



Theory of Reason Action to Predict Perception of Professionalism and Implementation of Patient Safety among Clinical Nurses: A Path Analysis

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Abstract. Background: Patient safety is a fundamental principle of health care and the right of every patient in receiving health services. Patient safety performance as the quality of a hospital organization is affected by the performance of nurses. **Objective:** This study aimed at investigating the implementation of the theory of reason action model to explain the perception of professionalism and the implementation of patient safety in nurses. **Method:** The design of this study is a correlational quantitative analytic study with a cross-sectional approach. The analysis technique used is path analysis. The sample of this study was all nurses at Hospital ABC Tangerang, with as many as 105 respondents. **Results:** This research showed that 1) workload and motivation variables simultaneously affected the implementation of patient safety with the perception of professionalism as an intervening variable (probability level $0.285 > 0.05$), 2) there was a negative and significant effect of workload on the implementation of patient safety (p -value $0.012 < 0.05$), 3) there was a negative and significant effect of workload on the perception of professional (p -value $0.000 < 0.05$), 4) motivation variable positively affected the implementation of patient safety (p -value $0.032 < 0.05$), 5) motivation variable positively affected the perception of professional (p -value $0.000 < 0.05$) and 6) the perception of professionalism positively affected the implementation of patient safety (p -value $0.000 < 0.05$). **Conclusion:** Nurses who have a high motivation to work will behave and act professionally to the duties and responsibilities so that the implementation of patient safety can be achieved. Management should manage the remuneration system of nurses, monitoring, evaluation, and the human resources management system so that the implementation of patient safety remain qualified.

Keyword: workload, work motivation, perception of professionalism, the implementation of patient safety

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INTRODUCTION

Patient safety in health care organizations has become a worldwide concern, and the health sector has responded with active efforts to address the problem (1). Patient safety became a global issue after the Institute of Medicine (IOM) in 2000 published a report entitled "To Err Is Human: Building a Safer Health System" (2). The report reveals that approximately 44,000 to 98,000 people die each year from medical errors in US hospitals, compared to the number of deaths from motor vehicle accidents, breast cancer and AIDS (3). Media coverage of the report was rapid and widespread, leading to public awareness of the issue (4).

The implementation of patient safety in hospitals aims to prevent and reduce the occurrence of Patient Safety Incidents (PSI) in healthcare settings. A patient safety incident is an event or circumstance that may potentially injure patients who should not have happened. The patient safety incident includes Adverse Events (AE), Near Miss Events (NME), Potential Injury Events (PIE), and Sentinel Events (an adverse event causing death or serious injury) (5).

Theory of Reason Action from Ajzen and Fishbein provided a framework for analyzing attitudes toward behaviour. Based on this theory, the most significant determinant of a person's behaviour is the intention to behave (6). Individual intention to exhibit behaviour is a combination of beliefs to show the behaviour and the subjective norm. People's attitudes towards behaviour include beliefs about behaviour, evaluation of behavioural outcomes, subjective norms, normative beliefs and motivation to comply. If someone perceives that the results of such behaviour are positive, they will have a positive attitude to such behaviour.

Nurses have a contribution to improving patient safety culture in hospitals. Nurses as professional health workers with the greatest number among other health professionals and most

prolonged contact with the patient as well as spread in various places of health care providers have a significant role in measuring, monitoring and improving the quality of care and patient safety. Based on a study conducted regarding medication errors at two hospitals for more than six months, it was found that 86% of nurses were able to prevent medication errors made by physicians and pharmacists, so the mistake was not to be experienced by patients (7). Therefore, nurses must try harder to provide comprehensive, evidence-based and patient-centred care to make patient safety in hospitals achievable.

Research on nurses' perceptions of patient safety is widely carried out, and one of which is conducted by AHRQ (*Agency for Healthcare Research and Quality*) in 2018 states that only 63% of nurses have a positive perception of patient safety culture. Another study conducted in Saudi Arabia hospitals and Oman found that nurses' positive perceptions of patient safety culture were still very low (8,9).

Nurses in their duty are facing a variety of health problems experienced by the patient or their family. In addition, they should focus on the nursing care provided as well. This situation can cause various physical and psychological responses that cannot be ignored because it will affect their daily performance. If it is not balanced with an increase in knowledge, skills and attitudes of nurses as well as supporting factors to increase job satisfaction, nurses will feel that the workload is heavy.

