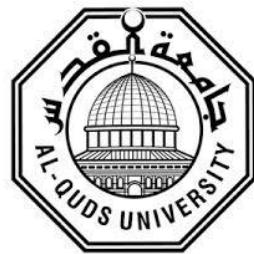


**Deanship of Graduate Studies  
Al- Quds University**



**Assessment of Quality Standards and Nursing  
Performance of Perioperative Nursing Care in  
Operating Rooms at Governmental  
Hospitals in the West Bank**

**Asma Mohammad Ahmad Abdulhaq**

**M.Sc. Thesis**

**Jerusalem- Palestine  
1435/2014**

**Assessment of Quality Standards and Nursing Performance  
of Perioperative Nursing Care in Operating Rooms at  
Governmental Hospitals in the West Bank**

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Requirements for the Degree of Master of Public  
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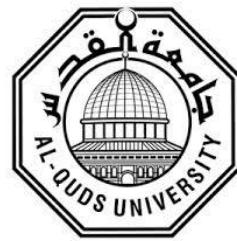
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**Thesis Approval**

**Assessment of Quality Standards and Nursing Performance of  
Perioperative Nursing Care in Operating Rooms at  
Governmental Hospitals in the West Bank**

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**Jerusalem-Palestine**

**1435/2014**

**Dedication**

TO MY FATHER

May God protect him

TO MY MOTHER

Wishing her wellness and good health

TO MY BROTHERS AND SISTER

To Dr. Asma Imam

For her efforts

I dedicate the fruit of this effort

**Signature**

## **Declaration**

I certify that this thesis submitted for the Master Degree is the result of my own research, except where otherwise acknowledged, and that this thesis or (any part of the same) material has not been submitted for a higher degree to any other university or institution.

Asma Mohammad Ahmad Abdulhaq

Dat: 13 /5/2014

Signed:

A handwritten signature in blue ink, appearing to read "Asma Mohammad Ahmad Abdulhaq".

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## **Abstract**

### **Background:**

Improving the quality of health care becomes the primary concern of all health care institutions. Operating Room (OR) nurses are part of the healthcare providers and they should be knowledgeable about the quality of health services in order to perform their roles in improving patient's safety.

### **Aim:**

The purpose of this study was to assess the application of quality care and nurses performance standards in operating rooms in the Palestinian governmental hospitals in the West Bank.

### **Method:**

A quantitative cross sectional descriptive design was used. The population of the study consisted of all operating room nurses working at 10 Governmental Hospitals in the West Bank/Palestine. A self-administered questionnaire was distributed to 129 nurses, out of which (77.5%) responded, Data was analyzed by using the statistical package of social science (SPSS) version 17.

### **Findings:**

The results of this study showed that the overall level of quality care standards application was moderate in the following standards; nursing assessment (63.2%), cleaning and sterilizing surgical instruments (81.3%), positioning patients according to the type of surgery (75.45%), using of homeostasis devices (71.25%), wound management (82.8%) and infection control (77.78%).

And it was high in the following standards; counts in surgery and sample preparation (91.5%), and preparation for surgery (89.36%). On the other hand low in reporting errors (58.68%).

OR nurses, who were older, applied the quality care standards of cleaning and sterilizing surgical instruments more than younger ( $P < 0.035$ ). Female nurses applied preparation for surgery standards more than male nurses ( $P < 0.028$ ). On the other hand there was no significant difference in the application of quality care standards in the operating rooms this is due to the academic level, training period, training site, years of experience. Also, results showed that OR nurses who worked in hospitals that have less numbers of operating rooms, applied quality standards (cleaning and sterilizing surgical instruments ( $P < 0.008\%$ ),

preparation for surgery  $P<0.017$ , positioning patients according to the type of surgery ( $P<0.001$ ), wound management ( $P<0.014\%$ ), reporting errors ( $P<0.002$ ) more than those who work in hospitals that have more numbers of operating rooms. OR nurses who work in hospitals that have low numbers of nurses applied quality standards of Using homeostasis devices ( $P<0.002$ ) and Infection control ( $P< 0.011$ ) more than those work in hospitals that have more numbers of nurses in OR wards..

The overall application of performing standards was moderate in standard of Ethics (71.8%) but it was low in the following standards; resources utilization (58.25%), professional practice evaluation 58.95%, leadership 57.1%, education 44.58%, quality of practice 44.3% and collaboration 28.08%). Nurses who had less experience years, applied performance standard of Education more than more experienced ( $P< 0.019$ ). On the other hand there was no significant difference for academic level, training periods, scientific qualification, training site, age, gender, and standards of performance application. Also results showed that OR nurses who work in hospitals which have high numbers of OR nurses ( more than 13) applied the following performance standards: ethics ( $P< 0.017$ ), collaboration ( $P<0.003$ ), resources utilization ( $P<0.028$ ), leadership ( $P<0.001$ ) more than who work in hospitals that have low numbers of OR nurses. And OR nurses who work in hospitals which have less numbers of operating rooms (1-3) applied the following performance standards: professional practice evaluation ( $P<0.001$ ), resources utilization ( $P<0.000$ ), quality practice ( $P<0.009$ ), Education ( $P<0.009$ ), Ethics ( $P<0.020$ ), more than those work in hospitals that have more numbers of operating rooms.

### **Conclusions and recommendations:**

The study employed an assessment of the quality standards and nursing performance of perioperative nursing care in operating rooms at Governmental Hospitals in the West Bank. The compliance of OR nurses with quality standards was moderate whereas the compliance with performance standards was low which was reflected on nurses's performance and patient safety. So, there is a need for improving quality culture in Governmental Hospitals by introducing a policy and strategies for applying quality standards and performance appraisal of OR nurses. Additional studies needed to clarify the causes that prevent the application of quality and performance standards.

# **تقييم معايير الجودة والأداء لدى ممرضى وممرضات اقسام غرف العمليات في المستشفيات الحكومية في الضفة الغربية**

**إعداد الطالبة: أسماء محمد أحمد عبد الحق.**

**إشراف: د. أسمى إمام.**

**الملخص:**

**الخلفية:**

بات موضوع الجوده هو الاهتمام الاول في كافه المؤسسات الصحيه، وذلك بهدف تطوير الخدمات الصحيه. حيث لا يمكن تحقيق الجوده بدون وجود معايير واضحه للممارسات الصحيه التي تعتبر حافز كمرشد لمقدمي الخدمات الصحيه لتحسين أدائهم.

ممرضات وممرضى اقسام غرف العمليات الذين هم جزء من مقدمي الخدمات الصحيه، لا بد ان يكون لديهم معرفه بجوده الخدمات الصحيه ليقوموا باداء دورهم في تحسين سلامه المريض.

**الهدف:**

هدف هذه الدراسه: هو تقييم معايير جوده الرعايه التمريضيه و الاداء التمريضي لممرضى وممرضات اقسام غرف العمليات بالمستشفيات الحكومية بالضفة الغربية.

**الطريقه:**

لتحقيق هذا الهدف تم استخدام المنهج الكمي المقطعي الوصفي لهذه الدراسه. مجتمع الدراسه كان عباره عن جميع ممرضى وممرضات اقسام غرف العمليات الذين يعملون في 10 مستشفيات حكوميه في الضفة الغربية، وقد تم توزيع استبانه واحده على 129 ممرض وممرضه وبلغت نسبة استجابه المرضين والممرضات (77.5%). ومن ثم تم تحليل البيانات بعد جمعها باستخدام النسخه 17 من برنامج SPSS لتحليل المعلومات للعلوم الانسانيه.

**النتائج:**

اظهرت نتائج الدراسه ان مستوى التزام مرضي وممرضات اقسام غرف العمليات بالمستشفيات الحكومية بمعايير الجوده كان متوسطاً بالنسبة للمعايير التاليه :التقييم التمريضي (63.2%)، تنظيف وتعقيم الادوات الجراحية (81.3%)، وضع المريض الوضعيه الملائمه للاجراء الجراحي (75.45%)، استخدام طرق وقف النزيف(71.25%)، التعامل مع جرح العمليه (82.81%) ضبط ومكافحة العدوى (77.78%) . هذا وقد كان تطبيق مرضي وممرضات اقسام العمليات عالياً بالنسبة للمعايير التاليه: عد الادوات الجراحية وتجهيز العينات (91.5%) والتحضير للعملية الجراحية (%89.78%). بينما كان التطبيق منخفضاً بالنسبة لمعيار التعامل مع الاخطاء (%58.68%). وتبين ان الممرضين والممرضات الاكبر سنا كانوا أكثر تطبيقاً لمعايير الجوده من الممرضين والممرضات الاصغر سناً بالنسبة لتنظيف وتعقيم الادوات الجراحية ( $P<0.035$ ) وكانت الاناث اكثراً تطبيقاً لمعيار التحضير للعملية الجراحية من الذكور ( $P<0.028$ ). بينما لم يكن هناك اختلافات في مدى تطبيق الممرضين والممرضات لمعايير الجوده في اقسام العمليات تعزيز لسنوات الخبره، المؤهل العلمي، فتره التدريب ومكان التدريب.

ايضاً اظهرت نتائج الدراسه ان تطبيق الممرضين والممرضات لمعايير الجوده في المستشفيات الاقل عدداً في التمريض اكثراً من هؤلاء الذين يعملون في المستشفيات الاكثر عدداً في التمريض وخصوصاً في المعايير التاليه: تنظيف وتعقيم الادوات الجراحية ( $P<0.008$ ) والتحضير للعملية الجراحية ( $P<0.017$ ) وضع المريض الوضعيه الملائمه للاجراء الجراحي ( $P<0.000$ ) والتعامل مع جرح العمليه ( $P<0.014$ ), التعامل مع الاخطاء( $P<0.002$ ) استعمال اجهزه وقف النزيف ( $P<0.002$ ), وضبط ومكافحة العدوى ( $P<0.011$ ).

اما فيما يتعلق بمعايير الاداء التمريضي لممرضي وممرضات اقسام غرف العمليات فقد اظهرت النتائج ان مستوى تطبيق هذه المعايير كان متوسطاً بالنسبة لمعيار الاخلاقيات (71.8%), فيما كان مستوى التطبيق منخفضاً في معايير الاداء التاليه: نوعيه وجوده الممارسه (44.3%), والتعليم (%44.58) وتقدير الممارسه المهنية(%58.95)، والتعاون (28.08%)، واستخدام الموارد (%58.25)، والقيادة (%57.1).

وتبين ان الممرضين والممرضات الاقل في سنوات الخبره اكثراً تطبيقاً لمعايير الاداء التمريضي من الممرضين والممرضات الاكثر في سنوات الخبره خصوصاً في معيار التعليم ( $P<0.019$ ) بينما لم

يكن هناك اختلاف في تطبيق الممرضين والممرضات لمعايير الاداء التمريضي في اقسام العمليات تعزى للجنس والعمر والمؤهل العلمي وفتره التدريب ومكان التدريب.

ايضا اظهرت نتائج الدراسه ان تطبيق الممرضين والممرضات لمعايير الاداء في المستشفيات الاكثر عددا في التمريض (اكثر من 13) كان اكثرا من هؤلاء الذين يعملون في المستشفيات الاقل عددا في التمريض وخصوصا في معايير الاخلاقيات ( $P<0.047$ ) والتعاون ( $P<0.003$ ) والاستفاده من الموارد ( $P<0.028$ ) والقيادة ( $P<0.001$ ), بينما كان تطبيق الممرضين والممرضات الذين يعملون في المستشفيات الاقل عددا في غرف العمليات (1-3) اكثرا من هؤلاء الذين يعملون في المستشفيات الاكثر عددا في غرف العمليات وخصوصا في المعايير: تقييم الممارسه المهنية ( $P<0.001$ ) والاستفاده من الموارد ( $P<0.000$ ) ونوعيه وجوده الممارسه ( $P<0.009$ ) و التعليم( $P<0.009$ ) و الاخلاقيات( $P<0.020$ )

#### **الخلاصه والتوصيات:**

قامت الدراسه بتقييم معايير الجوده ومعايير الاداء لممرضي وممرضات اقسام العمليات في غرف العمليات في المستشفيات الحكوميه في الضفه الغربيه. وكان التزام ممرضي وممرضات اقسام العمليات بمعايير الجوده متوسط بينما الالتزام بمعايير الاداء التمريضي كان منخفض. وهذه النتائج تتعكس سلبا على الاداء التمريضي وسلامه المريض. لذلك هناك حاجه لتحسين ثقافه الجوده في المستشفيات الحكوميه عن طريق ادخال سياسات واليات تطبيق معايير الجوده والاداء التمريضي لممرضي وممرضات اقسام العمليات، وهناك حاجه لعمل دراسات اضافيه لتوضيح الاسباب التي تمنع تطبيق معايير الجوده والاداء في غرف العمليات.

## **List of abbreviations**

ANA	American Nurses Association.
ENT	Ear, Nose, Throat
NQF	National Quality Forum.
MOH	Ministry of Health.
WHO	World Health Organization.
IT	Information Technology.
AORN	Association of Perioperative Registered Nurses.
ORNAC	Operating Room Nursing Association of Canada.
NAHQ	Association for Health Care Quality.
JCAHO	Joint Commission International Accreditation Health Organization.
OR	Operating Room.
LSD	Least Significant Difference Test

# Chapter One

---

## Introduction

Evaluating the quality of nursing practice began when Florence nightingale identified nursing's role in health care quality and began to measure patient's outcomes. She used statistical methods to generate reports correlating patient's outcomes to environmental conditions (Dossey, 2005; Nightingale, 1859/1946). Over the years, quality measurement in health care has evolved. The work was done in the 1970s by the American Nurses Association (ANA), the wide dissemination of the quality assurance model (Rantz,1995), and the introduction of donabedian's structure, process, and outcomes model (Donabedian,1988; 1992) have offered a comprehensive method for evaluating health care quality.

Quality is a complex notion and means different things to different people. It is essentially very simple; and it has been defined as the 'degree of excellence' in healthcare. Of course, excellence has many dimensions. But within the sector it is widely accepted that excellent healthcare should have the following six characteristics:

- **Safe** – avoiding harm to patients from care that is intended to help them.
- **Effective** – providing services based on scientific knowledge and which produce a clear benefit.
- **Person-centered** – providing care that is respectful or responsive to individuals' needs and values.
- **Timely** – reducing waits and sometimes harmful delays.
- **Efficient** – avoiding waste.
- **Equitable** – providing care that does not vary in quality because of a person's characteristics. (Institute of Medicine, 1990, p244).

Quality is a broad term that encompasses various aspects of nursing care. Various health care measures have been identified over the years as indicators of health care quality ("ANA's National Database of Nursing Quality Indicators conducts survey", 2005)(American Nurses Association, 1995; Institute Of Medicine, 1999, 2001,2005; Joint Commission, 2007). In 2004, the National Quality Forum (NQF) (Kurtzman& Corrigan,

2007), via its voluntary consensus standards process, endorsed 15 national standards to be used in evaluating nursing-sensitive care. These standards are now known as the NQF 15 (Kurtzman & Corrigan, 2007).

By providing specific, job-related performance requirements, standards of nursing performance can play an important role in assuring the quality of nursing care (Potter and Perry, 2005). Nursing Standards, such as those implemented at the Jewish Hospital of Cincinnati, help orient and educate new staff nurses; promote consistent, acceptable nursing care throughout the hospital; enhance communication between nursing staff and nurse managers; and form the basis of equitable, objective performance appraisal (National Association of Clinical Nurse Specialists, 2008).

All of which have an impact on the quality of nursing care. In addition, valuable quality assessment data can be gained from performance evaluations based on standards. When combined with information from other quality assurance mechanisms, such as patient care evaluation studies and nursing staff surveys, these data can contribute significantly to comprehensive assessment of nursing performance and lead to overall improvement in the quality of nursing care. To be most effective, however, the standards must be flexible so that they can be adapted to particular jobs and levels of training and experience and so that they can be appropriately modified as job requirements change. They will thus remain valuable tools for assuring the quality of nursing care (Miler And Drake, 1998).

Surgery is a corrective health procedure that requires extreme caution and super skills on the part of the surgeons and the nurses assisting them. Great responsibility lies with operating room nurses, nurse anesthetists and surgeons. Complicated surgeries could pose a risk to the life of the patient during the operation procedure. Therefore all operation room staff including the operating room nurse should provide high quality care.

## **1.1 Problem Statement**

There are 10 governmental hospitals in the West Bank that have theater rooms which employ 129 perioperative nurses. In 2009, there were 21,178 major surgical operations and 39581 minor surgical operations done in governmental hospitals (MOH, 2009).

Unfortunately, there is no standardized operational system which defines all types of processes and procedures that are done in operating room. The existing protocols and standards that are organizing the nursing performance are varied among hospitals according to the attitudes, knowledge and experience of the head nurses of the operating room. In addition, there are no previous studies carried out in Palestine about nursing quality standards and performance in the Operating Rooms.

This study can support nurses in identifying the standards of their performance, and it can also be used by hospital administrations to improve the overall performance in operating rooms which will contribute to the achievement of organizational goals regarding patient's safety and assuring the quality of services.

## **1.2 Justification of the study**

Over the last decade, there has been a substantial investment in holding health care providers accountable for the quality of care provided in hospitals and other settings of care. This investment has been realized through the proliferation of national policies that address the quality of care (Kurtzman, 2008).

Scence WHO published a report in 2008 about some facts of safe surgery such as Rates of death following major surgeries are reported to be between 0.4% and 10%, depending on the setting. Estimating the impact of these rates, at least 1 million patients would die every year during or after an operation. Information regarding surgical care has been standardized or systematically collected only in a few research studies globally. Also, in the developed world, nearly half of all harmful events (such as miscommunication, wrong medication, and technical errors) affecting patients in hospitals are related to surgical care and services. (Archibald and Jarvis, 2007).

And in Palestine One out of seven patients suffers harm in Palestinian hospitals. Compromised safety represents serious problems for patients, hospitals and governments and should be a high priority to public health issue (Najjar. sh, et al, 20013). That urges direct interventions to be launched immediately to improve safety.

Localy, few of the studies were conducted about assessment quality and safety in health care and in hospital sectors, but no one of them was in operating theaters. Najjar. Sh, 2008 said that it is possible to implement quality indicators in the Palestinian hospitals. Indicators will even better help the hospitals observe their performance regarding the

services they provide, and improve the domain that may have problems. Indicators also help decision makers in the ministry of health to evaluate the quality of health across different hospitals.

Therefore, safety is a critical aspect of the quality of care in a complex hospital setting such as the operating room. So this study assessed the standards of nursing care quality and the level of nurse's performance during their practice in operating room in the governmental hospitals.

### **1.3 Purpose of the Study**

The main aim of the study is to assess the application of quality care standards and nurses' performance in operating room in the Palestinian governmental hospitals.

### **1.4 Objectives of the Study**

1. To determine the current level of nurse's application of quality and performance standards in operating room at the governmental hospitals.
2. To determine the relationship between the organizational related variables, such as the number of nurses, operating room number, ratio in operating theater and the level of quality care application and nurse's performance in operating theater at the Governmental Hospitals.
3. To determine the relationship between socio-demographic variables such as age, educational level, years of experience and the level of quality care and nursing performance on operating theater at the governmental hospitals.

### **1.5 Research Hypothesis**

1. There are no significant relationships at ( $\alpha \leq 0,05$ ) between the nurses' application of the quality standards and performances standards.
2. There are no significant differences at ( $\alpha \leq 0,05$ ) in the application of the quality standards among nurses working in OR wards at governmental hospitals related

- to academic qualifications, gender, age, number of operation rooms, number of nurses in the ward and years of experience.
3. There are no significant differences at ( $\alpha \leq 0,05$ ) in application of performance standards among nurses working in OR wards at Governmental Hospitals in the West Bank related to academic qualifications, gender, age, operation rooms, number of nurses in the ward and years of experience.

## **1.6 Assumptions**

- The participants are cooperative and informative
- The instruments used in the study are valid and reliable.

## **Summary**

In this chapter, the problem statement, justification of the study purpose, objectives, and assumptions were discussed. This study was conducted in Palestinian governmental hospitals in the West Bank, with the aim to assess quality standards and nursing performance of perioperative nurses.

## **Chapter Two**

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### **Literature Review**

#### **Introduction**

This chapter includes the theoretical background including the historical background on the quality of healthcare organization and operating room, quality Standards in perioperative nursing care, Operating room nurses, Nurses education and technical and non-technical skills. In addition aspects related to operating rooms safety and techniques such as: Theater nursing and patient safety, Infection prevention and aseptic technique, Non-touch techniques, Swab, Sharp and Instrument Counts and Gown and gloves were explored. Moreover the previous studies that discussed the assessment of quality standards and nursing performance in operating room are discussed.

#### **2.1. Historical Background of Quality Health Care Organization**

Efforts to improve the quality of health care have used a wide variety of approaches. In the past half century all of the following have been used at one time or another: redesigning professional education; improving peer review of physician practice; reengineering systems of care; increasing competition among provider organizations; publicly reporting data on quality; rewarding good performance; punishing bad performance; applying continuous quality improvement or total quality management tools; and measuring and improving the culture of health care organizations to facilitate the adoption of safer systems of care (Leob, 2004). Another important impetus was the American college of surgeons' formation of the hospital standardization program according to which hospitals are accredited and certified( Roberts, et al;1987).

