

ORIGINAL ARTICLE

A BEDSIDE HANDOVER EDUCATIONAL INTERVENTION EFFECT ON PATIENTS SATISFACTION IN MMC KUNINGAN HOSPITAL JAKARTA

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Abstract

Successful implementation of bedside handovers depends on communication, where communication is one of the predictors of patient satisfaction. The purpose of this study was to determine the effect of bedside handover educational intervention on patient satisfaction. A Quasi-experimental study design, pre-test and posttest with nonequivalent control group were applied in this study. Respondents obtained as many as 118 for the intervention group and 30 respondents for the control group. A paired t- test, an independent t-test, chi-squared test and a SEM (structural equation model) were used to analyze data. The results of test hypotheses shows five of the seven independent variables have significant effect on patient satisfaction and two insignificant effect on patient satisfaction; bedside handover educational intervention $t = 3.64$, implementation of bedside handovers $t = 3.66$, bedside handover perceived by patients $t = 4.4$, age $t = 7.1$ and education level variables $t = 3.55$. Two insignificant independent variables that not have effect on patient satisfaction were gender $t = -3.34$ and patient health status $t = -2.07$. To achieve patient satisfaction, bedside handover can be applied as one of the handover methods in the inpatient care room.

Keywords: bedside handover, patient satisfaction, education intervention, communication

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Introduction

Accurate communication during bedside handover is a key element of safety and quality of service. Poor communication during handovers has an impact on patient safety (1-3). An adverse event due to poor communications in the USA was found 70% of cases of health care (4). Due to poor communication, clinical management cases occur in 22% of cases in Australia. Near miss event occurrences in Indonesia occurred as much as 53.33%, while the adverse events were 46.67% (4).

Patient satisfaction is often used as an indicator of quality measurement of care services. Patient satisfaction is also an indicator of the outcome of patient care success. (7,8). Patients who feel satisfied with health services tend to comply with advice, loyal and

obedient. Conversely, patients who are dissatisfied tend to disobey treatment plans, change doctors or move to other health services (7).

The implementation of bedside handover in Washington increases patient satisfaction. The reason is because patients were included in their treatment (8). Bedside handover also increases nurse communication which affects one of the determinants of patient satisfaction (8). Other patient satisfaction predictor is “interpersonal care “that important in patient satisfaction (14). Other factors that influence patient satisfaction are age, gender, education, socioeconomic status, marital status, ethnicity, beliefs (14).

Based on pilot study, a description of the implementation of the handover conducted in MMC Hospital in October 2017, the handover was carried out at the nurse station and then followed to the patient's room. Minor problem is found to the unstructured content of the handover. We also found nurses are low. There were many interruptions during handover from patient nurse call, doctor's visit and visitor

Objective

This study aimed to examine the effect of bedside handover education interventions on patient satisfaction before and after implementation at MMC Hospital Kuningan, Jakarta.

Method

Research design

A quasi-experimental nonequivalent pre-test & post-test design was applied in this study. The study was conducted in two groups without randomization. Through bedside handover educational interventions to the group of nurses who were intervened, the success of educational interventions, increased implementation of bedside handovers, bedside handovers perceived by patients and patient satisfaction pre intervention were analyzed.

Setting, samples, sampling technique

This study was conducted in the medical and surgical ward on the 3rd floor, 4th floor and 5th floor of MMC Hospital Kuningan, South Jakarta. Data were collected from these wards January to March 2018 (pre) and April to July 2018 (post). In this study using nonprobability sampling, patient as respondents were invited to complete a pre and post implementation survey on the participating wards. The sample size used in this study is based on the Rules of thumb formula (9). We anticipated the reduction in sample so we added 10% of the total sample became $106 + 10.6 = 116.6$ (117) respondents. Comparison between the intervention group respondents with the control group is 75% and 25% so that the total sample in the two groups becomes 118 respondents (patients). As many as 114 nurses from all wards also invited. We divided all nurses from the participating wards 89 nurses at join the bedside handover training and 25 nurses in the control group without training.

