Patient Safety Culture and Nursing Shortage among Nurses in Al-Medina Hospitals

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Abstract
This article explores the current relationship of patient safety culture to the nursing shortage in general hospitals in the city of Al-Medina, Saudi Arabia. A mixed methods article was conducted on 335 respondents drawn from 10 government hospitals in the region. We utilized an AHRQ Questionnaire for data collection, and we analyzed the data with statistical approaches such as the mean, percentages, and standard deviation. This analysis established significant relationship between patient safety cultures and nursing shortages. Furthermore, we found a weak and positive relationship between some of patient SC's components and nursing shortages in the hospitals studied; these components included communications ($r=0.144$, $p<0.05$), the frequency of event reports ($r=0.151$, $p<0.05$), and hospital work area ($r=0.329$, $p<0.05$). Most of the nurses who participated in the current article had low incident report rates, with only three to five event reports in one year. However, among the dimensions of patient safety culture, it was found in this article that the nurses had a high level of communication (3.91 ± 0.54/High). The overall grading of patient safety culture was moderate (3.27 ± 0.93) in Al-Medina City. The findings of this investigation will help the Ministry of Health (MOH) decide how to improve patient safety. Moreover, to increase the condition of nursing care provided to the patients and to boost patient safety culture, the healthcare sector must consider the factors and other causes. It is also crucial that nurse leaders learn to maintain and secure patient safety and that nurses learn to frequently report incidents, including any actual errors.
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1. Introduction

Various investigators have explored the impact of the nurse shortage on service delivery in the Kingdom of Saudi Arabia. For example, the McKinsey Global Institute (2015) noted that the existing nurses' workload is high, which leads to burnout, fatigue, and work-related stress. Indeed, turnover among nurses is also high in the United States. Another impact of nurse shortage is compromised patient safety (PS) programs. For example, if a nurse is expected to care for over 100 patients, patient-centered care will become impossible and patients' safety will be jeopardized. Nurse shortages can also cause misdiagnoses because unqualified nurses are often employed to fill the gap. Moreover, there is a shortage in the number of supervisors, which further risks the safety of the patients. However, this investigation will focus on the nurse shortage and its possible effects on patient safety in the KSA.

The term "safety culture" was first introduced after the nuclear explosion at Chernobyl in 1986. The International Atomic Energy Agency (IAEA) presented the term in its initial evaluation after the accident.

Researchers further developed the meaning of the word, and a review of the literature reveals several connotations. The IAEA characterizes one of the two basic concepts of safety culture as "a set of characteristics and attitudes in organizations and individuals classified as priorities, where the safety aspects of nuclear power plants pay attention to their interests" (IAEA, 1991).

A second characterization was adopted by the British Health and Safety Commission (HSC). The organization supported and laid out the characteristics of positive safety cultures, defining the idea as "group values and individual outcomes, attitudes, perceptions, behavioral models, driving skills involvement that determines the skills and style and management of health and safety of the organization" (Safety and Health Committee, 1993). Institutions that possess a good safety culture rely on communication based on mutual trust, which is in turn based on trust in organizational effectiveness. Safety cultures promote preventative actions and a general understanding of the importance of safety (HSC, 1993).

Pidgeon and O'Leary (1994) argued that a "good" security culture possesses and promotes four factors, including "senior management's commitment to security" and policies that are practical, flexible, and that address vague and unclear threats. Moreover, ongoing organizational training of various types, including analysis, supervision, and giving feedback, is also a common strategy discussed by risk management staff. Dedobbeleer (1998) proposed another critical component of SC: the attitude of workers concerning safety. Safety problems can develop if attitudes and perceptions about safety are not recognized and taken into account.

Recent studies have shown that health care human resources are a dominant PS challenge in several countries such as Taiwan, Ethiopia, and the United States (Mekonnen, Mclachlan, Brien, Mekonnen & Abay, 2017; Chen & Li, 2010; Famolaro, Yount, Burns, Flashner& Liu, 2011). Allocating nurses to meet demand while not jeopardizing PS presents major challenges (Jye, Hing, Peter, Bartholomew, & Senok, 2019). In several countries, staffing is not a major concern, particularly when standard operating procedures, policies, and systems on the lack of nurses and nurse workloads are given utmost attention (Sorra, & Nivea, 2004; Bartoníčková et al., 2019). Fatigue can be a consequence of overworked nurses due to nurse shortages, and this can cause errors and compromise PS (Keller, 2009).