#### **2.2. Historical Background of Operation Room Nursing**

Operating room nursing is one of the oldest nursing specialties. In the 19th century Florence Nightingale (1820 – 1910) practiced operating room nursing when she assisted physicians with uncomplicated operations in the English Slum areas. At Sint Thomas

Hospital in London, she established the first nursing school in 1860, where she taught general nursing and assistance at operations. The first specialty training in operating room nursing was established in the United States in 1876 at Massachusetts General Hospital.

The nurses who completed this education often became matrons, and were also responsible for assisting the surgeons during operations. The operating room nurses were trained in the operation departments, and usually they were also nurse anesthetists.

In the 1930s the education of the operating room nurses was organized as in-house specialty training. This training lasted for a period of one year and a contractual period of two years (Fairchild, et al.1993). In 1952 the first curriculum was compiled, containing theoretical and practical study sections emphasizing surgery, anatomy, microbiology, anesthesia, instrument instruction, suturing, hygiene, sterilizing and aseptic procedures. The specialist training in operating room nursing and anesthesia nursing gradually split up in two different nursing specialties (Fairchild, et al. 1993).

In Palestine, a perioperative nursing program was established and run by College of Health Profession at Al-Quds University from1993-1999; the program idea came in view of the urgent needs of the Palestinian health care system for qualified perioperative nurses and the fact that tremendous proliferation of new hospitals in WB which increased the demand for perioperative nurses.

The overall goal of this Program was to graduate highly skilled operating room nurses who are capable of providing quality, effective and efficient services pre, during and post-surgery to the patients and who can work effectively with the OR team in order to improve the outcome of surgical interventions which are reflected positively on the health status of the population ([www.alquds.edu](http://www.alquds.edu)).

### **2.3. Standard of quality in perioperative nursing care**

The nurse, working at the operating theatre can be called as theatre nurse, operating room nurse or perioperative nurse (Sevdalis, 2009). The term perioperative nurse was adopted by the association of perioperative registered nurses (AORN) 1982 in The United States. "Perioperative" is a more descriptive and accurate term compared to "operating room" because the term focuses on all facets of the patient's surgical experience: the preoperative, intraoperative and postoperative phases of nursing care (Fairchild 1993). The term

perioperative nursing also includes the anesthetic nursing in The United States, as it does in Sweden, where Lindwall and Von Post (2009) have adopted the term in their framework for perioperative practice (Lindwall and Von Post 2009).

Internationally, theatre nurses can have two major roles, either a scrub nurse (also called instrument nurse) role or a circulating nurse role. The traditional responsibilities of a scrub nurse include performing surgical hand scrub and sterile gowning and gloving. A scrub nurse prepares the instruments, trolleys and sterile supplies needed for the surgery, maintains sterile environment, and provides skilled assistance to the surgeon during the operation (Mitchell and Flin 2008; Spry 2009). In Sweden, the theatre nurse almost always has the role of a scrub nurse, while the circulating role is mostly carried out by an assistant nurse. The responsibilities of scrub nurse in Sweden include also skin disinfection and draping of the patient's surgical area prior to the surgery (Public Employment Services 2010).

The circulating nurse (also terms scout nurse<sup>\*</sup> or circulator nurse are used) is responsible for managing the nursing care of the patient within the operating theatre and coordinating the needs of the surgical team with other care providers necessary for completion of the surgery. The circulating nurse observes the surgery and the surgical team from a broad perspective and assists the team to create and maintain a safe and comfortable environment for the patient (Spry 2009).

According to (Rothrock, 2007) scrubbing and circulating may become obsolete terms; they define only a part of theatre nurses' sphere of responsibility. The role of theatre nurse subsumes elements of the behaviors and technical practices that characterize professional nursing in general. Theatre nursing is a blend of the technical and behavioral; it is critical thinking, which requires knowledge, skills, and experience as well as doing and caring for patients. Perioperative nurse fulfills a critical function in surgical patient care: it coordinates interventions, ensures patient safety and comfort, prioritizes and plans care, and manages multiple aspects of the patient's and team's needs in each surgical intervention (Rothrock, 2007).

Theatre nurses must work within narrow time constraints and must be able to combine the highly developed technical skills and extensive specialist knowledge with caring aspects of their role, give reassurance as well as obtain important clinical and psychosocial information of the patient (Bull and Fitzgerald 2004; Gillespie, et al. 2009). The goal of theatre nursing is in broad terms to maintain an optimal level of wellness in response to the physiological, psychological and socio-cultural need patients undergoing surgical

procedures. The role of a theatre nurse has evolved from task-oriented specialist to a patient-centered professional (Gillette1996; Silen-Lipponen, et al. 2004)

Three themes were identified as being central in (Gillespie, et al. 2004) study on operating theatre nurses' perceptions of competence. These three themes were knowledge (coalescence of theoretical, practical, situational and aesthetic knowledge), teamwork and communication (highly developed communication skills among teams of divergent personalities and situations), and the ability to coordinate and manage time schedule.

## **2.4. Graduate Diploma in Specialist Nursing**

Internationally, the qualifications and courses necessary before becoming a theatre nurse vary (Mitchel and Flin 2008). In Sweden a bachelor of science in nursing, 180 credit points, is required for graduate diploma in specialist nursing. Specialist nurse degree is achieved in Sweden when the student completes course requirements of 60 credit points.

The graduated student should be oriented with many skills such as: to demonstrate knowledge and skills required working independently as a specialist nurse, to demonstrate knowledge of the scientific ground of the specialist area, to have insight in the current research and development in the profession. To have knowledge about the relationship between science and evidence based on practice and to understand its signification for the profession, finally, to have a deeper knowledge of planning, coordinating and leading the care and health management (Higher Education Ordinance, 2006).

## **2.5 Technical and Non-Technical Nurses Skills**

In nursing education, the acceptable competence of technical skills is a major focus of education (Emerson, 2007). Practical nursing skills ensure patients' safe treatment (Bjork, 1999) and are a central part of a healthcare professional's role. The successful clinical outcome for patients often depends on the competent performance of a technical procedure (Alteren, 2006). Knowing how to do a practical skill can be termed know-how type of knowledge, practical expertise and skill that is acquired through constant exposure (Aggarwal, et al. 2004).

Surgical processes are a complex function of a number of inter-related factors that include individual skills, team working and operating theatre environment. Individual skills can be divided to technical and non-technical skills. This distinction between technical and non-

technical skills is rather recent in the healthcare literature. Aseptic technique and instrument handover are examples of a scrub nurse's technical skills (Sevdalis, et al. 2009). The non-technical skills are defined as the critical cognitive and social skills that complement the technical skills to achieve safe and efficient practice in safety-critical occupations (Mitchell and Flin 2008; Yule, et al. 2009). Non-technical skills can be divided into two subgroups: cognitive or mental skills (e.g. Decision making, planning, situation awareness) and social or interpersonal skills (e.g. Team-working, communication, and leadership). Both groups of skills are necessary for safe and effective performance in the operating theatre environment (Flitcher, et al. 2002).

There are several studies conducted to assess non-technical skills performed in the operating theatre (Marriott, et al, 2009; Undre, Sevdalis& Vincent, 2009), but studies made to assess theatre nurses' technical skills has been lacking until recently (Marriott,et al. 2009; Sevdalis,2009).

## **2.6 Theatre nursing and patient safety**

The operating theatre has been described as a dynamic, high-pressured and potentially high-risk environment that is vulnerable to multiple errors (Bull & Fitzgerald, 2004; Gillespie, et. al, 2009; Lipponen, et.al, 2005; Undre, et. al., 2007). Modern surgery requires a group of suitably skilled people to work together in a team. This team should be able to deal with the demands of their complex work environments and effectively deliver safe surgical patient's care (Fletcher, et.al, 2002; Mitchell &Flin, 2008).

Safety is not a state to be achieved, but an emergent process within health care organizations and their subunits such as operating theatres. The simplest definition of patient's safety is the prevention of errors and adverse effects to patients associated with health care(Aspden, et al. 2004).The safety agenda is associated with awareness and anticipation of more or less latent flaws in the processes (Sheps, Cardiff,2006). Securing patient's safety can be described as the key element in theatre nursing (Alfredsdottir & Bjornsdottir, 2008; Mcgarvey, Chambers, Boore, 1999).

Patient's safety is established by creating a safety culture, standardizing equipment, simplifying processes, using checklists, improving incident and hazard reporting, handling information better at the patient's discharge or transfer, improving team communications, actively managing fatigue and shifts provider and using surgical-site identification protocols (Warburton, 2009). Speed of work and imbalance in staffing are by theatre

nurses identified as the main threats to patient safety (Alfredsdottir & Bjornsdottir, 2008; Riley & Manias, 2006).

## **2.7 Patient safety practices in perioperative setting**

### **2.7.1 Infection prevention and aseptic technique**

Patients undergoing surgery are particularly susceptible to infection; therefore, high standards of infection control must be implemented at all times to break the chain of infection (Barrow, 2009). To create a sterile area and to care for the maintenance of it during the operation is a theatre nursing expertise. One of the aims is to guarantee an area in which microorganisms should be as few as possible to prevent contamination of an open surgical wound and reduce post-operative wound infection risk (Nicolette, 2007).

Creating a sterile area begins when the theatre nurse does the surgical hand scrub and dresses up sterile gown and gloves, takes the sterile instruments and equipments in a sterile manner and organizes them on the table for the surgery. He/she will continue to create a sterile area bounded by the surgical site with sterile disposable draping after patient's skin disinfection (Nicolette, 2007).

### **2.7.2 No touch technique**

In order to prevent injuries to the patient and surgical team members, association of surgical technologists have developed a standard of practice related to sharps safety and use of the neutral zone in the operating theatre. To prevent two individuals from simultaneously handling a contaminated sharp, scalpel blades, suture needles, 10 hypodermic needles, and sharp surgical instruments a neutral zone should be utilized during all surgical procedures. The sharps should be pointed away from the personnel in the work area mayo stand or back table. To remove or attach blades, needles or other sharps use of mechanical safety devices is required. For all surgical procedures a double gloving by all surgical sterile team members is recommended (Council on surgical and perioperative safety, 2010).

### **2.7.3 Swab Sharp and Instrument Counts**

In order to increase patient's safety practices in the perioperative setting it is recommended that sponge, needle and instrument counts should be performed on all procedures with the possibility that a foreign object could be retained. Incorrect count increases with risk

factors such as emergency surgical procedures, unexpected change in the scope of the surgical procedure, procedures involving more than one surgical team, extended procedural length of time, unexpected transfusions, and morbidly obese patients. Sponge, sharp and instrument should be accounted for at the end of the surgical procedure. That count should be documented by the surgical team (Council on Surgical and Perioperative Safety, 2010).

#### **2.7.4 Gown and gloves**

The migration of microbes from the skin and scrub attire of the sterile team member to the sterile field is prevented by using sterile gowns and gloves. Sterile gowns and gloves also prevent blood and body fluids from contaminating the team member. Gown and gloves choice should be selected according to the surgical procedure. Prior to entering the sterile field to aid in preventing surgical site infection all sterile surgical team members are required to wear a sterile surgical gown and gloving. All surgical procedures recommend double gloving of surgical members (Council on Surgical and Perioperative Safety, 2010).

### **2.8 Research Studies Regarding Quality of Care**

Through reviewing previous studies in relation to quality of care it was observed that there was a shortage in the local studies about the quality care standards in Palestine, while regional studies reveal that some studies were conducted about quality of nursing care from different views in general, others were about quality of care radiology departments and variables that might affect this care (Rumman, 2011). Moreover it was observed that studies had investigated the association of some variables with quality of care such as (age, qualification degree, experience, and staffing ratio). The studies were organized as the following:

#### **2.8.1 Local Studies**

A study was conducted by Toqan (2010) aimed to assess the standards of quality care and nursing performance of neonatal nurses at governmental hospital in the West Bank/Palestine.

A quantitative descriptive design was used to determine and describe the relationships existed between selected variables. Two questionnaires were used in this study. The population of the study consisted of all neonatal nurses working at 7 Governmental Hospitals in the West Bank/Palestine. A total of 84 nurses were targeted and invited to

participate in this study. The results of this study showed that the overall level of application of quality care standards was moderate in the following standards (newborn assessment, neonatal nursing care, medication management and use, family education, infection control, qualification and education). The neonatal nurses who were older, had more experience years and had less educational degrees, applied the standards of quality care more than younger, less experienced and had more educational degrees nurses. On the other hand, there was no significant difference for place of residence, gender, and application of quality care standards .The overall application of performance standards was moderate in the following: (quality of practice, education, and collaboration). On the contrary, it was high in the following standards (professional practice evaluation, ethics, resource utilization and Leadership).

The result of this study showed that there was a positive relationship between nurses: incubator ratio and the application of quality care standards beside the standards of performance among the neonatal nurses. Moreover, there were no significant differences between application of performance standards and place of residence or gender of neonatal nurses.

Another study was conducted by Rumman (2011) aimed to assess quality of services provided in the Radiology and Medical imaging departments in all hospitals that provide these services including governmental, private, NGOs, and UNRWA in the West Bank.

A quantitative descriptive design was used to determine and describe the relationships between selected variables. A site of observation and interviews were held with the leaders of radiology departments in thirty hospitals using a checklist.

The study showed that the radiology departments in the West Bank Hospitals have low adherence to the JCI standards for diagnostic radiology. Therefore the quality of providing the radiology and medical imaging services is also low.

### **2.8.2 International Studies**

Elizabeth, McGlynn (2003) conducted a study about the quality of health care delivered to adults in the United States. The study was conducted by telephoning random samples of adults living in 12 metropolitan areas and asking them about selected health care experiences. Medical records for the most recent two years period for these adults are used to evaluate performance on 439 indicators of care quality for 30 acute and chronic conditions as well as preventive care. The findings showed that there were little differences among the proportion of recommended preventive care provided (54.9 percent), the

proportion of recommended acute care provided (53.5 percent), and the proportion of recommended care provided for chronic conditions (56.1 percent) among different medical functions<sup>4</sup> and adherence to the process that was involved in care, ranged from 52.2 percent for screening to 58.5 percent for follow-up care. Quality varied substantially according to the particular medical condition<sup>4</sup> ranging from 78.7 percent of recommended care (95percent confidence interval, 73.3 to 84.2) for senile cataract to 10.5 percent of recommended care (95 percent confidence interval, 6.8 to 14.6) for alcohol dependence. The deficits that have been identified in adherence to the recommended processes for the basic care, pose serious threats to the health of the American public. Strategies to reduce these deficits in care are warranted.

Jone, Berkmeier, et al, (2001) conducted a prospective cohort study at a rural tertiary care center to examine how often and for what reasons patients go back to the OR in a broad – based general surgery practice. The size of the sample is consecutive series of 3044 patients undergoing general surgery procedures in the or between September 1, 1998, and March 31, 2000. Information about all postoperative adverse events occurring before discharge or within 30 days (whichever was longer) was collected prospectively. Unplanned return to the OR was defined as any secondary procedure required for a complication resulting directly or indirectly from the index operation. The result was 107 (3.5%) had unplanned return to the OR. The result concluded unplanned returns to the OR occur across a broad spectrum of general surgical procedures and carry significant implications. Because they most often reflect problems related to the procedure itself, reoperation rates may be useful for monitoring quality across hospitals and for identifying opportunities for quality improvement locally.

Lingard, et al, (2005), conducted a study to assess the feasibility of the check list (that is, team members' willingness and ability to incorporate it into their work process), to describe how the check list tool was used by operating room teams, and to describe perceived functions of the check list discussion. By developing a checklist prototype and operating team members were asked to implement it before 18 surgical procedures. A research assistant was present to prompt the participants, if necessary, to initiate each checklist discussion. Trained observers recorded ethnographic field notes and 11 brief feedback interviews were conducted. Observation and interview data were analyzed for trends. The checklist was implemented by the operating team in all 18 study cases. The rate of the team participation was 100%. The check list discussion lasted 1-6 minutes and mostly took place in the operating room before the patient's arrival. The most significant

barrier to undertake the team checklist was variability in team members' preoperative workflow patterns that sometimes presented a challenge in bringing the entire team together. The preoperative team checklist shows promise tool as a feasible and efficient tool that promotes information exchange and team cohesion.

Espin, et al, (2009), explored the factors that influence the persistence of unsafe practice in an inter-professional team setting in health care, towards the development of a descriptive theoretical model for analyzing problematic practice routines. Using data collected through conducting interviews with 28 members of an operating room team. Participants' approaches to unsafe practice were analyzed using the following three theoretical models from organizational and cognitive psychology: reasons theory of "vulnerable system syndrome", Tucker and Edmondson's concept of first and second order problem solving, and Amalberti's model of practice migration. These three theoretical approaches provide a critical insight into key trends in the interview data, including team members' definition of error as the breaching of standards of practice, nurses' sense of scope of practice as a constraint on their reporting behaviors, and participants' reports of the forces influencing tacit agreements to work around safety regulations. However, the relation factors underlying unsafe practice routines are poorly accounted for, in these theoretical approaches. Incorporating an additional theoretical construct such as "relational coordination" to account for the emotional human features of team practice would provide a more comprehensive theoretical approach for use in exploring unsafe practice routines and the forces that sustain them in health care team settings.

Wong, et al. (2010) explored the quality of information in operating room by interviewing thirty- three OR team –members (16 surgeons/anesthesiologists, 17 nurses). Participants indicated what information they need, their problems of accessing it, and potential interventions to improve information transfer. They also rated the importance of different sources of information and the quality (accuracy, availability, timeliness, completeness, and clarity) of the information that typically received. Theme extraction and statistical analyses (descriptive and inferential) were used to analyze the data. The results showed that surgeon's anesthesiologists relied more on information from fellow clinicians, as well as information originating from diagnostic and imaging labs. They were also more critical about the quality of the information than nursing personnel. Anesthesiologists emerged as the most reliable source of information, whereas information coming from surgeons was deemed lacking in quality (even by surgeons themselves). Finally, the more time participants had spent working in ORs, The more negative views had about the information

that they receive –an unexpected finding. Communication skills training, Standardized communication protocols, and information technology (IT) systems to function as a central information repository were the top three proposed interventions. This study comprehensively maps information sources, problems, and solutions expressed by or end –users. Recent developments in skills training modules and patient safety interventions for the OR (surgical safety check list) are discussed as potential interventions that will ameliorate communication in ORs, with a view to enhance patient's safety and surgical care.

Donme and Ozbayir (2010) conducted a cross-sectional survey to test the validity and reliability of the Turkish version of Good Perioperative Nursing Care Scale (GPNCS) for nurses and patients. The research sample was for 346 patients who had surgery and 159 operating room nurses who worked at 11 hospitals. The GPNCS) contains 32 items. The items on the nurses' form were changed as little as possible to create the form for patients to be able to directly compare them. To determine the tool's language equivalency /adaptation of the questionnaire for both nurses and patients, the tool was translated into Turkish then translated, and a pilot study was conducted. The result was that the total scale's mean score and standard deviation for nurses was determined to be 113.23( $SD=2.13$ ) and for patients was 128.23( $SD=1.27$ ). To test the scale's stability over time, a test –retest was conducted and the results showed a strong confirmatory correlation.

The researchers concluded that the GPNCS was determined to be a reliable and valid for the Turkish population. Relevance to clinical practice: this study highlighted the importance of comparing the quality and effectiveness of nursing care in different operating departments.

McClell (2004) conducted a descriptive study to determine the critical factors that influence staff retention in an acute Perioperative environments, using post positivist methodology and triangulation of methods to answer the question: what are the critical factors that influence staff retention in an acute Perioperative environment?

Forty-eight Perioperative nurses answered a questionnaire in relation to individual needs, provision of nursing care and administration and management. Four nurses subsequently participated in focus group interviews that explored in more depth, the survey data related to the following characteristics: management; establish policies/quality assurance; graduate orientation programs and professional relationships in an acute preoperative setting. Data

analysis revealed that > 90 % of respondents agreed that these characteristics are important for job satisfaction and influence staff retention in an acute Perioperative environment.

Lars, et. al (2010) conducted a study about performance measurement in Perioperative environments, the purpose of the study was to compare Perioperative management practice between two large university hospitals, and contrasted these practices with how performance measurement systems should be designed, then suggested how the hospitals Perioperative performance measuring systems could be developed further. The comparison was at two large university hospitals – one Norwegian and one in the US. The performance measures were collected on a regular basis by the surgical department of the Norwegian hospital and by the operating room environment of the US hospital. The two hospitals approach to Perioperative performance measurement is partially formed by their respective health care systems and mainly focuses on productivity and financial measures. The result of the study was developing the hospitals' performance measurement approaches, provides transparency and improves the quality, efficiency and coordination of Perioperative work.

Some of the previous studies conducted the quality theme, while the others talked about performance, some of them were about perioperative environment and others were about other wards in hospitals, but this study aims to assess both quality standards and performance standards of perioperative nurses to prove the essentiality to combine between both standards in improving work conditions.

