ORIGINAL ARTICLE

The Relationship of Nurses' Professional Commitment with Patient Safety and Patient Satisfaction at a Malaysian University Teaching Hospital

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ABSTRACT

Introduction: Professional commitment encompasses affirmation of profession goals and values and a strong sense of profession loyalty. Nurses' professional commitment is important as nurses represent the majority of healthcare professionals. Nurses play an essential role in maintaining patient safety and offering high care quality. This study aimed to examine the relationship of nurses' professional commitment with patient safety and patient satisfaction about care quality in the Malaysian healthcare context. **Methods:** A cross-sectional design with a questionnaire was adopted using pairs of nurse and in-patient from a Malaysian university teaching hospital. The questionnaire measuring nurses' professional commitment from Meyer and Allen's organizational commitment scale was used. The nurses' questionnaire also incorporated the Teng, Chang and Hsu's patient safety scale of six adverse actions to assess the patient safety level among nurses. The questionnaire for patients utilized the Service Quality Scale by Teng, Shyu and Chang to measure the patient satisfaction about care quality. Using the online survey channel to administer the questionnaires, 170 questionnaires were filled by nurses and this was matched by 170 questionnaires being completed by patients. Pearson correlation coefficient was used for the analysis. **Results:** The results show that nurses' professional commitment has a positive relationship with the patient satisfaction (r= 0.225, p= 0.003) while no significant relationship was found between nurses' professional commitment and patient safety. **Conclusion:** Efforts could be made to incorporate elements of professional commitment into nursing quality training programs. Managing patient safety and service quality across ward specialties may require tailoring of service provision aspects in line with different levels of patient care needs and complexity.

Keywords: Nurses' professional commitment, Patient safety, Patient satisfaction, Care quality, Malaysia

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INTRODUCTION

The concept of professional commitment (PC) offers insights to improve the nursing profession. The PC definition includes (a) trust in professional interests and principles, (b) a determination to make substantial contributions on behalf of the profession, and (c) a wish to remain a member of the profession (1). Nurses' PC is a foundational element of career success that complements other professional values, ethics, and principles (2). Nurses who are committed to their profession can advance their careers while contributing to hospitals (3).

Nursing PC is often reflected in the quality care provided to patients and their families (4). Nurses with

high commitment are usually confident in their abilities, deliver optimum work performance, and build trusting relationships with their patients (5). Nurses' PC has been studied widely and linked with many healthcare variables (6, 7). The variables that impact the nurses' PC include their demographic variables such as gender, age and monthly salary (6), and years of experience (7).

Nurses' professional commitment has been found to positively affect the patient safety level among nurses (7). Several studies consider patient safety to be an important factor in the delivery of patient care. The patient safety in healthcare relates to the absence of preventable risk to a patient and the decrease to a reasonable level of risk of unintended harm involved with healthcare (8). As nurses constitute the largest professional group of caregivers, many studies focus on improving patient safety by increasing the nurses' level of knowledge and training them according to professional nursing criteria (9). Nurses have been found to play a significant role in improving patient safety, which in turn decreases the

mortality rate among patients (10). Given the significant role of nurses in influencing patient safety, attention should be devoted towards factors influencing the provision of safe nursing care. Nursing staff shortage resulting in a taxing workload has been associated with an increased risk in safety failures as well as a higher incidence of errors, accidents, injuries and patient mortality rates (11-13).

Complementing and closely correlated with patient safety is the quality of care patients receive. Quality of care has been defined as "doing the right thing, at the right time, in the right way, for the right person, and having the best possible results" (14). The quality of care that patients perceive can affect patient satisfaction, retention and positive word of mouth for hospitals (15). In recent times, awareness and attention towards the quality of care in health organizations have widely increased. This attention towards the quality of care positively influences competition between private health organizations in attracting and retaining patients (16, 17). Besides clinical indicators, the quality of nursing care can be evaluated through patients' satisfaction about care received. Patient satisfaction is defined as "patient's attitudes toward physicians and medical care" (18). More precisely, it is hypothesized that a cumulative index of an individual's evaluative judgements about the standard of medical treatment rendered from doctors, nurses and other related sources represents the individual's level of satisfaction (18).

