

Safety-Care Training Effects on Nurses's Performance to Reduce Adverse Events at Hospital in Lombok, Indonesia

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Abstract- Patient's complaints related to communication, attitude and uncaring behavior. Patient satisfaction to nursing services at General Hospital in Lombok is 65%, is caused by lack of understanding about safety-care, closely related to adverse events : 3.2% - 16.6%. **This study aimed to** analyze effect of safety-care training on nurses performance and assess its effect on reducing adverse event.

Experimental method: safety-care modules training by t test analysis and risk reduction to assess reduction adverse events. Population was nurses and patients in all inpatient units, sample size: 60 nurses and 41 patients were taken with simple random sampling. Data was collected by questionnaire and observation.

Result's study: nurse performance based on safety-care either treatment group and the control group before the training is relatively the same, largely categorized enough, but after the training there is a real difference of nurses performance who trained most of increase from good to excellent, while the control group did not and t-test with $\alpha > 0.05$ show significant results. Risk Reduction adverse events decreased 35% - 45%.

It can be concluded that safety-care training affect the nurses performance to reduce the adverse events in the hospital.

Index Terms- Training, Nurse Performance, Safety-care, adverse events

I. INTRODUCTION

Nearly 50% of patients complaints related to communication, attitude and uncaring behavior. (AHRQ, 2011). Patient safety is one of the main components of the quality of hospital services but in general do not meet the standards. The condition is indicated by the data that 54.48% of all hospitals in Indonesia and 58.49 hospitals in the Province of West Nusa Tenggara has not met the accreditation standards and patient safety standards (MoH RI, 2012). Many cases of adverse events that occurred in the hospital but has not been reported. According to WHO

(2004), the number of patients who experienced adverse events at some hospitals in the world is 3.2% - 16.6%. Similarly, the Department of Health and Human Services (Office of Inspector General) report that clients who experience adverse events and temporary harm events by 13.5% (Daniel, 2010). Patient satisfaction survey results to nursing care in the General Hospital of West Nusa Tenggara province and in some Regional General Hospital in Lombok in 2010 was 65% (department of NTB, 2011), lower than the minimum standard of patient satisfaction. Patient satisfaction is related to the performance of nurses that include attitudes, knowledge and skills as well as adherence to standard operating procedures caused by a lack of understanding about caring and safety so that the nurse performance about safety-care is less. Many cases of adverse events was found consisting of medication errors, patient falls or risk of falling, phlebitis, pressure sores and infections operation area.

1.2 Objectives

This study aimed to analyze the effect of training on the nurse performance of safety-care to reduce adverse event in the Regional Hospital in Lombok.

II. RESEARCH METHODS

The method used is an experimental method of training modules in the form of safety-care by t test analysis techniques and risk reduction to assess the reduction in the adverse event (AE). The study population was nurses and patients in all inpatient units with a large sample of 60 nurses and 41 patients were taken randomly. Data was collected by questionnaire and observation using a checklist.

III. RESULTS AND ANALYSIS.

Results of training on safety-care nurses are presented in the table below.

Table 1 The Data of Nurses Understanding About Safety-Care Before Training

Comprehension	Category	Trained Nurse Group		Nurses Group		Not
		Trained (A)	Nurses	Trained (B)		
		n		n		
Very Good		5 (10%)		4 (7.1%)		
Good		25 (89.3%)		26 (92.9%)		
Enough		0		0		
Less		0		0		
Amount		30(100%)		30(100%)		

Based on Table 1, it can be seen that the understanding of the two groups before the safety-care trained are relatively the same that are mostly located in either category, namely 89.3%

and 92.9%. This data is important as the material for the evaluation of training results. While the data after training was presented in Table 2.

Table 2 Data of Nurses Understanding About Safety-Care After Training

Pemahaman	Trained Nurse Group (A)		Nurses Group		Not
	Trained (A)	Nurses	Trained (B)		
		n		n	
Very Good		20 (71.4%)		5 (17.9%)	
Good		10 (28.6)		30(82.1%)	
Adequate		0		0	
Less		0		0	
Jumlah		30(100%)		30 (100%)	

The data in Table 2 indicate a difference of understanding nurses trained (treatment group) or Group A with nurses who are not trained (control group) or Group B. Group A who understand

safety-care is very good increased from 10% to 71%, while group B who understand safety-care is very good at 17.9%.

The effects of training on the nurses performance of safety-care and decrease adverse events outlined in Table 3 below.