## **Summary**

This chapter presented the theoretical background, on local and international researches that have discussed the quality standards and nursing performance in operating room.

## **Chapter Three**

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### **Conceptual framework**

#### **Introduction**

This chapter includes the conceptual framework and the conceptual and operational definitions of the variables that might have an impact on the care quality and the performance of operation rooms nurses.

#### **3.1 Conceptual definitions**

**Assessment:** Nursing assessment is defined as “the systematic collection of all data and information relevant to the patients’ care, their problems, and needs (Taber’s cyclopedic medical dictionary, 2009), Components of the nursing assessment include nursing history, physical examination, review of other sources of assessment data (such as the client's family, other members of the health care team, and the client's record), and analysis and synthesis of data collected. (NCSBN· 2011)

**Quality:** degree of excellence. (Institute of Medicine, 1990, p244.)

**Quality of care:** “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”(Lohr 1990).

**Standards:** Are the broad statement that address the basic scope of professional nursing practice· they identify minimum acceptable care practice for the professional nurse who cares for specific populations of patients. These standards are population- based and not setting –specific. (ANA, 2004, p.187).

**Standards of patient care:** quality standards are a concise set of statements designed to drive and measure priority quality improvements within a particular area of care. These statements focused on delivering the best possible outcomes for people who use services (Schroeder, 2012).

**Performance** :The act of performing; the carrying into execution or action; execution; achievement; accomplishment; representation by action; so, the performance of an undertaking of a duty—the act of performing; of doing something successfully(Schroeder, 2012).

**Performance standards:** A performance standard is a management-approved expression of the performance threshold(s), requirement(s), or expectation(s) that must be met to be appraised at a particular level of performance. (Office of Personnel Management, 2013).

**Standards of quality:** Many view quality health care as the overarching umbrella under which patient's safety resides. For example, the Institute of Medicine (IOM) considers patient's safety “indistinguishable from the delivery of quality health care. “Quality [is] an optimal balance between possibilities realized and a framework of norms and values.” This conceptual definition reflects the fact that quality is an abstraction and does not exist as a discrete entity. Rather it is constructed based on an interaction among relevant actors who agree about standards (the norms and values) and components (the possibilities). This led to a definition of quality that appeared to be listings of quality indicators, which are expressions of the standards. These standards are not necessarily in terms of the possibilities or conceptual clusters for these indicators. Further, most clusters of quality indicators were and often continue to be comprised of the 5Ds—death, disease, disability, discomfort, and dissatisfaction rather than more positive components of quality (Institute of Medicine, 2004).

**Perioperative nursing:** is defined as those professional nursing activities that focus on identifying and meeting the individualized needs of the surgical, diagnostic, or anesthetic patient. Perioperative nursing practice includes activities that occur during the three phases of Perioperative nursing:

1. Immediate Preoperative Phase: The period immediately prior to and including patient's transport to the operating room theatre or procedure room.
2. Intraoperative Phase: The period from entry of the patient into the operating room theatre to the completion of the surgical or diagnostic procedure.
3. Immediate Postoperative Phase: The period following completion of the surgical procedure to the transfer of care to the appropriate unit for postoperative care. (Pirie, 2010).

### **Perioperative period:**

Perioperative is the time period that includes the three major phases of surgery. The initial phase is the preoperative phase, which lasts from the decision to have surgery until the beginning of surgery. The second phase is the surgery itself. The final phase, is the postoperative period, it is the time after surgery until recovery is complete. Perioperative, including all three phases, can last for days, weeks or months (Spry and Cynthia, 2005).

### **Operation room:**

An operating room (OR), also called surgery center, is the unit of a hospital where surgical procedures are performed (Surgery encyclopedia, 2012).

### **Governmental hospitals**

Are hospitals governed and authorized by The Palestinian ministry of health

### **Nurse performance:**

Performance is a continuous‘ ongoing measurement and evaluation process with the intended goal achieving “improvement in the quality care”. It is a term that describes complementary health care, and payment models that offer financial rewards to providers who achieve or exceed specified quality benchmarks (Christianson, Leatherman and Sutherland, 2008).

## **3.2 Operational definitions**

For this study, there are several factors affecting nurses’ performance and quality of care in OR, such as; the demographic data, the organizational factors and the presence of clear standards. In the following section those factors are discussed.

### **3.2.1 Demographic data**

Personal data of the operating rooms, including the gender, level of education, years of experience, Length of training period. Statements A.1-A.7.

### **3.2.2 Organizational factors**

Numbers of operating rooms, Numbers of theater nurses, Numbers of working hours weekly, the Presence of sterilization units or not in the hospital, The types of operations that were done, Means of operations that were done monthly and questions about the quality guideline in OR. Statements A.8 - A.19

### **3.2.3 Standards of quality care in OR**

Spry, 2005 has put the standards of perioperative nursing care and contributed in the following standards:

#### **3.2.3.1. Perioperative nursing assessment**

The perioperative nurse collecting patient's health data is continuous and ongoing. The assessment establishes the base line of patient's health status and provides a basis for planning appropriate patient care in the perioperative environment (Berry and Kohn's, P 20, 21). Statements B.1-B.6.

#### **3.2.3.2 Sterilization and disinfection**

Terminal decontamination, disinfection, and sterilization are the procedures carried out to destroy pathogens and items after their use for patients during surgery. So, perioperative nurse should be oriented with these procedures (Berry and Kohn's).Statements; B7-B10.

#### **3.2.3.3 Preparation for surgery**

The perioperative nurse is responsible for preparing a sterile field for operation and for monitoring a septic practice of all members of the surgical team (Spry 2004, P 79). Statements B11-B19.

#### **3.2.3.4 Positioning the patient according surgery**

Positioning the patient for surgery is a critical component of perioperative nursing practice. Improper positioning can result sever harm and can hinder the surgeon's ability to perform surgery (Spry 2004, P 119).Statements B20-B25.

### **3.2.3.5 Counts in surgery**

Surgical counts refers to the counting of sponges, sharps such as blades , needles, and instruments that are opened and delivered to the team for use during surgery. At the end of the surgery, the patient should be free of any unintended foreign body (Spry 2004).Statements B26-B28.

### **3.2.3.6 Homeostasis equipments management**

Homeostasis is the arrest of bleeding, where Modern homeostasis methods include electro surgery and tourniquet methods (Spry 2004, p 167). The perioperative nurse must be knowledgeable regarding the type of homeostasis methods, principles of application guidelines and safety measures related to these methods. Statements B29, 30.

### **3.2.3.7 Wound management**

The perioperative nurse must be knowledgeable and understanding of the types of wounds sutures and needles characteristics to prevent patient's injury (Spry 2004). Statements B31-B34

### **3.2.3.8 Reporting errors**

Perioperative nurse should be familiar and oriented in the field of surgery to prevent any error that may occur, reports any error that may harm patient under surgery. Statements B35-B39

### **3.2.3.9 Infection control**

The perioperative nurse is responsible for creating and maintaining a sterile field and for monitoring aseptic practice of all members of the surgical team. Appropriate implementation of this responsibility requires an understanding of infection sources, transmission modes, and the methods to reduce or eliminate microorganisms in the surgical setting. The perioperative nurse must have in- depth knowledge of principles and practices associated with attire, aseptic technique, gowning and gloving, prepping, draping, and operating room sanitation (Spry ,2004,p 79,80). Statements B40- B53

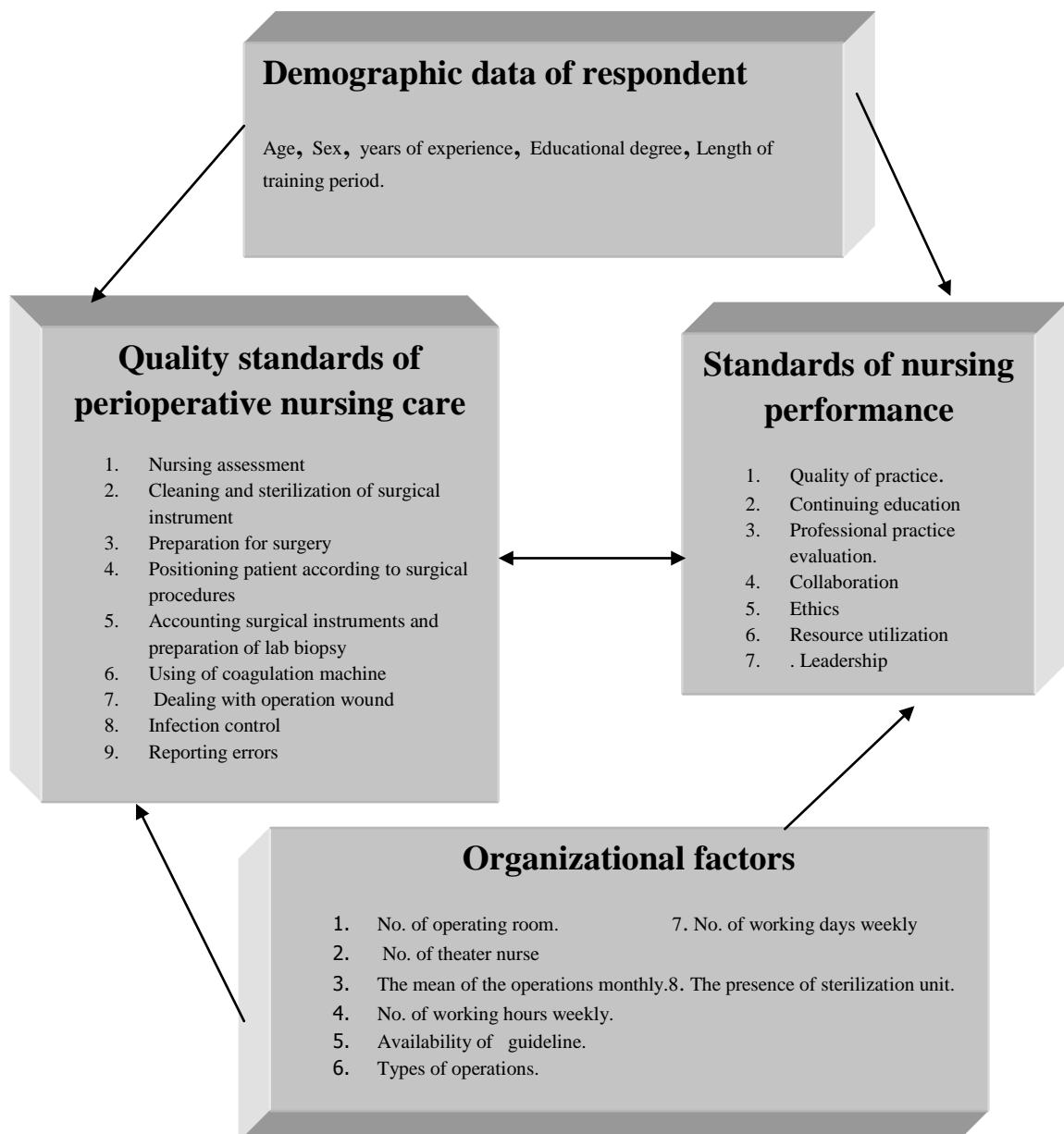
## **3.2.4 Standards of performance**

We used National Association of Nursing (NAN) standards for nurses' practice and performance, and these standards reflected the value and priorities of nursing profession (NAN manual, 2004). These standards include: Quality of practice, Education, Professional practice

evaluation, Collaboration, Ethics, Resource Utilization, and Leadership. Statements C54-C88.

### 3.3 The Study Conceptual Framework

The study's conceptual framework Figure (3.1) shows the study of conceptual framework. The framework developed was based on the literature reviewed, and it includes factors related to demographic data, organizational factors, quality of care standards, and nursing performance standards in operating room.



**Figure 3.1:** Linking selected demographic and organizational variables with the application of quality care standards in operating room and nursing performance.

## **Summary**

The chapter presented the conceptual framework of the study, as well as the variables of the conceptual and operational definitions of the study. There are some factors that might affect the quality of care and OR nurse's performance; such factors are age of nurse, gender, experience and educational qualification. Moreover, organizational factors may also have an effect on the quality.

## **Chapter Four**

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### **Methodology**

#### **Introduction**

A detailed description of the study methodology is presented in this chapter, including study design, targeted population and sample, data collection instruments, and data statistical analysis. Moreover, ethical consideration in this study and a summary about pilot study are highlighted.

#### **4.1 Study design**

In this study, a quantitative cross sectional descriptive design was used. A quantitative research refers to the systematic empirical investigation of social phenomena via statistical, mathematical or computational techniques. The objective of quantitative research is to develop and employ models, theories and/or hypotheses pertaining to phenomena (Given, 2008).

#### **4.2 Study setting**

This study was conducted in all the operating room units in MOH hospitals in the West Bank. 10 hospitals out of 11 hospitals have operating room department. These hospitals are: Ramallah Medical complex, Rafidia, Tulkarem, Jenin, Salfit, Qalqilia, Hebron, Jericho, Bethlehem and Yeta Hospital.

Ramallah medical complex is sited in Ramallah city and has 171 nurses and 150 beds. It has two operating theaters, each one including 6 rooms. Both theaters have 30 OR nurses. One of theater is for special surgeries such as ophthalmic, open heart, neurosurgeries and pediatric surgeries. The other theater is for general, orthopedic, urology, gynecology, and ENT surgeries. Monthly average operations were 464 operations.

Rafidia Hospital is cited in Nablus city and has 145 nurses and 145 beds, it has two operating theaters, and one has 6 rooms for major surgeries such as general, orthopedic, neurology, urology, and gynecology surgeries. The other theater has 2 rooms and for minor

surgeries such as ophthalmic and ENT surgeries. Both theaters have 30 OR nurses. Monthly average operations were 910 operations.

Al Khaleil (Alia) Hospital is cited in Hebron city and has 176 nurses and 216 beds. It has one operating theater for general surgical, orthopedic, neurology, urology, gynecology surgeries, and pediatric surgical surgeries. 12 OR nurses working in this theater and has 3 operating rooms and monthly average operations was 603 operations.

Yeta (Abo Al hasanAlkasem) Hospital is cited in the south of Hebron city in a village called Yeta and has 37 nurses in total and 30 beds, it has one operating theater including one operating room and 4 OR nurses. The theater is dealing with orthopedic, urology, gynecology surgeries, ENT surgeries and pediatric surgeries. Monthly average operations were 103 operations.

Beitjala (Al Husein) Hospital is cited in Bethlehem city and has 112 nurses and 117 beds. It included one operating theater including 3 operating rooms and dealing with general, orthopedic, urology, gynecology surgeries, and ENT surgeries and it has 15 OR nurses. Monthly average operations were 212 operations.

Jenin (Khalil Sulaiman Martyeer) Hospital is cited in Jenin city and has 123 nurses and 123 beds. It included one operating theater including 3 operating rooms and dealing with general surgeries, orthopedic, urology, gynecology and ENT surgeries and has 12 OR nurses. Monthly average operations were 394 operations.

Tulkarem (Dr. Thabit Thabit Martyeer) Hospital is cited in Tulkarem city and has 102 nurses and 105 beds. It included one operating theater including 3 operating rooms and dealing with general, orthopedic, urology, gynecology surgeries and ENT surgeries and has 10 OR nurses. Monthly average operations were 535 operations.

Qalqilia (Darweesh Nazal) Hospital is cited in Qalqilia city and has 48 nurses and 56 beds. It included one operating theater including 2 operating rooms and dealing with general surgeries, orthopedic, urology, gynecology and ENT surgeries and has 4 OR nurses. Monthly average operations was 77 operations.

Salfit (Yaser Arafat) Hospital is cited in Salfit city and has 46 nurses, 49 beds. It included one operating theater including 2 operating rooms and dealing with general, orthopedic, urology, gynecology and ENT surgeries and has 6 OR nurses. Monthly average operations were 107 operations.

Jericho Hospital is cited in Jericho city and has 51 nurses and 46 beds. It included one operating theater including 3 operating rooms and dealing with general, orthopedic,

urology, gynecology and ENT surgeries, and has 6 OR nurses. Monthly average operations were 133 operations.

### **4.3 Population**

Due to the small size of population of this study, all operating room nurses working in 10 governmental hospitals in the West Bank with a total of 129 OR nurses were targeted in data collection.

### **4.4 Study Instrument**

The questionnaire consists of two parts: Part one; included demographic characteristics of the respondents and some organizational factors.

Part two; included Standards of Nursing Care Quality in operating room and it was prepared from

1. Essentials of perioperative nursing, second edition. (Spry, 2005).
2. WHO checklist safe surgery. (World Alliance for Patient Safety, 2009)

Part three; included Standards of Nursing Performance in operating room and it was prepared from American Nurses Association (ANA, 2004) standards of nursing performance and Association of Operating Room Nurses Standards (1995).

The items of the final questionnaire were modified and translated into Arabic by a specialist in language translation in order to be suitable for situation in the West Bank Hospitals. And then, the items were back translated in to English by another specialist in language translation, after that, some terms were modified to be suitable with medical terms. Furthermore, the items were constructed using 5 points Likert Scale to indicate the degree to which the perioperative nurses applied the standards. In this study, a Likert scale was weighted as always: 5, mostly: 4, sometimes: 3, rarely: 2, and not applied: 0, some items were constructed using Yes or No questions.

#### **4.4.1 Study variables**

The study variables consist of independent and dependent variables, which are:

##### **Independent variables:**

1. The demographic data of respondents that includes (Age, Years of experience in operating room, Level of education and qualifications).

2. The organizational factors such as the work load (the number of nursing per number of operating room), the structure of operating room, the protocols and regulations at the department.

**Dependent variables are:** the quality care standards and the nursing performance in operating room.

#### **4.4.2 Validity of the Instrument**

Validity refers to the degree to which the instrument measures what is supposed to be measured (Polit, 2006). The content validity is the degree to which the items in an instrument adequately represent the universe of the content. Content Validity is based on the extent to which a measurement reflects the specific intended domain of content (Carmines & Zeller, 1991, p.20).

So, content validity was done, the questionnaire was reviewed by four experts (Annex 5) qualified in nursing and research methodology to determine whether the items of the questionnaires were relevant to the study purpose. Items were modified according to experts' recommendations. Main modifications were in formatting, rearrangement of the item, adding and removing some items, and language editing. No substantial modifications were recommended.

#### **4.4.3 Reliability of the instrument**

Reliability is the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials. Reliability is examined by using Cronbach  $\alpha$  and Reliability coefficient test. Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the "underlying construct." Construct is the hypothetical variable that is being measured; it is used to test the variables that generated from such a set of questions if returning a stable response or not (Hatcher, 1994).

Reliability coefficient test is often useful to determine if a relationship exists between the independent and dependent variables. If so, how significant or how strong is this association between these variables, The correlation coefficient or coefficient is a statistic used to measure the degree or strength of this type of relationship (Taylor, R. 1990).

Cronbach  $\alpha$  was used to determine the reliability of the instrument. The reliability coefficient for Quality Standards of Perioperative Nursing was 0.89 and for Standards of Nursing Performance was 0.97 as shown in table 4.1.

**Table (4.1): Reliability coefficients for standards of quality care and nurses' performance in operating theaters.**

<b>Reliability coefficient</b>	<b>No. of items</b>	<b>Standard</b>
<b>Standards of quality care</b>		
0.88	3	Counts in surgery and samples- preparing.
0.75	9	Preparation for surgery.
0.85	4	Wound management.
0.72	4	Cleaning and sterilizing surgical instruments.
0.78	6	Positioning patient according to the type of surgery.
0.82	2	Using of homeostasis devices.
0.86	6	Nursing assessment.
0.71	5	Reporting errors.
0.70	14	Infection control
<b>0.89</b>	<b>53</b>	<b>Total score for first instrument</b>
<b>Performance standards</b>		
0.89	5	Quality of practice
0.86	3	Education
0.82	11	Professional practice evaluation
0.70	3	Collaboration
0.75	4	Ethics
0.88	3	Resource Utilization
0.81	6	Leadership
<b>0.97</b>	<b>35</b>	<b>Total score for second instrument</b>

#### **4.5 Pilot study**

Piloting has been conducted in order to test response rate and to modify any part of the study before the start of the main study. The sites of piloting were 2 Non- governmental

Hospitals in Nablus city: Specialist Nablus Hospital and Specialist Arabic Hospital, Both of these hospitals have operating theaters. After sending a formal letter to the administration department of these hospitals explaining the purpose of this study, and how the study would be conducted, permission was granted from the general directors of the hospitals. 15- 20 nurses from the hospitals filled the questionnaires; changes in two questions were done in the questionnaire according to the nurses' suggestions.

#### **4.6 Permission and ethical considerations**

The Research Review Committee of the School of Public Health at Al-Quds University reviewed and approved this research. An official letter was sent from Al-Quds University to the Ministry of Health asking for permission to access the hospitals and collect data from operating room nurses. An official letter was obtained from The Ministry of Health/General Director of Hospitals (Appendix 1) to facilitate data collection procedures. An informed consent was attached to the questionnaire; respondents were assured that the data will only be used for research purpose, and confidentiality will be maintained. Moreover, participants had the right to refuse to participate or withdraw from the study at any time.

