



**Erasmus Mundus Master Course in Emergency and Critical Care Nursing
(EMMECC NURSING)**

NURSES' PERCEPTION OF PATIENT SAFETY CULTURE IN EMERGENCY AND
CRITICAL CARE SERVICES OF MATERNAL AND CHILD HEALTH DEPARTMENT OF
AN UNIVERSITARY HOSPITAL

ABDUL- KARIM JEBUNI FUSEINI

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Master's Thesis





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ERASMUS MUNDUS JOINT MASTER DEGREE IN EMERGENCY AND CRITICAL CARE NURSING

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That the Master's Thesis submitted by Mr ABDUL-KARIM JEBUNI FUSEINI, entitled "NURSES' PERCEPTION OF PATIENT SAFETY CULTURE IN EMERGENCY AND CRITICAL CARE SERVICES OF MATERNAL AND CHILD HEALTH DEPARTMENT OF AN UNIVERSITARY HOSPITAL", carried out under the supervision of Mrs. EMÍLIA ISABEL MARTINS TEIXEIRA DA COSTA and Mrs. FILOMENA ADELAIDE PEREIRA SABINO DE MATOS, in the Erasmus Joint Master Degree in Emergency and Critical Care Nursing, meets the necessary requirements to be approved as a Master's Thesis

And for the record, and for the relevant purposes, the present certification is issued in University of Algarve, on February, 2022.

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ABSTRACT

Introduction: The ultimate goal of every health institution is quality health care. Patient safety is one of the characteristics of high-quality healthcare delivery. Patient safety remains a difficulty in health care delivery, despite technical advancements in medicine and health research, as well as sophisticated health facilities. Many patients still inadvertently get hurt in their pursuit of medical and health care. Unwanted incidents in healthcare are the world's third leading cause of death.

Objectives: to evaluate the nurses' perception of the patient safety culture in the Emergency and Critical Care Services of the Maternal and Child Department of University hospital; to identify, strengths, vulnerabilities and opportunities for improvement, training needs or intervention in patient safety culture and respective corrective actions aimed at increasing the quality of care provided by nurses in these areas of activity; and to recognize, in this population of nurses, sociodemographic variables potentially associated with their perception of the patient safety culture.

Methodology: The data was collected from 84 participants using a quantitative cross-sectional design. Statistical Package for Social Science (SPSS) software, version IBM SPSS, version 28.0.0.0, was used to analyze the data.

Results: were presented using, Descriptive and Inferential statistics. According to the findings, patient safety culture received a 49.4 percent overall positive rating. Although teamwork within units has the highest average positive score of 87.8%, Non-punitive response to errors (27.3%) and Staffing (25.9) were both rated as unsatisfactory and the least developed.

Conclusion: According to the results, patient safety culture is vital in boosting hospital overall performance and ensuring patient safety with teamwork within units as this was found to be strength (fortress). The overall average positive score seems weak in this study. Management is hereby encouraged to show greater interest in patient safety issues and make it a top priority in policy making.

Keywords: Healthcare Quality; Patient safety; Maternal and Child Health; Emergency Care; Critical Care Nursing.



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INTRODUCTION

The main mission of healthcare organizations and their professionals is to provide quality healthcare and have satisfied patients. Patient safety is an important aspect of high-quality healthcare (Chakravarty, 2015). There is a notion that healthcare quality has multiple dimensions, but the issue of patient safety and safety culture stands out because of the impact it has on quality healthcare and, more importantly, in health outcomes. Unwanted incidents in healthcare are the world's third leading cause of death (Kohn, 2015). The establishment of strategies to investigate errors and improve patient safety in order to improve quality treatment, has become a public health concern, necessitating the development of plans to investigate adverse events (Luiz et al., 2015).

1. THEORETICAL FRAMEWORK

In order to formulate and create credible rationale for new or additional research, a review of related literature is required. This demonstrates the strength of prior research studies while also exposing their flaws which may create the need for further investigations.

This chapter deals with scientific related literature that serves the interest of the main aim of this study. The data research was focused on scientific sources. Relevant related works are presented according to the main aim and objective of this study.

1.1. HEALTHCARE QUALITY

One of the dimensions of healthcare quality delivery is patient safety, as previously stated. Nurses play a critical role when it comes to patient safety in health setting because of the nature of



their job. Nurses provide more direct care than other professionals and a high number of interpersonal cares in which, the responsibility for the care process is shared with other professionals, but it is often the nurse who provides the ultimate and most direct care.

The actions and risk assessment skills of nurses are quite important. Safe procedures and proper equipment used are critical in safety promotion (Kullberg et al., 2013; Mattsson et al., 2015), as is the bravery to speak out and ask questions when unpleasant incidences, such as hazards and near misses, occur in practice (Schwappach & Gehring, 2014). Despite the technological advancement in Medicine and health research coupled with modern health facilities, patient safety still lingers as a challenge in health care delivery (Haerkens, 2020). Many patients still, inevitably, get harmed in their quest to seeking medical and health care. In view of this, many legal proceedings have been raised, in relation to the patient safety culture.

Experts believe that healthcare quality and safety must be investigated within the framework of systems and contextual factors in which errors and adverse events occur (Sexton & Helmreich, 2016).

Medical errors or adverse events according to Leape et al. (2019) are unintended injuries or complications that are caused by health care management rather than by the patient's underlying disease and can lead to death, disability at the time of discharge and prolonged hospital stay.

For patients to be free from medical injury and harm, health care facilities should put in place systems, mechanisms as well as procedures that will prevent, minimize, or intercept medical errors (Institute of Medicine and Patient Safety, 2019). Patient damage is caused by a variety of factors, including the administration of the wrong drug to the wrong patient, allergic reactions to specific treatments, post-partum hemorrhage caused by complications, and delayed decision-making.



Every year, 134 million adverse events occur in hospitals in low and middle-income nations, resulting in 2,6 million deaths. Approximately one out of every 10 patients in high-income countries are injured while obtaining hospital care (Balsarkar, 2021). According to De Vries, Ramrattan, et al. (2018) at least one (1) out of every 150 patients die within the care facilities due to medical error of medical accident globally. Studies reveal that in the United Kingdom, at least one patient suffers medical injury in every 35 seconds (Makary et al., 2016). Similar report from Canada indicates that averagely 185 000 medical errors are recorded annually of which majority have adverse effects on patients. These errors are avoidable with due diligence in health care provision (Baker et al., 2018).

1.2. PATIENT SAFETY

Patient safety culture is an ancient phenomenon attributable historically to Galen that was adopted by the American and British medical culture in 1847 by the hand of Hooker (Ilan & Fowler, 2015; Jones, 2017). The desire for patient safety grew exponentially into the late 80's until it was universally recognized and recommended that organizations can reduce safety incidents by developing a positive safety culture (The Health Foundation, 2011).

1.2.1. Patient Safety Culture Model

Quality of healthcare is founded on the culture of patient safety and underpins excellent health care. As underlined, patient safety is a crucial component of healthcare quality (Chakravarty, Sahu, Biswas, Chatterjee, & Rath, 2015; Nicolaides & Dimova, 2015). Poor communication structures, improper leadership or teamwork, insufficient staff knowledge of safety processes, an



unsupportive safety culture in healthcare, and a lack of reporting systems and analysis of adverse events are just a few of the common flaws in patient safety structures (Kirwan, Matthews, & Scott, 2013).

Healthcare-related adverse events are the third greatest cause of death in the United States (Kohn, Corrigan, & Donaldson, 2015) which comprises quality. Because of the consequences of unsafe health practices and poor-quality care, the issue of adverse events has become a public health challenge, demanding the development of plans to investigate errors and enhance patient safety to improve quality care (Dias, Martins, & Navarro, 2012; Luiz, Simes, Barichello, & Barbosa, 2015). It is also possible to infer that there is a link between the introduction of a safety culture in healthcare institutions and a reduction in adverse events and mortality, resulting in improvements in healthcare quality (Naveh, Katz-Navon, & Stern, 2015). The focus on assessing and enhancing quality of care and patient safety in hospitals has pushed the concept of safety culture to the forefront.

Conceptual framework supports the investigator to better situate the research problem and finds pragmatic and meaningful results in an organized manner. There are several models in relation to patient safety culture such as Quality of Healthcare Model (Donabedian, 1980), Swiss Cheese Model (Reason, 2000), and Patient Safety Culture Model (Vogus et al., 2010), amid others.

Among the several available models, the Patient Safety Culture Model developed by Vogus et al. (2010) is being considered here because, it is the one that best fits the scope of this study. We consider that it gives very integrative and detailed outline in patient safety culture. In this model, patient safety culture is anchored on actions and cultural practices that minimizes harm. These are enabling, enacting, and elaborating practices that prioritize safety. The authors stated that “Isolated



interventions that enable, enact, or elaborate culture of safety are unlikely to reduce the underlying causes of hospital errors” (Singer & Vogus, 2013, p. 375). This suggest that a health care institution cannot be totally free of medical errors, so a systematic and well programed safety culture can help reduce medical errors and injury.

The patient safety culture model, according to Vogus et al. (2010), is a concept that asserts that management (enabling) and clinical staff (enacting) actions are likely to influence patient safety results. They argued that safety outcomes provide a platform for learning and that actions arising from learning practices can either be used to modify, enabling or enacting safety practices. The model has been adapted and used in several patient safety culture studies. Richter and colleagues used this model to evaluate the effect of safety culture on error reporting (Richter, McAlearney, & Pennell, 2016). Again, Richter, McAlearney, and Pennell (2016) adopted the model to examine patient safety culture on successful handover and transition of patient care. This has also been used by Granel-Giménez et al. (2022) to assess how nurses, the largest section of the health-care workforce, viewed the safety culture in public hospitals in four European Union Countries. Based on the evidence consulted, we therefore decided to use this model in this study.

1.2.2. Literature Review on Patient Safety Culture

The literature review dealt with scientific findings in research that assessed patient safety culture of nurses and other healthcare professionals. An extensive literature search was conducted within PubMed, Web of Science, Scopus, PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Open Grey databases. The search strategy used the combination of the following keywords and phrases, “patient safety” or “patient safety culture” and “patient



safety outcomes” and “adverse events reporting” to find relevant scientific studies. Reviewed scientific findings related to this work is presented according to the structure and components of the conceptual framework adopted for the present study, as well as, in accordance with the objectives of the research. Below are the most important categories found in the search that we consider related and relevant to this study.

1.2.2.1. Enabling Practices That Influence Patient Safety Culture

Structural safety procedures focused on patient safety, that emanate from leaders' attitudes and practices at the management level, makes it safe for individuals to speak up and act (Vogus et al., 2010). The leaders’ decisions and actions have direct influence on the day-to-day activities of the institution. Because of this, nurses and other health professionals can demonstrate some behaviors that can influence safety outcomes. These actions include manager’s support, managers’ expectations, and actions in promoting patient safety, open communication, no punitive response to errors, adequate staffing levels and feedback about errors.

1.2.2.2. Managers’ Support and Patient Safety Culture

The availability or otherwise of management support towards the safety of patient, in every health facility is very influential and vital for patient safety which will yield quality of health care. The style and attitude of good managers can influence staff to verbalize freely, regarding possibly harm and treats to patient safety. This can enable staff to suggest possible ways of dealing with these identified treats to patient safety. The role of managers in relation to patient safety is



important since they make all the crucial and policy directives in the operations of the facility (Asamani, Kwafo, & Ansah-Ofei, 2016).

The above-mentioned authors, consider that the support of managers often come in different forms such as making patient safety issues a major concern and a priority, providing conducive work environment, among others. On the contrary, if managers do not provide this kind of support for the purposes of ensuring patient safety, the net effect will be, sub optimal quality care, high incidence of medical errors, of which may not be reported for fear of intimidation. To ensure judicious utilization of resources, prevention of medical errors, and to ensure patient safety and quality of health care in the health industry, there is the absolute need for good managers.

A cross sectional study conducted in Iran among 1,203 health professionals, employing Patient Safety Culture Questionnaire (HSOPSC), revealed that, 66.7% of healthcare professionals reported that managers demonstrated a commitment to supporting patient safety (Khoshakhlagh et al., 2019). This result shows good managers efforts, because the attitude and behaviors of subordinates are mostly dependent or influenced by the actions and attitude of managers and leaders. Another study conducted in Ghana with the objective of assessing determinants of patient safety culture among 384 healthcare providers, found that the support of managers towards patient safety got 60.4% positive response score (Abuosi, Akologo, and Anaba, 2020). The implication of this is that managers, make conscious efforts and support for patient safety. The contribution and efforts by managers to staff can be achieved through capacity building. This will lead to achieving quality care and lower risk of patient injury, because managers are the sole decision-making body in every health institution.



A different study conducted among 414 Nurses showed that manager's support for patient safety was one of the least developed composites, with 25.5% as positive response score (Ammouri, et al., 2015). According to these researchers, this can result from the fact that managers do not pay conscious attention in providing enough support for staff towards patient safety. They do not prioritize patient safety issues. It could also be that managers do not show interest or take pragmatic steps in dealing with patient safety reported incidence. This can bring about ineffective teamwork and disunity among nurses in clinical practice; thus, no lessons are learnt from medical errors made. Again, findings from other study by Ederer et al. (2019) whose objective was to explore midwives' experiences about patient safety culture found that lack of objectivity by managers in evaluating errors, was one of the barriers that affected the reporting of adverse events. Lack of fairness in dealing with reported patient safety care incidence, could be a treat for staff in reporting adverse events in the facility. Managers should be fair, serious, and consistent in dealing with such incidences.

Several scientific studies have gone into finding out the influence of manager's support for safety and related safety outcomes. A study conducted in the United States of America with the main objective of assessing the effect of safety culture on error reporting by Richter et al. (2016) from 2008 to 2011 in 1,052 hospitals with total respondents of 515,637 revealed that, the relationship between managerial support for safety and adverse events reporting among clinical staff was very significant. It shows that patient safety is a major priority of managers in the health institution.



1.2.2.3. Managers' Expectations and Actions in Promoting Patient Safety Culture

It is the duty of every manager to ensure that the aims of the institution are well communicated to staff. They also have the responsibility to see if the staff duly adhere to practices that promote the safety and interest of patients. Findings from a study in Omani show that nurses with clear understanding of managers' expectations about patient safety were likely to report adverse events or near misses (Ammouri et al., 2015). It suggests that managers should pay keen interest and attention to their actions and ensure nurses and other health care providers engrossment in practices that enhance patient safety and create that environment that will allow nurses to report adverse happenings that jeopardizes patient safety.

Another study conducted in India found that 71.5% of 386 clinical staff, reported that they were motivated and encouraged by their managers to report adverse actions that compromise patient safety, aside this, managers accepted and implemented some recommendations from them regarding patient safety measures (Rajalatchumi et al., 2018). Attitudes of this type on the part of managers, value the fact that the increase in the workload does not make room for compromises in patient safety. Contrary to this, is another finding from a study in Iran that revealed that managers encouraged workers to get work done at all costs, disregarding patient safety measures or protocols when workload increases (Khoshakhlagh et al., 2019). The effect of working under pressure to get the work done has the tendency of high medical errors and other mistakes that could comprise patient safety outcome.

