

The Influence of Reinforcing Nurse-Doctor Inter-professional Collaboration on Patient Safety Target at RSUP H. Adam Malik, Medan

Mulidan¹, Dewi Elizadiani Suza², Diah Arruum³

¹Faculty of Nursing, Universitas Sumatera Utara, Indonesia

²Faculty of Nursing, Universitas Sumatera Utara, Indonesia

³Faculty of Nursing, Universitas Sumatera Utara, Indonesia

Abstract: *Inter-personal collaboration is practiced in providing a professional and comprehensive health service with an effective collaboration among professionals, patients, and health team in making any decision, based on patients' needs for increasing their safety. Objective: The objective of the research was to identify the influence of reinforcing nurse-doctor professional collaboration on patient safety target at RSUP H. Adam Malik, Medan. Method: The research used quasi-experimental method with non-equivalent control group pre-post test design. The samples were 44 nurses and 44 doctors, taken by using non-probability sampling with consecutive sampling technique. The hypothesis was tested by using non-parametric with Spearman Rho statistic tests. Research Result: The result of Spearman's Rho test showed that there was the influence of inter-professional collaboration seminar on patient safety target ($p=001 < 0.05$). Conclusion: It was concluded that there was the influence of the reinforcement in seminar and role-play of nurse-doctor inter-professional collaboration on patient safety target at RSUP H. Adam Malik, Medan. Recommendation: It is recommended that the hospital management provide seminars/role-plays concerning the practice of inter-professional collaboration to re-socialization in the form of seminars or training to new nurse doctors so that it is expected to be able to adapt between professions in accordance with their competencies and to improve the knowledge, attitude and skill of nurses and doctors in doing inter-professional collaboration in increasing service quality, effective interprofessional collaboration that can enhance teamwork interprofessional and patient safety target in the hospital.*

Keywords: *Inter-professional Collaboration, Patient Safety Target, Nurse and Doctor*

Date of Submission: 09-10-2019

Date of Acceptance: 25-10-2019

I. Introduction

The practice of interprofessional collaboration (IPC) has become a strategy to enhance collaboration between health professionals from two or more professions supporting each other, respecting inter-professions so as to strengthen relationships between professions, patients in providing services, joint decision making on the patient's clinical condition, achieving shared goals which results in good quality of service and patient satisfaction. Interprofessional collaboration an activity that aims to strengthen relationships between other professions that work together in achieving common goals, effective decision making that focuses on patients, clear and orderly communication (Dougherty, 2009). Previous research was obtained by Supper, L et al. (2018) obtained the practice of interprofessional collaboration of collaboration between professions involving several health professions and patients, through coordination and collaboration for joint decision making on the patient's clinical condition.

According to the World Health Organization (2010) it was found that data from the impact of implementing interprofessional collaboration from 42 special countries in the field of health implementation of interprofessional collaboration can increase cooperation and coordination among service providers such as clinical resource procurement, increased recovery for chronic diseases and can maximize services and improve safety patients in each hospital. According to the research of Chenjuan et al. (2018) found that the effect of nurse-doctorial interprofessional collaboration on patient care shows that the increase in nurse-doctor interprofessional communication affects the level of patient safety by reducing the incidence of hospital-acquired pressure ulcers (risk of infection) 31% and the incidence of risk of injury / fall patients 8%.

Components in the application of interprofessional collaboration set by the American Association of Colleges of Nursing (2011) obtained interprofessional collaboration competencies consisting of 4 competencies, namely attitudes in interprofessional collaboration, interprofessional responsibility role roles, communication competencies in interprofessional and interprofessional teamwork.

Interprofessional communication in a good nurse-doctor collaboration can influence and improve the quality of health services, the target of patient safety in hospitals. According to research by Kalberg et al. (2017) found that nurse – doctor interprofessional collaboration can influence nurse-doctor interprofessional communication relationships in a room that can improve patient safety both in terms of teamwork and nurse-doctor attitudes in hospitals.

Strengthening interprofessional collaboration can improve communication, attitudes, teamwork and mutual respect for fellow professionals in providing quality services that can reduce undesirable events, increasing nurse-doctor communication in conducting interprofessional collaboration has the potential to increase patient confidence in the services they receive. the research of Matzioul et al. (2014) show that effective interprofessional collaboration between health professionals is important to provide efficient treatment, reduce the risk of infection, and show that poor communication between other health professions can be detrimental to patients.