#### **4.7 Data collection**

Self-administrated questionnaires were distributed to all nurses in the operating rooms in Governmental Hospitals by the researcher during the period between January 2012 and June 2012, and then the filled questionnaires were handed to head nurses of each OR unit in closed envelops. It took around 4 months to collect the data (1/2012-4/2012).

#### **4.8 Data entry and statistical analysis**

The data was analyzed using the statistical package for social sciences (SPSS), version 17. Frequencies and descriptive statistics were used such as means, SDs, percentages, ANOVA, t-test and Person's correlation were used to test relationships between organizational related variables and the level of quality care application and nursing

performance in operating theaters and to test relationships between socio-demographic variables and the level of quality of care and nursing performance in operating theaters at the Governmental Hospitals.

#### **4.9 Limitations of the Study**

The main limitations for this study were:

- 1- Data collection took more time than was expected because:

Nurses have no time to fill the questionnaire due to high workload and some of them were in leave especially in large hospitals (Rafidia hospital and Ramalla Medical Complex).

- 2- The questionnaire was long, for this many nurses didn't fill all of the questions in the questionnaire, so some questions were excluded in interpretation and analysis.
- 3- Due to multiple types of questions, the analysis was complex and took more than the expected time in the interpretation and the data analysis.

#### **Summary**

The variables which were used in the study were discussed in this chapter, in addition to the methodology and data collection. The assessment was done in all departments after testing the validity and reliability of the items in the questionnaire. Finally, results analyzed using SPSS 17

## **Chapter Five**

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### **Findings of the study**

#### **Introduction**

This study was conducted to determine the level of quality care standards and nurses' performance in governmental Hospitals. Also the study examined the relationship between different socio-demographic variables and organizational factors, nurses' performance and quality care standards.

This chapter consists of two parts: first part, descriptive statistics which includes demographic characteristics of participants', means, standard deviations and ranges for the components of the questionnaire, and the second part, results of hypothesis testings.

#### **5.1 Demographic characteristics of the respondents**

All OR nurses at 10 governmental hospitals, were targeted for participation in the study. A questionnaire containing the standards of quality care, and standards of performance were distributed. A total of 100 participants returned the questionnaires out of 129. Table (5.1) shows the respondents distribution according to the hospitals.

**Table (5.1) Respondents' distribution according to the hospital.**

Hospital	Population	Sample respondents	Response rate %by hospitals
Ramallah	30	20	0.155%
Nablus/Rafidia	30	21	0.163%
Hebron	12	12	0.093%
Yeta	4	4	0.031%
BeitJala	15	8	0.062%
Tulkarem	10	10	0.078%
Jenin	12	9	0.070%
Qalqilia	4	4	0.031%
Salfit	6	6	0.047%
Jericho	6	6	0.047%
Total	129	100	0.775%

The age of respondents ranged from 21 to over 46 years. The majority (59%) were between 26 and 35 years old. Male respondents were (69%). The majority of respondents (55%) had 2 years or 3 years diploma while (2%) had high diploma. Of the 100 participants (62%) had 1-5 years of experience. The training period of respondents ranged from (1 month) to more than (13 months). The majority (46%) had (1-3) months of training, (32%) start working in OR without receiving any training. Only (4%) of respondents had their training outside the West Bank, in (Lebanon, Libya, Belgium and Jordan) as shown in table (5.2).

**Table (5.2) Respondents' Characteristics**

<b>Frequency and percentages Total: 100</b>	<b>Respondents Characteristics</b>
55 ( 55.0) 43 (43.0) 2(02.0)	Academic Qualifications Diploma (2 years) B.A High diploma in OR
56 (56.0) 7 ( 07.0) 5 (05.0) 32 (32.0)	Duration of Training period (in months) in Operating Rooms 1-6 7-12 13 and More Didn't have training
4(4.0) 64 (94.0)	Training sites abroad (Lebanon, Libya, Belgium, Jordan) Training inside the West Bank
32 (32.0) 68 (68.0)	Is there a committee for following up nurses' training in the ward? Yes No
62 (62.0) 21 (21.0) 17 (17.0)	Years of Experience 1-5 6-10 11and more
46(46.0) 38(38.0) 16(16.0)	Age 18-30 31-40 41and more
69 ( 69.0) 31 (31.0)	Gender Male Female

The majority of respondents (80%) indicated that they have (1-3) rooms in the theaters. Eighty percent of respondents revealed that they have separate sterilization ward on governmental hospitals where they work. All hospitals have programmed operations 5 days weekly. Availability of written nursing standards guideline in OR words was only (25%).

The main obstacles, which hinder standards applications, were workload pressure as shown in table (5.3).

**Table (5.3) Distribution of respondents according to ORs characteristics in which they work.**

OR's wards characteristics	Frequency and percentages Total: 100
Numbers of operation rooms 1-3 8-12	80 (80.0) 20 (20 .0)
Numbers of nurses in the ward 4-8 9-12 13 and more	20(20.0) 31 (31.0) 49 (49.0)
Availability of Separated sterilization unit Yes No	80 (80.0) 20 (20.0)
Are there a written Nursing standards guideline in OR words. Yes No	25 (25.0) 75 (75.0)
What are the obstacles which hinder applying the quality standards?  The standards guideline do not fit the work conditions  Work pressure  The absence of administrative commitment in  Practicing the quality standard guideline.  The absence of control committee for informing and training nurses about the quality standards guideline.  The absence of control and following up, applying the quality standards guideline.  No response	13 (13.0) 30 (30.0) 10 (10.0) 15 (15.0) 9 (09.0) 35 (35.0)

## 5.2 Findings related to the first question of the study

### What is the current level of standards of quality care in operating room?

To answer this question, means, percentages, standard deviations and the degree of standard items applications were calculated. A scale to evaluate respondents' agreement

level for each item was chosen by the assistance of my supervisor Dr; Asma and in reference to a Referenced Test; Development technical and legal guidelines for corporate training (Shrocked and Coscarelli, 2000), the scale was as the follows:

More than 85% high

From 60%- 85% medium

Less than 60% low

**Tables (5.4): the Means, Standard deviations and the Degree of respondents' application of Nursing Assessment in perioperative phase.**

No	Item	Mean	Standard deviation	% of application	Degree of application
1	The OR nurse receives the patient in the operation ward and assesses him/her according to the checklist that is used in the Governmental Hospitals.	3.43	1.805	60.75	Medium
2	The OR nurse confirms the patient's identity from the patient him/her self.	3.94	1.441	73.5	Medium
3	The nurse is requesting the patient to confirm the surgical procedure and its site	3.71	1.585	67.75	Medium
4	The OR nurse ensures the patient has informed consent before entering operating room.	3.96	1.483	74	Medium
5	In operating room and before starting the surgery, OR nurse confirms the right name, right surgical procedure and right site of surgery.	4.19	1.412	79.75	Medium
6	The OR nurse confirms that team members have introduced themselves by name and roles to the patients	1.94	1.613	23.5	Low
<b>Total score</b>		3.5283	0.93263	63.2	Medium

Table (5.4) shows that the overall level of OR nursing assessment standard's application was moderate; with mean (3.5283) and percentage (63.2%). All item levels were moderate except item (6) it was low.

**Tables (5.5) the Means· Standard deviations and the Degree of respondents' application of Cleaning and sterilization of surgical instruments**

No	Item	Mean	Standard deviation	% of application	Degree of application
7	*The OR nurse immerses the surgical tools in water and detergent for two minutes at least.	-----	-----	60.0	Medium
8	*The OR nurse has the ability to use all types sterilization and disinfection methods.	-----	-----	75.0	Medium
9	The OR nurse could categorize the surgical instruments according to the type of sterilization or disinfection method.	4.29	1.018	82.25	Medium
10	The OR nurse can use the suitable sterilizing substances and devices for each surgical instrument.	4.25	1.079	80.5	Medium
	<b>Total score</b>	4.2550	0.91927	81.3	Medium

- \* Yes or No questions

Table (5.5) shows that the overall level of Cleaning and sterilization of surgical instruments standard's application was moderate, with mean (4.2550) and percentage (81.3%).

**Tables (5.6): the Means, Standard deviations and the Degree of respondents' application of Preparation for surgery.**

No	Item	Mean	Standard deviation	% of application	Degree of application
11	The OR nurse is committed to wear surgical clothing (head cover, eye protector, over shoes, and the mask.)	4.15	1.366	78.75	Medium
12	The scrub nurses wash their hands with sterilizing substance for two minutes at least.	4.55	0.821	88.75	High
13	The scrub nurses take into consideration the sterilization techniques for clothing (the sterile gown and sterile gloves.)	4.55	0.809	88.75	High
14	The scrub nurse avoids touching the surgeon's skin or unsterilized clothes while assisting him in wearing sterile clothes.	4.77	0.423	94.25	High
15	All instruments and towels are excluded from the field of surgery when they are unsterilized.	4.74	0.463	93.5	High
16	OR nurse follows the sterilization techniques when positioning equipment, and any special supplies needed to the operation field.	4.82	0.386	95.5	High
17	The OR nurse monitors the operation field in order to maintain strict aseptic and sterile technique throughout the surgical procedure to reduce the risk for postoperative infection.	4.70	0.503	92.5	High
18	The scrub nurse remains in the surgical suite as much as possible to provide care for the patient.	4.50	.674	87.5	High
19	OR nurse reports any error occurs that may contaminate the field of surgery.	4.39	0.875	84.75	Medium
	<b>Total score</b>	4.5744	0.50521	89.36	High

Table (5.6) showed that the overall level of preparation for surgery standard's application was High, with mean (4.5744) and percentage (89.36%).

**Tables (5.7): the Means, Standard deviations and the Degree of respondents' application of positioning patient according to the type of surgery**

No	Item	Mean	Standard deviation	% of application	Degree of application
20	*Written Instructions about transferring patients to and from the operation ward are available.	-----	-----	37.0	Low
21	When transferring patient to OR, the bed that is used outside operating room remains outside surgical suite	3.15	1.737	53.75	Low
22	The OR nurse is oriented to all types of positioning according to the type of surgery.	4.30	0.785	82.5	Medium
23	The OR nurse maintains patient's safety while positioning patient for surgery.	4.26	1.228	81.5	Medium
24	The OR nurse reports any error about the patient's position during surgery immediately.	3.99	1.259	74.75	Medium
25	The patient's table and OR's machines is kept ready and in good condition for any surgery.	4.39	0.942	84.75	Medium
	<b>Total score</b>	4.018 0	0.76599	75.45	Medium

- \* Yes or No questions

Table (5.7) showed that the overall level of the standard's application for positioning patients according to the type of surgery was moderate, with mean (4.0180) and percentage (75.45%).

**Tables (5.8): the Means, Standard deviations and the Degree of respondents' application of counting surgical instruments and preparing samples**

No	Item	Mean	Standard deviation	% of application	Degree of application
26	*Written protocol for surgical counting of gauze, needles and surgical tools is available in OR ward.	-----	-----	83.0	Medium
27	*Written protocol for pathology sample handling (preparing and sending to lab) is available in OR ward.	-----	-----	84.0	Medium
28	OR nurse performs counts procedures for gauze, needles and surgical tools before and after the surgery.	4.67	0.768	91.5	High
	<b>Total score</b>	4.6600	0.71145	91.5	High

- \* Yes or No questions

Table (5.8) showed that the overall level of standard's application for counting surgical instruments and preparing samples was High, with mean (4.6600) and percentage (91.5%).

**Tables (5.9): the Means, Standard deviations and the Degree of respondents' application of protocols in handling of Homeostasis devices**

No	Item	Mean	Standard deviation	% of application	Degree of application
29	*Written protocol for dealing with traditional and modern bleeding stop devices is available in OR ward.	-----	-----	25.0	Low
30	The OR nurse is oriented with all the traditional and modern bleeding stop devices.	3.85	1.192	71.25	Medium
	<b>Total score</b>	3.8500	1.03962	71.25	Medium

- \* Yes or No questions

Table (5.9) showed that the overall level of using Homeostasis devices standard's application was moderate, with mean (3.8500) and percentage (71.25%).

**Tables (5.10): the Means, Standard deviations and the Degree of respondents' application of Wound management**

No	Item	Mean	Standard deviation	% of application	Degree of application
31	The OR nurse is oriented with the different types of sutures, needles and purposes of their use.	4.51	0.643	87.75	High
32	The OR nurse is oriented with all types of surgical instruments and the other modern machines that can be used in closing the surgical wound.	4.18	1.175	79.5	Medium
33	The OR nurse prepares the needed sutures for surgeon and monitors the sterile field to ensure that there is no contamination	4.44	0.671	86.0	High
34	The OR nurse maintains sterile technique throughout the surgical procedure and wound management.	4.12	0.977	78.0	Medium
	<b>Total score</b>	4.3125	0.64520	82.81	Medium

Table (5.10) showed that the overall level of wound management standard's application was moderate, with mean (4.3125) and percentage (82.81%).

**Tables (5.11): the Means, Standard deviations and the Degree of respondents' application of reporting errors.**

No	Item	Mean	Standard deviation	% of application	Degree of application
35	*Written protocol for dealing with errors is available in OR ward.	-----	-----	39.0	Low
36	Any errors in the surgical procedure are reported by OR nurse immediately.	3.26	1.756	56.5	Low
37	Errors occurring in the surgical operations are discussed by the OR team.	3.08	1.662	52.0	Low
38	Several measures are taken into consideration in order to prevent error occurrence.	3.68	1.557	67.0	Medium
39	All OR nurses are informed about these errors prevention and handling measures.	3.38	1.619	59.5	Low
	<b>Total score</b>	3.3475	1.24088	58.68	Low

- \* Yes or No questions

Table (5.11) showed that the overall level of reporting errors standard's application was Low, with mean (3.3475) and percentage (58.68%).

**Tables (5.12): the Means, Standard deviations and the Degree of respondents' application of Infection control.**

No	Item	Yes	No	% of application	Degree of application
40	*Written protocol for preventing infection is available in OR ward.	43	57	43.0	Low
41	* There are special cleaners for OR Ward.	87	13	87.0	High
42	*OR ward cleaners clean all surfaces, walls and grounds every morning.	78	22	78.0	Medium
43	*Surgical field is usually cleaned with detergents between each surgical procedure.	69	31	69.0	Medium
44	*There is a commitment to wearing gloves when cleaning and dealing with contaminated substances and body secretions in OR ward.	91	9	91.0	High
45	*In OR ward·trashes are collected in special bags, before disposal.	68	32	68.0	Medium
46	*Infected towels and sheets are collected in special bags then washed separately.	67	33	67.0	Medium
47	*Surgical instruments that are used with infected patient are usually immersed with germicidal substances according to the kind of the germ.	86	14	86.0	High
48	*The surgical operation of the patients with contagious disease is postponed to the end.	92	8	92.0	High
49	*The nurse who suffers from infectious disease is not allowed to work in OR word until his/her recovery.	73	27	73.0	Medium
50	*Hands are washed with water and soap before wearing gloves.	95	5	95.0	High
51	*Hands are washed with water and soap after taking off gloves.	76	24	76.0	Medium
52	* Hands are washed with water and soap before and after every procedure.	79	21	79.0	Medium
53	* Samples are collected periodically from several sites in OR ward and from surgical instruments to check for any contamination.	85	15	85.0	High
<b>Total score</b>		-----	-----	77.78	Medium

- \* Yes or No questions

Table (5.12) showed that the overall level of infection control standard's application was moderate (77.78%). All item levels ranged between moderate and high except for item (40) the level was low.

**Table (5.13): Means standard deviations and Degree of respondents' application of quality standards by OR nurses..**

No	Item	Mean	standard deviations	% of application	Degree of Application
1	Nursing assessment.	3.53	0.93263	63.2	Medium
2	Cleaning and sterilizing surgical instruments.	4.26	0.92	81.3	Medium
3	Preparation for surgery.	4.57	0.51	89.36	High
4	Positioning patient according to the type of surgery.	4.02	0.77	75.45	Medium
5	Counts in surgery and samples' preparing.	4.66	0.71	91.5	High
6	Using of homeostasis devices.	3.85	1.04	71.25	Medium
7	Wound management.	4.31	0.65	82.81	Medium
8	Reporting errors.	3.35	1.24	58.68	Low
<b>Total score of quality standards by OR nurses.</b>		<b>4.07</b>	<b>0.9</b>	<b>76.63</b>	<b>Medium</b>

Table (5.13): show the total degree of the nurses' application of the quality standards during their work time in OR ward was (76.63 %) which refers to medium degree.

### **5.3 Findings Related to Second Question of the Study**

#### **What is the Current Level of OR Nurses' Performance?**

To answer this question, means, percentages, standard deviations and degree of applications of nurses' performance items were calculated. A scale to evaluate respondents' agreement level for each item was chosen by the assistance of my supervisor Dr; Asma and in reference to a Referenced Test; Development technical and legal guidelines for corporate training (Shrocked and Coscarelli, 2000), the scale was as follows:

More than 85% high

From 60%- 85% medium

Less than 60% low

**Table (5.14): The main scores, standards deviations and percentages of Practice standard quality**

No	Item	Mean	standard deviations	% of application	Degree of Application
54	The OR nurse identifies quality aspects during nursing Care.	3.17	1.429	54.25	Low
55	The OR nurse participates in developing policies and procedures for nursing practice in the ward	2.75	1.540	43.75	Low
56	The OR nurse uses continuous quality-improvement activities to initiate changes in nursing practice.	2.71	1. 431	42.75	Low
57	The OR nurse uses quality-improvement data to initiate health care delivery, and system changes as needed.	2.73	1.355	40.25	Low
58	The OR nurse. Identifies indicators used to monitor quality and affect perioperative care.	2.83	1.656	40.5	Low
	<b>Total score</b>	2.77	1.33	44.3	Low

Table (5.14) showed that the overall level of practice standard's application's quality was Low with mean (2.77) and percentage (44.3%).

**Table (5.15): The mean scores, standards deviations and percentages of quality of education.**

No	Item	Mean	standard deviations	% of application	Degree of application
59	The OR nurse participates in educational activities in regard to theoretical, clinical knowledge and professional issues in the ward.	1.82	1.67	20.5	Low
60	The nurse tries to gain experience in contemporary with the clinical practices in order to maintain up-to date skills and knowledge	3.00	1.49	50	Low
61	The OR nurse applies perioperative nursing knowledge and skills inside the operation room.	3.53	1.540	63.25	Medium
	<b>Total score</b>	2.78	1.37	44.58	Low

Table (5.15) showed that the overall level of education standard's application by OR's nurses was Low, with mean (2.78) and percentage (44.58%).

**Table (5.16): The mean scores, standards deviations and the percentages of professional practice evaluation's quality.**

No	Item	Mean	standard deviations	% of application	Degree of application
62	The OR nurse participates in performance evaluation based on weakness and strengths analysis.	3.53	1.54	63.25	Medium
63	The OR nurse seeks and acts on constructive feedback on an ongoing basis for the purpose of professional development.	3.04	1.55	47.75	Low
64	The OR nurse takes action to achieve professional Goals identified during performance appraisal process.	2.97	1.59	49.25	Low
65	The OR nurse is well oriented about professional practice guidelines' instructions and	3.22	1.46	55.5	Low

	policies related to OR				
<b>66</b>	The OR nurse shares knowledge and skills with her colleagues.	3.22	1.46	55.5	Low
<b>67</b>	The OR nurse provides peers with constructive feedback regarding care and practice inside the operation room.	3.57	1.43	64.25	Medium
<b>68</b>	The OR nurse interacts with colleagues to enhance one's own professional perioperative nursing care and practice.	3.54	1.42	63.5	Medium
<b>69</b>	The OR nurse contributes in and supports the creation of a healthy work environment.	3.74	1.09	68.5	Medium
<b>70</b>	The OR nurse contributes to creating an environment inductive to clinical learning for nursing student.	3.57	1.22	64.25	Medium
<b>71</b>	The OR nurse contributes in a suitable environment of clinical learning for the care givers as appropriate.	3.27	1.5	56.75	Low
<b>72</b>	The OR nurse contributes in creating an environment inductive to clinical learning for the other employees.	3.22	1.35	55.5	Low
	<b>Total score</b>	3.36	1.11	58.93	Low

Table (5.16) showed that the overall level of professional practice evaluation standard's application by OR's nurses was Low, with mean (3.36) and percentage (58.93%).

**Table (5.17): The mean scores, standards deviations and percentages of Collaboration**

No	Item	Mean	standard deviations	% of application	Degree of application
73	The OR nurse communicates with the patient's family and other caregivers in order to create cooperation in providing perioperative nursing care.	2.41	1.89	24.75	Low
74	The OR nurse consults other healthcare providers for perioperative care	2.34	1.71	33.5	Low
75	The OR nurse collaborates with the family and other health providers in the formulation of patient's care plan	2.04	1.75	26	Low
	<b>Total score</b>	2.12	1.57	28.08	Low

Table (5.17) showed that the overall level of collaboration standard's application by OR's nurses was Low, with mean (2.1233) and percentage (28.08%).

