Patient Safety in Selected Healthcare Facilities in Caraga Region: An Aiken Model Approach

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ABSTRACT
This study aimed to determine the nursing organizational factors and patient safety in selected healthcare facilities in the Philippines. It utilized quantitative approach of research specifically descriptive correlational research design. The inclusion criteria of the entire population were composed mainly of 455 nurses employed among the five selected healthcare facilities in Caraga Region, Philippines within a period of 1 year and above offering inpatient and outpatient healthcare services. Results revealed that there was a positive response on organizational factors such as nurse participation in hospital affairs, nursing foundations for quality care, nurse manager leadership, ability and support and collegial nurse-physician relationships. Patient Safety with regards to wok area/unit, supervisor/manager, communications, and frequency of events reported, patient safety grade, hospital and number of events reported were positively performed and practiced. The patient safety practices were directly affected by the organizational factors being tested.

Keywords
Safety; Health Facilities; Aiken Model Approach; Nursing Organization

1. INTRODUCTION

The World Health Organization (WHO) estimated that one in ten patients are being harmed during their hospitalizations in developed countries. Every one hundred patients hospitalized per any given period, among seven developed and ten developing countries will acquire nosocomial infections affecting hundreds of millions of patients worldwide each year [1]. This leads to an increase in health care cost and lost productivity amounting to 17 to 19 billion US dollars annually in the US alone per the ASEAN Patient Safety Congress in 2015. Many countries have recognized the benefits of patient safety improvement. A patient may receive care from different facilities and multiple care providers from different disciplines. Adverse events damage the lives of real people – patients and families – who are affected, harmed or dying because of that unsafe care. Unsafe care also places a large and needless financial burden both on patients and on the health-care systems that treat them [2, 3].

In lieu, Patient Safety has become a global issue and a persistent healthcare challenge for decades. In the Philippines for instance, healthcare facilities has been a place rife with medication errors and hand-off communication errors. These errors serve as a serious danger and health threat to the safety of our patients which are among the most common medical faux pas harming 1.5 million lives per year while costing an estimated ₱ 887 million in additional medical costs which are predominantly preventable. Factors contributing to these errors were identified to be primarily due to professional and organizational factors. No Philippine breakthroughs were freely available with regards to the status of Patient Safety in the country and no mention was made of a possible contribution of data [4].

In order to advance a patient safety haven in response to the WHO Patient Safety movement, the Department of Health has declared an initiative of a National Policy on Patient Safety to ensure that patient safety is institutionalized as a fundamental principle of the health care delivery system (DOH Administrative Order No. 2008-0023). As mandated, the Professional Regulation Commission through the Philippine Board of Nursing has also made the delivery of safe and quality care come as one of the core competencies of the nursing profession. Health-care systems are increasingly complex and every point in the care process contains inherent risk thus several patient safety initiatives were established which we have the Philippine Health Corporation, commonly known as PhilHealth to aid in the process that provides accreditation programs among healthcare facilities enabling seven performance areas with core competencies such as 'Safe Practice and Environment [5].

On the emphasis of patient safety and advancement of healthcare delivery system, the Department of Health (DOH) has tapped several referral centers and hospitals throughout the country to bolster its preparations. It has been prevalent that these DOH stem hospitals were capable of rendering services at par with private hospitals due to PhilHealth Accreditation Program and the Philippine standard ratio of a hospital bed to a population ratio of 1000 patients in a year was addressed to effectively deliver quality patient services throughout the country yet in Caraga region, the average ratio was higher than that of the standard ratio and has ballooned to overcrowding of patients. This even resulted to the scenario that those hallways and improvised hospital beds were utilized to accommodate such surge. Patient census often surpasses the bed capacity of the hospital in addition to limited resources and manpower that were thinly distributed to cover every in-patient workload. However, meeting these standards in Caraga remains a challenge [6].

If the standard ratios have been met with positive organizational support for patient safety processes, nurses in particular are not heavily tasked and a high quality patient safety can be achieved. It is certain that patient safety is a quintessential aim of quality patient care delivery and achieving a high quality of patient safety might push the standards of all healthcare facilities to develop patient safety systems. It will not be possible unless the perceptions of the frontline healthcare providers such as the nurses and the organization are positively directed and supported; this is the main reason why the researcher has a definite focus on nursing organizational factors to shed some light in the attempt to recognize the relationship of identified organizational factors and patient safety to address the mileage of patient care delivery in Caraga region. Significant related studies have demonstrated the significant role of nursing organizational factors that most likely impact patient safety the nurse practice environment [7, 8]. Furthermore, this thesis was made to establish a baseline data on the levels of nurse reported patient safety in Caraga region. This will serve as basis for measuring future interventions and research. The tool used to measure the levels of patient safety was the Hospital Survey on Patient Safety from the Agency for Healthcare Research and Quality [AHRQ]. Several studies [9-12] conducted in various hospitals and institutions outside the country using this tool were reviewed and evaluated. Some of the studies [13] used the tool to gauge differences between pre-intervention and post intervention in areas of patient safety. In searching for literature, it was established that there were limited and/or non-existent studies here in the Philippines on the application of the AHRQ Hospital Survey on Patient Safety, and most definitely no published studies was found involving hospitals of Caraga region. This thesis deemed significant in so far as it can be beneficial because of the society's growing keen interest on patient safety. The connection between the emergence of an evidence-based practice and the enactment of association accreditation standards and regulations, research initiative is much tighter for the implementation of strict patient safety practices. To contribute more fully to the patient safety initiatives, nurses believe that their

voices must be heard to bring issues forward since information on nurse's perspective and contribution to patient safety has been limited to several factors; and so, those who fund research and researchers will find explicit wealth of potential research opportunities on the complexity of patient safety in the locality. Furthermore the thesis will provide a database that would open up for opportunities to initiate changes and promote future interventions on patient safety standards in the region.