In United States of America, a survey conducted among 7,671 hospital pharmacists about managers' actions in promoting safety and error reporting, including near misses, recoded a positive perception of managers' actions to promote safety and had a significant influence on



adverse events reporting, including near misses (Noureldin & Noureldin, 2020). All these data point to, how important and influential the actions of managers are on staff in relation to reporting adverse event and their effects on patient safety.

1.2.2.4. Open Communication and Patient Safety

Free flow of communication between managers and staff is one of the key determinants of ensuring patient safety and quality health care. Communication in intimidation-free environment help staff to speak openly and report any adverse event that has the potential to jeopardize the safety of patients. It also creates the needed climate for learning as the staff learn from experiences of colleagues and build their capacity and confidence. A study that analyzed 2,455 adverse events in 71 hospitals in the United States revealed that 70% of the events reported occurred due to failure in communication, leading to 75% loss of lives (Leonard et al., 2014) this demonstrates the vital role that appropriate and effective communication plays in approaching patient safety. It is prudent for managers to create a good system of communication between employees and managers, as well as between the different units and departments of the health institution. Ineffective and poor communication poses a threat to patient safety. Braaf and colleagues (2013) in their study in Australia found poor patient safety attributable to poor organizational communication, especially information transfer from management level to subordinates.

A study in India by Rajalatchumi et al. (2018) indicates that approximately 40.8% of clinical staff in the hospital felt threatened by managers to speak up and they were also afraid to question adverse issues and actions that seemed inappropriate. This kind of environment does not help foster patient safety. It possibly suggests that intimidation and poor communication has direct impact on



patient safety. It was then recommended, by the authors, that there is the need for improvement of communication between managers of health institution and clinical staff. Similar report from Turkey shows that more than half (50.1%) of 316 professionals felt restricted in speaking (Yilmaz and Goris, 2015). This fear of speaking up or questioning safety related issues compromises the safety of patients. Staff do not get to share and learn from their own mistakes or experiences of their colleagues. It creates the culture of disregarding patient safety issues and does not foster information sharing.

However, a study conducted in Austria, Germany, and Switzerland by Ederer et al. (2019) with the aim to explore the perception of midwives on patient safety culture, found that when people speak up, it clears misunderstanding and wrong assumptions at the workplace. In these contexts, workers can speak freely because of a good working relationship between employees and managers, free from inferiority complexes and an intimidating environment.

1.2.2.5. Non-punitive Response to Errors and Patient Safety

Non-punitive response to errors is yet another cultural practice that puts aside mistakes caused by individuals and transforms mistakes into learning opportunities. This culture opposes punitive culture, which is a barrier to safety culture. With institution of punitive culture, managers miss the opportunity to transform mistakes into learning new ideas and policies. In the real healthcare system, errors are inevitably committed by staff, including nurses, due to the nature of their job role. Blaming the clinical staff about reported adverse event prevents them from further reporting similar happenings. Avoidance of blame and undue punishment will enable staff report adverse



event and possibly contribute significantly towards resolving or preventing same from happening. All these will contribute to improving patient safety in the health institution.

A study in Saudi Arabia and Jordan have shown that non-punitive response to errors had a positive response score of 22% and 24% respectively in the hospitals' work environment (Alahmadi, 2010; El-Jardali et al., 2014). Similar findings in Taiwan and Oman (Al-Mandhari et al., 2014; Chen & Li, 2018) and in recent systematic reviews and meta-analyses in Iran and Brazil, reported analogous lower positive response scores on non-punitive response to error reporting (Okuyama, Galvao, & Silva, 2018; Behzadifar, Jahanpanah, & Bragazzi, 2019).

1.2.2.6. Staffing Levels and Patient Safety

The availability and number of staff at work is a very important duty of managers and one of the key determinants of patient safety. The chances of increased patient safety have direct relationship with the number of staff at work. Fewer staff may have more workload and stress that has the potential to increase errors and vice versa. A study report indicates that patient safety is likely to improve in many folds with enough health staff at work (Alenius et al., 2014). Inadequate staff can lead to increased stress, anxiety, and depression, which may lead to upsurge incidence of adverse events (Hamaideh, 2011). The difficult retention of key health personnel such as nurses, as well as their scarcity, represents a staffing challenge in most developing countries (Hamaideh, 2017). So, there is that urgent need of managers to ensure adequate health staff, including nurses, because of their vital role in the health system. This is a fundamental aspect to adjust the nurse-patient ratio closer to the density of qualified health professionals recommended by the WHO of 4.45 per 1,000 inhabitants, estimating the need for 32.3 million nurses by 2030, worldwide, to be



possible to respond to the SDG criteria (World Health Organization, 2016). Research conducted in Jordan to examine nurses' perception about patient safety culture in five different hospitals found that staffing level recorded a relatively low (30.4%) positive response score (Saleh et al., 2015). Again, different studies in Japanese hospitals reported low (37%) positive response scores (El- Jardali et al., 2014; Fujita et al., 2014). Several other studies reported lower (36%) positive scores (Okuyama et al., 2018), to as low as 27% in Saudi (Alahmadi, 2010) and 24% in Turkey (Güneş, Gürlek & Sönmez, 2016). All these findings are indications that proper staffing of clinical professionals, especially nurses, is very critical to ensuring patient safety. Due to inadequate staffing because of shortage, many nurses work longer hours than normal with more stress. This eventually compromises patient safety.

1.2.2.7. Feedback about Errors and Patient Safety

Giving feedback for every event creates room for improvement and turning mistakes into learning process. Feedback on adverse happenings is a good culture that helps improve patient safety. Feedback keeps everyone on track, helps people to avoid major mistakes, fosters better relationships, provides a friendly work environment, motivates people, and boost performance (Brookhart, 2017). If this is not ensured, the effect will be occurrence of avoidable errors and poor patient safety. In Ethiopia, a study conducted to assess the level of Patient Safety Culture and associated factors among 637 healthcare workers, reported a low (33%) positive feedback response in recorded errors (Wami et al., 2016). This suggests that opportunities were missed in correcting those errors. This could lead to high chances of recurring of same or similar adverse events that will hamper on patient safety. In a similar study by Rages (2014) in Libya, found that 28.6% of



346 healthcare workers attributed low positive response rates of adverse events reporting on lack of feedback from managers. It then obvious that approximately 71.3% of staff feel that managers do not see safety issues as a priority and hence may feel reluctant in reporting subsequent adverse events. In a research conducted in the United States to examine the perception of patient safety culture among health workers revealed that 82% of 150 staff were not informed about errors that happened at the ward (Falco, 2013).

Findings from a study in Omani, among nurses, however recorded about 68.7% of them gave feedback about errors a positive response rating (Ammouri et al., 2015). It seems that feedback helps create awareness and consciousness towards patient safety issues.

1.2.2.8. Enacting Practices that Influence Patient Safety – Teamwork

Enacting practices are actions of operational staff that highlight threats to safety and mobilize the needed resources to reduce those threats. These actions include interpersonal processes such as teamwork, and handover and transition of patient care.

Teamwork is essential at all levels of an organization, particularly in the direct provision of healthcare. This justifies why people with unique competencies and specialized professional training are brought together to use shared resources in solving patients' health problems (Reeves et al., 2011). The relevance of teamwork cannot be over emphasized as it helps in preventing adverse events that put patient at risk of injury. Teamwork in healthcare organizations has potential benefits such as good communication, coordination of patient care, and prevention of adverse events (Manser, 2019). On the other hand, lack of teamwork among nurses can results in adverse happenings that could harm or cause the death of patients (Mazzocco et al., 2019).



In a study conducted in Gaza to assess patient safety culture among 376 healthcare professionals recorded a positive percentage score of 78% (Abu-Hamad et al., 2016). This indicates that the health care providers work professionally with teamwork spirit and in result they offer the necessary support for each other. It therefore suggests that one would expect lesser stress and anxiety, which will translate into less medical errors and improved patient safety. These findings are similar to those found in other works conducted in Turkey and Philippines which showed that teamwork within units had the highest positive rating score: 80.3% and 91.5% respectively (Yilmaz & Goris, 2015; Ramos & Calidgid, 2018).

1.2.2.9. Handover and Transition of Patient Care

The National Patient Safety Agency stated that handover and transition of care involve the transfer of accountability and responsibility for patient care, from one health care provider to another (National Patient Safety Agency, 2014). Handover deals with every patient as a unique individual with specific health needs. During this transition, attention should be paid to vital information.

According to Wong et al. (2018), handover could be inter-health care professional, interdepartmental, or could be when patients are discharged from hospitals. It is reasonable for one to think that once effective handing overtakes place, vital clinical informational will be transferred from one caregiver to the other which will enhance quality care and improve patient safety. On the other hand, if transfer is poorly done, the net effect will be compromised quality and patient safety, as this will result in high tendencies of medical errors. Studies have shown that ineffective shift handover increases the risk of medication errors, delays the course of treatment, and prolongs the



length of hospital stay (Malekzadeh et al., 2013). In a study among 136 Intensive Care Unit (ICU) nurses in the United States, it was found that staff attributed 57% of all the healthcare errors to ineffective intra or inter shifts handover communications (Reade & Cuthbertson, 2017).

Several other studies from Saudi Arabia, Cairo, Sweden, France, and India have reported handover and transition of patient care as the least developed composite with a positive response score ranging from 20-45% (Listyowardojo, Nap, & Johnson, 2011; Aboul et al., 2012; Nordin, Wilde-Larsson, Nordström, & Theander, 2013; Giai et al., 2017; Rajalatchumi et al., 2018; Alshammari et al., 2019). It shows that transition is crucial to patient safety if it is done effectively. On the other hand, if it is not well done, vital information is lost, and this poses great threat to patient safety. A study that examined the influence of organizational factors on successful handover among 515,637 health staff in the United States reported that 59% of healthcare staff believed that patient care information is not lost during change of shift and handover (Richter et al., 2016). They also found that some of the important determinants of a successful handover, devoid of loss of vital patient information, include management support, staffing levels, and teamwork. This means that, teamwork with enough staff at post coupled with transparent and clear communication can help improve successful handover.

There is the need for the use of standard protocols and guidelines in handover and transition of patient care. Standardized systems used for handover promotes effective communication, facilitates error reporting and there is collaboration among units and departments (Scholefield, 2018)



1.2.2.10. Patient Safety Outcomes

As we have been highlighting, the expected outcome of healthcare providers and seekers of health, is quality care, which is measurable. The outcome could be satisfactory or unsatisfactory. There are key determinants that measure the outcome of patient healthcare that include patient mortality, the records of adverse events, complications during hospitalization, and duration of stay (Doran & Pringle, 2011). When best health culture practices are enhanced in the health setting, it may lead to quality health outcome and vice versa. Adverse event reporting aims to gather and analyze vital information about daily practices, sharing lessons learned with various departments or professionals in the health care institution to improve quality.

A study conducted in Saudi Arabia by Alonazi et al. (2016) reported a higher positive rating score by nurses (62%) for errors that did not directly affect patients. Similar results were found in Jordanian, where 69.2% of nurses reported adverse events to authority. In this study findings, nurses reported adverse events regardless of whether it harmed the patient or not (Khater et al., 2015). These high scores in reporting of adverse events by nurses in these studies suggest that nurses have a positive attitude regarding adverse events reporting, which is attributable to non-victimization of culprits. One may also deduce that the health institutions have prioritized patient safety and rather utilize the incidence reporting to build on policies and structures to prevent similar or same events from recurring to improve quality care, instead of victimizing their workers.

On the contrary, studies counted in the United States and other countries found that many health professionals including nurses will under report or will not report adverse event that harmed or could potentially harmed the patient (Al-Mandhari et al., 2014; El-Jardali et al., 2014). In other studies, in Ghana and Tunisia, also found under reported adverse event that have consequential



effects on patients (Sabblah et al., 2014; Badr, & El-Jardali, 2017; Mallouli et al., 2017; Akologo et al., 2019). More recent is a study conducted by Tlili et al. (2020), among nurses in the emergency and intensive care units stated a high rate (80.2%) of non-reported adverse events in their line of duty. These nurses either did not report adverse events or were simply not sure of what to report or how to report. Majority of them (91.5%), did not report any adverse happenings in the past 1 year of work. Reasons attributable to the low reporting attitude could be victimization and unpredictable punishment by managers. Outcomes from these studies, among others, reasonable suggest that healthcare professionals have poor attitude regarding adverse events reporting. It can fairly imply that this poor attitude will certainly have dire consequences on patient safety cultural practice and quality care outcomes. Managers should create victimization free work environment for workers to report adverse events.

Aside victimization some of the factors contributing to low adverse event reporting found by studies in Denmark are lack of clear definition on what to report, complicated reporting system, time-consuming and error reporting not making a significant impact. 1 out of 10 of the respondents did not know whether adverse events should be reported (Kousgaard et al., 2012; Rishoej et al., 2018). Other factors that were found to contribute to low adverse events reporting include work environment such as lack of transparent reporting procedures, perceived consequences in reporting, and lack of self-confidence as factors hindering reporting of adverse events (Prang & Jelsness-Jørgensen, 2014; Chen et al., 2018). Findings from these various studies suggests that practices of these nature do not encourage health professionals to report events that either harm or could potentially harm patients. This undoubtedly could affect quality of care and patient's outcome.



The notion of “protecting our profession and colleagues” is one of the reasons for low or no adverse event reporting found in a study by Zhou et al. (2015) in China. They found that, doctors felt disgraced when they commit an error, their colleagues prefer covering them up rather than reporting. This is because of the belief that an embarrassment to a member tarnishes the image of the entire profession. With this perception, medical staff will either under report or not report medical errors. This poses risks to patients and certainly can affect the quality of care and outcome. A study conducted by Tevis et al. (2017) in the United States with the main objective to examine barriers to adverse events reporting among medical doctors reported that, about 85% of them reported adverse events within 6 months of their residency. They however, found lack of information and insufficient time as some of the barriers for residents’ inability to report adverse events. These researchers concentrated on medical doctors. This increases our desire to find out from the nurses’ perspective. This is important because, nurses provide more direct care than other professionals and a high number of interpersonal care and responsibility in the care process.

Several studies have been conducted with the aim to examine the association between demographic characteristics and patient safety outcomes (Güneş et al., 2016; Wami et al., 2016; Abu-El-Noor et al., 2019). For example, research in Turkey (Güneş et al., 2016) and Ethiopia (Wami et al., 2016) found that years of hospital experience had a substantial impact on patient safety and results. They claimed that long-term hospital exposure makes healthcare practitioners far more conscious of patient safety and workplace safety risks. This contradicts the research of Alshammari et al. (2019) which discovered no statistically significant link between years of work experience and reporting of adverse occurrences. Akologo et al. (2019) also found in their study no statistically significant link between adverse event reporting and any of the demographic



factors. All these studies suggest that, in addition to demographic factors, other factors influence adverse event reporting. However, findings by Akbari et al. (2017) in Iran found that about 76.6% of maternity unit nurses had a positive attitude toward reporting adverse events, according to the study. Could it be that their favorable attitude toward event reports derives from the fact that they are responsible for two lives as a result, they do not want any harm to be done to patients because of mistakes they make unwittingly.

