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Attitude towards Safety Culture among Employees at the Intensive Care Unit in the Governmental Hospital of Gaza City

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

"وَقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ وَسَتُرَدُّونَ إِلَى عَالِمِ الْغَيْبِ وَالشَّهَادَةِ فَيُنَبِّئُكُم بِمَا كُنتُمْ تَعْمَلُونَ"

التوبة (115)

Dedication

To the soul of my mother who still lives in my spirit. May Allah bless her and grant her paradise; she never tired in her life for a second and was always at the forefront ready to assist us. I still feel her lovely soul and caring hand encouraging me to complete my mission.

To my father, my aunt, and my dear wife who endured in silence, encouraged me in a fine manner and provided me with the perfect atmosphere in order to complete my studies; may Allah give them the best reward.

To my lovely daughters Saffia and Nada and my oldest son Moadh.

To my sisters and brothers for their usual support.

To all my friends, relatives and colleagues for their kindness and cooperation.

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Abstract

This study aimed to understand the knowledge, attitude and practice that employees had toward safety culture in intensive care units in the Governmental Hospitals of Gaza City. It also aims to investigate determinants of safety culture such as: management's commitment to safety culture, employee engagement, the trust between the healthcare provider and management, the healthcare provider's participation in decision-making and good communication.

A questionnaire have been used to measure employee attitudes toward safety culture which consists of 5 safety culture domains: job satisfaction, knowledge about safety culture, safety climate, teamwork climate, and working conditions. The questionnaire was also used to measure the determinant of safety culture.

The population consisted of physicians and nurses working in the ICUs of all hospitals in the Gaza city namely: Al Shiffa, Al Nasser, Al Dorra, Abed El Azeez Al Rantesi. 220 questionnaires have been distributed and 180 have been returned back with a response rate of 81%. A group of statistical methods were used to analyze the study data using the statistical package system for social sciences SPSS.
The results of the study indicates that Employees working at the ICUs of Gaza City hospitals have a mild positive attitude toward safety culture, unacceptable working condition, mild level of job satisfaction also they don't have enough knowledge about safety culture.
There is a statistical relationship between(the commitment to safety by management, employee engagement, the trust that exists between the healthcare provider and the management, participation in decision-making, good communication) and employee attitudes toward safety culture.
This study recommended that improving safety culture among employee working at ICU can be achieved by maintaining the proper environment in-which employees can express their feelings, participate in decision-making and make comments and suggestions regarding problems concerning them and their patients.
Specialized training courses targeting nurses and physicians of ICUs to improve their knowledge about safety measures , communication skills and job description .
Activation of management role at promoting safety culture by increasing their commitment to safety culture
Recreational and financial incentives which have unique effect on the employee working at ICUs of Gaza city .

Conclusions: Safety culture plays a key role in improving employee and patient safety at ICUs on hospital of Gaza city especially when bundled with employee and management commitment, an environment characterized by mutual trust among health team with effective communication channels and proper participation in decision making .

ملخص الدراسة

هدفت هذه الدراسة إلى التعرف على توجه العاملين نحو ثقافة العمل بأمان في أقسام العناية المركزة التابعة للمستشفيات الحكومية في مدينة غزة , أيضا هدفت هذه الدراسة الى اختبار محددات الثقافة الامنة مثل (التزام الإدارة بثقافة العمل بأمان, ارتباط العاملين بالقسم, الثقة بين العاملين والإدارة, المشاركة في صنع القرار, الاتصال والتواصل بين أفراد الطاقم العامل في القسم)

تم قياس توجه العامين نحو ثقافة العمل بأمان من خلال توزيع استبانة مكونة من خمسة محاور (الرضا الوظيفي, مستوى المعرفة بثقافة العمل بأمان ,المناخ الأمن , مناخ العمل الجماعي ,ظروف العمل). أيضا تم قياس محددات ثقافة العمل بأمان من خلال تصميم استبانة لقياس هذه المحددات.

يتكون مجتمع الدراسة من الأطباء والتمريض العاملين في أقسام العناية المركزة في مستشفيات (الشفاء,النصر,الدرة ,الدكتور عبد العزيز الرنتيسي) البالغ عددهم 220 موظف, تم توزيع 220 استبانة واسترد منها 180 (81%). تم استخدام مجموعة من الاساليب الاحصائية لتحليل بيانات الدراسة باستخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية SPSS

أظهرت نتائج الدراسة وجود توجه ايجابي متوسط نحو ثقافة العمل بأمان لدى العاملين في أقسام العناية المركزة أيضا أظهرت أن ظروف العمل في أقسام العناية المركزة غير مقبولة ،مستوى متوسط من الرضا الوظيفي , لا يوجد المستوى المطلوب من المعرفة حول ثقافة العمل بأمان.

أظهرت الدراسة وجود علاقة ذات دلالة إحصائية بين (التزام الادارة بثقافة العمل بأمان , الارتباط الوظيفي , الثقة بين العامين والادارة , المشاركة في صنع القرار , الاتصال والتواصل الجيد) وتوجه العاملين نحو ثقافة العمل بأمان .

أوصت هذه الدراسة بتحسين مستوى ثقافة العمل بأمان في أقسام العناية المركزة عن طريق الحفاظ على بيئة يتمكن من خلالها العاملين من التعبير عن آرائهم والمشاركة في صنع القرار وابداء ملاحظاتهم واقتراحاتهم تجاه القرارات الخاصة بسلامتهم وسلامة مرضاهم.

- دورات تدريبية متخصصة تستهدف الاطباء والتمريض العاملين في أقسام العناية المركزة لتحسين معرفتهم حول مقاييس العمل بأمان ومهارات الاتصال والوصف الوظيفي .
- تفعيل دور الادارة في تعزيز ثقافة العمل بأمان من خلال الالتزام بهذه الثقافة .
- تعزيز المحفزات المادية والترفيهية لما يوجد لها من تأثير مميز على العاملين في أقسام العناية المركزة .

ختاما , ان ثقافة العمل بأمان تلعب دورا حيويا في الحفاظ على سلامة العاملين والمرضى في أقسام العناية المركزة في مستشفيات مدينة غزة خاصة اذا ارتبطت بالتزام العاملين والادارة وتوفر بيئة عمل تتميز بالثقة المتبادلة بين العاملين بالإضافة الى الاتصال والتواصل الجيد والمشاركة الفعالة في اتخاذ القرار

Chapter One

General Research Framework

1.1 Introduction

The intensive care unit (ICU) is a distinct organizational and geographic entity for clinical activity and care. It operates in cooperation with other departments integrated within the hospital.

The objectives of an ICU are the monitoring and support of threatened or failing vital functions in critically ill patients who have illnesses with the potential to endanger life. Adequate diagnostic measures and medical or surgical therapies are performed to improve outcomes **(Valentin, 2011).**

Thus, the ICU area is characterized by a stressful environment due to the needs of the critically ill patient and his family and the advanced technology needed to operate and provide maintenance for a healthy instrument. Quality assurance is a complex task and patients in the ICU are more likely than other hospitalized patients to experience medical errors. This is due to the complexity of their conditions, the need for urgent interventions, and considerable workload fluctuation **(Calabrese, et al. 2001).**

The American Institute of Medicine (IOM) reported that medical errors cause more than one million injuries. In addition, between 44,000 and 98,000 hospitalized American patients die annually due to medical errors which can be preventable. Hospital errors rank between the fifth and eighth leading cause of death, killing more Americans than breast cancer, traffic accidents or AIDS. Serious medication errors occur in five to ten percent of patients cases which are admitted to hospitals. ICUs are sites where the highest rates of medical errors occur, so it is essential for the human resource manager to identify the causes of these errors and maintain an environment which enables the healthcare team to detect, prevent and deal with these errors in a professional way **(Batat et al 2011).**

Wagenaar asserts that human factors are the main contributory factor to accidents or an error at the worksite. This human element, of course, extends beyond those personally involved in an incident. It also incorporates those who influence safety in the workplace, whether directly, consciously and immediately, or indirectly and unintentionally. Therefore, effective risk management depends, at least in part, on the behavior of all those individuals who operate in a specific organizational context **(Wadsworth, 2009).**

In addition, cultural attributes such as: leadership support, teamwork, communication, and fair and just cultural principles remain central towards achieving high reliability and ensuring patient safety in healthcare organizations **(Taylor, et al. 2011).**

In a study have been undertaken by the Non Governmental Organization (NGO) Development Center it was shown that there was little worker involvement in the life of the healthcare organizations of Gaza. Information sharing and communications are usually very poor and team spirit is lacking. Furthermore, to a high extent, the healthcare system is influenced by a tribal and political culture. **(Abu Hamad, 2009).**

Hamad, in Abu Hamad 2009, asserted that a culture of appointments, promotion or rewarding by connections, political affiliation or personal favors has grave consequences for the system. Furthermore, the healthcare professionals are neither rewarded nor penalized for their performance. Their earnings are completely unrelated to their performance; therefore, competition among the same or different health providers is completely non-existent. Even basic management essentials such as

providing job description or carrying out effective performance appraisals are not carried out (only 25% of employees have a job description). All this information indicates that there is an absence of a culture or climate that promotes cooperation, fairness and justice .

Al-Ahmadi (2009) assert that Healthcare organizations should reduce the fear of blame culture and create a climate of open communication and continuous learning , also focusing on culture, additional reporting and learning from errors are some of the most important areas having to do with the improvement of patient safety in hospitals today. Focusing on the aforementioned important areas allows the researcher to conclude that it is essential for the professional and organizational cultures in the healthcare field to undergo a transformation towards obtaining an interest in promoting safer patient care. Healthcare must come to see itself as a high-hazard industry which is inherently risky. It must abandon the philosophy of requiring perfect, error-free performance from individuals and focus, instead, on designing systems for safety. Healthcare systems must move away from the current ‘‘blame and shame’’ culture that prevents acknowledgement of errors and therefore, obstructs any possibility of learning from them.
To promote a culture of safety, one has to keep many aspects in mind in regards to the organization such as: the management role, employee commitment, communication among the healthcare team and the decision-making process.

1.2 Problem Statement

In 1999, the Institute of Medicine in the United States published a report on the prevalence of medical errors in the country. As a result, researchers and health experts started to consider patient safety. Following similar reports by institutions in other countries such as England, Canada, and Australia, health care systems throughout the world realized that patients don’t have the required safety climate.
"According to available evidence, it is estimated that 1 out of every 10 patients in developed countries is injured while receiving hospital services. Although there is no exact statistics about medical errors in developing countries, increasing numbers of public complaints from doctors and nurses to medical and forensic organizations in these countries imply their higher rates of damage to patients compared to developed countries".(Abdolahzadeh1,2012).
other studies shows the culture of blame, lack of enthusiasm to report, ineffectiveness of quality improvement from reported data, and inefficiency of feedback regarding errors still threaten incident reporting mechanisms and patient safety improvements in the west(Chiang,2012), also assure the continuous improvement of incident reporting, feedback and communication about errors and organizational learning .
Ballangrud, et al. (2012).
In a study targeted clinicians involved in direct patient care in medical and surgical units of two Swiss and 10 US hospitals assure the importance of teamwork and safety climate which has great effect on patient safety.
In Arab countries a study applied to hospital of Saudi Arabia shows that areas with potential for improvement for most hospitals were under-reporting of events, non-punitive response to error, staffing and teamwork across hospital units.
In regard to our country Abu Hamad (2009) showed that the concept of supervision in healthcare organizations is generally lacking and is mostly alienated in regards to the detection of errors and blaming employees rather than providing coaching, support and training.

In addition, **(Hamdan and Saleem, 2012)** highlights the existence of a punitive and blame-prone culture which is saddled by underreporting of events, a lack of openness in regards to communication and inadequate management support.

The researcher worked at the ICU for thirteen years and held many interviews with the head nurses and other employees at the ICUs. It can be concluded that there are many complaints from patients and their families against medical errors and the unsatisfactory ways of treatment. Moreover, unresolved problems exist among the health team which result from the schism between employees (those employed by Gaza Government and Ramallah Government) which lead to unfair relationship between the employees and their managers anywhere. Additionally, the health team complained from assaultive behavior from the patients' families.

Moving beyond blame requires that the underlying contributing factors, that is, the latent conditions that provoke unsafe behavior be identified. The intensive care unit is a stressful work area that provides healthcare for critically ill patients so promoting safety culture within this unit is critical in putting forth an effective healthcare service with minimal iatrogenic medical errors.

According to the mentioned conditions at the ICUs at the hospitals of Gaza city, the following will be the main question of this study:

What are the Determinants of Safety Culture inside Intensive Care Units in Hospitals in the Gaza City?

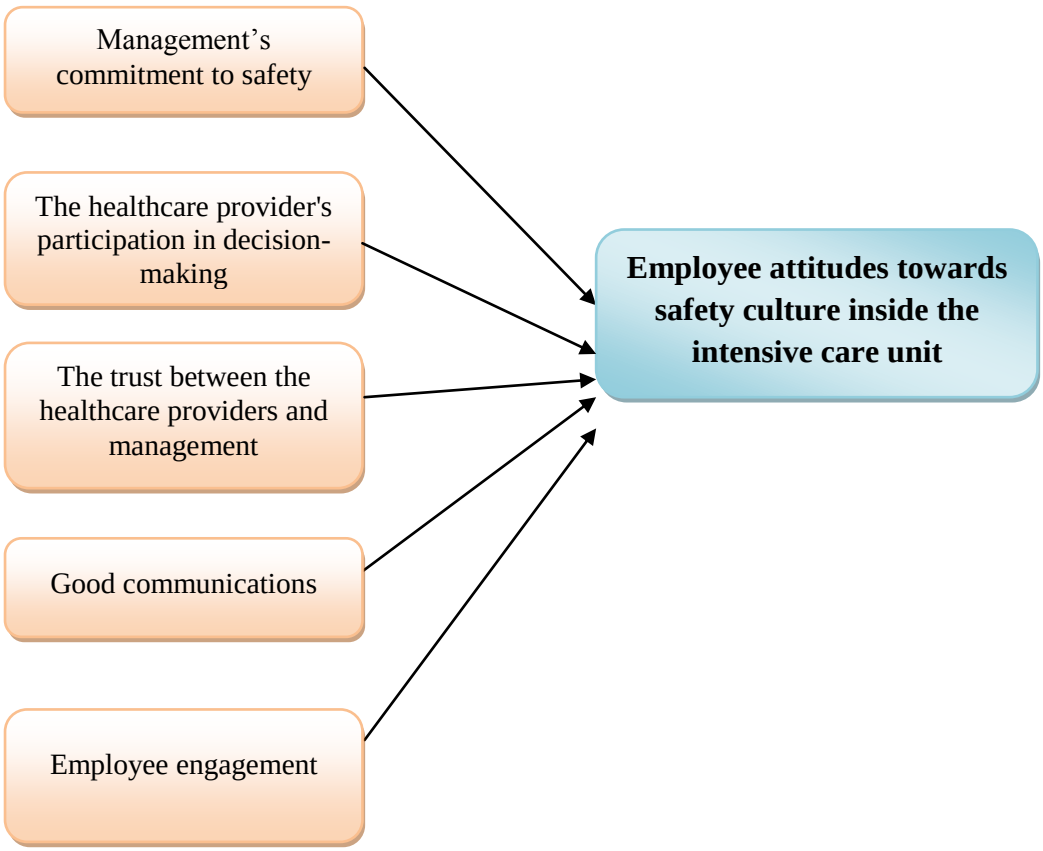
1.3Research Variables

Dependent variable: Employee attitudes toward safety culture inside the intensive care unit.

Independent variables:

1. Management's commitment to safety culture
2. Employee engagement
3. The trust between the healthcare provider and management
4. The healthcare provider's participation in decision-making
5. Good communications

Figure (1): Conceptual Frame Work Shows the Variables of the Study



Source: Self Developed Model

1.4 Research Hypothesis

1. There is a statistical relationship between the commitment to safety by management at a significant level of ($\alpha = 0.05$) and employees attitudes towards safety culture
2. There is a statistical relationship between participation in the decision-making process at a significant level of ($\alpha = 0.05$) and employees attitudes towards safety culture
3. There is a statistical relationship between the trust that exists between the healthcare provider and the management at a significant level of ($\alpha = 0.05$) and employees attitudes towards safety culture
4. There is a statistical relationship between good communication among healthcare team members at a significant level of ($\alpha = 0.05$) and employees attitudes towards safety culture
5. There is a statistical relationship between employee engagement at a significant level of ($\alpha = 0.05$) and employee attitudes towards safety culture
6. There are significant differences between respondents concerning attitude toward safety culture due to personal data results such as: gender, education level, years of experience and major .

1.5 General Objective of the Study

To understand employee knowledge, attitude, and practice toward safety culture in the intensive care unit.

Specific Objectives

1. To identify the level of knowledge pertaining to safety culture among the healthcare team in the intensive care unit .
2. To identify employees knowledge and practice towards safety culture among the healthcare team.
3. To explore the determinants of safety culture in the intensive care unit.
4. To identify the relationship between management's commitment to safety and employee attitudes towards safety culture.
5. To evaluate the relationship between participation in the decision-making and employees attitudes towards safety culture.
6. To designate the relationship between good communication among healthcare team members and employees attitudes towards safety culture.
7. To identify the relationship between employee engagement and employees attitudes towards safety culture.

1.6 Significance of the Study

1. Safety is a global concept that encompasses efficiency, security of care, the reactivity of caregivers, and the satisfaction of patients. Thus, it is essential for the researcher, as a staff nurse working in the intensive care unit, to conduct one's job in accordance with promoting a safety climate as well as promoting its importance to both the patient and the intensive care team.
2. This study will show human resource managers the importance of a safe environment in which the medical team in intensive care units can work. It is also effective at highlighting factors that affect the promotion of safety culture .
3. According to the researcher's knowledge, this is an even-handed study which assesses the safety climate as well as factors that affect safety culture in the universities and hospitals of the Gaza Strip.
4. The aura of an effective safety climate within the intensive care unit promotes good communication among healthcare team members, patients and family members which builds trust and reflects a peace of mind amongst healthcare team members and the public.
5. This research will provide good theoretical and practical knowledge for academia and practitioners.

1.7 Study Terms definition

Safety Culture:

The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies and patterns of behavior that determine the commitment to and the style and proficiency of an organization's health and safety management. Organizations with a positive safety culture are characterized by communications founded upon mutual trust via the shared perceptions of the importance of safety and via the confidence in the efficacy of preventive measures **(Frazier, 2011).**

Management Commitment to Safety:
The extent to which the managers clearly understand and invest serious time and money into effective safety management by developing programs, policies, written plans and procedures. They will also display leadership through effective accountability and recognition of behaviors and results. **.(OHSAcademy,2013)**

Good Communication:
The process by which information is systemically, clearly and accurately exchanged among team members, also it should be as relevant, local and timely as possible **(Armstrong 2009).**

Employee Engagement:
Employee engagement takes place when people at work are interested in and positive, even excited about their jobs and are prepared to go the extra mile to get them done to the best of their ability
(Armstrong 2009).

Trust between the Healthcare Team and Management:, trust is basically defined as the mutual understanding between the employee and managers that vulnerabilities will not be exploited and that the relationship is safe and respectful (Hassan and Ahmed,2011)

Participation in Decision-making:
The involvement of managers and their subordinates in information processing, decision making and problem solving endeavors(Muindi,2011)
.

Chapter Two

Research Theoretical Framework

Section One: Overview of Human Resource Management (HRM)

2.1 Introduction

human resource management is needed whenever more than one person needs to achieve a certain goal, for example the family member act as an organization which affected by internal and external environment ,also they have a leader who must harness all available resources including people for achieving the optimal goal of the family member , the philosophy which determine the goal, objectives and division of labors depends on the family culture which acquired from the society, also promoting a strong organizational culture which reflect the accepted, unified, values, customs and believes of the employees and managers is one of the objectives of human resource management (**Itika, 2011**).

The assumption underpinning the practice of HRM is that people are the organization's key resource and organizational performance largely depends on them. In the closing years of the twentieth century, management has come to accept that people, not products, markets, cash, buildings, or equipment, are the critical differentiators of a business enterprise **(Fitz-Enz, 2009).** All the assets of an organization, other than people, are passive resources that require human application to generate value and the key to sustaining a profitable company or a healthy economy is the productivity of the workforce so the development of an appropriate range of HR policies and processes will make a substantial impact on firm performance **(Caliskan, 2010).**

HRM has been defined as "the recruitment, selection, development, utilization, compensation and motivation of human resources by the organization" . Furthermore, it has been defined as a "branch of management which is responsible on a staff basis for concentrating on those aspects of operations which are primarily concerned with the relationship of management to employees and employees to employees and with the development of the individual and the group" **(Jackson and Schuler, 1995).**

HRM involves a number of areas, including organizational behavior and psychology as well as personnel management and relationship between employees and managers. Employees may expect to be treated fairly as human beings, provided with work that uses their abilities, rewarded equitably in accordance with their contribution, to be able to display competence, to have opportunities for further growth, to know what is expected of them and to be given feedback (preferably positive) on how they are doing. Employers may expect employees to do their best on behalf of the organization, to put themselves out for the company, to be fully committed to its values, compliant and loyal, to enhance the image of the organization with its customers and suppliers **(Armstrong, 2009)**

By reviewing a lot of definitions the researcher concluded that HRM is the branch of management which deals with employees' biological, psychological and social states in order to enable them to achieve individual and organizational goals that are creative, innovative and satisfactory. HRM also enables the organization to select and retain employees who have unique skills and characteristics that help achieve the organizational goal of the organization using the best method all the while maintaining cost effectiveness.

HRM is not just limited to manage and optimally exploit human intellect. It also focuses on managing physical and emotional capital of employees. One of the big problems in managing organizations' safety is that occupational health and safety (OHS) is seen, at best, as driven by regulatory and legislative compliance. However, a more sophisticated approach is to recognize the connections between OHS and the other aspects of business performance. One means of integrating OHS into mainstream management is to consider managing safety risks through an HRM perspective **(Glendon, et al. 2006).** Nonetheless, if a long-term, more strategic view is taken, it can be seen that safety and productivity (or profitability) are compatible objectives, where high performance strategies deliver not only higher productivity outcomes but also improved safety **(Agwu, 2010).**

2.2 Human resource management function :

most expert agree that the general management process is

planning: establishing goals and standers ,developing rules and procedures and forecasting

Organizing: giving each subordinate a specific task ,delegating authority, establishing channel of authority and communication, coordinating the work of subordinates

Staffing: determining what type of people should be hired, recruiting, selection, setting performance standers, compensating ,evaluating performance, counseling employee, training and development .

Leading : getting other to get the job done, maintaining moral, motivating subordinates

Controlling : setting standers such as sales quotes, quality standers, product level, checking to see how actual performance compares with these standers ,taking corrective action.

The staffing is the major job of human resource managers so he should have a good knowledge and practice about this concept and technique.

1- conducting job analysis .
2- selecting candidates
3- orienting and training employee
4- managing wages and salaries
5- providing incentives and benefits
6- appraising performance
7- communicating (interviewing, counseling, disciplining)
8- training and developing manager
9- building employee commitment. **(Desseler,2008)**

2.3 Human Resource Management and Safety

Human resource managers nowadays are faced with more crucial issues of (OHS) than ever before. The reason is that workers, just like any other resource, require maintenance and care in order to maximize their productivity. Along the same line, health and safety should not be viewed as a separate functions or responsibilities, but as a broader initiative that aims at improving productivity, profitability and competitiveness of a firm so the organization must be kept abreast of the health and safety legislation and organize the instruction and training of the staff concerning working practices that comply with health and safety regulations **(Makori et al., 2012).**

In addition, the organization has to promote a conscious approach to risk management among site workers. Effective management structure and arrangements must be considered at the sites, and policies must be applied very carefully. All the organization's staff should be motivated and empowered to work safely and to protect their long-term health; this can be done as a protective measure and should not be done after accidents or hazards have occurred. There must be a planned and systematic approach towards implementing a health and safety policy through an effective health and safety management system. The aim is to minimize risks wherever possible. Furthermore, risks can be overcome by the design of facilities, equipment and processes. If risks cannot be eliminated, they are to be minimized by the use of physical controls, or by the use of systems of work and personal protective equipment. If the workers have to wear something special on them in order to protect themselves against accidents, they have to exactly wear that **(Glendon et al., 2006).**

2.4 The Role of Human Resource Management in Promoting Safety Culture

The HRM department at any organization has the responsibility and plays a major role in promoting a safe workplace as well as safety culture. The following are the major areas in which human resource managers have the chance to plan, organize and implement methods and procedures for promoting safety culture.

2.4.1 Employee Security

Perceptions of job insecurity have been associated with higher levels of stress and with falling levels of worker health and wellbeing. In addition to this, a lack of employment security is associated with lower organizational commitment **(Sverke et al., 2006).**
Probst (2004) asserted that workers, who felt that their jobs were under threat, displayed higher levels of productivity, whilst also violating safety policies to a greater extent. It also appears, therefore, that in these circumstances workers will decrease their commitment to safety compliance for an increased quantity of production even though production quality declines **(Glendon et al., 2006).**

Also nontraditional workers, including contract and contingent workers tend to be overrepresented in injury statistics. This is due to contract workers being younger, less experienced, and subject to lower levels of safety training. Moreover, they are at an increased risk of injury through unfamiliarity with the workplace and with the host organization's practices and procedures.

Furthermore, Geller et al.found that the propensity to actively care about safety was significantly predicted by a number of variables; workers who felt more empowered and had a greater sense of belonging to the group were more likely to engage in safety behavior. It was also found that feelings of empowerment and personal control are unlikely to be associated with contingent employment **(Kular et al., 2008).** Therefore, contingent workers tend to hold more negative safety attitudes and engage in less organizational citizenship behavior as compared with permanently employed coworkers **(Kochan, 1992).**

Probst argued that organizational safety climate significantly moderated the relationship between job insecurity and safety outcomes; when workers perceived safety climate to be weak, job insecurity was related to lower levels of safety knowledge and safety compliance and to higher numbers of injuries and near-misses, but the effects were significantly attenuated when safety climate was perceived to be strong. All-in-all,

maintaining a strong safety climate can reduce or eliminate the negative effects of job insecurity upon safety outcomes **(Tucker, 2010).**

It can be concluded that the risk of injury to contract workers can be reduced by ensuring that there is an effective training program which meets the safety needs of these workers and there should be frequent follow up with evaluations. The contractor's safety system should be monitored; all safety rules must be reviewed and all injuries must be ensured of investigation. In addition, contract workers may undertake the most dangerous activities in an organization, thus, they require more intensive safety training than the other staff

2.4.2 Selective Hiring

The selection process gives managers an opportunity to assess potential employees' character and personality. This ensures that only an employee with the most suitable personality and skills is given the job. Furthermore, the organization takes particular notice of the personal flexibility and adaptability of a candidate, which assures that such an individual can adjust rapidly to the tough demands of the job.

The selection process should include the conscience of the company in that every person hired needs to be carefully screened. Some companies have third-party vendors that perform criminal background checks, which include some test like drug level tests. These required drug tests can identify any potential drug abuse issues prior to employment. Also driving records can reveal any reckless incidents or driving under the influence (DUI's). Companies that do not screen potential employees adequately may be subject to liability in future situations **(Glendon et al., 2006).**

In addition, organizations may follow other selection and recruitment procedures including application forms, references, interviews, and assessment centers. The application form should include questions regarding the safety record and injury involvement. Also, the included personnel in the interview should be reference personnel who may be asked to put forth information about safety. Candidates may be asked questions about safety behavior and measures in regards to the job. The candidate can furthermore be exposed to a specific personality test **(Pulakos, 2005).**

2.4.3 Communication and Information Sharing

Communication has an important role in creating a good climate for the exchange of the information necessary for achieving the organizational goals, also it reflect unique picture about the organizational services toward its customer. So, promoting good communication environment is one of most important goals of the human resource managers.

