

Level of Knowledge Regarding the use of AED Machine among Railway Employees

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Abstract

Automated external defibrillator is a portable electronic device that delivers an electric shock to the heart muscles through the chest wall in order to resolve a normal heart rate. The AED will analyse the heart's electrical rhythm and if it detects a rhythm likely to respond to a shock, it will charge itself ready to deliver a shock.

Aim: To assess the level of knowledge regarding the use of AED machine among the railway employees in a selected railway station at Kannur districts.

Objectives: The objectives of the study are to,

- assess the level of knowledge regarding the use of AED among railway employees
- find the association between knowledge and selected demographic variables among railway employees.

Methodology: The study was conducted to assess the knowledge regarding use of AED among the railway employees in a selected railway station at Kannur district. Non experimental quantitative approach was used for this study. A total of 30 samples were selected using convenient sampling technique. Formal written permission was obtained from the authorities prior to the data collection process. The data was analyzed by using both descriptive and inferential statistics on the basis of the objectives and hypothesis of the study.

Result: The study showed that 6.66% of railway employees have good knowledge, 70% of employees have moderate knowledge, 23.33% railway employees have poor knowledge regarding the use of AED and there was no association between knowledge and selected demographic variables except year of experience of the employees.

Keywords: Knowledge, AED, railway employees

Background

Heart disease has become a major killer of mankind with vast change in the life of people. Cardiac problems are increasing day by day in our country also. An increasing number of Indians, even among the younger age group are prone to heart attack due to their health damaging lifestyle.¹

In this life threatening situation, new interventions are made in the medical field with a view to conserve life from cardiac problems such as sudden cardiac arrest on such device invented is AED. AED the American Heart Association promotes the use of AED for use by lay

person and health care providers responding to cardiac arrest emergencies.²

Improved life expectancy by almost 15-20 years in average and reduced infant mortality has been recorded due to unprecedented improvement in public health in recent time. Advances in preventive measurement, medical diagnosis, superior treatment regimens, economic growth and better public policies have been a part of the 21st century industrialization and urbanization process. The changes in lifestyle increase the risk for cardiac disease.³

Around 57 million deaths occurred worldwide in the year 2008, of which 36 million deaths almost two third were because of non communicable diseases, involving mainly cardio-vascular disease, cancers, diabetes, and chronic lung disease. The leading NCDs risk factors globally in terms of attributable deaths are high blood pressure (13%), tobacco use (9%), diabetes (6%), lack of physical activities (6%) and obesity (5%). Nowadays lifestyle disorders are becoming more common, affecting younger population especially the young, urban population.⁹

An Automatic External defibrillator is a computerized defibrillator that analysis heart rhythm and tells the operator when to perform defibrillation AED have become common place in general public areas and are available for use in large volume of areas, such as airport, amusement park and shopping malls and railway station. Public access defibrillation was designed to provide early defibrillation to victims of cardiac arrest while the AEDs are not typically used in the hospital. Any delay the delivery of the first shock, including delays related to waiting for the arrival of trained medical personnel and equipment can decrease chance of survival. The availability of an AED in public area can prevent unnecessary delays in treatment and improve survival in victims of sudden cardiac death.¹²

Operation of an AED is quite simple and can be performed by lay people. Instructions for use are printed on the machine and voice commands also guide operator in using the AED. The AED is the smart defibrillator thus can tanks to sophisticated computer chips analyse the patient's ECG rhythm and determine whether a fibrillating shock is needed. AEDs may be fully automatic or semi-automatic. The fully automatic versions assess the patient rhythm and the semi automatic AEDs identifies the rhythm and them instruct the rescuer what to do about it.¹²

New AEDs appear on the market, railway, airport etc. all the time and each model comes with its own operating manual.

Materials and Method

Research approach: Non experimental quantitative approach

Research design : Descriptive survey is used for this research study.

Variables

Dependent variables

In this study the dependent variable is knowledge regarding use of AED machine among railway employees under the study.

Setting of the Study

The present study was conducted in a selected railway station at Kannur district.

Population

- **Target population :** All the railway employees of Kannur railway station

- **Accessible population:** The railway employees in Kannur railway station who are meeting the inclusion exclusion criteria and are available at day of data collection.

Sample

The sample in this study consisted of permanent or temporary railway employees in a selected railway station at Kannur railway station who met the sample selection criteria.

Sampling Technique: Convenient sampling technique

Sample Size: 30 railway station employees

Criteria for the selection of Sample

Inclusion Criteria

- Railway employees working in all shift
- Working temporary and permanent bases.
- Willing to participate in the study.