The patient safety culture is a key indicator of health-care quality, it is usually measured through questionnaires (Mascherek & Schwappach, 2017; Danielsson et al., 2019)

According to research, having a strong patient safety culture is linked to fewer readmissions, prescription mistakes, and urinary tract infections (Hansen et al., 2011). Nurses with higher levels of motivation, as well as more satisfied patients and nurses, are related with improved views of overall patient safety and a higher patient safety grade (Toode et al., 2015). It is quite clear that, seems to be a strong correlation between patient safety culture in the health institution and the outcomes of patient care.

1.3. EMERGENCY AND CRITICAL CARE NURSING

Adult as well as pediatric medication safety and other patient safety dimensions necessitate a multidisciplinary approach throughout the emergency care paradigm, beginning with triage care and continuing through emergency care. To ensure individual and relatives care in emergency and critical nursing, increasing the patient and family experience of care, is crucial (Byczkowski et al., 2016).



Children in hospitals are three times as likely to be injured as adults, especially in the Emergency and Critical Care Departments (Macedo et al., 2016). For a variety of reasons, pediatric patients treated in emergency departments (EDs) are particularly vulnerable to drug mistakes and other adverse events.

Medically complex patients with many drugs, who are unknown to emergency department (ED) staff, and a lack of standard pediatric drug doses and formulations are all factors that make the pediatric emergency care setting a high-risk environment for medication errors. A chaotic atmosphere with frequent interruptions, a dearth of clinical pharmacists in the ED, care team inpatient boarding status, the usage of information technology systems lacking pediatric safety measures, and several care transitions, makes this care environment challenging. Furthermore, the great majority of pediatric patients seeking care in EDs are seen in community hospitals, which may only see a few pediatric patients (ENA, 2015).

The introduction of consistent drug dose recommendations, greater integration and use of information technology to promote patient safety, and increased education standards across health care disciplines are all key areas for medication safety related to pediatric treatment in the emergency department (Benjamin et al., 2018). Notwithstanding, for true patient safety to occur, institutions must structure a safety culture that includes establishing a proper communication process, trust, organization development, collective commitment to safety aspects, command structure, the significance of this subject, and a quasi-approach to error.



1.3.1. Critical Care in Maternal Health and Pediatrics

One of the cruelest catastrophes imaginable is the death of a mother, a young woman who had hopes and plans for a bright future but died before her time. The immediate and long-term effects of such a catastrophe on her surviving children, partner, extended family, community, and health-care providers cannot be overstated.

Despite significant advancements in maternity care and world-class care provided by highly trained and motivated professionals, good maternal health is still not a universal right, even in countries where maternity services are of high quality and maternal mortality and morbidity rates are very low. In the three-year period 2006–2008, 261 women in the United Kingdom died because of pregnancy, either directly or indirectly. Overall, 11.39 per 100,000 births resulted in maternal death (Wilkinso et al., 2011).

As stated earlier, patient damage caused by unpleasant unpredictable events while in the hospital, whether unintentionally or knowingly, is one of the primary causes of morbidity and mortality globally. The issue of critical care in maternal and child health in relation to patient safety and quality care is extremely important in obstetrics (Balsarkar, 2021). Due to the substantial weight of risks and injuries to which women and babies are exposed when receiving care during childbirth, the theme chosen for World Patient Safety Day 2021 was "Safe maternal and newborn care" (Balsarkar, 2021). Every day, about 810 mothers and 6700 neonates die, with the causes mostly happening around the time of childbirth. Despite tremendous progress in lowering maternal and newborn mortality, the Sustainable Development Goals (SDG) 3 target are still a long way off (Balsarkar, 2021). Every year, around 2 million babies are stillborn, with over 40% of them happening during labor.



The majority of these deaths and stillbirths might be avoided if skilled health care providers working in supportive environments provided safe and excellent treatment (Balsarkar, 2021). This makes the issue of maternal and child health very important when it comes to ensuring quality care, through patient safety cultural practices.

1.4. PORTUGUESE HEALTHCARE

The National Health Service (NHS), which is mostly funded by taxes, provides health care to all Portuguese citizens. Both public and private providers supply health care. In primary care and hospital care, public provision predominates, with a drawbridge system in place for access to hospital care. Pharmaceuticals, diagnostic technology, and physician private practice make up most of the private health care. Portugal signed a Memorandum of Understanding with the International Monetary Fund, the European Commission, and the European Central Bank in May 2011 in exchange for a 78-billion-euro loan. The agreed-upon Economic and Financial Adjustment Programme includes 34 initiatives targeted at reducing health-care costs, enhancing efficiency, and increasing regulation (Simões et al., 2017). As pointed by these authors, improved regulation and governance, health promotion (launch of priority health programs such as diabetes and mental health), rebalancing the pharmaceutical market (new price setting rules, lower pharmaceutical prices, increased use of generic drugs), expanding and collaborating long-term and hospice care, and strengthening primary and hospital care, are among the reforms.

The Portuguese health system presently comprised of 3 contemporaneous and overlapping systems: the national NHS; special health insurance plans for certain professions or sectors, known as health subsystems; and private voluntary health insurance (VHI). The Ministry of Health and



its institutions are primarily responsible for planning and regulation, whilst regional health administrations (RHAs), which were established in 1993, are responsible for managing the NHS. Portugal had 225 hospitals in 2014, 113 of which were NHS hospitals, with a total capacity of 34 522 beds. Physicians per 100,000 people (442.6) was higher than the EU average (349.6). However, the number of nurses in Portugal (637.8 per 100,000 people) was lower than the EU average (864.3), indicating that the country had a poor nurse-to-physician ratio (Simões et al., 2017). One of the purposes of the Portuguese health system is to improve the country's stability and the quality of health care it provides, as well as to protect individuals' rights in their interactions with the health system. To increase the organizational quality and safety of health services, a national strategy for improving care quality was established; The Health Regulatory Agency (HRA's) powers were strengthened after the publication of the foundation law for all regulatory organizations (Law No. 67/2013, dated August 28, 2013). The HRA's new status, announced in August 2014 (Decree-Law 126/2014, dated August 22, 2014), provides it exclusive jurisdiction over all complaints from users of all health-care services. The HRA also oversees the licensing of all health-care professionals, including the issuing, maintaining, and cancelling of licenses, as well as facility inspections. The HRA's new status has reinforced regulation in areas that directly benefit patients' rights, as well as the quality and safety of health care (Simões et al., 2017)

1.5. PROBLEM STATEMENT AND SIGNIFICANCE OF THE STUDY

The relevance of patient safety cannot be over emphasized when it comes to quality health care delivery globally, likewise the negative effects of medical errors cannot belittle. When developing patient safety programs in healthcare organizations the ultimate goal is to provide high-quality



health care (Alsabri et al., 2021). Medical errors are one of the key determinants of patient safety and quality health care, causing more fetal deaths than AIDs, road traffic accidents, and breast cancer (Dzau et al., 2017) as have previously underlined. Medical errors have the potential of triggering mistrust of patients in the health care providers, as well as, the health system in general, the net effect of this is low satisfaction and patronage of health care. Medical errors are among the leading causes of medical burden on patients in both advanced and developing countries. Apart from the medical burden, it also causes financial and economic burden in most health facilities as 15% of health facilities budget is spent on medical error related events (Slawomirski, Auraaen & Klazinga, 2017). The overall effect of medical errors and negligence is compromised quality health, emotional and financial stress on patients and families and the entire nations at large (Leape et al., 2018). The menace of medical errors on patient safety culture is not limited to only developing countries. This affects advance countries as well. It is reported that about 44,000 to 98,000 patients have died from avoidable medical errors due to poor patient safety culture over recent times in the United States of America (Donaldson, Corrigan & Kohn, 2010), about 700,000 patients are treated on outpatient basis annually due to complications from medical errors by the Emergency Departments (Dzau et al., 2017). It against the backdrop of these and several other factors that show that patient safety is not only a critical issue to patients and families but health care providers, especially nurses, because nurses provide more direct care than other professionals and a high number of interpersonal care in which the responsibility for the care process is shared with other professionals, but it is often the nurse who provides direct care (Fujita et al., 2014; Goh & Kuziemy, 2017). Nurses are often regarded as the most trustworthy profession in many countries (Brenan, 2018; Stephenson, 2018), and they play an important role for patients as the



largest group of healthcare workers in the workforce. According to a recent systematic study (Charalambous et al., 2018), nursing makes a major but underappreciated contribution to patient-centered therapies and research in general.

In this framework, the purpose of this research is formulated to find out NURSES' PERCEPTION OF PATIENT SAFETY CULTURE IN EMERGENCY AND CRITICAL CARE SERVICES OF MATERNAL AND CHILD HEALTH DEPARTMENT IN A UNIVERSITY HOSPITAL.

Results from this study will be important for government policymakers, health institutions, patient safety activist and researchers. The study is relevant in these areas because it will assess the team's perception of patient safety, will allow the identification of the patient safety culture prevailing in the institution under study, identifying strengths and aspects that can be improved.

The findings will also provide useful information for organization and policymakers to formulate institutional patient safety culture policies. This will help to curb the challenges that nurses, and other clinical staff encounter in ensuring patient safety in healthcare institutions. The findings will help to deal with barriers and challenges to patients-staff and staff-staff relationships which will translate into greater utilization of health services resulting in a decrease in all forms of disabilities, impairments, handicaps, and deaths that could result due to unsafe practices.

Results will further provide practical guide for nurses' and other clinical staff to know the attributes and factors that are needed to develop a congenial patient safety culture to ensure patient safety. In addition, the findings of the study may further create an avenue for further studies to be carried out on patient safety culture in other parts of Portugal and other countries to move towards a state where healthcare workers will consciously and effortlessly maintain patient safety through the practice of patient safety culture.



In this context, it is now important to define the research question, which will serve as a guideline for the entire methodological process, in this way it is intended to answer the following question:

HOW DO NURSES PERCEIVE THE PATIENT SAFETY CULTURE IN THE EMERGENCY AND CRITICAL CARE SERVICES OF THE MATERNAL AND CHILD DEPARTMENT OF A UNIVERSITY HOSPITAL?



2. OBJECTIVES AND HYPOTHESES

In order to answer the research question, objectives were formulated that will allow the researcher to evidence relationships between variables through the verification of the hypotheses formulated below. The specification of objectives provides a way to empirically verify the researcher's starting assumptions. From the moment of their formulation, they become the guiding thread of the entire investigation. According to the literature review and with the previous knowledge gathered in the context under study, the following objectives were formulated:

Objective nº1. To evaluate the nurses' perception of the patient safety culture in the Emergency and Critical Care Services of the Maternal and Child Department of CHUA.

Objective nº 2. To identify, strengths, vulnerabilities and opportunities for improvement, training needs or intervention in patient safety culture and respective corrective actions aimed at increasing the quality of care provided by nurses in these areas of activity.

Objective nº 3. To recognize, in this population of nurses, sociodemographic variables potentially associated with their perception of the patient safety culture.

Given the characteristics of the data and the chosen instrument to measure it, it was estimated that Objective 1 and Objective 2 can be achieved through a descriptive analysis of the data collected. Objective 3, on the other hand, lacks an inferential analysis process that determines the need to formulate the following hypotheses to be tested.

Hypothesis H_{3.1}. Older nurses will have a stronger perception of the different dimensions of the patient safety culture.



Hypothesis H_{3.2}. Gender will have significant relationship with the different dimensions of the patient safety culture.

Hypothesis H_{3.3}. Nurses with masters and higher degrees will have a stronger perception of the different dimensions of the patient safety culture.

Hypothesis H_{3.4}. Nurses with longer duration of practice as professional nurses will have a stronger perception of the different dimensions of the patient safety culture.



3. MATERIAL AND METHOD

3.1. MATERIAL

3.1.1 Data collection tools

Validity describes the ability and degree of a research tool to measure adequately what it intends to (Polit & Beck, 2020). Reliability refers to the ability of a measuring instrument to do consistently whatever it is designed to do under identical or very similar conditions (Neuman, 2014). To ensure validity a reliability of the study, this research adopted the Hospital Survey on Patient Safety Culture (HSOPSC) as an instrument for data collection. It has been adapted to Portuguese population and used in different settings by several researchers, which makes its validity and reliability unquestionable.

The Agency for Healthcare Research and Quality's (AHRQ) Hospital Survey on Patient Safety Culture (HSOPSC) questionnaire was widely used as a tool in data collection in various countries and in different contexts. AHRQ created the HSOPSC for use in hospitals (Sorra & Nieva, 2004). The HSOPSC instrument contained 42 items aggregated in 12 dimensions. MANAGEMENT SUPPORT (3 items), MANAGERS' EXPECTATIONS (4 items), COMMUNICATION OPENNESS (3 items), NON-PUNITIVE RESPONSE TO ERRORS (3 items), STAFFING LEVELS (4 items), TEAMWORK ACROSS UNITS (4 items), TEAMWORK WITHIN UNITS (4 items), HANDOVER AND TRANSITION (4 items), OVERALL PERCEPTION OF PATIENT SAFETY (4 items), FREQUENCY OF EVENTS REPORTING (3 items), ORGANIZATIONAL LEARNING (3 items), and FEEDBACK ABOUT ERRORS (3 items) are all included. In addition to the 42 items, the survey asks respondents to give their work area/unit an overall grade on patient safety and to identify how many occurrences they recorded in the previous year. Respondents are requested to submit minimal demographic information about



themselves (such as their work area/unit, staff position, whether they have direct patient contact, duration in their work area/unit). To fit the setting of this study, the instrument was slightly reworded (Appendix I). Professor Margarida Eiras, who originally validated the instrument in the Portuguese population, granted permission to adapt and use the instrument (See Appendix II). All items were graded on a five-point Likert scale that ranged from (1) "strongly disagree" or "never" to (5) "strongly agree" or "always."

For the analysis and interpretation of the data, the methodology recommended by Sorra and Nieva (2004) was used, which consists of recoding the scale from 5 to 3 categories and inverting the negatively formulated questions in order to facilitate data analysis. Thus, the inverted items are: section A items: 5,7,8,10,12,14,16,17; section B items: 3 and 4; section C item 6 and section F items 2,3,5,6,7,9,11.

According to the same authors, in the recoding of the scale, for each item the response options "strongly agree and agree" and "most of the time and always" were grouped into a single category considered positive, the response options "neither agree nor disagree" and "sometimes" were grouped into a single category considered neutral and the response options "strongly disagree and disagree" and "rarely and never" were grouped into a single category considered negative.

Thus, with this recoding, the percentage of positive questions in the dimensions/items are considered the strengths of the safety culture (fortress), when they have a percentage greater than or equal to 75%. When items/dimensions have a percentage equal to or less than 50%, they are considered areas in need of improvement (improvement opportunities). For percentages between 50% and 75%, there are no guidelines from the AHRQ (Sorra & Nieva, 2004), however in a study carried out by Fernandes and Queirós in 2011 (Fernandes & Queirós, 2011) entitled Patient Safety



Culture perceived by nurses in Portuguese district hospitals, these percentages are considered acceptable but in need of improvement.

According to Polit, Beck and Hungler (2020), one of the measures for evaluating the internal consistency of a data collection instrument is through Cronbach's alpha. This is one of the most used methods to test the reliability of the data collection instrument, since it makes an estimate of the correlation divided by half, for all possible ways of dividing the measure into two parts. In this way, it is possible to know the relationship between all the items of the scale since it represents whether there is homogeneity between the statements.