Effective communication occurs when the massage received and understood as the sender wants, also the sender has to collect the information about the idea he wants to explore, making a good assessment about the receiver of the massage then to choose the right rout of communication so that the massage can be understood as he wants.

Studies shows that most problem experienced in people management are duo to ineffective communication, strategic human resource management appreciate the role of communication as it is an easy cost effective way of transmitting the mission, vision, rules, regulation and policies of the organization, also the degree to which the employee

understand and accept the massage the best commitment to this policies and the best result will be gotten.

Frequent meetings with the top management, departmental and team meetings present the best opportunities for effective communication. Other channels include close interaction between staff and supervisors, billboards, brochures and instruction manuals **(Itika, 2011**)

An effective safety information system is crucial to adequate dissemination of top-down communications (e.g., safety instructions, policies, and procedures) and also for bottom-up communications (e.g., feedback from workers to the organization).

Impaired or Ineffective safety information leads to errors of assessment and diagnosis of safety problems which leads to bad prognosis or disasters. In addition, reduced status distinctions through encouraging communication, sharing ideas, and promoting greater concern and trust amongst workers leads to a sense of common fate which encourages an effective mutual communication, finally positive communication between managers and workers is helpful to ease worker relations, which has been identified as an important HRM issue in relation to safety **(Glendon et al., 2006).**

2.4.4 Reward Systems for Safety

Incentives and rewards are two important factors which enable the human resource manager to achieve the organizational goals at the optimal level without employee disappointment, so it is essential to invest these factors to promote health and safety for organizations employee.

Compensation and reward are two words that are used interchangeably by human resource manager, but it have two different philosophical root, whereas the first is based on the interpretation that work is not a good thing and the employee loss time and health so they have to compensate, the other word means that some employee consider the work an interesting and positive thing which need rewarding. So, human resource managers have to choose the appropriate type and time to make either compensation or reward for the employees **(Itika, 2011).**

Reward systems can be classified as financial rewards (payments), other material rewards (benefits) and psychological rewards (recognition). Reward systems in organizations are at the disposal of managers in order to attract, retain and motivate people towards desired goals. Rewards can be divided into extrinsic (e.g., money and other material benefits) which originate from sources external to the individual and intrinsic components (e.g., feelings of achievement, responsibility, or personal growth) **(Sezer, 2011).**

In regard to promotion of safety culture reward systems is concerned with behavior or performance like: reporting injuries, incidents and near-misses, or making safety suggestions **(Zacharatos, 2005).**

Furthermore, in regards to their objective significance, rewards also convey meaning in terms of their symbolic value, for example, in an organization that rewards safe behavior, these rewards represent a senior management that is committed to ensuring safety. The symbolic value of reward systems is particularly important in relation to safety as this could shape workers' perceptions of safety climate **(Glendon et al., 2006).**

2.4.5 Safety Training

In general, training refers to instruction and practice for acquiring skills and knowledge of rules, concepts, or attitudes necessary to function effectively in specified task situations.

Worker training is defined as the systematic acquisition of skills, rules, concepts, or attitudes that result in improved performance on the job. It ranges from very specific skill training, such as showing a worker how to operate a fork-lift, to more abstract development, such as training managers to adopt a more transformational leadership style **(Alipour, 2009)**

With regard to Occupational Safety and Health, training can consist of instruction in hazard recognition and control measures, learning safe work practices and proper use of personal protective equipment, acquiring knowledge of emergency procedures and preventive actions. In addition, training could provide workers with ways to obtain added information about potential hazards and their control, gaining skills to assume a more active role in implementing hazard control programs and to have an effect on organizational changes that would enhance worksite protection **(Cohen and Colligan, 1998).** As a technique for developing human resources, training is concerned with improving worker skills and enhancing their capacity **(Swanson and Holton, 2001).** Employers must document all training skills, creating a training matrix will help keep track of who has been trained, when they were trained, the training topic and when it is time for refresher training **(Alexander and Wegner, 2004).**

An employee sign-in sheet is also necessary for success. Employees should also sign an official sign-in sheet provided by the employer that can serve as proof that employees received proper training. The sign in sheet must have a broad description of what is being covered in the training. Tests or quizzes on the presented material can help gauge employee understanding of the material and highlight topics that need to be reviewed.

It is essential for the safety training program to cover topics such as accident prevention and safety promotion, safety compliance, accident and emergency response, personal protective equipment, safety practices, equipment and machinery, chemical and hazardous materials safety, workplace hazards and employee involvement.

However, most employees display attitudes of disinterest and dread at the thought of attending a safety training, which can leave the trainer feeling frustrated and unappreciated so It is the trainer's duty to make safety training fun and educational, which will help the trainees to retain the information, enjoy the course, and apply the knowledge and skills learned to their work and lives **(Cohen and Colligan, 1998)**.

Trainer should do their best to have an effective training program which reduce the number of injuries and deaths, property damage, legal liability, illnesses, workers' compensation claims, and missed time from work. All these result of training will contribute to achieve a safety culture in which employees themselves help promote proper safety procedures while on the job

Section Two
Organizational Culture

2.1 General Background

The culture of an organization affects the way in which people behave and has to be taken into account as a contingency factor in any program for developing organizations and HR policies and practices.

Culture represents the 'social glue' and generates 'we-feeling', thus counteracting processes of differentiations that are an unavoidable part of organizational life. Organizational culture offers a shared system of meanings which is the basis for communications and mutual understanding. If these functions are of an organization, this is why it is important for HR specialists to understand the concept of organizational culture, how it affects organizations and how it can be managed **(Armstrong, 2009).**

When culture first appeared in the Oxford English Dictionary around the year 1430 it meant cultivation or tending the soil, based on the Roman culture. However, with the coming of the 19th century culture was associated with the phrase high culture, meaning the cultivation or refinement of mind, taste, and manners. This meaning generally held sway up until the mid-20th century when its meaning shifted toward its present American Heritage English Dictionary definition: "The totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought" **(Tharp, 2010).**

Organizational culture has been defined numerous times. In its simplest form, culture is the way things are done in the organization. It is seen as a set of meanings created within the organization but influenced by broader social and historical processes **(Sun, 2008).**

Furthermore, many definitions of culture give primacy to cognitive components, such as assumptions, beliefs, and values. Armstrong (2009) defined it as the pattern of values, norms, beliefs, attitudes and assumptions that may not have been articulated but shape the ways in which people in organizations behave and things get done. 'Values' refer to what is believed to be important about how people and organizations behave. 'Norms' are the unwritten rules of behavior. Others expand the concept to include behaviors and artifacts, leading to a common distinction between the visible and the hidden levels of organizational culture.

According to Schein's view, fundamental assumptions constitute the core and most important aspect of organizational culture. Accordingly, he offers the following formal definition of organizational culture:

A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems **(Sun, 2008).**

To help understand these symbolic and cognitive layers, Schein has categorized the places of culture into three fundamental categories being: observable artifacts, espoused values, and basic underlying assumptions.

First, observable artifacts represent an organization's attitudes, behaviors, and beliefs i.e. how one sees things and what is important and meaningful. These include: architectural and physical surroundings, its products, technologies, style (shown through clothing, art, publications, etc.), published values and mission statement, language, gossip, jargon, humor, myths, stories, practices, rituals, ceremonies, and taboos.

Second, espoused values are those championed by a company's leadership and management. They are distinguished from enacted values, which are those that employees' actual behavior reflects.

Finally, basic assumptions are underlying, often unconscious determinants of an organization's attitudes thought processes and actions. These assumptions are central to its culture. Values that gain long-term acceptance often become so ingrained and taken-for-granted that individuals are usually unaware of their influence. They usually provide a tacit sense of security and an unquestioned impetus for perceptions and behavior **(Taylor, 2012).**

2.2 How Organizational Culture Develops

The values and norms that are the basis of culture can be formed in four ways:

1. First, by the leaders in the organization, especially those who had a long time at the organization, the employee look at the visionary leaders – the way they behave and what they expect. They note what such leaders pay attention to and try to do as they want.
2. Second, culture is formed from the previous histories of the employee and the situation he faces as (critical incidents – important events from which lessons are learnt about desirable or undesirable behavior) .
3. Third, culture develops from the need to maintain effective working relationships among organization members, and this establishes values and expectations.
4. Fourth, culture is influenced by the organization's environment.

Other scientists suggest that culture is learnt over a period of time, and there are two ways in which this learning takes place:

1. First, the trauma model, in which members of the organization learns to cope with some threat by the erection of defense mechanisms.
2. Second, the positive reinforcement model, where things that seem to promote positive work environment become embedded and entrenched.

Learning new customs or norms takes place as people adapt to and cope with external pressures, and as they develop successful approaches and mechanisms to handle the internal challenges, processes and technologies in their organization **(Armstrong, 2009).**

2.3 Components of Organizational Culture

Values, norms and artifact are the most common component of organizational culture; the following is brief description for these components in regarded to organizational culture:

1. Values: Values are beliefs in what is best or good for the organization and what should or ought to happen. The 'value set' of an organization may only be recognized at top level, or it may be shared throughout the business. Furthermore, values can be expressed in many areas like competence, competitiveness, innovation, quality, teamwork. Implicit values that are deeply embedded in the culture of an organization and are reinforced by the behavior of management can be highly influential, while espoused values that are idealistic and are not reflected in managerial behavior may have little or no effect.

2. Norms: Norms are the unwritten rules of behavior, norms tell people what they should do, say, believe, even wear. They are never expressed in writing – if they were, they would be policies or procedures. They are passed on by word of mouth or behavior and can be enforced by the reactions of people if they are violated. They can exert very powerful pressure on behavior because of these reactions.

3. Artifacts: Artifacts are the visible and tangible aspects of an organization that people hear, see or feel which contribute to their understanding of the organization's culture. Artifacts can include such things as the working environment, the tone and language used in e-mails, letters or memoranda, the manner in which people address each other at meetings **(Armstrong, 2009).**

2.4 Safety Climate versus safety Culture

It is useful to distinguish between "safety culture" and "safety climate". Wiegmann defines safety climate as "the temporal state measure of safety culture, subject to commonalities among individual perceptions of the organization." It is therefore situational based, refers to the perceived state of safety at a particular place at a particular time, it is relatively unstable, and subject to change depending upon the features of the current environment or prevailing conditions". He also defined "safety culture" as "the enduring value and priority placed on the worker and public safety by everyone in every group at every level of an organization." This refers to the extent to which individuals and groups will commit to personal responsibility for safety, act to preserve, enhance and communicate safety concerns, strive to actively learn, adapt and modify (both individual and organizational) behavior based on lessons learned from mistakes, and be rewarded in a manner consistent with these values
(Wiegmann and Thaden , 2002).

Schein conceives of climate as preceding culture, he argues that climate is culture in the making. Further on, Schein writes that "climate will be a reflection and manifestation of cultural assumptions". Climate is replaced by culture and culture then conveys a broader and more profound meaning.

Initially, the term organizational climate might have signified the broad construct envisioned by researchers but, successively, it has been restricted to attitudinal or 'psychological' phenomena within an organization, which is how it was initially operationalized. Climate was replaced by the term culture, which nowadays has the comprehensive meaning formerly covered by the term climate
(Guldenmund, 2010).

Section Three
Safety Culture

2.1 History and Background

The development of safety culture as a concept comes due to the evolution of safety management systems and understanding accident causation. The theories of accident causation have progressed through several stages in an effort to identify the root causes of system failures. The first stage, which spanned the period of 1940-1960, was focused on machines and hardware improvements. However, due to the rapid development of new machinery, most accidents were attributed to mechanical malfunctions. The second stage, which took place between 1960 and 1980, focused researchers' attention upon human factors, because employees were seen as the weakest link in the system. The third stage is composed of the interaction between human and technical factors.

The current stage in which we live considers organizational culture an influential factor based upon the work of Schneider (1975) on organizational climate who developed the concept of safety climate and defined it as "a summary of molar perceptions that employees share about their work environments, which act as a frame of reference for guiding appropriate and adaptive task behaviors.

At around the same time as the disastrous nuclear accident at Three Mile Island (U.S.A.) in 1979 and Chernobyl (Ukraine) in 1986, public attention became focused on nuclear safety issues. The accident investigation in Chernobyl revealed many irregularities in organizational safety. The International Nuclear Safety Group's (INSAG) summary report on the Post-Accident Review Meeting on the Chernobyl accident, used the term "safety culture" for the first time to describe a set of factors related to the organizational facets of safety **(Chenhall, 2010).**

This case suggests that the term "safety culture" was not developed on the basis of organizational culture studies or other research in any other field. Nonetheless, as demonstrated above, historically, the two concepts of "safety culture" and "safety climate" were developed separately: "safety climate" had its genesis in subject research literature and "safety culture" has been used arbitrarily by accident investigators with no reference to any scientific source of information **(Nazaruk, 2011).**

2.2 Definitions of Safety Culture

It is important to consider what safety culture is and why it is important to the medical team. There are many different definitions of safety culture. The United Kingdom Health and Safety Commission define it as: "The result of individual and group values, attitudes, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's management of safety. Organizations with a positive safety culture are characterized by communications founded upon mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures" **(Yule, 2003).**

The Safety Standing Committee of the Civil Air Navigation Services Organization (CANSO) has endorsed the following definition of safety culture: "Safety culture refers to the enduring value, priority and commitment placed on safety by every individual and every group at every level of the organization. Safety culture reflects the individual,

group and organizational attitudes, norms and behaviors related to the safe provision of air navigation services **(Joint Planning and Development Office, 2010).**

Also it has been defined as the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management. (Guldenmund ,2000)

It can be summarized that scientists who defined safety culture send a massage inform us the essence of safety culture depend on the value , belief, attitude, toward the organizational safety ,also the conviction and commitment of the employee toward organizational rules and regulation regarding safety.

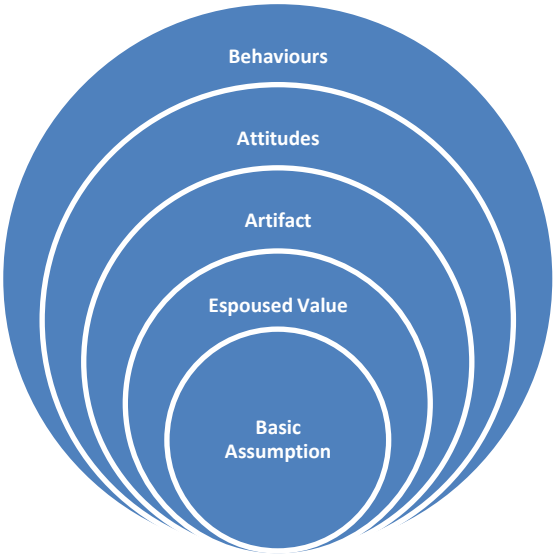
2.3 Elements of Safety Culture

There have been many contributors towards the theory of safety-culture and numerous models have arisen. Some examples of these models are seen in: Leveson 2004,Turner 1998; Rasmussen 1997; Reason 1997 .

To best understand safety culture, the researcher will explain the layered generic models of cultural elements. These elements were developed by E. Schine during his work in which he examined US business cultures which ultimately led to his theory of generic elements of organizational culture .The transferring of these concepts to safety culture was first proposed by specialists at the International Atomic Energy Agency (IAEA). Furthermore, this concept was further developed by the Agency into a methodology used to measure safety-culture in high-hazard industrial complexes.

The theory suggests that organizational culture arises from shared beliefs. These beliefs drive an organization's collective behaviors and are not always overt but, in reality, are clandestine; buried beneath observable supportive layers of values, attitudes and artifacts. It is suggested that beliefs, hence culture, can only be assessed and interpreted indirectly through observing human behavior. Nonetheless, the layered generic model's cultural elements can be summarized as: beliefs, espoused values, attitudes, artifacts and behavior. A combination of the aforementioned elements manifests itself through behavior or human performance **(Taylor, 2012).**

Figure (2.1): The Layered Generic Model's Cultural Elements



Taylor, John Bernard(2012) Safety-culture: Assessing and Changing the Behaviour of Organisations.2nd.ed.England: Gower Publishing ltd.

Also Guldenmund conceptualizes safety-culture as a three-leveled model, whereby each level might be examined separately or together. The 'core' is thought to reflect unspecified basic underlying assumptions that permeate the whole organization. The middle level consists of publicly declared beliefs and values that are operationalize as attitudes while the most superficial level reflects behaviors and artifacts. He also suggests that behaviors might encompass inspections, accidents and near-misses while safety posters and personal protective equipment could be construed as artifacts **(Agwu, 2012).**

2.3.1 Safety Culture Belief:

Beliefs are emotions and assumptions that something is true. They can become deep seated to the extent that a person unconsciously subscribes to them", examples of good safety beliefs are that

- Accountability for safety rests at all times with managers
- Responsibility for safety rest with all employees
- Human error is normal and can be expected
- Our engagement in safe behavior is necessary for safe operation
- Human errors are learning opportunities
- People are fallible and will make mistake

2.3.2 Safety Culture Espoused Value:

Espoused values are the core morals and values of an organization. They are essentially the beliefs upon which the company is built, developed into a code of conduct. These values serve as a sort of blueprint for the manner in which the organization conducts business. As espoused values will typically be very closely aligned with the mission of the organization, they tend to be fairly easy for employees to adopt.

The primary purpose of espoused values is to create a company-wide standard for behavior. This is to ensure that employees follow the company line, rather than their own value systems, when making decisions.

Espoused or spoken safety values are central principles held by the organization's member's managers, values enable an organization's shared safety-beliefs to be upheld**,** Safety values are spoken but they can also appear in documents, an intranet or posted around a facility. The following are some of safety espoused values:

- That everyone is responsible for safety, our own, others' safety and the protection of the facility
- That respect is given to all safety views as everyone has the right to question and report safety issues
- The organization strives for an open dialogue culture
- Teamwork to resolve safety matters is strongly supported
- All events and near misses are reported as we recognize that even minor injuries or events are important
- Thorough safety training and competence as essential for safe working
- We regularly check and report our safety-performance

Shared values that are frequently espoused by management and reinforced through supporting good safety-behavior norms will eventually become engrained within a business.

2.3.3 Safety Attitudes:

Attitudes can be considered as a state of mind towards a subject or an object and it has an important effect on organizational culture either negative or positive. Also safety attitude is considered positive or negative feedback about organizational safety behavior, so a positive safety attitude enforces appropriate safety behavior and negative safety attitude prohibit appropriate safety behavior. The following are some type of organizational unsafe attitude:

- Look after 'our' group not the organization
- The engineering and systems will always protect us
- Financial decisions affect only the balance sheet, not safety
- Organizational structural changes have no effect on safety; they just improve efficiency and competitiveness

Some attitudes can contribute to good safe behaviors and they are as follows:

- Supportive of team problem-solving
- A concerned attitude for one's personal and others safety
- We can always learn and improve our safety practice
- Cooperative attitude – dialogue culture
- Supportive attitude towards individual team members – dialogue culture

2.3.4 Safety Artifacts

Artifact is considered the formal organizational document of safety culture. The robustness of an organization's safety-culture can be indicated by the presence or absence of these artifacts. These contribute to establishing a safety climate as a reminder to all staff of their shared safety-beliefs, values and behaviors.

Formal safety organizational artifact:

- The organization's environment, health and safety mission and policy statement
- Public, annual safety reports
- Safety guidance pocket books
- Safety posters in the plant

Informal safety culture Artifacts

Artifact can provide a psychological support and encouraging employee to promote safety culture, also it assists in developing organizational team spirit and group cohesion.

- Company rituals – safety schemes, the annual safety conference.
- A person's posted photographs showing safety merit or achievement.
- A well-maintained safety wall board; statistics, posted achievements, conferences, lectures.

2.3 .5 Behaviours

Safety behavior is considered the most visible expression of safety culture also safety behavior may reflect the organizational beliefs and values toward safety. The following are some kind of organizational safety behaviors:

The manager of the organization should:

- Give visible leadership and commitment to safety
- Communicate, espouse and implement agreed organizational safety-beliefs and values within a dialogue culture
- Challenge and question on safety issues at all times
- Actively delegate safety responsibility within their framework of safety accountability

The workforce should:

- actively involved in safety initiatives
- Demonstrate autonomy through questioning and challenging on safety issues
- Actively promote a cohesive team spirit
- Be Self-motivated to be compliant with systems

Communicate, espouse and implement agreed organizational safety-beliefs and values **(Taylor, 2012).**

2.4 Characteristics of a Healthy Safety Culture

Reason stresses that limiting organizational accidents requires an "informed culture" which he equates to a positive safety culture that effectively shares information throughout the organization and actively seeks maximum safety. In Reason's model, an informed culture (a positive safety culture) contains the four sub-cultures described below **(Joint Planning and Development Office, 2010):**

2.4.1 Reporting Culture

Failures and 'near misses' are considered by organizations with good safety cultures as lessons which can be used to avoid more serious events. Follow up for incident report is essential to determine the cause and the way to prevent recurrence. In addition to this, timely feedback with appropriate remedial action is necessary, both to the work groups involved and to others who might experience the same problem. Near misses are also very important because they usually present a greater variety and volume of information for learning. If employees are to report near misses, they must believe that these reports are valued and that they and their colleagues will not be penalized or disciplined as a result of coming forward to make them **(INSAG-15, 2002).**

Promoting positive "reporting culture" decreases errors by encouraging employees to divulge information about the hazards or safety concerns that they encounter. Furthermore, Reason describes five important factors in determining the quantity and quality of incident reports **(GAIN working group E, 2004):**

- Protection from disciplinary proceedings.
- Confidentiality or de-identification.
- The separation of the agency or department that collects and analyzes the reports from those with the authority to discipline.
- Rapid, useful, accessible, and intelligible feedback to the reporting community.
- Ease of reporting.

2.4.2 Just Culture

"Reason argues that the foundation of a healthy safety culture is a functioning "just culture" in which all members of an organization understand that genuine errors will not be punished but investigated and understood. Without a just culture, it is considered nearly impossible to achieve the other features of a positive and healthy safety culture.

Reason refers to just culture as "an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety related information, but in which they are also clear about where the line must be drawn between acceptable and unacceptable behavior, as just culture does not tolerate reckless behavior or deliberate malfeasance" **(GAIN working group E, 2004).**

Following an incident or accident, a poor safety culture may assign blame to the individual responsible for the last action prior to the problem. Such a culture discourages the reporting of unsafe conditions and cooperation with incident investigation.

The healthy alternative to a "blaming culture" is a "just culture," in which employees are held accountable for deliberate violations of the rules but are encouraged and rewarded for providing essential safety-related information **(JPDO, 2010).**

2.4.3 Flexible Culture

The nature of today's organizational success depend on their ability to adapt to continuous global changes which make leaders to be more flexible of their leadership style as providing more accountability to their employee also to take decision as the situations needed without referencing or counseling.

The flatter organizational structure and the presence of multi skills workforce are some of strategies used to improve organizational ability to accommodate with external environment.

Flexibility in the Workplace is the possibility for employees and managers to make changes to when, where and how work is done in order to better balance personal needs and business requirements **(JPDO, 2010).**

Researchers continuously confirm that flexible work arrangements reduce stress and healthcare costs, improve productivity and job satisfaction, increase retention, decrease absenteeism and improve loyalty and commitment. Moreover, employees who work flexibly are more satisfied with their jobs, lives, and experience a better work/family balance **(Casey and Grzywacz, 2008).**

A flexible culture allows all employees to attain knowledge of procedures and behavior; this thus makes safety culture self-correcting on every level. When procedures or

behaviors are acquisitioned, potentially unsafe practices may be interrupted before they result in an actual mishap.

In a flexible culture, operational roles and responsibilities become less centralized and more freedom in regards to decision making can take place. In addition to this, all employees feel a shared sense of responsibility for the success of the organization. This results in an organization that is oriented toward goals as opposed to regulations **(JPDO, 2010).**

2.4.4 Learning Culture

Learning is the holistic collection of practices, behaviors, attitudes, patterns of decision making, relationships and valued systems of thought that construct a particular learning context **(Peters, 2003).**

Near misses are our free lessons. Learning organizations have to pay attention to them and take the time to learn from them. People need to be encouraged to reveal mistakes so that everyone can learn from them. Furthermore, Reason defined an organizational learning culture as "the willingness and the competence to draw the right conclusions from its safety information system, and the will to implement major reforms when their need is indicated." He also suggested that the best safety information is derived from analysis of reports of incidents and near misses as well as from proactive checks on the system's vital signs **(Flemons and McRae, 2012).**

An organization that demonstrates a strong “learning culture” is willing to change based upon safety indicators and hazards uncovered through an incidents report. It is essential that timely remedial action be taken to correct identified deficiencies in systems or procedures. Through proactive observation and evaluation, the organization and its employees are able to take part in continuous learning and contribute towards improvements in safety. These activities help identify vulnerabilities or weaknesses to organizational safety.

Leaders interested in promoting transformational organizational learning must come to the people at an experiential level first. They should listen to their experiences, suggestions and key observations. Using this as a beginning allows for the people to use their own language and to speak about the aforementioned things in their own way. The process has the opportunity to create a "shared vision" of a learning system where everyone has ownership in an interactive series of learning opportunities **(Murphy, 2007).**

Systems that provide healthcare workers with the opportunity to report hazards, hazardous situations, errors, close calls and adverse events make it possible for an organization that receives such reports to use these opportunities to learn and hold people accountable for their actions. Finally, when organizational learning is the primary goal, reporting should be confidential, voluntary and easy to perform and should lead to risk mitigation strategies following appropriate analysis **(Flemons and McRae, 2012).**

It can be concluded from the previous section that safety culture is a very important aspect that promotes an environment characterized by:

- Safety climate
- Trust among employees and mangers
- Employee participation in decision-making
- The prominence of justice among employees
- Incident reporting is professionally treated
- The prominence of flexible culture
- The prominence of learning culture

These characteristics insist that management's role rests with the frequent assessment of safety climate and factors affecting safety in all organizations especially in high risk areas such as: health institutions, aviation industries, schools and academic institutions

Finally, the information and knowledge concerning safety culture is related to social science which consist of values, customs and beliefs thus, managers have to take into consideration the effort that should be exerted to achieve the goal of an optimal level of safety culture and it needs an intense follow up to maintain the required level.

Section Four
Intensive Care Unit

2.1 Overview of the Intensive Care Unit

The term "Critical Care Medicine" was first introduced in the late 1950s at the University of Southern California (USC) based upon the concept that a patient whose immediately life is in danger or a critically ill and injured patient may have substantially better chances of survival if provided with professionally advanced minute-to-minute objective measurements.

Also in 1950, anesthesiologist Peter Safar established the concept of (Advanced Support of Life) which means keeping patients sedated and ventilated in an intensive-care environment. Safar is considered to be the first practitioner of intensive-care medicine as a specialty.

BjørnAage Ibsen established the first intensive-care unit in Copenhagen in 1953. However, the first application of this idea in the United States was in 1955 by Dr. William Mosenthal (a surgeon at the Dartmouth-Hitchcock Medical Center) **(Vincent, 2013).**

The ICU is a distinct organizational and geographic entity for clinical activity and care operating in cooperation with other departments integrated in a hospital. The ICU should be an independent unit that functions as a closed unit under the full medical responsibility of the ICU staff in close concert with referring medical specialists.

The objectives of an ICU are the monitoring and support of threatened or failing vital functions in critically ill patients who have illnesses with the potential to endanger life in order to perform adequate diagnostic measures and medical or surgical therapies to improve outcome **(Ferdinande, 1996).**

2.2 The Location and Size of Intensive Care Unit

An ICU should be found in a place connected to other departments in the hospital to ensure that the multidisciplinary needs of intensive care medicine are met. Surgical and medical diagnostic and therapeutic facilities must be represented as well. In addition to this, the availability of medical, anesthesiological, surgical, and radiological consultants should be made possible for ICU purposes on a 24 h/day basis.