Nurse workload is all the activities of nurses while on duty in a nursing care unit (10). Nurse workload can be estimated by the components, such as the number of patients treated per day, per month, and per year, the condition of the patient, the average patient being treated, the direct and indirect treatment needed by the patient, the frequency of each treatment required and the average time to perform the treatment (11).

Perception, knowledge and motivation affect the implementation of patient safety (12). Motivation is the impulse that arises

within themselves to work optimally in order to achieve the need for achievement, need for affiliation and need for power (13).

Previously research examines the effect of workload and burnout on patient safety which shows that workload and burnout affect the implementation of quality patient safety (14). The perception of professional nurses affects the patient safety culture (15).

Researchers are interested in discussing more the previous research regarding patient safety by combining independent variables from previous research, such as workload, work motivation on the implementation of patient safety, as well as verifying whether the variable perception of professionalism, which was previously an independent variable, is able to become an intervening variable in the implementation of patient safety.

In line with some of the descriptions above, Hospital ABC Tangerang has made efforts to maintain and develop the quality of service by implementing the Patient Safety Program by establishing the Hospital Patient Safety Team (TKPRS RS ABC). The results of interviews in the initial study with the Human Resource department obtained information that several nurses had attended training related to patient safety. In addition, SOPs have also been socialized from nurses to other staff. Otherwise, the results obtained in the researchers' initial observations that some nurses work without applying patient safety. In addition, information was obtained about the complaints of nurses who were less motivated in doing their job and caused unexpected incidents to occur in hospitals. The complaint is due to the low remuneration received and the lack of supervision by the head of the room

RESEARCH HYPOTHESIS

Based on the theoretical and framework, the research hypothesis is the workload and work motivation simultaneously affect the implementation of patient safety, and the perception of

professionalism in nurses as an intervening variable at Hospital ABC Tangerang.

METHOD

Samples and sampling techniques

The samples in this study were nurses who work in hospitals ABC Tangerang and selected using purposive sampling technique. The sampling technique is done by selecting samples that met the inclusion criteria, such as nurses who have the educational background of at least DIII of nursing, are still active in providing health services, willing to be respondents and involved in research, and nurses who are not currently having occupational problems. The number of samples in this study was 105 nurses.

Data Collection Instruments

Demographic factors: Four questions were used to obtain information regarding gender, age, level of education and years of service in the hospital.

Questionnaires for workload: consisted of 12 questions, divided into 4 indicators covering the duties and functions of nurses, additional tasks, working time and completeness of facilities. The scale in this questionnaire uses a Likert scale consisting of 5 points, namely: 1 = strongly disagree, 2 = disagree, 3 = Neither agree nor disagree, 4 = agree and 5 = strongly agree.

Questionnaire for work motivation: consisted of 24 questions, divided into 3 indicators include commitment, responsibility and appreciation. The scale in this questionnaire uses a Likert scale consisting of 5 points, namely: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree.

Questionnaires for perception of professionalism: consisted of 29 questions, divided into 3 indicators include commitment, responsibility and appreciation. The scale in this questionnaire uses a Likert scale consisting of 5 points, namely: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree.

Questionnaire for the implementation of patient safety: consisted of 19 questions, divided into 6 indicators include commitment, responsibility and appreciation. The scale in this questionnaire uses a Likert scale consisting of 5 points, namely: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree and 5 = strongly agree.

Testing the validity and reliability of the instrument

In this study, the validity test was carried out by consulting the expert and testing the questionnaire on 30 samples. The value of r table (0.361) in the statistical table was $df = n - 2 = 30 - 2 = 28$. Based on the results of the validity test of each indicator using a correlation coefficient showed the highest validity value was 0.938 and the lowest was 0.089. The results of the validity test showed that two indicators were not valid. Based on the reliability testing, it showed that all variables have Cronbach's Alpha > 0.6. It means that all variable indicators in this research are reliable (16).

Statistical Analysis

The data analysis technique used path analysis with the aim of 1) examining the effect of proactive relationship between the independent variable on the dependent variable, and 2) comparing variations theoretically constructed models with causal structure found.