The implementation of interprofessional collaboration has a good impact on health services, interprofessional communication, teamwork, and professional attitudes that can affect the quality of service in hospitals. The results of the study were supported by the results of the study of Bright et al. (2017) the survey results found a high level of nurse-doctor understanding related to interprofessional collaboration the majority was 86.67% (n = 65). This is because the nurse-doctor's knowledge and attitude has a positive effect on the application of interprofessional collaboration in hospitals.

The Joint Commission Sentinel Event Statistics (2011) received 1,243 hospital reports, identified about 60% due to the problem of ineffective interprofessional communication in collaboration. This is supported by research by Brighth et al. (2017) found that health care providers find one of the important or common points in health care is interprofessional communication, ineffective communication has caused significant medical errors including preventable hospital deaths and Urisman et al. (2017) found the results of pre-intervention compared to post-intervention found an increase in satisfaction in implementing interprofessional collaboration after socialization about interprofessional collaboration on patient safety such as reducing the risk of infection, treatment, medical errors and injured / falling patients.

Interprofessional attitude is an important part that creates an interprofessional professional identity that can foster mutual respect, mutual trust between professions becomes the basis of cooperation. Research This is supported by research by Elsous et al. (2017) showed a significant difference between nurses and doctors' attitudes towards collaboration between nurses 3.40% compared to doctors 3.01% so it can be concluded nurses have a better attitude value in collaboration than doctors statistically ($p < 0.001$).

The domain of nurse-doctor team collaboration is one of the competencies to achieve effective interprofessional collaboration that is able to foster relationships between professions to be more efficient in providing care. Susan S. et al. (2018) states that the services provided as a result of good cooperation between professions can create conditions that meet each other so that better health service goals are achieved.

Implementing interprofessional collaboration is currently being prioritized for collaborative, team-integrated work to achieve the goal of providing patient-centered, safe and effective care that meets the needs of patient needs. Based on the phenomena obtained in government hospitals towards the implementation of interprofessional collaboration of nurse-doctor, there were 70% -80% medical errors due to ineffective communication between teams such as medication errors, medical errors, and the risk of infection in patients. This causes the implementation of interprofessional collaboration is still not optimal in hospitals related to patient safety is still not optimal and there are still errors in the administration of drugs, medical errors, and the risk of infection in patients (WHO, 2010).

Patient safety is a procedure or process that provides safer patient services that is influenced by the behavior and application of implementing nurses who prioritize the interests of patient safety in hospitals (JCI, 2011). Improvement of patient safety indicators is influenced by several factors that support in health care, that supports increased patient safety is interprofessional collaboration. The importance of interprofessional collaboration has a positive impact on patient safety including: 1) can reduce the number of complications and infections, 2) length of stay in hospital, 3) increase the safety of high risk drugs, 4) death rates, and 5) increase patient and team satisfaction health (WHO, 2010)

Indicators of patient safety targets at each hospital often occur, this is due to the occurrence of professional negligence in providing patient care such as ineffective interprofessional communication, division of duties of nurses-doctors is less than optimal and the lack of teamwork. Based on data from the World Health Organization (2010) incidents, the incidence in Europe includes certainty of the right procedure, 83.5% risk of infection, 27% correct location and exact operation patients, medication errors as much as 18.3%, and evidence of medical errors shows 50-72.3%.

The implementation of interprofessional nurse-doctor collaboration is very important in building cooperation to achieve common goals towards patient recovery and can improve the quality of health services towards patient safety goals. The method that can be used to strengthen interprofessional collaboration with

seminars and roleplay is only focused on professions that are often related to each other in providing patient care, namely nurses and doctors, the reasons nurses are targeted because they are most often related to each other and patients to improve and strengthen close harmonious relationships in working together as an interprofessional team so that work overlaps do not occur and increase understanding related to each other's responsibilities with other professions so that effective interprofessional communication can be established which can improve good relations between professions and patient safety is guaranteed. The problem in this study is how the influence of strengthening interprofessional nurse-doctor collaboration can have an impact on improving patient safety goals in hospitals. This study aims to determine the effect of strengthening interprofessional nurse-doctor collaboration on patient safety goals. This research is a quantitative research.