Few studies have investigated the relationship between the PC of nurses and patient safety. A study conducted among nurses in Jordan showed that the PC of nurses is strongly and positively correlated to the patient safety (7). In congruence with the Jordanian study, it was reported by Teng et al. (2009) that overall patient safety is strongly affected by the PC of Taiwanese nurses (19). Therefore, managers could strive to improve the PC level among nurses to boost and promote patient safety (19). While the patient satisfaction about quality of care has received a lot of research attention, limited studies investigate the relationship between the PC of nurses and patient satisfaction. However, it has been found that nurses' PC influences patient satisfaction in areas of responsiveness and empathy (19). The quality of patient care delivered by nurses, healthcare professionals and multidisciplinary teams is often influenced by six Cs demonstrated by clinicians namely, care, commitment, competence, communication, compassion, and courage (20).

There is no reported study in Malaysia on nurses' PC and its relationship with patient safety and patient satisfaction. The patient safety is considered a vital factor in enhancing the quality of care. Therefore, there is a need to fill this Malaysian nursing research gap. This study aimed to investigate the PC of nurses and its relationship with patient safety and patient satisfaction

in the Malaysian healthcare context. Also, this study investigates the relationship between the study variables and some sociodemographic factors of nurses.

MATERIALS AND METHODS

Study design, sample and settings
A cross-sectional research design was used in this study at Hospital University Sains Malaysia (Hospital USM) in different specialties areas including medical, surgical and obstetrics & gynecology wards. Hospital USM is a teaching hospital giving different researchers the opportunity to study many important issues like a patient safety. Nurses with at least one year of experience were recruited to participate. The minimum cut-off criterion of one year of experience is to allow for participating nurses to have a foundation of adequate skills and experience about patient safety (21). Nurse managers, heads and supervisors were excluded because these staff categories are involved in nursing management hence their participation may lead to informational bias in this study. Patients were recruited based on criteria of being over 18 years and admitted at least 24 hours before the collection of data. These criteria for in-patient participant recruitment took into account the need for sufficient time for patients to form perceptions of nursing care received (22). Excluded in this study were patients admitted to critical care units, those with acute pain, individuals on mechanical ventilators and patients having impaired levels of consciousness affecting their understanding of the questionnaire. A pairwise design was employed for the enrolment of nurses and patients in this study. In line with the pairwise participant recruitment design, an equal number of patients and nurses were selected from the respective hospital wards. All nurses from mentioned wards (medical, surgical and obstetrics & gynecology wards) were selected to achieve the nurses' sample size. Besides, after implementing the inclusion and exclusion criteria to all patients, all names that matched the criteria were entered in a specialty-classified list (stratified random sampling) based on specialties (medical, surgical, obstetrics and gynecology), then the names of patients were chosen from the record every 5 names (systematic random sampling) to ensure a proportionate distribution of the sample across the wards and randomization. This process was repeated daily until achieving the total sample size. In total, 185 pairs of nurses and patients from the identified hospital wards were contacted and asked to participate.

Instruments
In this study, the set of questionnaires used was comprised of several sections, namely, section A (Meyer and Allen's Three Component Model), section B (Teng's Patient Safety Scale) and section C (SERVQUAL questionnaire for patient satisfaction). Prior to questionnaire administration, nurses have been asked to provide information pertaining to their gender, marital status, level of education, age, years of experience, and

specialty (work area) while patients were asked to give information about their gender, age, admission area and the number of times admitted to the hospital.