This study aimed to determine the nursing organizational factors and patient safety in selected healthcare facilities in Caraga Region. Specifically, it sought to describe the nurse respondent characteristics in terms of age, gender, designation, educational attainment, years of clinical work in the current healthcare facility, years of work in the current work area/unit, the number of working hours per week in the healthcare facility and nurse to patient staffing ratio; describe the organizational factors according to the Aiken Model (Nursing Organization and Outcomes Model) using the Practice Environment Scale of the Nursing Work Index (PES-NWI) and patient safety measured by the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety; correlate the organizational factors to the level of patient safety; and propose programs for patient safety.

2. METHODOLOGY

The study utilized the quantitative approach of research specifically descriptive correlational research design.This design was deemed appropriate because the aim of this study was to build a body of research by describing the association and relationship of nursing organizational factors specifically the nurse staffing levels and nurse practice environment toward patient safety levels across selected healthcare facilities in Caraga Region.

2.1 Participants of the Study

A total of 5 hospitals among the 7 healthcare facilities from Caraga Region were selected randomly. The respondents were registered nurses who were working currently among the selected healthcare facilities in Caraga Region. The inclusion criteria of the entire population were composed mainly of nurses employed among the five selected healthcare facilities in Caraga Region within a period of 1 year and above offering inpatient and outpatient healthcare services. The respondents were chosen through random sampling wherein the respondents were provided with equal opportunity to take part in the investigation. Respondents were employed and currently in service within the healthcare facility and were willing to participate in the investigation. Exclusion criteria did not include nurses who were on leave and on off duty during the data collection period.

2.2 Research Instrument

This questionnaire was composed of 42 items that were divided into subscales to measure 7 patient composite measures as characterized in the last frame by Work area/unit, Supervisor/Manager, Communications, Frequency of Events Reported, Patient Safety Grade, Hospital, Number of Events Reported plus additional background questions. These 42 items used the 5-point Likert response scales of agreement and were grouped according to the patient safety composites that were intended to measure. The survey placed an emphasis on patient safety issues and on error and event reporting [11, 12].

2.3 Data Collection

This study utilized the Nurse Staffing Ratio, Nurse Practice Environment Scale of the Nursing Work Index and Hospital Survey on Patient Safety questionnaires and gathered responses from the nurse respondents among selected health care facilities since it offers the possibility of anonymity, reduced interviewer bias, and is cost effective. The data collection was done in a manner of utmost constraint to enhance objectivity, reduce bias, and facilitate analysis [14].

2.4 Ethical considerations

This study observed cordiality and politeness in asking data from the respondents. Respects to their answers to each item were highly observed and their identity was kept with utmost confidentiality.

2.5 Data Analysis

All data gathered were tallied, encoded and interpreted using frequency distribution, weighted mean and Pearson-Product Moment Correlation. These tools used were based on the objectives of the study. In addition, all data were treated using statistical software, PASW version 18 to further analyse the results of the study using 0.05 alpha levels.

3. RESULT AND DISCUSSION

3.1 Organizational Factors

As presented in Table 1, Nurse Participation in Hospital Affairs Organizational factor indicated that there was an Overall Composite Mean of 2.87 with a verbal interpretation of 'Somewhat Agree' and gave a positive response from the majority population. Particularly, the Chief Nursing Officer [CNO] and Administration (3.03) "A chief nursing officer is equal in power and authority to other top-level hospital executives." Meanwhile the indication for Staff Nurses involved in Governance had a composite weighted mean of 2.07 revealed a verbal interpretation of 'Somewhat Disagree' which gave a negative response on Staff nurses involvement in the internal governance of the hospital (i.e. practice and policy committee), Staff nurses opportunity to participate in policy decisions and opportunity to serve on hospital and nursing committees. Conversely, the Career Development indicator revealed a composite weighted mean of 3.51 which gave a verbal interpretation of 'Strongly Agree' or a high positive response rate from the majority population which meant that "there were opportunities for advancement and the existence of a career development/clinical ladder opportunity".

The results revealed that the nursing administrators consult their nurse subordinates to gather information on their daily problems and procedures adapted in their practices yet staff nurses were not involved with the decision making process and a few number of them were involved in hospital and nursing committees. This might hasten opportunities for advancement, career development/clinical ladder opportunity for the particular pool of nursing staff who were not involved in such committees. Equal opportunity of every nursing staff to voice out their views and perceptions geared toward solutions should be apprehended in every Nursing Managerial meetings and settlements.

There are various types of leaders within a health care organization and in order for process enhancement to be effective, commitment on leadership and action to change and development should be required and engaged at all levels. Important roles should be imparted among all unit leaders and should become aware of the performance gap in their own organization [15].