Table 3 Data Adverse Events Before and After Safety-Care Training in Hospital A and Hospital B

Indicator of Adverse Event		Before		After		Risk Reduction (RR)	
		Hospital (A)	Hospital (B)	Hospital (A)	Hospital (B)	(A)	(B)
<i>Medication Errors</i>	No error	18	15	26	15		
	Error	23	26	15	26	0.35	0.00
Phlebitis	No	10	22	22	20		
	Flebitis	31	19	19	21	0.39	-0.11
Decubitus	No	22	22	25	22		
	Decubitus	19	19	16	19	0.16	0.00
Patients fall	No	8	8	24	9		
	Low risk	18	18	17	17	0.05	0.05
	High risk	15	15	0	15	1.00	0.00
Surgical wound infection	No	23	26	27	25		
	Infection	18	15	14	16	0.22	-0.07

Number of medication errors are all data errors ranging from category A (circumstances or events that have the capacity to cause error, but no actual error occurred) to category I (an

error occurs that may have contributed to or caused the death of the patient). Data phlebitis are all conditions ranging from signs and symptoms of phlebitis reached an advanced stage. Data

patient falls is a collection of data on patients who have fallen and the conditions that have the potential to pose a risk of falling either low or high risk. Data on the incidence of infection in the operating area of Table 3 above are all conditions for patients ranging from grade 1 (Normal healing with mild bruising or erythema) up to grade 5 (severe or deep wound infection with or without tissue breakdown). All conditions related to pressure sores are having a score of ≤ 14 (Norton Scale) there are categorized as pressure sores or decubitus risk. Table 3 illustrates that the data AE have a difference before and after safety-care training Data medication errors in hospital A (hospital with trained nurses) decreased 35%, the data phlebitis decreased 39%, decubitus decreased 16%, the risk of patient falls decreased 100% and the operating areas of infection decreased 22% after safety-care training. While data adverse events in Hospital B (Hospital are not trained safety-care) did not decrease even have increased.

Standard of medication errors and patient falls very tight means medication errors and patient falls is not expected to occur in the hospital because it is considered very sensitive and requires the clinician or practitioner to provide professional attention to two things without neglecting the others.

IV. CONCLUSIONS

Training nurses have effectively improve their understanding and nurse performance of safety-car and contribute significantly to reduce adverse events in hospitals. It is recommended that a safety-care training conducted periodically to all nurses in order to improve the performance of nurses measured the incidence of adverse events.

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REFERENCES

- [1] Austin, J.M.; Andrea, G.; Birkmeyer, J.D.; " Safety in Numbers: The Development of Leapfrog's Composite Patient Safety Score for U.S. Hospitals," J. Patient Safety, Volume 9, 2013.

- [2] American Hospital Association; "Checklists to Improve Patient Safety, Health Research and Educational Trust," Chicago, 2013
- [3] Davis, P.; Lay-Yee, R.; Briant, R.; "Adverse events in New Zealand public hospitals II: preventability and clinical context," The New Zealand Medical Journal Vol. 116, No. 1183, pp. 1-11, October 2013
- [4] Finch, L.R.; "Development of a Substantive Theory of Nurse Caring," International Journal for Human Caring, Vol.12, No.1 pp. 25 – 32, 2008
- [5] Hughes, R.G.; " Patient Safety and Quality: An Evidence-Based Handbook for Nurses," AHRQ Publication No. 08-0043, April 2008
- [6] Joint Commission International; "Accreditation Standards for Hospitals 4th Edition", Oak Brook U.S.A, 2011
- [7] Jansson, C.; Adolfsson.A;" Application of Swanson's Middle Range Caring Theory in Sweden after Miscarriage," International Journal of Clinical Medicine, Vol. 2, pp. 102-109, 2011
- [8] Jayadevappa, R.; Chhatre, S.; "Patient Centered Care - A Conceptual Model and Review of the State of the Art," The Open Health Services and Policy Journal, vol.4, pp.15-25, April 2011
- [9] Kuntoro (2011) Dasar Filosofis Metodologi Penelitian, Surabaya: Pustaka Melati
- [10] Nursalam.(2013) Metodologi Penelitian Keperawatan," Jakarta, Salemba Medika
- [11] Nakhleh, R.E. (2012) Quality Management Tools, Collega Of American Pathologists (CAP)
- [12] Rekleiti, M.; , "Patient Safety and Health Care Quality," International Journal of Caring Sciences, vol. 5, no.2, pp.74-79, May-August 2012
- [13] Ruchi Saini, Meenakshi Agnihotri, Ashok Gupta, Indarjit Walia (2011) Epidemiology of Infiltration and Phlebitis, Nursing and Midwifery Research Journal, Vol-7, No. 1, January 2011
- [14] Susanto, D.; "Intervensi Problem Solving Cycle (PSC) Pada Tim Patient Safety di Unit Rawat Inap dan Farmasi RSU Surya Husadha Denpasar," Disampaikan pada forum IHQN di Hotel Sanur Paradise, 2011
- [15] Tonges, M.; "Translating Caring Theory Into Practice, The Carolina Care Model," The Journal Of Nursing Administration, Volume 41, Number 9, pp 374-381, 2011.
- [16] WHO Collaborating Centre for Patient Safety (2007)"Nine Life Saving Patient Safety Solutions" .
- [17] Watson, J. (2002) " Assessing and Measuring Caring in Nursing and Health Science," Springer Publishing Company, Inc, New York.
- [18] Watson, J. (2008) "Nursing: The Philosophy and Science of Caring," University of Colorado–Denver, Anschutz Medical Center.

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