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Research Article

**THE IMPORTANCE OF STERILIZING MATERIALS USED FOR
NURSING IN HEALTH CENTERS**

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Abstract:

The aim of the study is what type of sterilization exists to sterilize tools used for nursing in health centers, what is the role of sterilization and its uses for nursing-related materials, what materials are sterilized for nursing in health centers, the importance of effective sterilization of materials used for nursing in health centers. A questionnaire was conducted via Google Drive, the questionnaire was distributed via the social media network (where 800 questionnaires were distributed) to mobile groups, and responses to 750 questionnaires were obtained via email.

Keywords: *the importance, sterilizing materials, nursing, health centers*

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INTRODUCTION:

Sterilization is the comprehensive extermination of germs and disposal of their remains, not forgetting the removal or killing of life-destroying microorganisms; They are bacteria and viruses found on the surface, the surface of human skin or the surfaces of surgical devices with drugs or sterile fluids (or radiation in the case of surgical devices). The World Health Organization has defined it as “a term referring to the elimination or eradication of all living organisms and other organic matter, such as microbes and viruses, which are not considered living organisms and other biological pathogens; including the complete element such as bacteria, fungi, viruses, prions, spores, and biological organic eukaryotes. Such as Plasmodium is found in a specific location, such as a liquid, or a vehicle such as a medium ⁽¹⁾⁽²⁾. The goal of the sterilization process is to reduce the initial number of microbes or other dangerous diseases. The degree of sterilization is exceeded by multiples of the decimal reduction time or value D (d), which is a poem about the time required for the main primary number (p_0) to one-tenth of cooperation ⁽³⁾. That is, the final number (p) after the sterilization time (g) has passed is: $p / p_0 = (10)^{-(d/g)}$ The value d is a special fabric that varies according to the type of microbe, temperature, activity, degree of humidity, degree of construction, etc... For steam sterilization, heat in Celsius is usually given. Theoretically, the probability of the organism's survival cannot be zero. To compensate for this lack of chances of complete sterilization, the total kill method is used, through which sterilization is carried out for a period longer than the time required to eliminate the bacterial burden present on or in the material to be sterilized. With this step, a guaranteed degree of sterilization is achieved. Higher but equal to the sterilization probability of a non-sterile unit .Different materials can be defined by one or more methods of transport such as heating, application of chemicals, radiation, high pressure, filtration, or filtration. This term has evolved to include Johnson's or the use of certain microorganisms that can survive, but they can cause serious harm, such as mildew. Sterilization does not differ from disinfection, correction, and pasteurization, because abuse causes, disrupts, or gets rid of all life's diseases and other factors. The unit sterilization process of PHC depends on several factors to make it occur conveniently. Favorable conditions for professionals, periodic training, supply of inputs such as packaging and solutions, and adequately organized structure, are some of these factors ⁽⁴⁾ The processing of materials follows the steps of cleaning, drying, choosing the appropriate packaging, disinfecting and/or sterilizing, and storing. The nursing team and dental assistants are generally

present at all stages of this process, from cleaning the material to its safekeeping, which must take place in a clean and dry place, protected from direct sunlight and subjected to minimal manipulation ⁽⁵⁾. In this context, nursing performance, in addition to being based on institutional norms, should be based on scientific knowledge, workers' clinical experiences, the structural conditions of the service, and knowledge of the legislation that regulates the practice of the profession ⁽⁶⁾. The quality of sterilization and disinfection is critical for the control and prevention of Health-Associated Infections (HAIs), since infections can be acquired due to poor processing. Studies show the need for appropriate disinfection and sterilization of medical equipment and instruments ⁽⁷⁻⁹⁾. Even though the actions performed within Primary Health Care (PHC) services employing sterilizable devices are not technically complex, the disinfection of these devices in PHC services is a very complex activity, the main objective of which is to avoid adverse events related to the use of these devices. Disinfection requires operational ability and expertise on the part of the professionals involved ⁽¹⁰⁾. The risks inherent to inappropriate processing are related to the potential transmission of microorganisms that cause infection, the toxicity of the disinfectant products used in the process, and potential adverse events related to residue from immunological material transmitted from one patient to another ⁽¹¹⁾. The prevention and control of infection in PHC units have been overshadowed by news highlighting HAIs in hospital facilities, in addition to the few studies addressing this topic in extra-hospital environments ⁽¹²⁾. Nevertheless, the same criteria and training required in the Sterile Processing Departments (SPDs) of hospital facilities should be followed at the PHC level ⁽¹³⁾. Due to the increase and diversification of extra hospital care services and the pressing need to establish HAI control practices in different environments, it is essential to provide a standardized procedure to assess the quality of processing in SPDs.