Table 1 Organizational Factors in terms of Nurse Participation in Hospital Affairs

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
CNO and Administration			
A chief nursing officer is highly visible and accessible to nursing staff.	2.96	Somewhat Agree	3

A chief nursing officer is equal in power and authority to other top-level hospital executives.	2.95	Somewhat Agree	4
Administration that listens and responds to employee concerns.	3.07	Somewhat Agree	2
Nursing administrators consult with staff on daily problems and procedures.	3.12	Somewhat Agree	1
Composite Mean	**3.03**	**Somewhat Agree**	
Staff Nurses Involved in Governance			
Staff nurses are involved in the internal governance of the hospital (i.e. practice and policy committees).	2.06	Somewhat Disagree	3
Opportunity for staff nurses to participate in policy decisions.	2.07	Somewhat Disagree	1.5
Staff nurses have the opportunity to serve on hospital and nursing committees.	2.07	Somewhat Disagree	1.5
Composite Mean	**2.07**	**Somewhat Disagree**	
Career Development			
There are opportunities for advancement.	3.51	Strongly Agree	1.5
Career development / clinical ladder opportunity.	3.51	Strongly Agree	1.5
Composite Mean	**3.51**	**Strongly Agree**	
Over-all Composite	**2.87**	**Somewhat Agree**	

Mean			

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Somewhat Agree; 1.50 – 2.49 = Somewhat Disagree; 1.00 – 1.49 = Strongly Disagree

Table 2 revealed the Organizational Factor in terms of Nursing Foundations for Quality Care which shows an Over-all Composite Mean of 3.39 with a verbal interpretation of Somewhat Agree or a positive response from the majority population. In particular, Competent Nurses (3.28) "Working with nurses who are clinically competent" and a provision of "a preceptor program for newly hired nurses", "active staff development or continuing education programs for nurses" had a higher response rate of 3.50 weighted mean where majority population 'Strongly Agree' on this statement. Moreover, Quality Culture Indicates a composite mean of 3.29 which reveals a verbal interpretation of 'Somewhat Agree' or a positive response on "clear philosophy of nursing that pervades the patient care environment, high standards of nursing care are expected by the administration", there is an existence of "an active quality assurance program and nursing care is based on a nursing rather than medical model". Patient Care Management indicates a Composite Mean of 3.39 with a verbal interpretation of 'Somewhat Agree' or a positive response on the "use of nursing diagnosis, patient care assignments that foster continuity of care, i.e., the same nurse cares for the patient from one day to the next, and written up-to-date care plans for all patients."

The value hospitals place on their people will have a direct correlation to their commitment, confidence and engagement. Enhancing culture and building programs to reinforce these values is critical to driving retention. Hospitals believe that retention is a "key strategic imperative", yet are slow to translate this into a formal strategic plan. Focus on strategies that enhance culture and eliminate those that do not. To strengthen the bottom line, hospitals need to build retention capacity, manage vacancy rates, bolster recruitment initiatives and control labor expenses, thus, breaking through the myopic ways of hiring more staff to Band-Aid the issue or utilizing excessive overtime work which taxes the staff yet diminishes the quality of care and the deterioration of patient safety. Building and retaining a quality workforce is paramount to navigate the shifting paradigm [16].

A sophisticated 2011 study showed that increased patient turnover was also associated with increased mortality risk, even when overall nurse staffing was considered adequate. Determining adequate nurse staffing is a very complex process that changes on a shift-by-shift basis, and requires close coordination between management and nursing based on patient acuity and turnover, availability of support staff and skill mix, and many other factors [17].

According to a 2010 study by researchers at the University of Pennsylvania, 29 percent of nurses in California experienced high burnout, compared with 34 percent of nurses in New Jersey and 36 percent of nurses in Pennsylvania, states without minimum staffing ratios during the period of research. The study also found that 20 percent of nurses in California reported dissatisfaction with their jobs, compared with 26 percent and 29 percent in New Jersey and Pennsylvania. California nurse staffing ratios accompanied a lower likelihood of in-patient death within 30 days of hospital admission than in New Jersey or Pennsylvania. In California, there was also a lower likelihood of death from failing to properly respond to symptoms. California reported 13.9 percent fewer surgical deaths than New Jersey and 10 percent fewer surgical deaths than Pennsylvania [18].

Table 2. Organizational Factors in terms of Nursing Foundations for Quality Care

Indicators	Weighted Mean	Verbal Interpretation	Rank
Competent Nurses			
Working with nurses who are clinically competent.	3.00	Somewhat Agree	3
A preceptor program for newly hired nurses.	3.34	Somewhat Agree	2
Active staff development or continuing education programs for nurses.	3.50	Strongly Agree	1
Composite Mean	**3.28**	**Somewhat Agree**	
Quality Culture			
A clear philosophy of nursing that pervades the patient care environment.	3.00	Somewhat Agree	5
High standards of nursing care are expected by the administration.	3.34	Somewhat Agree	2.5
An active quality assurance program.	3.50	Strongly Agree	1
Nursing care is based on a nursing, rather than medical model.	3.34	Somewhat Agree	2.5
Composite Mean	**3.29**	**Somewhat Agree**	
Patient Care Management			
Use of nursing diagnosis.	3.34	Somewhat Agree	2.5

Patient care assignments that foster continuity of care, i.e., the same nurse cares for the patient from one day to the next.	3.50	Strongly Agree	1
Written up-to-date care plans for all patients.	3.34	Somewhat Agree	2.5
Composite Mean	**3.39**	**Somewhat Agree**	
Over-all Composite Mean	**3.32**	**Somewhat Agree**	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Somewhat Agree; 1.50 – 2.49 = Somewhat Disagree; 1.00 – 1.49 = Strongly Disagree

As depicted in Table 3, Organizational Factors in terms of Nurse Manager, Leadership, Ability and Support revealed that there is an over-all Composite Mean of 3.51 with a verbal interpretation of "Strongly Agree" or a high positive response among the majority population revealing that the Nurse Manager is "a good manager and leader", "backs up the nursing staff in decision making, even if the conflict is with a physician, practices praise and recognition for a job well done." Furthermore the results revealed that the Supervisors "use mistakes as learning opportunities, not criticism" and the "Supervisory staff is highly supportive of nurses".

