of the participants to the self-administered questionnaire before and after CPR training were collated and analysed. One hundred and fifty (150) copies of the questionnaire were properly filled and collected at the end of the pre-training and post-training exercise, giving a response rate of 98.68%.

This study took place in June 2017.The sample is students admitted in 2015 who are studying to graduate with Bachelor degrees in either Human Kinetics or Health Education.

The researchers generated and tested the following null hypotheses:

Ho1: the pre-training attitude of the student teachers would not be significantly positive.

Ho2: that the post-training attitude of the same group of student teachers would not be significantly better than their pre-training attitude.

Stage 1 (Pre-training)

The questionnaire, containing a section for the demographic data of the participants and a section having the questions to assess their pre-training cardiopulmonary resuscitation attitude, was used (see Appendix).

Stage 2 (Training and Immediate Post-training)

Teaching was carried out for 60 minutes using American Heart Association (AHA) CPR guideline which is available online. Immediately after training the participants on the CPR technique using the manikins for their hands-on session, each of them was asked to answer the same questions they were given before the training. The process of training them on hands-on and the re-assessment took another 4 hours.

Determination of 'Positive CPR Attitude' and 'Negative CPR Attitude'

There are four options [strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD)] for each of the fourteen items / questions testing the attitude of the participants to cardiopulmonary resuscitation. Strongly agree has 4 points, Agree – 3 points, Disagree – 2 points while Strongly disagree attracts 1 point. Any score on any of the items or questions that is 3 or 4 means positive attitude while any score of 2 or 1 shows negative attitude.

Data Analysis

The data was collated and statistically analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics as well as the one-sample and two-sample Student's t-tests were used in the analysis with P-value set at 0.05.

RESULTS

The final cohort of one hundred and fifty (150) participants (student teachers) in this study was made up of 56 (37.33%) male and 94 (62.67%) female, age range of 17-28 years and mean age of 21.11 $\pm$ 2.40 (SD).

Table 1 below shows that 96% would like to learn CPR before the training while this increased to 97.3% after the training. Only slightly over 57% were willing to perform mouth-to-mouth ventilation on a stranger which increased to 70% after the CPR training. Willingness to perform CPR on relatives had 98.7% before CPR training and increased to 99.3% in post-training. The participants showed the highest improvement from 92% to 99.3% on the need to teach CPR to other citizens who are not in schools. In all, their attitude was positive both in the pre-training (84.95%) and post-training (92.33%) stages.

Table 2 below shows the t-test analysis of the pre-training attitude of the participants towards CPR. From the table, the first null hypothesis of no significant positive attitude towards CPR among the student teachers is, therefore, rejected, showing that the student teachers had significant positive attitude towards CPR even before the training on CPR.

Table 1 The pre-training and post-training CPR attitudes of the participants

	Questions assessing attitude of The participants to CPR	**Pre- training attitude**		**Post-training attitude**	
	Questions	Positive Attitude	Negative Attitude	Positive Attitude	Negative Attitude
1	After learning CPR, I would like to teach others.	144(96%)	6(4%)	146(97.3%)	4(2.7%)
2	I would perform mouth-to-mouth ventilation on a stranger.	86(57.3%)	64(42.7%)	105(70%)	45(30%)
3	I would perform CPR on a trauma victim, if needed.	123(82%)	27(18%)	142(94.7%)	8(5.3%)
4	I would perform CPR on a relative, if needed.	148(98.7%)	2(1.3%)	149(99.3%)	1(0.7%)
5	I would perform CPR on an elderly victim, if needed.	136(90.6%)	14(9.3%)	147(98%)	3(2.0%)
6	I would like to perform CPR on a child.	123(82%)	27(18%)	143(95.3%)	7(4.7%)
7	I would perform chest compression alone	70(46.7%)	80(53.4%)	106(70.6%)	44(29.3%)
8	CPR is not just a trial and error	117(78%)	33(22%)	128(85.4%)	22(14.6%)
9	There is increased hope of survival for a victim of sudden collapse who receives bystander CPR	134(89.3%)	16(10.6%)	146(97%)	4(3.4%)
10	Sudden cardiac arrest victims can survive	137(91.3%)	13(8.7%)	136(90.7%)	14(9.3%)
11	I believe there could be survival through CPR	146(97.3%)	3(2.7%)	149(99.3%)	1(0.7%)
12	CPR should be taught often on Television	140(91.3%)	10(6.7%)	145(96.6%)	5(3.3%)
13	CPR should be formally taught in Nigerian Universities	142(94.7%)	8(5.3%)	148(98.7%)	2(1.3%)
14	CPR should also be taught to other citizens who are not in schools.	138(92%)	12(8%)	149(99.3%)	1(0.7%)
	Overall Average Percentages	84.95%	15.05%	92.33%	7.67%

Table 2 One-sample T-test analysis of the pre-training attitude of the participants towards CPR

	Test value = 0					
	T	df	Sig.(2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
Pre-training Attitude to CPR	117.247	149	.000	45.20667	44.4448	45.9686

P < .001

Two-sample T-test analysis of the difference between pre-training and post-training CPR attitudes is shown in Table 3 below. The result confirms that the post-training attitude of the student teachers was statistically more positive that their pre-training attitude.

