Study of the Outcome of Health Education To Primary Health Care Workers On Their Behavior to Prevent Blood Borne Infectious Diseases

Thesis

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Dedication

To my wonderful family: father, mother, brothers, my wife, and my young daughters Viro & Miraey.

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ABSTRACT

The current intervention study was conducted on a group of 130 health care workers (nurses, lab. technicians and workers) working in nine primary health care centers in Cairo and Giza governorates. Their knowledge, attitude and practice concerning blood borne infectious diseases and safety precautions was assessed before and one month after health education. The health education lecture presented a comprehensive message on the three main blood borne infections HBV, HCV and HIV, and the basic safety precautions, and was reinforced by distribution of educational aids like posters, gifts and colorful printed materials.

The study showed that the whole group of HCWs had significant improvement in their knowledge, attitude and practice after health education. Nurses showed significant improvement in both knowledge and attitude. The workers group showed significant improvement in their knowledge and practice, while the lab technicians group did not show any significant improvement.

The difference in percent change of knowledge between the three study categories was significant and the group of workers showed the highest percent change.

There was no significant change in specific aspects of practice. However, the exposure of HCWs to needle stick or blood or body fluid splashes decreased significantly and there was significant improvement in both reporting the exposure to health management and in immediate hand washing after exposure.

The study concluded that health education had a significant positive impact on the study population knowledge, attitude and practice. However, some risky practices did not show a significant improvement in spite of the improvement shown in its related knowledge. The study recommended continuous health education courses to health care workers addressing the transmission and prevention of blood borne pathogens with monitoring and following up of the improvement in trainees' knowledge, attitude and practice.

Key Words

Blood borne infections - Hepatitis B, C, HIV - Health Care Workers, Knowledge - Attitude -Practice. – Health education.

CONTENTS

List of Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ALT	Alanine Transaminase
ANHOPS	The Association Of National Health Occupational Physicians
Anti-HBs Ab	Anti Hepatitis B Surface Antigen Antibody
AORN	The Association Of Peri Operative Registered Nurses.
ARC	Aids-Related Complex
AST	Aspartate Transaminase
AVSC	Association For Voluntary Surgical Contraception
BBFs	Blood And Body Fluids
BBPs	Blood-Borne Pathogens
CDC	Centers For Disease Control And Prevention
CSF	Cerebrospinal Fluid
CT	Computerized Tomography
ELISA	Enzyme-Linked Immuno Sorbent Assay
EMR	Eastern Mediterranean Region
EPINET	Exposure Prevention Information Network Data Reports
GGT	Gamma Glutamyl Transpeptidase
HAART	High Active Antiretroviral Therapy
HBeAg	Hepatitis B E Antigen

HBIG	Hepatitis B Immune Globulin
HBsAg	Hepatitis B Surface Antigen
HBV	Hepatitis B Virus
HCP	Health Care Personnel.
HCV	Health Care Workers
HIV	Human Immunodeficiency Viruses
IC	Infection Control
IF	Immunoflourescence
IGG	Immune Globulin G
ILO	International Labor Organization
KAP	Knowledge, Attitude and Practice.
MOHP	Mohp Ministry Of Health And Population
MRI	Magnetic Resonance Image
NANBH	Non-A, Non-B Hepatitis
NIOSH	National Institute For Occupational Safety And Health
OR	Operation Room
OSHA	Occupational Safety And Health Association
PCR	Polymerase Chain Reaction
PEMs	Printed Educational Materials

PEP	Post-Exposure Prophylaxis
PHC	Primary Health Care Center
PPE	Personal Protective Equipments.
RIBA	Recombinant Immunoblot Assay
TMA	Transcription Mediated Amplification
UNAID	Joint United Nations Aids Program
UP	Universal Precautions
USA	United States of America
WHO	World Health Organization

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Introduction & Aim of the work

INTRODUCTION

Healthcare personnel are at risk for occupational exposure to blood borne pathogens, including hepatitis B virus (HBV), hepatitis C virus (HCV), and human immuno-deficiency virus (HIV). Exposures occur through needle sticks or cuts from other sharp instruments contaminated with an infected patient's blood or through contact of the eye, nose, mouth, or skin with a patient's blood**. (*Centers for Disease Control and Prevention 2007).***

