The Importance of Sterilization in Health Facilities and its Impact on the Nature of Work

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Abstracts

The study aims to determine the value of sterilization for health facilities, and the extent of its efficiency in terms of modern equipment and people who grew up or received training courses in the field of sterilization, and thus are entrusted with the sterilization process, whether from nurses or other groups. The questionnaire was distributed to 550 people (men and women aged 25-55 years) to know their opinions and the extent of their satisfaction with sterilization in their center, and responses were obtained from 540 people in all health facilities in the city of Mecca it is concluded that, the sterilization process is important in combating microbes and viruses, because sterilization completely eliminates all epidemics and represents a major task, and indeed the sterilization mechanism helps preserve the lives of citizens and residents alike.

Keywords: the importance of sterilization, in health facilities, and its impact on the nature of work.

1. Introduction

Sterilization is the global extermination of germs and the elimination of their parts, and the process of throwing or killing life appearance of microorganisms; these contain bacteria and viruses on the face of human skin or flats of surgical tools with antiseptic medicines or liquids (or by radiation in the case of surgical instruments). The World Health Organization has determined it as "a code referring to the process of removing or killing all shapes of life and other organic matter, such as prions and viruses, which are not living creatures but biological pathogens; containing infectious workers such as bacteria, fungi, viruses, prions, spores, and single-celled eukaryotes Such as Plasmodium (Plasmodium) discovered in a set site, such as liquids, or in complexes such as biological media (1)(2). Most medical and surgical tools used in healthcare facilities are made of materials that are heat steady and therefore undergo heat, primarily steam, sterilization. However, since 1950, there has been a rise in medical systems and agents made of substances (e.g., plastics) that require low-temperature sterilization. Ethylene oxide gas has been used since the 1950s for heat- and wet-sensible medical tools. Within the past 15 years, a number of new, low-temperature sterilization systems (e.g., hydrogen peroxide gas plasma, peracetic acid immersion, ozone) have been improved and are being used to sterilize medical equipment. Sterilization technologies are used in healthcare and make reference for their optimum showing in the processing of medical instruments (3, 4, 5-6). A medical system that has to connect with disinfected body tissues or fluids is seen as a critical section. These items should be disinfected when used because any microbial communicated could outcome in illness transmission. Such items include surgical tools, biopsy forceps, and implanted medical instruments. If these articles are heat reluctant, the advice sterilization process is steam sterilization, because it has the largest edge of solidity due to its fineness, uniformity, and lethality. However, reprocessing heat- and moisture-sensitive subjects requests the use of low-temperature sterilization ethylene oxide, hydrogen peroxide gas plasma, and peracetic acid) (7).

Of all the paths ready for sterilization, moist heat in the shape of saturated steam under pressure is the most widely used and the most credible. Steam sterilization is nontoxic, inexpensive (8), rapidly. microbicidal, and sporicidal and rapidly heats and penetrates fabrics (9) Like all sterilization processes, steam sterilization has some deleterious effects on some materials, including erosion, there are other types of sterilization like Immediate-Use Steam Sterilization "Flash" steam sterilization", ethylene Oxide "Gas" Sterilization, hydrogen peroxide gas plasma, vaporized Hydrogen Peroxide,

Table 1. Summary of advantages and disadvantages of commonly used sterilization technologies (10)(11).

Sterilization Method	Advantages	Disadvantages
Steam	Nontoxic to a patient, staff, environment ·Cycle easy to control and ·monitor Rapidly microbicidal ·Least affected by by organic/inorganic	Deleterious for heat-sensitive instruments ·Microsurgical instruments damaged by repeated exposure
Hydrogen Peroxide Gas Plasma	Safe for the environment ·Leaves no toxic residuals ·Cycle time is 28-75 minutes	Cellulose (paper), linens and liquids cannot be processed ·Sterilization chamber size

