

## **Awareness and Attitudes of University of Ibadan Freshmen towards Learning and Performing Cardiopulmonary Resuscitation**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. The study was conceptualized by author KKK. Author KKK designed the study, developed the study tool, collected the data and analyzed the data. Authors KKK and AIB wrote the manuscript. Both authors read and approved the final manuscript.*

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### **ABSTRACT**

**Objectives:** To assess the level of awareness of cardiopulmonary resuscitation (CPR), and the attitude of the University of Ibadan (UI) freshmen towards learning CPR, and performing CPR on cardiac arrest victims.

**Methods:** This research was a cross-sectional study. Between October and November 2014, questionnaires were administered to 370 first-year undergraduate students of UI to obtain information about their bio-data, awareness of CPR, and attitudes toward learning CPR, and performing CPR on cardiac arrest victims. Their participation was voluntary and anonymous. A total of 333 questionnaires were returned filled, out of which 4 were discarded because they were not properly filled. So only the data of 329 respondents were used. Analysis was done using the SPSS version 16 software.

**Results:** A total of 305 (92.7%) respondents had not received any training on how to perform CPR, 59 (17.9%) had witnessed situations where an individual collapsed and died, 282 (85.0%) showed positive attitude towards learning CPR, and 311 (94.5%) respondents were willing to rescue a cardiac arrest victims if they have the know-how of what to do.

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**Conclusion:** The majority of the UI freshmen had never received any CPR training before, however the majority of them showed positive attitude towards learning CPR, and performing CPR. There is a need to introduce CPR training into the UI curriculum for the freshmen, as recommended by the Liaison Committee on Resuscitation.

*Keywords: Attitudes; students; cardiopulmonary resuscitation.*

## 1. INTRODUCTION

The incidence of out-of-hospital cardiac arrests is a major public health challenge [1]. The knowledge of bystanders on how to perform cardiopulmonary resuscitation (CPR) on cardiac arrest victims may be the determining factor to the survival, since about 70% of out-of-hospital cardiac arrests occur in or near the victims' environment and even in the presence of the victims' relatives and friends [2,3]. CPR, in simple terms, is a life-saving technique which consists of series of chest compressions and rescue breathing [4].

Since cardiac arrest can occur anywhere, the The Liaison Committee on Resuscitation, in 2003, therefore recommended that CPR training should be taught at schools, with the aim of preparing students for cardiac arrest emergencies that may occur either at school or elsewhere [5]. There had been reported cases of witnessed cardiac arrest disasters by students in the past [6], unfortunately not all the victims of these incidence survived it. These may be due to poor knowledge and negative attitudes towards CPR among them [7,8]. Training students on how to perform rescue CPR can help reduce the risks of sudden death among cardiac arrest victims in schools [8-10]. Fortunately, CPR could be easily taught at schools, due to the positive attitudes of both students and teachers towards learning CPR [8-10].

To the best of the authors' knowledge, CPR training has yet to be introduced into the educational curriculum of many Nigerian schools [9]. This study aimed to determine the level of awareness of CPR among the first year undergraduates of the University of Ibadan, and to also explore their attitudes toward learning CPR, and performing CPR on cardiac arrest victims.

## 2. METHODOLOGY

### 2.1 Study Design

This research was a cross-sectional study.

### 2.2 Study Setting

This study was conducted among the first year undergraduate students of the University of Ibadan, Ibadan. Ibadan is the capital city of Oyo State, Nigeria. The University of Ibadan is a federal university, and she is the oldest university within the country.

### 2.3 Study Tool

The study tool used was a well-structured questionnaire adapted from the work of Onyeaso and Imogie on CPR [9]. The questionnaire had two sections; section A and B. Section A obtained information about the socio-demographic data of the participants, while section B enquired about the participants' awareness of CPR, their experience of witnessed sudden deaths, and their attitudes towards learning CPR, and performing CPR on cardiac arrest victims.

### 2.4 Sample Size Determination

The sample size of our study participants was determined using the prevalence formula [11]:

$$N = \frac{Z^2 P(1 - P)}{T^2}$$

Where N is the sample size, Z is the level of significance that corresponds to the level of significance that corresponds to the 95% confidence level (that is, Z = 1.96), P is the prevalence taken as 98.9% [9], and T is the tolerance error (0.05).

The calculated sample size equals 17, but we increased our sample size to a convenient size of 310, so as to increase the power of the research.

