

**Occupational Health Hazards among Workers
of El- Araby Electronic Industries
at Benha City**

Thesis Proposal

Submitted for partial fulfillment of the requirement of master degree in
Public health nursing

By
Faten Said Abd El-Hady Garf
(B. Sc Nursing)

Supervisors

Prof. Dr. Soheir Ali Badr El-Din
Professor of Community health nursing
Faculty of nursing
Cairo University

**Dr. Hanaa Abd El-Gawad
Abd El-Megeed**
Lecturer of Community health nursing
Faculty of nursing
Benha University

**Dr. Noha Ahmed
Mohamed**
Lecturer of Community health nursing
Faculty of nursing
Beni Suef University

**Faculty of nursing
Benha University**

2012

Introduction

Work is basic to life throughout the life, most adults spend almost one third of their time at work and despite the high degree of automation and computerization of industry, and many workers exposed to occupational health hazards. In addition to hazards is a situation that posse a level of threat to life, health, property or environment. Any real or potential conditions produced by industries that can cause injury or death to personnel or loss of product or property (**Levy &Wegman, 2006**).

The electronic industry has experienced enormous global growth over the last quarter of a century .Like any other industry, Occupational health hazards are present in electronic work. As the electronic workforce increases, there is a need for occupational and environmental medicine practitioners to be aware of the work processes in this industry, to recognize possible hazards, and to implement appropriate control measures to protect the health of its employees (**Koh, et al., 2011**).

According to **Stanhope&Lancaster (2006)** who mentioned that all over the world approximately 30% to 50% of workers exposure to occupational health hazards in work site due to biological, chemical and physical agent's ergonomic deficiencies with stressful conditions, and as estimated by 120 million of occupational injuries resulting in 200,000 fatalities occur annually along with approximately 68 to 157 million new cases of occupational disease.

Occupational health services encompass the three public health practice priorities; health promotion, prevention and health protection. Health promotion programs seek to maintain and improve workers' health. Preventive programs seek to eliminate potential hazards to workers' health and safety. Health protective services shield workers from remaining hazards (**Allender & spradley, 2005**).

Lundy & Janes (2005) defined the occupational health nursing is the specialty practice that focuses on the promotion, prevention and restoration of health within the context of a safe and healthy environment; this includes the prevention of adverse health effects from occupational and environmental hazards. It provides, delivers health and safety services to workers, work populations as a community group.

The nursing role of occupational health is changing as a result of many factors, including rising health care costs, increased recognition of health effects associated with various exposures, emphasis on health promotion and wellness, trends in managing care, and multicultural workforce. More over occupational health nurse analyze each work task to detect task situations that place workers at risk through assessment and surveillance of the workplace to identify potential hazards increasing with the work, reduce risk and minimize risk problems (**Nies & Ewen, 2007**)

Magnitude of study

Occupational disease, injuries and accidents are the main causes of morbidity and mortality for many groups in the society. In addition to the heavy financial burden on industry and social security schemes (**Watton, 2002 &El-Zayat, 2008**).

The working age in Egypt ranges from 15 to 60 years. The labor force increased in 2003 to (198768) worker. An estimated 22570 occupational injuries resulted in 127 fatalities, 366 cases of handicapped and 56 disabilities that lead to 459779 days of absenteeism (**Central Agency for Public Mobilization and Statistics, 2005**).

The primary goals of this study are to reduce hazard exposure and to prevent disease and injury. Provision of services to meet these goals include assessment and monitoring of the work place and the general environment for health and safety hazards, interventions designed to eliminate hazardous exposures, case management for injured and ill individuals, and other measures to promote health and prevent disease and injury (**Rogers & Greenberg, 2011**).

Aim of the study

The aim of this study is to assess the occupational health hazards among workers of El- Araby electronic industries at Benha city through the following:

- 1) To assess workers' knowledge about occupational multiple factors affecting health.
- 2) To assess workers' health problems.
- 3) To assess the workers' physical health status.
- 4) To assess the workers' using of personal protective devices.
- 5) To assess the work site, environmental safety and sanitation.

Research Questions

- 1-What are work site factors affecting the workers' health?
- 2- Are the knowledge about occupational multiple factors affecting their health?
- 3-What are the occupational health hazards affecting workers' health?
- 4-Is there a relationship between workers' health problems and exposure to occupational health hazards?

Subjects and Methods

1- Technical design:

Research Design:

A descriptive study design will be utilized to assess the health hazards among workers at electronic industries.