Through this study, a self-administered questionnaire was used to collect data from nurses. To measure nurses' PC, an 18-item based on Meyer and Allen's (2004) Three-Components Model (TCM) was adopted (23). Meyer and Allen's initial theoretical proposition (1984) consisted of defining two components of commitment: affective commitment and continuance commitment. In addition, the model was expanded by a third component that is the normative commitment (24). The affective component implies an employee's emotional contribution to and affiliation with the organization. Continuance component is the perception of the risks of leaving the organization. However, the component of NC is the sense of moral obligation to remain in the organization (24). The nurses' PC was measured based on a 5-point Likert scale (1 being strongly disagreed to 5 being strongly agreed), as the total score of nurses' PC was represented by the mean (M). However, if the mean has a value of more than 3 considered a high level of the PC while if the mean equal to or below 3 considered a low level of PC. The English version TCM questionnaire is a reliable tool that has been validated and used among nurses in many Malaysian studies (25, 26). The PC scale Cronbach's alpha in this study was 0.814 reflecting acceptable reliability.

This study used the English version of the patient safety scale of Teng et al.'s (2009) to measure patient safety among nurses (19). The scale elicits feedback from nurses about the frequency of six types of adverse events (injuries due to care, patients falling down, nosocomial infections, medication administration errors, incorrect documentation and delayed patient care) experienced and observed either themselves or with their patients during the last year on a 9-point scale (1=twice daily; 2= once daily; 3= twice weekly; 4= once weekly; 5= twice monthly; 6= once monthly; 7= twice yearly; 8= once yearly; and 9= never). The mean (M) and standard deviations (SD) were calculated for the total patient safety scale and each adverse event, as well. The total score of the patient safety scale was the sum of the scores for all six items (the higher score mean indicates a higher level of patient safety). The mean scale score was the total scale score divided by the number of items which is 6. The patient safety was positively worded, while all of its items were negatively worded as they were adverse events, so as these adverse events were low in occurrence then patient safety will be high in its mean score (Fig. 1). The patient safety scale Cronbach's alpha in this study was 0.691 indicating acceptable reliability. To measure patient satisfaction, 20 items self-administer questionnaire based on patient-perceived care quality (SERVQUAL) scale of A. Parasuraman et al. (1985) was used after forward and backward translation into the Malay language (Bahasa Malay) (27). This scale contains
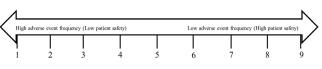

High adverse event frequency (Low patient safety)   Low adverse event frequency (High patient safety)

1   2   3   4   5   6   7   8   9

Figure 1: Patient safety scale measurement

20 items that measure five dimensions of quality care: reliability, responsiveness, assurance, empathy, and tangibles. The reliability dimension refers to the perception of patients for the quality of care provided by nurses. The responsiveness dimension refers to the patient perception that nurses are willing to provide their care on time. The assurance dimension refers to patient perception of the professional knowledge of the nurse. In addition, the empathy dimension indicates the patient's perception of a nurse's concerns, professional communication, and individualized care. Finally, the tangibles dimension refers to patient perception of the physical appearance of nurses and the equipment they used (27). The patient satisfaction scale was measured based on a 5-point Likert scale (1- being strongly disagreed to 5- strongly agreed), as the total level of patient satisfaction was represented by the mean (M). However, if the mean has a value over 3 considered a high level of the patient satisfaction while if the mean equal to or below 3 considered a low level of patient satisfaction. The patient satisfaction scale Cronbach's alpha in this study was 0.938 showing good reliability. A pilot study was done prior to the questionnaire distribution to determine the internal validity of the adopted patient safety and patient satisfaction scales (not used before among Malaysian nurses and patients) using 10% of nurses' and patients' samples (28). The Cronbach's alpha results of the pilot study of patient safety and patient satisfaction scales are 0.75 and 0.94 respectively, indicating that both scales are internally valid and consistent.

Data collection procedure
Data for this study were gathered after gaining permission from the Director of the hospital. In addition, approvals to use all study scales were obtained from the authors by sending and receiving formal emails. Data collection commenced in May 2020 to the beginning of June 2020. After the selection of eligible participants, and due to the COVID 19 pandemic situation, nurses were personally contacted through the WhatsApp phone application and invited to participate using an online survey link. The online survey for nurses contains an introductory cover letter to recruit them to participate in this study. Besides, a Malay-language cover letter was distributed with the patient questionnaire manually with the help of a research team member describing the study's importance and purpose to recruit them. Patients' questionnaire was distributed face to face and collected in the same day of distribution with the help of a research team member.

