

Patient Safety Climate, Burnout, And Safety Outcome Measures Among Nurses in Selected Private Hospitals in Davao City, Philippines

Shaina Kei C. Watanabe¹, Blaise B. Nieve²

¹MA in Nursing, RN; Staff Nurse, Minimally Invasive Surgery Unit, Southern Philippines Medical Center, Davao City, Davao del Sur, Philippines

²PhD in Nursing (cand.), PhD in Education major in Educational Leadership, MA in Nursing, RN, CMSRN, Clinical Nurse II, Adult General Medicine Stepdown Unit, Duke University Hospital, Durham, North Carolina, United States of America

Abstract

Background: Patient harm continues to be an essential concern in healthcare settings. Despite research, education, and collaborative efforts in patient safety, this issue remains a substantial problem and has yet to demonstrate a significant decrease in recent years.

Purpose: Seeing as there is a dearth of available studies on this topic locally, the study intended to determine the relationship between patient safety climate (PSC), burnout, and safety outcome measures (SOM) among nurses employed at private tertiary level in Davao City, Philippines.

Methods: The objective of this descriptive-correlational study was to establish a correlation between SOM, exhaustion, and PSC among nurses employed in private tertiary hospitals in Davao City. The snowball sampling method was utilized to select 197 respondents who met the following requirements: of legal age and currently employed as staff nurses in the study sites. The data were gathered using the Patient Safety Climate in Healthcare Organizations tool, Copenhagen Burnout Inventory, and Hospital Survey on Patient Safety Culture. Mean, standard deviation, Pearson r, and regression analysis were used in the statistical analysis.

Results and Conclusions: The results showed that PSC ($M=3.75$, $SD=0.89$), burnout levels ($M=3.44$, $SD=0.30$), and SOM ($M=3.81$, $SD=1.19$) were high. PSC and SOM were significantly correlated ($p<.001$; $r=.280$), whereas burnout and SOM ($p=.843$; $r=.014$) were not correlated. Patient safety climate ($p<.001$; $\beta=.280$) was a predictor of safety outcome measures.

Implications for Practice: Healthcare organizations are encouraged to cultivate a working environment where patient safety is recognized and prioritized. This will increase the frequency of event reporting, overall perceptions of safety, and patient safety grades.

Keywords: Social Science, Patient Safety Climate, Burnout, Safety Outcome Measures, Descriptive-Correlational, Davao City

1. INTRODUCTION

Patient safety is a fundamental aspect of patient care (Chakravaty et al., 2015, as cited in Ramos & Calidgid, 2018) and is seen as a crucial element of healthcare quality (Nicolaidis & Dimova, 2015, as

cited in Ramos & Calidgid, 2018), as it is considered a prerequisite for strengthening services and making progress toward achieving universal health coverage of high quality (World Health Organization [WHO], 2019). Patient safety is defined as the “act of avoiding, preventing, or ameliorating adverse outcomes or injuries caused in the process of hospital care” (Risk, 1997, as cited in Ramos & Calidgid, 2018). Despite efforts to increase studies, education, and collaborative work, however, harm to patients is still common and has yet to decline (Mueller et al., 2019). Available evidence estimates that in high-income countries, about 1 in 10 patients is harmed while receiving hospital care (WHO, 2019). In low- and middle-income countries, 134 million adverse events occur annually due to unsafe care. It was also noted that patient safety in developing countries is affected by the shortage of financial resources, medical expertise, and advanced information technology, which affects the process of healthcare delivery and leads to harm (Elmontsri et al., 2018). In this regard, developing a positive patient safety climate was identified as a critical component that significantly improves hospital patient safety (Shahabinejad et al., 2020).

Patient safety climate is defined as the measurable components of safety culture from attitudes and perceptions of individuals at a given point in time (Zhou et al., 2015). Patient safety climate has been distinguished from safety culture as culture exists at a higher level of abstraction than climate, and that climate is a manifestation of culture (Reichers & Schneider, 1990, as cited in Alsalem et al., 2018). Thus, patient safety climate reflects the workers' perceptions on the true value of safety in an organization, and, as such, considered as a factor that contributes to the safety outcome measures such as reduction of accidental injuries as well as lower medication errors and 30-day hospital readmission rates (Barbosa et al., 2016; Mascherek & Schwappach, 2017). Moreover, it is a psychological phenomenon associated with environmental and conditional factors subject to the existing circumstances, which guides employees and hospital managers in fulfilling their tasks and in dealing with safety issues (Shahabinejad et al., 2020; Wagner et al., 2019).