An ICU should be accommodated with at least 6 beds; 8–12 beds are considered to be the optimal number. Hospitals with several smaller units should be encouraged to rearrange these units into a single larger department in order to improve efficiency.

On the other hand, a larger ICU may take the opportunity to create separate, specialized functional subunits with 6–8 beds, sharing the same geographical, administrative, and other facilities. The distribution of patients in such subunits may be based upon specific processes of care or pathology. The geographical and economic situation should also influence the size and location of the ICU. Two other factors affect the location and size of the ICU being the numbers of admitted patients and the quantity and quality of therapeutic interventions **(Roosmalen, 2010).**

2.3 The Health Team at the Intensive Care Unit

2.3.1 Medical Team

1. **Director of the Intensive Care Unit:** The responsibility of the administrative and medical management of the unit is held by a physician, whose professional activities are devoted full-time or at least 75% of the time to intensive care. In addition, the head of the ICU has the sole administrative and medical responsibility for this unit and cannot hold top-level responsibilities in other departments or facilities of the hospital. Furthermore, the head of the ICU should be a senior accredited specialist in intensive care medicine as defined by the state's regulatory boards usually with a prior degree in anesthesiology, internal medicine, or surgery, a formal education, training, and experience in intensive care medicine.

2. **Medical Staff Members**: The head of the ICU is assisted by physicians qualified in intensive care medicine. The number of staff required will be calculated according to the (number of beds in the unit, number of shifts per day, desired occupancy rate, extra manpower for holidays and illness, number of days each professional is working per week, the level of provided care, clinical research and teaching workload).

   An experienced physician certified in intensive care medicine is on duty and available upon request at short notice in the hospital during off-duty hours. Regular medical staff members of the ICU must treat patients using state-of-the-art techniques and may consult specialists in different medical, surgical or diagnostic disciplines whenever necessary.

   The regular medical staff members have the task of coordinating the referring physician and consulting medical specialties. The staff members of the ICU take over the medical and administrative responsibilities of the care of the patients admitted to the unit. They also define admission and discharge criteria and carry the responsibility for diagnostic and therapeutic protocols to standardize care in the ICU **(Valentin, 2011).**

3. **Medical Trainees**: Trainees in medical and surgical specialties (e.g., anesthesiology, internal medicine, pulmonologist, surgery) may work in an ICU under clearly defined supervision after two years of training in their primary specialty and within the frame of their specialty. Furthermore, trainees participate in the duties of the ICU under the supervision of a qualified intensive care physician. However, the regular staff carries final medical responsibility. Under ideal conditions, there should be an overlapping in the training periods to reinforce expertise in the group of trainees.

2.3.2 Nursing Staff Organization and Responsibilities

Intensive care medicine is the result of close cooperation among doctors, nurses, and allied health care professionals (AHCP). An efficient process of communication has to be organized between the medical and nursing staff of the ICU thus responsibilities should be clearly defined so that tasks can be carried out correctly.

1. **Head Nurse**: The nursing staff is managed by a dedicated, full-time head nurse who is responsible for the functioning and quality of nursing care. The head nurse should have an extensive experience in intensive care nursing and should be supported by

at least one deputy head nurse able to replace him/her. Furthermore, the head nurse should ensure the continuing education of the nursing staff. Head nurses and deputy head nurses should not normally be expected to participate in routine nursing activities. In addition to this, the head nurse works in collaboration with the medical director, and together they provide policies and protocols, and directives and support to the team.

2. **Nurses**: Intensive care nurses are registered nursing personnel, formally trained in intensive care medicine and emergency medicine. A specific program should be available to assure a minimum of competencies amongst the nursing staff. An experienced nurse (head nurse or a dedicated nurse) is in charge of education and evaluation of the competencies of the nurses**.**

3. **Nurses in Training:** Nurses in specialty training for intensive care and emergency nursing must be trained in ICUs under the supervision of sufficient training personnel. They should not be seen as substitute for regular intensive care nursing staff but may be gradually assigned to patient care according to their actual level of training.

2.3.3 Allied Healthcare Personnel

1. **Physiotherapists**: One physiotherapist with dedicated training and expertise in critically ill patients should be available at the rate of one physiotherapist per five beds for level III care on a 7 day/week basis.

2. **Technicians**: As per the duties of technicians, maintenance, calibration and repair of technical equipment in the ICU must be organized and performed. This realm of activity can be shared with other departments of the hospital but a 24h availability has to be organized with priority for the ICU.

3. **Radiology Technician:** Radiology technicians should be on call around the clock. In addition, interpretation of the medical imaging by the radiologist must be available at all times.

4. **Dietician**: A dietician should be on call during normal work hours.

5. **Speech and Language Therapist**: A speech and language therapist should be available to consult with during normal working hours.

6. **Psychologist**: A psychologist should be available to consult with during normal working hours.

7. **Occupational Therapist**: An occupational therapist should be available to consult with during normal working hours.

8. **Clinical Pharmacist**: A clinical pharmacist should be available to consult with during normal working hours. A sufficient collaboration with the pharmacy is of particular importance in accordance with patient safety.

2.3.4 Administrative Personnel: One medical secretary is required per 12 intensive care beds. Basic tasks are patient administration, external and internal communication

exchange, and the typing of reports and documents. One secretary per six beds may be desirable if she/he is also involved in arranging laboratory journals and medical files. Supporting formal teaching activities may increase this need.

2.3.5 Cleaning Personnel: A specialized group of cleaning personnel familiar with the ICU environment should be available for the ICU. They should be familiar with infection control, prevention protocols and hazards of medical equipment. The cleaning and disinfection of the patient areas are performed under the nurse's supervision. Regular updates should be provided to ensure that cleaning protocols reflect best practice **(Valentin, 2011).**

2.4 Intensive Care Unit Design

ICU design should be approached
by a multidisciplinary team consisting of a medical director, an ICU nurse manager, a chief architect, hospital administration, and the operating engineering staff. The chief architect must be experienced in hospital space programming and hospital functional planning. The engineers should be experienced with the design of mechanical and electrical systems for hospitals, especially critical care units. Finally, environmental engineers, interior designers, staff nurses, physicians, and patients and families may be asked for comments as to how to provide a functional and user-friendly environment.

2.4.1 Floor, Wall and Ceiling Plan and Design

Overall ICU floor, wall and ceiling plan and design should be based upon patient admission patterns, staff and visitor traffic patterns, and the need for support facilities such as nursing stations, storage, administrative and educational requirements, and services that are unique to the individual institution. The location should be chosen so that the unit is adjacent to, or within direct elevator access to and from, the emergency department, operating room, intermediate care units, and radiology department.

Floor

The ideal floor should be easy to clean, non-slippery, able to withstand abuse and absorb sound all-the-while enhancing the overall look and feel of the environment. Carts and beds equipped with large wheels should roll easily over it.

Walls

The walls should be durable and it should be possible to clean and maintain them. Furthermore, the walls should be flame, mildew resistant along with great sound absorption potential and visual appeal. It has been shown that it is very useful to have a height of up to 4-5 ft with the same finish and similar tiles as the floor.

Ceiling

The ceiling should be soiling and break-proof due to leaks and condensation. Tiles or a smooth surface may not be the most appealing, however for all practical purposes; it is easier to remove individual or a few tiles for repairs as opposed to the entire ceiling in times of need. In addition, it is recommended that no lines or wires be kept or run attached to the ceiling or underground because damage does occur once in a while and therefore it should be easy to make repairs if the lines and pipes are easily exposable without hindering patient care.

2.4.2 Waste Disposal and Pollution Control

This is mandatory and a huge safety issue both for the patient and staff, doctors of the hospital and society. It is mandatory to have four covered pans (yellow, blue, red, black) provided for each patient or one may be set between two patients to save space and funds. This is needed to dispose of different grades of waste.

Hand Hygiene and Prevention of Infection

To attain this goal, every bed should have attached to it an alcohol based anti-microbial instant hand wash solution which should be used before the caregiver (doctor/ nurse/ relative/ paramedic) handles the patient. Furthermore, water basins at all bedsides have not proven popular and successful because of poor compliance and also due to reasons of spatial constraints and maintenance issues.

An operation room style sink with an elbow or foot operated water supply system and running hot and cold water with antiseptic soap solution should be there at an easily accessible and unavoidable point. Two people should be able to wash their hands at the same time.

This sink should have an immaculate drainage system, which usually may become a point of great irritation and nuisance in later years or months. All entrants should don a mask and cap in the ICU. No dirty/soiled linen/material should be allowed to stay in the ICU for a long period of time for fear of spreading bad odor, infection and the soiled material should be disposed of as fast as possible. Dirty linen should be replaced regularly at fixed intervals. All surroundings of the ICU should be kept absolutely clean if possible for obvious reasons **(Rungta, 2010).**

Clean and Dirty Utility Rooms

Clean and dirty utility rooms must be separate rooms that lack interconnection. They must be adequately temperature controlled. Floors should be covered with materials without seams to facilitate cleaning. The clean utility room should be used for the storage of all clean and sterile supplies, and may also be used for the storage of clean linen. Shelving and cabinets for storage must be located high enough off the floor to allow easy access to the floor underneath for cleaning. The dirty utility room must contain a clinical sink and a hopper both with hot and cold mixing faucets. Separate covered containers must be provided for soiled linen and waste materials. There should also be designated mechanisms for the disposal of items contaminated by bodily substances and fluids. Special containers should be provided for the disposal of needles and other sharp objects

2.5 Characteristic of internal environment:

Patient Areas

Patients must be situated so that direct or indirect (e.g. by video monitor) visualization by healthcare providers is possible at all times. This permits the monitoring of patient status under both routine and emergency circumstances. The preferred design is to allow a direct line of sight between the patient and the central nursing station.

Central Station

A central nursing station should provide a comfortable area of sufficient size to accommodate all necessary staff functions. When an ICU is of a modular design, each

nursing substation should be capable of providing most of the functions of a central station. There must be adequate overhead and task lighting, and a wall mounted clock should be present. Furthermore, adequate space for computer terminals and printers is essential when automated systems are in use. Patient records should be readily accessible.

Adequate surface space and seating for medical record charting by both physicians and nurses should be provided. Shelving, file cabinets and other storage for medical record forms must be located so that they are readily accessible by all personnel requiring their use (Ferdinande, 1997).

X-ray Viewing Area
A separate room or distinct area near each ICU or ICU cluster should be designated for the viewing and storage of patient radiographs. An illuminated viewing box or carousel of appropriate size should be present to allow for the simultaneous viewing of serial radiographs. A "bright light" should also be available.

Work Areas and Storage
Work areas and storage for critical supplies should be located within or immediately adjacent to each ICU. Alcoves should provide for the storage and rapid retrieval of crash carts and portable monitor/defibrillators. There should be a separate medication area of at least 50 square feet containing a refrigerator for pharmaceuticals, a double locking safe for controlled substances, and a sink with hot and cold running water.

Countertops must be provided for medication preparation, and cabinets should be available for the storage of medications and supplies. If this area is enclosed, a glass wall or walls should be used to permit visualization of patient and ICU activities during medication preparation, and to permit monitoring of the area itself from outside to assure that only authorized personnel are within.

Receptionist Area
Each ICU or ICU cluster should have a receptionist area to control visitor access. Ideally, it should be located so that all visitors must pass by this area before entering. The receptionist should be linked with the ICU by telephone and/or other intercommunication system. It is desirable to have a visitors' entrance separate from that used by healthcare professionals. The visitors' entrance should be securable if there is a need.

Special Procedures Room
If a special procedures room is desired, it should be located within, or immediately adjacent to the ICU. One special procedures room may serve several ICUs in close proximity. Consideration should be given to ease of access for patients transported from areas outside of the ICU. Room size should be sufficient enough to accommodate necessary equipment and personnel. Furthermore, work surfaces and storage areas must be adequate enough to maintain all necessary supplies and permit the adequate performance of all desired procedures without the need for healthcare personnel to leave the room.

Equipment Storage
An area must be provided for the storage and securing of large patient care equipment items not in active use. Space should be adequate enough to provide easy access, location of desired equipment, and retrieval. Grounded electrical outlets should be provided within the storage area in sufficient numbers in order to permit for the recharging of battery operated items.

Nourishment Preparation Area
A patient nourishment preparation area should be identified and equipped with food preparation surfaces, an ice-making machine, a sink with hot and cold running water, a countertop stove and/or microwave oven, and a refrigerator. A hand washing facility should be located in or near the area.

Staff Lounge
A staff lounge must be available on or near each ICU or ICU cluster to provide a private, comfortable, and relaxing environment. Secured locker facilities, showers and toilets should be present. The area should include comfortable seating and adequate nourishment storage and preparation facilities, including a refrigerator, a countertop stove and/or microwave oven. In addition, the lounge must be linked to the ICU by telephone or intercommunication system, and emergency cardiac arrest alarms should be audible within.

Conference Room
A conference room should be conveniently located for ICU physician and staff use. This room must be linked to each relevant ICU by telephone or other intercommunication system, and emergency cardiac arrest alarms should be audible in the room. The conference room may have multiple purposes including continuing education, house staff education, or multidisciplinary patient care conferences. A conference room is ideal for the storage of medical and nursing reference materials and resources, VCRs, and computerized interactive and self-paced learning equipment. However, if the conference room is not large enough for educational activities, a classroom should also be provided nearby.

Visitors' Lounge/ Waiting Room
A visitors' lounge or waiting area should be provided near each ICU or ICU cluster. Visitor access should be controlled by receptionists. One and one-half to two seats per critical care bed are recommended. Public telephones and dining facilities must be available to visitors.

Further recommendations are as follows, the providing of television, public toilet facilities and a drinking fountain. These should all be located within the lounge area or immediately adjacent to it. Warm colors, carpeting, indirect soft lighting, and windows are also highly desirable among the recommendations.

A variety of seating, including upright, lounge, and reclining chairs, is also desirable. Educational materials and lists of hospital and community-based support and resource services should be displayed and a separate family consultation room is recommended.

Patient Transportation Routes
Patients transported to and from an ICU should be transported through corridors separate from those used by the visiting public. Patient privacy should be preserved and patient transportation should be rapid and unobstructed. When elevator transport is required, an oversized keyed elevator, separate from public access, should be provided.

Supply and Service Corridors
A perimeter corridor with easy entrance and exit should be provided for supplying and servicing each ICU. Removal of soiled items and waste should also be accomplished through this corridor. This helps to minimize any disruption of patient care activities and minimizes unnecessary noise. The corridor should be at least 8 feet in width. Doorways, openings, and passages into each ICU must be a minimum of 36 inches in width in order to allow for easy and unobstructed movement of equipment and supplies. Floor coverings should be chosen to withstand heavy use and allow heavy wheeled equipment to be moved without difficulty.

Utilities
Each intensive care unit must have electrical power, water, oxygen, compressed air, vacuum, lighting, and environmental control systems that support the needs of the patients and critical care team under normal and emergency situations. These must meet or exceed regulatory and accreditation agency codes and standards.
A utility column (freestanding, ceiling mounted, or floor mounted) is the preferred source of electrical power, oxygen, compressed air and vacuum, and should contain the controls for temperature and lighting. When appropriately placed, utility columns permit easy access to the patient's head to facilitate emergency airway management if needed **(Thompson, 2012).**

Water Supply
The water supply must be from a certified source, especially if hemodialysis is to be performed. Zone stop valves must be installed on pipes entering each ICU to allow service to be turned off if line breaks occur. Hand-washing sinks deep and wide enough to prevent splashing, preferably equipped with elbow-, knee-, foot-, or sonar-operated faucets, must be available near the entrances to patient modules, or between every two patients in ward-type units. When a toilet is included in a patient module, it should be equipped with bedpan cleaning equipment, including hot and cold water supplies and a spray head with a foot control. In addition, when toilets are present, environmental control systems must be modified.

Environmental Control Systems
Suitable and safe air quality must be maintained at all times. A minimum of six total air changes per room per hour are required, with two air changes per hour composed of outside air. For rooms having toilets, the required toilet exhaust of 75 cubic feet per minute should be composed of outside air. Central air-conditioning systems and recalculated air must pass through appropriate filters. Air conditioning and heating should be provided with an emphasis on patient comfort. For critical care units having enclosed patient modules, the temperature should be adjustable within each module.

Computerized Charting
Computerized patient charting is becoming increasingly popular in ICUs. These systems provide for "paperless" data management, order entry, and nurse and physician charting.

If and when a decision is made to utilize this technology, it is important to integrate such a system fully with all ICU activities.

Bedside terminals facilitate patient management by permitting nurses and physicians to remain at the bedside during the charting process. To minimize errors, monitored data can be recorded automatically. In addition, when these systems are properly interfaced with existing hospital data systems, data retrieval (laboratory results, x-ray reports, etc.) can be performed at the bedside. Overall, remote data transmission capabilities (to offices, on-call rooms, etc.) are desirable to facilitate continuity in patient management.

Voice Intercommunication Systems

All ICUs should have an intercommunication system that provides voice linkage between the central nursing station, patient modules, physician on-call rooms, conference rooms, and the staff lounge. Supply areas and the visitors' lounge/waiting room may also be included in the system. When appropriate, linkage to key departments such as the blood bank, pharmacy and clinical laboratories should be included. Furthermore, some types of communication, such as personnel tracking and non-emergency calls, may best be accomplished using visual displays (e.g. numeric or color-coded lights) that eliminate unnecessary noise. Finally, in addition to standard telephone service for each ICU, which should provide hospital-wide and external communications capabilities, there should be a mechanism for emergency internal and external communications when normal systems fail.

Physician On-Call Rooms

When in-house physician services are provided on a 24-hour basis, on-call rooms should be available close to the ICU. Toilet and shower facilities should be provided. On-call rooms must be linked to the ICU by telephone and/or voice intercommunication system. In addition, cardiac arrest/emergency alarms must be audible in these rooms.

Administrative Offices

It is often desirable to have office space available adjacent to the ICU for medical and nursing management and administrative personnel. These offices should be large enough to permit for meetings and consultations with ICU team members and/or patients' families.

Additional office space may be allocated for staff development personnel, clinical specialists, and social services, as applicable. The ability to place these individuals in close proximity to an ICU may facilitate an integrated and broad-based team approach towards patient management (Gullo et al., 2009).

Section Five
Intensive Care Unit in Gaza City

2.1 Introduction

The Palestinian territories consist of two geographically separated areas; the West Bank (WB) and the Gaza Strip. The Gaza Strip is a very crowded place which is 46 kilometers long, 5-12 kilometers wide and has a total area of 365 square kilometers. The Gaza Strip is administratively divided into five governorates: the North, Gaza, the Middle Area, Kan Younis and Rafah. The Gaza Strip consists of four cities, fourteen villages and eight refugee camps. It also has a population of 1.561.906 people.
(Backry, 2013).

Palestine Health Care System (HCS)

The Palestine HCS consists of four major providers: the Ministry of Health (MOH), the United Nation Relief and Working Agency (UNRWA), Non-Governmental Organizations and for-profit providers. The main provider is the MOH which operates 25 hospitals and 453 Primary Health Care Facilities **(Backry, 2013).**

The intensive care unit is considered to be one of the most integral medical departments which need special attention from human resource managers as well as from other managers in the hospital. The healthcare services introduced to intensive care patient needs advanced medical equipment, performed in a suitable environment which promotes innovation, creativity amongst health team members and satisfaction for both the patient and his/her family. Additionally, ICUs in Gaza City are distributed amongst the main governmental hospitals in Gaza City being: Al-Shiffa, Al-Nasser and Al-Dora hospitals.

2.2 Al-Shiffa Hospital

Al-Shiffa hospital is a medical complex that includes three wings: a surgical wing, an obstetric and a gynecological wing and medical wing . The clinical capacity of the hospital includes 500 beds. It is located in the center-west of Gaza City and was built in 1946 on an area of 42000m2. It serves an area of coverage of the Gaza province with a population of 496,411 people in particular and also serves the Gaza strip in general. It has two main ICUs (an adult general ICU and a NICU) which will be included in my study **(Backry, 2013).**

2.2.1 Adult Intensive Care Unit

This unit provides intensive care services for surgical patients admitted to Al-Shiffa hospital. The percentage of ICU beds to admitted cases in the general surgical hospital in Al-Shiffa hospital is 3% and this percentage needs to be improved upon due to the unstable condition in the Gaza Strip. The size of the unit is not big enough for the number of occupied beds. In addition, it is difficult to increase the number of beds in the case of an increased number of patients.

The medical team consists of twenty-five physicians, only two of which who are specialized in intensive care medicine which means that it is necessary to increase the number of the specialists. On the other hand, the nursing team consists of twenty nurses and this is not enough based upon the suggested number of thirty-six. Nursing team members have a bachelor's degree in general nursing, however, none of them have a

special degree in intensive care nursing which indicates an urgent need for specialized programs in ICU nursing in regards to education **(Project for the Evaluation of Intensive Care Units and Nurseries in Hospital Units, 2010).**

The ratio of nurses to patients during the shift is one nurse to every two patients. This provides for adequate responsibility among healthcare team members and allows for good communication between team members. Furthermore, the head nurse of the intensive care unit has good experience in intensive care nursing. In addition, having a deputy nurse, allows him/her to participate in the decision-making process of the unit.

Allied Health Care Personnel

This unit has a physiotherapist, an on-call technician, a radiology technician, a clinical pharmacist, administrative personnel and nonprofessional cleaning personnel. However, there was no dietitian, speech and language therapist, psychologist or occupational therapist present. Nonetheless, there is an accepted protocol for admission, discharge and transfer.

Intensive Care Unit Design:

Positives: The design of the ICU is good as it is easily accessible due to its location which is connected to other surgical departments. Furthermore, the floor is easily cleanable and the carts and beds are equipped with large wheels which easily roll over the floor. The ICU also has a soil and break-proof ceiling with easily removed tiles that enable it to be removed easily for repair or special occasions. The walls are durable and this makes cleaning easily done. The patient area is situated so that direct or indirect visualization by healthcare providers is possible at all times. There is also a comfortable central nursing station, adequate lighting, adequate space for central monitoring and adequate surface space and seating for medical record charting by both the physician and nurse. Furthermore, this area is suited well for storage via a countertop for medication and it also has a professional administrative personnel and an acceptable conference room. Other benefits include a good water and oxygen supply, compressed air, vacuum, lightening and good air conditioning.

Negatives: On the other hand, the inadequacies of the setup include: no receptionist, no waiting area for visitors, no special procedure room, no nourishment preparation area, no staff lounge and a terrible patient transportation route due to it always being occupied by visitors. In addition to the aforementioned detriments, there is also no clear work protocol for nurses, physicians, or any protocol that helps ameliorate the relationship between intensive healthcare team members and other hospital workers **(An Interview with the Head Nurse, 2013)**

2.2.2 Neonatal Intensive Care Unit

This unit provides intensive care services for neonates who are delivered at Al-Shiffa hospital. The department consists of thirty beds that receive about one thousand babies each month. The department consists of two floors with no elevator. The healthcare team, on the other hand, consists of seventeen physicians and thirty-one nurses. The number of physicians is enough but there is a shortage of nurses due to the required number being sixty.

Among the detriments are that there are only two specialist physicians and no specialized nurses thus it is necessary to increase the number of specialized physicians and nurses. It was also shown that there was no clear work protocol for nurses,

physicians, or any protocol that helps ameliorate the relationship between intensive healthcare team members and other hospital workers. In addition, there was an unclear protocol for admissions, discharge and transportation. However, the silver lining of the assessment was that a good infection control protocol was found to exist when it came to medical supplies **(Project for the Evaluation of Intensive Care Units and Nurseries in Hospital Units, 2010).**

The nurse to patient ratio was found to be one nurse to four patients. Furthermore responsibilities amongst healthcare team members were not clearly defined and acceptable in regards to communication. However, it was found that head nurses of intensive care unit have good experience in intensive care nursing and also have one deputy nurse who participates in decision-making concerning the unit.

Allied Healthcare Personnel

This unit has a physiotherapist, an on-call technician, a radiology technician and nonprofessional cleaning personnel. On the other hand, there was no dietitian, therapist, psychologist, clinical pharmacist, administrative personnel and an unaccepted protocol for admissions, discharge and/or transfer.

Intensive Care Unit Design:

Positives: It has a good design with an easily accessible location connected to the maternity hospital. The ceiling is soil and break-proof and allows for the tiles to be easily removed for repair or for special purposes. Furthermore, the walls are durable and make cleaning easily done. Other positives include; a good water and oxygen supply, compressed air, vacuum, lightening and good air conditioning.

Negatives: The patient area is situated so that direct or indirect visualization by a healthcare provider is difficult. Furthermore, other obstacles to good healthcare providence are an uncomfortable central nursing station, adequate lighting, no central monitoring, inadequate surface or space and seating for medical record charting by both physician and nurse. In addition, the storage area is ineffective due to the lack of a countertop for medication, professional administrative personnel and conference room. The floor takes a long time to be cleaned, and carts and beds equipped with large wheels have difficulty rolling on the floor and create a lot of noise. Other hindrances include no receptionist or waiting area for visitors, no special procedure room, no nourishment preparation area or staff lounge, no effective patient transportation route due to it being always occupied by visitors (observation by the researcher)

2.3 Al-Nasser Hospital

Al-Nasser hospital provides pediatric health services and has a clinical capacity of 151 beds. It is located in the Nasser district in Gaza City and was built in 1962 on an area of 4400m2. It serves the area coverage the province of Gaza from Wadi Gaza in the south until the neighborhood of Shik Radwann in the north and serves a population of 496,411 inhabitants. It has two ICUs (a general pediatric ICU and a NICU) which will be included in my study **(Backry, 2013).**

2.3.1 Pediatric Intensive Care Unit

Th**e** building, place and size of the unit are suitable; the area is not crowded. The team consists of seven physicians two of which are specialized in intensive care medicine. Furthermore, there are not enough nurses and only one nurse had special training in

intensive care medicine **(Project for the Evaluation of Intensive Care Units and Nurseries in Hospital Units, 2010).**
The nurse to patient ratio was found to be one nurse to every two patients. The responsibility amongst healthcare professionals is not clear and an acceptable method of communication exists between healthcare professionals and people who receive the services but ineffective way of communication with nursing supervisors during evening and night shift Furthermore, the head nurse of the intensive care unit has good experience in intensive care nursing and has one deputy nurse who participates in decision-making concerning the unit.

Allied Healthcare Personnel
This unit has a physiotherapist, an on-call technician, a radiology technician and nonprofessional cleaning personnel. However, no dietitian, speech and language therapist, psychologist, occupational therapist, clinical pharmacist or administrative personnel, accepted protocol for admission, discharge and transfer.

Intensive Care Unit Design
Positives: The ceiling is break-proof and allows for the tiles to be easily removed for repair or for special purposes. In addition, the walls are durable and make cleaning easily done. Other positives include; a good water and oxygen supply, compressed air, vacuum, lightening and good air conditioning. The patient area is situated so that direct or indirect visualization by health care provider is possible at all times. Further positive features are: a comfortable central nursing station, adequate lighting, an acceptable patient transportation protocol, a good infection control protocol, a good and clear protocol for admission and discharge and various rules and policies that direct work inside and outside of the unit.

