The Role of the Managerial Function of Supervisor Model 4S towards Patient Safety Culture at Sawahlunto General Hospital

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A B S T R A C T

Background: The culture of patient safety in hospitals is still not well implemented. Maintaining a patient safety culture is the responsibility of every healthcare professional. This study aims to explore the relationship between the supervisory function of the 4S model and the culture of patient safety at Sawahlunto General Hospital. **Methods:** This study is an observational study. A total of 52 respondents participated in this study. This study uses a questionnaire instrument to assess the role of supervisory and managerial functions in the 4S model with patient safety culture. Data analysis was performed by SEM-PLS. **Results:** There is a significant relationship between the characteristics of nurses and patient safety culture at Sawahlunto General Hospital. There is a significant relationship between the characteristics of supervisors and interpersonal supervisors with the managerial function of supervisors at Sawahlunto General Hospital. **Conclusion:** The managerial function of the Model 4S supervisor is related to the patient safety culture at Sawahlunto General Hospital.

1. Introduction

Every health facility must maintain patient safety by minimizing the risk of injury.[1,2] Hospitals as health facilities must have the principle of quality improvement by measuring and assessing the implementation of patient safety and improving the service process by improving the quality and human resources in preventing errors that can result in disability and even death.[3,4] The prevalence of the 2000 death rate in America was estimated at 44,000 to 98,000 cases due to errors or errors. This figure increased to more than 400,000 deaths in 2013.[4] World Health Organization (WHO) reports 134 million events resulting in 2.6 million deaths in developing countries each year.[5] Meanwhile, in Indonesia, the 2019 National Committee for Patient Safety (KNKP)

reported 171 deaths due to errors in health services.[6] With a high mortality data, it illustrates that patient safety has not been well developed in health services.

Patient safety can run well if there is a good patient safety culture from all lines in the hospital.[7,8] Patient safety culture is a product of the values, attitudes, perceptions, competencies, and behaviors of individuals and groups that determine how committed and organizational capabilities are to improving patient safety. Patient safety culture is the main and fundamental step in achieving patient safety. A good patient safety culture will result in better patient safety implementation than focusing on patient safety programs alone. The culture of patient safety in hospitals is still not well implemented. Maintaining a

patient safety culture is the responsibility of every healthcare professional. All elements in the hospital, starting from the highest management leader, functional doctors, nurses, and medical and non-medical support staff in hospitals, have the authority and responsibility to maintain the best quality of service delivery. Nurses who exceed 50% of the total staff in the hospital are strength and opportunity to make changes towards improvements in improving the quality of care and increasing the value and perception of promoting patient safety.[9,10]

Supervision as a nursing management activity is carried out in various models.[11-13] Nursing supervision can be done with the model of developmental supervision, academic supervision, experiential supervision, and 4S supervision (structure, skills, support, and sustainability). Developmental, academic, and experiential supervision is supervision that has the aim of improving the performance of nurses. In contrast to the implementation objectives, 4S-based supervision is more complex, not only to improve performance but also to improve the quality of care with a structured scheme. This study aims to explore the relationship between the supervisory function of the 4S model and the patient safety culture at Sawahlunto General Hospital.

2. Methods

This study is an observational study with a cross-sectional approach. A total of 52 respondents participated in this study. Respondents met the inclusion criteria, namely 1. nurses who worked in the Children's, Internal, Surgery, and Midwifery room at Sawahlunto General Hospital, 2. had 4S supervision done, 3. willing to be respondents, 4. had a working period of > 1 year at Sawahlunto General Hospital. Data was collected using a questionnaire instrument (AE instrument). Instrument A was used to determine the demographic characteristics of the implementing nurses as respondents, including age, gender, education, length of work, and patient safety training. Instrument B is used to determine the demographic characteristics of Supervisor 4S, including the