Instruments

A pre and post-test sheets was used to evaluate nurse's knowledge about bedside handover in class room. A competency observation sheet also used to evaluate nurse ability

conducting nurse bedside handover. This instrument modified from Chaboyer in accordance with the needs of the ward (3). This observation consists of 6 dimensions and 16 indicators. The six dimensions observed were preparation, introduction, information exchange, patient involvement, review of patient safety and the termination stage. Patient as participated respondent in this study also asked to fill a bedside handover questionnaire sheet. The questioner measure how the participant perceived bedside handover. It consists of 12 question items to measure patients view about the implementation of a bedside handover around them. To collect patient satisfaction, we used instrument that developed by Sand-Jecklin & Sherman (10). The patient satisfaction questionnaire consisted of 17 questions with overall instrument reliability according to Cranach's α was 0, 96, and inter item correlations ranged from 0, 49–0, 80. Permission was obtained from the author

Ethical Consideration

Ethical approval was obtained from the Ethics Committee with thin both MMC Hospital and the Sint Carolus University. Written consent was obtained from patient as participants for the bedside handover perceived by patient and patient satisfaction survey

Data analysis

1. Descriptive statistics are used to identify participant's demographic data. It also used to analyze patients' satisfaction towards nursing bedside handover before and after the intervention.
2. Chi-Squared Test was used to determine the effect of bedside handover educational intervention on improvement in bedside handover implementation. It also used to see whether there was an effect of an improvement in bedside handover implementation on the bedside handover that perceived by patients.
3. A paired t-test was used to determine patient satisfaction before and after the implementation of bedside handovers between intervention groups.
4. An independent t-test was used to determine patient satisfaction between intervention group and the control group.
5. A Structural equation modeling with the Confirmatory Modeling Strategy also used to assess unobservable 'latent' constructs

Results

Patients' satisfaction towards nursing bedside handover before and after the intervention

Results of the t test showed that, statistically; there were differences in the results of the pre and post bedside handover education for nurses in the intervention group significantly ($p=0.00$). Regarding the implementation of bedside handover after education, were significant differences between the two groups with ($p=0.00$). There were significant differences, bedside handover perceived by patients in the intervention group ($p=0.00$). The post survey of patient satisfaction after implementation toward bedside handover also found significantly difference with ($p=0.00$).

Table 1. T test Results before and after handover education on the intervention group

	n	mean		Sig (≤ 0.05)
		Pre	Post	
Score of Pre-Post bedside handover Interventions	100	.74	.98	0.00
Increased implementation of bedside handovers	83	.74	.98	0.00
Bedside handover perceived by patient	88	1.67	1.71	0.00
Patient Satisfaction	88	1.77	1.81	0.00

Perceived beside handover

Investigating the effect of bedside handover educational to improve the implementation of bedside handovers was not significant ($p = 0.23$). Regarding the improvement in the implementation of bedside handovers, patient perceived bedside handovers had a significant effect ($p = 0.00$).

Table 2. Test results of Chi-squared test

		Phi	Cramer's V	Contingency Coefficient
Effect of Bedside handover interventions on improving the implementation of bedside handovers	N 118	-0.11	.11	.109
	Approx. Sig	0.233	0.233	0.233
Effect improvement of bedside handover Implementation toward patient perceived of bedside handover	N 118	1	1	.707
	Approx. Sig	0,000	0,000	0,000

Comparison of patients' satisfaction between the experimental group and the control group

Comparing the test results in table 3 above showed; there was a difference in the increase in the implementation of bedside handovers in the control group and the intervention group ($p < 0.00$).

Table 3. Independent t test Results for Improving the Implementation of Bedside Handovers

Implementation of Bedside Handovers through observation	n	Mean Rank	Mann-Whitney U	Wilcoxon W	Z	Sig.
Control	30	39.27	713,000	1,178,000	-4,383	0
Intervention	88	66.4				

Independent t test results showed that bedside handover perceived by patients in the control group and intervention group before and after intervention were significant difference ($p= 0.00$). Also the results of patient satisfaction, there were significant differences satisfaction between the control group and the intervention group before and after implementation of bedside handover ($p= 0.00$).