PS's relationship with nurse workloads and shortages has been explored comprehensively in other countries. However, there is little paper available regarding this concern in Saudi Arabia. Therefore, it is worth investigating whether Al-Medina hospitals can advance a culture of care of PS, and to what extent the culture is embodied in the hospital system. Furthermore, examining the consequences of the scarcity of nurses on PS care by soliciting the nurses' experiences is the most likely method to capture previous incidents that compromised PS. This way, the identified effects can be addressed for proper action and reflected through the article's recommendations. The researcher brings with him his determination, dedication, and experience to make certain that this undertaking will benefit the nursing profession together with the nursing staff and patients.

The researcher's trepidation for PS as a healthcare provider is one driving force that triggered this article. As observed by the researcher, clinical errors have continued despite the resources invested in PS by health care institutions. For example, there have been cases of medication errors, patient falls, and failure to document interventions. The lack of nurses (as observed by the researcher personally) is an evident factor contributing to these incidents in Saudi hospitals. The number of staff nurses often does not match the proportion of patients under their care. Also, despite the established standard operating procedures and measures, some health care institutions have failed to strictly implement policies. Such lax implementation creates a confusing double standard for PS. These observations and incidents demonstrate the gap that this article aims to fill

2. Aim, Objectives and Paper Question
The aims of this article to determine the patient SC along with the effects of nursing shortage on PS as perceived by the nurses in select Al-Medina hospitals in 2019. The article specifically addresses the following objectives: 1. Determine the overall grading of the patient SC by the nurses in general hospitals of Al-Medina. 2. Determine the relationship between patient safety culture and the nursing shortage.
"Is there relationship between patient safety culture and the nursing shortage in Al-Medina Hospitals"

3. Hypothesis
There is a significant relationship that exists between the patient safety cultures to the nursing shortage in the general hospitals of Al-Medina City* Based on the aforementioned objectives, lone null hypothesis was made: H: There is no significant relationship exists between the patient safety cultures to the nursing shortage in hospitals of Al-Medina city.

4. Significance of the Article
This article aims to provide scientific proof that nurse shortages negatively affect patients' safety, helping policy makers in the quality department and hospital management develop means of ensuring that there are enough nurses in hospitals. It can also help students to identify the effect of nurse shortages and how to address the

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problem.

Clients. Patients will be assured of safe and quality care, which will guarantee patient satisfaction. They will develop confidence and trust in the healthcare sector.

Nurses. Nurses will be able to deliver high-quality, safe nursing care consistently, as the number of patients that they care for will be within the standards of the patient-to-nurse ratio. They will be able to manage their time effectively and efficiently to provide care, compassion, competence, and commitment.

Other Healthcare Professionals. Collaboration with the nurses will become more effective and efficient as the proper healthcare professional-to-patient proportion is achieved. Teamwork will improve, and the team will be able to manage the patients safely.

Hospital Administrators. Administrators can make use of the recommendations of this article to come up with policies to cover the patient-to-nurse proportion. They will be able to adopt measures to address workforce requirements to ensure PS.

Policymakers. This article will help policymakers in the quality department develop means of ensuring that there are enough nurses in hospitals. New policies, standards, regulations, and laws may be drafted, recommended, and implemented to guarantee positive patient outcomes and PS.

Researcher. Through this work, the researcher will gain new knowledge about the variables being studied and contribute to the nursing profession through the output of the article. Furthermore, the researcher will gain expertise in conducting paper studies.

Future Researchers. This article will help students to identify the effect of nurse shortages and how to address the problem. The findings of the article can serve as future paper topics. To fortify the article's findings, a replication of the article may be done by future researchers to cover a wider area and a greater number of participants. A validation may also be performed using a different paper design.