Setting

The study will be done at El-Araby electronic industries at Benha City.

El-Araby Egyptian shareholding company was established in 1964 engaged in the manufacture and marketing of engineering goods lead a developmental role of the community and the Egyptian economy and provide high quality products with advanced technology that meet the wishes and expectation of consumers and aims to become the first Egyptian, Arab-African company in its field at the end of 2014.

The factory divided into four main departments (department for the collection and minerals, department of plastic and foam, department of engines and department of television).

Sampling

A systematic random sample of the electronic industry workers will be conducted.

The total numbers of El-Araby electronic industry workers in Benha city are (3000) workers. The study sample constitutes 300 (10%) of the factory workers will be chosen by systematic random sampling from the four departments.

Tools of data collection

To achieve the purpose of this study, data will be collected by the following tools:

1- Structured Interviewing Questionnaire: this questionnaire will be developed by the investigator and includes:

- a- Sociodemographic characteristics of the electronic industry workers such as (age, level of education, marital status, resident, income.....etc)
- b- Working history concerns; working hours, past experience, training courses and the using of factory facilities.
- c- Health problems of the workers during last 6 months as reported by the workers' file.

11- Anthropometric measurement tool (body mass index, general appearance, etc)

111-Observational checklist for workers' use of different personal protective device such as safety glasses, aprone, mask, goggles, ear muffs.....etc.

2- Operational design:

Pilot study: A pilot study will be carried out on a sample (30) worker from a target population to ensure clarity and applicability of the tools and will be excluded from the sample. The modifications will be done if needed, and then the final formats will be developed

Procedures

Approval of the factory director will be obtained through an official permission and also oral consent will be taken from the workers. The investigator will introduce herself and explain the aim of the study, the questionnaire using simple Arabic language. The process of data collection will be conducted by the investigator using the study tools for the workers in the factory departments through a period of 6 months.

3- Administrative design:

An official letter from the faculty of nursing will be delivered to the director (s) of the intended study setting. A full explanation about the aim of the study will be explored. Workers consent will be obtained before starting collecting data. Approval from the ethics committee also will be obtained to carry out this study.

4- Statistical design:

Data will be categorized, scored, tabulated and analyzed using the appropriate statistical methods. Descriptive statistics will be utilized; frequencies, means, standard deviation and test of significances.

Results:

The collected data will be coded, organized, analyzed and tabulated using a computer. Presentation of data into tables and graphs will be carried out according to types of the study variables.

Discussion:

Discussion of the results will be done based on the related literature and researchers' point of view.

Conclusion & recommendation:

Appropriate conclusion and recommendations will be made based on the findings of the study.

References

- **Allender, j. and spradley, B. (2005):** community health nursing promoting and protecting the public's health, 6th ed; Lippincott, New York, PP.679-712.
- **Central agency for public mobilization and statistic:** Annual yearbook, Egypt, June 2005.
- **Koh, D, Chan, G and yap, E. (2011):** Hazards in the workplace- World at work: The electronics industry, volume 61; issue 2
- **Levy, S. and wegman, H. (2006):** occupational health recognizing and preventing work related diseases and injuries, 5th ed; lippincot, Williams and Wilkins, Philadelphia.
- **Levy, S. and wegman, H. (2011):** occupational health recognizing and preventing work related diseases and injuries, 6th ed; Oxford University, chapter 1, p.5
- **Lundy, S. and Janes, S. (2005):** Community health nursing Caring For the public's health , 3rd ed ; Jones and Bartlett Publishers, London, pp. 824-887
- **El-Zayat, O. (2008):** Occupational hazards affecting worker's health in Misr Shebin El-Kom Spinning and Weaving Company. Unpublished M.S.c thesis. Community health nursing department, faculty of nursing , Minofiya University, Egypt
- **Nies, M. and McEwen, M. (2007):** community public health nursing. Promoting the health of population, 4th Ed , Saunders Elsevier Co, USA,pp 627
- **Rogers , B. and Greenberg , G. (2011):** occupational health recognizing and preventing work related diseases and injuries, 6th ed; Oxford University, chapter 4 ,P.619

- **Stanhope, M. and Lancaster, J. (2006):** community and public health nursing, 6h ed; Mosby, London, PP.942-960.
- **SOKAS, K. and Paron, L. (2011):** occupational health recognizing and preventing work related diseases and injuries, 6th ed; Oxford University, section 1,pp.5