**Table (5.18): The mean scores, standards deviations and percentages of Ethics**

No.	Item	Mean	standard deviations	% of application	Degree of application
76	The OR nurse maintains patient and family's confidentiality	4.56	0.833	89	High
77	The OR nurse gives patients care without any discrimination	3.93	1.799	73.25	Medium
78	The OR nurse gives advices and guidance for patients according to her/his responsibilities	3.78	1.567	69.5	Medium
79	The OR nurse gives advices and guidance for patient's family according to his responsibilities.	3.22	1.801	55.5	Low
	<b>Total score</b>	3.87	1.1	71.8	Medium

Table (5.18) showed that the overall level of ethics standard's application by OR's nurses was medium, with mean (3.87) and percentage (71.8%).

**Table (5.19): The mean scores, standards deviations and percentages of Resource Utilization**

No.	Item	Mean	standard deviations	% of application	Degree of application
80	The OR nurse assesses availability of resources and its effectiveness on patient's safety.	3.64	1.31	66	Medium
81	The OR nurse assists family in identifying and securing necessary resources and services to address patient's healthcare needs.	2.56	1.56	39	Low
82	The OR nurse assigns tasks based on the needs and conditions of the patient and the care complexity.	3.30	1.57	57.5	Low
	<b>Total score</b>	3.33	1.29	58.25	Low

Table (5.19) showed that the overall level of resource utilization standard's application by OR's nurses was Low, with mean (3.33) and percentage (58.25%).

**Table (5.20): The mean scores· standards deviations and percentages of Leadership**

No	Item	Mean	standard deviations	% of application	Degree of application
83	The OR nurse engages in teamwork, and he/she is a team builder.	3.82	1.40	70.5	Medium
84	The OR nurse coordinates and directs the care among caregivers	3.61	1.48	65.25	Medium
85	The OR nurse directs the care coordination among caregivers	2.79	1.72	44.75	Low
86	The OR nurse participates in professional activities.	2.98	1.76	49.5	Low
87	The OR nurse exhibits creativity and flexibility throughout time of change.	3.84	1.12	71	Medium
88	The OR nurse encourages and promotes others to succeed by monitoring and other motivational strategies	3.20	1.64	55	Low
<b>Total score</b>		3.28	1.13	57.1	Low

Table (5.20) showed that the overall level of leadership standard's application by OR's nurses was Low, with mean (3.28) and percentage (57.1%).

**Table (5.21): means· standard deviations and the response degree for the domains of nurses' performance standards in the OR ward:**

Domain No.	Domain	Mean	standard deviations	% of application	Degree of application
1	Quality of practice	2.77	1.33	44.3	Low
2	Education	2.78	1.38	44.58	Low
3	Professional practice evaluation	3.363	1.11	58.93	Low
4	Collaboration	2.12	1.57	28.08	Low
5	Ethics	3.87	1.10	71.8	Medium
6	Resources utilization	3.33	1.29	58.25	Low
7	Leadership	3.28	1.13	57.1	Low
<b>Total degree of performance</b>		3.16	1.04	54.1	Low

It has been shown from the previous table that the response degree about nurses' performance standards in OR ward was from low to medium according to the means which ranged between (2.12) to (3.87) for the domains of (collaboration) and (ethics) but the total degree of performance standards application by OR nurses was low.

## **5.4 Findings Related to Study Hypothesis**

### **5.4.1 Findings Related to Hypothesis One**

There is no significant relationship at ( $\alpha \leq 0.05$ ) between the nurses' application of the quality standards and their performances standards

**Table (5.22) Pearson's correlation between the nurses' application of the quality standards and their performance standards:**

Variables	R	Sig.
The nurses' applying the quality standards		
Nurses' performances standards	0.744	P<0.00*

Table 5.22 shows that there is a strong relationship between the nurses' quality standards' application and their performances standards.

### **5.4.2 Findings related to Hypothesis two**

There are no significant differences at ( $\alpha \leq 0.05$ ), related to academic qualifications, gender, age, number of operation rooms, number of nurses in the ward and years of experience, in the application of quality standards, among nurses working in OR wards at the governmental hospitals

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**Table (5.23) Participant's application of quality standards according to academic qualifications (ANOVA).**

Quality standards	Academic qualifications	N	Mean	Std. Deviation	F	P
Nursing evaluation	Diploma	55	3.7485	0.84673	1.291	0.280
	B.A	43	3.5741	1.02958		
	High diploma	2	4.0000	0.23570		
Cleaning and sterilizing surgical instruments	Diploma	55	4.2455	1.01321	0.212	0.810
	B.A	43	4.3222	0.79883		
	High diploma	2	4.5000	0.70711		
Preparation for the surgery	Diploma	55	4.6162	0.48234	0.668	0.515
	B.A	43	4.5432	0.53456		
	High diploma	2	4.8889	0.15713		
Positioning patient according to the type of surgery.	Diploma	55	4.0800	0.79218	0.068	0.934
	B.A	43	4.0844	0.74161		
	High diploma	2	4.2000	0.56569		
Counts in surgery and samples- preparing.	Diploma	55	4.6909	0.74161	0.347	0.707
	B.A	43	4.6444	0.63458		
	High diploma	2	5.0000	0.00000		
Using of homeostasis devices.	Diploma	55	4.0727	0.80214	1.953	0.147
	B.A	43	3.6889	0.89968		
	High diploma	2	4.0000	1.41421		
Wound management	Diploma	55	4.3545	1.16428	0.260	0.772
	B.A	43	4.2944	0.61931		
	High diploma	2				
Reporting errors	Diploma	55	3.4455	0.68109	0.497	0.610
	B.A	43	3.5111	1.18702		
	High diploma	2	4.6250	0.53033		
Infection control	Diploma	55	3.7485	0.84673	1.291	0.280
	B.A	43	3.5741	1.02958		
	High diploma	2	4.0000	0.23570		

Table (5.23) shows that there are no significant differences between educational levels in the applications of quality standards.

**Table (5.24)** Participants' application of quality standards according to years of experience (ANOVA).

Quality standards	Years of experience	Numbers	Means	standard deviation	( F )	Sig.*
Nursing assessment	1-5	62	3.5027	1.27270	0.505	0.605
	6-10	21	3.4127	0.77749		
	11and more	17	3.7647	0.83554		
Cleaning and sterilizing surgical instruments	1-5	62	4.2500	1.00307	0.016	0.984
	6-10	21	4.2381	0.75198		
	11and more	17	4.2941	1.31171		
Preparation for the surgery	1-5	62	4.5842	0.52423	0.406	0.667
	6-10	21	4.4921	0.60509		
	11and more	17	4.6405	0.39583		
Positioning patient according to the type of surgery.	1-5	62	4.1161	0.88525	1.895	0.156
	6-10	21	3.6857	1.11637		
	11and more	17	4.0706	0.44125		
Counts in surgery and samples-preparing.	1-5	62	4.6129	0.70953	0.511	0.601
	6-10	21	4.8095	0.40237		
	11and more	17	4.6471	1.22174		
Using of homeostasis devices.	1-5	62	3.9516	1.20691	2.160	0.121
	6-10	21	3.3810	1.35927		
	11and more	17	4.0588	0.74755		
Wound management	1-5	62	4.3306	0.66031	0.772	0.465
	6-10	21	4.1667	0.76376		
	11and more	17	4.4265	0.55737		
Reporting errors	1-5	62	3.3266	1.52142	0.409	0.666
	6-10	21	3.1905	1.63918		
	11and more	17	3.6176	1.03122		
Infection control	1-5	62	11.0000.	3.39720	0.182	0.834
	6-10	21	10.5238	2.60037		
	11and more	17	10.9412	2.77197		

Table (5.24) shows that there are no significant differences between experience level of nurses and quality standards application

**Table (5.25): Participants' application of quality standards according to age (ANOVA).**

<b>Quality standards /Age</b>	<b>Means</b>			<b>( F)</b>	<b>Sig.*</b>
	<b>18-30</b>	<b>31-40</b>	<b>41 and more</b>		
Nursing assessment	3.3841	3.6886	3.5625	0.780	0.461
Cleaning and sterilizing surgical tools	4.3261	3.9737	4.7188	3.463	0.035*
Preparation for the surgery	4.5700	4.5731	4.5903	0.009	0.991
Positioning patient according to the type of surgery.	4.0000	3.9737	4.1750	0.300	0.742
Counts in surgery and samples-preparing.	4.6522	4.6842	4.6250	0.037	0.964
Using of homeostasis devices.	3.8261	3.8947	3.8125	0.043	0.958
Wound management	4.1848	4.4211	4.4219	1.584	0.210
Reporting errors	3.1087	3.6447	3.3281	1.398	0.252
Infection control	10.8913	10.5789	11.6250	0.627	0.537

Table (5.25) shows that there were significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of application of standard: Cleaning and sterilizing surgical tools attributed to age. Table (5.26) shows the result of using LSD Test (Least Significant Difference Test).

**Table (5.26): Least Significant Difference Test for comparing differences of quality standards' application means by OR nurses attributed to age.**

<b>Variables</b>		<b>Differences of means</b>	<b>Sig*</b>
18-30	31-40	0.35240	0.105
	41 and more	0.39266	0.172
31-40	18-30	0.35240	0.012
	41 and more	0.74507*	0.172
41 and more	18-30	0.39266	0.172
	31-40	0.74507*	0.012

Table (5.26): shows that there were significant differences in the application of cleaning and sterilizing surgical tools standard between age groups (18-30), (31-40) and (41 and more) in favor of (41 and more).

**Table (5.27): participant's application of quality standards according to the gender (t-test).**

Quality standards	Gender	N	Mean	Std. Deviation	t	Sig*
Nursing assessment	Male	69	3.6184	0.93764	0.825	0.411
	Female	31	3.7849	0.92616		
Cleaning and sterilizing surgical tools	Male	69	4.2536	0.88958	0.426	0.671
	Female	31	4.3387	0.99488		
Preparation for the surgery	Male	69	4.5137	0.52293	2.249*	0.028*
	Female	31	4.7384	0.43181		
Positioning patient according to the type of surgery.	Male	69	4.0232	0.79597	1.147	0.254
	Female	31	4.2129	0.68884		
Counts in surgery and samples- preparing.	Male	69	4.5942	0.77305	1.602	0.112
	Female	31	4.8387	0.52261		
Using of homeostasis devices.	Male	69	3.9420	0.95308	0.601	0.549
	Female	31	3.8065	1.22255		
Wound management	Male	69	4.2754	0.63759	1.208	0.230
	Female	31	4.4435	0.65736		
Reporting errors	Male	69	3.3732	1.27087	1.227	0.223
	Female	31	3.7016	1.15906		
Infection control	Male	69	10.7681	3.22283	0.580	0.563
	Female	31	11.1613	2.92229		

Table (5.27) shows that there are no significant differences between male, and female in the application of quality standards except for the preparation for surgery,  $p < 0.028$ .in favor to Female.

**Table (5.28): Participant's application of quality standards according to the numbers of operating rooms in the ward (t-test).**

Quality standards	Operating rooms	N	Mean	Std. Deviation	T	Sig*
Nursing assessment	1-3	80	3.6187	1.13045	1.634	0.106
	8-12	20	3.1667	1.00292		
Cleaning and sterilizing surgical tools	1-3	80	4.3875	0.90699	2.717*	0.008*
	8-12	20	3.7250	1.21909		
Preparation for the surgery	1-3	80	4.6361	0.48026	2.428*	0.017*
	8-12	20	4.3278	0.61015		
Positioning patient according to the type of surgery.	1-3	80	4.1900	0.56380	4.161*	0.000*
	8-12	20	3.3300	1.48434		
Counts in surgery and samples- preparing.	1-3	80	4.6750	0.79197	0.389	0.698
	8-12	20	4.6000	0.68056		
Using of homeostasis devices.	1-3	80	3.8250	1.26065	0.418	0.677
	8-12	20	3.9500	0.88704		
Wound management	1-3	80	4.3938	0.65092	2.504*	0.014*
	8-12	20	3.9875	0.64111		
Reporting errors	1-3	80	3.5750	1.26441	3.242*	0.002*
	8-12	20	2.4375	1.87412		
Infection control	1-3	80	10.7375	3.24035	0.976	0.331
	8-12	20	11.5000 0	2.58538		

Table (5.28) shows that there were significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of application of the following standards: Cleaning and sterilizing surgical tools, Preparation for the surgery, positioning patients according to the type of surgery, wound management, reporting errors and numbers of operating rooms in favor to 1-3 rooms.

**Table (5.29) Participants' application of standards according to number of nurses (ANOVA)**

Quality standards / No. of nurses in the operation ward	Means			( F)	Sig.*
	4-8	9-12	13 and more		
Nursing assessment	3.4333	3.3710	306667	0.753	0.474
Cleaning and sterilizing surgical tools	4.6750	4.0968	4.1837	2.308	0.105
Preparation for the surgery	4.8111	4.5197	4.5125	2.674	0.074
Positioning patient according to the type of surgery.	4.2500	4.0387	3.9102	1.043	0.356
Counts in surgery and samples- preparing.	4.8000	4.7097	4.5714	0.718	0.490
Using of homeostasis devices.	3.0500	3.9355	4.1224	6.513	0.002*
Wound management	4.6125	4.1613	4.2857	2.982	0.055
Reporting errors	3.7750	3.1210	3.3163	1.232	0.296
Infection control	11.3500	9.5161	11.5714	4.711	0.011*

Table (5.29) shows that there were significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of standards application: using of homeostasis devices, infection control and number of nurses in OR ward. Table (5.29) shows the result of using LSD Test (Least Significant Difference Test).

**Table (5.30) Least Significant Difference Test for comparing the means of using homeostasis devices standard's application by OR nurses attributed to numbers of nurses in the OR ward.**

Variables		Differences of means	Sig*
4-8	9-12	0.88548*	0.008
	13 and more	1.07245*	0.001
9-12	4-8	0.88548*	0.012
	31 and more	0.18697	0.172
13 and more	4-8	1.07245*	0.172
	9-12	0.18697	0.012

Table (5.30): shows that there were significant differences in the application of using homeostasis devices standard between numbers of nurses in the OR ward groups (4-8), (9-12), (13 and more) in favor of (4-8).

**Table (5.31) Least Significant Difference Test for comparing the means of infection control standard's application by OR nurses attributed to numbers of nurses in the OR ward.**

<b>Variables</b>		<b>Differences of means</b>	<b>Sig*</b>
4-8	9-12	1.83387	0.036
	13 and more	0.22143	0.782
9-12	4-8	1.83387	0.036
	31 and more	2.05530	0.004
13 and more	4-8	0.22143	0.782
	9-12	2.05530	0.004

Table (5.31): shows that there were significant differences in the application of infection control standard between numbers of nurses in the OR ward groups (4-8), (9-12) in favor of (4-8). And between numbers of nurses in the OR ward groups (9-12), (13 and more) in favor of 13 and more.

#### **5.4.3 Findings related to hypothesis three:**

There are no significant differences at ( $\alpha \leq 0,05$ ), related to academic qualifications, gender, age, operation rooms, number of nurses in the ward and years of experience in the application of performance standards among nurses working in OR wards at Governmental Hospitals in the West Bank.

**Table (5.32):Participants' application of performance standards according to academic qualifications (ANOVA)**

Performance standards	Academic qualifications	N	Mean	Std. Deviation	F	P
Quality Practice	Diploma	55	2.9455	1.13624	0.399	0.672
	B.A	43	2.7721	1.23642		
	High diploma	2	3.6000	0.84853		
Education	Diploma	55	3.0182	1.09698	0.530	0.590
	B.A	43	2.6899	1.39802		
	High diploma	2	3.6667	1.41421		
Professional practice evaluation	Diploma	55	3.4066	1.01381	0.707	0.496
	B.A	43	3.4101	1.01298		
	High diploma	2	4.1818	1.15708		
Collaboration	Diploma	55	2.6242	0.90006	1.181	0.311
	B.A	43	1.9070	1.54359		
	High diploma	2	3.3333	0.47140		
Ethics	Diploma	55	3.9909	0.90006	0.670	0.514
	B.A	43	3.8837	1.19317		
	High diploma	2	4.7500	0.35355		
Resources utilization	Diploma	55	3.3864	1.15050	0.738	0.481
	B.A	43	3.4593	1.22951		
	High diploma	2	4.0000	1.41421		
Leadership	Diploma	55	3.3418	1.01593	0.385	0.682
	B.A	43	3.3674	1.07520		
	High diploma	2	3.7000	1.27279		
Total	Diploma	55	3.2956	0.92004	0.629	0.535
	B.A	43	3.1821	0.98601		
	High diploma	2	3.9571	3.9571		

Table (5.32) shows that there are no significant differences between academic levels in all standards of performance and in the total degree; F= 0.629 and p. 0.535 which is > 0.05.

**Table (5.33): Participants' application of performance standards according to years of experience (ANOVA)**

Performance standards/Years of experience	Means			( F )	Sig.*
	1-5	6-10	11 and more		
quality Practice	2.8548	2.4000	2.9294	1.069	0.347
Education	3.0538	2.0952	2.6471	4.151*	0.019*
Professional practice Evaluation	3.4370	3.1342	3.3422	0.578	0.563
Collaboration	2.4032	1.8413	1.4510	2.998	0.055
Ethics	3.8387	4.0238	3.8088	0.252	0.778
Resources utilization	3.3992	3.1905	3.2500	0.240	0.787
Leadership	3.3710	3.1524	3.1294	0.477	0.622
Total	3.2645	2.9401	3.0739	0.835	0.437

Table (5.33) shows that there were significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of standard application: education attributed to years of experiences. Table (5.34) shows the result of using LSD Test (Least Significant Difference Test).

**Table (5.34): Least Significant Difference Test for comparing the means of education standard's application by OR nurses attributed to years of experiences.**

Variables		Differences of means	Sig*
1-5	6-10	0.95853*	0.005
	11 and more	0.40670	0.269
6-10	1-5	0.95853*	0.005
	11 and more	0.55182	0.208
11 and more	1-5	0.40670	0.269
	6-10	0.55182	0.208

Table (5.34) shows that there were significant differences in the application of education standard's using between years of experience groups (1-5), (6-10), (11 and more) in favor of (1-5).

**Table (5.35): Participants' application of performance standards according to age (ANOVA)**

Performance standards /Age	Means			( F )	Sig.*
	18-30	31-40	41 and more		
quality Practice	2.8609	2.6000	2.9250	0.525	0.593
Education	2.8623	2.5526	3.1042	1.045	.356
Professional practice	3.3182	3.3541	3.4773	0.120	0.887
Evaluation					
Collaboration	2.2391	2.1404	1.7500	0.574	0.565
Ethics	3.7935	4.0592	3.6563	0.973	0.382
Resources utilization	3.3370	3.3224	3.3281	0.001	0.999
Leadership	3.3609	3.2895	3.0500	0.442	0.644
Total	3.1839	3.1414	3.1607	0.017	0.983

Table (5.35) shows that there are no significant differences between variable levels in all standards of performance and in the total degree  $F = 0.017$  and  $p= 0.983$  which is more than 0.05.

**Table (5.36) :Participants' application of performance standards according to Gender (t-test)**

Performance standards	Gender	N	Mean	Std. Deviation	t	N
quality Practice	Male	69	2.7159	1.39132	0.629	0.531
	Female	31	2.8968	1.17855		
Education	Male	69	2.7295	1.45665	0.582	0.562
	Female	31	2.9032	1.19317		
Professional practice evaluation	Male	69	3.4677	0.97841	0.330	0.742
	Female	31	3.3988	0.93940		
Collaboration	Male	69	2.5314	1.16501	0.553	0.581
	Female	31	2.3871	1.29414		
Ethics	Male	69	3.9130	0.96998	0.950	0.344
	Female	31	4.1129	0.97860		
Resources utilization	Male	69	3.3877	1.11436	0.967	0.336
	Female	31	3.6210	1.11779		
Leadership	Male	69	3.3913	0.96066	0.346	0.730
	Female	31	3.4645	1.02162		
Total	Male	69	3.2915	0.89247	0.267	0.790
	Female	31	3.3429	0.88298		

Table (5.36) shows that there are no significant differences between male and female in the performance standards application and the total degree;  $t = 0.267$  and  $p. 0.790$  which is  $> 0.05$

**Table (5.37): Participants' application of performance standards according to number of operation rooms (t-test)**

Performance standards	Operation rooms	N	Mean	Std. Deviation	t	Sig*
quality Practice	1-3	80	2.9425	1.09692	2.649*	0.009*
	8-12	20	2.0900	1.88230		
Education	1-3	80	2.9625	1.18831	2.683*	0.009*
	8-12	20	2.0667	1.82446		
Professional practice evaluation	1-3	80	3.5375	0.88142	3.411*	0.001*
	8-12	20	2.6364	1.59053		
Collaboration	1-3	80	2.0750	1.61391	0.614	0.541
	8-12	20	2.3167	1.40373		
Ethics	1-3	80	4.0000	1.06883	2.369*	0.020*
	8-12	20	3.3625	1.10761		
Resources utilization	1-3	80	3.5656	1.07749	3.896*	0.000*
	8-12	20	2.3875	1.64931		
Leadership	1-3	80	3.3350	1.17518	0.899	0.371
	8-12	20	3.0800	0.94791		
Total	1-3	80	3.3050	0.89709	2.801*	0.006*
	8-12	20	2.6000	1.37205		

Table (5.37) shows that there were significant differences at the level of ( $\alpha \leq 0.05$ ) between the means of application of the following standards: quality Practice, Education Professional practice evaluation, Ethics, Resources utilization and in the total score attributed to the number of operation room in favor to 1-3 rooms.