II. Method

The quantitative research design used in this study is a quasi-experimental study using a non-equivalent control group design pre-post-test design that provides manipulation of independent variables to determine the effects of manipulation by making comparisons between the intervention group and the control group before and after it is given. intervention. In this study respondents were given a pretest before treatment was given in the form of seminars and roleplay to identify the knowledge and attitudes of nurses and doctors using the IPC questionnaire and patient safety targets (SKP) then after treatment of respondents (Posttest) re-assessment of the implementation of IPC and SKP to see the effect or differences in the intervention group were given. The treatments given to respondents were seminars and IPC roleplay.

The location of this study was carried out in the Haji Adam Malik General Hospital in Medan. The research was conducted in February to May 2019. The population in this study were nurses who worked at the Adam Malik General Hospital in Medan. Sampling in this study was conducted by using a non probability sampling technique that is a sampling technique that is not done randomly. The sampling method used is purposive sampling determination of the sample by selecting the sample and using the knowledge of researchers about the population to choose and decide the sample in accordance with the criteria determined by the researcher (Polit and Beck, 2012). The inclusion criteria in this study are: Nurses, among others: 1). Willing to be a respondent is evidenced by filling out informed consent, 2). The working period is more than 2 years, 3). Not in orientation period, 4). Not on a learning assignment, 5) not on an external service and not on work leave, 6). Implementing nurses on duty inpatients. Doctors include: 1). Willing to be a respondent is evidenced by filling out informed consent, 2). PPDS doctor, 3) not on duty and not on work leave, 6). The doctor in charge of the room at the Haji Adam Malik General Hospital.

The number of samples in this study is as much as using a power analysis table with a significant level (α): .50 the number of samples is within the estimated effect size .60, and power .80. So that the total sample obtained was 36 nurses, a total of 72 samples. Efforts in anticipating the possibility of selected subjects or samples dropping out need to increase the number of samples 10% of the total sample so that the sample size remains fulfilled so that the total sample is 88 respondents. Then the sample size planned to be studied was 44 nurses and 44 doctors (Polit and Beck, 2012).

The preparation phase for data collection is carried out through preliminary studies, taking care of ethical clearance and then proceed with the licensing of research sites, by submitting a request for research from the leadership of the Faculty of Nursing, University of North Sumatra addressed to Haji Adam Malik General Hospital, Medan, and then researchers submit requests for permission to carry out research to Haji Adam Malik General Hospital Director and researchers then coordinated with the hospital about the schedule, venue and participants of the seminar and the roleplay of IPC. The next stage the researcher identifies the research sample based on the criteria that have been made before the sample collection is done in accordance with the criteria for sample inclusion. The next stage asks the respondents' willingness to become a sample by first explaining the intent and purpose of the study voluntarily asking respondents to sign an informed consent sheet, then all of the study samples totaling 88 people to fill out the interprofessional collaboration scale questionnaire and the patient safety target scale. The data will be pre-test data. The next step was to collect questionnaires for further processing and analysis as a result of the pre-test results of respondents who had a low category score included as research subjects with 44 nurses called the intervention group. The next stage was given treatment in the form of seminars and roleplaying of the IPC, then two weeks after the treatment was carried out a post-test to see the effect of the treatment and for two weeks the observations of the implementation of the IPC were then documented in the data tabulation.

III. Result and Discussion

Result

The characteristics of nurses and doctors in the intervention and control group distribution and the percentage of demographic data characteristics of nurses and doctors can be seen in table 1. Table 1 shows the characteristics of the intervention and control group samples based on the results of statistical tests on the age of respondents in table 1 known that the Nurse respondents were 44 people (50%), doctors 44 people (50%). The majority of female sex is 49 people (55.7%) and 39 men (44.3%). Majority age 31-50 years 45 people (51.1%), 25-30 years 43 people (48.3%), while the maximum length of service is 2-10 years 78 people (88.6%), 11-20 10 people (11.4%). The majority of S1 education level is 79 people (89.8%), D3 is 8 people (9.1%) and D4 is 1 person (1.1%). The majority worked in inpatients with 57 people (89.8%) and ICU 31 people (9.1%).

