



**Alexandria University
High Institute of Public Health
Department of Epidemiology**

**A Study of Sudden Cardiac Arrest among Adults
in Alexandria**

**Thesis submitted to the Department of Epidemiology,
High Institute of Public Health – Alexandria University
In partial fulfillment of the requirements of the degree of**

Doctor of Public Health Sciences

in

Epidemiology

by

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July - 2016

SUMMARY

The current study is considered a preliminary study about SCA among adults in Alexandria, EGYPT . The aim of the present study was to investigate the problem of SCA among adults in Alexandria, including its possible underlying causes and intervention; to estimate the magnitude of the problem of SCA among adults in Alexandria during the period from 2000-2004 based on registered cases. To investigate the possible underlying causes of SCA in the city during the same period. To assess knowledge of samples of selected population sub-groups (health care professionals, university students, club members) with respect to SCA and , knowledge ,attitudes and practices (KAP) with respect to cardiopulmonary resuscitation (CPR).and To apply a training programme for resuscitation of SCA cases, according to the American Heart Association (AHA) standard .

The study design used was a cross - sectional approach: used for collection of the quantitative data on SCA and its possible determinants, and a quasi experimental (time series) approach used for the intervention component.

The study was carried out at four settings namely: Information and Decision Support Center (IDSC) of the Ministry of Health (MOH), Alexandria, The medical records departments of five major Alexandria hospitals which receive and manage cardiac cases critical cases , faculties in Alexandria University , and a social club- in Alexandria.

The study included 103832 victims of SCA in Alexandria during the period from years 2000-2008, as reported by the Information and Decision Support Center (IDSC) of the Ministry of Health and Population (MOHP) , 91 cases of SCA above 18 years, managed at the five selected major hospitals in Alexandria, during a period of six months during 2004, and six months during 2008 , 850 individuals (400 health professionals from 5 studied hospitals, 450 individuals from the public (250 students, and 200 social clubs members) for the Knowledge, Attitudes and Practices (KAP) study. And 102 were randomly selected for the intervention program.

Information about SCA cases and underlying causes of SCA from the MOHP information center were collected. Data collection thus entailed: sorting out the SCA cases from overall mortalities registered at the center; recording some underlying causes (as available), place, time of death and collecting data about demographic variables as: age, sex, occupation, residence, and marital status.

Information about cases of SCA during six months of 2004 and another six month-period during 2008, managed at the five selected Alexandria hospitals dealing with critical SCA cases, were collected by abstracting their medical records.

An interview questionnaire sheet was designed to assess knowledge, attitude and practice of health professionals (physicians and nurses) & the public (university students and social club-members).

Seventy two individuals were divided into three groups: group 1 was health-professionals, group 2 was university students; and group 3 was social club-members were trained for CPR. Training was carried out at the office of the Cardiopulmonary Resuscitation and Trauma Care Society (CPRTCS) in Smouha district.

A preliminary assessment was done (pre-test) for the intervention program. The program designed and tailored according to the standard of The American Heart Association (AHA). Intervention evaluation was done by Practice exam (on manikin) to assess their achieved practical skills, and a written post-test (same version of KAP study form) to assess possible KAP- change immediately after the course, then four weeks later.

The study revealed the following results:

I- During the period 2000-2008 data extracted from Information and Decision Support Center (IDSC) of the Ministry of Health and Population (MOHP) about SCA victims (103832 SCD victims) revealed that most victims were arrested at home. Atherosclerosis was the most frequently reported cause of death in elderly females, while acute myocardial infarction, cardiac arrest and arterial embolism and thrombosis were the most frequently reported causes of death among males between 30 to 59 years.

II- During a period of six months during 2004, and six months during 2008. 91 victims of SCA cases managed at the five selected major hospitals in Alexandria, two thirds (62.6%) of them were males, while the rest (37.4 %) were females. Their age ranged from 20 to 85 with a mean \pm SD of 58.89 ± 14.62 years. Most victims (90.1%) were arrested at home, 9.9% were arrested on streets or at beach. Occurrence of SCA per day reflects 2 peaks, one from 1:00 - 6:00 am, while the other was from 13:00 - 18:00 pm. Sudden cardiac arrest related to cardiovascular causes was in about one third of the sample.

III- More than third of the three population sub-groups rolled in the KAP study were not smokers and they are not aware of important of practicing sport or not interested in practicing sports. A higher proportion of club members than health professional and students were knowledgeable regarding SCA related questions. The majority of all groups had positive attitude. 24.5% reported attending BLS course before, the median knowledge and practice score % was highest among social club members (71.4%), followed by health professionals (51.1%) then students (42.8%) .

IV- The pre test of Cardio-Pulmonary Resuscitation (CPR) training revealed that the knowledge related to CPR was higher in health professionals than club members and students subgroups participated in CPR training. Practice were improved in all three groups had the CPR training and all passed post test. After a month of training there was decrease or stability

of knowledge of students and club members while the health professionals vary between decrease, stability of knowledge and improvement.

The following are recommendations of the study:

- Establishment and implementation of an embedded system within the MOHP for Continuous Medical Education (CME) for health care providers to plan, conduct and evaluate education and training of health care professionals (HCP) regarding CPR, and renew their license of CPR every two years. Establish a checkup system in schools and university and Provide first aid and CPR classes to students in each level of education.

- Increase people awareness regarding OHCA, risk factors, methods to avoid the modifiable risk factors and methods of follow up for non modifiable risk factors, and healthy life style.

- Surveillance is needed to assess the SCA situation in Egypt and enhance survival, and establishing a cardiac arrest registry, identifying the effective use of ICD 10 system and continuous follow up to track the registration.