**Table (5.38): Participants' application of performance standards according to number of nurses (ANOVA)**

Performance standards/Number of nurses in the operation ward	Means			( F )	Sig.*
	4-8	9-12	13 and more		
quality Practice	3.1400	2.4000	2.8571	2.140	0.123
Education	3.0667	2.5699	2.8027	0.798	0.453
Professional practice Evaluation	3.7455	3.0528	3.3915	2.475	0.089
Collaboration	2.0000	1.4194	2.6190	6.209*	0.003*
Ethics	4.2375	3.5000	3.9592	3.155*	0.047*
Resources utilization	3.8375	2.8790	3.4082	3.706*	0.028*
Leadership	3.7700	2.7032	3.4531	7.269*	0.001*
Total	3.5214	2.7594	3.2741	4.025*	0.021*

Table (5.38) shows that there were significant differences at the level of ( $\alpha \leq 0.05$ ) between the application means of the following standards: Collaboration, Leadership, Ethics, Resources utilization and in the total score attributed to the number of nurses. Table (5.39) showed the result of using LSD Test (Least Significant Difference Test).

**Table (5.39): Least Significant Difference Test for comparing the means of performance standard's application by OR nurses attributed to the number of nurses in OR wards.**

Performance standards	Variables		Differences of means	Sig*
Collaboration	4-8	9-12	0.58065	0.178
		13 and more	0.61905	0.122
	9-12	4-8	0.58065	0.178
		13 and more	-1.19969-*	.001
	13 and more	4-8	0.61905	.122
		9-12	-1.19969-*	.001
Ethics	4-8	9-12	0.73750*	.019
		13 and more	0.27832	.333
	9-12	4-8	0.73750*	.019
		13 and more	0.45918	.066
	13 and more	4-8	0.27832	.333
		9-12	0.45918	.066
Resources utilization	4-8	9-12	0.95847*	.009
		13 and more	0.42934	.202
	9-12	4-8	0.95847*	.009
		13 and more	0.52913-	.070
	13 and more	4-8	0.42934	.202
		9-12	0.52913-	.070
leadership	4-8	9-12	1.06677*	0.001
		13 and more	0.31694	0.266
	9-12	4-8	1.06677*	0.001
		13 and more	0.74984*	0.003
	13 and more	4-8	0.31694	0.266
		9-12	0.74984*	0.003

Table (5.39) shows that there were significant differences in performance standards application (Collaboration, Leadership, Ethics, Resources utilization) between the number of nurses in the ward groups (4-8),(9-12) and (13 and more ) in favor to (4-8).

## **Summary**

This chapter includes the demographic variables of the participants, data related to ORs characteristics and the participants' application of quality standards and nursing performance. In addition the findings related to research questions and the study hypotheses are presented.

## **Chapter six**

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### **Discussion of Findings**

#### **Introduction**

This chapter includes analysis of the study findings in relation to previous studies. The characteristics of operation room wards and operating room nurses in the Governmental Hospitals in the West Bank are included in the discussion. Furthermore, relationships between the independent variables and the quality standards in addition to the standards of performance of perioperative nursing care are discussed in reference to the literature.

#### **6.1 Demographic data of OR nurses**

In relation to OR nurses academic level, 2% of OR nurses have high diploma because there was only one university (Al Quds University) that provided perioperative nursing program from 1993-1999 and after that it was closed and no similar programs were established till now. Moreover, training opportunities abroad are very limited for nurses in MOH Hospitals and very expensive.

Regarding training periods at OR ward, the results showed that 46% of OR nurses had training for 1-3 months ( $n=46$ ), 32% of them did not receive any training ( $n=32$ ). OR nurses mentioned that the reasons for the lack of training were; first work pressure and second the lack of interest from leaders in OR wards to provide education and training programs.

According to the years of experience, results showed that 62% of OR nurses have less than 6 years of experience. The high numbers of new graduates from local universities in West Bank can explain this. Moreover, most hospitals have expanded their services in OR, which required hiring more new graduate nurses.

In relation to the age of OR nurses, the majority of respondent's age ranges between 26-30 years old (65.4%). This result could be explained by the following: first, the nurses with long experiences in the hospitals prefer to move to public clinics so as to get rid of evening and night shift duties, this deployment gives a chance for new graduate nurses to be hired by hospitals. Second reason, is the recent policy of PMOH for increasing number of health care providers in its effort to reform the health sector in Palestine which necessitates

increasing hospitals staffing with different types of employees among nursing staff. Third reason is related to the Palestinian Civilian Service law which gives the chance for early retirement of (50s) for females or after 20 years of service, so many nurses now are scheduled on the program of retirement according to this law, and the MOH starts to employ new graduates.

Female nurses composed (69%) from total OR nurses in the governmental hospitals; this could be related to cultural considerations in the Palestinian society. Because the female patients feel more comfortable in the presence of female nurses and it is sometimes unacceptable culturally for the presence of male nurses in these units. Moreover, female nurses preferred to work in labor, post natal, neonatal and women surgical and medical wards.

According to the results 75% of OR nurses mentioned the OR's quality guidelines are not available and 60 % are applying these standards.

However, JCI standards for hospitals indicate that all hospital departments should establish their own quality control programs and procedures should be in place, followed, and documented (JCI 2008).

Results also showed that the main reason that prevents applying of quality guideline is the work overload, then the absence of education and training. These results might have serious implications on patient's safety.

Peter (2003) indicated that higher patient-to-nurse staffing ratios are associated with higher mortality rates and greater incidence of medical complications and errors, lower job satisfaction, and more burnout among nurses.

## **6.2 Application of quality standards by OR nurses**

The implementation of perioperative nursing standards contributes to the continuous improvement of safe patient's care and perioperative registered nursing practice. However, standards assist the perioperative registered Nurse in attaining and maintaining competence in the performance of quality patient's care, defining safety measures for patients and the health care team, providing a baseline and tool for measurement when evaluating perioperative registered nursing practice, and providing a consistent reference base for programs such as orientation, training programs in patient's safety, infection control research, and formal perioperative post basic education programs (ORNAC, 2009).

### **6.2.1 Standard of nursing assessment**

Nursing assessment is an important role for all nurses, and through assessment the nurse could plan for patient's care. In this study the total score of OR nursing assessment score was moderate (63.2%) this could be related to items 1, 3 and 6 (OR nurses don't assess the patient in OR ward according to the checklist that is used in governmental hospitals, nurses don't insure the patient's identity from patient him / herself, nurses don't introduce all surgical team in operating room to the patient) as shown in table (5.4). OR nurses in governmental hospitals know that the assessment should be done according to the checklist, but they don't have enough time to do that due to the work overload, and they don't have the training to learn how to make the assessment in proper way. However, this is a major safety issue that needs to be seriously taken in consideration. WHO has undertaken a number of global and regional initiatives to address surgical safety. The global initiative for emergency and essential surgical care and the guidelines for essential trauma care focused on access and quality. The second global patient's safety challenge: safe surgery saves lives address the safety of surgical care. The World alliance for patient's safety initiated work on a checklist in January 2007. This checklist is called the WHO Safe Surgery Checklist. The checklist has three phases of an operation, each specific period in the normal flow of work: Before the induction of anesthesia ("sign in"), before the incision of the skin ("time out") and before the patient leaves the operating room ("sign out"). In each phase, a checklist coordinator must confirm that the surgery team has completed the listed tasks before proceeding with the operation. In time out phase, OR nurse should reensure in operating room and before starting the surgery on the right name, right surgical procedure and right site of surgery. This action ensures the safety of the patient, contributes in preventing errors that may harm patient under surgery and improve quality of care.

### **6.2.2 Standard of cleaning and sterilizing surgical instruments.**

The results of this study showed that the level of standard of nursing care among OR nurses was moderate (81.3%). The lowest percentage assigned to item 7(Most of OR nurses didn't immerse the surgical tools in water and detergent substances for two minutes at least). The reason for this moderate application of this standard is the lack of training about aseptic techniques and perioperative nursing responsibilities. The responsibility for

reducing the number of microorganisms in the operating room to the lowest level possible is shared by all members of the surgical team and personnel employed in the department. However, the perioperative nurse assumes major responsibility for ensuring that each patient is provided with as aseptic environment as possible and that risk for wound infection is reduced to its lowest potentiality (Spry, 2005, p 80).

#### **6.2.3 Standard of preparation for surgery**

In this study, rating of preparation standard for surgery was high (89.36%) as shown in table (5.6). The perioperative nurse is responsible for preparing a sterile field for operation and for maintaining aseptic practice of all members of the surgical team. Appropriate implementation of this responsibility requires an understanding of infection sources, transmission, and the methods to reduce or eliminate microorganisms in the surgical setting. The perioperative nurse must have in-depth knowledge of principles and practices associated with attire, aseptic technique, gowning, gloving and draping (AORN, 2010). These activities are ensuring that each patient is provided with aseptic environment as possible, and that risk for wound infection is reduced to its lowest potentiality. ( Spry, 2005).

#### **6.2.4 Standard of positioning patient according to the type of surgery**

In this study rating the standard of positioning patient according to the type of surgery was moderate (75,45%) this could be related to items 20 and 21( There is no written instructions about transferring patients to and from the OR ward, there is no commitment in keeping patient's bed outside operating room) as showed in table (5.7). This is low commitment is due to the lack of training and non-availability of written instructions about positioning patient and keeping patient's bed outside operating room. Desired patient's outcomes related to patients' positioning are stated in the following AORN outcomes standards (the patient is free from injury related to positioning) and (the patient's skin integrity is maintained). (AORN 1995, P125& 126)

Some of the complications that can arise from improper positioning are postoperative musculoskeletal pain joint dislocation, peripheral nerve damage, skin break down and cardio-respiratory compromise (Spry 2005). So a protocol of positioning patients should be written and should be available in OR ward and nurses should be trained on the protocols to insure that each preoperative nurse is practicing positioning on a perfect manner and to decrease the potential risks on the patient.

### **6.2.5 Standard of using of homeostasis devices**

The results of current study showed that the application of “using of homeostasis devices” standard by OR nurses was moderate (79.2%). This result could be related to item 29 (There is no written protocol for dealing with traditional and modern hemostasis devices) as shown in table (5.9). The perioperative nurse must be able to use homeostasis devices and must be knowledgeable regarding the principles of applications and the appropriate safety precautions (spry, 2005). The principles of applications and safety precautions should be written in OR ward and training programs should be provided for OR nurses to be oriented with using of homeostasis devices. And nurses should contribute to prevent the potential risk or injury that may result of homeostasis devices.

### **6.2.6 Standard of wound management**

In this study rating wound management standard was moderate (78.8%).This result may be related to items 26 and 28. Some of OR nurses were not oriented with all types of surgical instruments and the other modern machines that can be used in closing the surgical wound and Others didn't follow the international sterilization techniques in closing surgical wound. These results are due to the lack of knowledge about international sterilization techniques in closing surgical wound and there is lack of update about modern machines that can be used in closing the surgical wound. Workshops should be implemented to provide OR nurses with needed knowledge. Without applying international sterilization techniques in closing surgical wound, patient will be at a risk of wound infection and poor surgical outcomes. Leaders in health organizations must be interested in acquiring knowledge about aseptic techniques, suture materials, and surgical techniques that may influence wound healing (Spry, 2005).

### **6.2.7 Standard of reporting errors**

The results of current study showed that the application of reporting errors standard by OR nurses was low (58. 68%). 39% the percentage of availability of written protocols for dealing with mistakes in OR wards. There is low interest in reporting mistakes in the surgical procedures immediately. Mistakes occurring in the surgical operations are not discussed, no procedures are taken into consideration in order to avoid repeating any error, so OR nurses didn't report errors that occur. The National Association for Healthcare

Quality (NAHQ) 2012, called on healthcare organizations to initiate the application of quality and error reporting. In order to strengthen patient's safety protection, minimize medical errors and enhance the overall quality of patient's care. Healthcare organizations should set up clinical staff to be accountable for achieving meaningful quality improvements and reporting potential safety risks.(NAHQ) also called for educating employees continually about expectations for timely reporting of quality and safety concerns, as well as establishing explicit policies that support error reporting and penalize reprisals in response to reporting.

#### **6.2.8 Standard of Infection control**

This study showed that the application of infection control standard by OR nurses was moderate (77, 78%). The lowest percentage was assigned to item 8 (Written protocol for preventing infection is not available in OR ward) Abd El-Ghalil (2007) found that nurses in the Governmental Hospitals have lack of knowledge in infection control issues related to lack of in-service educational courses and lack of supervision from infection control committee. Also Potter and Perry (2004) stated that infection control information and training of nurses should be based on standards and guidelines of universal precautions along with an explanation of its content. Infection prevention in the operating room includes practices of aseptic technique, requirements for surgical attire, sterilization of instruments and equipments, staff and patient skin preparation, creation and maintenance of a sterile field, and control of the environment. A major responsibility of the perioperative nurse is to implement and ensure practices that are designed to prevent infection (Spry, 2005). Some aseptic practices are prepared by regulatory associations such as occupational safety and health administration. Others are set by standard setting bodies such as the Association of Operating Room Nurses (AORN) and the Association for Advancement of Medical Instrumentation (AAMI). These associations recommended that aseptic practices are critical components of infection control, and each perioperative nurse should be oriented with these practices. Therefore, written protocols, workshops, educational programs and supervision of these practices must be implemented to increase the level of infection control in OR words at MOH Hospitals.

### **6.3 Demographic Variables and Application Standards of Quality care**

The results showed that in general older nurses (41 or more years) applied standards more than younger nurses  $p < 0.035$ , and they are more qualified and educated. It seems that older nurses gained experiences that enable them to perform duties better than younger nurses, especially in cleaning and sterilizing surgical tools. Mosa (2001) found that the nurses with diploma degrees had less performance in the medical surgical wards. Also, results showed that female OR nurses applied standards of preparation for surgery more than male OR nurses  $p < 0.028$ .

The result of this study showed that there was a negative relationship between the number of nurses in the ward and quality of care. Also there was a negative relationship between the number of operating rooms in the ward and quality of care. The low number of nurses and the low number of operating rooms appears in the small hospitals that did not have work load. So, the study showed that the quality of care increased when there was low work load.

Pallas, et al. (2004) found that there is a relationship between staffing and improving quality of care among hospital nurses. Gitlow (2001) mentioned that among the barriers of quality in health organizations is the shortage in human resources. Bolton (2003) found that there is a relationship between the staffing and the quality of nursing care from the perception of patients in 40 hospitals in the U.S.A. Moreover, Mustafa (1999) found that there is a relationship between the staffing and the quality of care in the hospitals studies. Related to work load, every additional patient added to a hospital staff nurse's workload is associated with the increase in hospital mortality with seven percent (Aiken, et al, 2007). The over workloads in the perioperative setting, including on call system, are the result of the shortage of nurses. This may lead to increased absenteeism and high rates of nurse burnout that more than the norm for healthcare workers. Nurses usually cope with increased stress and burnout by calling in sick, and patient's safety is compromised by the effect of high nursing turnover rates. Several studies demonstrate how increased workload results in compromised patient's safety and unfinished tasks. More importantly, these studies assert that the nurses' assessments of quality should provide a critical overview of the process of care (Scudder, Marilyn and Edmunds. 2008).

Hospitals should follow up strategies to reduce workload burden. AORN Position Statement: "Safe Work/On-call Practices" suggests that there are potential negative consequences of sleep deprivation and sustained work hours. So, adequate rest and recuperation periods are essential to patients and perioperative personnel safety. The AORN statement also identifies positive steps that could be taken (Board on Health Care Services, 2004)

- Perioperative registered nurses should not be required to work in direct patient care for more than 12 consecutive hours in a 24-hour period and not more than 60 hours in a 7-day period. Sufficient transition time is required for appropriate patient handoff and staff relief. Under extreme conditions, exceptions to the 12-hour limit may be required (eg, disasters). Organization policy should outline exceptions to the 12-hour limitation. All worked hours (ie, regular hours and call hours worked) should be included in calculating total hours worked.
- Off-duty periods should be inclusive of an uninterrupted 8-hour sleep cycle, a break from continuous professional responsibilities, and time to perform individual activities of daily living.
- Arrangements should be made, in relation to the hours worked, to relieve a perioperative registered nurse who has worked on-call during his or her off shift and who is scheduled to work the following shift to accommodate an adequate off-duty recuperation period.
- The numbers of on-call shifts assigned in 7-days period depend on the type of facility and should be coordinated with the number of sustained work hours and the adequate recuperation periods mentioned above.
- An individual's ability to meet the anticipated work demand should be considered for on-call assignments. Limited research indicates that older people are more likely than younger people to be adversely affected by sleep deprivation; however, there is no specific research to the effects of on-call assignment and a person's age.
- Orientation to on-call should be included in the orientation process and should be accomplished using the preceptor system (i.e. having an experienced nurse serve as an immediate resource for the orientee). The time frame depends on the type of procedures and the scope of services.
- Perioperative registered nurses should uphold their ethical responsibility to patients and themselves to arrive at work adequately rested and prepared for duty.

- Healthcare organizations should support perioperative RNs in changing cultural attitudes so that fatigue is recognized as an unacceptable risk to patient and worker's safety rather than a sign of a worker's dedication to the job. (Scudder, Edmunds. 2008, p25).

## **6.4 Application standards of performance by OR nurses**

The ANA Standards of professional Performance (2004) describes a high level of behavior in the professional role. These standards are including activities related to quality of care, performance appraisal, education, collegiality, ethics, collaboration, research, and resource utilization. This document serves as objective guidelines for nurses to be accountable for their actions, their patients, and their peers. Also the standards provide a method to assure clients are receiving high-quality care, the nurses know exactly what is necessary and what is important to provide nursing care, and can determine whether the care meets the standards. In relation to this study findings, results showed that the total mean of performance standards application scores were low (54%).

Results were affected mostly by the answers of questions that are concerned with evaluation of professional practices ( 58.93%), resources utilization (58.25%), leadership (57.1%), education (44.58%), quality of practices (44.3%), and collaboration (28.8%). These results were due to the absence of education and training programs, and work pressure.

### **6.4.1 Quality of practice standard**

The results of this study showed that the application of practice standard's quality is Low (44.3%) as shown in table (5, 14). OR nurses didn't apply any component of practice standards, this result may be due to the work overload and the idea of engaging in improving quality in the ward is still new in all governmental hospitals. In fact, the idea of quality improvement started in governmental hospitals in 2008 and the activities of quality improvements are limited to the managers, the decisions that were made by managers were rarely transmitted to nurses and other technicians and when it transmitted, nurses didn't have the time to be familiar with these decisions. Marquis& Hutson, (1996) mentioned that the key component of nursing practices is the nurse's ability to process information, to make sound judgment upon which professional practice can be used. Also they promoted a holistic approach to patient's care by taking in consideration the physiological, psychological and social needs of patient.

Clinical nurses may choose to grasp the challenge to pursue quality, set standards and monitor their care in realistic way, or they may allow others to regulate their practices. High quality of care is responsibility of everyone involved in the process, the recipients of care, the providers and the professional staff (Marquis & Hutson, 1996).

For the continuous quality improvement concept to succeed, quality must be a priority at all levels within organizations. Staff must be encouraged to improve care. There must be multidisciplinary and interdisciplinary reviews of systems and services with efforts focused on the improvement of process and systems (Wise, 1995).

#### **6.4.2 Educational Standard**

The results of the study showed that the application of educational standard for OR nurses were low (44.58%) as shown in table (5. 15). There is very low commitment in the application of all components of educational standards and this result may be due to the shortage of staffing and work overload. It is clear that OR nurses didn't have time to develop and attend up educational and training programs especially when there were just 2 OR nurses in each operating room, one scrub and the other is circulate turn on long list of surgeries. Also, there are no perioperative educational programs in all universities in the West Bank. According to MOH, few numbers of nurses were emitted outside the West Bank by MOH every 2 or 3 years for training and educational programs was organized by Donor countries, but it is not enough because of the few numbers of nurses that were nominated (1-3 nurses). JCAHO (2004) and Ward and O'Brien (2005) supported that the division of nursing ensures development of educational programs to support the delivery of high quality nursing care. The American Nurses Association (ANA, 2004) emphasized on the ongoing educational activities for nurses, because it helps in the enhancement of the practices relevant to their responsibilities, professional growth, and maintaining competency in their respective positions.