### 2.5 Data Collection

Between October and November 2014, the first-year students were approached in their lecture halls by one of the researchers. The aims and objectives of the study were explained to them,

and they were also informed that their participation is voluntary and confidential. Three hundred and seventy students volunteered to participate in this study. Questionnaires were issued to them to fill, and to return them back to the researcher. Only 333 questionnaires were returned filled, out of which 4 were discarded because they were not appropriately filled, so only the data from 329 respondents were used in this study.

**2.6 Data Analysis**

Data were entered into the SPSS software version 16.0 for analysis. Frequency distributions of data were analyzed and illustrated using frequency tables and charts, non-continuous variables were analyzed with Chi-square test. Significant p-value were recorded as <0.05.

**3. RESULTS**

**3.1 Demographic Characteristics of Respondents**

More than three-fourth of the respondents (256/329, 77.8%) were within the age range of 16 to 20 years. Almost half of them (162/329, 49.2%) were males. Almost all of them (323/329, 98.2%) were single (Table 1).

**3.2 Faculty Distribution of Respondents**

The distribution of the respondents based on academic faculty shows that 37 (11.2%) respondents were from Faculty of Science, 66 (20.1%) from Basic Medical Science, 12 (3.6%) from Dentistry, 22 (6.7%) from Pharmacy, 19 (5.8%) from Veterinary Medicine, 52 (15.8%) from Agriculture, 28 (8.5%) from Arts, 80 (24.3%) from Education, 10 (3.0%) from Technology and 3(0.9%) did not indicate their faculty (Fig. 1).

**3.3 Awareness and Exposure of Respondents to CPR**

Two hundred and six (62.6%) respondents have heard of CPR before, 92 (28.0%) have not heard of CPR before, 21 (6.4%) were not sure if they have heard of CPR before, while the remaining 10 (3.0%) gave no response (Fig. 2). Table 2 shows that less than one-tenth of the respondents (23/329, 7.0%) had received training on how to perform CPR, while all the remaining respondents (305/329, 92.7%) had not received any training on CPR, except for only

one respondent (1/329, 0.3%) that gave no response. Also, just less than one-fifth of the respondents (64/329, 19.5%) knew how to perform CPR. A higher proportion of respondents that had received a prior training on CPR knew how to perform CPR compared to the proportion of such among those that had not received any training on CPR (18/23 [78.3%] vs 39/261 [15.08%]) (p <0.001).

**Table 1. Demographic characteristics of respondents**

<b>Characteristics</b>	<b>N</b>	<b>%</b>
<b>(n=329)</b>		
<b>Gender</b>		
Male	162	49.2
Female	166	50.5
Not specified	1	0.3
<b>Age in years</b>		
16 – 20	256	77.8
21 – 25	62	18.8
26 – 30	4	1.2
>30	2	0.6
Not specified	5	1.5
<b>Marital status</b>		
Single	323	98.2
Married	4	1.2
Divorced	1	0.3
Not specified	1	0.3

*n = Total number of respondents; N = Number of respondents in each category of demographic characteristics*

**3.4 Respondents' Experience on Death Scene**

Fifty nine respondents (17.9%) had experienced a situation in which an individual collapsed and died, 118 (35.9%) respondents had experienced a situation in which people died as a result of fire or automobile accident (Table 3).

**3.5 Respondents' Attitude towards Receiving Training on CPR**

More than four-fifth of the respondents (282/329, 85.7%) would like to receive training on CPR, while just less than fourteenth percentile (44/329, 13.4%) would not like to receive any training on CPR. A higher proportion of respondents who had received training on CPR in the past would like to receive training on CPR compared to

those with no training experience on CPR (21/23 [91.3%] vs 261/305 [85.6%]), ( $p < 0.001$ ). Also, a higher proportion of respondents that had experienced a death incidence showed a positive attitude towards learning CPR, compared to respondents with no experience of such ( $p < 0.001$ ), (Table 3).

### 3.6 Respondents' Willingness to Perform Rescue CPR after CPR Training

More than nine-tenth of the respondents (311/329, 94.5%) were willing to perform CPR to rescue a dying soul if they are taught CPR, while just very few (8/329, 2.4%) were not willing to perform CPR to rescue a dying soul even if they were trained on CPR (Fig. 3).