Table 1 Characteristics of Nurses and Doctor Intervention Groups and Collaborative Interprofessional Control

Nurse-Doctor Characteristics	Control and Intervention Groups	
	F	Percent (%)
Sex		
Male	39	44,3
Female	49	55,7
Number of Nurse-Doctor		
Nurse	44	50
Doctor	44	50
Age		
25-30	43	48,3
31-50	45	51,1
Working Period		
2-10 Year	78	88,6
11-20 Year	10	11,4
Education		
Bachelor	79	89,8
Diploma III Nursing	8	9,1
Diploma IV Nursing	1	1,1
Task Room		
Inpatient	57	89,8
ICU	31	9,1

Source: Research Results

Differences in Interprofessional Nurse and Doctor Collaboration in the Pretest-Posttest Intervention and Control Group

The differences in the IPC attitudes of nurses and doctors can be seen in table 2. Based on table 2 shows the IPC attitudes of nurses and doctors in both sample groups (intervention and control) with the Mann-whiney U statistical test at the pretest-posttest stage. At the pretest stage there was a difference in the average value of 22.81 and the post-test obtained 66.19 with a significant value of p value = 0.00. Whereas in the control group it can be seen in Table 3 that there is no difference in the pre-test and post-test mean values. At the pre-test stage, it was obtained 42.85 and 48.15 post-test with p value = 0.0543 (p => 0.05).

Table 2 Differences in Interpeofessional Nurse-Doctor Collaboration in the Pre-Test and Post-Test Intervention Group

IPC Intervention Group	N	Mean	SD	p value
Pre-test	44	22,81	25,383	,000
Post-tes	44	66,19	.503	

Source: Research Results

Table 3 Differences in Interpeofessional Nurse-Doctor Collaboration in the Pre-Test and Post-Test Control Groups

IPC Control Group	N	Mean	SD	P value
Pretest	44	42,85	15,684	,543
Posttest	44	48,15	.503	

Source: Research Results

Differences in the Implementation of Patient Safety Goals in the Pretest-Posttest Intervention and Control Group

The difference in the implementation of patient safety goals before and after being given a convention can be seen in table 4. Based on table 4 shows the value of implementing patient safety targets in-patient care in both sample groups (intervention and control) with the Wilcoxon Sign Rank Test statistical test at the pretest-posttest stage. At the pretest stage there were differences in the mean value of 84.18 and the post-test obtained 112.34 with a significant value of p value = 0.00. While in the control group it can be seen in tabel 5 that no significant difference was found in the pre-test and post-test. In the pre-test stage, the value of 105.95 and 106.27 post-test were obtained with a p value = 0.0932 (p => 0.05).

Table 4 Differences in the Implementation of Patient Safety Goals in the Pre-Test and Post-Test Intervention Group

SKP Intervention Group	n	Mean	SD	p value
Pre-test SKP	44	85.18	5,013	,000
Post-tes SKP	44	112,34	8.664	

Source: Research Results

Table 5 Differences in the Implementation of Patient Safety Goals in the Pre-Test and Post-Test Control Groups

SKP Intervention Group	N	Mean	SD	p value
Pre-test SKP	44	105,95	14,678	,932
Post-tes SKP	44	106,27	13.805	

Source: Research Results

Effects of Strengthening Interprofessional Nurse-Doctor Collaboration on the Implementation of Patient Safety Goals

The effect of strengthening interprofessional collaboration of nurses and doctors in the form of seminars and roleplay on the implementation of patient safety goals using the Spearman Rho 'statistical test can be seen in table 6. Based on table 6, a significant value is obtained with p = 0.01 (P = <0.05) with a mean score of pre-test 95.07 and post-test 109.31 so that it has a significant value which can be concluded that there is a significant effect on the intervention group.