#### **6.4.3 Professional Practices' Evaluation Standards**

The results of this study showed that the level of application of professional practices' evaluation by OR nurses was low (58.93%). There was very low commitment in the application of all components of professional practices' evaluation standards as shown in table (5. 16). In all Governmental Hospitals, the professional evaluation of each OR nurse

is done by the head nurse only according to his /her personal view. There are no written professional practices standards to be followed in evaluating nurses. The evaluation is done once yearly and it is done in quick routinely manner and sometimes the nurses are participating in their evaluation. So, for these reasons OR nurses might not adhere to and appreciate the professional practices' evaluation standards. Broohhan, (1994) mentioned that because the ultimate cure and welfare of patients depend on nursing function, the assessment of nurses' performance is always needed. The frequent and continuous evaluation of nursing practice according to the criteria established in the goals of the organization can motivate nurses for better work performance. Marsland&Gissane (1992) pointed out that evaluation is the process of providing and indispensable practical tool for advancing professional nursing standards. The main purpose of this appraisal, as illustrated by Swan, et al. (1999) and Gillies (1996) is to promote the performance assessed through continuous guidance, promotion, counseling, training, termination, retention, and selection of education.

#### **6.4.4 Collaboration Standard**

The result of this study showed that the collaboration standard's application was Low (28.8%) as shown in table (5, 17), most of OR nurses don't communicate with the patient's family and the caregivers in order to provide perioperative nursing care, and don't consult with other healthcare providers for perioperative care, also, most of them didn't collaborate with family and other healthcare providers in the formulation of plan regarding the patient in the operating room. Actually, OR nurses didn't have the autonomy to provide the perioperative nursing care, they just act as assistance to the surgeon and do what surgeon order them to do during surgery and relating overall goals of care regarding the patient in the operating room, the surgeon is the responsible for patient's care plan and the nurses should do what the surgeon orders. Also, there is no time for collaboration due to the work pressure and shortage of staff, collaboration and communication are limited to the head nurse responsibilities. Lingard, et al (2004) indicated that causes of communication failure are increasing cognitive load, interrupting routine and increasing tension in the OR. Kalisch and Weaver (2009) mentioned that nursing depends on teams to carry out its mission and objectives, and when nurses work on effective teams, they are more productive and less stressed, the quality of the care they deliver is higher, there are few errors, and patients are more satisfied.

Effective health care involves teams of health care professionals, working together to bring their skills to bear on a particular health problem or patient in order to achieve health care goals. Literatures suggest that team interaction, collaboration, communication, and coordination have an important effect on the quality of nurses' work life and, more importantly, affect the quality of care and outcomes of patients (Hall, Doran, and Treuno, 2005).

#### **6.4.5 Ethics' Standard**

The results of this study showed that the application of ethics' standard was moderate (71.8%) as shown in table (5, 18). This result is related to items number 78&79, (Most of OR nurse doesn't give advices and guidance for patients and their families according to her/his responsibilities.). The reason for this low commitment, that there is no time to communicate with patients to give the needed advices due to the work pressure. Also, OR nurses didn't receive training about the responsibilities of OR nurses according to the needed advices. In addition to the culture in our community patients trust the surgeons more than nurses, so patients prefer to hear advices from her or his surgeon more than the nurse. Monterosso, et al. (2005) pointed that the primary role of the nurse is to advocate on behalf of the patients, particularly when patients are unable to decide or speak for themselves.

#### **6.4.6 Resource Utilization Standard**

The results of this study showed that the resource utilization standard's application was Low (58.25%) as shown in table (5.19). Most of OR nurses didn't assesses availability of resources and its effectiveness on patient's safety, didn't assist family in identifying and securing necessary resources and services to address health care needs, and didn't assign tasks based on the needs and conditions of the patient. The reason for this low commitment with this standard is the lack of OR nurses autonomy. The surgeons have the first and last decision about resources utilization according to the organizations which give authority and control to the physicians. Therefore, empowerment of nurses through training on which resources utilization is crucial. Joint Commission International Accreditation (2008) emphasized on the roles of nurses regarding the resource utilization

include educating patients and families about services provided by the hospitals, and the community resources and how to access them.

#### **6.4.7 Leadership Standard**

The results of this study showed that the leadership standard's application was low (57.1%) as shown in table (5. 20). OR nurses don't demonstrate a commitment to continuous lifelong learning for self and others don't coordinate and direct the care among caregivers, don't participate in professional activities, (sounds repeated) and finally, they don't use motivational strategies in encouraging and promoting others to succeed. The reason for this low commitment is the absence of education and training programs that are very important in improving leadership skills and in creating successful leaders in operating room wards. Hall, Doran, and Treunno (2005) emphasized on the fact that in order to achieve the quality of care and patients' desired outcome, the nursing profession requires leaders who can transform cultures' practices, so the essence, uniqueness, and outcomes of professional practices can be realized.

### **6.5 Demographic Variables and Performance Standards' Application**

In this study, it was found that the less experienced nurses (1-5 years) applied standard of education more than more experienced nurses. This result may be related to the fact that the new graduate nurses have information and knowledge more than older nurses that enabled them to enhance their performance. However, McLaughlin and Kaluzny (2006) emphasized that nurses learn from experience and they become capable to view their performance and develop strategies to enhance it. Moreover, Mosa (2002) found that there is a positive relationship between the performance of nurses and the years of experience for intensive care units nurses.

The study showed that OR nurses applied performance standards more when there were 1-3 operating rooms. Small hospitals that have 1-3 operating rooms have low work load. This gives them the time to apply performance standards in more efficient ways.

Also, results showed that the relationship between numbers of OR nurses and performance standards were positive. Schudder and Edmunds (2008) found that each additional patient per nurse was associated with a 7% increase in the odds of failure to rescue and a 7% increase in the likelihood of 30-days mortality. Also, each additional patient per nurse was

associated with a 23% increase in the odds of nurse burnout and a 15% increase in the odds of job dissatisfaction. The researcher documents that a high patient-to-nurse ratio is directly correlated with nurses' job-related to burnout and job dissatisfaction. Another research results indicated that the effect of staffing on patient's outcomes is highly variable across specialty units. But, when present; the relationships are inversely related, with lower staffing levels resulting in higher rates of all negative outcomes. Staffing was consistently, statistically, and inversely associated with falls, medication errors, and restraint application duration rates (Scudder, Marilyn and Edmunds. 2008). Bureau of Labor Statistics' 2012 indicated to working long hours and with inadequate staffing affects nurses' health, increasing their risk of musculoskeletal disorders (back, neck, and shoulder injuries), hypertension, cardiovascular disease, and depression. Furthermore, registered nurses had 11·610 incidents of musculoskeletal disorders, resulting in a median rate of eight days away from work. Among all healthcare practitioner and technical occupations, there were 65,050 nonfatal occupational injuries and illnesses that required a median of seven days away from work. According to Robert and Kane, an increase of one registered nurse (RN) per patient was associated with a 24 percent reduction in time spent in the intensive care unit and a 31 percent reduction in time spent in surgical units.

Ronda (2008) concluded that in long-term care facilities, patients with more direct RN time (30 to 40 minutes daily per patient) reported fewer pressure ulcers, acute care hospitalizations, urinary tract infections, and less deterioration in their ability to perform daily living activities.

## **6.6 Relationships between quality standards and performance standards**

The study results showed a significant relation between nurses' application of quality standards and their performance standards. ( $R= 0.744$ ,  $Sig=0.001^*$ ). Albanese, et al, (2010) concluded that engaging clinical nurses in the work of quality and performance improvement is essential to achieving excellence in clinical care. (Miler and Drake, 1980) concluded that standards of nursing performance can play an important role in assuring the quality of nursing care.

## **Summary**

This chapter discussed and described the findings of the study in relation to the application of quality standards and standards of perioperative nursing care performance at the

governmental hospitals in the West Bank. The results were compared with the international standards and study findings.

## **Chapter seven**

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### **Conclusions and recommendations**

#### **7.1 Conclusions**

The study employed an assessment of the quality standards and nursing performance of perioperative nursing care in operating rooms at the Governmental Hospitals in the West Bank. The compliance of OR nurses with quality standards was moderate whereas the compliance with performance standards was low. The most obstacles that prevents applying quality and performance standards is the work pressure that clearly appeared in the negative relationships between hospitals that have low numbers of rooms and low numbers of nurses and applying quality and performance standards. Also there was a positive relationship between applying performance standards and numbers of nurses in OR wards. There was no relationship between academic level, training period, training site, years of experience, and the application of quality care standards. . Whereas, there was no relationship between academic level, training periods' scientific qualification, training site, age, gender, and performance standards' application The percentage of availability of standard guideline in OR wards was low. These results reflect the dire need to increase quality culture and performance appraisal in MOH hospitals to insure qualified nurses, and thus qualified services and patient's safety. Policies and strategies should be introduced for Safety principles and efforts to improve safety in OR wards to reduce adverse events.

#### **7.2 Recommendations**

##### **7.2.1 Recommendation for policy makers**

- Regulating and controlling nursing practices in OR departments.
- Increasing numbers of OR nurses according to global recommendations about patient, nurse ratio in OR wards and according to work pressure.
- Developing and implementing a comprehensive quality assurance programs for introducing, applying, monitoring and evaluating quality standards in OR wards.
- Developing of quality standards of perioperative nursing care in all OR departments.

- All hospitals must develop policies and procedures for professional standards of perioperative nursing performance standards in all OR departments.
- Designing a system for accidents and medical errors reporting.
- Initiating the application of quality and error reporting. In order to strengthen patient's safety protection, minimize medical errors and enhance the overall quality of patient's care

### **7.2.2 Training Recommendations**

- The Ministry of Health and other stakeholders should develop and implement perioperative nursing programs.
- Developing educational programs in high diploma of perioperative nursing care and upgrading nurses' practice in perioperative care.
- Writing protocols, workshops, educational programs and supervision must be implemented to increase the level of infection control in OR wards at MOH Hospitals.

### **7.2.3 Further Research**

- Since the study was conducted in OR departments in governmental hospitals. It is crucial to conduct similar study in non-governmental health care institutions.
- Observational studies should be conducted in relation to the adherence of the international standards in OR departments in the West Bank hospitals.
- Conduct assessment studies to determine factors associated with low rate in applying standards of nursing performance by OR nurses.
- Assessment of patient's satisfaction of those who underwent surgical treatment in OR departments.

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## Appendix 1: Facilities Job paper

بسم الله الرحمن الرحيم  
Al-Quds University  
Jerusalem  
School of Public Health



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الرقم: ك ص ع 2010/٤٥٣

حضره السيد جواد البيطار المحترم  
رئيس قسم المعلومات/وزارة الصحة

الموضوع: تسهيل مهمة الطالبة أسماء عبد الحق

تحية طيبة وبعد،،

تقوم الطالبة أسماء محمد احمد عبد الحق ماجستير السياسات والإدارة الصحية / كلية الصحة العامة/ جامعة القدس  
بإجراء بحث بعنوان:  
(Assessment of Quality care standards and nursing performance in operating room in  
Government hospitals)

وهي بحاجة لمعلومات إحصائية تخص المستشفيات الحكومية كمتطلب لبحث رسالة الماجستير في الصحة العامة.  
أرجو من حضرتكم التكرم بتسهيل مهمة الطالبة وتزويدها بالمعلومات الازمة، علماً بأن هذه المعلومات خاصة للبحث  
العلمي فقط.

وتقبلوا مع فائق الاحترام،،

د. اسماعيل  
عميدة كلية الصحة العامة

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التاريخ: 2012/3/13

الرقم: د ص ع / ١٤١٢/٢٠١٢

سـ

حضره الدكتور سعيد الهموز المحترم  
مدير عام التعليم الصحي/ وزارة الصحة الفلسطينية

الموضوع: مساعدة الطالبة أسماء عبد الحق

تحية طيبة وبعد،

نقوم الطالبة أسماء عبد الحق بإجراء بحث بعنوان:

"Assessment of quality care standards and Nursing performance in operating room at the governmental hospitals".

كمتطلب للحصول على درجة الماجستير في برنامج السياسات والإدارة الصحية/ كلية الصحة العامة، وتهدف الدراسة إلى تقييم مستوى الأداء في المستشفيات الحكومية، وعمرضات وأقسام العمليات وأثناء عملهم داخل أنواع العمليات وتحديد مدى تأثير كل من العوامل الديمغرافية وعوامل أخرى تتعلق بالمشفى مثل: (ضغط العمل وعدد العمليات المبرمجة في الشهر) وعلى أداء الممرضين والممرضات، وتشمل الدراسة كلاً من: (المجمع الطبي، مستشفى الحسين، مستشفى أريحا الحكومي، مستشفى عالية، مستشفى يطا، مستشفى رفيديا، مستشفى د. ثابت، مستشفى د. سليمان خليل، مستشفى الشهيد ياسر عرفات، ومستشفى د. روشن نزال).

يتطلب هذا البحث توزيع استبانة الدراسة على الممرضين والممرضات في أقسام العمليات، وعليه نرجو من حضرتكم تسهيل مهمة الطالبة ومساعدتها في توزيع استبانة ادراستها. علماً بأن هذه الدراسة ستكون لأغراض البحث العلمي فقط.

وسيتم تزويدكم بنسخة عن النتائج بعد انتهاء الدراسة.

ونتمنى لكم التوفيق والسداد.



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## **Appendix 2**

### **A questionnaire of standards of quality care (B)**

**Dear Sir/Madam**

**We are trying to assess the standards of quality care and nurses' performance in operating room wards. Please answer the following questions and mark the appropriate answer to which degree you agree or disagree with the following variables**

**4. Always 4. Mostly 3. Sometimes 2. Rarely 0. Not applied**

#### **First part (A): the demographic data.**

A1, Academic qualifications of the nurse.		
A2, Academic qualifications and training periods in perioperative nursing		
A3, scientific qualifications and courses in perioperative nursing		
A4, Is there a committee for following up the training of nurses in operating room ward.	Yes	No
A5, The nurse's Years of experience.		
A6, Age of nurse.		
A7, Gender of nurse.	Male	Female
A8, Numbers of operating rooms in the ward.		
A9, Numbers of perioperative nurses.		
A10, Average monthly of operations.		
A11, Is there a sterilization unit in the ward	Yes	No
A12, What is the surgical specialization in the ward?		
A13, Numbers of working days in the week.		
A14. A written guideline about quality standards is available in the ward.	Yes	No
A15, If the standard guideline is available, is it	Yes	No

conducted by all nurses in the ward?		
A16, What are the obstacles that prevent applying quality standards in the ward( you can choose more than one answer)	1. Quality standards are not suitable with the ward conditions. 2. Work pressure. 3. There is no commitment by officials with quality standards.	
	A 4, There is no committee for training nurses on applying quality standards.	
	A5, There is no committee following up applying the quality standards in the ward.	

STATEMENT	Always	Mostly	Sometimes	Rarely	Not applied
<b>Standard one: Nursing assessment</b>					
<b>B1.</b> The OR nurse receives the patient in the operation ward and assesses him/her according to the checklist that is used in the Governmental Hospitals.					
<b>B2.</b> The OR nurse confirms the patient's identity from the patient him/herself.					
<b>B3.</b> The nurse is requesting the patient to confirm the surgical procedure and its site					
<b>B4.</b> The OR nurse ensures the patient's consent before entering the operating room.					
<b>B5.</b> In operating room and before starting the surgery, OR nurse reinsures on the right name· right surgical procedure and right site of surgery.					
<b>B6.</b> The OR nurse introduces all the participants in the surgery to the patient.					
<b>Standard two: Cleaning and sterilization of surgical instruments</b>					

<b>B7.</b> The OR nurse immerses the surgical tools in water and detergent for two minutes at least.	<b>Yes</b>		<b>NO</b>	
<b>B 8.</b> The OR nurse has the ability to use all types sterilization and disinfection methods.	<b>Yes</b>		<b>NO</b>	
<b>B9.</b> The OR nurse could categorize the surgical instruments according to the type of sterilization or disinfection methods.				
<b>B10.</b> The OR nurse can use the suitable sterilizing substances and devices for each surgical instrument.				
<b>Standard three: Preparation for surgical instruments</b>				
<b>B11.</b> The OR nurse adheres with surgical clothing ( head cover, eye protector, over shoes, and the mask)				
<b>B12.</b> The scrub nurses wash their hands with sterilizing substance for two minutes at least.				
<b>B13.</b> The scrub nurses take into consideration the sterilization techniques when clothing the sterile gown and sterile gloves.				
<b>B14.</b> The scrub nurse avoids touching the surgeon's skin or unsterilized clothes while assisting him in wearing sterile clothes.				
<b>B15.</b> All instruments and towels are excluded from the field of surgery when they are unsterilized.				
<b>B16.</b> OR nurse follows the sterilization techniques when positioning equipments, and any special supplies needed to the operation field.				
<b>B17.</b> The OR nurse monitors the operation field in order to maintain strict aseptic and				

sterile technique throughout the surgical procedure to reduce the risk for postoperative infection.				
<b>B18.</b> The scrub nurse remains in the surgical suite as much as possible to provide care for the patient.				
<b>B19.</b> OR nurse reports any error occurs that may contaminate the field of surgery.				
<b>Standard four: Positioning patient according to the type of surgery</b>				
<b>B20.</b> Written Instructions about transferring patients to and from the operation ward are available.		<b>Yes</b>		<b>NO</b>
<b>B21.</b> When transferring patient to OR, the bed that was used outside operating room remains outside.				
<b>B22.</b> The OR nurse is oriented to all types of positioning according to the type of surgery.				
<b>B23.</b> The OR nurse maintains patient's safety while positioning patient for surgery.				
<b>B24.</b> The OR nurse reports any error about the patient's position during surgery immediately.				
<b>B25.</b> The patient's table and OR s machines is kept ready and in good condition for any surgery.				
<b>Standard five: Accounting of surgical instruments and preparation samples</b>				
<b>B26.</b> Written protocol for surgical counting of gauze, needles and surgical tools is available in OR ward.		<b>Yes</b>		<b>NO</b>
<b>B27.</b> Written protocol for pathology sample handling (preparing and sending to lab) is		<b>Yes</b>		<b>NO</b>

available in OR ward.				
<b>2 B28.</b> OR nurse performs count procedure of gauze, needles and surgical tools before and after the surgery				
<b>Standard six: Using of Homeostasis devices</b>				
<b>B29.</b> Written protocol for dealing with traditional and modern bleeding control devices is available in OR ward.		<b>Yes</b>		<b>NO</b>
<b>B30.</b> The OR nurse is oriented with all the traditional and modern bleeding –stop devices.				
<b>Standard seven; Wound management</b>				
<b>B31.</b> The OR nurse is oriented with the different types of sutures, needles and purposes of their use.				
<b>B32.</b> The OR nurse is oriented with all types of surgical instruments and the other modern machines that can be used in closing the surgical wound.				
<b>B33.</b> The OR nurse prepares the needed sutures for surgeon and monitors the sterile field to ensure that there is no contamination				
<b>B34.</b> The OR nurse maintains sterile technique throughout the surgical procedure and wound management.				
<b>Standard eight: Reporting errors</b>				
<b>B35.</b> Written protocol for dealing with errors is available in OR ward.		<b>Yes</b>		<b>NO</b>
<b>B36.</b> Any errors in the surgical procedure are reported by OR nurse immediately.				
<b>B37.</b> Errors occurring in the surgical				

operations are discussed by the OR team				
<b>B38.</b> Several measures are taken into consideration in order to prevent error occurrence				
<b>B39.</b> All OR nurses are informed about these errors prevention and handling measures.				
<b>Standard nine: Infection control</b>				
<b>B40.</b> Written protocol for preventing infection is available in OR ward.	Yes	NO		
<b>B41.</b> There is special cleaners (housekeepers) for OR Ward	Yes	NO		
<b>B42.</b> OR ward cleaners clean all surfaces, walls and grounds every morning.	Yes	NO		
<b>B43.</b> Surgical field is usually cleaned with detergents between each surgical procedure.	Yes	NO		
<b>B44.</b> There is a commitment to wearing gloves when cleaning and dealing with contaminated substances and body secretions in OR ward.	Yes	NO		
<b>B45.</b> In OR ward, trashes are collected in special bags before disposal.	Yes	NO		
<b>B46.</b> Infected towels and sheets are collected in special bags then washed separately.	Yes	NO		
<b>B47.</b> Surgical instruments that are used with infected patients are usually immersed with germicidal substances according to the kind of the germ.	Yes	NO		
<b>B48.</b> The surgical operation of patient with contagious disease is postponed to the end.	Yes	NO		
<b>B49.</b> The nurse who suffers from infectious disease is not allowed to work in OR word until his/her recovery	Yes	NO		
<b>B50.</b> Hands are washed with water and soap	Yes	NO		

before wearing gloves.		
<b>B51.</b> Hands are washed with water and soap after taking off gloves.	<b>Yes</b>	<b>NO</b>
<b>B52.</b> Hands are washed with water and soap before and after every procedure	<b>Yes</b>	<b>NO</b>
<b>B53.</b> Samples are collected periodically from several sites in OR ward and from surgical instruments to check for any contamination.	<b>Yes</b>	<b>NO</b>

### Third Part: A questionnaire of standards of performance(C)

STATEMENT	Always	Sometimes	Rarely	Not applied
<b>Standard one: Quality of Practice</b>				
<b>C 54.</b> The OR nurse identifies quality aspects during nursing Care.				
<b>C55.</b> The OR nurse participates in developing policies and procedures for nursing practice in the ward.				
<b>C56.</b> The OR nurse uses continuous quality-improvement activities to initiate changes in nursing practice.				
<b>C57.</b> The OR nurse uses quality-improvement data to initiate health care delivery system changes as needed.				
<b>C58.</b> The OR nurse identifies indicators used to monitor quality and affect perioperative care.				
<b>Standard two: Education</b>				
<b>C59.</b> The OR nurse participates in educational activities in regard to theoretical, clinical				

knowledge and professional issues in the ward.				
<b>C60.</b> The nurse tries to gain experience in contemporary to the clinical practice in order to maintain up to date skills and knowledge				
<b>C61.</b> The OR nurse applies perioperative nursing knowledge and skills inside the operation room.				
<b>Standard three: professional practice evaluation</b>				
<b>C62</b> The OR nurse participates in performance evaluation based on weakness and strengthens analysis.				
<b>C63.</b> The OR nurse seeks and acts on constructive feedback on an ongoing basis for the purpose of professional development.				
<b>C64.</b> The OR nurse takes action to achieve professional goals identified during performance appraisal process.				
<b>C65.</b> The OR nurse is well oriented about professional practices, guidelines, instructions and policies related to OR				
<b>C66.</b> The OR nurse shares knowledge and skills with her colleagues.				
<b>C67.</b> The OR nurse provides peers with constructive feedback regarding care and practice inside the operation room.				
<b>C68.</b> The OR nurse interacts with colleagues to enhance one's own professional perioperative nursing care and practice.				
<b>C69.</b> The OR nurse contributes in and supports the creation of a healthy work environment.				
<b>C70.</b> The OR nurse contributes in creating an environment inductive to clinical learning for the nursing student.				