Ethics considerations
Ethical approval for the study was gained from the

Human Research Ethics Committee (HREC), University Sains Malaysia with the code USM/JEPeM/19120978. In addition, all participants had informed consent for this study. The participants were told that their details would be kept confidential and that their engagement in the study was entirely voluntary, with the option to withdraw at any time.

Statistical analysis

The collected data were analyzed using the Statistical Package of Social Science (SPSS), version 26. Descriptive statistics were used to describe the socio-demographic characteristics of the participants and study variables. Independent-sample t-test and one-way ANOVA test were used to investigate the relationship between study variables (PC and patient safety) and sociodemographic factors of nurses. The Pearson Correlation coefficient was used to determine the relationship between nurses' PC and patient safety, as well as the relationship between nurses' PC and the patient satisfaction. Data was reviewed and filtered for missing data, outliers and wide codes. Also, independency and normality assumptions were tested prior to Pearson correlation, t-test and one-way ANOVA. The significance level of the study was 0.05.

RESULTS

Demographic characteristics

The study obtained a 92% response rate with the completion of 170 pairs of questionnaires. The demographic characteristics of nurses are provided in Table I. The results indicate that 94.1% of nurses are female (n=160). The mean of the nurses' age is 31.7 (SD= 4.3) years with 69.4% (n= 127) of respondents belonging to the 25-34 years group. In addition, the majority of nurses are married (n= 132, 77.6%) and with diploma level education (n=165, 97.1%). Moreover, nurses who participated in this study are distributed over the following wards: medical (n= 50, 29.4%), surgical (n=73, 42.9%) and obstetrics & gynecology (n= 47, 27.6%). The results show that 66 nurses (38.8%) belong to the 6-10 years experience group, followed by the 1-5 years experience group (n= 61, 35.9%), and the more than 10 years experience group represents 25.3% of nurses (n=43).

Out of 170 patients who participated in the study, 64.7% of patients are female (n=110), with a mean age of 41 (SD= 6.1) years ranging from 18-94 years old. Regarding their area of admission (specialty), the patients' ward area is similar to the nurses' ward distribution. Also, the majority of patients belong to the group of fewer than 5 times admitted to the hospital (n= 133, 78.2%). The demographic characteristics of the patients are presented in Table II.

Levels of PC and patient safety among nurses

The results showed that 91% of nurses have a PC mean

Table I: Demographic characteristics of nurses (n= 170)

Demographic characteristics	n	%	M (SD)
Gender			
Male	10	5.9%	
Female	160	94.1%	
Age			
< 25 years	10	6.4%	31.7 (4.3)
25-34 years	109	69.4%	
35-44 years	26	16.6%	
> 44 years	12	7.6%	
Marital Status			
Single (single or divorced)	38	22.4%	
Married	132	77.6%	
Education Level			
Diploma	165	97.1%	
Bachelor	5	2.9%	
Specialty			
Medical	50	29.4%	
Surgical	73	42.9%	
Obstetrics & Gynecology	47	27.6%	
Experience			
1-5 years	61	35.9%	
6-10 years	66	38.8%	
> 10 years	43	25.3%	

M = mean, SD = standard deviation

Table II: Sociodemographic characteristics of patients (n= 170)

Demographic characteristics	n	%	M (SD)
Patient gender			
Male	60	35.3%	
Female	110	64.7%	
Patient Age			
18-39 years	95	55.9%	41(6.1)
40-59 years	44	25.9%	
> 60 years	31	18.2%	
Ward specialty			
Medical	50	29.4%	
Surgical	73	42.9%	
Obstetrics & Gynecology	47	27.6%	
Times admitted to the Hospital			
< 5 times	133	78.2%	
5-10 times	30	17.6%	
> 10 times	7	4.1%	