5. Review of Literature

5.1 Patient Safety (PS)

PS is a worldwide issue that requires multiple skills and knowledge areas, including human factors and system design. Numerous theoretical approaches and methods may be used to examine, prevent, and mitigate medical errors. Due to the complexity of job systems and healthcare processes, robust partnerships are necessary to increase PS in the health sciences. These collaborations will improve PS, introducing the program reforms required to strengthen the "work systems and processes" necessary for PS in the health care context (Carayon & Wood, 2010).

5.2 Safety Culture (SC)

Safety culture is a multifaceted subject. The healthcare system and independent health care facilities have described safety culture, polled staff and medical personnel, created performance enhancement strategies for safety results, and built models and resources to direct and assist in the process. Nevertheless, both hospitals and the public still have unanswered questions, such as whether hospitals can provide a safe environment for their patients and people in the community. Questions may also be raised if the changes introduced to guarantee safety cause changes in the community. Several steps can be taken by government officials in order to guarantee a culture of safety. McCarthy and Blumenthal (2006) affirmed that "policymakers could help stimulate a culture of safety by linking regulatory goals to SC expectations, sponsoring collaborations, rewarding safety improvements, better using publicly reported data, encouraging consumer involvement, and supporting paper and education," (Sammer, Lykens, Singh, Mains & Lackan, 2010).

Hansen et al. (2003) suggested that policymakers update the nurse-to-patient proportion guidelines and identify provider functions and accountabilities, particularly care "extenders" such as nurses. Leaders must examine the links between workplace culture, a rapidly changing labor force, and economic and quality achievements (Gelinas & Loh, 2004). Researchers believe that nursing, other health professions, and auxiliary academics should integrate SC values in educational curricula.

5.3 Patient SC Composites

This article's "Hospital Survey on Patient SC" included two queries that solicited participants to assign their "work area or unit" a general rating on "PS" and to provide the frequency of incidents they recorded in the past twelve months. Furthermore, participants were asked to provide a partial contextualization of their personal data, including their work area or unit, their respective positions, their direct patient interaction, and their tenure in their respective work area or unit (Famolaro et al., 2018).

The subsequent items are the dimensions of patient SC: "(a) Communication openness is the degree to which the staff speak freely when they see anything that concerns a patient and feel free to ask more informed questions; (b) Feedback and communication about errors is the extent to which staff are informed of errors that occur, provide feedback on changes, and discuss ways to prevent errors;(c) Frequency of events reported is the

extent to which errors of the following types are reported: (a) errors spotted and remedied before impacting the client; (b) errors with no potential to damage the client; and (c) errors that may harm the client but do not. (d) Handoffs and transitions (e) PS management support is the degree to which the management of the hospital provides a working environment that allows safety of patients and displays that PS is of utmost importance. (f) Non-punitive response to errors is the degree to which employees believe that their errors and incident reports are not against them and that errors are not kept in their personnel file. (g) Organizational Learning — Continuous improvement is the degree to which the errors have contributed to positive changes and the success of the changes is measured. (h) Public expectations of PS are to the degree the processes and systems are good at preventing accidents and PS concerns are missing. (i) the degree that there are adequate staff to manage the workload and working hours, it is reasonable to provide patients with the best possible care. (j) The degree to which supervisors / managers accept staff suggestions for improving PS, applaud staff for pursuing PS protocols and do not ignore PS concerns is the standards and actions of supervisors / managers supporting PS. (k) The extent to which the hospital departments collaborate and communicate with each other in order to provide patients with the best possible care. (l) The degree to which employees support each other, treat others with respect and play as a team (Famolaro et al., 2018)."

6. Nurse Staffing and PS

The diligence of nursing staff at the bedside is vital to their capacity to safeguard PS. It is inevitable that excessively high workloads jeopardize nurses' ability to deliver safe care. Several publications have revealed a correlation between the nurse-to-patient proportion and PS, showing that a lack of staff increases PS-related risks of illness and death. In 2004 in CA, such data led many states to develop legally mandated "minimum nurse-to-patient proportions." In CA, a registered nurse will only be assigned to handle five patients (AHRQ, 2019).