<b>C71.</b> The OR nurse contributes in a suitable environment of clinical learning for the care givers as appropriate.				
<b>C72.</b> The OR nurse contributes in creating an environment inductive to clinical learning for the other employees.				
<b>Standard four: Collaboration</b>				
<b>C73.</b> The OR nurse communicates with the patient's family and other caregivers in order to create cooperation in providing perioperative nursing care.				
<b>C74.</b> The OR nurse consults with other healthcare providers for perioperative care.				
<b>C75.</b> The OR nurse collaborates with the family and other health providers in the formulation of the patient's care plan				
<b>Standard five: Ethics</b>				
<b>C76.</b> The OR nurse maintains patient and family confidentiality.				
<b>C77.</b> The OR nurse gives patients care without any discrimination.				
<b>C78.</b> The OR nurse gives advices and guidance for patients according to her/his responsibilities.				
<b>C79.</b> The OR nurse gives advices and guidance for patient's family according to their responsibilities.				
<b>Standard six: Resource Utilization</b>				
<b>C80.</b> The OR nurse assesses availability, of resources and its effectiveness on patient's safety.				
<b>C81.</b> The OR nurse assists family in identifying and securing necessary resources and services to address patient's healthcare needs.				

<b>C82.</b> The OR nurse assigns tasks based on the needs and conditions of the patient and the care complexity.				
<b>Standard seven: Leadership</b>				
<b>C 83.</b> The OR nurse engages in teamwork, and a team builder.				
<b>C84.</b> The OR nurse demonstrates a commitment to continuous lifelong learning for self and others.				
<b>C85.</b> The OR nurse coordinates and directs the care among caregivers				
<b>C86.</b> The OR nurse participates in professional activities.				
<b>C87.</b> The OR nurse exhibits creativity and flexibility throughout time of change.				
<b>C88.</b> The OR nurse encourages and promotes others to succeed by monitoring and other motivational strategies				

### **Appendix 3**

**بسم الله الرحمن الرحيم**

**استبيانه**

**حول تقييم معايير جوده الرعاية و الاداء التمريضي لممرضى وممرضات اقسام العمليات  
بالمستشفيات الحكومية بالضفة الغربية**

**عزيزizi / عزيزتي المشاركه**

**يسعدني ان اتقدم اليكم بجزيل الشكر على مشاركتكم في تعبئه الاستبيان الذي هو جزء من دراسة  
الماجستير في السياسات والاداره الصحية- جامعة القدس.**

**الهدف من هذه الدراسة هو تقييم معايير جوده الرعاية والأداء الوظيفي لممرضات وممرضى اقسام  
العمليات بالمستشفيات الحكومية في الضفة الغربية.**

**هذه الاداء تعكس رأيكم ومن خلال تعبئه الاستبيان تتيحون الفرصة لمعرفه مدى استخدام ممرضى  
وممرضات اقسام العمليات لمعايير الجوده اثناء ادائهم التمريضي والعوامل التي تؤثر على الاداء.  
ولذا نستأنفكم بتخصيص 30 دقيقه من وقتكم لتعبئه الاستبيان علما اننا نقدر ونشمن وقتكم مع  
العلم ان الاجابات ستعامل بسريه تامة وهي مخصصه للبحث العلمي فقط ولكم كامل الحرية في  
المشاركه او عدمها ولكن مشاركتكم لها دور في انجاح هذه الدراسة.**

**شاكيرين حسن تعاونكم**

**وتقبلوا فائق الاحترام**

اسبيانه معايير جوده الرعاية التمريضية لممرضى وممرضات اقسام العمليات

القسم الاول : البيانات الديمغرافية ، الرجاء ملئ الفراغ حسب معلوماتك الديمغرافية والمعلومات الخاصة بالمستشفى التي تعمل بها.

		A1. المؤهلات العلميه للممرض/ه
		A2. المؤهلات العلميه وفترة التدريب في مجال العمليات.
		A3. المؤهلات العلميه والدورات التدريبية في مجال العمليات .
لا	نعم	A4 . هل يوجد لديه لمتابعة التدريب والتعليم للممرضين والممرضات في القسم
		A5 . سنوات الخبره في القسم.
		A6 . العمر بالسنوات

<b>انثى</b>	<b>ذكر</b>	<b>A7 . الجنس</b>
		<b>A8 . عدد غرف العمليات في القسم</b>
		<b>A9 . عدد الممرضين في القسم حاليا</b>
		<b>A10 . معدل عدد العمليات في القسم</b>
<b>لا</b>	<b>نعم</b>	<b>A11 . يوجد قسم تعقيم منفصل عن القسم؟</b>
		<b>A12 . ماهي التخصصات الجراحية الموجودة في القسم</b>
		<b>A13 . عدد ايام العمليات المبرمجه في الاسبوع</b>
<b>لا</b>	<b>نعم</b>	<b>A14 . هل يوجد دليل مكتوب عن معايير الواجب</b>

		اتباعها من قبل الممرضين في والممرضات القسم.
لا	نعم	A15. اذا كان الدليل موجود هل هو مطبق من قبل الجميع
		A16. ما هي العوائق التي تحول دون تطبيق الدليل في القسم (يمكن الاشاره لأكثر من سبب)  1.المعايير الموجودة في الدليل لا تتلاءم مع ظروف العمل في القسم 2.ضغط العمل 3.عدم الالتزام الاداري في تطبيق الدليل 4.عدم وجود لجنه لاطلاع وتدريب الممرضين والممرضات على معايير الجوده في الدليل 5.عدم وجود مراقبه ومتابعه لتطبيق الدليل في القسم

القسم الثاني الرجاء تحديد مدى تطبيق الممرضين والممرضات للمعايير التالية اثناء العمل في قسم العمليات وذلك بوضع ✓ في الخانه المناسبة.

النوع	النوع	النوع	النوع	النوع	العبارة
					<b>التقييم التمريضي للمريض</b>
					B1 - يقوم ممرض/ه العمليات باستقبال المريض في قسم العمليات وتقييمه حسب القائمه المستخدمه بمستشفيات وزاره الصحه .
					B2 - يطلب ممرض/ه العمليات من المريض التأكيد على هويته.
					B3 - يطلب ممرض/ه العمليات من المريض التأكيد على الاجراء الجراحي وموضع هذا الاجراء.
					B 4 - يطلب ممرض/ه العمليات من المريض التأكيد على موافقته على الاجراء الجراحي وموضع هذا الاجراء.
					B5 - في غرفه العمليات وقبل البدء بالإجراء الجراحي يقوم ممرض/ه العمليات بالتأكد من اسم المريض والإجراء الجراحي وموضع هذا الاجراء.
					B6 - يقوم ممرض/ه العمليات بتعريف المريض على جميع المشاركين في غرفه العمليات.
					<b>تنظيف وتعقيم الادوات الجراحية</b>
					B7- يقوم ممرض/ه العمليات بنقع

					الادوات الجراحية بالماء ومادة مفككه للأوساخ لمده دقيقتين على الاقل.
					B8- ممرض/ه العمليات قادر عل استعمال جميع طرق التعقيم والتطهير.
					B9- يستطيع ممرض/ه العمليات تصنيف الادوات الجراحية حسب حاجتها للتعقيم او التطهير.
					B10- يستطيع ممرض/ه العمليات استخدام الماده المناسبة والجهاز المناسب لتطهير و تعقيم الادوات الجراحية.
<b>التحضير للعملية الجراحية</b>					
					B11- يلتزم ممرضى العمليات باللباس الخاص بالعمليات ( غطاء الرأس واقي العيون، غطاء القدمين، الكمامه)
					B12- يقوم الممرض/ه المشارك في الاجراء الجراحي بغسل يديه بماده معقمه لمده دقيقتين على الاقل.
					B13- يقوم الممرض/ه المشارك في الاجراء الجراحي بالالتزام بتقنيات التعقيم اثناء لبس الرداء الجراحي والکفوف المعقمه.
					B14- يتتجنب الممرض/ه المشارك

					في الاجراء الجراحي لمس جلد الجراح او ملابسه الغير معقمه اثناء مساعدته بارتداء لباسه المعقم.
					-B15 يتم استثناء جميع الادوات والاغطيه التي تستعمل في الاجراء الجراحي اذا كانت غير معقمه.
					- B16 - يقوم ممرض/ه العمليات بإتباع تقنيات التعقيم في فتح او اضافه أي اداه الى ميدان العمليه المعقم.
					-B17 - يقوم ممرض/ه العمليات بمراقبه ميدان العمليه لابقاءه معقم باستمرار .
					-B18 يحافظ الممرض/ه المشارك في الاجراء الجراحي على حركته ويفد منها في غرفه العمليات.
					-B19 - يقوم ممرض/ه العمليات بالابلاغ عن أي خطأ يؤدي الى تلوث أي جزء من ميدان العمليه.
					<b>وضع المريض الوضعيه الخاصه بالاجراء الجراحي</b>
لا		نعم			-B20 يوجد تعليمات مكتوبه في القسم لكيفيه نقل المريض من والى قسم العمليات
					-B21 لا يتم ادخال سرير المريض

					القادم من خارج قسم العمليات.
					-B22 ممرض/ه العمليات على درايه بجميع الاوضاع الخاصه بكل اجراء جراحي.
					-B23 يقوم ممرض/ه العمليات بالتأكد من سلامه المريض اثناء الوضعيه الخاصه بالاجراء الجراحي.
					-B24 يقوم ممرض/ه العمليات بالابلاغ عن أي خطأ بوضعيه المريض اثناء الاجراء الجراحي.
					-B25 تكون طاوله المريض والاجهزه الملحقه بها في حاله جيده وجاهزه للاستعمال لاي اجراء جراحي.
					<b>عد الادوات الجراحية وتجهيز العينات</b>
لا		نعم			-B26 يوجد بروتوكول مكتوب غير القسم لعد الشاش والابر والادوات الجراحية.
لا		نعم			-B27 يوجد دليل مكتوب في القسم لتجهيز العينات وارسالها للمختبر.
					-B28 يقوم ممرض/ه العمليات بالتأكيد على عدد الشاش والابر والادوات الجراحية قبل وبعد انتهاء الاجراء الجراحي.
					<b>اجهزه وقف النزيف</b>

<b>نعم</b>	<b>لا</b>	B29 - يوجد بروتوكول واضح ومكتوب لاستعمال طرق وقف النزيف التقليديه والحديثه.
		-B30 ممرض/ه العمليات على درايه كامله بطرق وقف النزيف التقليديه والحديثه واستعمالها.
<b>التعامل مع جرح المريض</b>		
		-B31 ممرض/ه العمليات على دراية بأنواع الخيوط والإبر والهدف من استعمال كل نوع.
<b>B32 - ممرض/ه العمليات على درايه بأنواع الاذوات والاجهزه الاخرى الحديثه المستعمله في اغلاق جرح العمليه الجراحية.</b>		
		-B33 يقوم ممرض/ه العمليات باستعمال الخيط حسب الحاجه وإبقاء الخيوط المتبقية مغلقه ومعقمه لحين الحاجه.
<b>B34 - يتبع ممرض/ه العمليات تقنيات التعقيم العالميه اثناء القيام بإغلاق الجرح.</b>		
<b>التعامل مع الاخطاء</b>		
<b>نعم</b>	<b>لا</b>	-B35 يوجد بروتوكول مكتوب للتعامل مع الاخطاء التي تحدث في قسم العمليات
<b>نعم</b>	<b>لا</b>	-B36 يقوم ممرض/ه العمليات

				بالإبلاغ عن أي خطأ يحدث في الإجراء الجراحي فور حدوثه.
				- يتم مناقشة الاخطاء التي حدثت والوقوف على اسبابها والعوامل التي ادت الى وقوع الخطأ.
				- يتم اتخاذ اجراءات لتلافي وقوع الخطأ مره اخرى.
				- يتم اطلاع جميع ممرضي العمليات على هذه الاجراءات.
لا		نعم		اتباع اساليب مكافحة العدوى
				- يوجد دليل مكتوب واضح في القسم متعلق بمنع انتشار العدوى
				- يوجد عامل نظافة خاص بقسم العمليات.
				- يقوم عامل النظافه بتنظيف جميع الاسطح والأرضيات في قسم العمليات في كل صباح.
				- يتم تنظيف ميدان العمليه الجراحية بماده مبيده قاتله للجراثيم بين كل عملية واخرى.
				- يتم الالتزام بلبس الكفوف عند التنظيف والتعامل مع المواد الملوثه وافرازات الجسم.
				- يتم التخلص من النفايات بشكل صحي.

		B46 - يتم جمع الشرافف والخسيل الملوث باكياس خاصه و من ثم غسلها بشكل منفصل.
		B47 - يتم نقع الادوات الجراحية التي استعملت مع مريض معدى بماده قاتله للجراثيم حسب نوع هذه الجراثيم.
		B48 - يتم تأجيل العمليه الجراحية للمريض المصاب بمرض معدى الى اخر عملية.
		B49 - يتم ابعاد الممرض المصاب بمرض معدى عن المشاركه في العمليه الجراحية الى ان يثبت شفاءه من المرض.
		B50 - يتم غسل اليدين بالماء والصابون قبل لبس الكوفوف.
		B51 - يتم غسل اليدين بالماء والصابون بعد خلع الكوفوف.
		B52 - يتم غسل اليدين بالماء والصابون بعد كل اجراء
		B53 - يتم اخذ مسحات من نواحي متعددة من القسم ومن الادوات التي داخل لقسم وفحصها مخبريا بشكل دوري

**القسم الثالث: استبانه معايير اداء ممرضى وممرضات اقسام العمليات**

النوع	النوع	النوع	النوع	النوع	العبارة
					<b>نوعيه وجوده الممارسه</b>
					C54. يحدد ممرض/ه العمليات جوانب الجوده اثناء الرعايه التمريضيه.
					C55. يشارك ممرض/ه العمليات في تطوير السياسات والاجراءات الارشاديه للممارسة التمريضية في القسم.
					C56. يستخدم ممرض/ه العمليات نشاطات تحسين الجوده للمبادرة الى ادخال تغييرات في الممارسه التمريضيه.
					C57. يستخدم ممرض/ه العمليات بيانات تحسين الجوده للمبادرة لإدخال تغييرات في نظام تقديم الرعايه الصحيه طبقا للحاجه.
					C58. يقوم ممرض/ه العمليات بالتعرف على المؤشرات المستخدمه لمراقبه الجوده والتي تؤثر على رعاية المريض في غرفه العمليات.
					<b>التعليم</b>
					C59. يشارك ممرض/ه العمليات في نشاطات تعليمية متواصلة تتعلق بالمعرفة الاكلينيكيه والنظريه والقضايا المهنية في القسم.
					C60. يسعى ممرض/ه العمليات للحصول

					على الخبره التي تعكس الممارسه الاكلينيكية الحديثه وذلك للحفاظ على المهارات والكافئه الحديثه.
					C61. يقوم ممرض/ه العمليات بتطبيق المعرفه والمهارات المتعلقة بالرعاية داخل غرفه العمليات.
					<b>تقييم الممارسه المهنيه</b>
					C62. ينخرط ممرض/ه العمليات في تقييم الاداء على اسس مننظم ويقوم بتحديد مواطن الضعف والقوه والتطور المهني له.
					C63. يسعى ممرض/ه العمليات للحصول على تغذيه راجعه بناءه بشكل متواصل من اجل التطور المهني.
					C64. يسعى ممرض/ه العمليات بالعمل على تحقيق الاهداف المهنيه التي تم تحديدها اثناء عملية تقييم الاداء.
					C65. يظهر ممرض/ه العمليات المعرفه بمعايير الممارسه المهنيه والقوانين والتعليمات والانظمه المتعلقة بالرعاية التمريضيه الحديثه فيما يخص المريض داخل غرفه العمليات .
					C66. يشارك ممرض/ه العمليات المعرفه والمهارات مع زملاءه.
					C67. يقدم ممرض/ه العمليات لزملاءه التغذيه الراجعه البناءه والمتعلقه بالممارسه والرعاية للمريض داخل غرفه العمليات.
					C68. يتفاعل ممرض/ه العمليات مع

					زملاءه لتعزيز الممارسه التمريضيه المهنيه المتعلقة بالمريض داخل غرفه العمليات.
					C69. يساهم ممرض/ه العمليات في خلق ودعم بيئه عمل صحيه في القسم.
					C70. يساهم ممرض/ه العمليات في خلق بيئه مواطنه للتعلم الاكлинينيكي لطالب التمريض بطريقه مناسبه.
					C71. يساهم ممرض/ه العمليات في خلق بيئه مواطنه للتعلم الاكلينينيكي لمتدربى الرعايه الصحيه الاخرين بطريقه مناسبة.
					C72. يساهم ممرض/ه العمليات في خلق بيئه مواطنه للتعلم الاكلينينيكي للموظفين الاخرين بطريقه مناسبة.
					<b>التعاون</b>
					C73. يقوم ممرض/ه العمليات بالاتصال المستمر مع العائله ومع مقدمي الرعايه الصحيه الاخرين وذلك للتعاون في تقديم الرعايه المقدمه للمريض داخل غرفه العمليات.
					C74. يتشاور ممرض/ه العمليات مع مقدمي الرعايه الصحيه فيما يخص رعاية المريض داخل غرفه العمليات.
					C75. يتعاون ممرض/ه العمليات مع العائله ومع مقدمي الرعايه الصحيه الاخرين في صياغه خطه الرعايه المقدمه للمريض داخل غرفه العمليات.

					<b>الأخلاقيات</b>
					C76. يحافظ ممرض/ه العمليات على سرية المعلومات عن المريض والعائلة ضمن الحدود القانونية والمهنية.
					C77. يقدم ممرض/ه العمليات الرعاية بصورة غير منحازة .
					C78. يقوم ممرض/ه العمليات بتقديم الدعم المنوي والنصائح والإرشاد للمريض ضمن حدود مسؤوليته وعمله.
					C79. يقوم ممرض/ه العمليات بتقديم الدعم المنوي والنصائح والإرشاد لأهل المريض ضمن حدود مسؤوليته وعمله.
					<b>الاستفادة من الموارد</b>
					C80. يقوم ممرض/ه العمليات بتقييم الخيارات من حيث توفرها وفعاليتها وسلامة المريض.
					C81. يساعد ممرض/ه العمليات العائلة في تحديد وتأمين الموارد الضرورية والخدمات المعالجة لتلبی احتياجات الرعاية الصحية للمريض.
					C82. يقوم ممرض/ه العمليات بإسناد توزيع المهام على أساس الاحتياجات ووضع المريض ومدى استقرار المريض ومدى صعوبه الرعاية المقدمة.
					C83. ينخرط ممرض/ه العمليات في فريق العمل وفي بناء الفريق .

القيادة				
C84. يظهر ممرض/ه العمليات الالتزام بالتعلم المستمر لنفسه وللآخرين				
C85. يوجه ممرض/ه العمليات تنسيق الرعاية بين مقدمي الرعاية الصحية.				
C86. يعزز ممرض/ه العمليات مهنته من خلال المشاركه في اطار تنظيمي .				
C87. يظهر ممرض/ه العمليات الابداع والمرونة في وقت التغيير .				
C88. يعلم ممرض/ه العمليات الاخرين النجاح وذلك من خلال خلق استراتيجيات لتطوير المهنه .				

## **Appendix (4)**

### **Names of experts**

Dr. Ali Sha'ar. MPH in Quality Improvement.

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Dr. Bassam Abo hamad. PhD. School of Public Health, Al Quds University/  
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