There is evidence from several studies that suggest that cultivating a safety climate is positively linked to favorable outcomes such as reduction or prevention of patient safety incidents in the workplace, which leads to fewer treatment errors, lower readmissions, and mortality rates, as well as more excellent error reporting (Mascherek & Schwappach, 2017; Zhou et al., 2018). However, patient safety climate can vary within organizations, and the different perceptions of safety climate which exist among the various professional groups working at a hospital may suggest different aspects to be identified and strengthened (Elguea et al., 2019; Zhou et al., 2018). Previous studies have also revealed that the patient safety climate of certain departments can vary both across and within institutions, which may be due to the pace and complexity of the work performed in different work areas (Zhou et al., 2018). Given the variations in its perception, patient safety climate must be evaluated separately in accordance with the professional status of the individual in question, and efforts to evaluate and improve it should not be limited to interventions at the hospital level but should extend to the department level (Elguea et al., 2019; Zhou et al., 2018).

In addition, it is critical to note that developing a patient safety climate has been negatively linked to nurse burnout – that is, the state of physical and emotional exhaustion that results from long-term involvement in work situations that are emotionally demanding (Khasne et al., 2020) – as studies have suggested that hospitals with more outstanding nurse burnout scores had increased probabilities of adverse events (Chen et al., 2021). Specifically, hospitals with greater nurse burnout scores had increased probabilities of patient fatality, failure to rescue, and prolonged length of stay (Chen et al.,

2021). Such consequences may also extend to lower willingness to lead, suboptimal quality of patient care, lower inpatient satisfaction ratings, and more health care-associated infections (Dyrbye, et al., 2019). Incidentally, the prevalence of burnout among this group has been aggravated by the COVID-19 pandemic (Khasne et al., 2020), with studies reporting moderate to high levels of burnout during this time (Kabunga & Okalo, 2021). Previous studies have linked increased burnout among nurses to factors such as excessive workload, long commutes, inadequate staffing, values conflicts, inadequate rewards, and poor work environment including lack of autonomy and administrative support, and poor relationships among peers (Dyrbye, et al., 2019; De Lima Garcia et al., 2019).

Despite these facts, very few studies have investigated the direct impact of burnout on safety-related outcomes (Chen et al., 2021). Moreover, there is also an urge to expand research on safety outcomes, which is influenced by the patient safety climate (Custo et al., 2019). Besides, effective measurement of outcomes is necessary for improved patient safety (Tinker, 2018).

Because patient safety climate and burnout can affect safety outcomes, measuring and understanding their interrelationship is vital to uplift patient safety in the workplace. This undertaking may help inform efforts to improve patient safety and safety outcomes in hospitals (Mascherek & Schwappach, 2017; De Lima Garcia et al., 2019; Zhou et al., 2018). Measuring an institution's safety climate and understanding its variations allow the identification of strong and weak points in the employees' behavior, and of the most affected areas, which can be helpful for targeting efforts to improve patient safety (Barbosa et al., 2016; Zhou et al., 2018). Current studies rarely provide an in-depth analysis of climate data, and only a few have focused on patient safety climates at the department level (Mascherek & Schwappach, 2017; Zhou et al., 2018). Additionally, studies investigating unit-specific climates have mostly focused on those with higher levels of intrinsic risk (Zhou et al., 2018). Added to this, there is limited extant literature in low-income countries as these phenomena are less studied during the pandemic (Kabunga & Okalo, 2021). There is also a need for more published studies on patient safety in Davao City, Philippines due to the limitedness of the available research on this topic to date. Therefore, with the preceding premises, this study aimed to determine the relationship between patient safety climate, burnout, and safety outcome measures among nurses in private tertiary-level hospitals in Davao City. There is a study conducted by Copino-Castro et al. (2016) which determined the perceived incidence rate and the patient safety attitudes of health care professionals at the Davao Medical School Foundation Hospital (DMSFH), Davao City which revealed that the overall patient safety climate in such private hospital was good. However, among the constructs of safety attitudes surveyed, perceptions of management, which refers to the approval of managerial action, assessed in items such as “the management supports my daily efforts” and “management is doing a good job” was the lowest. In addition, among the constructs of perceived incidence rates surveyed (i.e., accidents, near-misses, and errors), errors were perceived to be the lowest. Overall, their study revealed that the perceived incidence rates were negatively, albeit weakly, correlated with the DMSFH safety climate. Despite these findings, however, the study of Copino-Castro et al. (2016) did not investigate the interrelationship between patient safety climate, burnout, and safety outcome measures, hence the need for this present study. Considering the prevalence of adverse events globally, this study intended to achieve a more expansive view of its associated issues, which may also provide a glance into opportunities for enhancement in the Philippine and in the local setting.