	(Varies with model type) and no aeration necessary ·Used for heat- and moisture sensitive it since process temperature <50oC· Simple to operate, install (208 V	from 1.8-9.4 ft3 total volume (varies with model type(·Some endoscopes or medical devices with long or narrow lumens cannot be processed at this time in the United States
100% Ethylene Oxide (ETO) ETO Mixtures 8.6% ETO/91.4% HCFC 10% ETO/90% HCFC	Penetrates packaging materials , device lumens ·Single-dose cartridge and negative- pressure chamber minimizes the potential for gas leak and ETO exposure ·Simple to operate and monitor · Compatible with most medical Penetrates medical packaging and many plastics ·Compatible with most medical materials · Cycle easy to control and monitor	Requires aeration time to remove ETO residue ·Sterilization chamber size from 4.0-7.9 ft3 total volume (varies with model type) ·ETO is toxic, a carcinogen, and flammable · ETO emission regulated by Some states (e.g., CA, NY, MI) require ETO emission reduction of 90-99.9% · CFC (inert gas that eliminates
Peracetic Acid	Rapid cycle time (30-45 minutes) Low temperature (50-55oC liquid immersion sterilization ·Environmental friendly by products ·Sterilant flows through endoscope which facilitates salt , protein and microbe removal	point of use system, no sterile storage ·Biological indicator may not be suitable for routine monitoring ·Used for immersible instruments only · Some material incompatibility

2. Material and Methods:

This study was started in (the city of Mecca in the kingdom of Saudi Arabia), began writing the research and then writing the questionnaire in January 2024, and the study ended with data collection in June 2024. The researcher used the descriptive analytical path that uses a quantitative or qualitative description of the social phenomenon, and (The importance of sterilization in health centers and its impact on the nature of work). This kind of study is described by analysis, reason, objectivity, and reality, as it is interested with persons and communities, as it studies the chargeable and their marks on the health of the individual, society, and consumer, the publishing of illness and their relations to demographic variables such as age, gender, nationality, and marital status. Status, occupation (12), and use of the Office Group 2010 histogram for Excel to rank the results by dragging them on the statistical software (13).

3. Results and Discussion:

With regard to the first question, it was about Do you have knowledge of sterilization, its tools, and methods? 100% of them answered yes. As for the second question, did you receive training courses on sterilization? 80% answered yes and 20% answered no. Regarding the third question, did you receive training courses on sterilization? And the answer was that 80% were yes, and

20% were no. The fifth question was about to do you have certificates in the field of sterilization from institutes, colleges, or centers specialized in this field. 80% answered yes and 20% answered no. The sixth question is: Are you satisfied with the level of sterilization in your workplace? 40% answered yes and 60% answered no. The seventh question was about whether sterilization is an essential part of your work. 100% of them answered yes, the eighth question was about to do you have a sterilization device in the place where you work in the center. 60% answered yes and 40% answered no. The ninth question was about Do you have knowledge of how the sterilizer works properly? 40% of the participants answered yes, while 60% answered no. The tenth question was: Are you the person in charge of the sterilization device, or are there others in the center? 100% of the participants answered "no." As for the last question, "Do you have innovative or new information about the sterilization process recently?" 20% answered, "yes," while 80% answered "no." (Table No.2)

Table No.2: Opinions, attitudes and impressions of the participants about sterilization in health centers

Questions	Yes	No
Do you know about sterilization and methods?	100%	0%
Did you receive training courses on sterilization?	80%	20%
Did you receive training courses on sterilization?	80%	20%
Do you have certificates in the field of sterilization from institutes, colleges, or centers specialized in this field	80%	20%
Are you satisfied with the level of sterilization in your workplace?	40%	60%
whether sterilization is an essential part of your work?	100%	0%
Do you have knowledge of how the sterilizer works properly?	60%	40%
Are you the person in charge of the sterilization device, or are there others in the center?	100%	0%
Do you have innovative or new information about the sterilization process recently?	20%	80%

Considering the importance of sterilization and the interest in Their practices, she announced, through many sites, such as the Saudi Commission's website on her Twitter page for health specialties, in cooperation with the Health Academy of the Saudi Commission for Health Specialties, announcing the opening of the admission and registration portal for the medical sterilization program.To apply via the link:(14)

4. Conclusion:

Knowledge of sterilization, its tools and methods, 100% of them, training courses in the field of sterilization, 80%. Certificates in the field of sterilization from institutes, colleges, or centers specialized in this field: 80%. Satisfaction with the level of sterilization in the workplace 40%. Sterilization is an essential part of the work 100%. A sterilization device in the place where you work in the health facility 60%. Knowledge of how the sterilizer works properly 40%. Is there a person responsible for the sterilization device or are there others in the health facility 100? %, Innovative or new information about the sterilization process recently 20%. It is responsible for preparing and qualifying citizens working in the health system and qualifying them properly and soundly in this field.

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