supervisor's age, education, length of work experience as a supervisor, and patient safety training. Instrument C is used to determine the managerial functions of the 4S supervisor in patient safety, including Planning, Organizing, Staffing, Directing, and Controlling in the 4S Scheme (Structure, Skill, Support, and sustainability) at Sawahlunto General Hospital, totaling 27 statements items. The questionnaire consists of 5 alternative answers. If the respondent gives an answer Strongly Agree, given a score of 5, Agree is given a score of 4, Disagree is given a score of 3, Disagree is given a score of 2, and Strongly Disagree is given a score of 1. Instrument D is used to determine the interpersonal characteristics of the supervisor. The 4S in patient safety totals 10 statement items. The questionnaire consists of 5 alternative answers. If the respondent gives an answer, always is given a score of 5, Often is given a score of 4, sometimes is given a score of 3, Rarely is given a score of 2, and if never is given a score of 1. Instrument E consists of 10 elements in 6. The statement section varies positively and negatively, with a total of 32 questions. The positive questions are questions that support the implementation of a patient safety culture in hospitals, while negative questions are those that are considered not to support or hinder the creation of a good patient safety culture. The answer to the questionnaire is in the form of a Likert scale consisting of 2 (two) types of answer scales. The first answer scale is: strongly disagree, disagree, undecided, agree, and strongly agree. The second answer scale is never, rarely, sometimes, often, and always. For the assessment, each scale is given a score of 1, 2, 3, 4, and 5.

Univariate analysis was conducted to assess the frequency distribution of each test variable. Furthermore, data analysis is carried out using Smart PLS or SEM Partial Least Square (PLS) software which is data processing with a variant-based structural equation modeling (SEM) approach. This equation approach is useful for analyzing in the model more than one dependent variable and independent variable. The SEM Partial Least Square (PLS) test has

two main test models, namely the measurement model and the structural model. The measurement model has two main test models, namely the measurement model and the structural model. The measurement model is the validity and reliability test, while the structural model is used to test causality (hypothesis measurement based on the prediction model). SEM Partial Least Square (PLS) analysis is also a multivariate statistical data analysis technique that performs comparisons between multiple dependent and multiple independent variables, and Partial Least Square (PLS) is a method designed to solve multiple regression when specific data problems occur.

3. Results

Table 1 shows that most of the nurses were 36-45 years old, had diplomatic education, worked for more than 11 years, and had never attended patient safety training. When viewed from the gender, almost all nurses involved as respondents were female. The table above also shows that most of the supervisors are 36-45 years old with 6-10 years of experience as a supervisor, and almost all of them are educated, nurses. All supervisors above are female, have worked for more than 11 years, and have attended patient safety training. Table 2 shows that most nurses

perceive the characteristics of supervisory interpersonal variables in general as not good, as well as sub-variables of supportive 4S supervisor interpersonal characteristics with less good categories. Meanwhile, for the interpersonal characteristics of supervisor 4S role model, a good listener, and relevant clinical skills, most of the respondents perceive it in a good category. The interpersonal character with the lowest score is the supportive sub-variable. Table 3 shows that most respondents think that the supervisory supervisor's managerial function variable is in a good category, including the five sub-variables of the supervisor's managerial function, namely planning, organizing staff arrangements, directing, and controlling. Table 4 shows that most respondents responded positively to patient safety culture in five of the six sub-variables of patient safety culture, including; the dimension of patient safety at the unit level, dimension of supervisor role, dimension of communication, dimension of reporting, and the dimension of patient safety culture at the hospital level. From table 4, it can be seen that most respondents have a negative perception of the dimensions of staff perceptions of the level of patient safety.

Table 1. Frequency distribution of characteristics of implementing nurses and supervisors at Sawahlunto General Hospital.

No.	Characteristics	Implementing nurses		Supervisor	
		f	%	f	%
1	**Age**				
	• ≤ 25	3	5.8	-	-
	• 26-35	20	38.5	4	7.7
	• 36-45	27	51.9	34	64,3
	• 46-55	2	3.8	14	27
		-	-	-	-
2	**Gender**				
	a. Male	6	11.5	-	-
	b. Female	46	88.5	52	100
3	**Education**				
	a. D3 Nursing/ Midwifery	27	51.9	12	23.1
	b. Ners	25	48.1	25	48.1
	c. S2	-	-	15	28.8
4	**Length of work**				
	a. 1-5	9	17.3	-	-
	b. 6-10	16	30.8	-	-
	c. ≥ 11	27	51.9	52	100
5	**Patient safety training**				
	Never	29	55.8	-	-
	Ever	23	44.2	52	100
6	**Experience as Supervisor**				
	a. 1-5			18	34.6
	b. 6-10			34	65.4
	c. ≥ 11			-	-

Table 2. Frequency distribution of interpersonal characteristics of supervisor 4S at Sawahlunto General Hospital.