M = mean, SD = standard deviation

of more than 3 with a total PC mean of 3.54 (high level of PC). Furthermore, the means of PC subdomains (affective PC, continuance PC and normative PC) respectively were 3.52, 3.48, 3.65 (Table III). In addition, the mean and standard deviation for total patient safety were 7.8±0.84 on a 9-point scale (1=twice daily; 2= once daily; 3= twice weekly; 4= once weekly; 5= twice monthly; 6= once monthly; 7= twice yearly; 8= once yearly; and 9= never). The mean (M) for the 6 adverse events determines the level of each event. The lower

the mean score, the higher the frequency of adverse events (low patient safety). The least adverse event frequency related to "Medication administration error" (M=8.29, SD= 1.45) and the most frequently noted was "Nosocomial infection" (M=6.89, SD= 2.13). Table III shows the level of nurses' PC and patient safety.

Table III: Level of nurses PC and patient safety (n= 170)

Variable	M (SD)	Level
PC	3.54 (0.36)	High (91% of nurses has Mean >3)
Affective domain	3.52 (0.51)	High
Continuance domain	3.48 (0.48)	High
Normative domain	3.65 (0.47)	High
Patient Safety	7.80 (0.84)	High
Injuries due to care	7.85 (1.39)	Low
Patient falls	8.06 (1.26)	Low
Nosocomial infections	6.89 (2.13)	Low
Medication administration errors	8.29 (1.45)	Low
Incomplete or incorrect documentations	7.27 (1.75)	Low
Delayed patient care	7.19 (1.94)	Low

M = mean, SD = standard deviation

The level of patient satisfaction among patients

The results showed that 92% of patients have a patient satisfaction mean over 3 with a total patient satisfaction mean of 3.89 (high level of patient satisfaction). In conclusion, overall, Hospital USM's in-patients were highly satisfied with the nursing care provided by nurses, as they perceive it with high quality.

Normality test findings

According to Tabachnick & Fidell (2013), the acceptable range for skewness or kurtosis is below 1.5 and above -1.5 (29). Findings of skewness test of patient safety and patient satisfaction distribution (outcome variables) were -0.345, 0.232 respectively. In addition, results of kurtosis of the same variables were -0.768, -0.696. In conclusion, the normality test findings revealed that the outcome variables were normally distributed.

The relationship between study variables (PC and patient safety) and socio-demographic factors of nurses

Results of the t-test showed significant differences in the nurses' PC scores between different educational levels (t (168) = -2.57; p= 0.011). Bachelor qualified nurses have a higher level of PC (M= 3.93) than nurses with diploma qualifications (M= 3.53). One-way ANOVA test indicate no significant differences in the scores of nurses' PC by age (F= 1.346, p= 0.108), experience (F= 1.261, p=0.136) and specialty working area (F= 0.965, p= 0.281) groups (Table IV).

The results presented in Table IV indicate no significant differences in the patient safety scores by gender (t (168) = -1.865, p= 0.823), marital status (t (168) = -0.832, p= 0.871) and education level (t (168) = -0.397, p= 0.321). However, one-way ANOVA results revealed a significant difference in the patient safety scores between the ward

Table IV: Relationship between nurses' socio-demographic factors with PC and patient safety (n= 170)

Variable	Nurses' PC			Patient safety		
	M (SD)	t or F-test	p	M (SD)	t or F-test	p
Gender		- 0.191	0.849†		- 1.865	0.823†
Male	3.52 (0.29)			7.32 (0.84)		
Female	3.54 (0.36)			7.83 (0.83)		
Marital status		- 0.439	0.230†		- 0.832	0.871†
Single (single or divorced)	3.52 (0.41)			7.70 (0.84)		
Married	3.54 (0.34)			7.83 (0.84)		
Educational level		- 2.57	**0.011**†*		- 0.397	0.321†
Diploma	3.53 (0.35)			7.80 (0.83)		
Bachelor	3.93 (0.38)			7.95 (1.17)		
Age		1.346	0.108◊		0.697	0.196◊
< 25 years	3.72 (0.46)			7.56 (1.09)		
25-34 years	3.56 (0.33)			7.75 (0.83)		
35-44 years	3.47 (0.38)			7.93 (0.80)		
> 45 years	3.50 (0.35)			7.94 (0.90)		
Experience		1.261	0.136◊		2.244	0.265◊
1-5 years	3.58 (0.35)			7.77 (0.95)		
6-10 years	3.55 (0.35)			7.68 (0.74)		
> 10 years	3.47 (0.37)			8.02 (0.78)		
Specialty (work area)		0.965	0.281◊		4.43	**0.003**◊*
Medical	3.52 (0.36)			7.82 (0.86)		
Surgical	3.51 (0.35)			7.61 (0.80)		
Obstetrics & gynecology	3.60 (0.37)			8.07 (0.83)		

