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# Study of the public's willingness to provide the necessary resuscitation in real situations of out-of-hospital cardiac arrest after receiving appropriate education and the possible factors that could affect their willingness

**Submission date**
31/03/2023

**Recruitment status**
No longer recruiting

**Registration date**
17/04/2023

**Overall study status**
Completed

**Last Edited**
23/01/2026

**Condition category**
Circulatory System

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

## Plain English summary of protocol

Background and study aims
Ischaemic heart disease resulting in sudden cardiac arrest is the leading cause of death worldwide. Early start of effective Basic Life Support (BLS) involving Cardiopulmonary Resuscitation (CPR) with Automated External Defibrillation (AED) doubles the survival from out-of-hospital cardiac arrest (OHCA). The 2021 Consensus of Science and Treatment Recommendation (CoSTR) of the International Liaison Committee on Resuscitation (ILCOR) and the 2021 guidelines of the European Resuscitation Council (ERC) stressed the important role of the trained bystanders or laypersons in initiating early CPR in OHCA situations. CPR should be started immediately in any unresponsive person with absent or abnormal breathing. The implementation of frequent BLS training that enables as many people as possible to quickly identify OHCA, call for help, perform high-quality CPR and initiate early defibrillation, is crucial for the improvement of OHCA survival. Training of laypersons on BLS is established in many countries using different training modalities. The different training modalities for laypersons have focused mainly on achieving the needed competency to perform resuscitation when required. The 2021 ERC guidelines on Education identified enhancing willingness to perform CPR by laypersons as one of five key points in resuscitation education for laypersons and first responders. Growing evidence shows that decreased willingness to start CPR by laypersons is an additional factor that hinders immediate resuscitation in OHCA situations. Some factors, such as the age and level of education of the laypersons, relationship with the cardiac arrest victim, and fear of causing more harm to the victim, were reported to alter the degree of willingness by laypersons to start resuscitation in OHCA situations. However, the willingness to perform CPR in middle- and low-resource settings hasn't been reported to date. The primary study aim is to investigate laypersons' willingness to perform resuscitation in real cardiac arrest situations to further improve the outcome of OHCA. The secondary study aims to build local scientific

evidence on the possible reasons for the lack of willingness to perform resuscitation by laypersons which could be used to encourage local stakeholders and lawmakers to support resuscitation training and practice through community involvement in public well-being.

Who can participate?
Laypersons aged 18 years and above who were educated on any kind of resuscitation training, either on CPR or BLS, within the last 2 years in Egypt, Libya, Sudan and Tunisia

What does the study involve?
This is a questionnaire study so no intervention will be made.

What are the possible benefits and risks of participating?
Participation will provide insight into the layperson's willingness to provide resuscitation in real OHCA situations. Identifying the independent possible barriers and enablers that might hinder or improve the willingness of laypersons to apply their learned resuscitation skills after CPR training may be used to encourage local stakeholders and lawmakers to support resuscitation training and practice through community involvement in public wellbeing. This study will not involve any burden for the participants.

Where is the study run from?
Human Resuscitation Organisation (Sudan)

When is the study starting and how long is it expected to run for?
January 2023 to December 2023

Who is funding the study?
Human Resuscitation Organisation (Sudan)

Who is the main contact?
Prof. Ayman O. Nasr, aonasr@iau.edu.sa

# Contact information

### Type(s)
Principal investigator


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# Additional identifiers

### Protocol serial number
LayResus 2023

# Study information

### Scientific Title
Attitudes and willingness of laypersons towards applying basic life support in real cardiac arrest situations: a prospective observational multi-centre study

### Acronym
LayResus 2023

### Study objectives
It is hypothesized that the public in middle and low-income communities will demonstrate a lack of willingness to provide resuscitation in real Out Of Hospital Cardiac Arrest (OHCA) situations. It is also hypothesized that their low willingness is due to factors possibly related to deficiencies in training, fear of causing harm to the victim, and lack of supportive laws to protect them.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
Approved 03/04/2023, Sudan Resuscitation Council-Ethics and Quality Assurance (SRC-EQA) Unit (Sudan Resuscitation Council, Continuous Development Center, Sudan Medical Specialization Board, AlQasr St. Khartoum-Sudan; +249 (0)909221114 ; SudanResuscitationCouncil@gmail.com), ref: SRC-EQA 3/2023 (2023\ - 3)

### Primary study design
Observational

### Study design
Multi-center cross-sectional questionnaire-based study

### Study type(s)
Other

### Health condition(s) or problem(s) studied
Out-of-hospital cardiac arrest

### Interventions
This is an observational international multi-centre cross-sectional questionnaire study on laypersons, so no intervention will be made.

The study questionnaire will be composed of five sections:

1. Demographic information about the participants' age, gender, city and country of residence, level of education, occupation, and socio-economic status in the form of open-response questions.