Table 6 Effects of Strengthening Interprofessional Collaboration Nurse-Doctor against Patient Safety Goals

IPC and SKP	N	Mean	SD	p value
Pre-test IPC and SKP	44	95,07	15,452	0,01
Post-test IPC and SKP	44	109,31	11,858	

Source: Research Results

Discussion

Based on research results obtained after the intervention in the form of seminars and interprofessional collaboration collaboration nurses and doctors showed an increase in the average value before and after the intervention and showed a significant value. This data shows that the treatment given to the intervention group gives a difference in attitude with proven Man-Whitney statistical results p = 0.00 (p = <0.05), that it can be concluded that there are differences in the attitudes of nurses and doctors in carrying out interprofessional collaboration before and after given strengthening interprofessional collaboration.

Significantly able to improve the attitude of nurses and doctors in conducting interprofessional collaboration in enhancing team collaboration, interprofessional communication and mutual understanding of the role of responsibilities between professions so that effective cooperation and effective communication between professions are established to achieve common goals and can improve patient safety. In line with Supper's research, L et al. (2018) shows that the practice of interprofessional collaboration is a collaboration between professions involving several health professions, patients through coordination and collaboration for joint decision making on patient clinical conditions in improving patient safety and research Bright et al. (2017) the survey results obtained the level of understanding of nurses-doctors related to interprofessional collaboration

the majority of high 86.67%, this is because the level of knowledge and attitudes of nurses and doctors have a positive effect on the application of interprofessional collaboration in hospital hospitalization.

Based on the Wilcoxon Sign Rank Test results obtained differences in the implementation of patient safety targets before and after the intervention was given with a Mean-pre-test 84.18 and post-test 112.34 with a significant value of p value = 0.00. It can be concluded that there is a significant effect on improving the implementation of patient safety targets after being given a strengthening of the IPC. In line with the study of Chenjuan et al. (2018) and Macdonald (2017) found that the effect of nurse-physician collaboration interprofessional practices on patient care showed an increase in the domain of interprofessional communication that affected the level of patient safety by decreasing the incidence of hospital-acquired pressure ulcers (risk of infection) 31% and the incidence of risk 8% injured patients.

Strengthening interprofessional collaboration especially nurses and doctors becomes vital in providing care to patients by increasing professional teamwork, understanding the roles and responsibilities between professions and effective communication so that interprofessional collaboration is established which efficiently improves the implementation of patient safety goals in hospitals. Based on the Spearman Rho 'statistical test results obtained a significant value strengthening the collaboration of nurses and doctors interprofessional reinforcement of patient safety targets with a value of $p = 0.01$ ($p = <0.05$), it can be concluded that the treatment in the form of seminars and roleplay IPC affect the implementation of safety targets patient. The results of this study are consistent with the research of Matzioul et al. (2014) show that effective interprofessional collaboration between health professionals is important to provide efficient treatment, reduce the risk of infection, and show that poor communication between other health professions can be detrimental to patients. In line with the research of Elsous et al. (2017) showed significant differences in nurses and physicians' attitudes towards interprofessional collaboration, namely nurses 3.40% compared to doctors 3.01% so it can be concluded nurses have better attitude values in collaboration than doctors statistically ($p <0.001$).

IV. Conclusion and Suggestion

Conclusion

There was a significant significant effect before and after the strengthening of interprofessional collaboration in the form of seminars and roleplaying on the implementation of patient safety targets in hospital hospitalization. This is proven by the results of statistically meaningful tests and an increase in each of the interprofessional collaborative domains such as changes in nurse-doctor attitudes in understanding roles and responsibilities between professions so as to create effective communication and teamwork that have an impact on improving the implementation of patient safety goals achieved and decreasing events medical error.

Suggestion

Recommendations for Hospital management to provide interprofessional collaboration re-socialization in the form of seminars or training for new nurses so that they are expected to be able to adapt between professions in accordance with their competencies and strengthen the knowledge, attitudes and skills of nurses to conduct effective interprofessional collaborations that can improve interprofessional teamwork and patient safety goals at the Hospital.

