ORIGINAL ARTICLE

Effects of SBAR Communication through Telephone on the Improvement of Effective Communication in Implementing the Patient Safety Program

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ABSTRACT

Background: Effective communication is a communication that can be understood by both parties who receive and provide the information. Ineffective communication between nurse and doctor becomes one of the causes of sentinel cases. SBAR *(Situation, Background, Assessment, and Recommendation)* can be used for the standards of effective communication between nurses and physicians; one of which is by using the telephone. SBAR communication via telephone is a simple communication framework between the nurse and doctor over the phone in the process of patient medical treatment.
Aim: To analyze the effects of SBAR communication through the telephone to improve the effective communication in implementing the patient safety program in the hospital.
Methods: This research uses quasi-experimental design with a pretest posttest design with a control group. The samples were 34 respondents recruited using the purposive sampling and were assigned to the intervention group (n = 17) and the control group (n = 17). The data were collected through the observations and analyzed using the t-test.
Results: The effective communication in implementing the patient safety program before the intervention was 26.11 and it was 36.70 after the intervention, indicating an increase of 10.59. There were differences in effective communication between the intervention and control groups with a p-value of 0.001. The SBAR communication through the telephone improved the effective communication in implementing the patient safety program in the hospital.
Conclusion: The use of SBAR communication by phone is important, as a solution to support effective communication in the patient safety implementation, and to improve hospital service quality.
Keywords: Effective communication, patient safety, SBAR communication

INTRODUCTION

Patient safety is a service system provided in a hospital to ensure a patient's comfort and security. The system consists of risk assessment, identification, and management, reporting, and incident analysis, ability to learn and deal with an incident by providing minimum risk solutions and preventing injuries. Injuries due to failure to take proper measures or taking improper measures may harm a patient's safety[1].

Patient Safety Incident is any unintended event and condition that has the potential for injuries, and it can actually be prevented[2]. Adverse Events in Utah and Colorado is around 2.9%, with 6.6% fatalities. Adverse Events in New York are at 3.7%, with 13.6% fatalities. The number of deaths due to Adverse Events for inpatients in the US is 33.6 per year, with an average of 44,000 – 98,000 fatalities. A report by the WHO in 2004, cited figures from hospitals in countries of the US, Denmark, and Australia, with Adverse Events, ranges from 3.2–16.6%[3]. The condition in Indonesian in 2007 as reported by Hospital Patient Safety Committee is 145 Patient Safety incidents that comprised 46% of Adverse Events, 48% of Near Miss, and 6% other incidents. DKI Jakarta had the highest incidents by 37.9%, followed by Central Java with 15.9% and some other provinces had lower figures.

Data from Quality Improvement and Patient Safety of K.R.M.T Wongsonegoro Semarang Regional Public Hospital show that Patient Safety incidents from May to December 2015 registered 63 incidents of 2 Sentinel events, 16 Adverse Events, 32 No-harm incidents, 8 Near Miss, and 5 Potential Adverse Events. Patient Safety incidents from January to December 2016 listed 162 incidents of 2 Sentinel Events, 32 Adverse Events, 79 No-harm incidents, 9 Near Miss and 40 Potential Adverse Events. It is clear that that was an increase in the number of incidents from 2015 and 2016 (PMKP, 2016). The Target for Patient Safety has six goals

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and one of them is effective communication. Effective communication is a proper communication to better communicate ideas and descriptions from the caller to the receiver. This is a key for nurses to ensure patient safety based on the standard set in the hospital. Effective communication must be timely, accurate, unbiased, and easily understood by the receiver.[3] A personnel's inability to listen and understand properly may cause ineffective communication.

Ineffective communication is often cited as one of the most common causes of problems in a hospital (Komisi Akreditasi Rumah Sakit., 2011). Miscommunications may take place when; giving oral instruction, giving instruction over the phone, during reporting of critical examinations (Permenkes, 2011) (Komisi Akreditasi Rumah Sakit., 2011). The most common issue in sentinel cases is miscommunication between a doctor and a nurse. Incidents that may lead to injuries or death in a hospital due to bad communication make up to 65%-70% of sentinel events.[4] Miscommunication was the greatest problem as cited by the Joint Commission USA between 1995 and 2006, with 25,000-30,000 cases of preventable incidents that resulted in permanent impairment (11%), these were caused by different understandings (6%), and the rest were due to inadequate expertise.[5] Research shows that 50% of medical errors and 20% of wrong drug administrations are due to ineffective communication[6].