Negatives: There are numerous negatives to the plan and they include: inadequate surface, space and seating for medical record charting by both physician and nurse, an ineffective area for storage, no countertop for medication, no conference room, no receptionist or waiting area for visitors, no special procedure room, nourishment preparation area or staff lounge, no a clear work protocol for nurses ,physicians and no clear protocol to control the relationship between intensive unit healthcare professionals and other workers in the hospital **(An interview with the Head Nurse, 2013).**

2.3.2 Neonatal Intensive Care Unit, (Al-Nasser Hospital)
This unit provides intensive care for neonates delivered at hospitals or clinics in Gaza and in Gabalia cities. It consists of thirty beds while the healthcare team consists of nine physicians one of who are specialized in neonatal intensive care services and thirty-five nurses (staff and practical).

The unit consists of a well-structured building of good size, place and an environment conducive to serve neonatal patients well. The unit also has a reputation for an acceptable infection control, admission, discharge and transfer protocols.

The ratio of nurses to patients is one nurse to every three patients. Furthermore, the responsibility among healthcare team professionals is clear-cut and a good method of communication is prevalent. In addition, the head nurse of the intensive care unit has good experience in intensive care nursing and has one deputy nurse who participates in the decision-making process concerning the unit.

Allied Healthcare Personnel
This unit has a physiotherapist, an on-call technician, a radiology technician, nonprofessional cleaning personnel and an accepted protocol for admission, discharge and transfer. However, there is no dietitian, , psychologist, occupational therapist or clinical pharmacist administrative personnel present.

Intensive Care Unit Design:
Positives: It has a good design due to easy accessibility, a location connected to other departments of the hospital, a well-suited area for storage, an acceptable patient transportation route, a countertop for medication, walls that are durable and make cleaning easy, an easily cleanable floor and carts and beds equipped with large wheels that make it easy to roll on the floor. In addition, there is a break-proof ceiling that allows for easy repair and removal of tiles for special purposes, a Good water and oxygen supply, compressed air, vacuum, lightening and good air conditioning. Furthermore, the patient area is situated so that direct or indirect visualization by health care provider is possible at all times. There is also a comfortable central nursing station, adequate lighting, adequate space for central monitoring, adequate surface space and seating for medical record charting by both physician and nurse.
Negatives: There is no receptionist area, waiting area for visitors, special procedure room, nourishment preparation area or staff lounge. In addition, there is not a clear work protocol for the staff to control the relationship between intensive healthcare professionals and other workers in the hospital.
(An interview with the Head Nurse, 2013).

2.4 Dr. Abed Aziz Rantisi Hospital, (Intensive Care Unit)
Dr. Abed Aziz Rantisi pediatric hospital provides specialized medical services for children and it has a clinical capacity of 49 beds, is located in the Naser district and started operating in 2008 **(Backry, 2013).**

The ICU in this hospital provides intensive care services for patients admitted to Al-Rantesi hospital. It is also spacious, with a sturdy building and good location, size and place. The healthcare team consists of six physicians two of which are specialized in intensive care medicine and eleven nurses who have a bachelor's degree. However, none of the nurses has any specialty in intensive care nursing. On the other hand, there is a good protocol for infection control as well as a clear protocol for admission, discharge and transportation **(Project for the Evaluation of Intensive Care Units and Nurseries in Hospital Units, 2010).**

The ratio of nurses to patients is one nurse to every three patients. Responsibility amongst healthcare team members is clear and good methods of communication have been established. Furthermore, the head nurse of the intensive care unit has good experience in intensive care nursing and has one deputy nurse who participates in the decision-making process concerning the unit.
(An interview with the Head Nurse, 2013).

Allied Health Care Personnel
This unit has a physiotherapist, an on-call technician, a radiology technician and nonprofessional cleaning personnel. However, the unit does not have a dietitian, speech and language therapist, psychologist, occupational therapist or clinical pharmacist administrative personnel. Nonetheless, an accepted protocol for admission, discharge and transfer exists.

Intensive Care Unit Design:
Positives: The ICU has a good design due to its easily accessible location which is connected to other departments of the hospital, a floor which is easily cleaned, carts and beds equipped with large wheels that make it easy to roll on the ground, a break-proof ceiling, easily removable tiles that provide for an ease of repair and removal for special purposes, walls which are durable and make cleaning easy and possible, a comfortable central nursing station, adequate lighting, adequate space for central monitoring, adequate surface space and seating for medical record charting by both physician and nurse, a well-suited area for storage, a countertop for medication, an acceptable patient transportation route, a good water and oxygen supply, compressed air, vacuum, lightening, good air conditioning and a clear work protocol for nurses and physicians.

Negatives: there is no receptionist or waiting area for visitors, special procedure room, nourishment preparation area or staff lounge. In addition, there is an unclear protocol for the control of the relationship between intensive healthcare team members and other healthcare workers in the hospital **(An interview with the Head Nurse).**

2.5 Al-Dora Hospital, (Children Intensive Care Unit)
Mohamed Al-Dora hospital for children has a capacity of 72 beds, is located in Gaza City and was established in the year 2000 on an area of 1600m2 **(Backry, 2013).**

The location, building and size of the unit are not suitable; it is crowded and needs an elevator. Furthermore, the healthcare team consists of seven unspecialized doctors and fourteen general nurses. On the other hand, there is a good protocol for infection control and clear polices for admission, discharge and supplies **(Project for the Evaluation of Intensive Care Units and Nurseries in Hospital Units, 2010).**

The ratio of nurses to patients is one nurse to every two patients however; responsibility amongst healthcare professionals is not clear and there are acceptable methods of communication available. In addition, the head nurse of the intensive care unit has good experience in intensive care nursing and has one deputy nurse who participates in decision-making concerning the unit. **(An interview with the Head Nurse, 2013).**

Allied Healthcare Personnel
This unit has a physiotherapist, an on-call technician, a radiology technician and nonprofessional cleaning personnel. On the other hand, there is no dietitian, speech and language therapist, psychologist, occupational therapist, clinical pharmacist or administrative personnel or accepted protocol for admission, discharge and transfer.

Intensive Care Unit Design:

Negatives: The design of the unit is lackluster and has to be changed due to it being far away from the other departments of the hospital. In addition, the floor takes a long time to be cleaned and carts and beds are equipped with large wheels which roll with difficulty and produce a lot of noise. There is also an uncomfortable central nursing station, no central monitoring inadequate surface, an ineffective area for storage, no countertop for medication, no receptionist or waiting area for visitors, no special procedure room, no nourishment preparation area or staff lounge, no clear work protocol for nurses, physicians, or any protocol that controls the relationship between intensive healthcare team members and other healthcare workers in the hospital

(An interview with the head nurse,2013).

Chapter Three

Previous Studies

3.1 Introduction:

Safety cultures reflect the attitudes, beliefs, perceptions, and values that employees share in relation to safety**,** organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures **(Yule, 2008).**

A number of recent and old published studies/ papers in certified journals are viewed to support this research. These studies on safety culture are from different Palestinian, Arab and international authors from countries worldwide.

3.2 Local and Arabic Studies

1. **Hamdan and Saleem (2012): "Assessment of Patient Safety Culture in Palestinian Public Hospitals"**

The objective of this study is to assess the prevalent patient safety culture in Palestinian public hospitals. All 11 general public hospitals in the West Bank run by the MOH (Ministry of Health) participated in the study. Only one specialty public hospital (Psychiatry) was excluded to ensure similarity amongst participants.

A cross-sectional quantitative design was adopted. The study used an Arabic translated version of the (Hospital Survey on Patient Safety Culture) HSOPSC. Data was collected in the period between July and August 2011. The study targeted all the clinical and non-clinical hospital staff that had direct contact with patients, including physicians and nurses, staff without direct patient contact but whose work directly affects patient care including paramedical and support services and hospital managers and supervisors. Furthermore, a self-administered questionnaire (HSOPSC) was distributed to the entire target group estimated to be 2852 out of a total of 3229 hospital personnel.

Data was analyzed using the Microsoft Excel and SPSS 16.0. A level of $P \leq 0.05$ was considered to represent statistical significance. The results showed that the patient safety composites with the highest positive scores were teamwork within units (71%), organizational learning and continuous improvement (62%) and supervisor/manager expectations and actions promoting patient safety (56%). The composites with the lowest scores were non-punitive response to error (17%), frequency of events reported (35%), communication openness (36%), hospital management support for patient safety (37%) and staffing (38%).

This study highlights the existence of a punitive and blame-prone culture which is saddled by underreporting of events, a lack of openness in regards to communication and inadequate management support: these are all the important key challenges that must be addressed for hospital care to be safe for the patients. The baseline survey results are valuable for designing and implementing the patient safety program and for measuring future progress.

2. **Abdou and Saber (2011): "A Baseline Assessment of Patient Safety Culture among Nurses at Student University Hospital"**

This study aimed at assessing patient safety culture among nurses at Student University Hospital - Egypt. A descriptive correlation research design was selected for this study. The study was conducted among twelve inpatients units at Student University Hospital. Subjects consist of a convenience sample of one hundred and sixty five nurses from those meeting the inclusion criteria, available during data collection period and working

in the above mentioned settings. A self-administered Safety Attitude Questionnaire (SAQ) developed by the University of Texas was used to collect data. Data was collected over a one-month period.

Bivariate and multivariate analysis revealed that positive responses of safety culture dimensions had the highest ratings among nurses. They were generally satisfied with their job and with the teamwork climate. However, the lowest ratings were reported concerning perceptions of management. In addition, technical nurses who were employed in the ICU reflected a significantly higher perception of overall safety culture dimensions as compared to those professional nurses who were working in the CCU and general units. Significant relationship was observed between socio demographic characteristics and all dimensions of safety culture.

The finding concluded that providing insight into nurses' safety attitudes can be used as a baseline for raising safety awareness throughout the organization and identifying the areas that need improvement.

3. **Alahmadi (2010): "Assessment of patient safety culture in Saudi Arabian Hospitals"**

The purpose of this study was to evaluate the extent to which the culture supports patients' safety at Saudi hospitals. Data was collected via survey. A questionnaire was distributed hospital-wide to13 general hospitals in Riyadh, Saudi Arabia to 223 health professionals including nurses, technicians, managers and medical staff.

The HSOPSC was used to identify dimensions of patient safety culture. The responses to the questionnaires resulted in an overall Patient Safety Grade of excellent or very good by 60% of respondents, acceptable by 33% and failing or poor by 7%. More than half of respondents thought that managers overlooked safety problems that happened over and over. Areas of strength, for most hospitals, were organizational learning/continuous improvement, teamwork within units, feedback and communication about errors. Areas with potential for improvement for most hospitals were under-reporting of events, non-punitive response to error, staffing and teamwork across hospital units. In conclusion, leadership is a critical element to the effectiveness of patient safety initiatives. Response to errors is an important determinant of safety culture in healthcare organizations. In order for healthcare organizations to create a culture of safety and improvement, they must eliminate the fear of blame and create a climate of open communication and continuous learning.

4. **Al-Ahmadi (2009): "Measuring Patient Safety Culture in Riyadh's Hospitals (Saudi Arabia): A Comparison between Public and Private Hospitals"**

The aim of this study was to explore the perceptions of Riyadh hospitals' staff concerning patient safety and error reporting and to identify factors that influence the levels of frequency pertaining to events reported .

A cross-sectional survey, using a (HSPSC), was carried out in 2008. The questionnaire was distributed to all of the hospitals' staff in Riyadh, which included nine public hospitals and two private hospitals. A total of 1224 questionnaires were returned over a six-month period, giving a response rate of 47.4% .

Results: Organizational learning was the safety culture dimension with the highest positive response (75.9%), while the non-punitive response to error received the lowest positive response (21.1%). The key areas that needed improvement in public hospitals include handoffs and transitions, communication openness, staffing, and non-punitive response to error. The private hospitals need an improvement in two aspects; staffing and non-punitive response to error. The results show that all types of mistakes were reported more frequency in private hospitals than in public hospitals. Regression analysis indicated that event reporting was influenced by feedback and communication about error, staff position, teamwork across units, non- punitive response to error, supervisor/managers expectations and actions promoting patients safety, and the type of hospital.

Conclusion and Recommendations: Areas that needed improvement in Riyadh hospitals included handoffs and transitions, communication openness, staffing and non-punitive response to error. Healthcare organizations should reduce the fear of blame culture and create a climate of open communication and continuous learning.

3.3 International Studies

1. **Raftopoulos and Pavlakis (2012): "Safety Climate in Five Intensive Care Units: A Nationwide Hospital Survey Using the Greek-Cypriot Version of the Safety Attitudes Questionnaire"**

Patient safety is considered an antecedent of the quality of hospital care. The explicit need to focus on quality of care underpins the aim of the study which evaluated the safety culture and teamwork climate in the public intensive care units (ICUs) of the five regional public hospitals in Cyprus as measured by a validated safety attitudes tool. A questionnaire that included the Greek version of the generic version of the Safety Attitudes Questionnaire has been used in all public ICUs across Cyprus.

Results: There were 132 (76.7%) fully completed questionnaires of 172 registered nurses who are currently positioned in Cyprus ICUs. The mean age of the participants was 33.09 ± 08.16 years. The mean of the total working years as a nurse was 10.82 ± 8.47 years, whereas the mean of the total work experience in the ICU units was 6.05 ± 5.16 years. The sample's age strongly correlated with teamwork; nurses with more years of experience rated a higher teamwork score of (P = .02), and their perceptions of management were better than those of the inexperienced nurses. Another result of the study was that it was verified that considerable safety culture variations between the ICUs of the regional hospitals of Cyprus exist .

Age, infrastructure, and the mix of nursing skill are variables that affect patient safety attitudes in the ICU environment. These findings can be the route to establishing a patient safety culture assessment tool. Responsible bodies should take into consideration the findings of this study to implement a patient safety culture scheme using the correct mechanisms for early identification of the problems, engaging the most appropriate measures to handle them nationally and separately in accordance with institutional settings.

2. **Ballangrud, et al. (2012): "Nurses' Perceptions of Patient Safety Climate in Intensive Care Units: A Cross-sectional Study"**

The objectives of this study were to investigate registered nurses' perceptions of the patient safety climate in intensive care units and to explore potential predictors for overall perception of safety and frequency of incident reporting. A cross-sectional design was conducted, using the HSOPSC, measuring 12 patient safety climate dimensions: seven at the unit level and three at the hospital level.

Setting: Ten intensive care units (ICUs) in six hospitals in one trust Norway.
Results: In total, 220 registered nurses (RNs) responded (72%). Seven of 12 dimensions achieved a RN proportion of positive scores over 55%. Five achieved a lower proportion. Significant differences in RNs' perceptions of patient safety were found between types of units and between the four hospitals. The study showed that RNs in the ICU are most positive towards the patient safety climate at a unit level. Hence, continuous improvements are needed concerning incident reporting, feedback and communication about errors and organizational learning.

3. **Schwendimann,et al. (2012): "Variation in Safety Culture Dimensions within and between the US and Swiss: Hospital Units: an Exploratory Study"**

The purpose of this study was to explore the variability in safety culture dimensions within and between Swiss and US clinical areas. A Cross-sectional design was applied. The 30-item (SAQ) was distributed in 2009 to clinicians involved in direct patient care in medical and surgical units of two Swiss and 10 US hospitals. At the unit level, results were calculated as the percentage of respondents within a unit who reported positive perceptions. Furthermore Multivariate analysis of Variance (MANOVA) and analysis of Variance (ANOVA) were used to test for differences between and within US and Swiss hospital units.

Findings: The authors found differences in SAQ dimensions at the country, hospital and unit levels. The general emphasis is placed upon teamwork and the quality of the safety climate. Safety efforts appear to be highlighting dimensions that vary more at the unit than hospital level. The researchers suggest that patient safety improvement interventions target unit level changes, and they support the emphasis being placed on teamwork and safety climate, as these vary significantly at the unit level across countries.

4. **Sukadarin et al. (2012): "Preliminary Study of the Safety Culture in a Manufacturing Industry"**

This study was carried out to measure the safety culture in the Malaysian manufacturing industry. A safety climate questionnaire was utilized to explore the perception of employees towards safety culture in a manufacturing industry. Respondents were asked to answer two sections of questions: one being about respondents' demographics and the other being about safety climate. Seven factors in the safety climate questionnaire were used to measure safety culture: safety management system and procedure, management commitment, safety attitudes, workmate's influences, employee's involvement, safety knowledge, and safety behavior.

The result shows that employees have positive perceptions about the safety management system and procedures that were implemented in the organization as well as workmate's

influence, employee involvement, safety knowledge and safety behavior. In contrast however, employees' perceptions towards management commitment are negative, whereby they felt that management commitment in terms of safety and health in the organization is still weak.

In order to create safety culture, the researcher recommended that management must ensure that all machinery, engineering and workplace related issues have been catered to first. In addition, a sense of belonging must be taken into consideration before any other aspect of safety culture is instilled. Both the management and employees need to play their own roles and fulfill their responsibilities in order to ensure that the objectives of safety culture are realized.

5. **Thorp (2012): "Workplace Engagement and Workers' Compensation Claims as Predictors for Patient Safety Culture"**

The objective of this study was to demonstrate the relationship between employee engagement and workplace safety for predicting patient safety culture. The Gallup Q^{12} survey and an approved, abbreviated, and validated subset of questions from the Hospital Survey on Patient Safety Culture were administered to staff at a large tertiary academic medical center in 2007 and 2009. After controlling for demographic variables, researchers conducted a longitudinal, hierarchical linear regression analysis to study the unique contributions of employee engagement, changes in employee engagement and employee safety in predicting patient safety culture.

The result of the study showed that teams with a higher baseline engagement, more positive change in engagement, fewer workers' compensation claims, and fewer part-time associates in previous years had stronger patient safety cultures in 2009. In addition to this, baseline engagement and change in engagement were the strongest independent predictors of patient safety culture in 2009.

Conclusions: A synergistic effect exists between employee engagement and decreased levels of workers' compensation claims for improving patient safety culture. Organizations can improve engagement and implement safety policies, procedures, and devices for employees with the ultimate effect of improving patient safety cultur

6. **Wadesango (2012): "The Influence of Teacher Participation in Decision-making on their Occupational Morale"**

Organizational theorists suggest that participatory decision-making (PDM) often leads to more effective organizations and higher staff morale. Bureaucracies impose restraints on individuals by refusing to treat them as mature actors capable of self-direction thereby demoralizing them. This study examined the influence of teacher participation in decision-making upon their morale in Zimbabwean schools. Qualitative/interpretive research methodology was adopted and a case study research design was used as the operational framework for data gathering. Data was collected from 5 secondary schools in the Gweru Education District of Zimbabwe. The population sample comprised of 5 secondary school heads and 20 secondary school teachers who were purposefully selected. In order to get an in-depth view of the analysis of the shared decision-making concept, a series of interviews were conducted over a period of two months. To get further insight into teacher participation in the decision-making processes in schools, the author observed two staff meetings at each school under study.

The conclusion of the study showed that insignificant teacher participation in critical school issues resulted in low staff morale and this culminated in stressful school governance. The study recommended that importance be placed upon teacher empowerment in regards to decision-making.

7. **Abstoss, et al. (2011): "Increasing Medication Error Reporting Rates while Reducing Harm through Simultaneous Cultural and System-level Interventions in an Intensive Care Unit"**

The objective of this study was to analyze patterns in reporting rates of medication errors, rates of medication errors with harm, and responses to the (SAQ), all in the context of four cultural and three system-level interventions for medication safety in an intensive care unit.

Over a period of 2.5 years (May 2007 to November 2009), seven overlapping interventions to improve medication safety and reporting were implemented: a poster tracking days since last medication error resulting in harm, a continuous slideshow showing performance metrics in the staff lounge, a multiple didactic curricula, unit-wide emails summarizing medication errors, computerized physician order entry, introduction of unit-based pharmacy technicians for medication delivery, and patient safety report form streamlining. The reporting rate of medication errors and errors with harm were analyzed over time using statistical process control.

SAQ responses were collected annually and the result of this study showed that actively developing a transparent and positive safety culture at the unit level can improve medication safety. System-level mechanisms to promote medication safety are likely important factors that enable safety culture to translate into better outcomes, but may be independently ineffective in the face of poor safety culture.

8. **Profit, et al. (2011): "Neonatal Intensive Care Unit Safety Culture Varies Widely"**

Variation in healthcare delivery and outcomes in neonatal intensive care units (NICUs) may be partly explained by differences in safety culture. The objective of this study is to describe NICU caregiver assessments of safety culture, explore variability within and between NICUs on safety culture domains, and test for association with caregiver characteristics. NICU caregivers in 12 hospitals were surveyed using the (SAQ), which has six scales: teamwork climate, safety climate, job satisfaction, stress recognition, perception of management and working conditions.

There was substantial variation in safety culture domains among NICUs. Composite mean score across the six domains ranged from 56.3 to 77.8 on a 100-point scale and NICUs in the top four NICUs were significantly different from the bottom four ($p<0.001$). Across the six domains, respondent assessments varied widely, but were least positive on perceptions of management (3%–80% positive; mean 33.3%) and stress recognition (18%–61% positive; mean 41.3%).

Comparisons of SAQ scale scores between NICUs and a previously published adult ICU cohort generally revealed higher scores for NICUs. Composite scores for physicians were 8.2 ($p = 0.04$) and 9.5 ($p = 0.02$) points higher than for nurses and ancillary personnel

Key Findings Reveal:

- A significant variation in safety culture domains among this sample of NICUs.
- Opportunities for improvement within all domains measured by the SAQ.
- Patterns of more positive safety culture domains in NICUs relative to a large sample of adult ICUs from the same time period.
- The trend for an association between job position and safety culture where physicians assess teamwork and safety related norms more positively than nurses and other ancillary personnel.

9. **Jaafarpour and Khani (2011): "The Participation of Nurses In Decision Making"**

Staff nurse decisional involvement is associated with positive patient outcomes including a higher nurse perceived quality of patient care, lower patient mortality, fewer complications and lower levels of job strain and burnout. The aim of this study was to investigate the actual and preferred levels of the decisional involvement of nurses in the Iranian state. It was a descriptive study that was performed at ILAM general hospitals, IR, during the year 2010.

The research instrument which was used was the decisional involvement scale (DIS). A sample of 96 registered nurses (RN) was enrolled in the study by using a simple random sampling method. Descriptive and inferential statistical analyses were performed by using the Statistical Package for Social Sciences Program, Version 11.5 (SPSS).

Results: The nurses reported that their actual involvement in their work environment was only somewhat (M = 2, SD = 0.75) and they also reported high levels of preferred involvement (M = 4, SD = 0.65). Collaboration/liaison activities were the most prominent aspect of involvement in the work environment of the nurses (M =3.1, SD = 0.69) and unit governance and leadership were the most preferred forms of involvement (M=4.2, SD= 0.56). The results provided support for decisional involvement in the population of Iranian nurses. Therefore, efforts to improve the quality of the nursing work environments into decisional involvement are critically important to sustaining a strong nursing work force in the future. These findings have important implications for nursing leadership.

The recommendations for creating and sustaining a culture of safety included nonhierarchical communication and decision-making strategies, such as empowering all members of the healthcare team to participate in decisions that affect their work processes as well as empowering them to engage in “constrained improvisation” to immediately address patient safety issues as they arise. In conclusion, creating decisional involvement in work environments for the professional nursing practice is an exciting organizational strategy that holds promise for reducing job burnout and job dissatisfaction in healthcare settings.

10. **Terrence et al, (2011): "Influence of Trust and Job Satisfaction on Safety Climate among Managers at a Large U.S. Air Carrier"**

Safety climate is a measure of employee attitudes and opinions regarding safety and serves as a snapshot of the overall safety culture within an organization. The objective of this study was to understand the strength of the relationship between coworker trust, supervisor trust and job satisfaction in regards to safety climate. A regression-based path analysis was conducted on a sample of managers from a large U.S. air carrier to

determine whether coworker trust and supervisor trust were effective means of predicting job satisfaction and safety climate at the particular organization. Data was collected from management personnel using a 100-item survey instrument, which included items, intended to measure supervisor and coworker trust, job satisfaction, and safety climate.

The survey instrument was provided to management personnel at the partner air carrier and respondents were asked to rate their level of agreement with survey instrument statements. Responses were recorded on a 5-point Likert-type scale. Survey instruments were forwarded to all 1299 (N=1299) management employees falling under Operations (flight, engineering, maintenance, quality, etc.), thus those employees involved in other aspects of the airline were not included.
Coworker trust and supervisor trust were found to be significantly and directly associated with both job satisfaction and safety climate. Additionally, the relationship between the two trust scales and safety climate were found to be partially mediated by job satisfaction. These results indicated that safety climate, and safety culture, could be improved by implementing programs that focused upon coworker trust, supervisor trust, and/or job satisfaction.

11. **Kines,. et al, (2010): "Improving Construction Site Safety through Leader-based Verbal Safety Communication"**

The construction industry is one of the most injury-prone industries. Production is usually prioritized over safety in daily on-site communication. Workers have an informal and oral culture of risk, in which safety is rarely openly expressed. The objective of this study is to test the effect of increasing leader-based on-site verbal safety communication regarding the level of safety and safety climate at construction sites.

A pre-post intervention-control design with five construction work gangs was carried out. Foremen in two intervention groups were coached and given bi-weekly feedback about their daily verbal safety communications with their workers. Foremen-worker verbal safety exchanges was measured by (experience sampling method, n=1,693 interviews), construction site safety level was measured by (correct vs. incorrect, n=22,077 single observations), and safety climate was measured by (seven dimensions, n=105 questionnaires) all were measured over a period of up to 42 weeks.

Results:
Baseline measurements in the two intervention and three control groups reveal that foremen speak with their workers several times a day. Workers perceive safety as part of their verbal communication with their foremen in only 6-16% of exchanges, and the levels of safety at the sites range from 70-87% (correct observations). Measurements from baseline to follow-up in the two intervention groups reveal that safety communication between foremen and workers increased significantly in one of the groups and a smaller increase was found when the two intervention groups were combined.

Significant increases in the level of safety are seen in both intervention groups (7% and 12% increases, respectively), particularly in regards to 'access ways' and 'railings and coverings' (39% and 84% increases, respectively). Increases in safety climate are seen in only one of the intervention groups in respect to their 'attention to safety.' No

significant trend changes were seen in the three control groups regarding any of the three measures.

The researcher concluded that coaching construction site foremen to include safety in their daily verbal exchanges with workers had a significantly positive and lasting effect on the level of safety. It is recommended that future studies include coaching and feedback at all organizational levels and for all involved parties in the construction process.

12. **Moumtzoglou (2009): "Factors Impeding Nurses from Reporting Adverse Events"**

This study provides an understanding of why nurses fail to report adverse events so that we can introduce systems and develop cultures, which will make it easier to report them .

An exploratory study using the Adverse Events Questionnaire was administered to 214 nurses in 14 major Athens hospitals, comprising university as well as tertiary hospitals. Five main reasons for not reporting were identified. They include: the fear of the press, the licensing board, the difficulty in handling an adverse event, confidence concerning bringing up adverse events and patients' complaints. It was found that in regards to nursing, the impeding factors for bringing up adverse events may be projected not only by cultural aspects such as professional, national and organizational cultures but also by healthcare practice structural issues such as safety systems, rules, procedures, and relevant acts and regulations.

Recommendation: The study recommends that nursing management should change management rules and establish systems so that nurses work in a blame-free culture. In addition, it is important to examine system factors as causes of error rather than individuals.

13. **Snijders, et al. (2009): "Which Aspects of Safety Culture Predict Incident Reporting Behavior in Neonatal Intensive Care Units? A Multilevel Analysis"**

Safety culture assessments are increasingly used to evaluate patient-safety programs. However, it is not clear which aspects of safety culture are most relevant in understanding incident reporting behavior, and ultimately improving patient safety. The objective of this study was to examine which aspects of safety culture predict incident reporting behavior in the neonatal intensive care unit (NICU), before and after implementation of a voluntary, non-punitive incident reporting system. The survey study was based on a translated, validated version of the Agency for Healthcare Research and Quality Hospital Survey on Patient Safety Culture. This survey incorporates two outcome measures, 11 dimensions of patient-safety culture as well as demographic data.