In order to know the internal consistency of this study, Cronbach's alpha was calculated for the scale and for each dimension. On the scale, we obtained a Cronbach's alpha of 0.894 which is quite satisfactory. The study by Eiras (2014) obtained a score of 0.908. For the evaluation in each dimension, the results were not so satisfactory, since some scores obtained, in certain dimensions, are below 0.7, as can be seen in Table 3.1.

Table 3.1: Dimensions and the Value for Cronbach's Alpha (Internal Consistency Statistics)

Dimension	Number of Items	Cronbach's alpha (Portuguese version)	Cronbach's alpha (Current Study)
Teamwork Within Units	4	0.73	0.510
Supervisor/Manager Expectations & Actions Promoting Patient Safety	4	0.72	0.159
Management Support for Patient Safety	3	0.77	0.814
Organizational Learning - Continuous Improvement	3	0.71	0.610
Overall Perceptions of Patient Safety	4	0.62	0.699
Feedback & Communication About Error	3	0.76	0.719
Communication Openness	3	0.67	0.732
Frequency of Events Reported	3	0.90	0.926



Teamwork Across Units	4	0.69	0.694
Staffing	4	0.48	0.486
Handoffs & Transitions	4	0.71	0.496
Non-punitive Response to Errors	3	0.57	0.587
Entire scale	42	0.91	0.894

In the study by Sorra and Nieva, as mentioned by Eiras (2014), they obtained scores that varied between 0.60 and 0.84 and in the study by Eiras (2014), were obtained scores between 0.483 and 0.901, which is quite similar, mostly, to the one obtained in this study. Thus, 8 dimensions were identified with Cronbach's alphas below 0.70, that is, with weak consistency, although two are very close to 0.70. The dimensions “Supervisor/Manager Expectations & Actions Promoting Patient Safety”, “Teamwork Within Units”, “Staffing” and “Handoffs & Transitions” were the ones with the lowest reliability values, being below 0.6. The fact that these dimensions present a low consistency, in this context, may be related to the size of the sample, or possibly, can be that in this particular situation the items of this dimension were not able to capture the essence of the concept that is intended to be evaluated.

On the other hand, the dimension “Frequency of Events Reported” obtained a Cronbach's alpha value of 0.926, indicative of a very good internal consistency.

3.2. METHOD

3.2.1. Study Design

This study is descriptive, survey-based with a quantitative approach, and transversal in terms of time horizon, based on the stated objectives. A cross-sectional design was adopted because it allows the collection of primary data on patient safety practices among nurses in the



study settings and the analysis of the data to understand the determinants of patient safety outcomes. This design is versatile, cost-effective, and easy to administer, allowing for the collection of large amounts of data in a short length of time.

3.2.2. Study Setting

The study recruited participants from *Centro Hospitalar Universitário do Algarve* (CHUA).

It was created by Decree-Law No. 69/2013, on 17th May, the *Centro Hospitalar do Algarve EPE* resulted from the merger between the Hospital de Faro and the Hospital do Barlavento Algarvio (Hospital de Portimão and Hospital de Lagos). In 2017, under Decree-Law No. 101/2017, of 23 August, its name was changed to *Centro Hospitalar Universitário do Algarve EPE*, – new name of *Centro Hospitalar do Algarve*. The target population includes the population of the geographical area of the districts of Faro, being able to provide care to the population of other districts of the country, if they have available capacity and there are no waiting lists.

Integrated in the National Health System (SNS), the University Hospital Center of the Algarve was constituted as a legal institution under public law, of a business nature, endowed with administrative, financial, and patrimonial autonomy. It is made up of three hospital units – Faro, Portimão and Lagos – to which are added the Basic Emergency Services of the Algarve and the Physical Medicine and Rehabilitation Center of the South, being characterized as a reference hospital unit in the NHS, by providing differentiated healthcare in the Algarve region, as well as by supporting pre- and post-graduate health professionals education and continuing training in the health area.



Consolidated as a unit of excellence in the health system, endowed with the most advanced technical and therapeutic resources, with the competence, knowledge and experience of its professionals, the University Hospital Center of the Algarve is geared towards guaranteeing equity and universal access to healthcare, as well as fostering the development healthcare professional's education and research training activities, hence the “university” status (Centro Hospitalar Universitário do Algarve, 2022)

3.2.3. Sampling

The population is constituted by all nurses who work in the identified services from the emergency, maternal and child health departments in CHUA. No sampling procedure was initially adopted, the final sample depended on the response rate obtained with the application of the questionnaire, sent to the target population. As inclusion criteria was considered: Voluntarily accepting to participate in the study upon adherence to the Informed Consent Form and answer more than 80% of the questions.

Data collection was carried out through an online electronic form built through the Google Docs© application. This application has proven to be a widely used resource for data collection in health investigations, facilitating access to the research instrument and filling it out at a low cost. This modality also allows researchers to monitor the development of the research as the data is produced by the participants. The researcher of this study shared the link to access the Informed Consent Form (FICF) and questionnaire via e-mail. In situations where the response rate was lower than expected, the link was resent, with a reminder to all stakeholders, to encourage participation, 8 days after the first contact. The exclusion criteria were nurses on sick leave or annual leave and



if they were not present at the time of this study. Other clinical staff such as doctors, laboratory technicians or others healthcare professionals were also excluded from this study.

3.2.4. Statistical method

As expected, and after formal authorizations had been given, the nurses managing the services and the collaborating nurses were contacted and the link was sent to all nurses (initially identified 184). The first contact was made by email and reinforced in the WhatsApp groups of each service. Data collection took place between December 24 and January 12. After completing the data gathering, the categories were coded, and items inversion was performed for the previously identified items.

In order to answer the research question and meet the defined objectives, with the analysis of the relationship between the variables, data analysis was carried out using descriptive and inferential analysis.

In the descriptive analysis, absolute frequencies (N) and percentages (%); measures of central tendency (averages and the minimum and maximum limits, when relevant), are presented.

In the inferential analysis, through hypothesis tests, the existence of relationships between the identified variables was tested. Regarding inferential statistics and considering the results of the normality distribution test (Kolmogorov-Smirnov normality test), non-parametric tests were used, since the variables under study showed a non-normal distribution as shown in Table 3.2.



Table 3.2: Kolmogorov-Smirnov Normality Test Results

Dimensions	Statistic	Sig.
Teamwork Within Units	.381	.001
Supervisor/Manager Expectations & Actions Promoting Patient Safety	.187	.001
Management Support for Patient Safety	.128	.002
Organizational Learning - Continuous Improvement	.1241	.001
Overall Perceptions of Patient Safety	.205	.001
Feedback & Communication About Error	.188	.001
Communication Openness	.178	.001
Frequency of Events Reported	.182	.001
Teamwork Across Units	.117	.006
Staffing	.134	.001
Handoffs & Transitions	.224	.001
Non-punitive Response to Errors	.157	.001

The nonparametric tests used to test the hypotheses of the present study were the Mann-Whitney U test, which is used to compare differences between two independent groups, in which the dependent variable is ordinal or continuous, but does not have a normal distribution. This statistical test was used to test hypotheses H_{3.2}. The Kruskal-Wallis test is used to determine whether there are statistically significant differences for more than two groups of an independent variable and a continuous or ordinal dependent variable. To determine which groups, differ from each other, Bonferroni *post hoc* method was used. This statistical test was applied to test hypotheses H_{3.1} H_{3.3} and H_{3.4}. In all statistical analyses, the level of statistical significance assumed to accept the hypotheses is $p \leq .05$.

The statistical analysis of the data obtained was processed using the software SPSS (Statistical Package for the Social Sciences) version 28.0.0.0.



3.2.5. Ethical procedures

The researcher is already committed to submitting a final report and publishing the results in a scientific journal and/or scientific event, whenever and wherever it is of interest and with the proper authorization from CHUA. Ethical approval was sought from the Ethics Committee for Health of CHUA with introductory Letter and other relevant documents from the University of Algarve. The Ethics Committee for Health at CHUA granted ethics approval to the researcher on the 22nd of December 2021 with Registration number 213/2021 (Appendix III). Permission was also given by the Head Nurse of CHUA on 23rd of December 2021. Data collection only started when the ethical approval and permission from head nurses were given. Before proceeding to answer the questionnaire, the respondents were required to sign an electronic consent form declaring that they had read and understood the research information and that they were participating willingly. The respondents were reminded that they had the right to refuse to participate in the study, and that even after agreeing, they could opt out at any moment if they so desired. The researcher assured the respondents that refusing to participate in the study would have no negative consequences for them or their jobs as nurses. Similarly, anonymity and confidentiality were protected by ensuring that any personal information provided was not shared with anyone else and was treated with the utmost care.



4. RESULTS

Of the 184 nurses who were identified as working in the services under study, 84 fully answered the questionnaire, which shows a response rate of 45.7%. We can consider this an acceptable adherence rate, given that other studies in the Portuguese population showed lower rates, as is the case of the one developed by the General Directorate of Health (Direção Geral de Saúde [DGS], 2011) with 11.13%. It should be noted that all the participants in this study provide direct care to mothers, children, and families.

Presented below are the data obtained from the application of the questionnaire, previously prepared, to the selected population, having obtained 84 forms that were completely filled in, and thus eligible for data processing. Data collection took place between December 23, 2021, and January 13, 2022.

4.1 SAMPLE CHARACTERIZATION

4.1.1. Sociodemographic and Professional Variables

This is the sociodemographic and professional variables of the study participants. In this study, demographic features of nurses were investigated, including age, gender, qualification, job area, and years of professional experience as a nurse, years of experience in the service, and years of experience in the organization. Total of 84 nurses were qualified for this study after they fully answered the survey questionnaires. Women form majority of the respondents (73) representing 88%, age range of nurses are from 21 to 62 with more nurses within the age bracket of 31-40 (32) representing 38.1%. In terms of academic qualification, more than half (43) representing 51.2%



are Graduates with the least being Bachelor's Degree holders (2) representing 2.4% of the entire respondents. Pediatrics Emergency (Portimão) has more nurses participating in the study (20) denoting 24.1% in the unit than the rest of units under this study. Majority of the respondents (n=80, 95.2%) indicated this was their first time answering this questionnaire. In the same line significant number of the nurses (28.6%) have between 13 and 20 years of professional experience as a nurse, while 23 (27.4%) have between 3- and 7-years' experience in the service. Also, 27.4% of the nurses have 13 to 20 years' work experience within the organization. Additionally, majority of the nurses, 56 representing 66.7% of the respondents answered "yes" to have had training on patient safety, on the other hand, 97.6% of nurses expressed interest to have training on patient safety if given the opportunity. In an attempt to find out the importance of nurses having the opportunity to have and update training on patient safety at least once in a year, more than half of nurses (52.4%) found it very important as can be seen in Table 4.1.

Table 4.1: Sociodemographic and Professional Variables

Variables		Frequencies N=84	%
Service	Delivery Room (Faro)	17	20.4
	Delivery Room (Portimão)	16	19.3
	Pediatrics Emergency (Faro)	14	15.7
	Pediatrics Emergency (Portimão)	20	24.1
	Pediatric Intensive Care Unit	17	20.5
Have you ever answered this questionnaire?	No	80	95.2
	Maybe	3	3.6
	Yes	1	1.2
Academic qualification	Bachelor's Degree	2	2.3
	Graduate	43	51.2
	Post-Graduate	26	31
	Master's degree	13	15.5



Professional experience as a nurse	Less than 6 months	6	7.1
	1 – 2 years	3	3.6
	3 – 7 years	13	15.5
	8 – 12 years	17	20.2
	13 – 20	24	28.6
	More than 21 years	21	25
Experience in the service	Less than 6 months	8	9.5
	6 – 11 months	3	3.6
	1 – 2 years	8	9.5
	3 – 7 years	23	27.4
	8 – 12 years	10	11.9
	13 – 20	21	25
	More than 21 years	11	13.1
Experience in the organization	Less than 6 months	10	11.9
	6 – 11 months	1	1.2
	1 – 2 years	5	6
	3 – 7 years	18	21.4
	8 – 12 years	9	10.7
	13 – 20	23	27.4
	More than 21 years	18	21.4
Age $\bar{x} = 38.50$ $Std = 10.289$ $Mo = 34$	21-30	22	26.2
	31-40	32	38.1
	41-50	18	21.4
	51-62	12	14.3
Gender	Women	73	88
	Men	10	12
Have you done training on patient safety?	Yes	56	66.7
	No	28	33.3
If you had the opportunity, would you attend training on patient safety?	Yes	82	97.6
	No	2	2.4
Do you consider it important that nurses do frequent training/updates (at least once a year) on patient safety?	Unimportant	2	2.4
	Important	38	45.2
	Very important	44	52.4



4.1.2. Descriptive data of the scale (HSOPSC)

The descriptive data of the scale (HSOPSC) responses is then presented. These are the various responses gathered from the various dimensions and constituent items. Attention is paid to the positive responses of the individual items as well as the average positive percentage of each dimension. The dimension that has the highest positive average score is “TEAMWORK WITHIN UNITS” (87.8%) with 83 respondents (98%) answering positive to the item “people support one other in this unit”, with zero negative response and with only one respondent stating neutrality. “SUPERVISOR/MANAGEMENT EXPECTATIONS AND ACTIONS PROMOTING PATIENT SAFETY” had an average positive score of 38.7%. With significant number of nurses (48.8%) believing that managers always ask them to work faster and even take shortcut when there is pressure. On the other hand, more than half (51.2%) agreed that managers consider staff suggestions for improving patient safety seriously. A significant number of nurses (41.7%) also believe managers have a good word when something good is done, while 11 nurses (13.1%) states that managers do not overlook patient safety problems when they occur. The results also revealed a low average positive score (31.7%) for MANAGEMENT SUPPORT FOR PATIENT SAFETY dimension, the individual items as well as the average positive score did not meet the standard benchmark of 75% of the AHRQ's tool. Out of the 84 nurses surveyed 33 (39.3), responded positive that management provide a work climate that promotes patient safety while 29 (34.5), believe that managers see patient safety as a priority. Again, 18 nurses (21.4%) are also of the view that managers seem interested in patient safety only after an adverse event had happened. Findings also indicate that ORGANIZATIONAL LEARNING-CONTINUOUS IMPROVEMENT gained an appreciable level of positive average score of



68.6%. Majority of nurses (75%) indicated that after changes are made to improve patient safety, its effectiveness is evaluated afterwards, a significant number of them (76.2%) said they actively do things to improve patient safety while more than half (54.8%) answered positive to mistakes leading to changes. It shows there is significant learning outcomes from mistakes made. It is worth noting that the overall perception of patient safety dimension had an average positive score of 56.2%. Out of 84 nurses who answered this survey, majority of them (63.1%) report that they have procedures and systems in preventing errors, significant number of them (57.1%) also hold the view that patient safety is never sacrificed to get work done. On the other hand more than half (51.2) indicated that it is only by chance that more serious mistakes do not occur.

It is found from this study that there is average positive score of 50% for FEEDBACK AND COMMUNICATION ABOUT ERROR. Majority of nurses (60.7%) answered positive to been informed about errors that happens, exactly half percent (42) also revealed that they discuss ways to prevent errors from happening. However, only 33 nurses (39%) said they are given feedback about changes put in place based on events development.