Objectives

This study determined the relationship between patient safety climate, burnout, and safety outcome

measures among nurses in Davao City, Philippines. Specifically, it aimed to answer the following questions:

1. What is the level of patient safety climate of the respondents?
2. What is the level of burnout of the respondents?
3. What is the level of safety outcome measures in terms of frequency of event reporting, overall perceptions of safety, and patient safety grade?
4. Is there a significant relationship between:
 - a. patient safety climate and safety outcome measures?
 - b. burnout and safety outcome measures?
5. Do patient safety climate and burnout significantly influence safety outcome measures?

2. MATERIALS AND METHODS

Design and Participants

This study utilized the descriptive-correlational research design. Through snowball sampling, 197 nurses in three operating tertiary-level hospitals in Davao City during the COVID-19 pandemic responded to the online survey. In this sampling, the following criteria were followed: must be 18 years of age and above, must be employed as a staff nurse in one of the chosen hospitals, and must be willing to participate in the study. Those who did not meet the selection criteria were excluded upon screening. Normality testing using a standard probability plot ensured the residuals were normally distributed. The result shows a straight diagonal line, indicating normally distributed data.

Setting

The study was conducted in three private tertiary level hospitals located in Davao City. Hospital A was founded in 1969, and with over 250 bed capacity, it offers state-of-the-art diagnostic, therapeutic, and intensive care facilities. Its medical specialties include cardiovascular medicine, orthopedics, gastroenterology and endocrinology, obstetrics-gynecology, neurology and neurosurgery, ophthalmology, nephrology, digestive and liver diseases, radiology, and radiation oncology. Moreover, Hospital B is a 100-bed capacity hospital established in 2003, with 60 private rooms, 24 beds for the wards, two suite rooms and several semi-private rooms. On the other hand, Hospital C is a specialist hospital with over 200 bed capacity, which offers an extensive scope of medical and surgical services in different fields such as physical medicine, family medicine, neurosciences, orthopedics, internal medicine, pediatrics, obstetrics and gynecology, ophthalmology, general surgery, and rehabilitation.

Measures

The study used three sets of adopted standardized research questionnaires to measure patient safety climate, burnout, and safety outcomes. Patient safety climate was measured using short form of the Patient Safety Climate in Healthcare Organizations (PSCHO) by Benzer et al. (2017). The PSCHO is a 15-item survey tool that comprises 3 broad scales: organizational, which concerns the organization as a whole (Cronbach's $\alpha=.84$); unit, which relates to the conditions in the respondent's immediate work unit (Cronbach's $\alpha=.83$); and interpersonal, which reflects concerns about others' interactions to their mistakes, errors, or questions (Cronbach's $\alpha=.74$) factors. All items under the interpersonal factor subscale were reverse scored. The responses ranged from 1 = Strongly Disagree to 5 = Strongly Agree.

The second part determined the level of burnout using the Copenhagen Burnout Inventory by Kristensen et al. (2005), a recent burnout measure focused on fatigue and exhaustion. It has three factors, namely

personal burnout, work-related burnout, and client-related burnout. The item “Do you have enough energy for family and friends during leisure time?” was scored inversely. The Cronbach's alpha result for each composite ranged from 0.85 to 0.87, indicating high reliability (Kristensen et al., 2005). The responses ranged from 1 = Never to 5 = Always.

The final part of the survey questionnaire determined the level of safety outcome measures in terms of frequency of event reporting, overall perceptions of safety, patient safety grade, as categorized by Sorra et al. (2016) in the Hospital Survey on Patient Safety Culture (HSOPSC). Each composite had acceptable reliability, with Cronbach's alpha results ranging from 0.74 to 0.85 (Alsalem et al., 2018). The items “It is just by chance that more serious mistakes don't happen around here” and “We have patient safety problems in this unit” were scored inversely. The responses ranged from 1 = Never/Strongly Disagree/Failing to 5 = Always/Strongly Agree/Excellent.