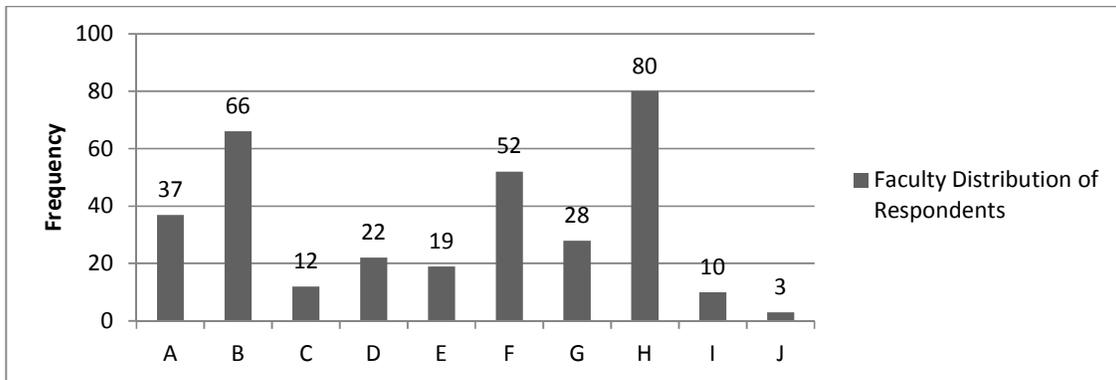
## 4. DISCUSSION

This study has revealed an urgent need in our society, as many of our respondents after passing through six years of secondary school education were still yet to have a training session on CPR. However, in some other countries like Norway, Great Britain, and United States, CPR training has been introduced to students right from secondary school [8,12,13]. Unfortunately,

the incidence of sudden collapse and road traffic accidents are highly prevalent in Nigeria [14-17]. This is also corroborated by the experience of many of our respondents, as many of them have witnessed sudden death scenes in the past.

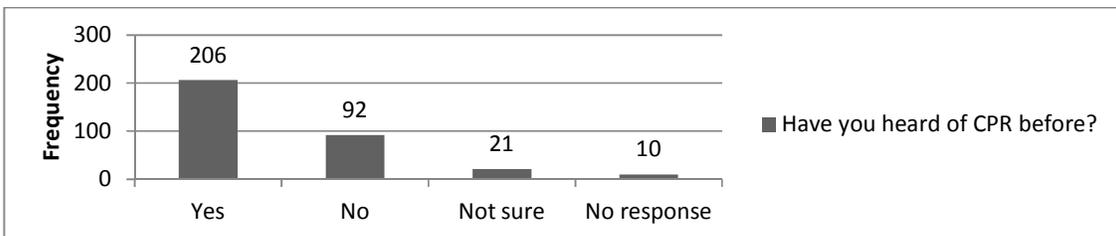
From the authors' observation, there had been cases where lecturers within the UI campus collapsed and the students were confused on what to do. This might be due to the poor knowledge of the bystanders on rescue CPR, and this statement can be supported by our findings where as low as just 19.5% of our respondents could perform CPR (Table 2).

The majority (85.7%) of our respondents showed interest in learning CPR (Table 3). This finding is similar to that reported by Onyeaso and Imogie in their study on attitude of some Nigerian adolescents towards learning CPR [9], although in their study they recorded a higher rate of positive attitude among their respondents (98.9%). Furthermore, our finding is also similar to that reported by Kanstad et al [10], where as high as 86% of some Norwegian students showed interest in learning CPR.



**Fig. 1. Faculty distribution of respondents**

Key: A = Science; B = Basic Medical Science; C = Dentistry; D = Pharmacy; E = Veterinary Medicine; F = Agriculture; G = Arts; H = Education; I = Technology; J = faculty not stated