Establishing effective communication between nurses and doctors (medical practitioners) is one effective way to ensure patient safety, and this is endorsed by Health Ministry Regulation[7]. Effective communication is also the goal of the national patient safety initiative by the Joint Commission International (JCI). The standard for effective communication is SBAR (Situation, Background, Assessment, Recommendation)[8]. SBAR communication is a framework that standardizes conversations concerning patient care among medical service providers (CMC Lincoln, 2010). It is aimed at improving effective communication, including during making considerations, either between a nurse and a doctor or between two nurses[7].

Telephone communication is indirect in nature, a nurse is not talking in person to a doctor, for instance, but facilitated by a device (the telephone). The advantages include its practicality[9,10,11], professionalism[12,13,14] and adequate collaboration[15]. SBAR communication allows nurses and doctors to communicate in less than 1 minute (Nazri, 2015). However, observations show that SBAR communication is not 100% implemented yet by nurses, in terms of its components. Nurses apply SBAR communication differently, its documentation is not yet uniform, and many SBAR communication items are not documented by nurses.

One of the measures to reduce incidents that may harm patients is training in SBAR communication via the telephone. Based on interviews with the department for training, head of the ward, and nurses, it was known that not all nurses have been properly trained. Staff development program via training is an effective way to improve nurses' creativity. Adequate support in the form of professional training and learning is an attempt to create a positive working atmosphere to help them provide safe care to patients[16]. A research by Meester shows that SBAR improves effective communications between nurse and doctor and reduces the number of unsuspected deaths. Other research by Fatimah mentions that in terms of patient safety; SBAR communication effectively reduces the number of wrong medication given by nurses[17].

Training in SBAR communication via telephone to be given to nurses is expected to improve effective communication, and hence their implementations for patient care in the hospital. Based on that aforementioned background, a research on "The Effect Of SBAR Communication Via Telephone On Improving Effective Communication For Patient Safety At K.R.M.T Wongsonegoro Semarang Regional Public Hospital" has been carried out.

This research is aimed at describing the characteristics of nurses in terms of age, gender, employment year, and level of education. It also analyses the difference in effective communication prior to and after training in SBAR communication via the telephone in both intervention and control groups. Finally, this research, analyses the effect of SBAR communication via telephone on improving effective communication for patient safety at K.R.M.T Wongsonegoro Semarang Regional Public Hospital.

METHODS

This research is based on the *queasy experiment pre-post test with control group design*. There were two groups of intervention and control, each with 17 respondents. Samples were taken using *non-probability sampling* technique using *purposive sampling*. Respondents were nurses who were carrying out SBAR communication via the telephone, the same nurses were chosen for both *pre* and *post-tests* with inclusion criteria; nurses working in third (3rd) class ward at K.R.M.T Wongsonegoro Semarang Regional Public Hospital, nurses with D III Nursing degree, nurses who have never participated in a training of SBAR communication via the telephone, and were willing to participate in the study.

Meanwhile, the exclusion criteria include the head of the ward and team leader, nurses who have taken similar training before, and those who were not willing to be respondents.

The independent variable was SBAR communication via the phone, while the dependent variable was improving effective communication for patient safety. Training is one of the means to gain new knowledge in order to enhance an individual work and working result as a team in an environment of quality and safety. Staff development program with training and education is effective in improving nurses' creativity and is one of the measures to ensure a positive atmosphere to help nurses provide safe care to patients. Training in SBAR communication via the telephone is a method of providing materials and practices for nurses in class three wards at K.R.M.T Wongsonegoro Semarang Regional Public Hospital who have met the inclusion criteria. This training provided materials lasting 120 minutes long, concerning communications between doctors and nurses when the nurses report critical conditions of patients to doctors via the telephone using the framework of SBAR (situation, background, assessment, and recommendation). This method is aimed at better-structured communication. Once the materials are delivered, role play ensues, with a facilitator and the researcher practicing SBAR communication via the telephone first. Afterwards, respondents will try it themselves. The training is aimed at improving the knowledge and skills of nurses on SBAR communication via the telephone as to make communications better structured, and hence improve safe care for patients.

The instruments that used in this study are an observation sheet with 40 questionnaires, 1-6 questions related to the use of standards in communication, 7-27 questions related to the completeness of communication, 28-29 questions related to communication time, 30 questions related to accuracy in communication, 31- 33 questions related to communication clarity, 34-37 easy to understand communication questions, 38-40 questions related to verification of information by the recipient of the message. Effective communication appraisal contains a statement with two alternative answers, the choice of Yes and No answers, with the category of communication effective if respondents answered 21-40 questions and communication less effective if the respondent answers 0-20 questions. The data were collected by the researcher and supported by four heads of wards in K.R.M.T Wongsonegoro Semarang Regional Public Hospital.