Ethical Consideration

The methods undertaken in this study were subjected to review by the Technical Panel of the Master of Arts in Nursing Program of the Davao Doctors College, Inc to ensure its ethical soundness. The researchers sought permission from the Program Chair of the Master of Arts in Nursing to conduct this study. Throughout its course, institutional policies and proceedings of the concerned institutions were strictly observed and complied with. Moreover, before the gathering of data, an informed consent form was given to the selected respondents, which outlined the nature, purpose, possible risks, and benefits of the study. Their participation was purely voluntary, and they were allowed to decline or withdraw from the study at any time.

The potential benefits of participating in the study included the possibility of bringing into realization the experiences of staff nurses with patient safety, which may serve as a reference for self-reflection. As for potential risks, the participants may encounter questions that may bring about discomfort to them. However, the survey questionnaire used in this study served only to collect the necessary data, and no foul, discriminating, or derogatory words were used. Further, the participants' right to freedom from harm and discomfort was also respected during data gathering. All gathered information was kept in a single file accessible only to the researchers.

Procedures

The researchers sent a letter of permission to conduct the study to the Program Chair of the Master of Arts in Nursing of Davao Doctors College, Inc. After the approval, a questionnaire was prepared, which underwent validation by three experts. Subsequently, data gathering was done, and a link to a Google Form file was sent electronically to the study participants. The Google Form file consisted of two main sections: the first section, which presented the electronic informed consent, and the second section, which contained the questionnaire of the study. Each participant had to affix his or her electronic signature in a document or image file in the informed consent section to signify voluntary participation before the participant could answer the survey questionnaire in the second section.

Results were then analyzed using the following statistical tools: Mean and standard deviation, which were used to determine the level of patient safety climate, burnout, and safety outcome measures, as well as the homogeneity and heterogeneity of the participants' responses; Pearson Product Moment Correlation was utilized to determine the significance of the relationship between patient safety climate and safety outcome measures, as well as burnout and safety outcome measures; and Multiple Regression Analysis, which was employed to assess the influence of patient safety climate and burnout on safety

outcome measures. Microsoft Excel, IBM SPSS version 26 and JASP 0.18.3 were used for the data analysis. Conclusions and recommendations were drawn based on the results.

3. RESULTS

Patient Safety Climate

Patient safety climate was measured in terms of organizational, unit, interpersonal, and provision of care factors. As shown in Table 1, the overall patient safety climate was high (M=3.63, SD=0.91). The highest mean score of patient safety climate was seen on organizational factors (M=4.35, SD=0.54). Conversely, the lowest mean score of patient safety climate was seen on interpersonal factors (M=2.52, SD=0.77).

Table 1 Level of Patient Safety Climate

| Indicator | Mean | SD | Description |
|----------------|-------------|-------------|-------------|
| Organizational | 4.30 | 0.13 | Very High |
| Unit | 4.12 | 0.42 | High |
| Interpersonal | 2.52 | 0.77 | Low |
| Overall | 3.75 | 0.89 | High |

Legend: 5.00 - 4.21 – Very High; 4.20 – 3.41 – High; 3.40 - 2.61 – Moderate; 2.60 - 1.81 – Low; 1.80 - 1.00 – Very Low; SD – Standard Deviation

Burnout

Burnout was measured in terms of personal burnout, work-related burnout, and client-related burnout. As shown in Table 2, the overall level of burnout was high (M=3.44, SD= 0.30). The highest mean score of burnout was seen on personal (M=3.50, SD= 0.20). Conversely, the lowest mean score of burnout was seen on work-related burnout (M=3.40, SD= 0.41).

Table 2 Level of Burnout

| Indicator | Mean | SD | Description |
|------------------------|-------------|-------------|-------------|
| Personal Burnout | 3.50 | 0.20 | High |
| Work-Related Burnout | 3.40 | 0.41 | High |
| Client-Related Burnout | 3.43 | 0.26 | High |
| Overall | 3.44 | 0.30 | High |

Legend: 5.00 - 4.21 – Very High; 4.20 – 3.41 – High; 3.40 - 2.61 – Moderate; 2.60 - 1.81 – Low; 1.80 - 1.00 – Very Low; SD – Standard Deviation

Safety outcome measures

Safety outcome measures were measured based on the frequency of event reporting, overall perceptions of safety, patient safety grade, and number of events reported. As shown in Table 3, the overall level of safety outcome measures was high (M=3.88, SD=1.14). The highest mean score of safety outcome measures was seen on patient safety grade (M=4.34, SD=0.70). Conversely, the lowest mean score of safety outcome measures was seen on the frequency of event reporting (M=3.51, SD=1.35).