Model fit

AMOS program was used to estimate the path analysis using: maximum likelihood estimation of each parameter in the hypothetical model. Each significant parameter in the path analysis was determined using the estimated standardized regression weight (β) of the adjusted model according to the hypothetical model. Tests for goodness of fit on the factors that affect the implementation of patient safety are summarized in Table 1

Table 1. Statistical test for goodness of fit between empirical data and hypothetical model

Statistics	Explanation	Interpretation
Number of parameter	Total number of an estimated parameter from empirical data	Less than a hypothetical model (Full model)
Chi-square (CMIN X ²)	To test whether empirical data absolute fit the hypothetical model or not	p-value of CMIN X ² > 0.05
Relative Chi-square (CMIN X ² /df)	The proportion of Chi-square and degree of freedom varied by the number of samples	<2.0 indicated model fit
Comparative fit index (CFI)	Comparative fit index of a constructed and hypothetical model	≥0.9 indicated model fit
Normed fit index (NFI)	Comparative fit index of a constructed and hypothetical model	≥0.9 indicated model fit
Root mean square error of approximation (RMSEA)	Degree of variance to estimate parameter in the model	<0.05 indicated model fit

Adapted from Hooper D, Coughlan J and Mullen MR (2008). Structural Equation Modeling: Guidelines for Determining Model Fit (17).

Ethical Considerations

This research has obtained ethical approval from the Research Ethics Commission of University of Esa Unggul, No.0102-21.102/DPKE-KEP/FINAL-EA/UEU/IV/2021 issued on 6th, April 2021.

RESULTS

Demographics data

Based on the data, the majority of the 105 respondents were female nurses, namely 88.6% and the remaining 11.4% were male. Based on the age of the respondents, the majority of respondents aged between 26-35 years were 48.6% and aged between 17-25 years were 22.9%, while the rest, nurses aged 36-45 years as many as 15.2%, aged 46-55 years as many as 7.6% and more than 55 years as many as 5.7%. Based on education level, most of the respondents were Diploma 3, as many as 70.5% and Bachelor (S1) as many as 26.7%, while the remaining respondents with professional education as many as 2.9%. Based on the length of service, the nurse who had worked between 5-10 years was 41% and less than 1 year and between 1-3 years old respectively by 19%, while the employees who worked between 3-5 years were 17.1% and more than 10 years were 3.8%.

Descriptive statistics and correlation matrices

Table 3 explained the correlation matrix effects of workload, motivation, perception of professionalism on the implementation of patient safety. The results showed that perception of professionalism ($r = 0.534$) and motivation ($r = 0.681$) were positively correlated, while workload had a negative correlation with the implementation of patient safety (-0.520).

Goodness of Fit Model

Table 4, Goodness of Fit test results from this study. Reviewed from the value of Chi-Square that $p=0,285>0,05$; Cmin/DF ($1,141<2$), RMSEA ($0,037<0,08$), TLI ($0,994>0,90$), CFI ($0,999\geq 0,9$). For GFI

($0,995>0,9$) and AGFI ($0,947>0,9$) stated that the model meets the assumption of Goodness of fit. Overall this model showed a good model (meets the assumption of Goodness of Fit).

Table 2. Demographics of respondent data (n = 105)

Demographic Data	n	%
Gender		
Male	12	11,4%
Female	93	88,6%
Age		
17 - 25 years old	24	22,9%
26 - 35 years old	51	48,6%
36 - 45 years old	16	15,2%
46 - 55 years old	8	7,6%
56 - 65 years old	6	5,7%
Level of Education		
D3	74	70,5%
Bachelor	28	26,7%
Professional degree of Nurse	3	2,9%
Length of service		
< 1 Years	20	19,0%
1 - 3 Years	20	19,0%
3 - 5 Years	18	17,1%
5 - 10 Years	43	41,0%
> 10 Years	4	3,8%

Table 4. Test result *Goodness of Fit Model*

Goodness of fit	Cut – off Value	Model Results	Information
$X^2 - Chi Square$	It is expected that the value is small with DF=1 table value = 3.815	1,141	Good
Probability	$\geq 0,05$	0,285	Good
Cmin/DF	≤ 2	1,141	Good
GFI	$\geq 0,90$	0,995	Good
RMSEA	$\leq 0,079$	0,037	Good
AGFI	$\geq 0,90$	0,947	Good
TLI	$\geq 0,90$	0,994	Good
CFI	$> 0,90$	0,999	Good