Exclusion Criteria

- Person who are seriously ill; fatigued.
- Not able to follow the instructions.
- Person who are physically handicapped.

Data Collection Instruments

- Data collection tools are the procedures or instruments used by the researcher to observe or measure the key variable in the research problem

- Researcher developed Likert rating scale to assess the knowledge regarding the use of AED among railway employees.

Selection and Development of Tool

Selection of Tool

- Instrument is a written device that a researcher used to collect the data.
- The data collection tool for this study consisted of two parts
- Part 1 : Demographic data
- Part 2 : Knowledge questionnaire

Data Collection

Base Line Characteristics

The first part of the tool consisted of seven item related to the baseline characteristics of the railway employees that included age, gender, education, nature of employment, income, years of experience and nature of the duty.

Preparation of Knowledge questionnaire

- Investigators arbitrarily prepared the likert rating scale that consisted of 20 items.
- Likert scale is a 3 point scale ranging from strongly agree, agree and disagree. Each strongly agree statement consist of 3 mark . Agree 2 and disagree consist 1 mark.

Findings

Organization of the finding

The data were analyzed under the following headings:

Section 1: Description of social demographic characteristics of railway employees.

Section 2: Assess the knowledge regarding the use of AED among railway employees

Section 1: Description of socio demographic characteristics of railway employees

The sample was selected non probability convenience sampling from railway station at Kannur.

This section deals with the base line characteristics of 30 railway employees in terms of frequency and percentage distribution and is presented in charts.

It was found that 36.7% sample belongs to age group between 36 – 51 years. About 16.7% sample belong to age group between 20-35 years and 14.7%7 belongs to 52-71 years. Regarding gender, 23.3% study sample are females and 76.6% are males. Majority of the employees (86.7%) belongs to Hindu religion, 36.7% railway employees belongs to Islam and equal proportion of 3.33% belongs to Christian and others .Related to educational status, 40% of railway employees are graduated, 20% employees are technical, 23% employees are school level and 16.7% employees are post graduates . In this study the majority of employees are worked in permanent bases (96.6%) and very small percentage (3.33%) employees are temporary bases. About 63.3% employees have greater than ten years of experience in this field, 23.3% employees have 0-5 yrs experience and 13.3% have 6-10 yrs experience. Majority of employees are general shift (56.6%) and 43.3% employees are shift work. In the case of residence 50% are urban and 50% are rural.63.3% employees are not attended medical related course. But 36.7% of employees are only attended medical related course.

Section 2 : Assess the knowledge regarding the use of AED among Employees

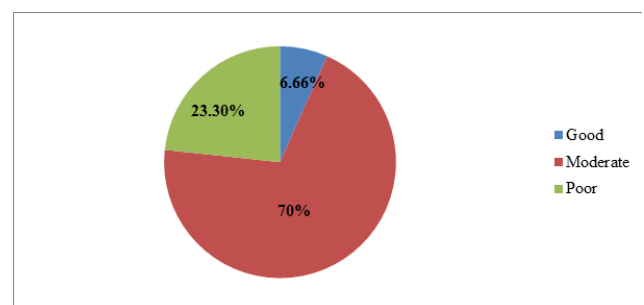


Fig 1: Knowledge regarding use of AED

The figure shows that 6.66% of railway employees are good knowledge, 70% of employees have moderate knowledge regarding the use of AED and 23.3% have poor knowledge.

Conclusion

This study was undertaken to assess the knowledge regarding the use of AED among railway employees in a selected railway station at Kannur district. In this study researcher developed likert rating scale is used for assess a knowledge of the railway employees among AED.

The following conclusions were drawn based on the findings of the study.

The result findings show that, the majority of the railway employees had moderate knowledge on use of AED.

- No other variables except years of experience were associated with the knowledge score.

Suggestions

- A series of education programmes can be conducted for the railway employees regarding the use of AED.
- Conduct a demonstration class among the operation of AED for the railway employees.
- Recommendations
- A seminar study can be replicated on large scale sample.
- A similar study can be conducted among large sample may yield more reliable results
- The effectiveness of video assisted demonstration of AED can be conducted

Implications of the study

The result obtained from the study helped the researcher to drive certain implications for nursing practices

Nursing Education

The present study emphasizes the need of health educations and awareness programme to improve the knowledge and practice regarding the use of AED among railway employees.

Nursing Administration

Nurse as an administration can play an important role in educating the railway employees regarding the knowledge and practices regarding AED and other basic life support.

Nursing research

The findings of the study also have scope in the field of research and based on the recommendations, further study can be conducted.

The study relieved that majority of the railway employees had moderate knowledge on use of AED.

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Ethical Clearance : Taken from Institutional Ethics Committee

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