COMMUNICATION OPENNESS dimension also saw a significant average positive score of 51.6%. With majority of them (69%) believing that nurses can speak up freely about anything they think can harm the patient. On the other hand, more than half of the respondents (52.4%) belief that nurses are afraid to question if something seems not right. Again only 27 nurses (32.1%) feel free to question decision and actions of authority. With regards to FREQUENCY OF EVENTS REPORTED, an average positive score of 40.8% was realized. Out of the total respondents , 37 (44%) of them reported mistakes that are caught and corrected before affecting patients also known as near misses, in the same line, 35 nurses (41.7%) have also reported on events that could harm the



patient but did not, only 31 of nurses (36.9%) reported incidents that have no potential harm to the patient.

Results from TEAMWORK ACROSS UNITS showed an average positive score of 48.5%. More than half of the nurses (51.2%) believe that there is good cooperation among hospital units that need to work together, significant number of them (44%) are of the view that hospital units' work together to provide the best of care for patients. However, 22 nurses (26.2%) also held that hospital units do not coordinate well with each other, with same percentage of 36.9% for both negative score and those who are undecided or remain neutral on this subject. Majority of nurses (72.6%) in this study find it pleasant to work with staff from other hospital' units.

Issues about STAFFING had a low positive average score of 25.9% as only 32 nurses (38.1%) agreed that they have enough staff to handle workload, 61 nurses indicated, (72.6%) that they work longer hours than is best for patients. In relation to using more agency/temporary staff than is best for patients, 24 nurses (28.6%) answered positive to that, 36 of these professionals (42.8%) also have the view that they work in crisis mode and do too much and too quickly.

As all items in the dimension "HANDOFFS AND TRANSITIONS" were inverted (F3, F5, F7 and F11), the interpretation is done in reverse. There is average positive score of 66.9% with HANDOFFS AND TRANSITIONS. Although the dimension got a higher positive percentage score, which is a good indication, it is quiet problematic as about 33.1% of the respondents are either undecided or do not give it a positive score considering the key role of the transitions of care and patient information have on the management and safety of patients. Details are presented in Table 4.2.



Table 4.2: The 12 Dimensions and the Respective Items with Positive, Negative, Neutral and Average Positive Response Rate

Dimensions	Items	Positive % N	Negative % N	Neutral % N	Average Positive %
Teamwork Within Units	A ¹ . People support one another in this unit.	98.8% 83		1.2% 1	87.8%
	A ³ . When a lot of work needs to be done quickly, we work together as a team to get the work done.	91.8% 77	1.2% 1	7% 6	
	A ⁴ . In this unit, people treat each other with respect.	82.1% 69	2.4% 2	15.5% 13	
	A ¹¹ . When one area in this unit gets really busy, others help out.	78.6% 66	7.1% 6	14.3% 12	
Supervisor/Manager Expectations & Actions Promoting Patient Safety	B ¹ . My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.	41.7% 35	32.1% 27	26.2% 22	38.7%
	B ² . My supervisor/manager seriously considers staff suggestions for improving patient safety.	51.2% 43	19% 16	29.8% 25	
	B ³ . Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts.	48.8% 41	16.7% 14	34.5% 29	



	B ⁴ . My supervisor/manager overlooks patient safety problems that happen over and over.	13.1% 11	44% 37	42.9% 36	
Management Support for Patient Safety	F ¹ . Hospital management provides a work climate that promotes patient Safety.	39.3% 33	31% 26	29.7% 25	31.7%
	F ⁸ . The actions of hospital management show that patient safety is a top priority.	34.5 % 29	29.8% 25	35.7% 30	
	F ⁹ . Hospital management seems interested in patient safety only after an adverse event happens.	21.4 % 18	41.7% 35	36.9% 31	
Organizational Learning - Continuous Improvement	A ⁶ . We are actively doing things to improve patient safety.	76.2% 64	3.6% 3	20.2% 17	68.6%
	A ⁹ . Mistakes have led to positive changes here.	54.8% 46	16.7% 14	28.5% 24	
	A ¹³ . After we make changes to improve patient safety, we evaluate their effectiveness.	75% 63	10.7% 9	14.3% 12	
Overall Perceptions of Patient Safety	A ¹⁵ . Patient safety is never sacrificed to get more work done.	57.1% 48	25% 21	17.9% 15	56.2%
	A ¹⁸ . Our procedures and systems are good at preventing errors from happening.	63.1% 53	10.7% 9	26.2% 22	



	A ¹⁰ . It is just by chance that more serious mistakes don't happen around here.	51.2% 43	27.4% 23	21.4% 18	
	A ¹⁷ . We have patient safety problems in this unit.	53.6% 45	20.2% 17	26.2% 22	
Feedback & Communication About Error	C ¹ . We are given feedback about changes put into place based on event reports.	39.3% 33	26.2% 22	34.5% 29	50%
	C ³ . We are informed about errors that happen in this unit.	60.7% 51	6% 5	33.3% 28	
	C ⁵ . In this unit, we discuss ways to prevent errors from happening again.	50% 42	13.1% 11	36.9% 31	
Communication Openness	C ² . Staff will freely speak up if they see something that may negatively affect patient care.	69% 58	3.6% 3	27.4% 23	51.1%
	C ⁴ . Staff feel free to question the decisions or actions of those with more authority.	32.1% 27	17.9% 15	50% 42	
	C ⁶ . Staff are afraid to ask questions when something does not seem right.	52.4% 44	8.3% 7	39.3% 33	
Frequency of Events Reported	D ¹ . When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	44% 37	31% 26	25% 21	40.8%
	D ² . When a mistake is made, but has no potential to harm the	36.9% 31	33.3% 28	29.8% 25	



	patient, how often is this reported?				
	D ³ . When a mistake is made that could harm the patient, but does not, how often is this reported?	41.7% 35	25% 21	33.3% 28	
Teamwork Across Units	F ⁴ . There is good cooperation among hospital units that need to work together.	51.2% 43	10.7% 9	38.1% 32	48.5%
	F ¹⁰ . Hospital units work well together to provide the best care for patients.	44% 37	13.1% 11	42.9% 36	
	F ² . Hospital units do not coordinate well with each other.	26.2% 22	36.9% 31	36.9% 31	
	F ⁶ . It is often unpleasant to work with staff from other hospital units.	72.6% 61	3.6% 3	23.8% 20	
Staffing	A ² . We have enough staff to handle the workload.	38.1% 32	51.2% 43	10.7% 9	25.9%
	A ⁵ . Staff in this unit work longer hours than is best for patient care.	10.7% 9	72.6% 61	16.7% 14	
	A ⁷ . We use more agency/temporary staff than is best for patient care.	28.6% 24	28.5% 24	42.9% 36	
	A ¹⁴ . We work in "crisis mode" trying to do too much, too quickly.	26.2% 22	42.8% 36	31% 26	
Handoffs & Transitions	F ³ . Things "fall between the cracks" when transferring	53.6% 45	21.4% 18	25% 21	66.9%



	patients from one unit to another.				
	F ⁵ . Important patient care information is often lost during shift changes.	81% 68	13% 11	6% 5	
	F ⁷ . Problems often occur in the exchange of information across hospital units.	57.1% 48	8.4% 7	34.5% 29	
	F ¹¹ . Shift changes are problematic for patients in this hospital.	76.2% 64	2.4% 2	21.4% 18	
Non-punitive Response to Errors	A ⁸ . Staff feel like their mistakes are held against them.	25% 21	42.9% 36	32.1% 27	27.3%
	A ¹² . When an event is reported, it feels like the person is being written up, not the problem.	23.8% 20	45.2% 38	31% 26	
	A ¹⁶ . Staff worry that mistakes they make are kept in their personnel file. (Negatively worded)	33.3% 28	19.1% 16	47.6% 40	

Inverted items appear highlighted in different color for easier analysis

The Table 4.3 presented below, shows the summary of the various dimensions and the average positive percentage scores, according to the organizational actions and practices defined by Vogus et al. (2010), that minimize the risks related to patient safety, and that we previously described.



Table 4.3: Summary of Dimensions and Average Positive Response and overall Average Positive Score of the Entire Dimensions

Dimension	Average positive percentage score (%)
Enabling safety Practice	
Feedback & Communication About Error	50%
Communication Openness	51.1%
Supervisor/Manager Expectations & Actions Promoting Patient Safety	38.7%
Management Support for Patient Safety	31.7%
Non-punitive response to errors	27.3%
Staffing	25.9%
Enacting Patient Safety Practice	
Teamwork within units	87.8%
Handoffs and transitions	66.9%
Teamwork across units	48.5%
Elaborating Patient Safety Practice	
Overall perception about patient safety	56.2%
Frequency of Events Reported	40.8%
Organizational Learning & continues development	68.6%
Overall Average Positive Score.	49.4%

4.1.3. Number of events reported and overall grade on patient safety

Findings with regards to events reporting are presented in the Table 4.4. In relation to adverse events reporting by nurses in this study, majority of the respondents (83.3%) did not report any event in the past 12 months, whereas as low as 14 nurses (16.7%) reported 1 to 2 events.

Table 4.4: Number of Events Reported

Number of Adverse Events Reported	Frequency	Valid Percent
No event reports	70	83.3
1 to 2 event reports	14	16.7
Total	84	100.0



In an attempt to find out, the general patient safety grade in the studied services of CHUA, exactly half of the nurses (50%) graded the facility's patient safety very good, in the same vein significant number of them (46.4) considered the hospital overall patient safety grade as acceptable. Notwithstanding, only 3 nurses representing 3.6% of the participants in this research graded the institution's patient safety as excellent, as shown in Table 4.5.

Table 4. 5: Overall Grade on Patient Safety

	Dimension	Frequency	Valid Percentage (%)
Patient Safety Grade	Acceptable	39	46.4
	Very good	42	50.0
	Excellent	3	3.6
	Total	84	100.0

4.2. INFERENCE ANALYSIS

Below is a list of the hypothesis tests. Only statistically significant results were included in this section.

H_{3.1}. Older nurses will have a stronger perception of the different dimensions of the patient safety culture.

In order to analyze the age variable, we chose to group the nurses in this study into four categories. Thus, the following groups were obtained: nurses aged between 21 and 30, nurses aged between 31 and 40 years, nurses aged between 41 and 50 years and nurses aged between 51 and 62 years.



To test the hypothesis H_{3.1}, we compared the age groups of nurses in each of the twelve dimensions of patient safety culture, using the Kruskal-Wallis test. The *post hoc* Bonferroni procedure correction was used (Table 4.6).

After applying the Kruskal-Wallis Test to ascertain the relationship between the 12 dimensions of Patient Safety Culture and age groups, the only dimension found to be statistically significant was NON-PUNITIVE RESPONSE TO ERRORS ($p=0.029$). The Bonferroni *post hoc* procedure correction was used to further determine the differences between the various age groups. The findings show that there is significant difference between nurses within the age group of 31 to 40 and those within the age bracket of 51 to 62 years ($p=.039$) as indicated on Table 4.6 below. These findings imply that nurses within the age range of 51 to 62 years were more conscious and have stronger perception about patient safety culture than the younger nurses in age brackets such as 21 to 30, 31 to 40 and 41 to 50.

This seems to indicate that older nurses have stronger perception of the different dimensions of the patient safety culture. The hypothesis is hereby accepted.

Table 4.6: Kruskal-Wallis Test between Safety Culture Dimensions and Age groups

Dimensions	Age Groups	N	Middle rank	<i>p</i>	<i>Post Hoc</i>
Non-punitive Response to Errors	21-30	22	37.80	0.029	[31-40] < [51-62] ($p=.039$)
	31-40	32	36.80		
	41-50	18	47.47		
	51-62	12	58.88		
	Total	84			



H_{3.2}. Gender will have significant relationship with the different dimensions of the patient safety culture.

To test the hypothesis H_{3.2}, we used the Mann–Whitney U test to analyze the statistical difference between gender and patient safety culture dimensions. Which showed a significant difference in OVERALL PERCEPTIONS OF PATIENT SAFETY dimension and gender ($p=.014$) as shown in Table 4.9. Although there is a significant relationship between gender and OVERALL PERCEPTIONS OF PATIENT SAFETY, the relationship between the rest of the safety culture dimensions were statistically insignificant indicating that this hypothesis is partly accepted.

Table 4.7: Gender Mann–Whitney U test

Dimensions	Gender	N	Middle Rank	<i>p</i>
Overall Perceptions of Patient Safety	Female	73	44,37	.014
	Male	10	24,70	
	Total	83		

H_{3.3}. Nurses with masters and higher degrees will have a stronger perception of the different dimensions of the patient safety culture.

In order to test the hypothesis H_{3.3}, Kruskal-Wallis Test was once again used. Which revealed that level of education has significant relationship with OVERALL PERCEPTIONS OF PATIENT SAFETY dimension ($p=.005$) as well as STAFFING ($p=.003$). Post Hoc analysis further indicates significant difference between nurses with Master’s degree and Graduate nurses ($p=.017$) in relation to OVERALL PERCEPTIONS OF PATIENT SAFETY dimension. With regards to STAFFING, the study also found significant difference between nurses with masters’ degree and Graduate nurses ($p=.020$) as reported in Table 4.10 below. This demonstrate that, in both safety dimensions,



Graduate nurses were more likely to have stronger perception about the different dimension of patient safety culture than those with other degrees such as Bachelor’s, Master’s degree and postgraduate. This fails to support the earlier assumption that nurses with higher degrees such as masters will have more stronger perception about patient safety culture dimensions. Hence the hypothesis is rejected.

Table 4.8: Kruskal-Wallis Test between Safety Culture Dimensions and Education

Dimensions	Highest academic qualification	N	Middle Rank	<i>p</i>	Post Hoc
Overall Perceptions of Patient Safety	Bachelor's Degree	2	17,00	.005	M<G (<i>p</i> =.017)
	Graduate	43	50,50		
	Post-Graduate	26	38,60		
	Master's degree	13	27,77		
	Total	84			
Staffing	Bachelor's Degree	2	44,00	.003	M<G (<i>p</i> =.020)
	Graduate	43	48,31		
	Post-Graduate	26	41,00		
	Master's degree	13	26,04		
	Total	84			

H_{3.4}. Nurses with longer duration of practice as professional nurses will have a stronger perception of the different dimensions of the patient safety culture.

To test hypothesis H_{3.4}. Kruskal-Wallis Test was applied to find out the significance between patient safety culture dimensions and duration of practice as a professional nurse. It revealed a significant relation between MANAGEMENT SUPPORT FOR PATIENT SAFETY and years of practice as a professional nurse (*p*=.034). Aside that, post hoc analysis subsequently found significant difference between nurses with 3 to 7 years and nurses with less than 6 months of



professional practice ($p=.017$) as shown on Table 4.11 below. It is found that nurses with less than 6 months of practice as professional nurses were more conscious and have stronger perception about patient safety culture in this dimension, than other nurses with more years of practice. This defeats the hypothesis that nurses with longer duration as professional nurses will have stronger perception about the different patient safety culture dimensions. Based on this, the hypothesis is rejected.