M= mean; SD= standard deviation; t= t value, using independent t-test analysis; F-test= F value, using one-way ANOVA; p= significant level; * significant at the level < 0.05 (2-tailed); †= Independent t-test; ◊= One-way ANOVA.

specialty groups (F= 4.43, p= 0.003), with obstetrics and gynecology ward nurses having a higher level of patient safety (M= 8.07, SD= 0.76) compared to medical (M= 7.82, SD= 0.79) and surgical ward nurses (M= 7.61, SD=0.72).

The relationship of nurses' PC with patient safety and patient satisfaction

The findings of the relationship of nurses' PC with patient safety and patient satisfaction, Highlighted in Table V, no significant relationship was found between nurses' PC and patient safety (r= 0.122, p= 0.110). However, a positive relationship was found between nurses' PC and patient satisfaction (r= 0.225, p= 0.003).

DISCUSSION

This study was conducted to investigate the relationship between nurses' PC with patient safety and patient

Table V: Relationship of nurses' PC with patient safety and patient satisfaction (n= 170)

Variable	Nurses' PC	
	r	*p*
Patient safety	0.122	0.11
Patient satisfaction	0.225	0.003**

r= coefficient of Pearson correlation analysis; *p*= significant level; ** Correlation is significant at level < 0.01.

satisfaction. Regarding the relationship between nurses' PC and patient safety levels in this study, the results revealed no significant relationship between nurses' PC and patient safety. The findings obtained contrast with earlier findings among Taiwan nurses (n= 348) where nurses' PC has a positive relationship with patient safety (19). In the current study, the lack of relationship between the PC of nurses and reported patient safety might be due to hospital policies, job specifications, patient care standards and regulations that strongly enforce patient safety compliance instead of patient safety being influenced by PC. In their study, Ludin and Bajuri (2020) reported that nurses in Malaysia have a positive attitude toward patient safety culture (30). Findings in this study suggest that patient safety levels in the wards could be mitigated through other factors and approaches if PC is low among nurses.

The result of the current study showed a positive relationship between PC and patient satisfaction. The findings are in line with previous research, where committed nurses would deliver patient care with a sense of accountability, compassion and prioritizing their patients' best interests (19). Such efforts from nurses are likely to be appreciated by patients in determining the quality of care. (19). All these actions could increase the patient satisfaction about nursing care.

With the exception of education level, this study did not find any relationship between sociodemographic factors and PC. The positive relationship between a higher education level and PC findings can be explained by the additional duration of education and clinical practice that bachelor's degree nurses receive. The additional duration of education and clinical practice experience could have an influence in producing a stronger understanding about the professional procedures and teaches for critical thinking and therefore increasing their level of commitment to the profession (31).

The findings of the current study indicated that patient safety reported by nurses differed by ward specialty with higher patient safety at obstetrics and gynecology wards (32). A possible explanation for patient safety variation by ward specialty is that the different specialties might have different levels of risks depending on care delivered to patients. Ward patient safety may be influenced by other factors such as the number of medications, status and numbers of the patients, invasiveness of procedures and staff workload. The mentioned factors affecting

patient safety would differ based on ward specialty. Therefore, higher patient safety results for obstetrics and gynecology wards compared to medical and surgical wards in this study could be explained by the latter having a higher complexity of treatment and uncertainty of patient outcomes. Nursing attention and commitment could be tailored accordingly to address variation in patient safety by ward specialties.