Nurse Managers who performs, and conducts, performance evaluation of the staff nurses, should take action in identifying and minimizing the potential adverse effects of their resolutions towards patient safety by educating board members and supervisory nurses, senior nurses, and staff nurses about the link between management practices and safety, and highlight patient safety to the same extent as productivity and financial goals in core management planning and reports and in public reports towards stakeholders.

Healthcare administrations should provide nursing leaders with resources that enable them to design the nursing work environment and care processes to reduce errors, avoid unnecessary activities performed by nurses, such as locating and obtaining missing supplies and resources, looking for personnel, completing redundant and unnecessary documentation processes, and compensating for poor communication systems [19, 20].

Table 3. Organizational Factors in terms of Nurse Manager Leadership, Ability and Support

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
Nurse Manager			
The nurse manager is a good manager and leader.	3.51	Strongly Agree	2

The nurse manager backs up the nursing staff indecision making, even if the conflict is with a physician.	3.51	Strongly Agree	2
Praise and recognition for a job well done.	3.51	Strongly Agree	2
Composite Mean	**3.51**	**Strongly Agree**	
Supervisor			
Supervisors use mistakes as learning opportunities, notcriticism.	3.51	Strongly Agree	1.5
A supervisory staff that is supportive of nurses.	3.51	Strongly Agree	1.5
Composite Mean	**3.51**	**Strongly Agree**	
Over-all Composite Mean	**3.51**	**Strongly Agree**	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Somewhat Agree; 1.50 – 2.49 = Somewhat Disagree; 1.00 – 1.49 = Strongly Disagree

Table 4 depicts that Organizational Factors in terms of Collegial Nurse-Physician Relationships indicated an over-all Composite Mean of 3.35 with a verbal interpretation of 'Somewhat Agree' or a positive response from the majority population which reveals that "a lot of teamwork between nurses and physicians exist, Physicians and nurses have good working relationships" and there is a "collaboration (joint practice) between nurses and physicians".

Physicians were perceived—by patients and clinicians—as being the captain of the health care team, with good reason. But, physicians may spend only 30 to 45 minutes a day with even a critically ill hospitalized patient, whereas nurses are a constant presence at the bedside and regularly interact with physicians, pharmacists, families, and all other members of the health care team. Nurses are involved in the provision of health care in every area of the healthcare system: 24 hours a day, 7 days a week.

The presence of nurses with their sound knowledge enables them to play a critical role in patient safety amongst all the members of the health care team by monitoring patients for clinical deterioration, detecting errors and near misses, understanding care processes and weaknesses inherent in some systems, and performing countless other tasks to ensure patients receive high-quality care. Because nurses represent the largest group of hospital employees who deliver patient care, nurse staffing level (e.g. nurse-to-patient ratio) plays a significant role in patient safety outcomes [7].

Patient Safety as featured on the succeeding tables are comprised by seven patient safety composite measures indicated by Work area/unit, Supervisor/Manager, Communications, Frequency of Events Reported, Patient Safety Grade, Hospital, Number of Events Reported.

Table 4. Organizational Factors in terms of Collegial Nurse-Physician Relationships

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
A lot of teamwork between nurses and physicians.	3.35	Somewhat Agree	2
Physicians and nurses havegood working relationships.	3.36	Somewhat Agree	1
Collaboration (jointpractice) between nursesand physicians.	3.34	Somewhat Agree	3
Composite Mean	**3.35**	**Somewhat Agree**	

Legend: 3.50 – 4.00 = Strongly Agree; 2.50 – 3.49 = Somewhat Agree; 1.50 – 2.49 = Somewhat Disagree; 1.00 – 1.49 = Strongly Disagree

3.2 Patients Safety

Table 5 features the Patient safety composite measure in terms of Work Area or Unit which reveals a composite mean of 3.52 with a verbal interpretation of 'Agree' wherein the majority of the population confirmed that they are actively doing things to improve safety. This reveals that the majority of the population is aware of their work area or unit's intervention towards patient safety. Among the composite indicators of Patient Safety as to Work Area or Unit, there were 2 indicators having weighted mean of 3.51 among the majority population and reveal as the least positive response among the indicators which means that "people treat each other with respect and that they had enough staff to handle the workload and in their unit".

Application of effective methods used to facilitate staffing elasticity should give preference to scheduling excess staff and creating cross-trained float pools within the nursing service administration. Furthermore, it is necessary to involve direct-care nursing staff in identifying the causes of nurse staff turnover and develop methods to improve skilled nursing staff retention.

Moreover, healthcare facility nurse leaders should involve direct-care nursing staff in the determination and evaluation of interventions used to determine appropriate unit staffing ratio for each shift and provide for staffing "elasticity" or "slack" within each shift's scheduling to accommodate unpredicted variations in patient volume and insight the resulting workload. Assigning unit nursing staff and senior nurses regulate unit work flow and set standards for unit closures to new patient admissions and transfers as nursing workload and staffing ratio would necessitate [18, 19].

The introduction of evidence-based practice, guidelines, performance measurements and feedback has characterized patient safety initiatives in hospitals during the last decade. Results from evaluations of the interventional efforts on patient safety are inconsistent, and several authors have described a need to better understand how organizational factors contribute to quality of care and patient safety in hospitals [22].