Table 4.9: Kruskal-Wallis Test between Safety Culture Dimensions and Duration of Practice as a Professional Nurse

	Duration of Practice as a Professional Nurse	N	Middle Rank	<i>p</i>	Post Hoc
Management Support for Patient Safety	Less than 6 months	6	68,17	.034	3 to 7 years< less than 6 months ($p=.017$)
	1 – 2 years	3	50,33		
	3 – 7 years	13	29,38		
	8 – 12 years	17	40,97		
	13 – 20	24	39,60		
	More than 21 years	21	46,71		
	Total	84			



5. DISCUSSION

This chapter discusses the study's findings, which were reported in chapter four.

The objective of this study was to evaluate nurses' perception of the patient safety culture in the Emergency and Critical Care Services of the Maternal and Child Department of CHUA and to identify vulnerabilities, training needs or intervention in patient safety culture and respective corrective actions aimed at increasing the quality of care provided by nurses in these areas of activity. This chapter is also divided into themes to help categorize the study's objectives and make it easier to grasp.

5.1. SOCIODEMOGRAPHIC AND PROFESSIONAL VARIABLES.

A total of 84 nurses from CHUA Emergency and Critical Care services of Maternal and Child Department participated in this study by fully answering the questionnaires.

The ages of respondents ranged from 21 to 62 years with a mean age of 38.5 years indicating that the bulk of the study's participants were in their late 30's. This finding is in line with similar report by Suhendra et al. (2020) who found the mean age of working nurses to be in the 30's. The plurality of nurses (88%) was female, while male nurses made up only 12 percent of the workforce. However, this is in sharp contrast with findings in a similar study by Suhendra et al. (2020) which reported majority of nurses to be males. The variation could result from different study settings. This feeds into the popular notion that nursing is a female dominated profession. In addition, the majority of nurses had a Graduate Certificate as their greatest degree of education, according to the report 51.2 percent. With the least of nurses (2.4%) with a Bachelor's degree.



Other nurses have postgraduate and master's degree. This clearly demonstrates that nurses in these departments are well educated, and this can enhance patients' safety and improve quality care.

The provision of healthcare is predicated on quality and experience. In this research, a significant number of nurses (28.6%) had 13 to 20 years of professional experience with 25% of the respondents having more than 21 years' experience. In relation to experience in the service, 27.4% have between 3 to 7 years' experience with 25% between 13 to 20 years. With experience in the organization, majority of nurses have more than 7 years working with the organization. It implies that majority of the nurses have had enough professional experience as nurses which is a good indicator of patient safety and quality care.

Majority of nurses (66.7%) in this study had training on patient safety, yet 97.6% expressed the desire to attend patient safety training if given opportunity. It is an area that can be worked on to increase safety awareness and ensure safer practices given the fact that nurses are willing and ready to learn. According to the findings, more than half of the surveyed nurses indicated that is very important for them to have regular training and update at least once every year, on patient safety issues. It is worth noting nurses who are considered pivotal in the healthcare delivery system in this hospital have realized the need for regular training on patient safety and are ready to utilize any given opportunity. Managers can take advantage of this to organize training on patient safety for nurses.



5.2. ENABLING PATIENT SAFETY PRACTICES

Enabling safety practices are management measures that focus on patient safety and provide a safe environment for people to speak up and take action. According to some safety experts, putting in place enabling safety standards has an impact on operating activities. Consequently, employees may engage in behaviors that have the potential to affect patient safety (Vogus et al., 2010). Managerial support, expectations, open communication, non-punitive error reaction, staffing levels, and feedback concerning errors are all examples of enabling safety measures.

The support of management for patient safety is one important significant safety practice that may have a positive impact on patient safety in healthcare organizations. According to the findings of this study, 31.7% of nurses asked believed that patient safety was a key concern for management. The score is quite low. This report is similar to findings by Eiras et al. (2014). They also found that management support for patient safety, was 37% positive average response, which was the second lowest positive average score. However, it differs from another study by Suhendra et al. (2020) who reported a high average positive score of 56.6% for management support for patient safety. Also Abuosi et al. (2020), and Khoshakhlagh et al. (2019), found that management support for patient safety received a higher positive evaluation score. There could be varied reasons but one could attribute this to the study settings. In the present study, management support is believed not to be strong as only 31.7% was the average positive response which is lower than the average benchmark of 75% of HSOPSC (Sorra & Nieva, 2004). This implies that management show less interest in patient safety issues and do not consider it a high priority in this hospital. This could have dire consequences as staff are more likely to commit more adverse events and feel



reluctant to report. According to findings from other studies, when hospital management supports safety-related measures, the overarching result is an increase in adverse event reported (Brown, 2015; Richter et al., 2016). Management support for patient safety is an area that need enhancement. Other studies have found that putting a premium on patient safety and safety-related concerns resulted in improved safety outcomes (Ammouri et al., 2015). Healthcare executives must place a high priority on patient safety and devote sufficient resources to employee training and capacity building especially the Emergency and Critical Care Settings.

Managers' expectations and behaviors are also enabling safety strategy that healthcare managers can employ to improve patient safety. Staff ideas, award incentives for safety compliance, and paying proper attention to safety-related issues help to achieve these expectations and actions. According to this study, around 38.7% of nursing staff responded positively to supervisors' expectations and actions in improving patient safety. This was the fourth lowest score of all the enabling safety practices, indicating that the hospital's healthcare management may not take safety concerns and suggestions sufficiently. This is consistent with the findings of Khoshakhlagh et al. (2019), who found a low positive reaction rate to managers' activities improving patient safety. That because supervisors instructed employees to disregard safety concerns in order to expedite production. Adverse occurrences may arise unintentionally as a result of such orders, which could jeopardize patient safety. The findings of this study however, contradict Rajalatchumi et al. (2018), who claimed that healthcare managers had high regard for patient safety and would not compel personnel to ignore safety issues in the performance of their jobs under any circumstances. Suhendra et al., (2020) also recorded high average positive percentage of 62.8% for mangement espections to patient safety. Similaarly, Eiras et al., (2014) in



their study reported a 63% positive average score for management expectations regarding patient safety.

In any healthcare delivery facility, a non-punitive reaction to mistakes is a key predictor of patient safety culture. Nurses are more likely to report bad incidents when the work atmosphere is blame-free and non-punitive. According to the results of several studies, non-punitive responses to errors result in greater positive response score. Non-punitive response to errors, for example, had the greatest positive response score in studies conducted in Norway and Iran (Ballangrud et al., 2012; Khoshakhlagh et al., 2019). Because errors or mistakes are not held against them or documented in their records, adverse event reporting is free of threats and intimidation among healthcare personnel. One key finding of this study was the prevalence of punitive responses to errors, as indicated by respondents. Non-punitive response to errors had the second lowest of positive average score of 27.3% indicating that major of the nurses are either not sure of what will happen to them if they report an adverse event, or their mistakes will be recorded in their personal record and held against them. In situation like this, many nurses feel unsafe to report adverse event which could jeopardize patient safety. This report however, conforms with result from a study by Eiras et al., (2014) who reported a 25% average positive score for non-punitive response to errors which was the lowest score. As a major predictor of patient safety, this behavior should be carefully evaluated. Hence, attempts should be made to ensure that the clinical setting is blame-free and non-punitive. Several studies show that a non-punitive response to error reporting is a barrier for healthcare practitioners. Other studies have also found that the least developed managerial technique among healthcare employees is non-punitive response to errors (Arrieta, Suárez, & Hakim, 2017; Okuyama et al., 2018; Akologo et al., 2019; Behzadifar et al., 2019). Anxiety and



coercion among staff nurses have been blamed mostly by researchers for the poor score on non-punitive reaction. In Saudi Arabia, for instance, healthcare personnel were frightened of losing their jobs or facing severe punishment if they reported unpleasant events to supervisors (Alahmadi, 2010). Management should pay critical attention to diffusing fear and panic among nurses that will create an enabling environment to encourage incidents reporting.

Under this study, feedback on errors was also a key enabling safety practice of hospital administration that led to patient safety. According to the findings, exactly half of the nurses (50 percent) claimed they had received feedback when errors were reported. This demonstrates that a considerable proportion of nurses were updated about errors that occurred in their units, as well as the necessary improvements that were implemented as a result of the occurrences reported. Despite its significance, this discovery backs up the findings of previous investigators, who found that positive reaction scores for comments about errors were greater (Ammouri et al., 2015; Abuosi et al., 2020). This is also in line with findings from Eiras et al. (2014) who found a 54% average positive score for feedback and communication about errors in their research. According to these studies, when healthcare personnel, such as nurses, are provided feedback after reporting errors, they are more likely to disclose such incidents in the future. This kind of incentive might also encourage individuals to alert others who are affected by the mistakes. This is a good patient safe operation practice that healthcare executives should be aware about. The current study's findings, however, contradict those of prior studies that found feedback to be a poor facilitating safety practice (Falco, 2013; Khoshakhlagh et al., 2019). In addition, healthcare personnel indicated that they were not notified about errors that happened in their units, nor were modifications made to prevent future occurrences (Khoshakhlagh et al., 2019). As a result of the delays in delivering



prompt feedback, nurses may become disgruntled and unwilling to report safety events in the future.

Such management practices have the potential to compromise patient safety, thus they must be addressed. As a result, providing feedback to reported incidents is critical, as doing so will motivate nurses to report unfavorable events.

In establishing patient safety, staffing level is a crucial enabling safety practice. Per the findings of this study, the majority of nurses (51.2%) claimed that hospital units lacked appropriate nursing staff to manage patient safety-related tasks. Only 32 nurses (38.1%) agreed that they have enough staff to handle workload, 61 nurses indicated, (72.6%) that they work longer hours than is best for patients. Staffing level had an average positive percentage score of 25.9% which is the least developed dimension in this study. Nursing staff also stated that they had to work long hours in crisis mode and get too much work in a short amount of time in order to complete their tasks. Consequently, healthcare facilities with insufficient numbers of personnel, such as nurses, experience a variety of problems, including depression, anxiety, stress, and extra workload (Hamaideh, 2011), all of which can compromise patient safety. The findings of this study back with earlier scientific investigations that have highlighted the issue of insufficient hospital staffing (Fujita et al., 2014; Saleh et al., 2015; Güneş et al., 2016; Okuyama et al., 2018). In a quantitative survey among healthcare workers in Ghana, Abuosi et al. (2020) discovered staffing as a safety strategy with a greater negative response score (65.5%). According to various studies, there seem to be an insufficient number of healthcare workers, particularly nurses, to address patient safety-related burden. A nursing shortage indicates there are not enough nurses to provide safe and efficient care to patients. As a result, hospital executives must see staffing as a vital enabling safety



strategy and vigorously advocate for nurses' employment with the appropriate authorities. Despite the fact that proper staffing is thought to promote patient safety, Rages (2014) found the opposite. According to Rages' research, appropriate staffing causes confusion among employees because everyone relies on one another to complete tasks. This can lead to medication and treatment omission and others that pose threat to patient safety. Adequate staffing of qualified and experience nurses though good, is not the only determinant for patient safety. Other parameters such proper supervision and motivation could help achieve good patient safety.

One of several facilitating attitudes that can be used to impact patient safety is open communication. Professionals can willingly and openly share patient safety issues with managers in an open setting, free of fear and coercion. Open communication has an overall average positive response of 51.1% which is in line with Eiras et al. (2014) who recorded in their study a positive average response of 53%. Open communication in this study though a high average positive percent response seems problematic as significant of nurses (52.4%) are afraid to ask questions when something does not seem right. In addition, only 32.1% feel free to question decisions and actions of authority. This indicates a strained relationship between nurses and their superiors, as well as among themselves. Sharing patient information is likely to be difficult in the face of a faulty transceiver. Consequently, if left unaddressed, it could have a negative impact on patient safety. Other research investigations (Yilmaz & Goris, 2015; Rajalatchumi et al., 2018) have found that healthcare staff find it difficult to communicate patient safety-related issues with their management. Some research has linked inadequate open communication to bad relationships between hospital management and operational personnel, as well as staff disagreements (Braaf et al., 2013; Rages, 2014). The net effect of all these is unhealthy communication culture in the work



environment which could compromise patient safety. Regular professional seminars can help defuse this and improve good and free communication culture.

5.3. ENACTING PATIENT SAFETY PRACTICES

Nurses' enacting practices are measures that they take to raise awareness of safety hazards and marshal resources to address those threats. Teamwork, handover, and transition of patient care are examples of these actions.

With an average percentage positive reaction score of 87.8 percent, teamwork within units was found to have the greatest average percentage positive response of patient safety culture in the current study. This is similar to findings by Eiras et al. (2014) who got a 70% average positive score as well as Suhendra et al. (2020) who also recorded average positive score of 82.9% for teamwork management within units. This as well is support reported by Akologo et al. (2019) who also found in their study an average positive score of 81.5% in teamwork within units. Teamwork within units were the highest average scores in all these studies. The top rating indicates that the nurses in this facility have a good mindset toward teamwork. The result is greater than the AHRQ's average positive response rate of 75% (Sorra & Nieva, 2004). It demonstrates that the nurses in this facility work as a team, treat each other with respect, and give the necessary assistance at work. Perhaps the greatest positive percentage score earned by nurses can be linked to the study's findings of insufficient staff nurses. It most likely drove them to work together more effectively in order to give safe treatment to patients. Teamwork within hospital units received the greatest favorable reaction score, according to these studies (Abu-Hamad et al., 2016; Ramos & Calidgid, 2018; Abuosi et al., 2020) as well, which conforms with the findings in the current study's findings.



This survey discovered that a considerable (48.5 percent) of nurses said there was strong collaboration and coordination among hospital units when it came to teamwork between units. This is similar to report by Eiras et al. (2014). They had an overall average positive score of 44% in teamwork across units. In this study, majority of nurses (72.6%) stated that it is unpleasant working with staff from other units in the hospital. This conclusion is consistent with Khater et al. (2015), who found that nurses had limited interaction with other units, indicating that there was no collaboration between them. Previous research has found that teamwork between hospital units has one of the lowest positive response scores (Rages, 2014; Cheikh et al., 2016), implying that the plurality of these healthcare professionals are dissatisfied with how hospital units coordinate patient care. Results from Suhendra et al., (2020) however, found a higher average positive score of 67.7% indicating that there is good relationship between hospital units. It is crucial to compare nurses' teamwork scores within units with teamwork scores across units. Teamwork inside units had a better ranking than teamwork across units in this study. This suggests that teamwork inside units in hospitals is more likely to result in improved patient safety results than teamwork across units. This finding is consistent with Elmontsri et al. (2017), who found that teamwork within units scored higher than teamwork across hospital units. Considering this conclusion, it seems to be critical to focus on unit collaboration as a priority, as it has the ability to affect other patient safety behaviors. It is also important for better strategies to be kept in place to foster good and cordial replation between hospital units.

Patient care information transfer from one hospital unit to another is an essential process that, if not treated carefully, can have a severe impact on the patient's health outcome. Incomplete patient data can cause delays or changes in the entire individual care process, affecting the patient's



health and well-being. In this study, there was a high average positive score of 66.9% for handoffs and transitions indicating that majority of the nurses agree to the way they transfer duty of care among themselves. It further, reveals that critical patient information relevant to care is not lost during transition. This study agrees with Eiras et al. (2014) who recorded an average positive score of 54% in handoffs and transition. In this case, due diligence is ensured during transition of care. The implication is that there are lesser chance of adverse events occurring. This study further backs up the findings of (Richter et al., 2016; Yu et al., 2018; Akologo et al., 2019), who found that a higher handover score reflects a stronger patient safety culture. Nevertheless, the current study contradicts findings from other researchers who found that patient handover and transition was the least established implementing safety strategy (Giai et al., 2017; Rajalatchumi et al., 2018; Alshammari et al., 2019).