The strengths of this study are the examination of the relationship between the PC of nurses, patient safety and the patient satisfaction of Hospital USM registered nurses and in-patients while there was a limitation in studying these factors together. Also, this study is considered the first study in Malaysia studying the relationship between these three variables. In addition, gaining a better understanding of how PC of nurses has a relationship with patient safety and the patient satisfaction and to make a comparison among different Hospital USM working area. Further, the response rate was 92% for both participating nurses and patients; this means that participants may be interested in those issues related to PC, patient safety and the patient satisfaction. In addition to the fact that these questionnaires do not take long to answer.

Consideration should be given to the results of this study because of many possible limitations. One limitation was the cross-sectional design of the present research design. While all hypotheses have been suggested based on related theories and data seen in the literature and due to the lack of a longitudinal design, it was not possible to conclude causal relationship between variables. The measurement of study variables was done by getting a subjective report from the participants via questionnaire (self-reported issues). Therefore, there will be a possibility of samples giving bias and not a genuine response to the questionnaire. In addition, the study sample is not large enough and this will affect the result generalization of the population. The final limitation of this research is insufficient literature about the relationship between all study variables in one study.

Based on the positive relationship findings between PC and patient satisfaction, it is recommended that nursing educators, researchers, nurse and nurse managers encourage nurse to further their qualification to a higher level as this may improve PC and hopefully improve Patient satisfaction. Efforts could be made to incorporate elements of professional commitment into nursing training programs. The status of no relationship findings between PC and patient safety indicates that managing patient safety may require attention towards other aspects of service provision depending on the level of patient care complexity.

Results of this cross-sectional study contribute baseline nursing care knowledge. Future research could focus on investigating the relationship between the same

variables across a random sample of Malaysian hospitals with larger numbers of nursing and patient participants. Future studies could utilize additional or alternative questionnaires to cover a wider range of related variables and adopt longitudinal study designs to obtain more comprehensive data. Additionally, qualitative studies may be needed to get in-depth explanations for the quantitative findings on PC, patient safety and patient satisfaction.

CONCLUSION

The results indicating a positive relationship between nurses' PC and patient satisfaction highlight the importance of nurses' PC in influencing patient satisfaction with the quality of care. However, based on this study's no significant relationship was reported between PC and patient safety, nurses' PC alone is inadequate for ensuring patient safety.