Nurse-to-patient proportions are just one element of the connection between nurse workload and PS. The cumulative workload in nursing is also likely to be related to patient outcomes. A article in 2011 revealed that an increase in client turnover was also linked to an increased risk of death, despite adequate nursing staff. Nurse staffing is an extremely complicated procedure that varies on a shift-by-shift basis and requires intimate collaboration amongst the administration, nurse administrators, and nursing heads. Staffing must account for perception, retention, provision accessibility, and the proficiency mix, among other influences. The application of nursing skills and training can also be related to patient outcomes. One article revealed lower inpatient death rates for different surgical clients with nurses with superior educational attainment. This finding led to recommendations that nurses gain at least a baccalaureate degree. Independently of educational level, the caliber of OJT nurse training can significantly influence clinical outcomes (AHRQ, 2019).

The correlation between nurse-to-patient proportions and client outcomes is likely due to higher workloads and excessive stress and burnout risk among nurses. Failure to provide nursing care—an oversight in which the necessary nursing care essentials are not provided or completed—is somewhat widespread in hospital inpatient units. According to a British investigation, nursing incidents are closely linked with very high numbers of patients assigned to each nurse. Burnout among both nurses and doctors has been consistently linked with risks to PS, and other studies reveal that an increased number of clients per nurse correlates with a high risk of nurse burnout (AHRQ, 2019).

The high-intensity nature of nursing ensures that nurses are at greater risk of making errors when delivering routine care to their clients. The theory of human factors technology suggests that when a person tries to perform a difficult task, such as giving medicine to a sick patient, the working conditions should be as favorable as possible to perform the job. However, predictable factors such as disruptions and equipment defects can interfere with the ability of nurses to execute their duties; a few publications have already established that disruptions are standard in nursing jobs. These disruptions are linked to an increase in errors, particularly in medication administration. Although some disruptions are clearly imperative for clinical care, the connection between disruptions and errors is one example of how shortcomings in nurses' day-to-day workplace are closely related to PC (AHRQ, 2019).

Longer hours and overtime were also linked with an increased risk of error. In a well-known case, an extremely tired nurse committed an error because this nurse had already worked a double shift. This error concluded in a criminal trial of the nurse. Nurses who commit errors are in jeopardy of being punished for those errors. A trend toward thorough documentation is also linked to an increase in self-reported failure. This tends to lead nurses and other medical and paramedical professionals to leave their profession. Nurses are often subjected to intrusive or inappropriate behaviors by the rest of the medical team, particularly the doctors. This type of experience contributes to emotional stress that leads to burnout, as it ruins nurses' mental health and pushes them to quit. Given that the job becomes high-risk with an increased workload, pressures from different sources like negative behaviors from colleagues or supervisors and the mental burden from committing errors create retention issues. A low client proportion is dangerous, particularly when nurses are exposed to other forms of negative stress. In the end, the nurse will feel burnout and resign. In the so-called Swiss cheese model of medical errors,

nurses who commit active errors are predicted to cover up their errors rather than declare them so as to avoid potential damage to themselves (AHRQ, 2019).

7. Nursing Shortage in Saudi Arabia

The shortage of nurses has proved a challenge in Saudi Arabia. The report of the Ministry of Health (2009) stated that the nurse shortage crisis led to a heavy reliance on expatriates. Previous studies have shown that Saudi Arabia recruits foreign nurses of different origins (AlYami and Watson, 2014), demonstrating that Saudi Arabia is very short-handed in nursing staff. The problem with hiring expatriates is that a language barrier is present, affecting the nurses' quality of care. Foreign nurses face a handicap since they cannot establish good communication because they cannot speak the native language of Saudi Arabia (Al-Mahmoud & Mullen, 2013). Several factors may have caused the crisis of the nurse shortage. One factor that contributes to the nursing shortage is the work environment. In Saudi Arabia, working night shifts is considered an undesirable condition in the profession, leading to a high turnover rate (Aboshaiqah, 2016). In addition, the nurse shortage results in a heavier workload and longer hours for the nurses who remain in their job. AlYami and Watson (2014) also noted that nurses are hindered by unpleasant working conditions. Similarly, studies have shown that many nurses were dissatisfied with their workplace, and the supervisors could not meet their needs (Almalki, 2011). These factors all lead to the resignation of nurses, thus contributing to the nurse shortage in the country.