Table 3 Level of Safety Outcome Measures

| Indicator | Mean | SD | Description |
|-------------------------------|-------------|-------------|-------------|
| Frequency of Event Reporting | 3.51 | 1.35 | High |
| Overall Perceptions of Safety | 4.02 | 0.98 | High |
| Patient Safety Grade | 4.34 | 0.70 | Very High |
| Overall | 3.81 | 1.19 | High |

Legend: 5.00 - 4.21 – Very High; 4.20 – 3.41 – High; 3.40 - 2.61 – Moderate; 2.60 - 1.81 – Low; 1.80 - 1.00 – Very Low; SD – Standard Deviation

Relationship Between Patient Safety Climate and Safety Outcome Measures, and Burnout and Safety Outcome Measures

Table 4 shows the relationship between patient safety climate and burnout to safety outcome measures. Results show a positive relationship between patient safety climate and safety outcome measures ($p < 0.001$, $r = .280$). Specifically, the strength of the correlation between the two variables is weak and directly proportional. In contrast, the results show that burnout is not significantly correlated to safety outcome measures ($p = 0.843$, $r = .014$).

Table 4 Relationship Between Patient Safety Climate and Safety Outcome Measures, and Burnout and Safety Outcome Measures

| Independent Variables | r | p-value | Decision | Remarks |
|------------------------|-------------------------|---------|------------------------|-----------------|
| | Safety Outcome Measures | | | |
| Patient Safety Climate | .280 | <.001 | Reject Ho ¹ | Significant |
| Burnout | .014 | 0.843 | Accept Ho ² | Not significant |

Note: $p < 0.05$ – Significant

Regression Analysis of Patient Safety Climate on Safety Outcome Measures

Table 5 presents the regression analysis results, which show the significant predictors of safety outcome measures. Based on the tabulated data, patient safety climate has a significant direct influence on the safety outcome measures of the respondents ($p < 0.01$, $B = .280$). This finding means that the regression weight for patient safety climate in predicting safety outcome measures significantly differs from zero at the 0.05 level (two-tailed). Therefore, for every unit increase in patient safety climate, there is a corresponding increase in safety outcome measures by .280. Further, the findings were apparent in the regression analysis results, in which 7.8% of the variance of safety outcome measures can be explained by patient safety climate as indicated by the r-square of .078. This finding would mean that 92.2% of the variation can be attributed to other factors besides the patient safety climate.

Table 5 Regression Analysis of Patient Safety Climate on Safety Outcome Measures

| Independent Variables | Safety Outcome Measures | | | | |
|------------------------|-------------------------|-------|-------|---------|-------------|
| | Standard Error | B | t | p-value | Remarks |
| Patient Safety Climate | .068 | 0.280 | 4.069 | <.001 | Significant |

Note: $R^2 = 0.078$ (Patient Safety Climate vs Safety Outcome Measures); $F = 16.559$

4. DISCUSSION

In general, the nurses working in private tertiary hospitals in Davao City at the time of this study perceived that their patient safety climate was high despite conducting the study at the time of the COVID-19 pandemic. This implies an overall positive perception of patient safety among nurses, which could be attributed to the high importance placed on the patient safety climate within these organizations. This finding coincides with the results of Kang et al. (2021) which highlighted the fact that the importance of patient safety climate is recognized in Southeast Asian countries. It also concurs with the findings of Ramos and Calidgid (2018) in their study on patient safety culture among nurses at a tertiary government hospital in the Philippines which revealed that most respondents indicated that the hospital had a very good patient safety grade, with no one perceiving it as deficient. In addition, this finding also agrees with the results of the study of Copino-Castro et al. (2016) which determined the perceived incidence rate and the patient safety attitudes of health care professionals in a private hospital in Davao City which revealed that the overall patient safety climate in such setting was good.

Furthermore, the present study also revealed that, among the indicators of patient safety climate, organizational factors were rated the highest. This result implies that the nurses deemed that the work environment that their senior management has created, which includes the senior management having a clear picture of the risks associated with patient care, the senior management considering patient safety when program changes are discussed, patient safety decisions being made by the most qualified people, adequate resources being provided to provide safe patient care, and the level of patient safety at the facility being perceived as improving, was conducive to the establishing a positive patient safety climate. Several studies have reported this finding by collectively stating that the work environment is among the reported major influencing factors in patient safety climate (Abu-El-Noor et al., 2019; Farokhzadian et al., 2018; Kang et al., 2021). Specifically, mental and emotional settings, professional attrition, working in shifts and weariness, lack of control over complex and risky working conditions, excessive workload, crowded and irregular environment, and insufficient space have an impact on patient safety and quality improvement (Farokhzadian et al., 2018). It was also suggested that varying norms in different hospital units significantly impact attitudes, with nurses working in surgical specialties having much more positive attitudes toward patient safety (Abu-El-Noor et al., 2019).