2. Level of participants' cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) knowledge utilising the five top messages on basic life support (BLS) according to the European Resuscitation Council (ERC) 2021 BLS guidelines. This will cover early signs of cardiac arrest, victim safety position, number to call the Emergency Medical Services (EMS), place of the palm on the victim's thorax, appropriate depth, chest compression rate, and the ratio of compression to rescue breaths, in the form multiple choice questions.

3. Willingness of the participant to help in real-life out-of-hospital cardiac arrest (OHCA) situations, in the form of 5-point Likert scale questions, on the following: (1) willingness to help in real-life OHCA situations, (b) participation in local/national neighborhood resuscitation response teams, (c) willingness to attend CPR training programs, (d) willingness of the inclusion in a national resuscitator registry, and (e) willingness to be part of the local/national network of EMS as a first responder to OHCA.

4. Possible barriers to attending CPR training and for applying resuscitation by the participant, and how it could be overcome, in the form of the closed set of questions.

5. Possible enablers that might help study participants attend CPR training in the form of a closed set of questions.

Open-response questions will be added as appropriate to allow participants to share their ideas /concerns or suggestions.

Cronbach's alpha will be used to measure the internal consistency of the knowledge section questions. A cumulative knowledge score will then be calculated by adding +1 for each correct answer or positive attitude/willingness answer and a 0 for wrong, missing, or negative attitude /willingness answer to the sum score which will be converted to a percentage of the expected total positive score. Continuous variables will be expressed in the form of mean ± standard deviation (SD) and will be preliminarily tested for normal distribution.

Categorical data will be reported as percent values, and univariate comparisons between different proportions will be evaluated through a Chi-squared test as a willingness to apply resuscitation with demographic data. Variables with p-value less than 0.05 are then included in a logistic regression model to determine the factors associated with willingness to apply resuscitation and the possible barriers. The results will then be expressed as multivariate Odds Ratio (mOR) and 95% confidence interval (CI). The significance level for all analyses will be set for $p < 0.05$.

## Intervention Type
Other

## Primary outcome(s)
Laypersons' willingness to perform resuscitation in real out-of-hospital cardiac arrest (OHCA) situations, measured using the third part of a cross-sectional LayResus 2023 Study Questionnaire, composed of 5-point Likert scale questions on the following:
1. Willingness to help in real-life OHCA situations
2. Participation in local/national neighbourhood resuscitation response teams
3. Willingness to attend cardiopulmonary resuscitation (CPR) training programs

4. Willingness to be included in a national resuscitator registry
5. Willingness to be part of the local/national network of Emergency Medical Services (EMS) as a first responder to OHCA
Measured at a single point of time during the completion of the questionnaire

### Key secondary outcome(s)
Barriers and enablers that might hinder or improve the willingness of laypersons to apply learned resuscitation skills after cardiopulmonary resuscitation (CPR) training, measured using the fourth and fifth part of a cross-sectional LayResus 2023 Study Questionnaire, composed of a closed set of questions on the following:
1. Possible barriers to attending CPR training and for applying resuscitation by the participant, and how they could be overcome
2. Possible enablers that might help study participants attend CPR training
Measured at a single point of time during the completion of the questionnaire

### Completion date
31/12/2023

## Eligibility

### Key inclusion criteria
1. Laypersons aged 18 years and above
2. Educated on any kind of resuscitation training, either on cardiopulmonary resuscitation (CPR) or basic life support (BLS), within the last 2 years in the involved countries of Egypt, Libya, Sudan, and Tunisia

### Participant type(s)
Healthy volunteer

### Healthy volunteers allowed
No

### Age group
Mixed

### Lower age limit
18 Years

### Upper age limit
100 Years

### Sex
All

### Total final enrolment
837

### Key exclusion criteria

1. Younger than 18 years
2. Healthcare professionals
3. Participants who have expressed their refusal to have their responses used in research

### Date of first enrolment
01/05/2023

### Date of final enrolment
31/12/2023

## Locations

### Countries of recruitment
Egypt

Sudan

Tunisia

### Study participating centre
**Human Resuscitation Council**
AlSteen St. AlRiyadh District
PO Box 7216
Sudanese Postal Service Co. Ltd. (SudaPost)
Khartoum
Sudan
0000

### Study participating centre
**Egyptian Resuscitation Council**
170 Ahmed Shawki Street
Roushdy
Alexandria
Egypt
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### Study participating centre
**Tunisian Resuscitation Council**
Service SAMU 03
CHU Sahloul
Sousse Jouahara
Sousse
Tunisia
0000

# Sponsor information

### Organisation
Human Resuscitation Organisation

# Funder(s)

### Funder type
Charity

### Funder Name
Human Resuscitation Organisation

# Results and Publications

### Individual participant data (IPD) sharing plan
The datasets generated and/ or analysed during the current study will be published as a supplement to the results publication

### IPD sharing plan summary
Published as a supplement to the results publication

### Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Results article | | 01/05/2025 | 23/01/2026 | Yes | No |
| Protocol file | protocol version 2 | 03/02/2023 | 18/05/2023 | No | No |
| Study website | | 11/11/2025 | 11/11/2025 | No | Yes |