No	Characteristics Interpersonal	f	%
1.	**Interpersonal characteristics**		
	• Good	25	48.1
	• Poor	27	51.9
2.	**Support**		
	• Supportive	24	46,2
	• Less supportive	28	54.8
3.	**Clinical Skills**		
	• Good	32	61.5
	• Poor	20	38.5
4.	**Role Model**		
	• Good	35	67.3
	• Poor	17	32.7
5.	**Good Listeners**		
	• Good	29	55.8
	• Poor	23	44.2

Table 3. Frequency distribution managerial supervisor function model 4S at Sawahlunto General Hospital.

No	Managerial Supervisor Function 4S	f	%
1	**Managerial Supervisor Function 4S**		
	• Good	32	61.5
	• Poor	20	38.5
2	**Planning**		
	• Good	37	71.2
	• Poor	15	28.8
3	**Organizing**		
	• Good	36	69.2
	• Poor	16	30.8
4	**Staff arrangement**		
	• Good	32	61.5
	• Poor	20	38.5
5	**Briefing**		
	• Good	31	59.6
	• Poor	21	40.4
6	**Control**		
	• Good	35	67.3
	• Poor	17	32.7

Table 4. Distribution frequency of patient safety culture at Sawahlunto General Hospital.

No	Patient Safety Culture	f	%
1	**Total of patient safety culture**		
	• Positive	34	65.4
	• Negative	18	34.6
2	**Part A. Unit level**		
	• Positive	38	73.1
	• Negative	14	26.9
3	**Part B. Role of supervisors and managers**		
	• Positive	33	63.5
	• Negative	19	36.5
4	**Part C. Communication**		
	• Positive	34	65.4
	• Negative	18	34.6
5	**Part D. Reporting**		
	• Positive	33	63.5
	• Negative	19	36.5
6	**Part E. Perception of patient safety level**		
	• Positive	21	40.4
	• Negative	31	59.6
7	**Part F. Hospital**		
	• Positive	34	65.4
	• Negative	18	34.6

Test the suitability of the model based on the established criteria called the goodness of fit. The goodness of Fit from the Inner Model is measured using R-square dependent latent variable with the same interpretation as regression. The patient safety culture variable can be explained by the characteristics of nurses and supervisory and managerial functions by 27.2%. The rest is explained by other variables that are not studied or are not included in this research model. The supervisory, managerial function variable can be explained by the personal and interpersonal characteristics of the supervisor variable by 54.4%, and the rest is explained by other variables that are not examined or are not included in this research model.

Table 5. The results of the R-square

	R-square	R-square adjusted
Patient safety culture	0.272	0.210
Managerial function supervisor of 4S	0.544	0.535

Table 6. Structural model testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P-Value
Supervision managerial function -> Patient safety culture	0.324	0.224	0.019	17,288	0.003
Characteristics of interpersonal supervision -> Supervision managerial function	0.469	0.439	0.072	6,490	0,023
Nurse characteristics -> Patient safety culture	0,287	0,415	0,050	5,787	0,029
Personal supervision characteristics -> Supervision managerial function	-0,080	0,289	0,007	10,707	0,009

Based on table 6, the sample mean value is 0.415, which shows the magnitude of the positive influence of characteristics on patient safety culture. The meaning of mean sample value is an increase in the nurse's characteristic score by 1 unit. It will increase the patient safety culture by 0.415 units. Based on the significance value obtained of 0.029 with a p-value <0.05 and a statistical T value of 5.787 with a T table >1.645, it shows that there is a significant relationship between the characteristics of nurses and patient safety culture in Sawahlunto General Hospital. The loading value of the education factor is the highest value, which is 0.889, which shows the characteristics of the implementing nurse that are most related to the culture of patient safety in the Sawahlunto General Hospital is education. The higher the score of the characteristics of the nurses at the Sawahlunto General Hospital (age, education, training, length of service), it will have a positive effect in improving the culture of patient safety at Sawahlunto General Hospital.

Based on table 6, the sample mean value is 0.289, which shows the magnitude of the positive influence characteristics with supervisory and managerial functions. The meaning of sample mean value is an increase in the nurse's characteristic score by 1 unit. It will increase the managerial function of the 4S supervisor by 0.289 units. Based on the significance value obtained of 0.009 with a p-value <0.05 and a statistical T value of 10.707 with a T table >1.645, it shows that there is a significant relationship between supervisor characteristics and supervisory and managerial functions at Sawahlunto General Hospital. The loading value of the length of work and education factor is the highest value, namely 0.791 and 0.743, which shows the characteristics of the 4 S supervisors

that are most related to the supervisory, managerial function at Sawahlunto General Hospital length of work and education. The higher the 4S supervisor characteristic score at Sawahlunto General Hospital (age, education, training, length of work, and experience), the better the managerial function of the 4S supervisor at Sawahlunto General Hospital.