Conversely, interpersonal factors were rated the lowest indicator on patient safety climate. This result implies that the nurses felt uncomfortable reporting errors and seeking help due to fear of embarrassment from their colleagues or out of fear of disciplinary action. This can be attributed to the resulting feelings of incompetence when committing mistakes. This was supported by Dekker (2013, as cited in Zabari & Southern, 2018), who stated that healthcare professionals are often shamed and blamed for mistakes and poor outcomes, owing to the professional culture of perfectionism in healthcare. This finding may lead to a reluctance to report errors, impeding their learning ability and jeopardizing patient safety (Miles, 2019). In fact, according to Zarea et al. (2018), fear of spreading the news of the error in the hospital and the possible disgrace and shame thereof was one of the most common reasons for nurses not reporting errors. This also coincides with the findings of Ramos and Calidgid (2018) in their study on patient safety culture among nurses at a tertiary government hospital in the Philippines which revealed that nonpunitive response to error was the area that requires improvement. Non-punitive responses to error, alongside issues in handoffs and transitions, patient safety reporting, and staffing, are considered barriers to patient safety culture (Kang et al., 2021).

Furthermore, this study also revealed that the overall burnout level of the respondents was high. Since this study was done at the height of the COVID-19 pandemic, this result may imply that the nurses were exposed to unmanaged and prolonged exhaustion, which could be attributed to intensified stressors due to the pandemic. Specifically, personal-related burnout was rated the highest among the indicators surveyed. This result implies that persistent stress at work has affected the nurses' personal lives, resulting to these nurses feeling tired, physically and emotionally exhausted, worn out, weak and susceptible to illnesses. On the other hand, the indicator with the lowest mean was work-related burnout. Although this was the type of burnout that got the lowest mean, the results show that the respondents still had high levels of work-related burnout. This finding was supported by the study by Aljhani et al. (2021) which concluded that a high frequency of burnout among nurses was present during the COVID-19 pandemic. This phenomenon could be explained by their exposure to specific stressors, such as the torment of difficult decisions, the pain of losing patients and colleagues, and the risk of infection for themselves and their families, resulting in physical and mental exhaustion (Leo et al., 2021). This could be due to significant changes in work organization during the COVID-19 pandemic brought about by facing life-threatening situations, pathogen exposure, and shift overload (Leo et al., 2021), as well as poor work-life balance, as nurses tend to subdue their personal needs to meet work requirements (Gribben & Semple, 2021). The results of Aljhani et al. (2021), however, showed a different finding from this study's results, revealing that burnout scores were higher for personal- and work-related burnout than client-related burnout.

Several studies have demonstrated, notwithstanding the form of burnout, that burnout was prevalent among nurses throughout the COVID-19 pandemic. More specifically, depersonalization was reported by 12.6% of nurses, strong emotional exhaustion was experienced by 34.1%, and low personal accomplishment was encountered by 15.2%. Even among nurses who operate in a particularly demanding setting like palliative care, these levels of burnout are significantly elevated; emotional exhaustion, low personal accomplishment, and depersonalization are prevalent to the extent of 19.5%, 9.3%, and 8.2%, respectively (Parola et al., 2017). An additional meta-analysis (Woo et al., 2020) incorporated data from 49 countries and concluded that 11.23% of nurses experience fatigue symptoms on average. The daily emotions of nurses have been significantly taxed amidst the COVID-19 pandemic due to their status as a high-risk group, their close proximity to patients inflicting the virus, and their apprehension regarding the potential repercussions of the illness. Negative emotions and sentiments expressed by patients, colleagues, and family members have the potential to elicit comparable responses from nurses, thereby impacting their perception of stress and increasing their susceptibility to emotional exhaustion (Joshi & Sharma, 2020).

