

The Impact of Applying Quality in Forensic Medicine Refrigerators in Mecca

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ABSTRACT

This current study aims to know the impact of applying quality on the refrigerators of the Mortality Affairs Department. The impact of applying quality on work procedures in the refrigerators of the Mortality Department and Affairs in Mecca, the impact of applying quality procedures on employees of the Mortality Department in Mecca. A questionnaire was prepared via Google Drive and distributed to all categories of workers in the Department of Mortality Affairs in Mecca. The responses to this questionnaire were obtained on an email was sent to the principal researcher. A personal interview was also conducted with the person in charge of the refrigerators of the Mortality Affairs Department in Makkah (holy city), and questions were directed to him to learn about the extent of quality implementation in the Mortality refrigerators.

Keywords: the impact, of applying quality, in forensic medicine, refrigerators, in Mecca.

1. INTRODUCTION

Forensic medicine is the medical subspecialty to determine the underlying cause through examination of the body ⁽¹⁾⁽²⁾⁽³⁾. Autopsies are performed by a coroner, and these cases are carried out by forensic investigations and criminal cases. The coroner and forensic investigator also ask questions to confirm the identity of the body. The forensic sciences are part of the penal system of several countries around the world as a support tool promoting the better administration of justice. When a crime is committed, forensic experts, with their solid scientific training in specialties such as chemistry, anthropology, physics, genetics, and medicine, have the task of clarifying the facts surrounding the commission of the crime by providing expert evidence that is of vital importance in the investigation process ⁽⁴⁾. To solve crimes and bring the guilty to justice, the forensic sciences are essential in obtaining solid scientific evidence that guarantees fair and accurate decisions in the courts of law, an aspect that is relevant to carrying out fair processes for both the accused and the victims ⁽⁵⁾. Using forensic techniques in conjunction with technological equipment can sometimes aid in preventing future crimes by identifying criminal patterns, connections, and trends ⁽⁶⁾, allowing law enforcement and judicial systems to act proactively through prediction. Multidisciplinary is important for resolving criminal cases because it allows for the thorough collection of evidence, a comprehensive approach and analysis, and the effective resolution of complex cases. The collaboration of experts from different forensic disciplines allow all relevant aspects of the case to be considered, which can help clarify the main aspects of the facts and ensure the comprehensive identification and collection of evidence ⁽⁷⁾. The morgue or refrigerator is the room or building in which bodies are kept and dealt with until they are buried or sent outside the hospital. The supervisor of the refrigerator and forensic department provides assistance and support, follows up on the work staff and ensures the provision of the necessary supplies and tools, hand washing and disinfection supplies/personal protective supplies and tools/ Supplies and tools for cleaning and disinfecting the environment to implement the quality policy. The refrigerator space is used to store all bodies in accordance with established procedures. The body storage facility must provide adequate cooling for the workload of the bodies and be maintained at approximately 4°C. Secondly, in large facilities, there may be a need for long-term storage where storage with freezing is at a temperature of - 20 m. Dead bodies or bodies suspected of harboring infectious diseases are contained in a double bag. The temperature of each refrigerator is checked and recorded twice a day, and emergency power must be available for the refrigerators. Manual lifting of objects is reduced by the provision of cranes or trolleys. One of the ways to maintain temperatures in refrigerators, in the case of longer-term storage of the bodies of the deceased, if necessary, is that preservation in low-temperature freezing devices should be

carried out and monitored and documented periodically. All refrigeration and freezing devices must be equipped with monitoring devices, which include Alarm that operates 24 hours a day. In autopsy areas, these places must have negative-pressure ventilation relative to the outside, at no less than 2.5 Pa. This includes no less than 12 air changes per hour, which are monitored and documented periodically. The air is exhausted to the outside or passed through high-efficiency filters. If there is recirculation of air, it must be recirculated air, and the air extraction systems around the autopsy table must be designed to take aerosols resulting from autopsies from workers to any side of the room.⁽⁸⁾

2. MATERIAL AND METHODS

The study began in (the city of Mecca in the Kingdom of Saudi Arabia), and the study ended with writing the data collection in September 2024. The researcher used descriptive analysis, an approach that uses quantitative or qualitative description of the social phenomenon (the impact of applying quality in forensic medicine refrigerators in Mecca). The independent variable (the impact of applying quality requirements followed in forensic refrigerators in Mecca on the work environment and its workers) and the dependent variable (the impact of applying the quality requirements followed in forensic refrigerators in Mecca). This type of study is characterized by analysis, reason, objectivity, and reality. It is also concerned with individuals and societies, as it studies the variables and their impact on the health of the individual, society, and the consumer, and the spread of diseases and their relationship. For demographic variables such as age, gender, nationality, and marital status. Status and occupation⁽⁹⁾, and use the Excel 2010 Office suite pie chart to sort the results⁽¹⁰⁾. The questionnaire is a wonderful and useful tool for collecting a huge amount of data, and also personal interview for the refrigerator official in the mortality affairs department to find out how they apply it at , and the questionnaire was only answered electronically, because the questionnaire consists of fifteen questions, all of which are closed-ended.