8. Methods

This article utilized a descriptive design supported by Quantitively data. Descriptive paper is employed whenever there is limited information about a certain event (Burns & Grove, 2005; Walker, 2005). The researcher of the article only observes, explains, and records the features of the event; in this type of design, variables are not manipulated to cause effects in the subject being studied. In addition, such studies simply explain the phenomenon under investigation, describe how often it occurs, and classify the data. In other terms, descriptive researchers pose Level I paper questions (Polit, Beck, & Hungler, 2001; Seers & Crichton, 2001; LoBiondo-Wood & Haber, 2002). This article descriptively determines the hospital and personnel features related to patient SC (in all its dimensions), together with perceptions of the effects of nursing shortages on PS among Al-Medina nurses in 2019. Recommendations will be proposed based on the results of the article.

The participants of the present article were the nurses from the 10 Government hospitals in the City Probability sampling methods we used through simple random technique.

To proportionately distribute the sampling, total population of 3,840 requires a sample of size of 350 nurses I use (Sample Size Calculator, confidence interval and confidence level) to get sample size of total population. To proportionately distribute the sampling, please refer to the table below for the sample size for each of the hospital. The intended size of the sample was based on the following: random selection, 50 percent response rate, and $+/-$ 5 percent confidence interval.

9. Analysis

Frequency Distribution and Percentage

Frequency distribution is a statistical proportion displaying how many times a variable occurs for each of its probable values. This was used to present the data on hospitals and personal features. Percentage was also used to go along with the frequency distribution.

Ranking

This technique was used to rank the identified effects of staffing shortages on PS as identified by the nurses.

Standard Deviation

The standard deviation (SD) describes the spread of scores around the mean. This was used to determine the extent to which the hospitals' measures differed from the mean. If the hospitals included in the article resulted in the same measures, then the mean would signify that the measures were flawless and the value of standard deviation was zero. If the hospitals' measures were extremely near to the mean, then the value of SD would be close to zero. Additionally, if the measures were dissimilar from the mean, then the SD would be high. When the distribution of hospital measures is normal and forms a bell-shaped curve ("where most of the measures fall in the middle of the distribution, with fewer measures at the lower and superior ends of the distribution"), the mean, plus or minus the standard deviation, will comprise around 68% of all hospital measures.

10. Limitations

The article utilized random sampling interpretations and descriptive article of a sample population. Random sampling means that nurses from the selected 10 hospitals had equal chances to participate in the article. Because of this design, the results of the article are representative of the entire population of nurses in the general hospitals of Al-Medina City. The article also utilized a descriptive paper design to describe the relationship between the nursing shortage and the patient safety culture without affecting the subjects being studied.

Furthermore, the article only focused on the nurses from the general hospitals in the Al-Medina region. Therefore, the results might not hold for other settings and contexts. Lastly, the sample population of the article was slightly too small to draw conclusions that could represent all nurses in Al-Medina City. Conflicts may arise as well, as the responses of the participants in each item of the survey questionnaire may be subject to bias and personal issues.

11. Findings

This article found that the aspect of communication was the highest compared to the other elements of patient safety, with a mean score of 3.91±0.54. Most nurses reported that they had always been informed whenever modifications occurred based on their event reports. These results indicate that the nurses were well informed of the changes that were happening inside the institutions. However, most reported that they rarely asked questions of those in higher positions. This is due to the fact that there is a huge gap between the hierarchical status of the nurses and the supervisors. This outcome is in agreement with the results of a article conducted in Africa, which found that doctors, as one of the healthcare professionals who are slightly higher in position compared to staff nurses, tend to disobey safety policies with impunity because they have the authority to control their behavior (Aveling et. al 2015). This difference in hierarchy is a possible reason why it is difficult for nurses to question the actions of employees with more authority, as they are afraid that it will compromise their status in the institution.