Setting: Eight tertiary care NICUs and one surgical pediatric ICU.

Subjects: All unit personnel.

Intervention: Implementation of a specialty-based, voluntary, non-punitive incident reporting system.

Results: The result of the study show that a non-punitive approach to error, hospital management support for patient safety and overall perceptions of safety predict incident reporting behavior in the NICU. The relation between these aspects of safety culture and patient outcome require further scrutiny and therefore remains an important issue to address in future research

14. **Mills et al, (2008): "Teamwork and Communication in Surgical Teams: Implications for Patient Safety"**

The Department of Veterans Affairs (VA) offered a program, developed by the National Center for Patient Safety (NCPS) in 2003, entitled "Medical Team Training" (MTT). This program is based upon the principles of crew resource management and was designed to improve communication within the healthcare environment. The primary objectives of the program were to improve the outcomes of patient care and staff job satisfaction by introducing crew resource management communication principles for application in the clinical workplace. The questionnaire was administered to 384 operating room staff and administrators in (VAMCs) before the MTT Learning Session to assess the safety climate and reveal differences in perceptions between professional groups working in the same clinical units. Respondents were asked to rate the degree to which they agreed with statements in the questionnaire on a five-point Likert scale. The response rate (the number of completed questionnaires over the number of attendees in the Learning Sessions) was 309/384, or 80%.

Questionnaire responses for operating room personnel from three major categories (surgeons, anesthesiologists and certified registered nurse anesthetists and operating room nurses) were aggregated for the six medical centers and compared using (ANOVA) analysis. The subscale scores were compared across the three clinician groups using Bonferroni post hoc probes. (MANOVA) analysis was conducted to detect differences between facilities. Furthermore, all analyses were conducted using SPSS version 12.1 for Windows (SPSS, Inc.). The results revealed a pattern of discrepancies among physicians and nurses in which surgeons perceive a stronger organizational culture of safety, better communication, and better teamwork than either nurses or anesthesiologists. The researcher further concluded that the Medical Team Training questionnaire was helpful in identifying hidden problems with communication before formal team training learning sessions, and it would be useful in focusing efforts on improving communication and teamwork in the operating room.

15. **Widerszal and Warszewska (2008): "Employee Direct Participation in Organizational Decisions and Workplace Safety"**

In 1993–1998, the European Foundation for the Improvement of Living and Working Conditions carried out a project known as (Employee Direct Participation in Organizational Change) EPOC. It was a thorough analysis of direct participation (DP), which was defined as consultative participation, whereby management encourages employees to make their views known on work-related matters, but retains the right to take action or not.

Managers from 192 companies filled out the Employee Direct Participation in Organizational Change questionnaire which measured employees' direct participation (DP) in organizational decisions. Four main forms of DP were identified: individual and group consultations, and individual and group delegation. Workplace safety was measured according to the number of accidents, the number of employees working in hazardous conditions, accident absenteeism and sickness absence.

The objective of this study was to find out if there is a relationship between intensity and scope of employee DP in organizational decisions and workplace safety**.** Results showed that the companies which used face-to-face individual consultation had lower accident absenteeism than ones that did not. The same effect was true for group consultation with temporary groups and individual and group delegation. Workplaces with high scores for scope for group consultation had lower accident absenteeism, and those with high scores for scope for group delegation had lower sickness absence. It was concluded that employee DP had a positive influence upon workplace safety, even if involvement was not directly related to safety.

16. **Vogus and Sutcliffe (2007): "The Impact of Safety Organizing, Trusted Leadership, and Care Pathways on Reported Medication Errors in Hospital Nursing Units**

Prior research has found that safety organizing behaviors of registered nurses (RNs) positively impact patient safety. However, little research exists concerning the joint benefits of safety organizing and other contextual factors that help foster safety.

The objective of this study is to explore the relationship between safety organizing and other contextual factors believed to foster safety due to the numerous benefits of bundling safety organizing with leadership (trust in manager) and design (use of care pathways) factors when it comes to reported medication errors.

A total of 1033 RNs and 78 nurse managers in 78 emergency, internal medicine, intensive care, and surgery nursing units in 10 acute-care hospitals in Indiana, Iowa, Maryland, Michigan, and Ohio completed questionnaires between December 2003 and June 2004. Cross-sectional analysis of medication errors reported to the hospital incident reporting system for the 6 months after the administration of the survey linked to survey data on safety organizing, trust in manager, use of care pathways, and RN characteristics and staffing. Multilevel Poisson regression analyses indicated that the benefits of safety organizing concerning reported medication errors were amplified when paired with high levels of trust in management or in the use of care pathways. The researcher concluded that safety organizing plays a key role in improving patient safety in hospital nursing units especially when bundled with other organizational components of a safety supportive system

17. **Huang et al. (2006): "Perceptions of Safety Culture Vary across the Intensive Care Units of a Single Institution"**

The objective of this study was to determine whether safety culture factors varied across the intensive care units (ICUs) of a single hospital, between nurses and physicians, and to explore ICU nursing directors' perceptions of their personnel's attitudes. Cross-sectional surveys were utilized using the Safety Attitude Questionnaire–ICU version, a validated, aviation industry– based safety culture survey instrument. It assesses culture according to six factors namely: teamwork climate, perceptions of management, safety climate, stress recognition, job satisfaction, and work environment.
Setting: Four ICUs in one tertiary care hospital.
Subjects: All ICU personnel.

Measurements and Main Results: The survey was conducted from January 1st to April 1st, 2003 and achieved a 70.2% response rate (318 of 453). The researcher calculated the safety culture factor and percent-positive scores (percentage of respondents with a

mean score of >75 on a 0–100 scale for which 100 is best) for each ICU. A comparison was made with mean ICU scores by ANOVA and percent-positive scores by chi-square.

Results: The results of the study demonstrated that significant safety culture variation exists across the ICUs of a single institution and that ICU nursing directors tend to overestimate their personnel's attitudes. In addition, culture assessments based on institutional-level analysis or director opinion may be flawed. Furthermore, confidential ICU personnel-level culture assessments across multiple factors may yield more precise data and allow for more focused interventions.

18. **Puntillo (2006): "Communication between Physicians and Nurses as a Target for Improving End-of-Life Care in the Intensive Care Unit: Challenges and Opportunities for Moving Forward"**

The objective of this study was the discussion of obstacles and barriers to effective communication and collaboration regarding end-of-life issues between intensive care unit nurses and physicians. The researchers undertook a systematic literature review to evaluate practical interventions for improving communication and collaboration amongst healthcare team member in the ICU.

The result of the study showed that an increase in shared decision making can result from a better understanding and respect for the perspectives and burdens felt by other caregivers. Intensive care unit nurses value their contributions to end-of-life decision making and want to have a more active role. Increased collaboration and communication can result in more appropriate care and increased physician/nurse, patient, and family satisfaction.

Recommendations for improvement in communication between intensive care unit physicians and nurses include the use of joint grand rounds, patient care seminars, and inter professional dialogues. Communication interventions such as use of daily rounds forms, communication training, and a collaborative practice model have shown positive results in promoting effective communication. In addition, when communication is clear and constructive and practice is truly collaborative, the end-of-life care provided to intensive care unit patients and families by satisfied and engaged professionals will improve markedly.

3.4 Comments on Previous Studies

Studies about safety culture are concentrated on high risk areas such as: the aviation industry and ICUs. The studies are concerned about employee attitudes toward safety culture, punitive culture, incident reporting and medical error. These are the main factors that affect safety culture and the promotion of safety culture in high risk areas.

Most of the studies are international studies; there are only two local studies in the West Bank and three Arabic studies in Egypt and Saudi Arabia. This leads us to conclude that a lack of research studies was done concerning the subject in Arabic countries . One also sees that the previous studies applied to medical departments are mainly concerned with patient safety culture. This differs from this study which focuses on safety culture amongst employees.

In line with previous studies, this research is concerned with an assessment of employees concerning safety culture and also test variables which affect employees' attitudes toward safety in intensive care units of governmental hospitals.

The main distinction of this research in regards to the previous study is that it was conducted in the governmental hospital of Gaza City. In addition, the target group consists of physicians and nurses working at three type of ICUs (NICU, Pediatric ICU, specialized ICU, adult ICU). This study also consists of two parts; the first one is an assessment of employee attitudes toward safety culture and the second is testing the variable affecting employee attitudes toward safety culture.

After exploring the previous studies and research, the researcher can state the following:

Most of the studies measure employee attitudes toward safety by using the SAQ or HSOPSC;

- Factors affecting safety culture were also tested.
- Most result of these studies show a positive attitude of employees toward safety culture with recommendations to increase the role of management in the promotion of safety culture.
- It assures the importance of teamwork, communication and work condition in regards to the promotion of safety culture
- It assures the employee role at decision making ,proper suggestion and comment
- It assures the importance of professional incident reporting with non-punitive responses to error
- -The researcher can summarize the benefits of the previous studies as the follows:
- Enriching relevant studies especially in regards to the general framework and literature review of safety culture
- They help in analyzing and explaining the results of the study
- Designing and improving the questionnaire is needed to achieve the study objective.

Chapter Four

The Research Practical Framework

Section I: Methodology & Procedures

4.1 Introduction:

This section describes the methodology that has been used in this research study to achieve the research objectives which include: the adopted methodology, the research design and procedure, the characteristics of the research population and sample, the sources of data, questionnaire design and the statistical analysis tool for the question.

4.2 Research design

The study follows the descriptive analytical approach through which the hypotheses are developed and then tested through the research process

4.3 Research Population

This research targeted 220 physicians and nurses working in the ICUs of Governmental hospitals in Gaza City. The population was classified according to their gender, age, major, level of education and place of work such as: Al Shiffa, Al Nasser, Al Dora and Al Rantes hospitals

4.4 Information and data collection

In order to collect the needed information for this research we use secondary resources such as books, journals, statistics and web pages, other data was collected through the distribution of questionnaires on study population in order to get opinions about safety culture inside ICUs

4.5 Study instrument

a field survey which was conducted with a safety attitude questionnaire to measure employee attitudes toward safety culture. The safety attitude questionnaire (SAQ) elicits a snapshot of safety culture through surveys of frontline worker perceptions **(Sexton et al, 2006).**

Researchers developed the intensive care unit Safety Attitudes Questionnaire by modifying Sexton et al.'s SAQ. All responses are recorded using a 5-point Likert-type scale (Strongly Disagree to Strongly Agree).

The intensive care unit Safety Attitudes Questionnaire combines responses to the 43core domains to elicit ratings for 5 safety culture domains being: (a) job satisfaction (b) level of knowledge about safety culture, (c) safety climate, (d) teamwork climate, (e) working conditions. In addition, researchers developed other checklists to measure the study variables which are thought of to be a determinant of safety culture.

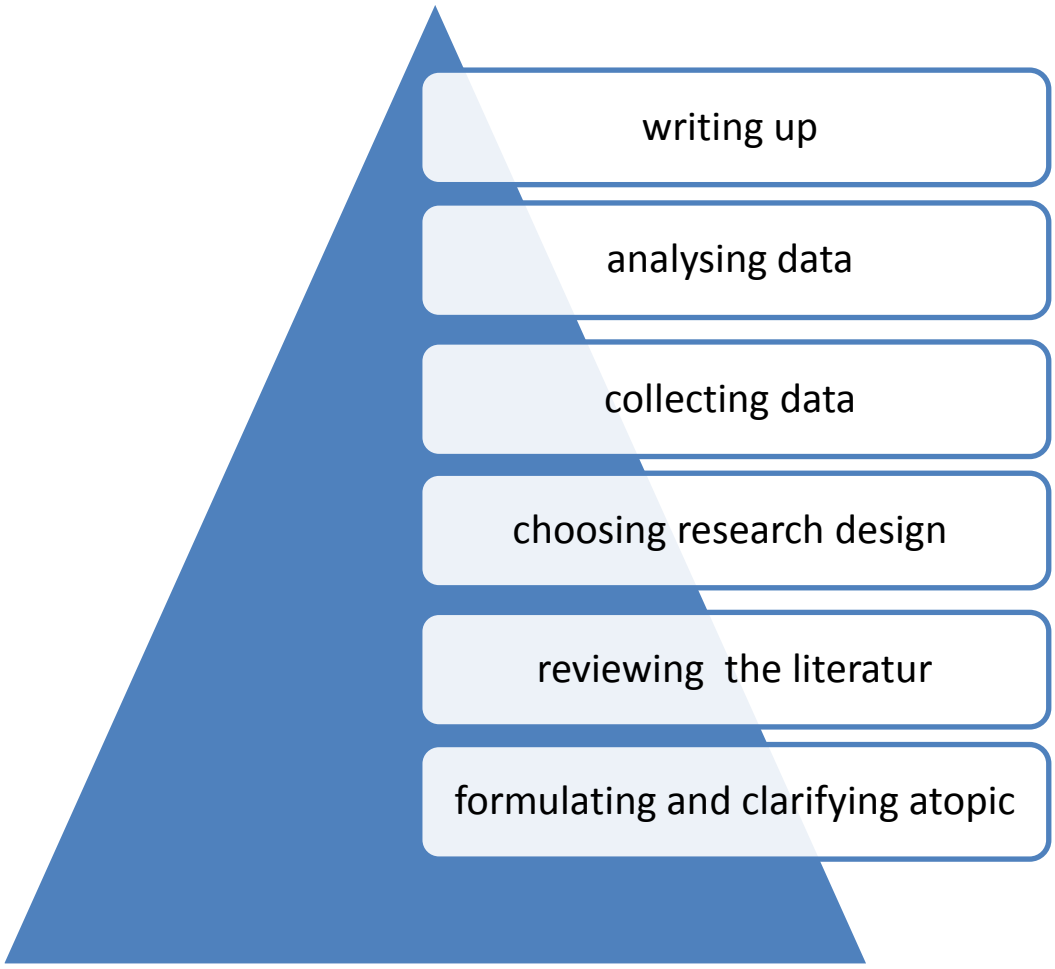
After that a modification of the questionnaire design through arbitration from experts (a number of experts in the field from different universities) then the distribution of the questionnaire to a pilot study. The purpose of the pilot study was to test and prove that the questionnaire questions can be answered clearly in a way that helps to achieve the target of the study. The questionnaire was modified based on the results of the pilot study. 200 questionnaires were distributed to the research population and 180 questionnaires were received

4.6 Research Location
This research was carried out in the intensive care units of the Governmental hospitals located in Gaza City, like Al Shifa hospital, Al Dorra hospital, Al Rantese and Al Nasser hospital.

4.7 Data analysis Statistical Package for the Social Sciences, (SPSS) was used to perform the required analysis. The final phase included conclusions and recommendations.
Figure (4.1) shows the methodology flowchart, which leads to achieve the research objective.

4.8 Pilot Study
A pilot study for the questionnaire was conducted before collecting the results of the sample by distributing 30 questionnaires. It provided a trial run for the questionnaire, which involved testing the wordings of question, identifying ambiguous questions, testing the techniques that were used to collect data, and measuring the effectiveness of standard invitation to respondents.

Figure (4.1) illustrates the methodology flow chart



Source: Mark Saunders, Philip Lewis and Adrian Thornhill 2009

Section II

Testing the Research Tool

4.1 Introduction

This section covers validity and reliability of the tool in terms of its content and statistical validity. The validity of an instrument is a determination of the extent to which the instrument actually reflects the abstract construct being examined; "validity refers to the degree to which an instrument measures what it is supposed to be measuring while reliability is the degree of consistency with which it measures the attributes it is supposed to measure (Saunders et al.2009)

Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (1, 2, 3, 4, 5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on Likert scale we have the following:

Table no. (4.1): Likert scale

Item	***Strongly agree***	***Agree***	***Do not Know***	***Disagree***	***Strongly Disagree***
Scale	5	4	3	2	1

4.2 Test of Normality for each field:

Table (4.2) shows the results for Kolmogorov-Smirnov test of normality. From Table (4,2), the p-value for each field is greater than 0.05 level of significance, then the distribution for each field is normally distributed. Consequently, Parametric tests will be used to perform the statistical data analysis.

Table (4.2): Kolmogorov-Smirnov test

Field	**Kolmogorov-Smirnov**	
	Statistic	**P-value**
Job Satisfaction	1.154	0.140
Level of Knowledge about Safety Culture	0.809	0.529
Safety Climate	1.098	0.180
Team Work	1.262	0.059
Work Condition	1.210	0.107
Measuring Employee's Attitudes towards Safety Culture	0.744	0.638
Management's Commitment to Safety Culture for Patients and Workers	0.630	0.823
Employee Engagement	1.184	0.130
Trust between Employee and Managers	0.760	0.610
Participation in Decision-making	1.049	0.221
Communication among Employees	1.099	0.150
Measuring Determinants of Safe Culture in Intensive Care Units	0.656	0.783
All paragraphs of the questionnaire	0.605	0.858

4.3 Statistical analysis Tools

The researcher would use data analysis for quantitative data analysis methods. The Data analysis will be made utilizing (SPSS 20). The researcher would utilize the following statistical tools:

1. Kolmogorov-Smirnov test of normality.
2. Pearson correlation coefficient for Validity.
3. Cronbach's Alpha for Reliability Statistics.
4. Frequency and Descriptive analysis.
5. Parametric Tests (One-sample T test, Independent Samples T-test , Analysis of Variance).

T-test is used to determine if the mean of a paragraph is significantly different from a hypothesized value 3 (Middle value of Likert scale). If the P-value (Sig.) is smaller than or equal to the level of significance, $\alpha = 0.05$, then the mean of a paragraph is significantly different from a hypothesized value 3. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 3. On the other hand, if the P-value (Sig.) is greater than the level of significance $\alpha = 0.05$, then the mean a paragraph is insignificantly different from a hypothesized value 3.

The *Independent Samples T-test* is used to examine if there is a statistical significant difference between two means among the respondents toward the impact of marketing information system on the decision making process due to (Gender and Major).

The *One- Way Analysis of Variance (ANOVA)* is used to examine if there is a statistical significant difference between several means among the respondents toward the impact of marketing information system on the decision making process due to (Age, Level of Education Attained, Years of Experience within the ICU, The Department You Work in, and Hospital).

4.4 Validity of Questionnaire

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include internal validity and structure validity.

4.4.1 Internal Validity

Internal validity of the questionnaire is the first statistical test that used to test the validity of the questionnaire. It is measured by a scouting sample, which consisted of 30 questionnaires through measuring the correlation coefficients between each paragraph in one field and the whole field.

- **Internal Validity for Measuring Employee's Attitudes towards Safety Culture**

Table (4.3) clarifies the correlation coefficient for each paragraph of the " Job Satisfaction" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.3): Correlation coefficient of each paragraph of "Job Satisfaction" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I'm proud of my job.	.652	0.000*
2.	I feel that my job makes me happy.	.703	0.000*
3.	I think that my job is suitable for me than other jobs.	.715	0.000*
4.	I don't force myself to go to work.	.546	0.001*
5.	I fell that my hope is achieved by getting this job.	.617	0.000*
6.	I am satisfied about the salary I get.	.606	0.000*
7.	I feel satisfied about incentives that I take.	.686	0.000*

* Correlation is significant at the 0.05 level

Table (4.4) clarifies the correlation coefficient for each paragraph of the " Level of Knowledge about Safety Culture " and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.4) **Correlation coefficient of each paragraph of " Level of Knowledge about Safety Culture " and the total of this field**

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I have the ability to deal with medical error in a professional way.	.357	0.029*
2.	I know the maximum number of work hours which does not affect my health.	.414	0.014*
3.	I know the number of night shifts which do not affect my health.	.691	0.000*
4.	I receive information about health and safety periodically.	.443	0.008*
5.	I have specialized training courses to deal with my patients in a healthy way.	.624	0.000*
6.	Protocol for providing health services to the patient is available at any time.	.607	0.000*
7.	I know the number of my annual leave days.	.594	0.000*
8.	I know the number of my sick-leave days.	.419	0.012*
9.	I know the number of my emergency-leave days.	.344	0.034*
10.	I know my job description.	.531	0.002*

* Correlation is significant at the 0.05 level

Table (4.5) clarifies the correlation coefficient for each paragraph of the "Safety Climate" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table(4.5): Correlation coefficient of each paragraph of "Safety Climate" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I know about communication channels that have information about measures concerning employee safety.	.456	0.006*
2.	My colleagues encourage me to make incident reports.	.756	0.000*
3.	Incident reports are treated in a professional way.	.728	0.000*
4.	Employees are committed to safety rules.	.717	0.000*
5.	Prominent culture inside the department encourages learning from mistakes.	.544	0.001*
6.	There are no difficulties in the discussion of incident reports inside the department.	.750	0.000*

* Correlation is significant at the 0.05 level

Table (4.6) clarifies the correlation coefficient for each paragraph of the "Team Work" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table 4.6: Correlation coefficient of each paragraph of "Team Work" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Agreement about the work plan at the beginning of the shift is important for the safety of the employee and the patient.	.595	0.000*
2.	It is easy for any employee to ask about information he/she wants to know during work.	.742	0.000*
3.	I am satisfied with cooperation among the healthcare team who work in the unit.	.649	0.000*
4.	I have enough support from the work team to promote patient safety.	.873	0.000*
5.	Most employees take part in decision making during the shift.	.722	0.000*
6.	Important events are delivered to the next shift in an accepted way.	.418	0.012*
7.	Doctors and nurses work as an organized and collaborated team to provide a unique service.	.842	0.000*
8.	Professional disagreements between colleagues is solved in a proper way and treated in an accepted way that satisfies everyone.	.653	0.000*
9.	I can talk about any medical error committed during the providing of health service to patients.	.665	0.000*
10.	I don't find it difficult to discuss professional disagreements that occur with members of other medical professions.	.682	0.000*

* Correlation is significant at the 0.05 level

Table (4.7) clarifies the correlation coefficient for each paragraph of the "Work Condition" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.7)**: Correlation coefficient of each paragraph of " Work Condition " and the total of this field**

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Information relating to decisions concerning work is routinely available to me.	.707	0.000*
2.	I deal with the managers as supporter for me, not as a barrier.	.615	0.000*
3.	This department deals in a positive way with arising work problems.	.860	0.000*
4.	There is a clear policy and rules that organize work inside of the department.	.817	0.000*
5.	Social and health conditions for workers are taken into consideration during work.	.771	0.000*
6.	Annual leave is given according to employee desire.	.592	0.000*
7.	Sick leaves are granted to employees without difficulties.	.701	0.000*
8.	I choose the work hours that are suitable for my family.	.657	0.000*
9.	There are no constraints in the request for leaving to go abroad.	.617	0.000*

* Correlation is significant at the 0.05 level

- **Internal Validity for Measuring Determinants of Safe Culture in Intensive Care Units**.

Table (4.8) clarifies the correlation coefficient for each paragraph of the "*Management's* Commitment to Safety Culture for Patients and Workers" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.8): Correlation coefficient of each paragraph of "Management's Commitment to Safety Culture for Patients and Workers" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I have enough time to work in a way that I can ensure me and my patients' safety.	.653	0.000*
2.	There are written policies concerning safety.	.643	0.000*
3.	Policies formulated by the management to ensure the safety of patients and staff are translated into action.	.811	0.000*
4.	Managers provide a relaxing atmosphere for reporting medical incidents.	.763	0.000*
5.	Management relay the safety massage in an effective way.	.881	0.000*
6.	Management motivates workers to work in a way that promoted their safety as well as their patients' safety	.880	0.000*
7.	Safety for employees and patient is a priority for management.	.565	0.001*
8.	Health status of the employee is affect by his decision to work at the intensive care unit.	.362	0.027*
9.	Any suggestion I introduce regarding the safety of patients and employee are welcomed and discussed.	.450	0.007*

* Correlation is significant at the 0.05 level

Table (4.9) clarifies the correlation coefficient for each paragraph of the "Employee Engagement" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.9): Correlation coefficient of each paragraph of "Employee Engagement" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I have enough time to work in a way that I can ensure me and my patients' safety.	.449	0.007*
2.	There are written policies concerning safety.	.833	0.000*
3.	Policies formulated by the management to ensure the safety of patients and staff are translated into action.	.858	0.000*
4.	Managers provide a relaxing atmosphere for reporting medical incidents.	.832	0.000*
5.	Management relay the safety massage in an effective way.	.887	0.000*
6.	Management motivates workers to work in a way that promoted their safety as well as their patients' safety	.756	0.000*
7.	Safety for employees and patient is a priority for management.	.856	0.000*
8.	Health status of the employee is affect by his decision to work at the intensive care unit.	.717	0.000*

* Correlation is significant at the 0.05 level

Table (4.10) clarifies the correlation coefficient for each paragraph of the "Trust between Employee and Managers" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.10): Correlation coefficient of each paragraph of "Trust between Employee and Managers" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Managers and workers work beside each other.	.829	0.000*
2.	Management does not abandon employees when they commit medical mistakes.	.828	0.000*
3.	I don't have any difficulties in asking for a manager's help.	.636	0.000*
4.	I enjoy working under the current management.	.803	0.000*
5.	I prefer to gain experience from department management.	.467	0.006*
6.	When I commit a mistake I speak frankly with the management to learn from my mistakes.	.784	0.000*
7.	I do not fear disagreements in opinion with management.	.363	0.026*
8.	I accept instructions and criticism from management with an open mind.	.652	0.000*

* Correlation is significant at the 0.05 level

Table (4.11) clarifies the correlation coefficient for each paragraph of the "*Participation* in Decision-making" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.11): Correlation coefficient of each paragraph of "Participation in Decision-making" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I have clear responsibilities and practice them without any opposition from managers.	.835	0.000*
2.	Management is ready to discuss any suggestions or harassment concerns of the employees.	.856	0.000*
3.	It is encouraged to learn other skills to increase my responsibilities in the department.	.746	0.000*
4.	New tasks are explained professionally and suggestions are welcomed to facilitate the acceptance of these tasks.	.923	0.000*
5.	I have the chance to solve work problems in my department.	.873	0.000*
6.	Management takes decisions after listening to the opinions of others.	.660	0.000*

* Correlation is significant at the 0.05 level

Table (4.12) clarifies the correlation coefficient for each paragraph of the "Communication among Employees" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (4.12): Correlation coefficient of each paragraph of "Communication among Employees" and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	There is an exchange of information about patients at specific times to suit all crew members working in the department.	.719	0.000*
2.	Employees at the department receive suggestions and criticisms with no qualms.	.804	0.000*
3.	There are formal channels that enables each employee to transfer any information or data that concerns any employee or patient.	.646	0.000*
4.	I feel that employees working in the department have the ability to listen and concentrate when addressing them.	.793	0.000*
5.	Some employees speak with technical terms that are not understandable to others	.401	0.016*
6.	There are no difficulties in understanding new rules or regulations when published by the management.	.532	0.001*

* Correlation is significant at the 0.05 level

4.4.2 Structure Validity of the Questionnaire

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of liker scale.

Table (4.13) clarifies the correlation coefficient for each field and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at $\alpha = 0.05$, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

Table (4.13) Correlation coefficient of each field and the whole of questionnaire

No.	Field	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Job Satisfaction	.840	0.000*
2.	Level of Knowledge about Safety Culture	.530	0.002*
3.	Safety Climate	.870	0.000*
4.	Team Work	.696	0.000*
5.	Work Condition	.823	0.000*
6.	**Measuring Employee's Attitudes towards Safety Culture**	.958	0.000*
7.	Management's Commitment to Safety Culture for Patients and Workers	.892	0.000*
8.	Employee Engagement	.901	0.000*
9.	Trust between Employee and Managers	.849	0.000*
10.	Participation in Decision-making	.878	0.000*
11.	Communication among Employees	.673	0.000*
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	.963	0.000*

* Correlation is significant at the 0.05 level

4.5 Reliability of the Research

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring (Saunders et al.2009). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool.