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REFERENCES

1. Lachman R, Aranya N. Job attitudes and turnover intentions among professionals in different work settings. Organization Studies. 1986;7(3):279-93.
2. Blais K, Hayes J, Kozier B, Erb G. Professional nursing practice: Concepts and perspectives. NY: Pearson; 2016.
3. Guerrero S, Chenevert D, Kilroy S. New graduate nurses' professional commitment: antecedents and outcomes. Journal of Nursing Scholarship. 2017;49(5):572-9.
4. Chang H, Huang T, Lee I, Shyu Y, Wong M, Lun-Hui H, et al. Impact of Professional Commitment on Professional Capability Improvement and Care Quality Dimensions: A Multi-Wave Study. Journal of Clinical Nursing. 2021.
5. Karem M, Mahmood Y, Jameel A, Ahmad A. The effect of job satisfaction and organizational commitment on nurses' performance. Humanities & Social Sciences Reviews. 2019;7(6):2395-6518.
6. Honyenuga B, Adzoyi P. Professional commitment of nurses in Ghana: The case of the Volta region. APJRBM. 2012;3(1):12-27.
7. Al-Hamdan Z, Dalky H, Al-Ramadneh J. Nurses' professional commitment and its effect on patient safety. Global journal of health science. 2018;10(1):11-9.
8. WHO. Patient safety 2004 [20/02/2021]. Available from: https://www.who.int/patientsafety/about/en/.
9. AbdAlla A. Nurses are a Key to Ensure Patient Safety: A systematic Review. 2017;2(9):10-5.
10. Amiri A, Solankallio-Vahteri T, Tuomi S. Role of nurses in improving patient safety: Evidence from surgical complications in 21 countries. International Journal of Nursing Sciences. 2019;6(3):239-46.
11. Cho E, Lee N, Kim E, Kim S, Lee K, Park K, et al. Nurse staffing level and overtime associated with patient safety, quality of care, and care left undone in hospitals: a cross-sectional study. International journal of nursing studies. 2016;60(8):263-71.
12. Hayajneh Y, AbuAlRub R, Almakhzoomy I. Adverse events in Jordanian hospitals: types and causes. International journal of nursing practice. 2010;16(4):374-80.
13. Khater W, Akhu-Zaheya L, Al-Mahasneh S, Khater R. Nurses' perceptions of patient safety culture in Jordanian hospitals. International Nursing Review. 2015;62(1):82-91.
14. Wolfe A. crossing the quality chasm: a new healthcare system for the 21st century. Policy, Politics, & Nursing Practice. 2001;2(3):233-5.
15. Vaz N. Patient satisfaction. Healthcare Administration for Patient Safety and Engagement. PA: IGI Global; 2018. p. 186-200.
16. Aqel I, Al-Tarawneh K. Study of the relationship between the quality of the medical service and patient satisfaction in private hospitals operating in Amman area. European Journal of Business and Management. 2013;5(4):255-74.
17. Zarei E, Mousazadeh A. Determinants of Outpatients' Loyalty: A Study of the Teaching Hospitals. Journal of Healthcare Management. 2015;6(1):59-68.
18. Hulka BS, Zyzanski SJ, Cassel JC, Thompson S. Scale for the measurement of attitudes toward physicians and primary medical care. Medical Care Journal. 1970;8(5):429-36.
19. Teng C, Dai Y, Lotus Shyu Y, Wong M, Chu T, Tsai Y. Professional commitment, patient safety, and patient-perceived care quality. Journal of Nursing Scholarship. 2009;41(3):301-9.
20. Ndoro S. Effective multidisciplinary working: the key to high-quality care. British Journal of Nursing. 2014;23(13):724-7.
21. Khater W, Akhu-Zaheya L, Al-Mahasneh S, Khater R. Nurses' perceptions of patient safety culture in Jordanian hospitals. International Nursing Review. 2015;62(1):82-91.
22. Al-Hussami M, Al-Momani M, Hammad S, Maharmeh M, Darawad M. Patients' perception of the quality of nursing care and related hospital services. Health & Primary Care. 2017;1(2):1-6.
23. Meyer J, Allen N. TCM employee commitment survey academic users guide 2004. Ontario, Canada: The University of Western Ontario, Department of Psychology; 2004.
24. Meyer JP, Allen N. A three-component conceptualization of organizational commitment. Human resource management

review. 1991;1(1):61-89.

25. Ahmad N, Oranye NO. Empowerment, job satisfaction and organizational commitment: a comparative analysis of nurses working in Malaysia and England. Journal of nursing management. 2010;18(5):582-91.

26. Omar K, Anuar M, Majid A, Johari H. Organizational commitment and intention to leave among nurses in Malaysian public hospitals. International Journal of Business and Social Science. 2012;3(16):194-9.

27. Teng C, Shyu Y, Chang H. Moderating effects of professional commitment on hospital nurses in Taiwan. Journal of Professional Nursing. 2007;23(1):47-54.

28. Baker T. Doing social research. 2nd ed. ed. NY: McGraw-Hill; 1994.

29. Tabachnick B, Fidell L. Using multivariate statistics: International edition. 6th ed. CA: Pearson; 2013.

30. Ludin S, Bajuri N. Nurses' Perception on Patient Safety Culture in Critical Care Area at A Tertiary Hospital in Pahang, Malaysia. The Malaysian Journal of Nursing. 2020;11(4):78-84.

31. Barutcu C, Ergin S. Examination of professional commitment and stress management among nurses from different generations. International Journal of Caring Sciences. 2017;10(1):456-63.

32. Carlesi K, Padilha K, Toffoletto M, Henriquez-Rold6n C, Juan M. Patient safety incidents and nursing workload. Revista latino-americana de enfermagem. 2017;25(2841):1-8.