In terms of the hospital work area, it was found out in the present article that the nurses perceived it as moderate. Most nurses never let the safety of the patients be jeopardized in order to get more work done (3.94±0.98). However, most nurses disagreed that their procedures were good and were designed to prevent future errors (2.60±1.14). The majority of nurses also felt that whenever they made mistakes, it was held against them. This outcome is the same as that of Chegini et al. (2020) and Alqattan (2018), who found that nurses' mistakes would be remembered and used against them in the near future. However, this contrasts with the article conducted by Alrowely and Baker (2019), who found that most of their participants did not feel the same predicament because most of the participants were actively engaged in the improvement of patient safety in their field. The nurses in the present article might have observed and felt that they were in a workplace with an intense and strict atmosphere, making it difficult to forget the mistakes they committed for the fear that it may affect their job. The participants in the present article also agreed that patient safety problems occur in their unit. These areas also seem to be problematic in Bhutan, where several concerns have been identified, such as errors in diagnosis and patient identification and in medical aspects as well (Pelzang & Hutchinson, 2018). These problems in the hospital work area make it clear that it needs improvement and requires urgent attention. This finding suggests that a friendly working environment for the nurses is essential in order enrich the culture of patient safety in the hospital.

Supervision was also seen to be moderate, as shown by the item that says the nurses were encouraged by the supervisors to work faster when in times of pressure. This means that they were given opportunities to take shortcuts in order to get the work done. Nurses also noted that their supervisors overlooked problems that seemed to happen repeatedly, which may affect the patient safety. It is in such cases that the leadership role of supervisors becomes crucial. Competent and reflective leaders contribute to the enhancement of safety culture. They are required to comprehend the flaws that exist in each process (Clarke et al., 2007) that could potentially lead to failures; if this is overlooked, the patients will be put at risk. In essence, a leader should always prioritize creating and maintaining a patient safety culture (Leonard & Frankel, 2012) as they have critical roles to strengthen the quality of care being delivered by the nurses to the patients. For example, in a article conducted in Iran, some nurse leaders did not exhibit commitment to intensifying and maintaining safety culture. Thus, the leaders must take into account the constant supervision and guidance in providing safety culture, as it is one of the key roles of nurse managers (Farokhzadian et al., 2018).

The nurses also perceived the frequency of events as moderate. However, mistakes and errors that could possibly harm the patient often went unreported. The same is true of events that were prevented before they affected the patient. Nurses usually did not report mistakes and errors because they were more worried about the consequences of reporting the error incidents; this could lead to punishment, salary deduction, or termination (Farokhzadian et al., 2018). The present article also reported that there has been a low rate of event reporting, with only three to five events reported over the past 12 months. This weakness in reporting errors also poses a challenge in other countries. For example, in Australia, a article reported that there were some failures to report errors and mistakes committed by doctors and nurses (Kingston et al., 2004). In Kuwait, staff members reported only one to two events in a period over one year (Ghobashi et al., 2014). Low reporting rates may also reflect the fact that nurses do not perceive reports as a way to make changes. As a result, nurses may be reluctant to report. Another reason that may contribute to low reporting is the lack of feedback (Whitaker and Ibrahim, 2016). Nurses might not take reporting as a serious matter since it does not make any difference to them. These findings suggest that nurses must learn to report errors frequently in order to boost patient SC.

Nurses must have a workplace that promotes safe nursing care for the patients. The aspect of hospital environment in this article was also perceived to be moderate, since the nurses expressed that the hospitals cared about and prioritized their patients. However, most agreed that essential patient information was lost during shift changes. This is not a good sign, since vital data about patients that could affect their treatment and medication was being disregarded. Moreover, most nurses reported that the units in the hospital did not coordinate well with each other. This indicates that problems frequently occur whenever the units exchange information with one another. Teamwork culture among units when changing shifts must be strengthened and professionalism may be required to carry out this task (Lee at al., 2016). The findings of the present article indicate that problems occurred whenever nurses' hand off responsibility to other units right after their shift. Therefore, professionalism should be invoked to enhance patient SC. If effective, this transfer of information maintains the continuity of appropriate care and treatment, thereby reinforcing patient safety culture.

Nurses also expressed that there was an inadequate number of staff to manage the workload, as provided by the mean score of 2.59 ± 1.29. This indicates that the studied hospitals are currently facing a shortage of nurses. The workload must be divided among the nurses so that the number of working hours that they complete in a week is at an optimum level. The results showed that 51.6% of the participants in this article worked for 40 to 59 hours per week. This finding alone indicates that the nurses' work exceeds the expected working hours of a typical nurse. The only possible reason for this is a heavy workload assigned to each nurse due to the shortage of staff. Heavy workloads can lead to burnout among nurses, which impacts the type of care being given to the patients.