5.4. PATIENT SAFETY OUTCOMES

The results of patient safety were examined in the context of adverse event reporting in this study. The study looked at the frequency of adverse event reporting as well as the actual number of adverse event report forms filled out and filed over the course of a year. It also assessed the overall safety grade of patients in the hospital. The reporting of adverse occurrences is crucial for enhancing patient safety in health facilities. According to the findings of this study, the frequency at which adverse occurrences were reported by nurses throughout the hospital was quiet low (40.8 percent). Similar average percentage score (40%) was reported in other study (Eiras et al., 2014). This implies that majority of nurses either do not report adverse events occurred or simply did not know what to report. This indicates that errors were reported lesser often. This conclusion could



be attributable to healthcare executives' perceived negative management methods and punitive response to errors. Nurses may feel threatened or being dealt with in an unfavorable manner. Termination of work contract (Kousgaard et al., 2012) or public humiliation may be used as a form of punishment (Brown, 2015). Consequently, many healthcare personnel may be fearful of the consequences of reporting unfavorable events, posing a risk to patient safety. Several studies support these findings (Al-Mandhari et al., 2014; Mallouli et al., 2017; Akologo et al., 2019) revealing a decreased positive response score among healthcare staff when it came to reporting unpleasant events. Other research, nonetheless, found that healthcare personnel have a greater positive response rate when reporting adverse events (Alonazi et al., 2016; Ribeliene et al., 2019). That implies that healthcare workers have a favorable attitude toward reporting bad events, which could be due to the formation of a non-punitive and blame-free environment in which they feel at ease reporting and discussing unpleasant events with managers. It is therefore important that similar conducive work atmosphere is created to facilitate events reporting to enhance patient safety.

In terms of the number of adverse event report forms completed out and submitted at the previous 12 months, a higher percentage of nurses (83.3%) said no adverse events had happened in their wards. In addition, only 16.7% of the nurses had had one or more adverse events reported. The lower score in events reporting could either be that patients are well protected and taken good care off as enhancing their safety or nurses simply did not want to report adverse events for fear of intimidation and humiliation. If the latter is the case, it could create dare consequences for patient safety. A qualitative approach may help unearth the reality. This conclusion backs up the



findings of earlier studies in which no adverse events had been documented in the previous 12 months (Badr et al., 2017; Tevis et al., 2017).

In terms of the overall perception of patient safety grade, half (50%) of the nurses graded the safety of the patients in the hospital as very good, significantly, 46.4% perceived the overall safety grade to be acceptable and 3.6% indicated that overall safety grade of patients was excellent. The findings of this investigation are consistent with previous findings (Abdou, 2011; Fujita et al., 2014) who captured the majority of the patient safety composite areas with a positive overall impression. This could indicate that when employees give their hospital a high rating for patient safety, a strong safety culture exists.

5.5. TESTING HYPOTHESES

In order to evaluate the hypothesis, the researcher looked at the relationship between nurses' demographic features and their perceptions of key aspects of patient safety culture. The results demonstrated that their judgments of critical features of patient safety culture were significantly influenced by their age, gender, academic qualification, and years of work experience as a professional nurse. In terms of years of practice as professional nurse, Nurses with less than 6 months of experience as professional nurses were found to be more aware of and have a stronger view of patient safety culture dimensions than nurses with greater experience. This contrasts the findings of Akologo et al., (2019), who found that nurses with more experience had stronger assessments of important features of patient safety culture. Nurses who work in clinical settings for a long time prioritize safety. Alshammari et al. (2019) found no significant link between years of work experience and views of critical patient safety culture characteristics.



In relation to education and its significant relationship with perception of patient safety dimensions, the study found that Overall Perceptions of Patient Safety and Staffing Dimensions, Graduate nurses were more likely than those with other degrees such as Bachelor's, Master's, and post graduate degrees to have stronger perceptions regarding the different dimensions of patient safety culture. The credentials of nurses had a substantial association with perceptions of the different components of patient safety culture, according to Akologo et al., 2019. They found that nurses with a bachelor's degree were two times more likely than those with a diploma or certificate to have a strong impression of several patient safety dimensions. The findings of this study seem to agree with that of Akologo et al., (2019) however, in their study the highest level of education was Bachelor's Degree which implies that nurses with higher degrees were more conscious of patient safety dimensions than those with lower academic qualification such as Diploma and certificates. Results from this study rather disagree with their assertion because the highest academic qualification in this study was Post Graduate.

With regards to age and perception about patient safety culture dimensions, the study found statistical significance between age and patient safety culture dimension. It is recorded that Nurses between the ages of 51 and 62 were more aware of patient safety culture and had a stronger perception of it than younger nurses in the age brackets of 21 to 30, 31 to 40, and 41-50. This suggests that senior nurses have a better understanding of the many aspects of patient safety culture. It defies Akologo et al (2019)'s findings, which revealed that age had no statistically significant impact on perceptions of several patient safety aspects. This shows that the age of the nurses in their study had no bearing on their perceptions of the various patient safety characteristics.



The report also found statistical significance between gender on one of the patient safety culture dimensions thus; Overall Perceptions of Patient Safety dimension ($p=.014$). In a study by Akologo et al., Collaborating the works of (Stoetet al., 2013; Szameitat et al., 2015). They discovered a link between gender and the various characteristics of patient safety culture. In terms of gender, female nurses were more likely than their male counterparts to have a positive attitude toward patient safety. Females are thought to be more multitasking than males. Females are multitaskers in nursing, according to Downey (2013), and are sometimes considered to be the brightest. Female nurses are more aware of their surroundings due to their proclivity to perform multiple jobs at once.



6. CONCLUSIONS

Assessments of safety culture can empower hospital personnel and assist them in developing quality and safety improvement plans to create safer settings. Nurses are advantageously placed at the center of patient safety promotion, and their closeness to patients makes them the safety promoters. The purpose of this study was to assess nurses' perceptions of patient safety culture in the Emergency and Critical Care Services of CHUA Maternal and Child Departments, as well as to identify vulnerabilities, training needs, or intervention in patient safety culture, and appropriate corrective actions aimed at improving the quality of care provided by nurses in these areas.

This research employed the Patient Safety Culture Model. The model suggests that management (allowing safety practices) and operational staff (enacting safety practices) activities are likely to influence patient safety outcomes, and that these outcomes can serve as a pedagogical method. A quantitative cross-sectional design was used to collect data from 84 participants. The data was analyzed using IBM SPSS, version 28.0.0.0.

Thus, and according to the results obtained in the present investigation, we reach the following conclusions:

According to the results, we consider that we have achieved Objective 1

Examining patient safety culture is the first step toward improving patient safety results as indicated in objective number one of this study. After a careful choice of what we consider the assessment instrument that best suits the proposed objectives, we were able to evaluate the central concept of this study in the selected population. The findings of this study reveal quiet



unsatisfactory patient safety culture as clearly indicated in the overall average positive score of 49.4% which is below the benchmark of AHRQ's 75%.

According to the results, we consider that we have achieved Objective 2

Data analysis allowed us to identify strengths, vulnerabilities and opportunities for improvement as indicated by the various average positive scores in the dimensions.

The results of this study show a wide range of favorable responses to allowing safety measures. Openness to communication saw the highest of positive average score (51.1%) under the enabling safety measures, followed by feedback about errors (50%), management expectations and action (38.7%), management support (31.7%), non-punitive response to errors (27.3%) and staffing (25.9%) were the least developed enabling patient safety events and require improvement.

Under this study, teamwork within units was found to be the most important factor in instituting safety procedures, with a positive percentage response score of 87.8%. Handover and succession of patient care (66.9%) came next, followed by cross-unit collaboration (48.5%).

Applying the guidelines from the AHRQ (Sorra & Nieva, 2004), only teamwork within units (87.8%) has a positive percentage score greater than 75% for this reason it is considered the strength (fortress) in the study. Organizational learning (68.6%), Overall perception of patient safety culture (56.2%), Communication openness (51.1%) and Handoffs and transition had scores between 50% and 75% which has no specific guidelines from AHRQ, however, they are considered in this study acceptable but needs improvement. The rest of the dimensions are either less than or equal to 50% of which according to AHRQ's benchmark, are considered unsatisfactory and need improvement as well.



Nursing professionals had a generally negative attitude about reporting unpleasant incidents. This was obvious in the fact that 59.2 percent of the nurses had not reported adverse occurrences or were confused about what to report. As a reminder, a greater percentage of nurses (83.3%) had never carried out or submitted an adverse event form in the previous year.

In terms of overall perception about patient safety however, majority of nurses (56.2%) believe patient under their care are safe. This is coupled with 50% of nurses scoring the overall patient safety grade in the hospital as very good, with 46.4% considering it as acceptable.

According to the results, we consider that we have achieved Objective 3

Results of this study indicate that age, gender, level of academic qualification and duration of practice as a professional nurse are sociodemographic variables of respondents that have significant statistical association with various patient safety culture dimensions.

Examining patient safety culture, according to this research, is very vital in improving patient safety outcomes. The patient safety culture model was also shown to be a useful tool in analyzing patient safety culture among hospital nurses in this study.

6.1. RECOMMENDATIONS AND NURSING PRACTICE.

The lowest-rated safety procedures, according to the current survey, are non-punitive responses to errors and open communication. This suggests that, in the aftermath of negative occurrences, there is a blame and punishment culture. It could also indicate that nurses are hesitant to speak up about patient safety issues. This requires a policy guideline for health facilities to create a “stop blaming”, non-punitive work environment, open to change, dialogue and creativity in providing safe nursing care.



The positive score for management support and managers' expectations in relation to patient safety were not encouraging as well. It is only when managers expect and support patient safety at the managerial level of the hospital that the issue of patient safety can grow exponentially.

Likewise, one of the weakest cited safety behaviors by nurses in this study was staffing level. This indicates that the hospital's nursing staff is insufficient to deal with safety-related issues efficiently. As a result, nurses are more likely to be overworked, increased vulnerability to making mistakes. Hence, rigorous recruitment of qualified and experience nursing staff is advised.

The overall average percentage score is 49.4% which is below the benchmark of AHRQ's average positive response rate of 75% indicating that issues of patient safety is not considered a high priority, or that the best strategies to make it visible have not yet been found. Hospital administration should expand the emphasis given to patient safety issues the necessary attention it deserves.

Although 66.7% of nurses indicated that they have ever attended patient safety training, overwhelming majority of them (97.6%) still express interest in undergoing patient safety training at least once in a year as 52.4% of the nurses see this as very important. Once there is the desire for training, manage can take advantage of that and organize the needed resources for capacity building with regards to patient safety.

6.2. STUDY LIMITATIONS

Due to time constraints, the researcher admits that patient safety outcome indicators such as medication errors, injection abscesses, falls from beds, wound infections, and transfusion errors, leaderships styles and their relationship or effect on patient safety culture were not directly



evaluated nor was a detailed analysis of the relationship between other sociodemographic of the respondents and the various patient safety culture dimensions done. As a result, establishing a direct link between patient safety practices and individual reported adverse events has been difficult. Using a standardized instrument to collect data from nurses although widely used and acceptable, also limited the nurses' ability to freely share their opinions on patient safety. To acquire an in-depth assessment of patient safety in the hospital, a mixed method approach would be required in subsequent patient safety culture assessment.

Language barrier was another significant limitation in this study as it was conducted in Portugal of which the lead researcher does not understand Portuguese.



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CONSENTIMENTO INFORMADO (Informed Consent)

Exmo. Senhor(a) Enfermeiro(a):

O meu nome é Jebuni Fuseini Karim, sou enfermeiro, atualmente a realizar o Mestrado Erasmus Mundus em Enfermagem de Emergência e Cuidados Críticos ministrado em parceria pela Universidade de Oviedo em Espanha, pela Universidade de Edimburgo, pela Escola Superior de Saúde do Instituto Politécnico de Santarém e pela Escola Superior de Saúde da Universidade do Algarve. Este trabalho é feito sob a orientação das Professoras Emilia Costa (eicosta@ualg.pt) e Filomena Matos (fmatos@ualg.pt) da Escola Superior de Saúde da Universidade do Algarve e os Enfermeiros José António Neutel (Urgência de Pediatria - Faro) e José Francisco Nascimento (Bloco de partos – Portimão)

Este projeto de investigação intitula-se: PERCEÇÃO DOS ENFERMEIROS SOBRE A CULTURA DE SEGURANÇA DO PACIENTE EM SERVIÇOS DE EMERGÊNCIA E CUIDADOS INTENSIVOS DO DEPARTAMENTO MATERNO-INFANTIL DO CENTRO HOSPITALAR UNIVERSITÁRIO DO ALGARVE (CHUA). É um estudo transversal, descritivo e correlacional, de abordagem quantitativa, aplicado nos serviços de Emergência e Cuidados Intensivos do Departamento Materno-Infantil do CHUA. Temos como objetivos: 1. Avaliar a perceção dos enfermeiros sobre a cultura de segurança do paciente nos serviços de emergência e cuidados críticos do Departamento Materno-Infantil do CHUA; 2. Identificar vulnerabilidades, necessidades de formação ou intervenção na área da cultura de segurança do paciente e respetivas ações corretivas visando o incremento da qualidade dos cuidados, prestados pelos enfermeiros nestas áreas de atuação.

Embora conscientes que a participação nesta pesquisa não comporta para os intervenientes inconvenientes ou benefícios a curto prazo, consideramos que poderá fornecer informações relevantes sobre a Cultura de Segurança do Doente nos serviços estudados, podendo permitir o desenvolvimento de estratégias intervenção no sentido de incrementar a qualidade dos cuidados prestados.

Chamamos a atenção que só deve responder uma vez a este questionário.

Declaramos assim que:

1. Os propósitos deste estudo são puramente científicos, os seus resultados contribuirão para uma melhor compreensão da Cultura de Segurança do Paciente nos serviços estudados. O estudo levar-se-á a cabo em conformidade com a Declaração de Helsínquia e Convenção de Oviedo, que estabelecem critérios éticos internacionais no domínio da investigação com pessoas.
2. A participação no estudo é completamente voluntária e qualquer participante o pode abandonar em qualquer momento, não necessitando de dar explicações.
3. De acordo com a Lei nº 58/2019 de 8 de agosto relativa à execução, na ordem jurídica nacional, do Regulamento Geral de Proteção de Dados, toda a informação recolhida neste estudo é confidencial e não se utilizará para outros fins que não os do estudo e divulgação dos seus resultados.
4. Se necessitar informação adicional pode contactar-nos pessoalmente, para as orientadoras deste projeto, a Professora Emilia Costa, pelo telefone 918851149 ou por correio eletrónico eicosta@ualg.pt ou Professora Filomena Matos fmatos@ualg.pt.

Após a análise dos dados, os serviços terão acesso aos resultados.

Este estudo foi autorizado pelo _____ em _____ para ser desenvolvido neste serviço.”