Table 5. Patients Safety as to Work Area/Unit

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
People support one another in this unit	3.51	Agree	13.5
We have enough staff to handle the workload	3.51	Agree	17.5
When a lot of work needs to be done quickly, we work together as a team to get the work done	3.51	Agree	13.5
In this unit, people treat each other with respect	3.51	Agree	17.5
Staff in this unit work within hours that is best for patient care	3.51	Agree	13.5
We are actively doing things to improve patient safety	3.57	Agree	1
We avoid taking agency/temporary staff that is best for patient care	3.51	Agree	13.5
Staff doesn't feel like their mistakes are held against them	3.52	Agree	8
Mistakes have led to positive changes here	3.52	Agree	4.5
It is just by chance that more serious mistakes don't happen around here	3.52	Agree	8
When one area in this unit gets really busy, others help out	3.53	Agree	2
When an event is reported, the problem is being written up not the person	3.52	Agree	3
After we make changes to improve patient safety, we evaluate their effectiveness	3.51	Agree	13.5
We avoid working in "crisis mode" trying	3.52	Agree	8

to do too much, too quickly			
Patient safety is never sacrificed to get more work done	3.52	Agree	4.5
Staff doesn't worry that mistakes they make are kept in their personnel file	3.52	Agree	8
We don't have patient safety problems in this unit	3.51	Agree	13.5
Our procedures and systems are good at preventing errors from happening	3.52	Agree	8
Composite Mean	**3.52**	**Agree**	

Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49= Agree; 2.50 – 3.49 = Neither Agree nor Disagree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Table 6 apparently demonstrated the Patient Safety composite measure as to Supervisor or Manager showed a composite mean of 3.49, the supervisor or manager 'Neither Agrees nor Disagrees' that half of the majority population gave a positive response that whenever pressure builds up, supervisor/manager want them to work faster but remind them to avoid taking shortcuts, and overlooks patient safety problems that happen over and over. Moreover, half of the majority population gave a positive response that their supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures with a weighted mean of 3.44. Furthermore half of the majority population gave a positive response that their Supervisor/Manager seriously considers staff suggestions for improving patient safety comprising the weighted mean of 3.43.

Hospital nurse managers and nurse administrators are accountable for improving the safety and quality of patient care, and one sure way of achieving this is through having a clear understanding of the problems that affects safety and quality. To gather enough data on this matter, hospital managers and administrators must not rely on their perspective alone, rather, they must be aware of the perceptions of those working in the frontline. Furthermore, safety officers being appointed should take responsibility for ensuring the safety of the hospital staff and the patients.

However, if an organizational culture emanating in the workplace is one that imposes punitive damages and harbors a blame culture instead of a just culture, it is less likely that someone will step up for fear of retribution and other sanctions [23].

Table 6. Patients Safety as to Supervisor/Manager

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures	3.44	Neither	3

My supervisor/manager seriously considers staff suggestions for improving patient safety	3.43	Neither	4
Whenever pressure builds up, my supervisor/manager wants us to work faster but reminds us to avoid taking shortcuts	3.55	Agree	1
My supervisor/manager prevents patient safety problems to happen over and over	3.52	Agree	2
Composite Mean	**3.49**	**Neither Agree nor Disagree**	

Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49= Agree; 2.50 – 3.49 = Neither Agree nor Disagree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Based on Table 7 the Patient Safety composite measure as to Communications revealed a composite mean score of 3.35 with a verbal interpretation of 'Neither Agree nor Disagree'. This means that half of the majority population gave a high positive response that they were given feedback about changes being put into place based on event reports. Half of the majority population gave the least positive response towards the staff feeling free to question the decisions or actions of those with more authority and staff are not afraid to ask a question when something does not seem right.

The results revealed that there must be an established events or grievance committee to address immediate problems being brought about by staff nurses in collaboration with the Physicians, Chief Nurse and Nurse Managers. They should facilitate an open communication and a healthy discussion between the concerned personnel.

The IOM [24] reported 'Crossing the quality chasm' has also called for the development of a "culture of safety" among healthcare organizations. A culture of safety plays an important role in the approach towards greater patient safety in healthcare organizations. Organizations with a positive patient safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures [11].

Table 7. Patients Safety as to Communications

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
We are given feedback about changes put into place based on event reports	3.40	Neither	1
Staff will freely speak up if they see something that may negatively affect patient care	3.36	Neither	2
We are informed about errors that happen in this unit	3.34	Neither	4

Staff feel free to question the decisions or actions of those with more authority	3.33	Neither	5.5
In this unit, we discuss ways to prevent errors from happening again	3.35	Neither	3
Staff are afraid to ask questions when something does not seem right	3.33	Neither	5.5
Composite Mean	**3.35**	**Neither Agree nor Disagree**	

Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49= Agree; 2.50 – 3.49 = Neither Agree nor Disagree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Table 8 shows that Patient Safety as to Frequency of Events reported had a composite mean of 3.53 with a verbal interpretation of 'Agree' which means that majority of the population had highly positive response that "it is often reported when a mistake is made, but is already caught and corrected before affecting the patient. This only means that whenever events are being reported, immediate interventions were already done before it could harm the patient, thus, keeping the patient safe from the possible harm.

Understanding organizational behavior in events reporting is foundational to reduce the incidence of adverse events and improve patient safety. Achieving a high level of safety through patient harm prevention is an essential step in improving the quality of care [25]. In order to improve patient safety, it is necessary to identify ''error and violation producing conditions'' within healthcare organizations [24, 26]. High numbers of adverse events are related with organizational factors [27].