2-MATERIAL AND METHODS:

This study started in (the holy city of Mecca in Saudi Arabia), began writing the research and then recording the questionnaire in January 2023, and the study ended with data collection in July 2023. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (The importance of sterilizing materials used for nursing in health centers) ,this kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual,

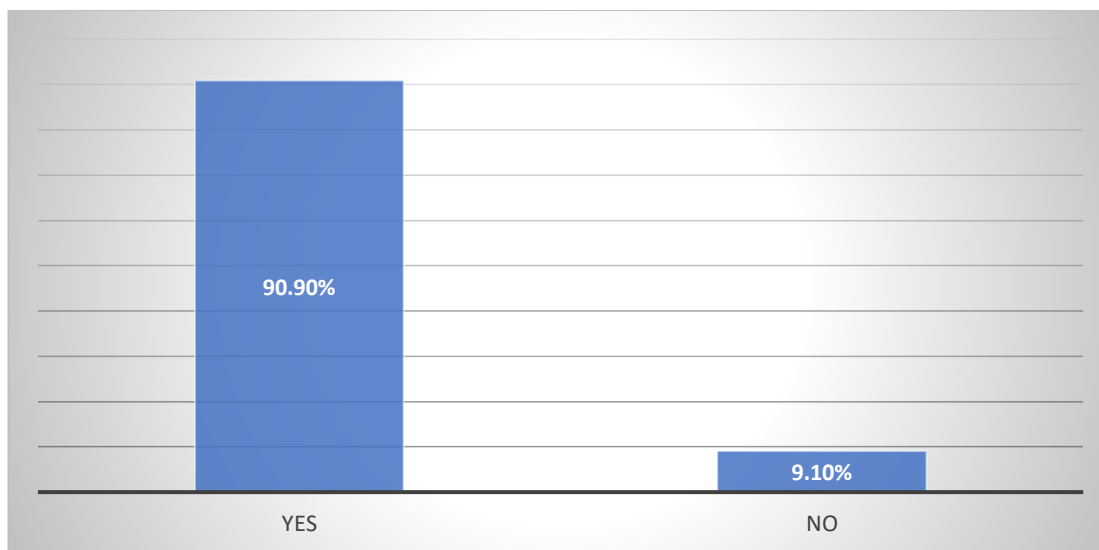
society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation ⁽¹⁴⁾, And use the Excel 2010 Office suite histogram to arrange the results using: Frequency tables Percentages ⁽¹⁵⁾. A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, due to social distancing regulations at the time to prevent infection between participants and researchers and vice versa (not coronavirus participation completely disappearing from society). He only answered the questionnaire electronically, because the questionnaire consisted of twelve questions, seven questions were closed and five questions were opened. The online approach has also been used to generate valid samples in similar studies in Saudi Arabia and elsewhere ⁽¹⁶⁾

3- RESULTS:

The percentage of participants in the research questionnaire was 100%. As for the ages of the participants, they are as follows: 54.5% from 1-34 years old, 27.3% from 35-44 years old, 18.2% from 45-54 years old, and 0% from 55-60 years old. %. As for the nationality of the questionnaire participants, the percentage of males was 36.4%, and the percentage of females was 63.6%. As for the nationality of the participants, they were all 100% Saudi. As for the educational status, it was as follows: health college diploma 27.3%, secondary school 0%, university 63.6%, master's 0%, doctorate 9.1%. As for the participants' professions: they were as follows: administrative 0%, technician 100%. When moving on to the questionnaire questions: The first question was about the importance of sterilization in reducing the risk of infection with microbes. Yes 100%. The second question is: What are the goals of sterilization and disinfection? (Choose from the

mentioned)? The answers are as follows: 1- Activating germs and microbes 0% 2- Stop germs and microbes 100% 3- All of the above. The third question: What are the most important methods of sterilization? (Choose from the above)? 1- Thermal sterilization 63.6%, 2- Steam sterilization 27.3%, 3- Pressure 0%, 4- Dry hot air sterilization 0%, Sterilization (filtration) 0%, Sterilization (irradiation) 9.1%. The fourth question: Is sterilization a health specialty? Yes 100%. As for the fifth question: Does steam sterilization kill germs? Yes 70%, no 30%. The sixth question: Is cleaning considered sterilization? Yes, 36.4%, and No, 63.6%. As for the seventh question, what type of sterilization is available in the health center? Choose from the following? As for the seventh question, what type of sterilization is available in the health center? Choose from the following? Thermal sterilization 63.6%, steam sterilization 18.2%, pressure 9.1%, sterilization with dry hot air 9.1%, sterilization (filtration) 0%, sterilization (irradiation) 0%. The eighth question: Does hot, heavy water kill germs? Yes, 72.7%, and no, 27.3%. The ninth question: Are medical tools sterilized immediately after use at work? Yes, 72.7%, and no, 27.3%. The tenth question: What are the conditions for sterilization? (Choose from the mentioned)? 1- Using gloves when sterilizing 30%, 2- Sterile cloths for drying tools 0%, 3- Others 0%, 4- All of the above 70%. The eleventh question: What are the sterilization tools for? Choose from the following? 1- Sterilization brush 0%, 2- Ultrasound device 0%, 3- Sterilization cover 0%, 4- Steam sterilization device 0%, 5- Surface adhesive 0%, 6- Surface disinfectants 9.1%, all mentioned 91.9%. The last question is about: Is the sterilization device available in the health center. (Choose from the above)? 1- Effective for sterilizing used tools 90.9%, 2- Ineffective for sterilizing used tools 9.1%. (figure No.1).

Figure No. 1: Opinions and trends of the questionnaire participants (female and female health practitioners) that health sterilization devices are effective for sterilizing tools used in health centers.



4-DISCUSSION:

Through the study, we find that sterilization is very important, in terms of sterilizing the tools used in work (for nursing) such as cotton, scissors, etc., we also find that the effectiveness of sterilization in health centers is 90.9%.

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