Cronbach's Coefficient Alpha

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table (4.14) shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.683 and 0.943. This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.957 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Table (4.14): Cronbach's Alpha for each field of the questionnaire

No.	Field	Cronbach's Alpha
1.	Job Satisfaction	0.804
2.	Level of Knowledge about Safety Culture	0.683
3.	Safety Climate	0.752
4.	Team Work	0.874
5.	Work Condition	0.882
6.	**Measuring Employee's Attitudes towards Safety Culture**	**0.911**
7.	Management's Commitment to Safety Culture for Patients and Workers	0.835
8.	Employee Engagement	0.904
9.	Trust between Employee and Managers	0.824
10.	Participation in Decision-making	0.891
11.	Communication among Employees	0.738
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	**0.943**
	All paragraphs of the questionnaire	**0.957**

The Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample

Section III
Analysis of the Sample Characteristics

1. Personal data

1.1 Gender

Table No.(4.15) shows that 66.9% of the sample are Males and 33.1% of the sample are Females .

This result indicates that the number of males in the sample was double the number of females and the reason for this is that in our society it is still common that males have the responsibility to work outside the home and his wife stays at the home to care for their children. In addition, with the nature of medical jobs, it is difficult for female employees to hold them as they must leave their families for long periods of time and may even stay outside during night shifts thus; the researcher thinks that it is normal to have a greater number of males than females in this sample.

On the other hand, the Palestine Central Bureau of Statistics stated that in Palestine, 18.1 percent of employed persons were female and 81.9 percent were male. This indicates that the percentage of females working in the medical institution is higher than other working areas and this demonstrates a positive attitude of Palestine females toward medical jobs. Also it is indicated that the highly demand for the medical jobs inside the Palestinian society

Table (4.15): Gender

Gender	Frequency	Percent
Male	103	66.9
Female	51	33.1
Total	154	100.0

1.2 Age

Table No. (4.16) shows that 60.4% of the sample are " Less than 30 ", 21.4% of the sample are of "30- Less than 40 ", 11.7% of the sample are of "40- Less than 50 " and 6.5% of the sample are of "50 years and above ".

The participants were from different age groups but the prominent age group in the sample were employee who were less than 40 years old which constituted 81.8% 0f the sample because the health service introduced to intensive care patient needed a large number of nurses and it is common for nursing teams particularly females to leave this units as the age increase. Their ability to meet patients' needs decreased with age and it is common to have burnout due to the nature of the patients they deal with **(El Ammassi, 2007).** In addition, the old ICU teams do not have special incentives or specifications to differentiate them as they have more years of experience (interview with the head of ICU, 2013).

Table (4.16): Age

Age	Frequency	Percent
Less than 30	93	60.4
30- Less than 40	33	21.4
40- Less than 50	18	11.7
50 years and above	10	6.5
Total	154	100.0

1.3 Major

Table No. (4.17) shows that 68.8% of the sample is "nursing ", 31.2% of the sample are of "physicians".

The result of this table indicates that the number of nurses is more than double the number of physicians. This is normal due to the intensive care patients needing nursing service more often than medical service and the financial cost of physicians is more than nurses.

Table (4.17): Major

Major	Frequency	Percent
Physician	48	31.2
Nursing	106	68.8
Total	154	100.0

1.4 Level of Education Attained

Table No.(4.18) shows that 63.0% of the sample are " Bachelor's Degree ", 24.7% of the sample are of " Diploma ", 12.3% of the sample are of " High study "

It is noted that participants of the study had a good academic education and this supports the results of the study. It is also noted that employees who have a Bachelor's degree are most prominent in the sample as it is preferable for ICU nurses to have a bachelor's degree to enable them to deal with complex health services and deal with technologically advanced instruments. In addition, in regards to physicians, a bachelor's degree is the minimum educational level in regards to medicine and other degrees need a masters or PHD which obviously requires more physical and financial effort.

Table (4.18): Level of Education Attained

Level of Education Attained	Frequency	Percent
Diploma(nursing)	38	24.7
Bachelor's Degree	97	63.0
High study	19	12.3
Total	154	100.0

1.5 Years of Experience within the ICU

Table No.(4.19) shows that 52.6% of the sample are " Less than 5 year ", 26.6% of the sample are of "5 – Less than 10 year ", 11.0% of the sample are of "10- less than 15 years " and 9.7% of the sample are of "15 years and more.

It is noted that the participants of the study have different numbers in regard to years of experience in the ICU but a majority of the employee have less than 10 years of experience and this leads to the conclusion that as the amount of experience increases the number of employees decrease which indicates that the employees do not stay working in the ICU due to the workload and the stressful environment in these units(Cavalheiro et al.2008).In addition, there is a lack of incentive.

Table (4.19): Years of Experience within the ICU

Years of Experience within the ICU	Frequency	Percent
Less than 5 year	81	52.6
5 – Less than 10 year	41	26.6
10- less than 15 years	17	11.0
15 years and more	15	9.7
Total	154	100.0

1.6 The Department You Work in

Table No.(4.120) shows that 53.2% of the sample work at " Neonatal Intensive care ", 27.3% of the sample work at" Child Intensive Care ", 19.5% of the sample working at" Adult Intensive Care".

Participant responses indicates that more than half of the employees worked at neonatal intensive care units and this is seen due to the samples consisting of two major NICUs at two major hospitals of Gaza city namely: Al Shiffa and Al Nasser and it only consisted of one adult intensive care unit.

Table (4.20): The Department You Work in

The Department You Work in	Frequency	Percent
Neonatal Intensive care	82	53.2
Child Intensive Care	42	27.3
Adult Intensive Care	30	19.5
Total	154	100.0

1.7 Hospital

Table No.(4.21) shows that 40.9% of the sample working at Al Shifa Hospital ", 40.9% of the sample working at " Al Nasir Hospital ", 11.7% of the sample are working at " Al Rantisi Hospital " and 6.5% of the sample are of " Al Dorrah Hospital"

Participant responses indicates that a majority of employees work in Al Shiffa and Al Nasser hospitals and that is because these two hospitals are the two major hospitals of Gaza City.

Table (4.21): Hospital

Hospital	Frequency	Percent
Al Shifa Hospital	63	40.9
Al Nasir Hospital	63	40.9
Al Dorrah Hospital	10	6.5
Al Rantisi Hospital	18	11.7
Total	154	100.0

Section IV
Analysis for "Measuring Employee's Attitudes towards Safety Culture"

1. Job Satisfaction

Table (4.22) shows the following results:
The mean of paragraph #1 "I'm proud of my job" equals 4.19 (83.90%), Test-value = 17.80, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. it can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #7 "I feel satisfied about incentives that I take" equals 1.97 (39.32%), Test-value = -11.34, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3. It can be concluded that the respondents disagree to this paragraph.

The mean of the field "Job Satisfaction" equals 3.23 (64.51%), Test-value = 3.93, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to field of "Job Satisfaction ".

This result indicates that employees working at ICUs were mildly satisfied about their job and as the participant response shows the mean of paragraph #7 "I feel satisfied about incentives that I take" equals 1.97 (39.32%), The mean of paragraph #6 "I am satisfied about the salary I get" equals 2.14 (42.88%). Thus, it can be concluded that employee are satisfied about many question regarding job satisfaction as they demonstrate their proud about their job and the problem rests in the salary and the incentives (which may only be financial incentives). This study partly agrees with the study of (Rickard, 2006) which showed that ICU research coordinator dissatisfaction was expressed regarding: remuneration and recognition, compensation for weekend work; salary package, career advancement opportunities; and childcare facilities. Also it is noted that the condition of the ICU research coordinator in the study of (Rickard, 2006) is similar to that of our study population in the ICU of Gaza city as they are very qualified ,high workload and the undervalued believe of the ICU research coordinators by their managers

Table (4.22): Means and Test values for "Job Satisfaction"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I'm proud of my job.	4.19	83.90	17.80	0.000*	1
2.	I feel that my job makes me happy.	3.82	76.47	10.32	0.000*	2
3.	I think that my job is suitable for me than other jobs.	3.67	73.38	7.57	0.000*	3
4.	I don't force myself to go to work.	3.24	64.84	2.47	0.007*	5
5.	I fell that my hope is achieved by getting this job.	3.49	69.80	5.73	0.000*	4
6.	I am satisfied about the salary I get.	2.14	42.88	-9.08	0.000*	6
7.	I feel satisfied about incentives that I take.	1.97	39.32	-11.34	0.000*	7
	All paragraphs of the field	3.23	64.51	3.93	0.000*	

* The mean is significantly different from 3

2. Level of Knowledge about Safety Culture

Table (4.23) shows the following results:
The mean of paragraph #7 "I know the number of my annual leave days" equals 4.09 (81.72%), Test-value = 15.05 and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #5 "I have specialized training courses to deal with my patients in a healthy way" equals 2.57 (51.32%), Test-value = -4.32, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3. It can be concluded that the respondents disagree to this paragraph.

The mean of the field "Level of Knowledge about Safety Culture" equals 3.30 (66.05%), Test-value = 6.25, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to the field entitled "Level of Knowledge about Safety Culture ".

This result indicates that the employees have a mild level of knowledge about safety culture and also demonstrates that the participant responses show the mean of paragraph #5 "I have specialized training courses to deal with my patients in a healthy way" equals 2.57 (51.32%) .

Thus, it can be concluded that the employee does not have enough knowledge about safety culture and their knowledge about safety culture is individually earned without a specialized, organized training course as the participant response of not having a training course or protocol for dealing with the patient in a safe way. Also of note is the perception of managers about the employees who worked in the health department as

having the required knowledge about their safety during academic studies. It can also be concluded that managers do not play the required role to select and assess employee knowledge about safety which allows for an informed follow up to follow which would correct any detected problems.

Table (4.23): Means and Test values for "Level of Knowledge about Safety Culture"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I have the ability to deal with medical error in a professional way.	4.07	81.31	23.13	0.000*	2
2.	I know the maximum number of work hours which does not affect my health.	3.72	74.44	9.11	0.000*	3
3.	I know the number of night shifts which do not affect my health.	3.45	69.08	5.13	0.000*	4
4.	I receive information about health and safety periodically.	2.85	57.03	-1.65	0.051	8
5.	I have specialized training courses to deal with my patients in a healthy way.	2.57	51.32	-4.32	0.000*	10
6.	Protocol for providing health services to the patient is available at any time.	2.69	53.73	-3.19	0.001*	9
7.	I know the number of my annual leave days.	4.09	81.72	15.05	0.000*	1
8.	I know the number of my sick-leave days.	3.32	66.36	3.08	0.001*	5
9.	I know the number of my emergency-leave days.	3.01	60.26	0.13	0.450	7
10.	I know my job description.	3.26	65.26	2.45	0.008*	6
	All paragraphs of the field	3.30	66.05	6.25	0.000*	

* The mean is significantly different from 3

3. Safety Climate

Table (4.24) shows the following results:

The mean of paragraph #5 "Prominent culture inside the department encourages learning from mistakes" equals 3.37 (67.37%), Test-value = 4.26, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #2 "My colleagues encourage me to make incident reports" equals 2.95 (59.08%), Test-value = -0.54, and P-value = 0.295 which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the hypothesized value 3. It can be concluded that the respondents (Do not know, neutral) to this paragraph.

The mean of the field "Safety Climate" equals 3.21 (64.23%), Test-value = 3.38, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to field of "Safety Climate".

This result indicates that employees working at the ICU have a mildly positive attitude towards safety climate as the mean of the field "Safety Climate" equals 3.21 (64.23%)

because most of the employees have mild knowledge about the source of information concerning their safety. They feel that incident reporting is not treated in an effective way and that there is mild commitment to safety rules. Furthermore, the culture inside the department encourages learning from mistakes but does not in a way that promotes learning culture. It can be concluded that managers do not put forth enough effort in the way of selection, training and follow up of the employees regarding safety knowledge and practice. In addition, the promotion of safety climate which encourages incident reporting and detections of medical error in a way that promotes learning from mistakes. The result of this study disagrees to a certain degree with the study of Ballangrud, et al. (2012) which showed that RNs in the ICU are most positive towards the patient safety climate at a unit level.

Table (4.24): Means and Test values for "Safety Climate"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I know about communication channels that have information about measures concerning employee safety.	3.15	63.03	1.73	0.043	5
2.	My colleagues encourage me to make incident reports.	2.95	59.08	-0.54	0.295	6
3.	Incident reports are treated in a professional way.	3.33	66.58	3.83	0.000*	2
4.	Employees are committed to safety rules.	3.30	66.05	3.82	0.000*	3
5.	Prominent culture inside the department encourages learning from mistakes.	3.37	67.37	4.26	0.000*	1
6.	There are no difficulties in the discussion of incident reports inside the department.	3.16	63.29	1.82	0.035*	4
	All paragraphs of the field	3.21	64.23	3.38	0.000*	

* The mean is significantly different from 3

4. Team Work

Table (4.25) shows the following results:

The mean of paragraph #1 "Agreement about the work plan at the beginning of the shift is important for the safety of the employee and the patient" equals 4.11 (82.24%), Test-value = 16.43, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #10 "I don't find it difficult to discuss professional disagreements that occur with members of other medical professions" equals 3.15 (62.91%), Test-value = 1.77, and P-value = 0.039 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to this paragraph.

The mean of the field "Team Work" equals 3.58 (71.57%), Test-value = 10.50, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to field of "Team Work ".

The participant responses showed that employees working at ICUs have a good work team climate as the mean of the field "Team Work" equals 3.58 (71.57%), Test-value = 10.50, and P-value=0.000

It can be concluded that it is necessary for the ICU healthcare team to have a teamwork climate that is as good as possible because the nature of the intensive care client who has a critical health issue is that they usually have multiple health needs, thus, the various healthcare team members each has to do his role perfectly. The team members are complementary to each other; they work as a group and have one goal, respect each other and use shared a decision-making process to overcome the workload and the stressful environment of the critically ill patients. The study of Hamdan and Saleem (2012) and Alahmadi (2010) showed that patient safety composites with the highest positive scores were teamwork within units and this support the result of this study, and one of the two studies Hamdan and Saleem (2012) is applied at the west bank hospitals which is an area of Palestine country that have the same social and political characteristics also the study of Alahmadi (2012) applied to the Saudi Arabia which is an Arab country that have the same custom ,culture and religion .

Table (4.25): Means and Test values for "Team Work"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Agreement about the work plan at the beginning of the shift is important for the safety of the employee and the patient.	4.11	82.24	16.43	0.000*	1
2.	It is easy for any employee to ask about information he/she wants to know during work.	4.05	81.07	16.28	0.000*	2
3.	I am satisfied with cooperation among the healthcare team who work in the unit.	3.69	73.73	8.37	0.000*	4
4.	I have enough support from the work team to promote patient safety.	3.61	72.11	7.57	0.000*	5
5.	Most employees take part in decision making during the shift.	3.21	64.11	2.47	0.007*	8
6.	Important events are delivered to the next shift in an accepted way.	3.93	78.53	13.44	0.000*	3
7.	Doctors and nurses work as an organized and collaborated team to provide a unique service.	3.58	71.54	6.49	0.000*	6
8.	Professional disagreements between colleagues is solved in a proper way and treated in an accepted way that satisfies everyone.	3.26	65.14	2.90	0.002*	7
9.	I can talk about any medical error committed during the providing of health service to patients.	3.18	63.58	2.02	0.023*	9
10.	I don't find it difficult to discuss professional disagreements that occur with members of other medical professions.	3.15	62.91	1.77	0.039*	10
	All paragraphs of the field	3.58	71.57	10.50	0.000*	

* The mean is significantly different from 3

5. Work Condition

Table (4.26) shows the following results:

The mean of paragraph #1 "Information relating to decisions concerning work is routinely available to me" equals 3.31 (66.27%), Test-value = 3.70, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #9 "There are no constraints in the request for leaving to go abroad" equals 2.49 (49.80%), Test-value = -5.60, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3 . it can be concluded that the respondents disagree to this paragraph.

The mean of the field "Work Condition" equals 2.93 (58.63%), Test-value = -1.00, and P-value=0.160 which is greater than the level of significance $\alpha = 0.05$. The mean of this field is insignificantly greater than the hypothesized value 3.

It can be concluded that the respondents (Do not know, neutral) to field of "Work Condition".

The participant respondents shows that the employees at the intensive care unit do not know or do not have the working condition to make a good response about working condition paragraphs so it can be concluded that working conditions within the ICUs are not satisfying to the respondents even though they do not have enough knowledge about healthy working conditions. Furthermore, the response to paragraphs numbers (2,7,8,9) which has a mean" less than 3"and proportional mean "less than 60%" indicates that the manager and employees do not have the required knowledge about the healthy work condition in their department and the effects of these condition upon their health and their patients' health.

Table (4.26): Means and Test values for "Work Condition"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Information relating to decisions concerning work is routinely available to me.	3.31	66.27	3.70	0.000*	1
2.	I deal with the managers as supporter for me, not as a barrier.	2.59	51.79	-4.55	0.000*	8
3.	This department deals in a positive way with arising work problems.	3.16	63.20	1.71	0.045*	3
4.	There is a clear policy and rules that organize work inside of the department.	3.23	64.64	2.55	0.006*	2
5.	Social and health conditions for workers are taken into consideration during work.	3.08	61.59	0.80	0.213	5
6.	Annual leave is given according to employee desire.	3.13	62.53	1.26	0.105	4
7.	Sick leaves are granted to employees without difficulties.	2.62	52.35	-3.95	0.000*	7
8.	I choose the work hours that are suitable for my family.	2.78	55.57	-2.06	0.020*	6
9.	There are no constraints in the request for leaving to go abroad.	2.49	49.80	-5.60	0.000*	9
	All paragraphs of the field	2.93	58.63	-1.00	0.160	

* The mean is significantly different fro

6- Measuring Employee's Attitudes towards Safety Culture
Table (4-27) shows the following results:

The mean of the field "Measuring Employee's Attitudes towards Safety Culture" equals 3.27 (65.36%), Test-value = 5.76, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. it can be concluded that the respondents agreed to field of "Measuring Employee's Attitudes towards Safety Culture".

This result indicates that employees working in the ICU do not have a good positive attitude toward safety culture in their department. This is a bad sign about safety inside ICUs because ICUs consider themselves to be one of the most highly advanced centers which provide medical service; the employees inside these units deal with the most critically and dangerous ill patients.

This result can be derived from the political situation of the Gaza Strip which contributes to an unsafe feeling among the population as a whole and results in stress being applied to the population which can be seen in health institutions. In addition, the economic situation affects the quality of healthcare services, salaries and incentives.

It can also be concluded that healthcare managers or decision-makers put the safety of the patients as a first priority in their healthcare plans and they ignore or do not care about the safety of employee as shown in the mean of paragraph #9 "There are no constraints in the request for leaving to go abroad" equals 2.49 (49.80%), Test-value = -5.60, and P-value = 0.000 , The mean of paragraph #7 "Sick leaves are granted to employees without difficulties." equals 2.62 (52.35%), P-value = 0.000 , The mean of paragraph #8 "I choose the work hours that are suitable for my family" equals 2.78 (55.57%), Test-value =-2.06, and P-value = 0.000. Furthermore, most employees have not undertaken a training course concerning their safety. It can also be noted that employees inside the ICU do not play the required role in developing their knowledge regarding safety for them and for their children.

This study does not agree with the study of Sukadarin, et al. (2012) in which the result shows that employees have positive perceptions about the safety management system and procedures that were implemented in the organization as well as workmate's influence, employee involvement, safety knowledge and safety behavior and this disagreement is related to the nature of the study which applied to the manufacturing industry and the population of the study is a workers who has a low level of education in comparison with the population of this study .

Table (4.27): Means and Test Values for "Measuring Employee's Attitudes towards Safety Culture"

	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
Means and Test values for "Job Satisfaction"	3.23	64.51	3.93	0.000*	3
Means and Test values for "Level of Knowledge about Safety Culture"	3.30	66.05	6.25	0.000*	2
Means and Test values for "Safety Climate"	3.21	64.23	3.38	0.000*	4
Means and Test values for "Team Work"	3.58	71.57	10.50	0.000*	1
Means and Test values for "Work Condition	2.93	58.63	-1.00	0.160	5
Measuring Employee's Attitudes towards Safety Culture	3.27	65.36	5.76	0.000*	

* The mean is significantly different from 3

Section V
Analysis for "Measuring Determinants of Safety Culture in Intensive Care Units"

1. Management's Commitment to Safety Culture

Table (4.28) shows the following results:

The mean of paragraph #8 “Health status of the employee is affect the decision to work at the intensive care unit” equals 3.41 (68.16%), Test-value = 4.49 and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . it can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #4 “Managers provide a relaxing atmosphere for reporting medical incidents” equals 2.47 (49.33%), Test-value = -6.52, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3 . It can be concluded conclude that the respondents disagree to this paragraph.

The mean of the field “Management's Commitment to Safety Culture” equals 2.84 (56.71%), Test-value = -2.58, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this field is significantly smaller than the hypothesized value 3. It can be concluded that the respondents disagree to field of "Management's Commitment to Safety Culture".

The participants responded the most concerning the paragraph entitled "Management's Commitment to Safety Culture" which has a mean of less than 2.84 (56.71%) and indicates that management does not play enough of a role in promoting the safety of their employees.it is also noted that there is no written policies concerning safety, managers dose not provide the atmosphere for the employee to express their feeling regarding safety manners, also managers does not adopt the promotion of employee safety as primary goal.

Managers at any organization have the responsibility to adopt goals and objectives that assure that the availability of resources and training courses to promote the safety environment of the employees and customers exists and they also have to be committed to these goals and objectives. The results of this study indicate that managers in the ICU do not have a clear goals or objectives concerning the healthcare team as shown in the participant responses.

It can be concluded that the management system has a lot of complex problems concerning the health of our population in the Gaza Strip and at the same time they do not have the resources to overcome these problems. Furthermore, the decision-making inside the hospitals is affected by many factors such as: political, economic and even social factors. In addition, employees in healthcare institutions do not play the role required in regards to participation in decision-making, professional criticism and giving suggestions to the support manager for the promotion of the optimal level of safety .

Table (4.28): Means and Test values for "Management's Commitment to Safety Culture for Patients and Workers"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I have enough time to work in a way that I can ensure me and my patients' safety.	3.21	64.30	2.40	0.009*	2
2.	There are written policies concerning safety.	2.81	56.11	-2.21	0.014*	3
3.	Policies formulated by the management to ensure the safety of patients and staff are translated into action.	2.68	53.69	-3.68	0.000*	7
4.	Managers provide a relaxing atmosphere for reporting medical incidents.	2.47	49.33	-6.52	0.000*	9
5.	Management relay the safety massage in an effective way.	2.62	52.38	-4.61	0.000*	8
6.	Management motivates workers to work in a way that promoted their safety as well as their patients' safety	2.70	53.96	-3.35	0.001*	6
7.	Safety for employees and patient is a priority for management.	2.80	55.97	-2.06	0.020*	4
8.	Health status of the employee I affect by the decision to work at the intensive care unit.	3.41	68.16	4.49	0.000*	1
9.	Any suggestion I introduce regarding the safety of patients and employee are welcomed and discussed.	2.76	55.27	-2.50	0.007*	5
	All paragraphs of the field	2.84	56.71	-2.58	0.005*	

* The mean is significantly different from 3

2. Employee Engagement

Table (4.29) shows the following results:

The mean of paragraph #4 "I have a clear goal in my work" equals 3.72 (74.50%), Test-value = 8.92, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . It can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #8 "I have the opportunity to be promoted in my career" equals 3.07 (61.41%), Test-value = 0.67, and P-value = 0.253 which is greater than the level of significance $\alpha = 0.05$. Then the mean of this paragraph is insignificantly different from the hypothesized value 3. It can be concluded that the respondents (Do not know, neutral) to this paragraph.

The mean of the field "Employee Engagement" equals 3.46 (69.26%), Test-value = 7.02, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to field of "Employee Engagement ".

This result indicates that employees working in the ICU are moderately engaged in their work. This is acceptable because working in the ICU is difficult and stressful and the

nature of the ICU patient prohibits creation and innovation in the work field. In addition, the families of these patients are always stressed and transfer this stress on to the employee. Also of note is that management does not make the required effort to maintain an environment that promotes innovation that enables employees to be more engaged in their work.
It cannot be ignored that customs and beliefs of our society enforces helping and caring for ill people even without financial compensation and all of the healthcare team at our hospital awaits compensation from God.

Table (4.29): Means and Test values for "Employee Engagement"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I trust the workers at this department.	3.65	72.93	6.94	0.000*	3
2.	I have the chance to innovate during work.	3.54	70.87	6.14	0.000*	5
3.	This department appreciates my work.	3.18	63.65	1.85	0.033*	7
4.	I have a clear goal in my work.	3.72	74.50	8.92	0.000*	1
5.	I have the chance to invest all my skills.	3.30	65.91	3.43	0.000*	6
6.	I know and realize the department goal.	3.67	73.42	8.34	0.000*	2
7.	I can take a suitable decision in my work.	3.64	72.75	8.17	0.000*	4
8.	I have the opportunity to be promoted in my career.	3.07	61.41	0.67	0.253	8
	All paragraphs of the field	3.46	69.26	7.02	0.000*	

* The mean is significantly different from 3

3. Trust between Employee and Managers

Table (4.30) shows the following results:
The mean of paragraph #8 "I accept instructions and criticism from management with an open mind" equals 3.41 (68.19%), Test-value = 5.33, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . it can be concluded conclude that the respondents agreed to this paragraph.

The mean of paragraph #2 "Management does not abandon employees when they commit medical mistakes" equals 2.59 (51.87%), Test-value = -4.55, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3 . it can be concluded that the respondents disagree to this paragraph.

The mean of the field "Trust between Employee and Managers" equals 3.01 (60.26%), Test-value = 0.21, and P-value=0.417 which is greater than the level of significance $\alpha = 0.05$. The mean of this field is insignificantly greater than the hypothesized value 3. It can be concluded that the respondents do not know or are neutral to the field of "Trust between Employee and Managers".

It is believed that a great place to work is one where people trust the people they work for, take pride in what they do, and feel enthusiastic about the work they do. The result of this study indicates that there is an unacceptable level of trust between employee and manager, the reason of which is related to the political, economic and social conditions

of our population in the Gaza Strip which affects everyone's level of trust towards one another. It is also of note that managers and employees do not do their best to overcome these annoying conditions in order to have a good relationship of trust that promotes proper interaction and cooperation which leads to an acceptable and safe social environment.

Table (4.30): Means and Test values for "Trust between Employee and Managers"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Managers and workers work beside each other.	2.69	53.83	-3.17	0.001*	7
2.	Management does not abandon employees when they commit medical mistakes.	2.59	51.87	-4.55	0.000*	8
3.	I don't have any difficulties in asking for a manager's help.	2.70	53.96	-3.47	0.000*	6
4.	I enjoy working under the current management.	2.79	55.84	-2.22	0.014*	5
5.	I prefer to gain experience from department management.	3.24	64.86	2.62	0.005*	4
6.	When I commit a mistake I speak frankly with the management to learn from my mistakes.	3.39	67.87	4.87	0.000*	2
7.	I do not fear disagreements in opinion with management.	3.30	66.04	3.60	0.000*	3
8.	I accept instructions and criticism from management with an open mind.	3.41	68.19	5.33	0.000*	1
	All paragraphs of the field	3.01	60.26	0.21	0.417	

* The mean is significantly different from 3

4. Participation in Decision-making

Table (4.31) shows the following results:

The mean of paragraph #5 "I have the chance to solve work problems in my department" equals 3.43 (68.51%), Test-value = 5.38, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . it can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #6 "Management takes decisions after listening to the opinions of others" equals 2.64 (52.84%), Test-value = -3.87, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3 . it can be concluded that the respondents disagree to this paragraph.

