بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / سلوي محمود عقل

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد

Health Education Program Regarding Food Safety among Food Service Providers at Ain Shams University Hospitals: Development and Assessment

Thesis

Submitted for Partial Fulfillment of MD Degree in
Public Health

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Sherine Fawzi Hassan Mahmoud

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List of Abbreviations

Abb.	Full term
ASU	Ain Shams University
CDC	Centers for disease control and prevention
DALYs	Disability-adjusted life years
E coli	Enterohaemorrhagic Escherichia coli
FAO	Food and Agriculture Organization of the United Nations
FBI	Food borne illness
FH	Food handler
FS	Food Safety
HACCP	Hazard analysis and Critical Control Points System
MENA	Middle East and North Africa
MOHP	Ministry of Health and Population
SD	Standard deviation
SPSS	Statistical package for social sciences
TCS	Temperature control for safety
WHO	World Health Organization

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ABSTRACT

Background: Food safety at hospitals is of significant importance for the recovery and wellbeing of patients. Reasons beyond unsafe food at hospitals may be related to consumption of food contaminated with microorganisms or their toxins, which may result from unsafe sources, inadequate cooking or unhygienic practices during food preparation, handling and storage.

Objectives: to identify the baseline knowledge and food handling practices of food safety among the food handlers in Ain Shams University Hospitals (ASU), and to develop a health education program about food safety for the food handlers and assess its outcome in ASU Hospitals. **Method:** one arm intervention study was carried out at the kitchens of ASU hospitals. All food handlers (n=75) in ASU hospital kitchens were recruited in this study. The study was carried out in three phases, the first phase was evaluation of baseline knowledge and practices of participants using self-administered questionnaire and on site observation checklist (Pre-intervention phase), the second phase was health education program for food handlers (Intervention phase) which included several activities such as **power point lecture, demonstration, playing video, interactive discussion and distribution of brochures.**, and the third phase was evaluation of knowledge and practices after receiving health education program (Post-intervention phase) using the same tools as pre intervention phase. **Results:** The study showed that the majority of respondents (49.3%) had poor knowledge regarding food safety measures, and46.7% of them had sufficient food safety practices .There was an improvement in food safety knowledge scores as it was 5.33±3.31 in the pre intervention, then improved to 5.92 ± 2.28, 7.21±2.47 and 9.80±1.92 immediately, 3 and 6 months after intervention respectively. A statistically significant difference was found when comparing food safety knowledge scores pre intervention with each time period post intervention ($p<0.001$). Results also, showed that food safety practices scores was 8.35±2.06, improved to 9.20 ± 1.77, 10.27±1.23 & 11.40±0.70 before intervention, and immediately, 3months and 6 months after intervention respectively. Also, there was a statistically significant difference in food safety practice scores when comparing food safety practice scores pre intervention with each time period post intervention($p<0.001$).**Conclusion & Recommendations:** This study showed that training of food handlers on food safety has a significant impact on their knowledge and practices regarding this issue. We suggested that food safety intervention through continuous training programs must be done at regular basis even during normal working hours, so that corrective steps can be taken immediately after failures are identified,. Meanwhile, periodic application of educational guidelines at university hospital kitchens should be provided at regular basis to improve food handlers knowledge and practices about safety food measures.

Key words: knowledge, food handling practices, food safety, and health educational program

PROTOCOL OF A THESIS FOR PARTIAL FULFILMENT OF M.D. DEGREE IN PUBLIC HEALTH

Title of the Protocol: Health education program regarding food safety among food service providers at Ain Shams University hospitals: development and assessment

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(Maximum 6 Pages)

What is already known on this subject? AND
What does this study add? (Maximum 6 lines) "References are not needed"

Safe food is one of the most important human rights, protection from diseases and improvement of human health, Knowledge gap and poor hygienic practices are among factors responsible for unsafe hospital food. Unsafe food has been associated with nosocomial food infections which is a serious challenge to public health in both developing and developed countries.

After accomplishing this study, a validated educational food safety program will be provided to stakeholders in Ain Shams University hospital kitchens to be used as in job training program.

1. INTRODUCTION/ REVIEW (Maximum 1000 words) "References are needed"

Food safety at hospital is of significance importance for the recovery and wellbeing of patients **(Al-Torky, 2015)**. Food safety refers to limiting microbial pathogens, toxic chemicals or radioactive materials that may make food unsafe to the health of the consumer. It is about producing, handling, storing and preparing food in such a way as to prevent infection and contamination in the food production **(World health organization, 2015**).

Unsafe food has been linked to outbreaks of nosocomial food infections which can have detrimental effects on hospital patients The poor health and low immune status of hospitalized patients make them more vulnerable than the general population for the harmful effects of these infections **(Getachew, 2010**)

In Egypt, 79% of foods borne outbreaks had occurred in food service establishments and 25% of these outbreaks could have been prevented by safe food handling practices **(Abdel Latif et al., 2013)**. While, the Prevalence of nosocomial food infections was 59% in the United States **(Centers for Disease Control and Prevention, 2017).**

The reasons beyond unsafe food at hospitals may be related greatly to consumption of food contaminated with microorganisms or their toxins, which may result from unsafe sources, inadequate cooking or un-hygienic practices during food preparation, handling and storage **(Sharif et al.,**