Table 3. Correlation matrix of workload, motivation, perception of professionalism on the implementation of patient

	Work motivation	Workload	Perception of Professionalism	Implementation of patient safety
Work motivation	1			
Workload	-.404	1		
Perception of Professionalism	.548	-.489	1	
Implementation of patient safety	.534	-.520	.681	1

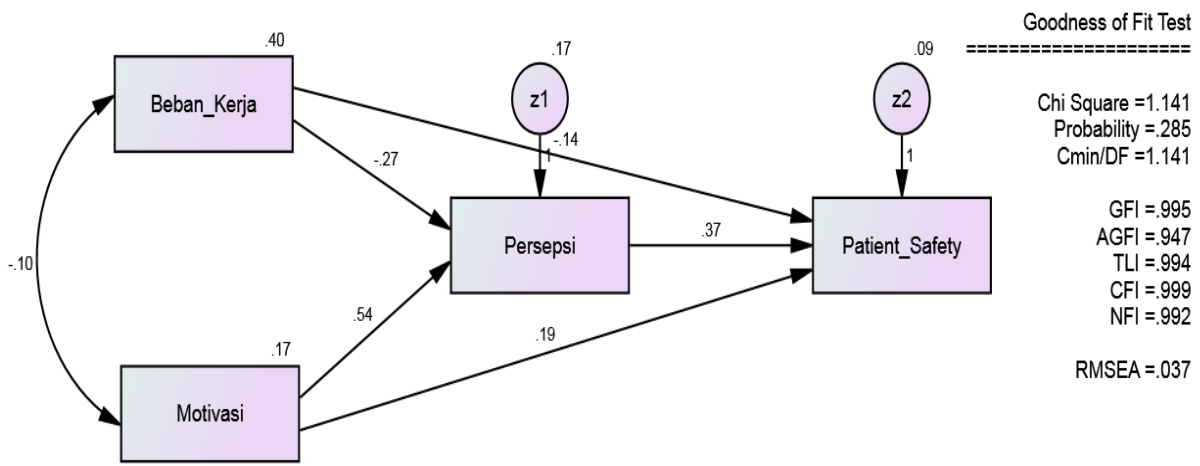


Table 3. Correlation matrix of workload, motivation, perception of professionalism on the implementation of patient

Predictive factor	Standarized effect			Adjusted R2 (%)
	Direct	Indirect	Total	
Workload	-0.204	-0.146	-0.350	49.6%
Work motivation	0.182	0.191	0.373	
Perception of Professionalism	0.457	-	0.457	38.6%

workload and motivation on the implementation of patient safety. The results showed that the direct and indirect effect of workload on the implementation of patient safety ($\beta = -0,204$; $\beta = -0,146$) and work motivation ($\beta = 0,182$; $\beta = 0,191$). At the same time, the direct effect of workload, work motivation on the perception of professionalism is ($\beta = -0,320$; $\beta = 0,418$). It can be concluded that the influence of workload, motivation and professional perception on the implementation of patient safety is as much as 50% ($R^2 = 0,496$), while the effect of workload and work motivation on professional perception is as much as 39% ($R^2 = 0,386$).

Discussion

The study results indicate a simultaneously significant effect between workload, motivation, and perception of professionalism toward the implementation of patient safety in hospitals. This result implies that, besides workload and work motivation, the perception of professionalism has a significant effect in improving the implementation of patient safety. This study is in line with another study which states that the health care worker perception of professionalism has a positive influence on the implementation of patient safety (15). The study results reinforce the previous research that the motivation of nurses affects the quality of service and the application of patient safety (18). Another study also found that the motivation and perception of nurses' knowledge simultaneously influenced the implementation of patient safety (12). In addition, also found the influence of workload on nurse services, health and fatigue, as well as safety and the quality of service (14).