Among the 35 million health workers worldwide, about 3 million experience percutaneous exposures to blood borne pathogens each year; these injuries may result in 15,000 HCV, 70,000 HBV and 1,000 HIV infections. ***(WHO, 2003).*** These infections lead to about 1,100 deaths and significant disability. More than 90% of these infections occur in developing countries. ***(WHO 2000b).***

A study conducted in Egypt revealed that out of 1485 HCWs interviewed, 529 (35.6%) were exposed to at least 1 needle stick injury during the past 3 months with an estimated annual number of 4.9 needle sticks per worker. The most common behavior associated with needle stick injuries was 2-handed recapping. Overall, 64% of HCWs disposed of needles unsafely in non puncture-proof containers ***(Talaat M, 2003)***.

Another study was conducted in 25 health care facilities in Gharbiya governorate to assess safe injection practices among health care workers (HCWs) and revealed that many safe practices were infrequent as proper needle manipulation before disposal (41%), safe needle disposal (47.5%), reuse of used syringe & needle (13.2%) and safe syringe disposal (0%). Accordingly, exposure to needle stick injuries were common among the interviewed HCWs (66.2%). ***(Ismail et al., 2005).***

Lack of awareness and misconceptions of HCW about the precautions might contribute to increased risk of occupational exposure and disease transmission. Many studies have revealed poor HCW's knowledge of high risk practices and transmission based precautions. ***Gould et al. (1996)*** reported that one-quarter of sampled nurses were unable to state all the precautions necessary before handling blood/bodily fluids. ***Chan et al. (2002***) also stated that the nurses had inadequate knowledge of UP. ***Bauer (1991)*** found that the responses on a UP (universal precautions) test in operation room indicated knowledge deficits among operation room personnel.

In Egypt, lack of access to information and education on the importance of the precaution guidelines also contribute to continued high-risk behaviors***. Kabbash IA, et al. (2007)*** found that only 57.4% of the studied nurses in Egypt's Delta hospitals had correct knowledge regarding the risk of transmission of BBP through infected sharp objects. A group of HCW was studies including physicians, surgeons, nurses, laboratory technicians, and ambulance workers. Of the studied HCW, 67% were misinformed about the possibility of contracting HIV from toilet seats, droplets, and touching patients, and 83.5% believe that patients with AIDS should be quarantined. Only 72.8% believe themselves to be in great danger of acquiring AIDS through occupational exposure, while 0.6% thought that there was no danger. ***(Faris R, 1994).***

Health education and training of HCWs on safe handling and collection of needles and sharps, and hepatitis B vaccination of all HCWs is required to reduce transmission. ***(Talaat M, 2003).*** Health care workers should be made aware of hazards, preventive measures and post-exposure prophylaxis to needle-stick injuries. ***(Gurubacharya DL, 2003)***

The PHC workers should be able to recognize major and obvious health hazards related to Blood borne Pathogen and distinguish those that require formal evaluation by the institution. ***(WHO, 2002*)**. Therefore**,** it is highly recommended that seminars, workshops should be organized on a continuous basis for health care workers on universal precautions and **t**hose trained should train others on the job. ***(Aisien & Shobowale ,2005)***

Many studies have revealed that hospital nurses and workers under UP (Universal Precaution) educational training had significantly improved their knowledge, practice and behavior, ***(Huang et al. 2002).*** Additionally**, c**ombined with performance feedback, health education has proved to be highly effective in decreasing the rate of HCW exposure to needle stick or blood or body fluid splashes and subsequently reduced their infection rate. **(*Mantel C, et al., 2007)***.

AIM OF THE WORK

Main Goal:

The main goal of the study is to decrease transmission of blood borne infectious diseases and more especially viral hepatitis B (HBV), viral hepatitis C (HCV) and human immuno-deficiency virus (HIV) among health care workers at 9 Primary Health Care centers in Cairo and Giza by implementing a health education program.

Specific objectives:

1. Assessment of the baseline knowledge, attitude and practices (KAP) of health care workers (HCW) concerning the transmission and prevention of blood born infectious diseases HBV, HCV and HIV and the basic safe practices and precautions in this regard.
2. Provide a package of health education messages to the study population to reduce the level of exposure to blood borne infectious diseases.
3. Measure and evaluate the effectiveness of the intervention in changing knowledge, attitude and practices of the studies group concerning risky behaviors predisposing to transmission of blood born infectious diseases.