Furthermore, this present study revealed that the overall safety outcome measures were high. Among the indicators, the patient safety grade received the highest mean. These findings imply that, despite the challenges nurses faced at work at the time of the COVID-19 pandemic, they still perceived that their facilities were safe for the patients and that the practices that their colleagues do support patient safety. This result reflects the findings of Guspianto et al. (2021) in their investigation on the hospital patient safety culture outcomes in Jambi Province in two government hospitals which revealed that the surveyed facilities had good safety outcomes. Several factors such as supervisor expectations and actions and management support, Guspianto et al. (2021) adds, may predict the outcomes of hospital patient safety. Tlili et al. (2021) results, however, contradicts these finding. Results of their study showed that the level of patient safety, as reported by nurses, was only qualified between "poor" and "failing." This may be

linked to the work environment, as it has been shown that nurses reported a favorable grade on patient safety where clinical care environments improved. When environments deteriorated, fewer nurses gave a favorable grade on patient safety (Aiken et al., 2019).

Incidentally, the frequency of event reporting, albeit rated high by the respondents of this study, had the lowest rating among the factors under safety outcome measures in this study. This result implies the frequency of event reporting among nurses surveyed still requires further improvement. Nevertheless, the frequency of event reporting being rated high in this study is comparatively better when compared to the findings of the study of Tlili et al. (2021), which discovered that 86.8% of nurses declared that they did not report any event in the last 12 months (Tlili et al., 2021). It was also explained in the study of Hamed and Konstantinidis (2021) how, despite the high frequency of adverse events experienced by patients and the significant number of errors made by nurses, which is at least one error every month, underreporting of these events remains high. Because of this lack of accountability, there is an increasing concern about the extent of harm among patients, especially in developing countries (Elmonstri et al., 2018). Thus, underreporting of events remains a significant challenge in error monitoring and reduction efforts (Noble & Pronovost, 2010, as cited in Hamed & Konstantinidis, 2021), which should be addressed by enhancing systems instead of focusing on individuals (Elmonstri et al., 2018). These concerns must be recorded, reviewed, and rectified as Jabonete and Concepcion (2016) highlighted in their study of patient safety culture in hospitals in the Philippines using the Manchester Patient Safety Culture Assessment Tool (MaPSCAT) that recording and reviewing safety accidents was essential for the formation of a positive organizational culture.

Moreover, upon determining the correlations between patient safety climate and burnout to safety outcome measures, results showed, on one hand, a significant positive relationship between patient safety climate and safety outcome measures. Specifically, the nature of the correlation between the two variables is directly proportional, which suggests that an increase in patient safety climate is correlated with an increase in safety outcome measures. The regression analysis done in this study also showed that patient safety climate has a significant direct influence on the safety outcome measures of the respondents. This result implies that patient safety climate can increase safety outcome measures. Thus, a strong climate of safety among nurses can enhance an organization's safety-related outcomes. This result concurs with previous studies linking patient safety climate to better safety-related outcomes (Castilho et al., 2020). In addition, various studies have shown that patient safety climate is a significant factor in preventing safety incidents (Mascherek & Schwappach, 2017). Such a result is also aligned with the study of Bisbey et al. (2019), wherein it was stated that a well-developed safety climate would encourage activities that have been shown to improve safety outcomes. Safety climate may also influence knowledge, motivation, and behavior, ultimately impacting safety outcomes (Custo et al., 2019). Such behaviors are manifestations of a safety climate and may include communication, teamwork, incident reporting, and fair rewarding and punishing (Bisbey et al., 2019).

On the other hand, results of this study showed that burnout was not correlated with safety outcome measures. This result differs from the findings of the study of De Lima Garcia et al. (2019), which concluded that burnout and safety outcomes were correlated, and that the nature of the relationship between the two variables was found to be inversely proportional, such that higher levels of burnout were associated with unfavorable safety outcomes. Furthermore, Singh (2019) reported that burnout among nurses has been linked to five self-reported adverse events, such as medication errors, pressure ulcers, falls with injury, hospital-associated urinary tract infections, and central line bloodstream

infections. This result also contradicts numerous studies pointing out that increasing burnout is associated with worsening safety outcomes (Dall'Ora et al., 2020; Eltaybani et al., 2021; De Lima Garcia et al., 2019; Jun et al., 2021). Chen et al. (2021) also reported that a higher level of burnout among nurses was linked to increased patient fatality, failure to rescue, and prolonged length of stay.