This article also negated the null hypothesis, which stated that there was no relationship between nursing shortages and patient SC. The present article revealed that there is, in fact, a correlation between nurses shortages and some areas of patient SC. First, the article revealed a weak and positive relationship between nursing shortage and hospital work area ($r=0.329$, $p<0.05$). This is clear evidence that whenever the staff is short-handed in the hospital work area, nurses are unable to create a support system for one another, as they are more preoccupied with heavy workloads such as attending to the patients. This leads to working longer hours than expected. A typical nursing workload is 40 hours per week. However, in this case, most nurses work from 40 to 59 hours per week. This means that nurses in this setting sometimes work overtime, which exceeds the full-time standard work for registered nurses. Previous studies have shown that the longer nurses spend at work, the more errors they commit, endangering the lives of patients (Wu et al., 2013, Rogers et al, 2004). In contrast, a article found that nurses who were working for 35 hours per week exhibited a more positive attitude towards patient safety compared to those who were working for long hours (Elsous et al., 2017). Other studies previously reported that exhausted workers tend to commit mistakes in their work, putting the lives of the patients at risk (Leung et al., 2013, Hamdan et al., 2013, Kamran et al., 2018, Abu-El-Noor et al., 2017). Nurses should avoid such incidents because they greatly affect patient safety culture. This result suggests that the total number of nurses working relates to the number of hours that each nurse works, and that it therefore affects the efficacy of the nurses in delivering care to their patients. This is likely why the hospital work area is correlated weakly with nursing shortage.

Communication was also observed to be weakly correlated with nursing shortage ($r=0.144$, $p<0.05$). Good communication affects the condition and status of the nurses working in the hospital. If good communication is established, nurses will be more informed and open to one another's opinions, thus preventing errors.

There was also a weak and positive relationship between the frequency of reports to nursing shortage ($r=0.151$, $p<0.05$). If more reports are made, then more actual errors are being reported, making the health care institution a more reliable one because patients could be reassured that the nurses do not frequently commit mistakes and that they would receive an optimum quality of care (Wolf and Hughes, 2008). This shows that whenever these negative incidents are reported, employers tend to remove nurses who are less efficient. The sudden removal of inefficient nurses could lead to a nursing shortage. It is only logical that the supervisors would remove less efficient workers, as it may affect the quality of nursing care to the patients. After all, one wrong move by a nurse could prove fatal for a patient. Preventing such incidents is the reason why supervisors need incident reports. This seems to suggest that the supervisors need to rectify the errors of nurses by providing educational trainings in order to avoid career mistakes.

12. Conclusions

Based on the results of the current article, the following conclusions were drawn:
- The nurses from the general hospitals selected in the Al-Medina Region perceived patient safety culture as acceptable.
- The nurses in the article had a high communication rate, and they were well informed about errors.
- Nurses from the selected hospitals had a low incident report rate because of the fear of consequences.
- The nursing shortage weakly correlates with communications, frequency of reported events, and hospital work area

- There was significant relationship between Nursing shortage and Patient Safety in
- al-Medina Hospitals.
- There was impact of nursing shortage on patient safety.

13. Recommendation

On the basis of the results of the article, the following list of recommendations was enumerated to improve the patient safety culture in hospitals:

- Healthcare institutions should foster a friendly environment where nurses can freely express their opinions.
- Good communication should be established among the healthcare units in order to make the handoff as effective as possible.
- The hospitals should add more staff to lessen the workload of each nurse, so that nurses can efficiently carry out their tasks, focus on their patients, and provide a support system to one another.
- Training and other programs should be employed for the staff nurses regarding the crucial role of submitting and reporting actual errors and incidents. Parallel interventions must also be designed for nurse leaders to properly supervise the institution in order to avoid the repetition of mistakes.
- The Future Paper Recommendation to be larger population Including whole Hospitals in the region and anther sitting Include also Healthcare providers.

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