QUESTIONÁRIO HOSPITALAR SOBRE A CULTURA DE SEGURANÇA DO DOENTE

A segurança do doente é uma preocupação crescente nos Hospitais Portugueses, tal como acontece noutros países da Europa e do resto do mundo. Este questionário pretende avaliar as perceções dos enfermeiros envolvidos na prestação de cuidados de saúde do seu Hospital.

Não existem respostas certas nem erradas. Solicitamos que expresse a sua opinião no momento. Todos os questionários serão tratados com confidencialidade e anonimato.

Para estabelecer um quadro de referência comum, optámos por definir alguns conceitos.

- Um "incidente" é definido por qualquer tipo de erro, acidente ou anomalia resultante, ou não, em danos para o doente.
- A "segurança do doente" é definida como a prestação de cuidados de saúde, livre de qualquer dano.

Instruções

Este questionário pede-lhe que deixe as suas opiniões sobre a política de segurança do doente, erros médicos e relatórios de ocorrências no seu hospital e levará entre 10 a 15 minutos a responder.

Ao preencher este questionário pense no seu Serviço como sendo a área de trabalho, departamento ou área do hospital, onde passa a maior parte do tempo a trabalhar ou onde presta a maioria dos seus cuidados.

O SEU SERVIÇO – A

Indique, por favor, se concorda ou discorda com as seguintes afirmações acerca do **seu Serviço**. Utilize para isso a escala indicada.

①	②	③	④	⑤
Discordo fortemente	Discordo	Não concordo nem discordo	Concordo	Concordo fortemente

1. Neste Serviço/unidade os profissionais entreadjudam-se	①	②	③	④	⑤
2. Existem meios humanos para corresponder ao trabalho que é exigido	①	②	③	④	⑤
3. Quando é necessário efetuar uma grande quantidade de trabalho rapidamente, trabalhamos juntos como equipa, para o conseguir fazer	①	②	③	④	⑤
4. Neste Serviço/unidade os profissionais tratam-se com respeito	①	②	③	④	⑤
5. Os profissionais trabalham mais horas, o que pode pôr em causa a segurança do doente	①	②	③	④	⑤
6. Estamos a trabalhar ativamente para uma melhoria da segurança do doente	①	②	③	④	⑤

7. Dispomos de profissionais temporários na prestação de cuidados, o que pode pôr em causa a segurança do doente	①	②	③	④	⑤
8. Os profissionais sentem que os seus erros são utilizados contra eles	①	②	③	④	⑤
9. Aqui, os erros proporcionam mudanças positivas	①	②	③	④	⑤
10. É apenas por sorte que erros mais graves não ocorrem neste Serviço/unidade	①	②	③	④	⑤
11. Quando uma área fica com excesso de trabalho, as outras dão-lhe apoio	①	②	③	④	⑤
12. Quando uma ocorrência é reportada, parece que é a pessoa que está a ser alvo de atenção e não o problema em si	①	②	③	④	⑤
13. Avaliamos a eficácia das alterações que fazemos no sentido de melhorar a segurança do doente	①	②	③	④	⑤
14. Trabalhamos em "modo de crise", tentando fazer muito, demasiado depressa	①	②	③	④	⑤
15. Nunca se sacrifica a segurança do doente, mesmo quando há muito trabalho	①	②	③	④	⑤
16. Os profissionais interrogam-se se os seus erros são registados no seu processo pessoal	①	②	③	④	⑤
17. Neste Serviço/unidade, temos problemas com a segurança do doente	①	②	③	④	⑤
18. Os nossos procedimentos e sistemas são eficazes na prevenção dos erros	①	②	③	④	⑤

O SEU SUPERVISOR/DIRETOR – B

Indique, por favor, se concorda ou discorda com as seguintes afirmações acerca **do seu supervisor/coordenador/diretor** ou pessoa a quem reporta diretamente. Utilize para isso a escala indicada.

①	②	③	④	⑤
Discordo fortemente	Discordo	Não concordo nem discordo	Concordo	Concordo fortemente

1. O seu supervisor/diretor tem uma palavra agradável quando vê um bom desempenho no que respeita aos procedimentos de segurança estabelecidos	①	②	③	④	⑤
2. O seu supervisor/diretor leva seriamente em consideração, as sugestões dos profissionais para melhorar a segurança do doente	①	②	③	④	⑤
3. Sempre que existe pressão, o meu supervisor/diretor quer que trabalhemos mais rapidamente, mesmo que isso nos leve a seguir por alguns atalhos	①	②	③	④	⑤

4. O meu supervisor/diretor revê os problemas que acontecem relacionados com a segurança do doente, repetidamente	①	②	③	④	⑤
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COMUNICAÇÕES – C

Com que frequência acontece este tipo de situações no seu Serviço/unidade de trabalho? Pense no seu Serviço/unidade de trabalho.

①	②	③	④	⑤
Nunca	Raramente	Por vezes	A maioria das vezes	Sempre

1. É-nos fornecido feedback acerca das mudanças a efetuar, baseadas nos relatórios de ocorrências.	①	②	③	④	⑤
2. Os profissionais falarão livremente se verificarem que algo afeta negativamente os cuidados para com o doente.	①	②	③	④	⑤
3. Somos informados acerca de erros que aconteçam neste Serviço/unidade.	①	②	③	④	⑤
4. Os profissionais sentem-se à vontade para questionar as decisões e ações dos que têm maior autoridade.	①	②	③	④	⑤
5. Neste Serviço/unidade discutimos modos de prevenção de repetição de erros.	①	②	③	④	⑤
6. Os profissionais têm medo de colocar questões quando algo parece não estar certo.	①	②	③	④	⑤

FREQUÊNCIA DOS RELATÓRIOS DE OCORRÊNCIA – D

No seu Serviço/unidade de trabalho quando os erros que se seguem acontecem, com que frequência são reportados?

①	②	③	④	⑤
Nunca	Raramente	Por vezes	A maior parte do tempo	Sempre

1. Quando um erro é cometido, mas é detetado e corrigido antes de afetar o doente, com que frequência é reportado?	①	②	③	④	⑤
2. Quando um erro é cometido, mas não tem perigo potencial para o doente, com que frequência é reportado?	①	②	③	④	⑤

3. Quando um erro é cometido, que poderia causar dano ao doente, mas isso não acontece, com que frequência é reportado? ① ② ③ ④ ⑤

GRAU DE SEGURANÇA DO DOENTE – E

Por favor, atribua ao seu Serviço/unidade de trabalho, neste hospital, um grau sobre a segurança do doente (assinale apenas uma resposta).

Excelente
 Muito Bom
 Aceitável
 Fraco
 Muito fraco

O SEU HOSPITAL – F

Indique, por favor, se concorda ou discorda com as seguintes afirmações acerca do seu hospital.

①	②	③	④	⑤
Discordo fortemente	Discordo	Não concordo nem discordo	Concordo	Concordo fortemente

1. A direção do hospital proporciona um ambiente de trabalho que promove a segurança do doente	①	②	③	④	⑤
2. Os Serviço/unidades do hospital não se coordenam muito bem umas com as outras	①	②	③	④	⑤
3. A situação fica caótica quando se transferem doentes de um Serviço/unidade para outro	①	②	③	④	⑤
4. Existe boa colaboração entre os Serviço/unidades do hospital que necessitam de trabalhar conjuntamente	①	②	③	④	⑤
5. É frequentemente perdida informação importante sobre os cuidados do doente, durante as mudanças de turno	①	②	③	④	⑤
6. É frequentemente desagradável trabalhar com profissionais de outros Serviços/unidades do hospital	①	②	③	④	⑤
7. Ocorrem frequentemente problemas aquando da troca de informação pelos vários Serviços/unidades do hospital	①	②	③	④	⑤

8. As ações da direção do hospital mostram que a segurança do doente é uma prioridade	①	②	③	④	⑤
9. A direção do hospital parece apenas interessada na segurança do doente, quando acontece alguma adversidade	①	②	③	④	⑤
10. Os Serviços/unidades do hospital funcionam bem em conjunto para prestarem os melhores cuidados ao doente	①	②	③	④	⑤
11. As mudanças de turno neste hospital são problemáticas para o doente	①	②	③	④	⑤

NÚMERO DE OCORRÊNCIAS NOTIFICADAS – G

Gestão do risco – notificação de eventos adversos

Nos **últimos 12 meses**, quantos relatórios preencheu e entregou? (Escolha apenas UMA resposta)

Nenhum	<input type="checkbox"/>
1 a 2 relatórios de ocorrência	<input type="checkbox"/>
3 a 5 relatórios de ocorrência	<input type="checkbox"/>
6 a 10 relatórios de ocorrência	<input type="checkbox"/>
11 a 20 relatórios de ocorrência	<input type="checkbox"/>
21 ou mais relatórios de ocorrência	<input type="checkbox"/>

DADOS SOCIODEMOGRÁFICOS E PROFISSIONAIS

Alguma vez tinha respondido a este questionário?

Sim Não Não recorde

Em que serviço trabalha?

Habilitações Académicas:

- Licenciatura
- Pós- Licenciatura
- Mestrado
- Doutoramento

Outro _____

Experiência no serviço/unidade

- < 6 meses 6 a 11 meses 1 a 2 anos 3 a 7 anos
 8 a 12 anos 13 a 20 anos 21 ou mais anos

Experiência na Organização

- < 6 meses 6 a 11 meses 1 a 2 anos 3 a 7 anos
 8 a 12 anos 13 a 20 anos 21 ou mais anos

Idade:

- < 30 anos 30 a 34 anos 35 a 39 anos 40 a 44 anos
 > 45 anos

Gênero:

- feminino masculino

Alguma vez frequentou formação relativa à segurança do paciente?

- Sim Não

Se tivesse oportunidade, frequentaria formação sobre segurança do paciente?

- Sim Não

Em que medida considera importante que os enfermeiros realizem formação/atualização frequente (pelo menos uma vez por ano) na área da segurança do paciente?

①	②	③	④	⑤
Nada importante	Pouco importante	Não tenho opinião	Importante	Muito importante

Gratos pela sua participação!

**APPENDIX II - Authorization from the author of the Portuguese version of the
Hospital Survey on Patient Safety Culture**

10/02/22, 19:00

Gmail - Autorização para utilização do instrumento da Cultura de Segurança do Paciente



Emília Costa <emiliaisabelcosta@gmail.com>

Autorização para utilização do instrumento da Cultura de Segurança do Paciente

Margarida Eiras <margarida.eiras@estesl.ipl.pt>
To: Emília Costa <eicosta@ualg.pt>
Cc: KARIM JEBUNI FUSEINI <a72447@ualg.pt>

Mon, Nov 15, 2021 at 4:50 PM

Boa tarde

Que bom saber de si!
É com todo o gosto que autorizamos a utilização do instrumento.
Vá dando notícias!
Até breve

Melhores cumprimentos,
Margarida Eiras, PhD
margarida.eiras@estesl.ipl.pt

On 15 Nov 2021, at 15:09, Emília Costa <eicosta@ualg.pt> wrote:

Estimada Professora Margarida Eiras,

Como está? E a sua família?

Entro em contacto consigo para lhe pedir autorização para utilizar o instrumento que validou para a nossa população do "the hospital survey on patient safety culture" para ser utilizado por um aluno nosso do mestrado Erasmus Mundus em Enfermagem de Urgência e doente crítico para avaliar a Cultura de Segurança em unidades de emergência e cuidados críticos no departamento de materno-infantil do CHUA.

Antecipadamente grata pela atenção dispensada a este assunto.

Um abraço



Emília Isabel Martins Teixeira da Costa
Full Professor CNM, MSc & PhD - Health Psychology, Algarve University

00351 289800100 | 00351 918851149

Universidade do Algarve, Escola Superior de Saúde, Edifício 1, Campus de Gambelas 8005 - 139 Faro
Ciência ID 191B-0BE8-473B



"The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom." - Isaac Asimov.

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Informação

Número 213/2021

Data 22/12/2021

Serviço Remetente

Despacho superior:

Núcleo de Formação Investigação em Enfermagem – Centro
Formação, Investigação e Conhecimento - Faro

Destinatário

Exma. Enfermeira Diretora do CHUA

Assunto: Pedido de autorização para realização do Estudo *Perceção dos Enfermeiros sobre a cultura de segurança do paciente em serviços de emergência, urgência e cuidados intensivos do departamento materno-infantil do CHUA*

Trata-se de um Trabalho académico conferente do grau de Mestre. Curso de Mestrado *Erasmus Mundus* em Enfermagem de Emergência e Cuidados Críticos-ESSUALG).

Estudante: Karim Jebuni Fuseini, Enfermeiro do Gana.

Orientadoras da Instituição de Ensino: Professora Filomena Matos (Prof.ª Doutora-ESSUALG) e Professora Emília Costa (Prof.ª Doutora-ESSUALG);

Orientadores no CHUA: Enf.º Especialista José Nascimento (Serviço de Urgência de Ginecologia/Obstetrícia-UH de Portimão); Enf.º Especialista José Neutel (Serviço de Urgência/HD de Pediatria-UH de Faro).

Tipo de Estudo: Descritivo correlacional, transversal, de abordagem quantitativa.

Recolha de Dados: 1. A população-alvo são os Enfermeiros dos serviços a seguir indicados; 2. A recolha de dados será através de questionário multidimensional de auto-preenchimento: *hospital survey on patient safety culture*; 3. Análise de dados recorrendo ao SPSS.

Locais: Serviços de Urgência de Ginecologia/Obstetrícia (Faro e Portimão); Serviço de Urgência/HD de Pediatria de Faro; Serviço de Urgência de Pediatria de Portimão; Serviço de Medicina Intensiva Pediátrica e Neonatal- UH de Faro.

Calendário: após autorização, até final de Dezembro de 2021.

Objetivos do Estudo:

- Avaliar a perceção dos enfermeiros sobre a cultura de segurança do paciente nos serviços indicados;
- Identificar vulnerabilidades, necessidades de formação ou intervenção na área da cultura de segurança do paciente e respetivas ações corretivas visando o incremento da qualidade dos cuidados prestados nestas áreas de atuação.

Mais se informa que o projeto tem a concordância das Enfermeiras Gestoras dos vários serviços envolvidos e parecer favorável da Comissão de Ética para a Saúde, reunida de urgência a 22-12-2021 para apreciação desta proposta.

O processo encontra-se instruído com os seguintes documentos:

- 1) Parecer da Comissão de Ética para a Saúde;
- 2) Pedidos de autorização institucional;
- 3) Termos de autorização local (Enfermeiras Gestoras);
- 4) Termos de responsabilidade (Investigador/Orientadores);
- 5) Curriculum Vitae do Investigador Principal;
- 6) Certidão de matrícula;
- 7) Folha de rosto do estudo de investigação;
- 8) Proposta do estudo/Projecto;
- 9) Consentimento informado; Instrumento de recolha de dados;
- 10) Mensagens com os investigadores.

Pede deferimento

Emanuel Mourão
Emanuel Mourão (77038)

Enfermeiro Especialista em ESIP., MSc.
(CFIC-NFIE)

*Autorizada, desde
que nos acarrete
custos para o
CHUA.*

Resente

Mariana Santos
Enfermeira Diretora do Centro
Hospitalar Universitário do Algarve, EPE