Table 8. Patients Safety as to Frequency of Events Reported

Indicators	Weighted Mean	Verbal Interpretation	Rank
It is often reported when a mistake is made, but is caught and corrected before affecting the patient.	3.54	Agree	1
It is often reported when a mistake is made, but has no potential to harm the patient.	3.53	Agree	2.5

It is often reported when a mistake is made that could harm the patient.	3.53	Agree	2.5
Composite Mean	3.53	Agree	

Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49= Agree; 2.50 – 3.49 = Neither Agree nor Disagree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Patient Safety as to Patient Safety Grade as depicted in Table 9 reveals an over-all composite mean of 3.53 with a verbal interpretation of 'Acceptable' or the majority population gave a positive response towards an Acceptable Patient Safety grade on their work area or unit in the hospital.

Patient safety grade among the selected Healthcare facilities in Caraga Region revealed that the overall perceptions of patient safety in the region pervaded that the procedures and systems are good at preventing errors and have less patient safety problems. Staff may freely speak up if they see something that may negatively affect a patient yet, otherwise, they don't feel free to question those with more authority. The staffs were informed about errors acquired during the performance of their practice yet few were given feedback about changes implemented and were able to discuss ways to prevent these errors.

There are various management procedures and systems that are good at preventing errors and prevent patient safety problems. There may be enough staff to handle the workload if the work hours and patient ratio are appropriate to provide the best care for patients. Supervisors/managers consider staff suggestions for improving patient safety, praise staff for following patient safety procedures, and do not overlook patient safety problems. Hospital units cooperate and coordinate with one another to provide the best care for patients. Lastly, the final criterion would include that nursing staff support each other, treat each other with respect, and work together as a team.

Mistakes of the following types should be reported: (1) mistakes caught and corrected before affecting the patient, (2) mistakes with no potential to harm the patient, and (3) mistakes that could harm the patient but do not. Important patient care information is transferred across hospital units and during shift changes. Hospital management should provide a work climate that promotes patient safety and shows that patient safety is a top priority. Staff should feel that their mistakes and event reports will not be held against them and that mistakes are not kept in their personnel file as an offense. Mistakes should lead to positive changes and changes should be evaluated for effectiveness [12].

Table 9. Patients Safety as to Patient Safety Grade

Indicators	**Weighted Mean**	**Verbal Interpretation**
Overall grade on patient safety on work area/unit in the hospital	3.53	Acceptable
Composite Mean	**3.53**	**Acceptable**

Legend: 4.50 – 5.00 = Excellent; 3.50 – 4.49= Very Good; 2.50 – 3.49 = Acceptable; 1.50 – 2.49 = Poor; 1.00 – 1.49 = failing

Table 10 shows that Patient Safety as to Hospital composite measure revealed a composite mean of 3.51 with a verbal interpretation of 'Agree'. This means that the majority population gave a high positive response on "important patient care information is kept during shift

changes" yet the majority population gave the least positive response that "there is good cooperation among hospital units that need to work together" and "it is often pleasant to work with staff from other hospital units."

Many registered nurses are experiencing an increased pace of work and workload brought about by the shortage of nurses, increasing complexity of care, rising patient acuity and the introduction of new technology without proper training and orientation. Present workloads are at times so heavy that nurses believe they are unable to develop therapeutic relationships, make the necessary comprehensive assessments of their patients or seek guidance from nurses and other healthcare professionals. They believe that these factors contribute to error and incidents that have been referred to in the nursing literature as "failure to rescue and refer accordingly". When nurses have the time to watch for problems, identify them early and take action in a timely manner, patients are rescued from complications that may occur in health care settings [7].

Table 10. Patients Safety as to Hospital

Indicators	**Weighted Mean**	**Verbal Interpretation**	**Rank**
Hospital management provides a work climate that promotes patient safety	3.51	Agree	10
Hospital units do not coordinate well with each other	3.40	Agree	11
Things "fall between the cracks" when transferring patients from one unit to another	3.51	Agree	9
There is good cooperation among hospital units that need to work together	3.51	Agree	7.5
Important patient care information is kept during shift changes	3.57	Agree	1
It is often unpleasant to work with staff from other hospital units	3.51	Agree	7.5
Problems often occur in the exchange of information across	3.52	Agree	5.5

hospital units			
The actions of hospital management show that patient safety is a top priority	3.52	Agree	4
Hospital management seems interested in patient safety only after an adverse event happens	3.52	Agree	5.5
Hospital units work well together to provide the best care for patients	3.53	Agree	2
Shift changes are problematic for patients in this hospital	3.52	Agree	3
Composite Mean	**3.51**	**Agree**	

Legend: 4.50 – 5.00 = Strongly Agree; 3.50 – 4.49= Agree; 2.50 – 3.49 = Neither Agree nor Disagree; 1.50 – 2.49 = Disagree; 1.00 – 1.49 = Strongly Disagree

Patient Safety as to Number of Events Reported, as illustrated in Table 11 shows that the majority population of 47.03% had a positive response of reporting 6 to 10 event reports while 1.76% of the total population did not made any events reported in the past 12 months.

The results showed that staff nurses are well aware of the events reporting system in their hospital. There were nursing staff that may have made event reports for the past 12 months knowing that there is a need to address issues immediately yet some may adhere from reporting adverse events if it would deem detrimental to their part.

The goal of a culture of safety is to lessen harm to patients and healthcare providers through both system effectiveness and individual performances [28].

However, certain threats to patient safety remain with errors happening in all aspects of the processes of care. The common obstacles to a safe system include complex and risk-prone systems that produce preventable adverse events; lack of a comprehensive verbal, written, and electronic communication systems; tolerance of stylistic practices and the lack of standard protocols; fear of retribution, job security, embarrassment and legal ramifications which inhibits voluntary reporting of errors; and the lack of ownership for patient safety owing to the decentralized and fragmented nature of the healthcare delivery system [28, 29].