The mean of the field "Participation in Decision-making" equals 3.11 (62.12%), Test-value = 1.54, and P-value =0.063 which is greater than the level of significance $\alpha = 0.05$. The mean of this field is insignificantly different from the hypothesized value 3. It can be concluded that the respondents (Do not know, neutral) to field of "Participation in Decision-making ".

Participation in decision-making is one of the most important aspects of an effective management system because it give a chance to every employee to express his feelings

and make suggestions that lead to early detection of work problems and to suitable solution which are accepted by everyone in the organization.
Participant responses indicates that employees working in the ICU are not effectively participating in decision-making and this is related to the instability of political and economic conditions of our society which decreases the chance for managers and employees to adequate time for proper decision-making. In addition, the manager does not have the required knowledge, experience, authority and resources to meet the employees' and patients' requirements.

Table (4.31): Means and Test values for "Participation in Decision-making"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I have clear responsibilities and practice them without any opposition from managers.	3.35	67.07	4.17	0.000*	2
2.	Management is ready to discuss any suggestions or harassment concerns of the employees.	2.90	58.00	-1.13	0.129	5
3.	It is encouraged to learn other skills to increase my responsibilities in the department.	3.03	60.53	0.29	0.386	4
4.	New tasks are explained professionally and suggestions are welcomed to facilitate the acceptance of these tasks.	3.27	65.33	3.18	0.001*	3
5.	I have the chance to solve work problems in my department.	3.43	68.51	5.38	0.000*	1
6.	Management takes decisions after listening to the opinions of others.	2.64	52.84	-3.87	0.000*	6
	All paragraphs of the field	3.11	62.12	1.54	0.063	

* The mean is significantly different from 3

5. Communication among Employees

Table (4.32) shows the following results:
The mean of paragraph #1 "There is an exchange of information about patients at specific times to suit all crew members working in the department" equals 3.53 (70.67%), Test-value = 6.96 and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3 . it can be concluded that the respondents agreed to this paragraph.

The mean of paragraph #5 "Some employees speak with technical terms that are not understandable to others" equals 2.65 (52.93%), Test-value = -4.17, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3 . it can be conclude that the respondents disagree to this paragraph.

The mean of the field "Communication among Employees" equals 3.16 (63.23%), Test-value = 2.86, and P-value=0.002 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It can be concluded that the respondents agreed to field of "Communication among Employees ".

This result indicates that there is an unacceptable level of communication among employees working in ICUs as the mean of the field "Communication among Employees" equals 3.16 (63.23%), Test-value = 2.86, and P-value=0.002 which is smaller than the level of significance $\alpha = 0.05$. It is concluded that employees in ICUs do not have an effective communication pattern or clear communication channels to promote an effective exchange of information regarding the patients, employees and the departments as a whole. In addition, there is a problem with the pattern of communication related to the workload, stressful ICU environment and an unacceptable level of trust among employees and their managers.

This study is in agreement with the results of the study of Hamdan and Saleem (2012) which show a lack of openness in regards to communication amongst patients, nurses and physicians at Palestinian public hospitals and this assure the prominence an ineffective communication pattern among employees working at the hospitals of Gaza and west bank and it is clear that both areas has the same political and social problem .

Table (4.32): Means and Test values for "Communication among Employees"

No.	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	There is an exchange of information about patients at specific times to suit all crew members working in the department.	3.53	70.67	6.96	0.000*	1
2.	Employees at the department receive suggestions and criticisms with no qualms.	3.28	65.60	3.59	0.000*	3
3.	There are formal channels that enables each employee to transfer any information or data that concerns any employee or patient.	2.88	57.58	-1.38	0.085	5
4.	I feel that employees working in the department have the ability to listen and concentrate when addressing them.	3.43	68.53	5.06	0.000*	2
5.	Some employees speak with technical terms that are not understandable to others	2.65	52.93	-4.17	0.000*	6
6.	There are no difficulties in understanding new rules or regulations when published by the management.	3.20	64.00	2.19	0.015*	4
	All paragraphs of the field	3.16	63.23	2.86	0.002*	

* The mean is significantly different from 3

Section VI

Testing Research Hypothesis

1- **There is a statistical relationship between the commitment to safety by management at a significant level of (α = 0.5) and employee attitude toward safety culture.**

Table (4.33) shows that the correlation coefficient between the commitment to safety by management and employee attitude toward safety culture equals .711 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at α = 0.05. It can concluded that there is a significant relationship between the commitment to safety by management and employee attitude toward safety culture.

This result assures the role of management towards the promotion of safety culture where it can maintain a safety environment by adopting goals and objectives concerning safety rules and policies. It also assures the availability of trained personnel and instruments which provide safety healthcare service for the employees and patients. On the other hand, it is also necessary for management personnel to be committed to safety measures so that they will be a role-models for other employees.

This study agrees to a certain degree with the study of Moumtzoglou (2009) which recommended that nursing management should change management rules and establish systems so that nurses can work in a blame-free culture.
This study is similar to our study as it is applied to medical field and the population of the study has nearly the similar educational level, job description and economic and social environment

Table 4.33 Correlation coefficient between the commitment to safety by management and employee attitude toward safety culture

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a statistical relationship between the commitment to safety by management at a significant level of (α = 0.5) and employee attitude toward safety culture.	.711	0.000*

* Correlation is statistically significant at 0.05 level

2- **There is a statistical relationship between employee engagement at a significant level of (α = 0.5) and employee attitude toward safety culture.**

Table (4.34) shows that the correlation coefficient between employee engagement and employee attitude toward safety culture equals .782 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at α = 0.05. It can be conclude that there is a significant relationship between employee engagement and employee attitude toward safety culture.

This result assures us that there is a critical need for the employees to be engaged in their respective departments which results in a willingness to adopt rules, policies and decisions concerning the department. In addition, employee engagement helps increase

employee satisfaction so the employee has the chance to be creative and innovative. (Sakovska, 2012).

Finally, this result stresses the role of human resource managers to have the appropriate selection method and the environment that enables the employee to be engaged in his department. This study also agrees to a certain degree with Thorp (2012) who indicated that there is a positive effect of employee engagement toward patient safety culture. Also this study was applied to a medical staff at the tertiary hospital which have the similar educational and academic level

Table (4.34) Correlation coefficient between employee engagement and employee attitude toward safety culture

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a statistical relationship between employee engagement at a significant level of ($\alpha = 0.5$) and employee attitude toward safety culture.	.782	0.000*

* Correlation is statistically significant at 0.05 level

3- There is a statistical relationship between the trust that exists between the healthcare provider and the management at a significant level of ($\alpha = 0.5$) and employee attitude toward safety culture.

Table (4.35) shows that the correlation coefficient between the trust that exists between the healthcare provider and the management and employee attitude toward safety culture equals .675 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. It can be concluded that there is a significant relationship between the trust that exists between the healthcare provider and the management and employee attitude toward safety culture.

Organizations that are recognized as great place to work put great emphasis on the quality of relationship between employees and their leaders; between employees and their jobs, and among employees. The centrality of these three relationships influence employees' loyalty, commitment, and willingness to materialize organizational goals and priorities. If leaders are seen as transparent, acting according to espoused values, and not displaying self-protective motives then they develop trusting relationship with their employees which in turn contributes to positive employee work outcomes such as work engagement.(Hassan and Ahmed,2011)

This result shows the importance of trust between management and the employee at the ICU and asserts the role of manager to take care of their employees and maintain a safe environment to report their incidents and pay attention to the employee suggestions. It also allows for the having of clear rules and regulations to organize the relationship among the healthcare team.

This study partly agrees with the study of - Kelly Terrence et al, (2011) which indicated that coworker trust and supervisor trust were found to be significantly and directly associated with both job satisfaction and safety climate , this study was applied to the managers at a Large U.S. Air Carrier who have the same dangerous situation as medical team at the ICUs as their mistakes may be fatal to their customer. Also this result is partly agreed with the Vogus' and Sutcliffe's study (2012) which indicated that

the benefits of safety organizing on reported medication errors were amplified when paired with high levels of trust in the manager, and the population of this study the same as the population of our study as they are an employees working at different medical department

Table (4.35) Correlation coefficient between the trust that exists between the healthcare provider and the management and employee attitude toward safety culture

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a statistical relationship between the trust that exists between the healthcare provider and the management at a significant level of (α = 0.5) and employee attitude toward safety culture	.675	0.000*

* Correlation is statistically significant at 0.05 level

4- There is a statistical relationship between participation in the decision-making at a significant level of (α = 0.5) and employee attitude toward safety culture.

Table (4.36) shows that the correlation coefficient between participation in the decision-making and employee attitude toward safety culture equals .712 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at α = 0.05. it can be concluded that there is a significant relationship between participation in the decision-making and employee attitude toward safety culture.

There is an assumption held by many scholars and managers that if employees are adequately informed about matters concerning them and are afforded the opportunity to make decisions relevant to their work, then there will be a benefits for both the organization and the individual as it strengthen employee's morale, job satisfaction and enhances productive efficiency as well as participation in decision making that contributes to greater trust and a sense of control on the part of the employees. Kuyea and Sulaimon(2011)

This asserts that the management role in regards to encouraging employee participation in decision-making to listen to their comments and suggestions and take them into consideration. In addition, as a result of this study, the ideas partly agree with those brought up in the study of Widerszal-Bazyl and Warszewska-Makuch (2008) which conclude that employee direct participation had a positive influence upon workplace safety, even if involvement was not directly related to safety. It also raises positive correlation with Wadesango (2012) who concluded that insignificant teacher participation in critical school issues resulted in low staff morale and this culminated in stressful school governance, and this study was applied to a teachers of secondary schools who have the same critical job as our population at the ICUs Finally, Jaafarpour and Khani (2011) which demonstrates the importance of participation in the decision-making process among Iranian nurses.

Table (4.36) Correlation coefficient between participation in the decision-making and employee attitude toward safety culture

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a statistical relationship between participation in the decision-making at a significant level of (α = 0.5) and employee attitude toward safety culture	.712	0.000*

* Correlation is statistically significant at 0.05 level

5- There is a statistical relationship between the good communication among healthcare team members at a significant level of (α = 0.5) and employee attitude toward safety culture.

Table (4.37) shows that the correlation coefficient between the good communication among healthcare team members and employee attitude toward safety culture equals .690 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at α = 0.05. it can be concluded that there is a significant relationship between the good communication among healthcare team members and employee attitude toward safety culture.

Communication is very important for employees who work in any organization anyplace on the earth; as communication gives a feeling of belonging and sense of partnership amongst employees working in the same organization. In addition, when employees feel that they have been heard and that they can communicate with their supervisors at anytime they feel as part of a group and are more motivated to work.

This result demonstrates that the role of the employee to develop their communication skills and the role of the manager to develop an effective communication system with clear communication channels, and clear job descriptions partly agreed with the study of – Puntillo, (2006): which showed that increased collaboration and communication can result in more appropriate care and increased physician/nurse, patient, and family satisfaction. Finally, this result agreed with the study of Al-Ahmadi (2009), which showed the importance of good communication amongst the healthcare team in the ICU, and both studies was applied to employees working at ICUs

Table (4.37) Correlation coefficient between the good communication among healthcare team members and employee attitude toward safety culture

Hypothesis	Pearson Correlation Coefficient	P-Value (Sig.)
There is a statistical relationship between the good communication among healthcare team members at a significant level of (α = 0.5) and employee attitude toward safety culture	.690	0.000*

* Correlation is statistically significant at 0.05 level

6- There are significant differences between respondents concerning attitude toward safety culture due to personal data results such as: Gender, Age, Major, Level of Education Attained, Years of Experience within the ICU, The Department You Work in, and Hospital.

- **There are significant differences between respondents concerning attitude toward safety culture due to Gender**

Table(4.38) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the fields "Safety Climate, Measuring Employee's Attitudes towards Safety Culture, Management's Commitment to Safety Culture for Patients and Workers and Participation in Decision-making ", then there is significant difference among the respondents regarding to this fields due to Gender. It can be concluded that the respondents' Gender has significant effect on these fields. Female respondents have higher than Male respondents.
Table (4.38) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among the respondents regarding to these fields due to Gender. We conclude that the respondents' Gender has no effect on these fields.

This result indicates that there are significant differences between respondents concerning attitudes towards safety culture due to gender; female employees have a more positive attitude towards safety culture than males and the reason for this is that female employees prefer working in closed areas to avoid the public.

In addition, working within a closed unit gives them the same feeling of working inside a family, nursery or the NICU; all of which are interesting jobs/locations for females.

Table (4.38): Independent Samples T-test of the fields and their p-values for Gender

No.	Field	Test Value	Sig.	Means	
				Male	Female
1.	Job Satisfaction	-1.720	0.087	3.16	3.36
2.	Level of Knowledge about Safety Culture	-1.665	0.098	3.25	3.42
3.	Safety Climate	-2.550	0.012*	3.10	3.44
4.	Team Work	-1.569	0.119	3.52	3.70
5.	Work Condition	-1.018	0.310	2.88	3.03
6.	**Measuring Employee's Attitudes towards Safety Culture**	-2.283	0.024*	3.19	3.42
7.	Management's Commitment to Safety Culture for Patients and Workers	-1.995	0.048*	2.75	3.02
8.	Employee Engagement	-1.503	0.135	3.40	3.61
9.	Trust between Employee and Managers	-1.434	0.154	2.95	3.14
10.	Participation in Decision-making	-2.039	0.043*	3.01	3.31
11.	Communication among Employees	-1.347	0.180	3.11	3.27
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	-1.925	0.056	3.04	3.26
	All paragraphs of the questionnaire	-2.353	0.020*	3.12	3.36

* Means differences are significant at α = 0.05

7- There are significant differences between respondents concerning attitude toward safety culture due to Age.

Table (4.39) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the field "Communication among Employees", then this is significant difference among the respondents regarding to this field due to Age. We conclude that the respondents' Age has significant effect on these fields. 30- Less than 40 respondents have higher than other Age group.

Table (4.39) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among the respondents regarding to these fields due to Age. We conclude that the respondents' Age has no effect on these fields.

Participant response shows that the group aged from "30- Less than 40" have a better attitude regarding communication than other age groups. The reason for this that this group consists of new employees made up mostly of socially active people. In addition, they have the desire to increase their knowledge about the job, the employees and the department.

Table (4.39): ANOVA *test* of the fields and their p-values for Age

No.	Field	Test Value	Sig.	Means		
				Less than 30	30- Less than 40	40 years and above
1.	Job Satisfaction	1.341	0.265	3.15	3.33	3.35
2.	Level of Knowledge about Safety Culture	1.037	0.357	3.25	3.40	3.38
3.	Safety Climate	0.432	0.650	3.18	3.32	3.20
4.	Team Work	1.685	0.189	3.53	3.77	3.52
5.	Work Condition	1.238	0.293	2.88	3.14	2.87
6.	**Measuring Employee's Attitudes towards Safety Culture**	1.453	0.237	3.22	3.41	3.27
7.	Management's Commitment to Safety Culture for Patients and Workers	1.824	0.165	2.85	3.00	2.61
8.	Employee Engagement	1.193	0.306	3.47	3.60	3.28
9.	Trust between Employee and Managers	1.231	0.295	3.03	3.13	2.83
10.	Participation in Decision-making	1.360	0.260	3.13	3.24	2.89
11.	Communication among Employees	3.337	0.038*	3.09	3.44	3.08
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	2.058	0.131	3.11	3.28	2.92
	All paragraphs of the questionnaire	1.556	0.214	3.17	3.35	3.11

* Means differences are significant at α = 0.05

8- There are significant differences between respondents concerning attitude toward safety culture due to Major.

Table (4.40) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the field "Communication among Employees", then this is significant difference among the respondents regarding to this field due to Major. We conclude that the respondents' Major has significant effect on these fields. Physician respondents have higher than Nursing respondents.

Table (4.40) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among the respondents

regarding to these fields due to Major. We conclude that the respondents' Major has no effect on these fields.

This result indicates that there are significant differences between respondents concerning communication among employees due to major and the physicians responded better than nurses towards communication among the healthcare team inside the ICU. This result partially agrees with the study of. Mills et al, (2008) which shows that surgeons perceive stronger organizational culture of safety, better communication, and better teamwork than either nurses or anesthesiologists. The reason for this is that physicians are more socially active than nurses because they have the responsibility to communicate with the public about the patient's condition, the department's condition and the equipment and medicine of the department. They also spend more years studying than nurses and have more knowledge about other foreign cultures.

Table (4.40): Independent Samples T-test of the fields and their p-values for Major

No.	Field	Test Value	Sig.	Means	
				Physician	Nursing
1.	Job Satisfaction	0.168	0.867	3.24	3.21
2.	Level of Knowledge about Safety Culture	1.447	0.150	3.40	3.25
3.	Safety Climate	0.236	0.814	3.23	3.20
4.	Team Work	0.831	0.408	3.64	3.54
5.	Work Condition	0.674	0.501	3.00	2.90
6.	**Measuring Employee's Attitudes towards Safety Culture**	0.786	0.433	3.32	3.24
7.	Management's Commitment to Safety Culture for Patients and Workers	0.606	0.546	2.89	2.81
8.	Employee Engagement	0.117	0.907	3.48	3.46
9.	Trust between Employee and Managers	0.185	0.853	3.03	3.01
10.	Participation in Decision-making	0.182	0.856	3.13	3.10
11.	Communication among Employees	1.994	0.048*	3.32	3.08
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	0.638	0.524	3.16	3.09
	All paragraphs of the questionnaire	0.686	0.494	3.25	3.17

* Means differences are significant at $\alpha = 0.05$

9- There are significant differences between respondents concerning attitude toward safety culture due to Level of Education Attained.

Table (4.41) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for each field, then there is insignificant difference in respondents' answers toward each field due to Level of Education Attained. It can be conclude that the characteristic of the respondents Level of Education Attained has no effect on each field.

The educational level attained by each individual has to change the job description and give the employee more responsibility and accountability. However, it can be concluded that employees in the ICU with different educational level have the same job description and practice the same skills even though they participate in the

decision-making process at the same level which makes them have similar attitudes toward safety culture. The only thing in which some employees differ on in regards to educational level attained is financial compensation; the result of this study shows that the participant has a negative response to financial compensation which assures that employees with different levels of education have the same unaccepted levels of attitude toward safety culture.

Table (4.41)**: ANOVA *test* of the fields and their p-values for Level of Education Attained**

No.	Field	Test Value	Sig.	Means		
				Diploma	Bachelor's Degree	High study
1.	Job Satisfaction	2.227	0.111	3.38	3.13	3.39
2.	Level of Knowledge about Safety Culture	0.988	0.375	3.34	3.26	3.46
3.	Safety Climate	0.193	0.825	3.27	3.18	3.25
4.	Team Work	0.752	0.473	3.46	3.61	3.63
5.	Work Condition	0.140	0.870	2.90	2.93	3.02
6.	**Measuring Employee's Attitudes towards Safety Culture**	0.383	0.682	3.29	3.24	3.37
7.	Management's Commitment to Safety Culture for Patients and Workers	0.086	0.918	2.88	2.82	2.86
8.	Employee Engagement	0.484	0.617	3.45	3.43	3.63
9.	Trust between Employee and Managers	0.640	0.529	3.10	3.01	2.86
10.	Participation in Decision-making	0.069	0.933	3.15	3.09	3.09
11.	Communication among Employees	1.554	0.215	3.11	3.13	3.42
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	0.102	0.903	3.13	3.09	3.15
	All paragraphs of the questionnaire	0.247	0.781	3.23	3.17	3.27

10- There are significant differences between respondents concerning attitude toward safety culture due to Years of Experience within the ICU.

Table (4.42) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the fields "Level of Knowledge about Safety Culture, Measuring Employee's Attitudes towards Safety Culture, Employee Engagement, Trust between Employee and Managers, Communication among Employees and Measuring Determinants of Safe Culture in Intensive Care Units", then there is significant difference among the respondents regarding to this fields due to Years of Experience within the ICU. It can be conclude that the respondents' Years of Experience within the ICU has significant effect on these fields. 5 – Less than 10 year respondents have higher than other Years of Experience within the ICU group.

Table (4.42) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among the respondents regarding to these fields due to Years of Experience within the ICU. It can be concluded that the respondents' Years of Experience within the ICU has no effect on these fields.

This result indicates that there are significant differences between respondents concerning attitudes towards safety culture due to years of experience within the ICU. The result shows that employees who have an experiance of 5 years to less than 10 years have better attitudes toward safety culture than other groups and the reason for this is that during the first years of experience, the employee begins to collect

information about the healthcare team in order to know more about the department's condition. In addition, he may involuntary come to this department and search for another department.

Those with 5 to 10 years of experience become accustomed to this department and enter in a stage of acceptance to work and other employees who want to leave find a chance to leave. In addition, this group consists of mostly young people and as such has the ability to overcome any problems inside the department as they try to develop themselves.

Employees who have more than 10 years of experience are searching for incentives, development, commonly criticize managers and always make suggestions.

Table (4.42) :ANOVA *test* of the fields and their p-values for Years of Experience within the ICU

No.	Field	Test Value	Sig.	Means		
				Less than 5 year	5 – Less than 10 year	10 years and more
1.	Job Satisfaction	2.175	0.117	3.12	3.39	3.28
2.	Level of Knowledge about Safety Culture	4.443	0.013*	3.18	3.52	3.34
3.	Safety Climate	1.891	0.154	3.13	3.41	3.17
4.	Team Work	2.935	0.056	3.49	3.80	3.52
5.	Work Condition	2.116	0.124	2.84	3.17	2.88
6.	**Measuring Employee's Attitudes towards Safety Culture**	3.973	0.021*	3.17	3.48	3.25
7.	Management's Commitment to Safety Culture for Patients and Workers	2.012	0.137	2.79	3.04	2.70
8.	Employee Engagement	4.047	0.019*	3.40	3.77	3.27
9.	Trust between Employee and Managers	4.512	0.013*	2.94	3.32	2.83
10.	Participation in Decision-making	2.897	0.058	3.07	3.36	2.90
11.	Communication among Employees	3.902	0.022*	3.05	3.42	3.14
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	4.588	0.012*	3.04	3.38	2.95
	All paragraphs of the questionnaire	4.363	0.014*	3.12	3.43	3.11

* Means differences are significant at $\alpha = 0.05$

11- There are significant differences between respondents concerning attitude toward safety culture due to Department You Work in.

Table (4.43) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for each field, then there is insignificant difference in respondents' answers toward each field due to" department you work in". It can be concluded that the characteristic of the respondents" Department You Work in" has no effect on each field.

This result indicates that employees who work in the ICU have the same attitude towards safety but the problem they face comes from other factors outside of the unit such as: the type of patient admitted to the unit, the resources available to the unit and the hospital to which the unit is followed as we will see later.

Table (4.43): ANOVA *test* of the fields and their p-values for Department You Work in

No.	Field	Test Value	Sig.	Means		
				Neonatal Intensive care	Child Intensive Care	Adult Intensive Care
1.	Job Satisfaction	2.352	0.099	3.13	3.42	3.23
2.	Level of Knowledge about Safety Culture	0.792	0.455	3.30	3.38	3.20
3.	Safety Climate	1.471	0.233	3.12	3.36	3.27
4.	Team Work	1.355	0.261	3.50	3.70	3.64
5.	Work Condition	1.552	0.215	2.88	3.13	2.82
6.	**Measuring Employee's Attitudes towards Safety Culture**	1.799	0.169	3.21	3.41	3.24
7.	Management's Commitment to Safety Culture for Patients and Workers	0.678	0.509	2.89	2.84	2.69
8.	Employee Engagement	1.311	0.273	3.40	3.64	3.41
9.	Trust between Employee and Managers	1.062	0.349	3.04	3.09	2.84
10.	Participation in Decision-making	1.056	0.350	3.16	3.15	2.91
11.	Communication among Employees	0.248	0.781	3.13	3.18	3.23
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	0.584	0.559	3.12	3.17	3.00
	All paragraphs of the questionnaire	0.969	0.382	3.17	3.30	3.13

12- There are significant differences between respondents concerning attitude toward safety culture due to Hospital.

Table (4.44) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the fields "Level of Knowledge about Safety Culture, Team Work, Work Condition, Measuring Employee's Attitudes towards Safety Culture, Employee Engagement, Participation in Decision-making, Communication among Employees and Measuring Determinants of Safe Culture in Intensive Care Units", then there is significant difference among the respondents regarding to this fields due to Hospital. We conclude that the respondents' Hospital has significant effect on these fields. Al Nasir Hospital respondents have higher than other Hospital group.

Table (4.44) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among the respondents regarding to these fields due to Hospital. We conclude that the respondents' Hospital has no effect on these fields.

The result shows that there are significant differences between respondents concerning attitudes towards safety culture due to the hospital. This result agrees to a certain degree with the result of Raftopoulos, Pavlakis (2012) which examined five ICUs in different hospitals and the results show the difference of employee attitudes toward safety culture among the units.

The employees of Al Rantisi hospital have a slightly more positive attitude toward safety culture than Al Nasser and Al Dora hospital but there is a big difference in comparison with Al Shiffa hospital. The reason for this is that with Al Rantisi hospital the intensive care units are specialized for children from the hospital only, there are also

a small number of beds, the nature of patients they deal with (a seriously and chronic ill patient) also have special care from the healthcare team, the management, the ministry of health and the public at large**.**

In addition, Al Nasser and Al Dora hospital are specialized pediatric hospitals which have a small number of beds in comparison with Al Shiffa hospital. On the other hand, the intensive care units at Al Shiffa hospital have a large numbers of patients and it is considered a referral place for all hospitals in Gaza city; sometimes they have admitted cases from outside Gaza City. In addition, this hospital is ready to accept any employee due to the continuous shortage of manpower in comparison with other hospitals examined in the sample.

Table (4.44): ANOVA *test* of the fields and their p-values for Hospital

No.	Field	Test Value	Sig.	Means			
				Al Shifa Hospital	Al Nasir Hospital	Al Dorrah Hospital	Al Rantisi Hospital
1.	Job Satisfaction	1.447	0.232	3.10	3.29	3.17	3.45
2.	Level of Knowledge about Safety Culture	4.561	0.004*	3.11	3.43	3.23	3.55
3.	Safety Climate	2.108	0.102	3.06	3.23	3.45	3.52
4.	Team Work	4.231	0.007*	3.38	3.70	4.02	3.62
5.	Work Condition	5.087	0.002*	2.65	3.09	2.96	3.36
6.	**Measuring Employee's Attitudes towards Safety Culture**	4.955	0.003*	3.07	3.39	3.35	3.51
7.	Management's Commitment to Safety Culture for Patients and Workers	2.419	0.069	2.67	3.03	2.85	2.74
8.	Employee Engagement	3.107	0.028*	3.23	3.60	3.72	3.67
9.	Trust between Employee and Managers	1.636	0.184	2.86	3.15	3.18	2.99
10.	Participation in Decision-making	4.691	0.004*	2.83	3.37	3.33	3.07
11.	Communication among Employees	3.238	0.024*	2.96	3.32	3.30	3.26
12.	**Measuring Determinants of Safe Culture in Intensive Care Units**	3.628	0.015*	2.91	3.29	3.26	3.14
	All paragraphs of the questionnaire	4.584	0.004*	2.99	3.35	3.29	3.33

* Means differences are significant at $\alpha = 0.05$

Chapter Five

Conclusion and Recommendations

5-1 Introduction

This chapter provides a summary of the most important findings of the research, some recommendations in light of these findings with hope that the research achieved its purpose in assessing employee attitudes toward safety culture in ICUs of the governmental hospitals of Gaza City and in identifying some determinants of safety culture.