Validity test is based on *content validity* and *face validity.* Observation sheets were developed by the researcher, composed based on sources or theories found. These sheets of SBAR communication via the telephone and effective communication were tested and reviewed by competent experts. The instruments constructed using required aspects were then consulted to clinical academics and practitioners in hospital. Experts are asked to provide input and improvements to the questionnaire made, then the researchers made revisions as directed after. Expert test results expressed effective communication questionnaire is stated valid as many as 40 questions.

Data were collected via direct observation using pre-test prior to training. These served as initial data that spanned 2 (two) weeks. Afterwards, 1 (one) day training followed, with 1 (one) week of coaching and a further 1 (one) week of independent implementation ensued. Then the post-test was administered for 2 (two) weeks. The data analysis technique employed were *paired sample t-test* and *independent sample t-test* statistical tests to figure out the difference and effect of effective communication for patient safety, both prior to and after training on SBAR communication via the phone. Results are said to be significant when $P < 0.05$, and on the contrary, it is insignificant when $P > 0.05$.

Research data had to undergo stages of *editing, coding, scoring, processing* and *cleaning.* They were then analyzed using both univariate and bivariate methods. The univariate analysis is meant to see frequency distribution, while bivariate analysis is to know the differences and the effects of SBAR communication via the telephone on improving effective communication for its implementation in patient safety. The ethics uphold in this research is an *ethical clearance* of the *Ethical Clearance* commission applied by the researcher to the Commission for Health Research Ethics (PEPKP) of the Faculty of Medicine of Diponegoro University. This guarantees the researcher's confidentiality upon providing informed consent and letters of permission to the Nursery Magister Program, Faculty of Medicine, Diponegoro University, and to gain permission to the research facility. Hence, conditions of *informed consent, confidentiality,* and *anonymity* are observed.

RESULT

Table 1 shows that the median age of respondents is 26.94 years with 23 the youngest, and 34 the oldest. Meanwhile, mean employment year for respondents is 2.47 years with 1 year the shortest and 7 years the longest. Gender shows the same number of 17 (50%) for each group. On the other, the most dominant education level is a DIII Nursing for the intervention group with 12 nurses (70.8%) and also for the control

group, with 15 nurses (88.2%). The result of the homogeneity test for each respondent characteristic for both intervention and control group is *p-value* 0.088 for age, *p-value* 0.138 for employment year, *p-value* 0.500 for gender, and *p-value* 0.199 for education. It is found that respondent characteristics are homogeneous, as *p-value* >0.05.

Table 2 reveals that the mean value of effective communication prior to the implementation of SBAR communication via the telephone for the intervention group is 26.11, whereas, after SBAR communication implementation, the value increases to 36.70. This means an average increase of 10.09. Meanwhile, for the control group prior to implementation of effective communication, the value is 26.52 and it increases to 27.94 the implementation, an improvement of 1.42. The result of *Independent t-test* for pre-intervention and pre-control p-*value* = 0.227. Therefore, H0 is accepted and H1 is rejected. This means that there is no difference in effective communication for patient safety prior before and after SBAR communication, implementation of the control group, compared to the intervention group. Results of post intervention and post control tests are p-*value* 0.001, in which P-*value* < 0.05 means it is significant. H0 is rejected and H1 is accepted. This reveals differences in effective communication for patient safety implemented for the intervention and control group after the intervention was made.

The result of *paired t-test* for *pre* and *post*-intervention generated p-*value* = 0.001. P-value < 0.05 means that it is significant. Therefore, H0 is rejected and H1 is accepted. This shows that effective communication for patient safety prior to and after the intervention has its effect for the intervention group. Statistical test for both pre and post control yielded p-*value* 1.49, with p-*value* >0.05 means that it is insignificant. Hence, H0 is accepted and H1 rejected. This indicates that effective communication prior to and after intervention does not have any effect on the control group.

Table 1: Frequency distribution of respondent percentage and characteristic homogeneity for both intervention and control group at K.R.M.T Wongsonegoro Semarang Regional Public Hospital (n=34)

No	Variable	Group		P-*value*
		Intervention	Control	
1	**Age**			
	Mean	26.94	26,94	0.088
	SD	2.883	2,015	
	Min-max	23-34	25-33	
2	**Employment Year**			
	Mean	2.47	3,29	0.138
	SD	2.065	1,490	
	Min-max	1-7	1-7	
3	**Gender**			
	Male:	9 (52.9%)	8 (47.1%)	0.500
	Female:	8 (47.1%)	9 (52.9%)	
4	**Education**			
	D III:	12 (70.6%)	15 (88.2%)	0.199
	Undergraduate (S1)**:**	5 (29.4%)	2 (11.8%)	