**Fig. 2. Level of awareness of respondents on CPR**

**Table 2. Comparison between previous exposures to CPR training with the ability to perform CPR among respondents**

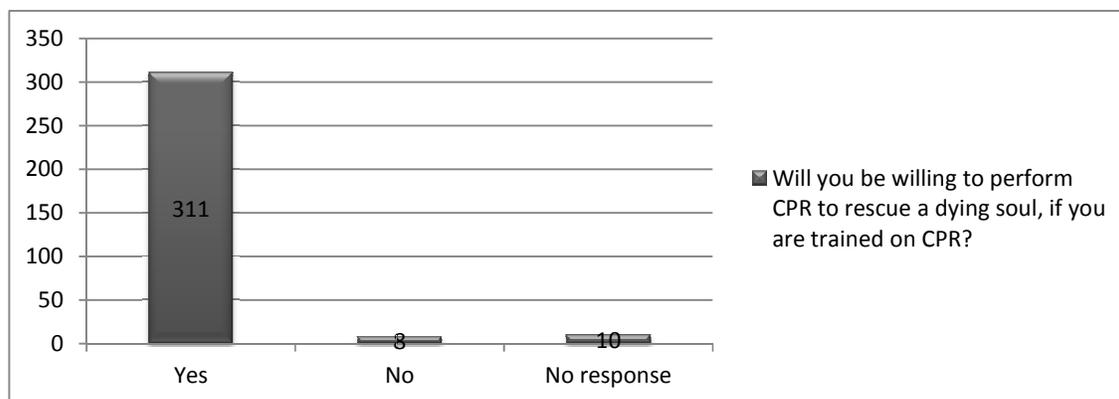
		Do you know how to perform CPR?				P – value (X <sup>2</sup> )
		Yes (%)	No (%)	NR (%)	Total (%)	
Have you received any training on CPR before?	Yes (%)	18 (5.5)	5 (1.5)	0 (0.0)	23 (7.0)	<0.001
	No (%)	46 (14.0)	256 (77.8)	3 (0.9)	305 (92.7)	
	NR (%)	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.3)	
	Total (%)	64 (19.5)	261 (79.3)	4 (1.2)	329 (100.0)	

NR=no response

**Table 3. Attitude of respondents towards learning CPR**

		Will you like to receive any training on CPR?				P – value(X <sup>2</sup> )
		Yes (%)	No (%)	NR (%)	Total (%)	
Have you experienced a situation in which someone collapsed and died before?	Yes	51 (15.5)	8 (2.4)	0 (0.0)	59 (17.9)	<0.001
	No	230 (69.9)	36 (11.0)	2 (0.6)	268 (81.5)	
	NR	1 (0.3)	0 (0.0)	1 (0.3)	2 (0.6)	
	Total	282 (85.7)	44 (13.4)	3 (0.9)	329 (100.0)	
Have you experienced a situation in which someone died as a result of fire or automobile accident?	Yes	101 (30.7)	17 (5.2)	0 (0.0)	118 (35.9)	<0.001
	No	179 (54.4)	27 (8.2)	2 (0.6)	208 (63.2)	
	NR	2 (0.6)	0 (0.0)	1 (0.3)	3 (0.9)	
	Total	282 (85.7)	44 (13.4)	3 (0.9)	329 (100.0)	
Have you received any training on CPR before?	Yes	21 (6.4)	2 (0.6)	0 (0.0)	23 (7.0)	<0.001
	No	261 (79.3)	42 (12.8)	2 (0.6)	305 (92.7)	
	NR	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.3)	
	Total	282 (85.7)	44 (13.4)	3 (0.9)	329 (100.0)	

NR= No response



**Fig. 3. Attitude of respondents on performing CPR to rescue a dying soul, if trained on CPR**

Although the majority of our respondents had interest in learning CPR, some few (13.4%) had no interest in learning CPR (Table 3). Negative attitudes of these few respondents towards learning CPR could be changed by giving them training on how to perform rescue CPR while

also educating them the importance of CPR in cardiac emergencies [18,19]. In a study by Hamasu et al. [18] they discovered a positive change in attitudes of unmotivated college students towards learning CPR after a session of CPR training. Our finding is also consistent with

that reported by Hamasu et al, as we observed from our study that a higher proportion of respondents with previous exposure to CPR training showed positive interest in learning CPR, compared to those with no previous exposure to CPR training (Table 3).

## 5. CONCLUSIONS AND RECOMMENDATIONS

The majority of the UI freshmen had never received any CPR training before, as evidenced by our findings. The majority of them had a positive attitude towards learning CPR, and performing CPR on cardiac arrest victims. We would like to recommend that CPR training should be organized for the University of Ibadan freshmen because many of them did not know how to perform CPR; however the majority of them were willing to learn CPR. We also advise that the training should be done yearly in order to keep them updated about the latest trends of CPR, as strongly recommended by the International Liaison Committee on Resuscitation [5]. This will be of benefits because early initiation of CPR will increase the survival rates of out-of-hospital cardiac arrest victims in the university community and beyond.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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