2013). The most common factors contributing to foodborne outbreaks are poor knowledge regarding food safety and practice among food handlers **(Mudy et al., 2010, Kadariya et al., 2014 and Akabanda et al.,2017)**

Although, food production should meet minimum standards including sufficient refrigeration facilities, training of food handlers and exclusion of infectious handlers from work. Awareness with good personal hygienic practices, cross contamination, and the importance of temperature are all critical food borne illness prevention concepts for food handlers to know(**(Fawzi & Shama, 2009, Awad Allah et al. 2017)**. A good understanding of these concepts and implementation of these measures will help decreasing ~~the~~ food outbreaks **(Abdel Latif et al., 2013).**

WHO, 2010 indicates that food safety education and training are the most effective methods to prevent food borne outbreaks. Food handlers must not only know "what" to do, but also "how" and "why" it is being done .The majority of food handlers do not understand why food safety handling practices are important unless they are properly trained.

In Egypt, Many studies recommended a provision of educational programs for all food handlers on a nationwide large scale to gain more knowledge and attention regarding prevention of food borne diseases **(Ismail et al.,2013, Awad Allah et al. 2017)**

2. AIM/ OBJECTIVES (Maximum 300 words)

1- To identify the baseline knowledge and food handling practices of food safety among the food handlers in Ain Shams university Hospitals.
2- To develop a health education program about food safety for the food handlers and assess its outcome in Ain Shams university Hospitals.

3. METHODOLOGY:

Patients and Methods/ Subjects and Methods/ Material and Methods (Maximum 1000 words) "References may be needed"

1-Type of Study: One arm intervention study

2-Study Setting: ASU hospitals. In which, ASU hospitals have three separate kitchens, one in cardio thoracic surgery academy, the second in internal medicine and the third one in gynecological and obstetric hospitals. The first kitchen provides food to the majority of hospitals of ASU. The other two kitchens serve their own hospitals.

3-Study Population:

-Food handlers working in the three hospital kitchens.

4-Sampling Method:

- All food handlers working in three hospital kitchens will participate in the study to assess the hospital food safety measures.

5-Sample Size:

- All food service handlers (120) in the hospital kitchens (35) in kitchen of cardio thoracic, (45) in internal medicine and (40) in kitchen of gynecological and obstetric hospitals of Ain Shams university hospitals.

6- Study Phases :

The study will be carried out in 3 phases :

-Phase 1 -Pre-intervention stage

-phase 2 -Intervention stage

-phase 3 -Post-intervention stage

1-The first phase(Pre-Intervention stage):

The food safety baseline knowledge and food handling practice of all food handlers working in Ain shams university (ASU) hospital kitchens will be assessed by using a self-administered questionnaire to assess their baseline knowledge. Also an observational sanitation checklist that will be completed by the investigator to assess the food handling practice for each food handler during their cooking. This phase will take about two months and this is according to a study conducted by **Awad Allah et al., 2017**.

2-The second phase (The Intervention stage(The health education program):

The food safety health education program will be given to the food handlers working in ASU kitchens in the form of: Power Point presentations, videos, posters and demonstrations regarding for example proper hand hygiene. The health education topics will be identified based on inadequacies in food safety knowledge and practice of the food handlers that will be noted during the pre-intervention stage. There are three preliminary topics including; food handling practice, personal hygiene of food handlers including : the presence of health certificate for each food handler and its validity, cut nails and clean hands and exclusion of food handlers with boils and proper hand washing . This phase will take about one month and this is according to a study conducted by **Awad Allah et al., 2017**.

3-The third phase (post-Intervention stage):

The Food safety knowledge and practice of all food handlers working in ASU kitchens will be reassessed using the same initial tools knowledge questionnaire & food handling check list used in the pre- intervention stage to determine the effect of the health education program at zero month, three and six months after the last health education session in the intervention stage and this period of reassessment is according to studies conducted by **Nyamari et al., 2013** & **Awad Allah et al., 2017** which depends on already some included indicators such as: (frequency & place of hand washing, use of uniform & clean aprons, use of head caps, use of gloves, use of masks, hand drying by hygienic measures and temperature control of dry, cold and frozen food) .

7-Study Tools:

1- A self-administered questionnaire for food handlers in hospital kitchens. The questionnaire will assess the knowledge among food handlers. It includes questions about (cross-contamination, temperature control, safety and hygiene procedures and food handling process) (**Al-Mohaithef et al., 2014)**

2- An observational checklist that was constructed in the light of FAO/WHO standards **(FAO/WHO, 2016**). It assesses the extent to which hospital kitchens confirm to food safety standard operating procedures, and kitchen conditions, including data about: Sanitary requirements of building, kitchen design and construction, sanitary requirements of garbage and waste disposal and sanitary requirement of pest control. Also, observing the practice of food handlers during preparation of food including cleaning and sanitation of food equipment, sanitary requirements of food handling, sanitary requirements of food preparation and personnel hygiene).

The questionnaire will be pre-tested on a basis of a **Pilot study** to ensure clarity of questions, the wording of questionnaire and to estimate the time needed to complete questionnaire.

8-Ethical Considerations: Approval from ethical review committee will be obtained in addition to an official permission will be obtained from the director of the hospital kitchen and verbal consent from food handlers.

9-Data management and Analysis plan: The data will be completed, validated, coded, entered then analyzed using SPSS (Statistical Package for Social Sciences) version 20 and both qualitative and quantitative analysis techniques will be applied