Table 2: Result of effective communication test for patient safety in both intervention and control groups K.R.M.T Wongsonegoro Semarang Regional Public Hospital (n=34)

Measurement	Effective communication for patient safety						*P-value*
	Intervention			Control			
	Mean	SD	Min-max	Mean	SD	Min-max	
Pre	26.11	2.34	22-29	26.52	3.00	20-30	*0.227
Post	36.70	2.86	29-38	27.94	3.64	21-36	*0.001
P-value	**0.001			**0.149			

**Independent T-test, **Paired T-test*

DISCUSSION

Effective communication by nurses prior before and after training for SBAR Communication via telephone for Innervations and Control Groups. The results found in this research lead to an analysis that for pre-control and pest control group, there is no difference in effective communication before training in SBAR communication via the telephone was conducted. This is in contrast to those results from pre-intervention and post-intervention which shows differences in effective communication for patient safety after training in SBAR communication via the telephone was administered. An effective communication is the one that consciously and successfully conveys ideas and feelings across[18]. According to Hanafi, effective communication tries to find the proper way as to relay description in the mind

and consciousness of the communicator and the receiver can be understood by each other.

The Joint Commission International has identified effective communication as one of the national patient goals in 2008. Communication means like SBAR (situation, background, assessment, and recommendation) helps nurses to be focused on communication, and hence improves the effectiveness of information transfer. SBAR is especially critical in emergency situations where clear and effective communication among personnel is vital for the survival of a patient[19]. Effective communication can be in the form of electronic, oral, and written information. Miscommunications are most commonly found over the phone. Training in SBAR communication via the telephone provided for the intervention group shows significant changes from pre to post intervention.

The results of this research are in line with those of Riesenberg (2010), which said that SBAR communication is one of the strategies to improve effectiveness in care shifts and reports of patients' conditions[20]. Kambuaya (2016) mentioned that training is aimed at getting rid of gaps in knowledge, attitude, and skills, and it serves as means to facilitate attitude and effective communication to, in turn, improve effectiveness in care shifts and reports of patients' conditions.[1] These very much agree with the findings in this research which indicates increased mean value from pre-intervention to post-intervention with training in SBAR communication via the phone (Muhajirin,Fuad,A & Hasanbasri, 2007).

Effect of SBAR Communication via the Telephone on Improving Effective Communication for Patient Safety for both Pre and Post Interventions. Results show that there is an effect of SBAR communication via the telephone on improving effective communication for patient safety at K.R.M.T Wongsonegoro Semarang Regional Public Hospital. These results are in agreement with those from K. De Mester et al (2013) which stated that SBAR communication eases communications from doctors to nurses in an attempt to reduce the number of unwanted deaths[17]. A research by Wahyuni (2014) revealed that SBAR communication is effective, either directly or via the phone, to improve care shifts and reports of patients' conditions in the ward. It is also shown that SBAR communication involves medical practitioners, patients, and family members according to required communication needs, either individually or in a team, to improve effective communication and hence, ensure patients' safety.

According to Erel Joffe et al. (2013), SBAR Communication via the telephone improves communication between nurses and doctors with the help of structured and accurate SBAR tools to ensure that problems are evaluated and communicated properly to ensure patient safety. A research on patient safety in elderly hip fracture patients: design of a randomized controlled trial by Hanneke Merten et al (2011) involved three interventions, and the result is that SBAR communication improves quality and completeness of information shared among health practitioners that it yields satisfactions from patients suffering from broken hip bones. Therefore, their safety is improved as well[17]. Alvaro et al. (2006) said that standard directive for patient reporting or communication of patients' latest conditions using SBAR communication in detail ensures patient safety[21].

The research carried out here used both intervention and control groups and is supported by some earlier researchers showing the effect of SBAR communication via the phone, especially in the intervention group. It finds that SBAR communication via the telephone significantly improves patient safety. Hence, it is concluded that, evidently, SBAR communication via the telephone does have significant effects on improving effective communication for patient safety at K.R.M.T Wongsonegoro Semarang Regional Public Hospital.

CONCLUSION

Respondents involved in this research are of the following mean characteristics: 26 years mean age, 3 years mean employment year, an equal number of male and female nurses (17 each), and are mostly graduates of D III Nursing (27 nurses). There is a significant difference in effective communication for patient safety for the intervention group, after the intervention. Meanwhile, there is no significant difference in effective communication for patient safety for the control group, both prior to and after the intervention. There is a significant effect of SBAR communication via the telephone in improving effective communication for patient safety at K.R.M.T Wongsonegoro Semarang Regional Public Hospital, both prior to and after training in the intervention group.

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