Table 3 Paired sample T-test analysis of the difference between the post-training and pre-training attitude towards CPR of the participants

	Paired Differences					T	df	Sig.(2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence interval of the Difference				
				Lower	Upper			
Post Training Attitude – Pre Training Attitude	2.80667	5.14318	.41994	1.97686	3.63647	6.684	149	.000

P < .001

DISCUSSION

The present Nigerian quasi-experimental study has shown that the participants (student teachers) had positive attitudes to CPR both during the pre-training and post-training stages, which equally significantly improved during the post-training in CPR.

The positive pre-training attitude to CPR observed in this Nigerian study is consistent with earlier reported positive attitude to CPR among secondary school students in Nigeria and some primary and secondary school teachers in Nigeria.[16. 18] However, the level of positivity towards CPR is much higher in this group of Nigerian student teachers than those of Nigerian secondary school children and the primary and secondary school teachers. The possible reason for this is that these student teachers are better exposed and could appreciate the need for bystander CPR than secondary school children and even the teachers with the National Certificate of Education (Post NCE teachers) that most likely trained without the basic exposure to first aid teaching at their certificate school level. The current student teachers in this present Nigerian study had some basic lecture in first aid and safety education.

This present Nigerian study has comparable responses to those reported by Onyeaso and Imogie[16] such as willingness to teach others CPR after learning which was 97.6% in that report and 96% in the present Nigerian study, performing mouth-to-mouth on strangers in that report was 68.5% and 57.3%, carrying CPR on trauma victims was reported as 87.6% while 82% in the present study. While this present study has 94.7% agreeing that CPR should be taught in Nigerian Universities, that earlier report by Onyeaso and Imogie gave 94.9% as accepting that CPR should be taught in Nigerian schools; 96.8% felt there was need to train other citizens outside the school system compared to 92% in the present study.

Chen *et al*[20] reported that the majority of the laypersons (98.6%) would perform CPR on their family members, but fewer laypersons (76.3%) were willing to perform CPR on strangers. Meanwhile, the number of laypersons unwilling to perform CPR would drop with legal protection. The current Nigerian study has 98.7% willing to perform CPR on relatives and 57.3% ready to perform mouth-to-mouth ventilation on strangers. All these percentages, however, increased after the CPR training unlike the Chen *et al* [20] which was a survey of the public without providing CPR training for the respondents to see the effect of the training on their attitude. However, it is good to note here that the rate of bystander CPR in China is low compared to developed countries just as it is in Nigeria. This Chinese study encouraged legal protection of bystanders who provide assistance. The current Nigerian study did not look into the legal aspect of bystander CPR.

In Saudi Arabia, Al Enizi *et al* [24] reported that 64.6% of the teachers wanted more CPR training and they concluded that the teachers showed positive attitude towards CPR.

A major strength of the present Nigerian study is that the participants are the potential primary and secondary school teachers in the country and as such the study acts as a good means of strengthening the advocacy for increasing laypeople bystander CPR providers in our country in addition to the training of the school children in the country. Also, the sample is fairly representative in nature because the student teachers were drawn from different States of Nigeria during their admission into the University.

CONCLUSION

The participants (Nigerian student teachers) showed positive attitude towards cardiopulmonary resuscitation (CPR) before and after the CPR training and their attitude after the training significantly was better than their attitude before.

Recommendation

Similar studies should be carried out among future teachers in other Universities as a way of equipping the teachers and increasing the consciousness of the need to incorporate CPR training/teaching in Nigerian schools.

References

1. Ashour A, Cameron P, Bernard S, Fitzgerald M, Smith K, Walker T. Could bystander first -aid prevent trauma deaths at the scene of injury? *Emerg Med Australas* 2007; 19(2): 163-8
2. Tannvik TD, Bakke HK, Wisborg T. A systematic literature review on first aid pro-vided by laypeople to trauma victims. *Acta Anaesthesiol Scand* 2012; 56:1222-7.2.
3. Mpotos N, Vekeman E, Monsieurs K, Derese A, Valcke M. Knowledge and willingness to teach cardiopulmonary resuscitation: a survey amongst 4273 teachers. *Resuscitation* 2013;84:496-500.6
4. Urban J, Thode H, Stapleton E, Singer AJ. Current knowledge of and willingnessto perform Hands-Only CPR in laypersons. *Resuscitation* 2013; 84:1574-8.3.
5. Stroobants J, Monsieurs K, Devriendt B, Dreezen C, Vets P, Mols P. Schoolchildren as BLS instructors for