The results of statistical tests show that the workload has a negative and significant effect on the implementation of patient safety. These results can be interpreted that the excessive workload on nurses can reduce the implementation of patient safety. Based on these results, it can

be concluded that the workload has a negative and significant effect on the implementation of patient safety. The higher the workload that occurs, the lower the application of patient safety will be. Different workloads experienced by nurses at Hospital ABC Tangerang is due to differences in the number of activities on work shifts, the number of patients, the number of nurses and differences in treatment classes.

The implementation of patient safety adds to the nurse's task in keeping patients safe. Additional jobs include hand hygiene, accurate patient identification, increased vigilance of high-alert drugs, increased effective communication, reduced risk of patient falls and reduced risk of infection related to health services. Excessive workload leads to various effects, namely physical and mental fatigue and emotional reactions such as headaches, digestive disorder, neglect, forgetfulness and irritability, potentially endangering workers or nurses (19). This study is in line with previous study, who found that the nurse's workload significantly affects the implementation of patient safety (20).

The results showed that there was a negative and significant effect between workload on the perceptions of professionalism of nurses at Hospital ABC Tangerang. There is a negative and significant effect of workload on the perceptions of professionalism which shows that the higher the workload felt by nurses at ABC Hospital Tangerang, the lower the perception of professionalism. Nurse workload is all activities carried out by a nurse while serving in a nursing service unit. The study results reinforce the previous research, who examined nurses' perceptions of the nurse's workload and its effect on errors in nursing, who concluded that almost half of the nursing staff had low perceptions of nurse workload and there was a significant positive correlation between nurse workload and nurse errors (21). The study recommends continuing education programs for nurses to update their knowledge and skills to provide

quality nursing care to avoid mistakes related to staff shortages. Another study, found that the individual capabilities of nurses (knowledge, attitudes, perceptions) have a significant effect on the performance of nurses (22).

The test results show that motivation has a positive and significant effect on the implementation of patient safety. These results can be interpreted that high motivation in nurses will increase the implementation of patient safety. Motivation is the impulse that comes from within the individual (intrinsic motivation) and external individuals (extrinsic motivation) to support or not support the activities in implementing patient safety. Motivation according to Gibson's theory is one of the psychological factors that can affect one's job satisfaction (23). Satisfiers factors include achievement and individual potential development. The need for achievement will encourage a person to develop creativity by mobilizing all his abilities to achieve optimal work performance the tasks to be carried out by staff through training and continuing education, both formal and non-formal, so that the increased capacity will encourage individuals to work, especially in the implementation of patient safety. The study results reinforce the research previous study, who found the relationship between nurses' external motivation and the application of patient safety (24). Another research also found that the motivation and work commitment of nurses were simultaneously related to the implementation of patient safety (25).

The test results show that motivation has a positive and significant effect on the perception of professionalism. These results can be interpreted that high motivation in nurses will increase the perception of professionalism. Based on these results, it can be concluded that motivation has a positive and significant effect on the implementation of patient safety. The better the motivation felt by employees, the implementation of patient safety will increase. The existence of a positive influence indicates that the higher

the motivation of nurses, the more their perception of professionalism will increase. Otherwise, nurses who do not have work motivation will tend to reduce their perception of professionalism in the implementation of patient safety at Hospital ABC Tangerang.

The test results show that professional perception has a positive and significant effect on the implementation of patient safety. These results can be interpreted that a high professional perception of nurses will increase the implementation of patient safety. Patient safety has become the latest issue in a health service, especially in hospital services starting in 2000 which is based on the increase in the number of adverse events. (adverse event). This patient safety program has become a global issue and has been part of the world health program since 2004 after the World Health Organization (WHO) started the program through the World Alliance for Patient Safety (26). This program also explains that patient safety is a fundamental principle in patient care and is a critical component in quality management (WHO, 2004) (26). The study results reinforce the previous research which found that the professional attitude of health workers affects the implementation of patient safety (27). This research is in line with another study which states that the perception of professionalism of health workers has a positive influence on the implementation of patient safety (15). Another research also found that perception, knowledge and motivation affect the implementation of patient safety (12).

Conclusion

Workload and work motivation affect the implementation of patient safety with the perception of professionalism as an intervening variable. Workload has a negative influence on the implementation of patient safety. Therefore, hospital management must carry out continuous evaluations to measure the workload, motivation and the perception of professionalism of nurses so that the

implementation of patient safety is achieved and the quality remains.

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