3. RESULTS AND DISCUSSION

The percentage of approval to participate in the questionnaire was 100%, while the percentage of ages of participants in their various categories was as follows: 25-34 years old 0%, 35-44 years old 40%, 45-55 years old 50%, and 55-60 years old 10%. The majority of participants were male, 95%, and female, 5%. As for their professions, they were as follows: 90% were male and female technicians, and 10% were male and female doctors. As for the educational status, it was as follows: primary and middle school 0%, secondary school 10%, university level 15%, doctorate 5%, diploma 60%, master's 10%. As for their responses to the questionnaire questions: The first question: Do you know what the quality standards are in the death refrigerator at the Forensic Medical Services Center? Yes, 85%, no, 15%, and I don't know, 0%. The second question: Did you know that there is regular maintenance for the death refrigerator? Yes 100% and no I don't know 0%. Question Three: Do you supervise the washing and disinfection of the forensic death refrigerator? Yes, 55%, no, 45%, and I don't know, 0%. Question Four: Do you wear protective clothing (infection control) while receiving forensic deaths? Yes, 95%, No, 5%, and I don't know, 0%. Question five: Do you use disinfectants and sterilizers while receiving deaths by forensic medicine? Yes, 90% and No, I don't know (both 5%). Question Six: Do you clean your hands while touching bodies in the forensic mortuary? Yes 100%. Question Seven: Do you wear gloves and a protective mask while receiving and delivering bodies to the forensic mortuary? Yes 100%. Question Eight: Are there procedures for handing over and receiving bodies in the forensic mortuary? Yes 100%. Question 9: Do you dispose of medical waste in the forensic mortuary refrigerator? Yes 100%. Question 10: Are sharp tools placed in the designated waste bags? Yes, 85%, no, 10%, and I don't know, 5%. Question Eleven: Do you dispose of used medical supplies that are contaminated with secretions immediately after completing medical procedures? Yes 100%. As for the interview with the person responsible for the mortuary in Mecca, he was asked questions that were as follows: The first question: What is the mechanism for implementing quality in monitoring temperatures in the death refrigerator? The answer was: Temperatures are monitored by the refrigerator manager every four hours, and a special form is filled out. The second question: What is the mechanism for following up on periodic maintenance of the death refrigerator? Answer: Regular maintenance is carried out on refrigerators on a weekly basis, and follow-up is done on a daily basis by doing three rounds over a 24-hour period. Question Three: What are the procedures used to combat infection in the death refuge? All measures taken to combat infection that take place in all health facilities are followed, such as the presence of sterilizers, disinfectants, and means of prevention when receiving and delivering cases. Question Four: What are the ways to prevent infection if bodies are received in a mortuary? Washing hands before receiving, using protective means, sterilizing hands, and washing after handing over the case or after completing any procedure with the body. Question five: What are the materials used to sterilize the death refrigerator? The materials used are medical types of disinfectants and sterilizers on a daily and weekly basis, including all death drawers and the refrigerator in general. Question Six: What is the washing method used in the death refrigerator while receiving deaths? Surgical washing method before and after using protective means such as (gown, gloves, mask, and leg and head covers). Question Seven: What are the procedures followed when dealing with natural and rotting corpses? Natural corpses are dealt with by placing them in specialized drawers with low cooling, while rotting

corpses are placed in specialized isolated drawers with high cooling. Question Eight: What are the alternative methods in the event of a power outage from the death refrigerator? There is a backup generator in the event of a power outage or fluctuation.

Table 1: The impact of applying quality in forensic medicine refrigerators in Mecca according to questionnaire

The impact of applying quality in forensic medicine refrigerators in Mecca	Yes	No	I don't know
Do you know what the quality standards are in the death refrigerator at the Forensic Medical Services Center	85%	15%	0%
Did you know that there is regular maintenance for the death refrigerator	100%	0%	0%
Do you supervise the washing and disinfection of the forensic death refrigerator	55%	45%	0%
Do you wear protective clothing (infection control) while receiving forensic deaths	95%	5%	0%
Do you use disinfectants and sterilizers while receiving deaths by forensic medicine	90%	5%	5%

4. CONCLUSION

Regarding the implementation of quality in the death refrigeration, the majority of participants in the questionnaire agreed that: There is 100% regular maintenance for the death refrigerator. washing and disinfection of the forensic death refrigerator is also supervised by 55%. wear protective clothing (infection control) while receiving forensic deaths by 95%, the use of disinfectants and sterilizers while receiving deaths by the death department by 90%. So we found that That the workers in the Mortality Department apply quality standards to a high degree, which may contribute significantly to the success of the ongoing work and the success of the fruitful efforts working in the Department of Forensic Medical Services in the region and also the General Administration of Forensic Medicine Centers in the Ministry. We recommend continuing the work with continuous improvement and motivating the employees and representatives of the refrigerator supervisors in Mecca.

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