References

- [1]. American Association of Colleges of Nursing. (2011). *Core competencies for interprofessional collaborative practice: Report of an expert panel*. Washington, D.C.: Interprofessional Education Collaborative. Retrieved from: https://www.aacom.org/docs/default-source/insideome/ccrpt05-10_11.pdf?sfvrsn=77937f97_2.
- [2]. Bright, B., Austin, B., Garn, C., Glass, J., & Sample, S. (2017). Identification of interprofessional practice and application to achieve patient outcomes of health care providers in the acute care setting. *International Journal of Caring Sciences*. <https://doi.org/10.1016/j.xjep.2017.09.003> 2405-4526/© 2017 Elsevier Inc. All rights reserved.
- [3]. Chenjuan, M., Parkb, H., Shang, J. (2018). Inter- and intra-disciplinary collaboration and patient safety outcomes in U.S. acute care hospital units: A cross-sectional study. *Internasional Journal Of Nursing Studies* 85 (2018) 1-6 <https://doi.org/10.1016/j.ijnurstu.2018.05.001>.
- [4]. Dougherty, MB., and Larson, E. (2009). A Review Of Instrument Measuring Nurse-Physician Collaboration. *Journal Of Nursing Administration*, Vol. 35, No. 5, pp 244-2537.
- [5]. Elsous, A., Radwan, M., and Mohsen, S. (2017). Nurses and Physicians Attitudes toward Nurse-Physician Collaboration: A Survey from Gaza Strip, Palestine. *Nursing Research and Practice*, volume 6, Page 7, <https://doi.org/10.1155/2017/7406278>.
- [6]. Kallberg, S. A., Ehrenberg, A., Florin, J., Ostergren, J., and Egoransson, K. (2017). Physician' and Nurses' Perceptions Of patients Safety Risk in the Emergency Department. *Journal of Intermeasional Emergency*, .<http://dx.doi.org/10.1016/j.ienj.2017.01.002> 1755-599X/2017 Elsevier Ltd. All rights reserved.
- [7]. Matzioul, F., Vlahioti, E., Perdikaris, P., Matziou, T., Megapanou, E., and Petsios, K. (2014). Physician and nursing perceptions concerning interprofessional Communication and collaboration. *Journal of Interprofessional Care*, volume 28(6), page 526-533, <https://doi.org/10.3109/13561820.2014.934338>.
- [8]. Mei, B., Wang, W., Shen, M., Cui, F., Wen, Z., and Ding, J. (2017). The physician-nurse collaboration in feeding critically ill patients: A multicenter survey. *A multicenter survey journal*, volume 36, page 63-67, <http://dx.doi.org/10.1016/j.apnr.2017.05.007>.

- [9]. Polit, D.F., & Beck, C. T. (2012). *Nursing Research: Appraising evidence for nursing practice*, (7thed.). William and Wilkins, Lippincott.
- [10]. Supper, I., Catala, O., et al. (2014). *Interprofessional Collaboration in Primary Health Care: A Review of Facilitators and Barriers Perceived by Involved Actors*. *Journal of public health* Vol. 37 No. 4 pp. 716-727, <http://doi.org/10.1093/Pubmed/Fdu.102>.
- [11]. Susan, H., Virginia, J., et al. (2018). *Fostering Interprofessional Collaborative practice in Acute Care Through an Academic-Practice Partnership*. *Journal of Interprofessional Care*, <http://doi.org/10.1080/13561820.2018.1470498>.
- [12]. The Joint Commission. (2011). *Sentinel event data. Event type by year 1995- third quarter 2011*. Retrieved from
- [13]. http://www.jointcommission.org/assets/1/18/Event_Type_Year_1995_3Q2011.pdf
- [14]. Urisman, T., Garcia, A., and Harris, H.(2017). Impact of Surgical Intensive Care Unit Interdisciplinary on Interprofessional Collaboration and Quality of Care : Mixed qualitative-quantitatif. *Intensive and Critical care Nursing, volume 1, page 6*.<https://doi.org/10.1016/j.iccn.2017.07.0010964-3397>/© 2017 Elsevier Inc. All rights reserved.
- [15]. World Health Organization. (2010). *Framework for Action on Interprofessional Education & Collaborative Practice*. Geneva, Switzerland: WHO. Diakses dari http://whqlibdoc.who.int/hq/2010/WHO_HRH_HPN_eng.pdf.

Mulidan. " The Influence of Reinforcing Nurse-Doctor Inter-professional Collaboration on Patient Safety Target at RSUP H. Adam Malik, Medan. " *.IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, vol. 8, no.05 , 2019, pp. 43-49.