Based on table 6, the sample mean value is 0.439, which shows the magnitude of the positive influence of the characteristics of the 4S supervisor on the supervisory 4S managerial function. The meaning of the sample mean value is an increase in the 4S supervisor characteristic score by 1 unit. It will increase the managerial function of the 4S supervisor. by 0.439 units. Based on the significance value obtained of 0.023 with a p-value <0.05 and a statistical T value of 6.490 with a T table >1.645, it shows that there is a significant relationship between the interpersonal characteristics of the 4S supervisor and the supervisory, managerial function at Sawahlunto General Hospital. The factor loading value of the role model sub-variable is the highest value, which is 0.967, which shows the interpersonal characteristics of the 4S supervisor, which are most related to the managerial function of the 4S supervisor at Sawahlunto General Hospital are characteristics as a role model. The higher the score for the interpersonal characteristics of the 4S supervisor, the better the managerial function of the 4S supervisor at Sawahlunto General Hospital.

Based on table 6, the sample mean value is 0.224, which shows the magnitude of the positive influence of the 4S supervisory on patient safety culture. The meaning of the sample mean value is an increase in the managerial function score by 1 unit. It will increase the patient safety culture by 0.224 units. Based on the significance value obtained of 0.003 with a p-value <0.05 and a statistical T value of 17,228 with a T table >1.645, it shows that there is a positive and significant relationship between the managerial function of the supervisor of the 4S model and the cultural safety in Sawahlunto General Hospital. The value of the loading factor of the directive function is the highest value,

which is 0.954, which shows the managerial function of the 4S supervisor that is most related to the patient safety culture at Sawahlunto General Hospital in the 2022 directive function. The higher the score of the 4S supervisory and managerial function at the Sawahlunto General Hospital, the more positive it will be in improving the patient safety culture in the Sawahlunto General Hospital.

4. Discussion

The 4S management function is a process that begins with building a supervisory structure through the functions of planning, organizing, and staffing. The better the 4S supervisory and managerial function, the better the patient safety culture. An effective supervisory, managerial function is believed to be able to make a strategy to achieve its goals in every process of the management function. A good supervisor's managerial ability has a positive effect on patient safety commitment.[14] The managerial function process is a series of functions and activities that are simultaneously interconnected in completing work through members of the implementation to increase the effectiveness and efficiency of quality nursing services in patient safety.[15] In the planning function, the supervisor formulates the objectives of the supervision that are expected to affect the safety culture in the hospital. In the organizing function, the supervisor manages the staff according to a predetermined supervision schedule. In the 4S supervision, a schedule for continuous supervision is set. With a schedule that fits the needs of staff and supervisors, 4S is effective in improving hospital incident reporting because staff feels that the manager supports them in overcoming patient safety problems.

The loading value of the directive function factor is the highest value, which is 0.954, which shows that the managerial function of the 4S supervisor that is most related to the culture of patient safety in Sawahlunto General Hospital is the directive function. The higher the score of the supervisory, and managerial function of 4S in the direction of the Sawahlunto General Hospital, the higher the patient

safety culture in Sawahlunto General Hospital. The success of the 4S supervisor at Sawahlunto General Hospital in the directive function is when the 4S supervisor's direction provides appropriate solutions and examples in staff understanding related to safety topics. The function of direction by the supervisor in the 4S supervision process has a positive impact on the motivation of nurses to prevent mistakes and support each other in the learning process. Effective supervisor support in briefing three times has an effect on implementing a patient safety culture. With the directing process, the supervisor coordinates, optimize, and facilitates the achievement of staff by providing sufficient information on changes towards improvement. Adequate information is effective in reducing errors in health services. In addition, in achieving a patient safety culture, supervisors, as managers play a role in motivating staff to develop and assisting staff empowerment in creating a safe environment for patients.[16-18] Factors that influence the direction of the 4S supervisor at Sawahlunto General Hospital, are appreciation and respect for staff opinions and the support given when explaining the purpose of the 4S supervision.

5. Conclusion

The managerial function of the model 4S supervisor is related to the patient safety culture at Sawahlunto General Hospital.

6. References

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