relatives and friends: impact on attitude towards bystander CPR. *Resuscitation* 2014; 85:1769-74.5.
6. De Buck E, Remoortel HV, Dieltjens T, Verstraeten H, Clarysse M, Moens O, Vandekerckhove P. Evidence-based educational pathway for the integration of first aid training in school curricula. *Resuscitation* 2015; 94: 8-22.
7. Herlitz J, Svenson L, Holmberg S, Angquist KA, Young M. Efficacy of bystander cardiopulmonary resuscitation intervention by laypeople and by health care professionals. *Resuscitation* 2005; 66(3): 291-5.
8. Wissenberg M, Lippert FK, Folke F, Weeke P, Hansen CM, Christensen EF, Jans H, Hansen PA, Long-Jansen T, Olesen JB, *et al*. Association of national initiatives to improve cardiac arrest management with rates of bystander intervention and patient survival after out-of-hospital cardiac arrest. *JAMA* 2013; 310(13): 1377-84.
9. Bottiger BW, Van Aken H. Training children in cardiopulmonary resuscitation worldwide. *Lancet* 2015; 385(9985): 2353.
10. Bohn A, Lukas RP, Breckwoldt J, Bottiger BW, Van Aken H. 'Kids save lives': why school children shouldtrain in cardiopulmonary resuscitation. *Curr Opin Crit Care* 2015; 21(3): 220-5.
11. Institute of Medicine (IOM). Strategies to Improve Cardiac Arrest Survival: A Time to Act. Washington Institute of Medicine, 2015.
12. Miro O, Jimenez-Fabrega X, Espigol G, Culla A, Escalada-Roig X, Diaz N, Salvador J, Abad J, Sanchez M. Teaching basic life support to 12-16 yearolds in Barcelona schools: views of head teachers. *Resuscitation* 2006; 70(1):107-16.
13. Plant N, Taylor K. How best to teach CPR to schoolchildren: a systematic review. Resuscitation 2013; 84(4):415-21.
14. Drezner JA, Toresdahl BG, Rao AL, Huszti E, Harmon KG. Outcomes from sudden cardiac arrest in US high schools: a 2-year prospective study from the National Registry for AED Use in Sports. *Br J Sports Med* 2013; 47(18):1179-83.
15. Hansen CM, Zinckernagel L, Ersbøll AK, Tjørnhøj-Thomsen T, Wissenberg M, Lippert FK, Weeke P, Gislason GH, Køber L, Torp-Pedersen C *et al*. Rates of, Barriers and Facilitators to Cardiopulmonary Resuscitation Training in Schools Following Eight Years of Mandating Legislation: a nation widesurvey. 2017.
16. Onyeaso AO, Imogie AO. Attitude towards cardiopulmonary resuscitation among some secondary school students in Rivers State, Nigeria**.** *Br J Educ* 2014; 2(3):37-43.
17. Onyeaso AO, Achalu EI. Influence of age, gender, school class of Nigerian secondary school students on their attitude to cardiopulmonary resuscitation. *J Health Sci* 2016; 6(3): 43-47. Doi:10.5923/j.health.20160603.02
18. Onyeaso AO, Onyeaso CO. Nigerian Public Primary and Secondary School Teachers' Knowledge and Attitude towards Cardiopulmonary Resuscitation. *Int J Adv Res* (IJAR) 2016; 5(1): 89-95.
19. Kanstad BK, Nilsen SA, Fredriksen K. CPR knowledge and attitude to performing bystander CPR among secondary school students in Norway. *Resuscitation* 2011; 82(8): 1053-9. Doi: 10.1016/resuscitation 2011.03.033. Epub 2011Apr 13.
20. Chen M, Wang Y, Li X, Hou L, Wang Y, Liu J, Han F. Public Knowledge and Attitudes towards Bystander Cardiopulmonary Resuscitation in China. *BioMed* 2017; ID 3250485, 7 pages. https:// doi.org/101155/2017/3250485
21. Chair SY, Hung MSY, Lui JCZ, Lee DTF, Shiu IYC, Choi KC. Public knowledge and attitudes towards cardiopulmonary resuscitation in Hong Kong: telephone survey. *Hong Kong Med J* 2014; 20: 126-33 DOI: 10.12809/hkmj134076.
22. Vaillancourt C, Grimshaw J, Brehaut JC, Osmond M, Charette ML, Wells GA, Stiell IG. A survey of attitudes and factors associated with successful cardiopulmonary resuscitation (CPR) knowledge transfer in an older population most likely to witness cardiac arrest: design and methodology. *BMC Emerg Med* 2008; 8:13 https//doi.org/10.1186/1471-227X-8-13.
23. Tsegaye W, Tesfaye M, Alemu M. Knowledge, Attitude and Practice of cardiopulmonary Resuscitation and Associated Factors in Ethiopian University Medical Students. *J Gen Pract* 2015; 3:206. DOI: 10.4172/2329-9126. 1000206.
24. Al Enizi BA, Squib N, Zaghloul MSA, Alaboud MSA, Shahid MS, Squib J. Knowledge and attitudes about Basic Life Support among secondary school teachers in Al-Qassim, Saudi Arabia. *Int J Health Sci* 2016; 10(3): 415-422.

How to cite this article:

Adedamola Olutoyin Onyeaso and Onyedikachi Oluferanmi Onyeaso.2017, Bystander Cardiopulmonary Resuscitation: The Attitude of Some Nigerian Student Teachers. *Int J Recent Sci Res.* 8(8), pp. 19618-19621.
DOI: http://dx.doi.org/10.24327/ijrsr.2017.0808.0731

****