Training Program for Quality Improvement in Central Sterile Supply Department

Thesis

Submitted for Partial Fulfillment of the
Requirement of Doctorate Degree
In
Nursing Science
(Medical- Surgical Nursing)

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Under Supervisions of

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Contents

List of tables

List of abbreviation

>: Greater Than

≤: Less Than or Equal

AAMI: The Association for the Advancement of Medical Instrumentation

AS: Standard of Australia

CDC: Center for Disease and Control

CHRISP: Center for Health Care Related Infection Surveillance & Prevention

CSD: Central Supply Department

CSSD: Central Sterile Supply Department

DNA: Deoxyribo-Nucleic Acid

EO: Ethylene Oxide

HAIS: Health associated infections

ICU: Intensive Care Unit

ID: Internal Diameter

LPN: Licensed Practical Nurse

MM: Millimeter

MCQ: Multiple Choice Questions

MEC: Minimum Effective Concentration

NZS: New Zeeland Standard

OPDs: Outpatient Departments

O T : operation theater

PPE: Personal Protetive Equipment

RN: Registered Nurse

RNA: Ribo-Nucleic Acid

SPD: Sterile Processing Department

TGA: Therapeutic Goods Administration

UVL: Ultraviolet Light

WHO: World Health Organization

Abstract

Background: Diseases such as Hepatitis B & C, known to be transmitted through contaminated surgical instruments; there is a need to adopt stricter guidelines for disinfection and sterilization. **Aim**: improve the quality of work delivered in the central sterile supply department through: Assessment of the central sterile supply department staff (nurses, technicians and workers) level of knowledge and performance regarding to the standards disinfection and sterilization process develop and apply tailored training program based on the staff needs assessment and Evaluate the effect of the training program on the quality of the work delivered at the central sterile supply department. ***Design:*** A quasi experimental design. **Setting**: conducted in the central sterile supply department (CSSD), at El-demerdash Hospital, affiliated to Ain shams university hospital. **Subject and Tools:** Convenience sample include all of the available staff (12 nurses, 10 technicians and 8 workers) who are working in the central sterile supply department. There were five tools used for data collection: (1) A self administered questionnaire sheet, (2) Observation checklist for the central sterile supply department staff, (3) policy and procedure assessment sheet, (4) sterilization standards audit checklist and (5) nurse supervisor's openionaire structure sheet. **Results:** there are highly statistically significant difference between total score for nurses, technicians and workers regarding level of knowledge pre and post, pre and follow up. There are highly statistically significant difference between total score for nurses and technicians regarding level of practice pre and post, pre and follow up. There are highly statistically significant difference between total score for workers regarding level of practice pre and post, pre and follow up. There are highly statistically significance difference in head nurses supervisors' opinion regarding services provided by central sterilization supply department, in the pre and post , pre follow up and post and follow-up implementation of training program. **Conclusion**: Highly statistically significant difference was observed among central sterilization supply department staff (nurses and technicians) related to level of knowledge and practice pre, post and follow up implementation of training program and this answer the research hypothesis. **Recommendations**; Periodic in-service training courses should be provided to central sterilization supply department staff (nurses, technicians) and workers in order to keep them with updated knowledge and practice regarding to surgical and medical equipment sterilization.

Key wards: training program in CSSD, quality improvement.

Introduction and Aim of the study

Introduction

The central sterile services department (CSSD), also called sterile processing department (SPD), sterile processing, central supply department (CSD), or central supply, is an integrated place in hospitals and other health care facilities that performs sterilization and other actions on medical devices, equipment and consumables; for subsequent use by health care providers in the operating theatre of the hospital and also for other aseptic procedures, e.g. catheterization, wound stitching and bandaging in a medical, surgical, maternity or pediatric ward **(Banu, 2013; Wikipedia, 2015).**

The central supply sterilization concerns on patient safety and inspection control. Central supply personnel should equipped with the knowledge and experience on such goal, objective and functions as the hospital engages in providing safe and quality assurance where patient safety is a key dimension, would prevent health care associated infections (HAIs) (**Hoyos**, **Wezel & Doornmalen, 2015**).

Ideally, CSSD is an independent department with facilities to receive, clean, pack, disinfect, sterilize, store and distribute instruments as per well-delineated protocols. The essentials of

this department are correct design, appropriate equipments, skilful operators and proper work flow **(Hung & Lin, 2015).**

There are many worldwide reports about infection risks related to inappropriate sterilization. In order to prevent inadequate sterilization process and to improve the quality of sterilization, many effort have been engaged into the improvement and development of sterilization process **(Rutala, & Weber, 2016).**

The CSSD personnel should perform most cleaning, disinfecting, and sterilizing of patient-care supplies in a central processing department in order to more easily control quality. The aim of central processing is the orderly processing of medical and surgical instruments to protect patients from infections while minimizing risks to staff and preserving the value of the items are being reprocessed (**Huber, 2015)**.

Ensuring consistency of sterilization practices requires a comprehensive training program that ensures operator competence and proper methods of cleaning and wrapping instruments, loading the sterilizer, operating the sterilizer, and monitoring of the entire process. Furthermore, care must be consistent from an infection prevention standpoint in all patient-care settings, such as hospital and outpatient facilities **(Moss & Isley, 2015)**.

Today's practice is more complex with the necessity for increased knowledge and staff competencies of the entire sterilization process. The way that regulatory agencies review or assess a facility's process for equipment sterilization is also changing.

The sterilization processes are assessed to ensure that they deliver safe products for patients. Because of the increased incidences of surgical site infections and health care–associated infections(HAIS), it is imperative that all steps of the sterilization process be followed consistently and conscientiously. Professionals should review and audit current practices and implement a workable, continuous, quality-improvement program **(Mews, 2010)**.

Significance of the study

It is essential to the central sterile supply department staff to have in depth knowledge that are related to the scientific principles and methods of sterilization, parameters, applications, and risks associated with each method, to work safe and effective. As well as staff must be adequately trained to perform their job on effective competency level. So in order to improve the quality of the services delivered in the central sterile supply department, the quality of the human and non

human resources should be improved and as well as the policy and procedure applied in such area.

Aim of the study:

The study aims to:

Improve the quality of work delivered in the central sterile supply department through:

1- Assessment of the central sterile supply department staff (nurses, technicians and workers) level of knowledge and practice regarding to the standards sterilization process (decontamination, cleaning, disinfection, package and sterilization of surgical equipment and instruments; storage and transferring of sterile supplies).

2-Develop and apply tailored training program based on the staff needs assessment.

3-Evaluate the effect of the training program on the quality of the work delivered at the central sterile supply department.

Research Hypothesis:

This study assumes that the level of performance of the central sterile supply department staff will be improved after the implementation of the training program.

Review of literature