Table 11. Patients Safety as to Number of Events Reported

Indicators	**Frequency**	**Percentage (%)**
6 to 10 event reports	214	47.03
3 to 5 event	211	46.37
1 to 2 event	22	4.84
No event	8	1.76

3.3 Relationship between Organizational Factors and Patients Safety

Table 12 depicts the association of organizational factors and patients safety. It was observed that there were significant relationship on work area and organizational factors since all computed p-values were less than 0.01 alpha level. This meant that a relationship exists and implies that the better are the organizational factors, the better are the patient safety practices.

Conversely, the results suggested that a better nursing work environment is associated with higher levels of patient safety and quality of health care. Better work environments often include ardent nurse participation in hospital affairs, a solid nursing foundation for quality of care, strong nurse leadership, adequate resources, and good working relationships between doctors and nurses.

Table 12. Relationship between Organizational Factors and Patients Safety

Organizational Factors				
Patients Safety in terms of	**Nurse Participation in hospital affairs**	**Nursing Foundations for Quality Care**	**Nurse Manager Leadership, Ability & Support**	**Collegial Nurse-Physician Relationships**
Work Area/Unit	0.595**	0.128**	0.990**	0.570**
Supervisor/Manager	0.261**	0.070	0.360**	0.262**
Communications	0.359**	0.081	0.570**	0.973**
Frequency of Events Reported	0.519**	0.122**	0.922**	0.526**
Patient Safety Grade	0.514**	0.125**	0.912**	0.521**
Hospital	0.322**	0.119*	0.595**	0.341**
Number of Events Reported	-0.340**	-0.084	-0.147**	-0.106*

***. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed)*

Organizational factors are associated with positive patient outcomes and fewer adverse patient events. There are sets of proposition which indicate that favourable nurse practice environments provide nurses with a supportive management, adequate resources, good interdisciplinary relationships, and autonomy in practice that are associated with positive outcomes. These key attributes in the nurse practice environment, support nurses in their

work, enhance the quality of care patients receive, and ultimately lead to superior patient outcomes, including lower mortality [12]. In addition, primary care training has also shown to improve practice perspectives,from treating the acute care to a more comprehensiveand holistic care [30,31].

With regards to supervisor/manager and communications, there were significant relationships observed except on nursing foundation for quality care. In clinical practice, 'Safety Culture' relates to the extent to which organizations prioritize and support improvements in safety. Organizations with a positive safety culture have communication based on mutual trust, shared perceptions on the importance of safety, confidence in the effectiveness of preventive measures, and support for workforce [25].

As to frequency of events reported and patient safety grade, there was also a significant relationship observed because all computed p-values were less than 0.01 alpha levels. In terms of number of events recorded, the computed R-values show weak negative correlation, however, a significant relationship exists. This means that the fewer events recorded, the better the organization practices.

Events reporting and information dissemination on individual healthcare facilities at the level of individual nursing units and healthcare facility aggregate should be disclosed routinely to the public. In consolidation, these provide initiatives to dedicate budgetary resources equal to a defined percentage of finance to support nursing staff in their ongoing acquisition and maintenance of patient safety and the improvement of the nursing organizational factors. These resources should be sufficient for and used to implement policies and practices provided by a well-established governing board on patient safety and practices provided by a well-established governing board on patient safety [26].

4. CONCLUSION

In overall, there was a positive response on organizational factors such as nurse participation in hospital affairs, nursing foundations for quality care, nurse manager leadership, ability and support and collegial nurse-physician relationships. The patient Safety with regards to wok area/unit, supervisor/manager, communications, and frequency of events reported, patient safety grade, hospital and number of events reported were positively performed and practiced. Also, the patient safety practices were directly affected by the organizational factors being tested.

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6. REFERENCES

[1] World Health Organization. 2014. Ebola and Marburg virus disease epidemics: preparedness, alert, control, and evaluation. [Internet]. [cited 16 October 2019]. Available from:http://www.who.int/csr/disease/ebola/PACE_outbreaks_ebola_marburg_en.pdf

[2] World Health Organization. 2013. 10 facts on patient safety. [Internet]. [cited 16 October 2019]. Available from:http://www.who.int/feature/factsfile/patientsafety/en/index.html

[3] Ehsani, J. P., Jackson, T. and Duckett, S.J. 2006. The incidence and cost of adverse events in Victorian hospitals 2003–04. *Medical Journal of Australia*. 184, 11, 551–555.

[4] Ribo, A., Ribo, F., Limjuco, R., Japos, G., Lupo, L., Sagarino, E., et. al. 2014. Achieving Optimal Administration of Medications with a Lean Clinical and Pharmacy Team in a Tertiary Healthcare Institution. Health, Health Education and Environment (B). *National Conference on Multidisciplinary Research Journal.*

[5] Department of Health. 2014. RITM Ready for Ebola. [Internet]. [cited 16 October 2019]. Available from:http://www.healthpromo.doh.gov.ph/ritm-ready-for-ebola-doh/

[6] Department of Health. 2011. Caraga Region Health Profile 2011. Publication Centerfor Health Development-Caraga Region.

[7] Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., et al. 2014. Nurse staffing and education and hospital mortality in nine European countries: A retrospective observational study. *Lancet*. 9931, 1824-1830.