5-2 Research Findings

First Part: Employee Attitude toward Safety Culture

1. Employees working in ICUs in hospital of Gaza City have a mildly positive attitude towards safety culture as participant respondents shows a low level of job satisfaction ,low level of knowledge about safety culture , a mildly positive attitude towards safety climate, unaccepted team work climate and unaccepted working condition
2. They have a low level of job satisfaction as the participant respondents shows un acceptable salary also an acceptable financial incentives
3. There is unacceptable team work among ICU healthcare providers
4. The employees do not have the required knowledge regarding safety culture as participant respondents shows the absence of training courses also the unavailability of any protocols directing the employee behavior toward safety measures
5. The employees have a mildly positive attitude towards the safety climate of the ICU as the participant respondents shows the absence of the environment which encourage incident reporting also professional treatment of incident reporting and the mutual trust among managers and there employee
6. Unacceptable working conditions in the ICUs of governmental hospitals of Gaza city as the participant respondents shows that employee considers their managers as an obstacles in their way not as facilitator also the obstacles and difficulties to take annual leave , sick leave or to go abroad for any reason

Second Part: Determinants of Safety Culture

1. There is a statistical relationship between the commitment to safety by management at a significant level of ($\alpha = 0.05$) and employee attitudes toward safety culture
2. There is a statistical relationship between employee engagement at a significant level of ($\alpha = 0.05$) and employee attitudes toward safety culture
3. There is a statistical relationship between the trust that exists between the healthcare provider and the management at a significant level of ($\alpha = 0.05$) and employee attitudes toward safety culture
4. There is a statistical relationship between participation in the decision-making process at a significant level of ($\alpha = 0.05$) and employee attitudes toward safety culture
5. There is a statistical relationship between good communication among healthcare team members at a significant level of ($\alpha = 0.05$) and employee attitudes toward safety culture

Third Part: The Difference in Response to the Safety Culture Dimension among Employees in ICUs

1. There are significant differences between respondents concerning attitudes toward safety culture due to gender in which the female employees have a more positive attitude toward safety culture as they feel working inside a closed unit is more safe and they deal with the team as a family
2. There are significant differences between respondents concerning communication among employees due to age. The age group of "30-Less than 40" has a better attitude about communication than other age groups as this age group consist of the newly employed personnel who have a good orientation about the nature of the department and the health team ,also this age group enter in the stage of acceptance for working in this department
3. There are significant differences between respondents concerning communication among employees due to major problems. However, the physicians responded better than nurses toward communication among the healthcare team inside the ICU as they have more academic study years also they are more oriented about variety of foreign cultures .
4. There are significant differences between respondents concerning attitudes toward safety culture due to years of experience within the ICU. In addition, the result shows that employees who have from 5 to less than 10 years of experience have a better attitude toward safety culture.
5. There are insignificant differences between respondents concerning attitudes toward safety culture due to the department they work in.
6. There are insignificant differences between respondents concerning attitudes toward safety culture due to the level of education.
7. There are significant differences between respondents concerning attitudes toward safety culture due to hospitals.

5-3 Recommendation:

At the end of this study and after discussion of the previous results the researcher puts forth the following recommendations

First: Recommendation Regarding Employees Attitude towards Safety Culture

1. Adoption of goals and objectives regarding safety culture by medical and nursing managers at health institutions as participant respondents shows the absence of adoption of these goals and objective among health team managers.
2. paying attention to the selection and recruitment process of the healthcare team working in the ICU as the employee who work at the ICU should have a special characteristics enable him to deal with the ICU patient at required level.
3. There needs to be a needs assessment process for the ICU team regarding their job satisfaction along with proper follow up as the participant respondents shows low level of job satisfaction and they complaint of some problems especially financial incentives .
4. There needs to be a specialized training course targeting nurses and physicians of the ICU to improve their knowledge about safety as participant respondents shows the absence of training courses .
5. paying attention to financial incentives which have a unique effect on the employees of the ICU.
6. maintaining a proper environment which makes employees express their feelings, participate in decision-making and make comments and suggestions regarding problems concerning them and their patients.

Second Part: Recommendation Regarding Determinant of Safety Culture

1. showing more commitment concerning safety culture by managers as the unique effect of them on the employee performance.
2. specialized training courses that improve the employees communication skills.
3. Effective and clear job description and a communication channel that promotes a good communication pattern.
4. Recreational activity for the employee and their families which have a great effect on employee physical, social and emotional status .
5. Maintaining a creative, innovative environment to make the ICU team be more engaged and be more loyal to their department.
6. paying attention to the employees' trust toward their managers and try to improve it as it is difficult to practice medical job in a climate characterized by distrust among health member .
7. encouraging the employees to express their feeling towards their managers which promote a mutual trust among them and decrease the stress also promote good communication pattern .
8. encouraging the employees to make comments and suggestions regarding rules and policies inside the department.

Third Part: Recommendation Regarding the Difference in Response to Safety Culture Dimension among Employee at the ICU

1. paying special attention to male employees to improve their attitude towards safety culture.
2. Paying special attention to the age group who are over 40 years old to determine their needs and improve their communication skills.
3. Paying special attention to the nursing staff to determine their needs and improve their communication skills.
4. Paying special attention to the ICUs employees in Al Shiffa hospital to determine there needs to create a more positive attitude towards safety culture like the colleges at other hospitals.

5-4 Recommendation for Future Studies:

After the discussion of the results of this study, the researcher recommends that more studies in these fields take place for example:

1. Assessment of safety culture at the various medical departments at the governmental and non-governmental institutions.
2. Assessment of patient safety culture at the various medical departments at the governmental and non-governmental institutions.
3. Determinant of the factors which affect safety culture among employees at the various medical departments at the governmental and non-governmental institutions.
4. Studying the nature of medical error (incidence, prevalence, incident reporting) and following up for the consequences of these errors at the governmental and non-governmental institutions .
5. Assessment of the relationship among employees and managers and factors affecting these relationships at governmental and non-governmental institution .
6. Assessments of the internal and external environment that affect medical practice at governmental and non-governmental institutions.
7. Assessing the communication system inside and outside healthcare institutions and factors affecting the effectiveness of the communication pattern at various departments in the governmental and non-governmental hospital

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Annex 1

List of Referees' Names

Name	Working Place
Dr. Samir Safi	Islamic University of Gaza
Dr. Yousef Bahar	Islamic University of Gaza
Dr. Majed Al Farra	Islamic University of Gaza
Dr. Bassam Abu Hamad	Al- Quds University (Abu Dis) in Gaza
Dr. Sami Ali Abu Al Ross	Islamic University of Gaza
Professor Yousif Ashour	Islamic University of Gaza
Dr. Yousef Al Jaish	Islamic University of Gaza
Dr. Khitam Abu Hamad	Al- Quds University (Abu Dis) in Gaza
Mr. Jehad Akasha	MOH (health information system)

Annex 2

Request for Questionnaire Assessment

الجامعة الإسلامية

الدراسات العليا

كلية التجارة

بسم الله الرحمن الرحيم

الدكتور الفاضل ----------

السلام عليكم ورحمة الله وبركاته

يقوم الباحث بإجراء دراسة بعنوان

Enforcing Safety Culture in Intensive Care Units in The Hospitals of Gaza City

وذلك للحصول على درجة الماجستير في إدارة الموارد البشرية لذا قام الباحث بتطوير استبيان لقياس

The employee attitude toward safety culture at their department and other factors that can be determinants of safety culture at intensive care units

لذا أرجو التكرم بإبداء رأيكم السديد ومقترحاتكم بشأن فقرات الاستبيان فيما إذا كان صالحًا أو غير صالح، ومدى انتماء كل فقرة للمجال المحدد لها، وبنائها اللغوي، وأية اقتراحات أو تعديلات ترونها مناسبة لتحقيق هدف الدراسة الحالية علمًا بأن بدائل الإجابة على الفقرات هي: (أوافق بشدة، أوافق/لا أوافق/ لا أوافق بشدة).

مع خالص الشكر والتقدير
والسلام عليكم ورحمة الله وبركاته.

الباحث :أحمد حمودة

مرفق مشكلة و فرضيات البحث

Annex 3

Questionnaire in Arabic

Islamic University - Gaza
Dean of Postgraduate Studies
Faculty of Commerce
Business Administration

الأخ/ت الفاضل/ة في قسم العناية المركزة---------- السلام عليكم ورحمة الله وبركاته...

يقوم الباحث أحمد سلمى حمودة بإعداد دراسة بعنوان: "تعزيز ثقافة العمل بأمان في أقسام العناية المركزة في المستشفيات الحكومية بمدينة غزة " وذلك استكمالاً لنيل درجة الماجستير في إدارة الموارد البشرية بالجامعة الإسلامية. لقياس ذلك أعد الباحث الاستبانة المرفقة والتي تهدف إلى التعرف على مدى ممارسة أفراد الطاقم العامل في أقسام العناية المركزة للمهن الصحية المختلفة (طبيب، ممرض، فني) في بيئة عمل تتمتع بثقافة آمنة تعمل على ممارسة المهن الطبية بطريقة تضمن سلامة مقدم الخدمة الصحية ومريض العناية المركزة.
كل التحية والتقدير لكم لما تبذلونه من جهد لخدمة المرضى ليلاً ونهاراً، وأود أن أحيطكم علماً بأن الإجابات سوف تكون لأغراض البحث العلمي فقط، لذلك فأرجو منكم الإجابة على كافة الأسئلة بصراحة وموضوعية، علماً بأن نتائج هذه الدراسة سوف تكون لصالح المجتمع الفلسطيني.

وتفضلوا بقبول فائق الاحترام والتقدير،،

الجزء الأول: البيانات الشخصية:

الرجاء وضع إشارة (✓) أمام الخيار المناسب:

الجنس	□ ذكر	□ أنثى	
العمر	□ أقل من 30 سنة □ 50 سنة فأكثر	□ 30- إلى أقل من40 سنة	□ 40- إلى أقل من 50 سنة
التخصص	□ طبيب	□ ممرض	
المؤهل العلمي	□ دبلوم	□ بكالوريوس	□دراسات عليا (ماجستير،دكتوراه)
سنوات الخبرة في العمل داخل أقسام العناية المركزة	□ أقل من 5 سنوات □ 15 سنة فأكثر	□ 5-إلى أقل من 10 سنوات	□ 10- إلى أقل من 15 سنة
القسم الذي تعمل فيه	□ العناية المركزة للخدج **(nicu)**	□ العناية المركزة للأطفال	□ العناية المركزة للكبار
المستشفى	□ مستشفى الشفاء □ مستشفى د. عبد العزيز الرنتيسي	□ مستشفى النصر للأطفال	□ مستشفى الدرة

الجزء الثاني: قياس توجه الموظفين نحو الثقافة الآمنة في قسم العناية المركزة ويتكون من ستة محاور (الرضا الوظيفي, مستوى المعرفة بثقافة العمل بأمان , المناخ الآمن, الاعتراف بوجود ضغوطات نفسية, مناخ العمل الجماعي, ظروف العمل)

الرجاء وضع علامة ✓ أمام الخيار المناسب

أولا	الرضا الوظيفي	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
-1	أنا فخور بالعمل في هذا القسم					
-2	أعتبر وظيفتي من النوع الذي يسرني					
-3	أشعر أن وظيفتي مناسبة لي أكثر من غيرها					
-4	لا أضغط على نفسي للذهاب إلى العمل					
-5	حققت أملي لأنني حصلت على هذه الوظيفة					
-6	أشعر بالرضا عن الراتب الذي أتقاضاه					

7-	أشعر بالرضا عن المكافآت التي أتقاضاها					
ثانياً	مستوى المعرفة بثقافة العمل بأمان	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	أستطيع التعامل مع الأخطاء الطبية بشكل مهني					
2-	أعرف الحد الأعلى لساعات العمل اليومي التي لا تشكل خطرا على سلامتي					
3-	أعرف عدد المناوبات الشهرية التي لا تشكل خطرا على سلامتي					
4-	أتلقى المعلومات الخاصة بالأمان والسلامة بشكل دوري					
5-	حصلت على دورات تدريبية متخصصة في الحفاظ على سلامتي أثناء التعامل مع المرضى					
6-	الدليل الإرشادي لكيفية تقديم الخدمة الطبية لمريض العناية المركزة متوفر في أي وقت					
7-	أعرف عدد أيام الإجازات السنوية الممنوحة لي خلال العام					
8-	أعرف عدد أيام الإجازات المرضية الممنوحة لي خلال العام					
9-	أعرف عدد أيام الطوارئ الممنوحة لي خلال العام					
10-	أعرف الوصف الوظيفي لي					
ثالثاً	المناخ الآمن	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	أعلم الطرق الرسمية للاستفسار عن المعلومات والإجراءات الخاصة بسلامة العاملين في القسم					
2-	أجد التشجيع من زملائي على تبليغ الإدارة بأي حدث أو خطأ يتعلق بسلامة العاملين في القسم					
3-	يتم التعامل مع الأخطاء الطبية داخل القسم بشكل مهني					
4-	يلتزم العاملون في القسم بالسياسات والقوانين الخاصة بسلامتهم					
5-	الثقافة السائدة في القسم تشجع الفرد أن يتعلم من أخطائه					
6-	لا يوجد صعوبة في مناقشة الأخطاء الطبية داخل القسم					
خامسا	مناخ العمل الجماعي	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	التفاهم على آليات عمل الفريق قبل بداية فتره العمل (المناوبة) مهم لسلامة المرضى والعاملين					
2-	من السهل على أي فرد من أعضاء الفريق أن يسأل عن أي معلومة لا يعرفها أثناء العمل					
3-	أنا راض عن التعاون السائد بين أفراد الطاقم العامل في القسم					
4-	أجد الدعم الكافي من أفراد الفريق للحفاظ على سلامة المريض					
5-	جميع أفراد الطاقم العامل يشاركون في صنع القرار أثناء فتره العمل					
6-	يتم تسليم الأحداث المهمة خلال الفترة لطاقم الفترة المقبلة بشكل جيد					
7-	يعمل الأطباء والممرضون كفريق منظم ومتعاون لتقديم خدمه مميزة					
8-	الخلافات المهنية بين أفراد الفريق تحل بشكل ملائم يرضي الجميع					
9-	أستطيع الحديث عن أي خطأ طبي أرتكبه أثناء تقديم الخدمة الصحية للمريض					
10-	لا أجد صعوبة في الإفصاح عن الخلافات المهنية التي تحدث مع أفراد المهن الطبية الأخرى					
سادسا	ظروف العمل	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	المعلومات المتعلقة بالقرارات التي تخص العمل متوفرة لي بشكل روتيني					
2-	أنظر إلى الإدارة كداعم لي في العمل وليس كعائق أمامي					
3-	هذا القسم يتعامل بشكل ايجابي مع المشكلات المتعلقة بالعاملين					

4-	يوجد لوائح وقوانين واضحة تنظم العمل داخل القسم					
5-	يتم مراعاة الظروف الصحية والاجتماعية للعاملين في القسم					
6-	تعطى الإجازات السنوية حسب رغبة العاملين في القسم					
7-	الإجازة المرضية تعطى للعاملين بدون معيقات إدارية					
8-	أختار أوقات الدوام التي تناسب أفراد أسرتي					
9-	لا يوجد معيقات إدارية في طلب الإجازة الخارجية					

الجزء الثالث: قياس العوامل التي يفترض الباحث أنها أحد محددات الثقافة الآمنة في أقسام العناية المركزة

أولا	التزام الإدارة بثقافة الأمان والسلامة للمرضى وللعاملين	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	أتمتع بالوقت الكافي للعمل بشكل يضمن سلامتي وسلامة المرضى					
2-	توجد سياسات مكتوبة تتعلق بالأمان والسلامة					
3-	السياسات التي تضعها الإدارة لضمان سلامة المرضى والعاملين تترجم إلى أفعال					
4-	الإدارة توفر أجواء مريحة للتبليغ عن الأخطاء الطبية					
5-	الإدارة توصل الرسائل المتعلقة بالأمان والسلامة بشكل جيد					
6-	الإدارة تحفز العاملين للعمل بطريقة تضمن الأمان والسلامة لهم وللمرضى					
7-	تعتبر سلامة المرضى والعاملين من أولويات الإدارة					
8-	تؤثر الحالة الصحية للفرد في اختياره للعمل في أقسام العناية المركزة					
9-	أي اقتراح أقدمه للإدارة بخصوص سلامة المرضى والعاملين يتم الترحيب به ومناقشته بشكل جيد					
ثانياً	ارتباط العاملين بالقسم	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	لدي ثقة بالعاملين في هذا القسم					
2-	توجد لدي الفرصة للإبداع في هذا العمل					
3-	القسم يثمن مجهودي وعملي					
4-	لدي هدف واضح في العمل					
5-	يوجد لدي الفرصة لأستثمر جميع مهاراتي					
6-	أعرف وأدرك أهداف القسم					
7-	أستطيع اتخاذ القرار المناسب في عملي					
8-	يوجد لدي الفرصة للارتقاء في السلم الوظيفي					
ثالثاً	الثقة بين العاملين والإدارة	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	الإدارة والعاملين يقفون جنبا إلى جنب					
2-	الإدارة لا تتخلى عن العاملين عند الوقوع في أي خطأ طبي					
3-	لا أجد صعوبة في طلب المساعدة من الإدارة					
4-	أتمتع بالعمل في ظل الإدارة الموجودة					
5-	أحب أن أكتسب خبراتي الإدارية من إدارة القسم					
6-	عندما ارتكب خطا أكون صريحا جدا مع الإدارة لأتعلم من أخطائي					
7-	لا أخشى عدم الاتفاق في الآراء مع الإدارة					
8-	أتقبل التعليمات والانتقادات من الإدارة بصدر رحب					
رابعاً	المشاركة في صنع القرار	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	مسئولياتي واضحة وأمارسها بدون معارضة من الهيئة الإدارية					
2-	الإدارة على استعداد تام لشرح أي اقتراحات أو مضايقات تخص العاملين					
3-	يوجد تشجيع لتعلم مهارات أخرى تعمل على زيادة مسئولياتي في					

	القسم					
4-	المهام الجديدة يتم شرحها بشكل مهني وهناك ترحيب بأي اقتراحات تسهل قبول هذه المهام					
5-	توجد لدي الفرصة لحل المشاكل داخل عملي					
6-	الإدارة تتخذ القرارات بعد الاستماع لآراء الآخرين					
خامساً	الاتصال والتواصل بين أفراد الطاقم العامل في القسم	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
1-	يتم تبادل المعلومات عن المرضى في أوقات محددة تتناسب مع جميع أفراد الطاقم العامل في القسم					
2-	يستقبل العاملين في القسم المقترحات والانتقادات بالمعنى الذي يريده المتكلم					
3-	يوجد قنوات رسمية يتمكن من خلالها كل موظف من نقل أي معلومة أو بيانات تخص الموظف أو المريض					
4-	أشعر أن أفراد الطاقم العامل في القسم يحسنون الإصغاء والتركيز عند مخاطبتهم					
5-	هناك بعض العاملين يتحدث بلغة خاصة أو مصطلحات فنية لا يفهمها الآخرين					
6-	لا يوجد صعوبة في فهم الأنظمة والقوانين الجديدة حين يتم نشرها من قبل الإدارة					

هل لديك أي اقتراحات تساهم في الحفاظ على سلامة العاملين في أقسام العناية المركزة:

_____
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Annex 4

Questionnaire in English

Islamic University - Gaza

Dean of Postgraduate Studies

Faculty of Commerce

Business Administration

Dear Sir/ Madam,

The researcher is conducting a study entitled: " Knowledge, Attitude and Practice Toward Safety Culture Among Employee at Intensive Care Unit in The Governmental Hospital of Gaza City" as a partial fulfillment of the requirements for the awarding of a master's degree in Human Resource Management. The researcher would greatly appreciate your participation in completing this questionnaire because your experience in this field would be valuable to the study. All questionnaires will remain anonymous and the data collected will be kept strictly confidential.

Your time and participation are greatly appreciated.

Sincerely,
Ahmed Hamouda

Part One – Personal Information
Please select one of the following alternatives:

Gender	❑ Female	❑ Male	
Age	❑ Less than 30 ❑ 50 years and above	❑ 30- Less than 40	❑ 40- Less than 50
Major	❑ Physician	❑ Nursing	
Level of Education Attained	❑ Diploma ❑ High study	❑ Bachelor's Degree	
Years of Experience within the ICU	❑ Less than 5 years ❑ 15 years and above	❑ 5- Less than 10 years	❑ 10- Less than15 years
The Department You Work in	❑ Neonatal Intensive care	❑ Child Intensive Care	❑ Adult Intensive Care
Hospital	❑ Al Shifa Hospital ❑ Al Rantisi Hospital	❑ Al Nasir Hospital	❑ Al Dorrah Hospital

Part Two: Measuring Employee's Attitudes towards Safety Culture

Please select one of the following alternatives:

1st	Job Satisfaction	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1-	I'm proud of my job.					
2-	I feel that my job makes me happy.					
3-	I think that my job is suitable for me than other jobs.					
4-	I don't force myself to go to work.					
5-	I fell that my hope is achieved by getting this job.					
6-	I am satisfied about the salary I get.					
7-	I feel satisfied about incentives that I take.					
2nd	**Level of Knowledge about Safety Culture**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	I have the ability to deal with medical error in a professional way.					
2-	I know the maximum number of work hours which does not affect my health.					
3-	I know the number of night shifts which do not affect my health.					
4-	I receive information about health and safety periodically.					
5-	I have specialized training courses to deal with my patients in a healthy way.					
6-	Protocol for providing health services to the patient is available at any time.					
7-	I know the number of my annual leave days.					
8-	I know the number of my sick-leave days.					
9-	I know the number of my emergency-leave days.					
10-	I know my job description.					
3rd	**Safety Climate**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	I know about communication channels that have information about measures concerning employee safety.					
2-	My colleagues encourage me to make incident reports.					
3-	Incident reports are treated in a professional way.					
4-	Employees are committed to safety rules.					
5-	Prominent culture inside the department encourages learning from mistakes.					
6-	There are no difficulties in the discussion of incident reports inside the department.					
4th	**Team Work**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	Agreement about the work plan at the beginning of the shift is important for the safety of the employee and the patient.					
2-	It is easy for any employee to ask about information he/she wants to know during work.					
3-	I am satisfied with cooperation among the healthcare team who work in the unit.					
4-	I have enough support from the work team to					

	promote patient safety.					
5-	Most employees take part in decision making during the shift.					
6-	Important events are delivered to the next shift in an accepted way.					
7-	Doctors and nurses work as an organized and collaborated team to provide a unique service.					
8-	Professional disagreements between colleagues is solved in a proper way and treated in an accepted way that satisfies everyone.					
9-	I can talk about any medical error committed during the providing of health service to patients.					
10-	I don't find it difficult to discuss professional disagreements that occur with members of other medical professions.					
5th	**Work Condition**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	Information relating to decisions concerning work is routinely available to me.					
2-	I deal with the managers as supporter for me, not as a barrier.					
3-	This department deals in a positive way with arising work problems.					
4-	There is a clear policy and rules that organize work inside of the department.					
5-	Social and health conditions for workers are taken into consideration during work.					
6-	Annual leave is given according to employee desire.					
7-	Sick leaves are granted to employees without difficulties.					
8-	I choose the work hours that are suitable for my family.					
10-	There are no constraints in the request for leaving to go abroad.					

Part Three: Measuring Determinants of Safe Culture in Intensive Care Units

1st	**Management's Commitment to Safety Culture**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	I have enough time to work in a way that I can ensure me and my patients' safety.					
2-	There are written policies concerning safety.					
3-	Policies formulated by the management to ensure the safety of patients and staff are translated into action.					
4-	Managers provide a relaxing atmosphere for reporting medical incidents.					
5-	Management relay the safety massage in an effective way.					
6-	Management motivates workers to work in a way that promoted their safety as well as their patients' safety					
7-	Safety for employees and patient is a priority for					

	management.					
8-	Health status of the employee affect the decision to work at the intensive care unit.					
9-	Any suggestion I introduce regarding the safety of patients and employee are welcomed and discussed.					
2nd	**Employee Engagement**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	I trust the workers at this department.					
2-	I have the chance to innovate during work.					
3-	This department appreciates my work.					
4-	I have a clear goal in my work.					
5-	I have the chance to invest all my skills.					
6-	I know and realize the department goal.					
7-	I can take a suitable decision in my work.					
8-	I have the opportunity to be promoted in my career.					
3rd	**Trust between Employee and Managers**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	Managers and workers work beside each other.					
2-	Management does not abandon employees when they commit medical mistakes.					
3-	I don't have any difficulties in asking for a manager's help.					
4-	I enjoy working under the current management.					
5-	I prefer to gain experience from department management.					
6-	When I commit a mistake I speak frankly with the management to learn from my mistakes.					
7-	I do not fear disagreements in opinion with management.					
8-	I accept instructions and criticism from management with an open mind.					
4th	**Participation in Decision-making**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	I have clear responsibilities and practice them without any opposition from managers.					
2-	Management is ready to discuss any suggestions or harassment concerns of the employees.					
3-	It is encouraged to learn other skills to increase my responsibilities in the department.					
4-	New tasks are explained professionally and suggestions are welcomed to facilitate the acceptance of these tasks.					
5-	I have the chance to solve work problems in my department.					
6-	Management takes decisions after listening to the opinions of others.					
5th	**Communication among Employees**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
1-	There is an exchange of information about patients at specific times to suit all crew members working in the department.					
2-	Employees at the department receive suggestions and criticisms with no qualms.					

3-	There are formal channels that enables each employee to transfer any information or data that concerns any employee or patient.					
4-	I feel that employees working in the department have the ability to listen and concentrate when addressing them.					
5-	Some employees speak with technical terms that are not understandable to others					
6-	There are no difficulties in understanding new rules or regulations when published by the management.					

Do you have any suggestions that contribute to maintaining the safety of workers in the intensive care units?

_____
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_____.

Annex 4
Abbreviation used in the research

Abbreviation	Meaning
ICU	Intensive care unit
IOM	The American Institute of Medicine
AIDS	Acquired immune deficiency syndrome
NGO	Non Governmental Organization
WHO	The World Health Organization
HRM	Human Resource Management
HR	Human resource
OHS	occupational health and safety
DUI's	driving under the influence
U.S.A	United state of America
INSAG	The International Nuclear Safety Group
CANSO	Civil Air Navigation Services Organization
JPDO	Joint Planning and Development Office
TSC	Total Safety Culture
US	United State
IAEA	International Atomic Energy Agency
GAIN	Global Aviation Information Network
USC	University of Southern California
AHCP	allied health care professionals
HCS	Health care system
MOH	Ministry of Health
HSOPSC	Hospital Survey on Patient Safety Culture
SAQ	Safety Attitude Questionnaire
CCU	Coronary Care Unit
NICU	neonatal intensive care units
RN	Registered Nurse
ANOVA	Analysis Of Variance
MANOVA	Multivariate Analysis Of Variance
EMS	emergency medical services
EMS-SAQ	EMS Safety Attitudes Questionnaire
EMS-SI	EMS Safety Inventory
VA	Veterans Affairs
NCPS	National Center for Patient Safety
MTT	Medical Team Training
VAMC	Veteran affair medical center
PPS	paraprofessional staff
DH	Danbury Hospital
EPOC	Employee Direct Participation in Organizational Change
DP	direct participation
PDM	participatory decision-making
SPSS	Statistical Package for Social Sciences Program, Version
DIC	Decision Involvement Scale