Limitations of the Study

Although this study assessed the patient safety climate, burnout, and safety outcome indicators of nurses in Davao City, it is crucial to acknowledge its inherent limitations. Firstly, this study exclusively included nurses employed in private hospitals located in Davao City. Therefore, the outcomes may not accurately reflect the experiences of individuals employed in public healthcare facilities. This study was exclusively conducted in a limited sample of three hospitals out of the several healthcare facilities in Davao City. Furthermore, it is possible that there are variations in the levels of patient safety climate, burnout, and safety outcome measures among different units within these hospitals. This emphasizes the necessity for additional research to specifically examine and define these levels in each individual unit. In addition, the use of the Hospital Survey on Patient Safety Culture in its entirety is suggested if the researcher is intending to gauge the level of patient safety culture of an organization. Also, the questionnaires were self-reported, potentially introducing bias. Additional research endeavors could enhance the existing data by using alternative data collection techniques, such as direct observation or cross-referencing the findings with officially documented patient safety outcomes within the hospital.

5. CONCLUSION

The study presents initial findings that indicate a favorable patient safety climate and high ratings for safety outcome measures among nurses working in Davao City during the peak of the COVID-19 pandemic. Unsurprisingly, their level of burnout was also high. Nevertheless, the results of the correlation analysis indicated that out of all the variables examined in this research, patient safety climate was the only one to exhibit a significant correlation and predict safety outcome measures. There was no observed correlation between burnout and safety outcome measures.

A favorable safety outcome measure appears to be correlated with the nurses' perception of a supportive and safety-focused environment, as evidenced by the high level of patient safety climate. In contrast to initial hypotheses, the study yielded no correlation between burnout and safety outcome measures. This finding implies that there may not be a substantial influence of burnout levels on the frequency of reported events, overall perceptions of safety, or patient safety grades. This suggests that despite the presence of elevated levels of burnout, the safety outcomes assessed in the research remained unaffected. One salient result is that patient safety climate was the sole variable that demonstrated a significant predictive capacity for safety outcome measures. This finding suggests that a favorable environment for patient safety significantly impacts the safety results of nurses in Davao City amidst the COVID-19 crisis. Safety outcome measures might benefit organizations that prioritize enhancing the climate of patient safety.

6. IMPLICATIONS

Assessing the level of PSC should be an ongoing and continuous procedure. The first step should be obtaining the support of the administration and assuming a non-punitive approach to those who make and report medical errors. To tackle the issue of personnel not reporting incidents, it is necessary to identify and eliminate any obstacles that prevent reporting. Healthcare organizations in Davao City and

other areas must acknowledge the need of cultivating a favorable environment for patient safety, particularly under difficult circumstances such as the COVID-19 epidemic. Various evidence indicates that managerial practices and the emphasis on safety have a positive effect on safety outcomes. Therefore, healthcare organizations should prioritize their efforts to improve and sustain a favorable patient safety climate. This may include cultivating a culture that encourages open communication, teamwork, and a collective commitment to patient safety. Implementing measures such as frequent safety training, supportive leadership, and fostering opportunities for staff involvement in safety-related decision-making can help establish a positive safety environment. Moreover, considering the predictive value of patient safety climate, organizations must consider allocating resources towards specific initiatives designed to enhance safety culture. This may entail the implementing evidence-based safety practices, providing resources for continuous education, and incorporating safety considerations into daily workflows.

Moreover, although burnout did not show a direct correlation with safety outcome measures, the high overall burnout level among nurses during the COVID-19 pandemic should not be overlooked. Addressing burnout remains crucial for the overall well-being of healthcare professionals. Organizations should advocate for a comprehensive approach to well-being, recognizing the interdependence between individual well-being and patient safety. Organizations should also implement workload management strategies, promoting work-life balance, providing mental health support, and recognizing and addressing factors contributing to burnout within the organization. Also, although this study did not find a direct link between burnout and safety outcome indicators, it is crucial to further explore the connection between burnout and safety in healthcare environments. The current study may not have properly caught other causes or specific characteristics of burnout.

Furthermore, healthcare organizations should implement systems for consistent regular monitoring and assessment of patient safety climate. Staff views of safety and opportunities for improvement can be assessed by conducting surveys, focus groups, and other feedback channels. Ongoing assessment enables organizations to monitor shifts in safety climate over a period and customize measures to target specific issues. It is equally important to keep in mind that, as various studies have pointed out, the context of patient safety vary from unit to another, and so it is important to recognize that the strategies to enhance patient safety climate may need to be customized based on the unique context of each healthcare organization. What works well in one setting may need adjustments to fit the specific needs and challenges of another.

Finally, it is necessary to establish a continuous quality improvement process that includes ongoing assessment, feedback, and modifications to interventions. This guarantees that the organization maintains its ability to adapt to shifting circumstances and emerging difficulties.

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