[8] Coetzee, S. K. 2013. A tale of two systems-nurses practice environment, wellbeing, perceived quality of care and patient safety in private and public hospitals in South Africa: A questionnaire survey. *International Journal of Nursing Studies*. 50, 2,162–173.

[9] Ito, S., Seto, K., Kigawa, M., Fujita, S., Hasegawa, T. and Hasegawa, T. 2011. Development and applicability of Hospital Survey on Patient Safety (HSOPS) in Japan.*BMC Health Services Research*. 11, 28.

[10] Hannah, K., Schade, C., Lomely, D., Ruddick, P. andBellamy, G. 2008. Hospital administrative staff vs. nursing staff responses to the AHRQ hospital survey on patient safety culture. [Internet]. [cited 16 October 2019]. Available from:http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/advances-in-patient-safety-2/vol2/Advances-Hannah_23.pdf

[11] Singer, S., Meterko, M., Baker, L., Gaba, D., Falwell, A. and Rosen, A. 2007. Workforce Perceptions of Hospital Safety Culture: Development and Validation of the Patient Safety Climate in Healthcare Organizations Survey. *Health Services Research*. 42, 5, 1999-2021.

[12] Sorra, J.S., Gray, L., Streagle, S., et al. 2016. Hospital Survey on Patient Safety Culture. (Prepared by Westat, under Contract No. HHSA290-2013-00003C). AHRQ Publication No. 15-0049-EF. Rockville, MD: Agency for Healthcare Research and Quality. [Internet]. [cited 16 October 2019]. Available from: http://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/patientsafetyculture/hospital/userguide/hospcult.pdf

[13] Adams-Pizarro, I., Walker, Z. A., Robinson, J., Kelly, S. and Toth, M. 2008. Using the AHRQ Hospital Survey on Patient Safety as an Intervention Tool for Regional Clinical Improvement Collaboratives. In: Henriksen K, Battles JB, Keyes MA, et al., editors. Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 2: Culture and Redesign). Rockville (MD): Agency for Healthcare Research and Quality (US).[Internet]. [cited 16 October 2019]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK43728/

[14] Polit, D. and Beck, C. 2012. Quantitative Research Design. In Nursing Research: Generating and Assessing Evidence for Nursing Practice (9th Ed.). Philadelphia: Wolters Kluwer Health / Lippincott Williams & Wilkins.

[15] Patient Safety Network. 2015. Patient safety. [Internet]. AHRQ PSNet. [cited 16 October 2019]. Available from:http://psnet.ahrq.gov/glossary.aspx#P.

[16] Nursing Solutions Incorporated (NSI). 2016. 2016 National Healthcare Retention and RN Staffing Report. [Internet]. [cited 16 October 2019]. Available from:http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2016.pdf

[17] Agency for Healthcare Research and Quality. 2011. AHRQ's Patient Safety Initiative: building foundations, reducing risk. [Internet]. [cited 16 October 2019]. Available from:http://www.ahrq.gov/qual/pscongrpt/psinisum.htm.

[18] Aiken, L. H., Sermeus, W., Van den Heede, K., Sloane D. M., Busse, R., McKee, M., et al. et al.2012. Patient safety, satisfaction, and quality of hospital care: Cross-sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*. 344, e1717.

[19] Hughes, R. G. 2008. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville (MD): Agency for Healthcare Research and Quality (US).[Internet]. [cited 16 October 2019]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK2671/

[20] Institute of Medicine. 2004. Executive Summary. Keeping Patients Safe:

[21] Institute of Medicine. 2004. Keeping Patients Safe: Transforming the Work Environment of Nurses. Washington, DC: The National Academies.

[22] Rivard, P.E., Elixhauser, A., Christiansen C.L., Shibei, Z. and Rosen, A. K. 2010. Testing the association between patient safety indicators and hospital structural characteristics in VA and nonfederal hospitals. *Med Care Res Rev2014*. 67, 321-41.

[23] Tocco, S., and Blum, A. 2013. Just culture promotes a partnership for patient safety - American Nurse Today. [Internet]. [cited 16 October 2019]. Available from:http://www.americannursetoday.com/just-culture-promotes-a-partnership-for-patient-safety/

[24] Institute of Medicine. 2007. Preventing Medication Errors. Washington, DC: National Academies Press; Quality Chasm Series.

[25] Wachter, R. M. 2008. Understanding Patient Safety. McGraw Hill Medical, New York Chicago San Francisco.

[26] Vincent, C. 2010. Patient Safety. Wiley-Blackwell, BMJ Books, West Sussex.

[27] Smits, M., Zegers, M., Groenewegen, P.P., Timmermans, D. R, Zwaan L, van der Wal, G.and Wagner, C. 2010. Exploring the causes of adverse events in hospitals and potential prevention strategies. *Quality and Safety in Health Care*. 19, 5, 1-7.

[28] Barnsteiner, J. 2011. Teaching the Culture of Safety.*JIN: The Journal of Issues in Nursing*.16, 3, 5.

[29] Ellis, J. and Hartley, C. 2012. Safety Concerns in Healthcare. In Nursing in today's world: Trends, issues, & management (10th ed., p. 377). Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

[30] Hussain, A., Mkpojiogu, E.O.C., Fadzil, N.M., Hassan, N.M. (2017). The UX of amila pregnancy on mobile device. AIP Conference Proceedings, 1891, art. no. 020061.

[31] Ekawati, F. M., Claramita, M., Istiono, W.,Kusnanto, H., &Sutomo, A. H. 2018. The Indonesian general practitioners' perspectives on formal postgraduate training in primary care. *Asia Pacific family medicine*, *17*(1), 10.