A Structural equation modeling with the Confirmatory Modeling Strategy

Figure 1. Research path diagram (hybrid / full model)

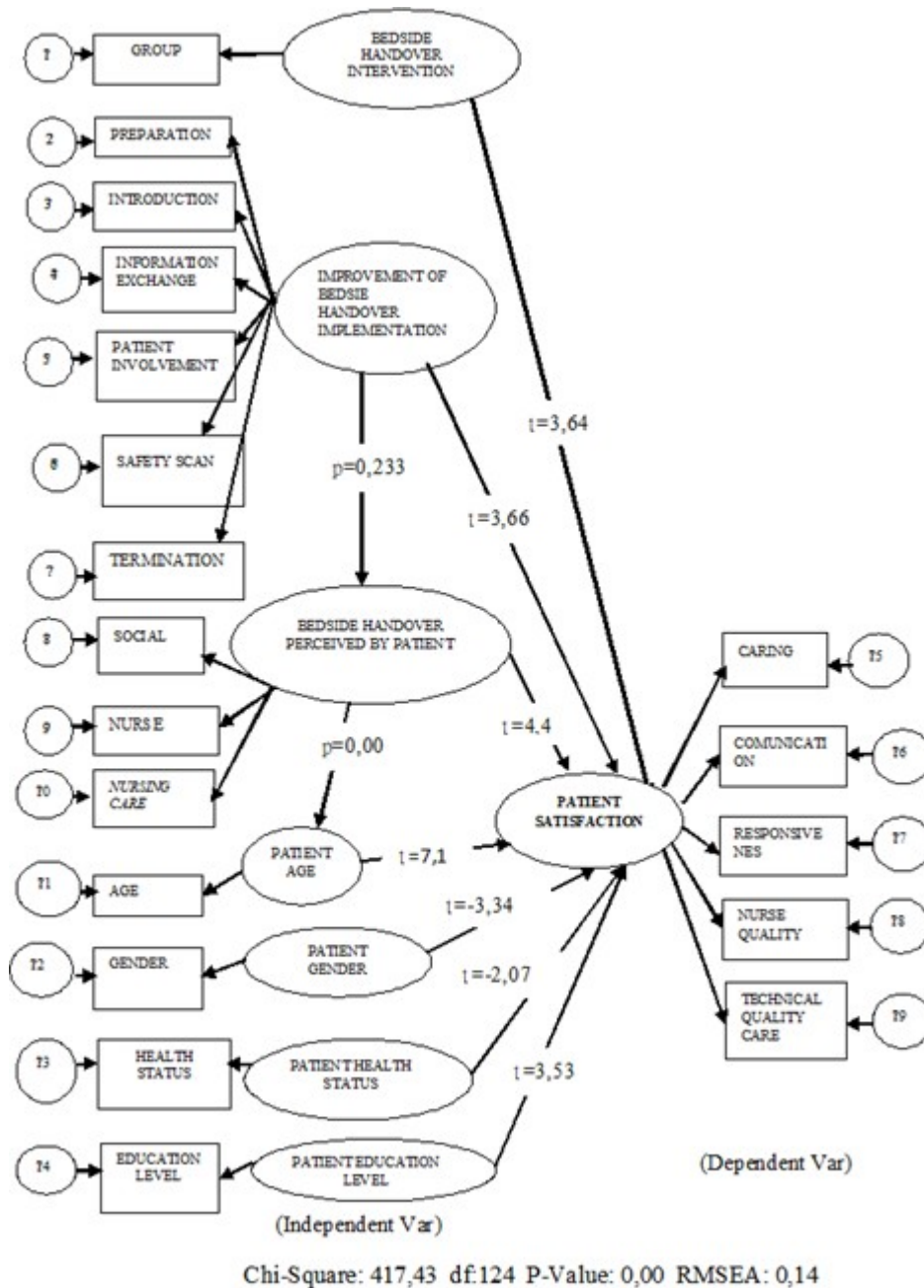


Table 5. Structural Fitting Model Tests

GOF size	Match Level Target	Estimated Results	Match Level
Chi Squared & P	Chi Square / df <3-5	3.36	Fit
Root Mean Square Error of Approximation (RMSEA) P (close fit)	RMSEA ≤0.08	0.14	Unfit
Normed Fit Index (NFI)	NFI ≥ 0.9	0.50	Unfit
Non Fit Index (NNFI)	NNFI ≥ 0.9	0.45	Unfit
Comparative Fit Index (CFI)	CFI ≥ 0.9	0.60	Unfit
Incremental Fit Index (IFI)	IFI ≥ 0.9	0.62	Unfit
Relative of Fit Index (RFI)	RFI ≥ 0.9	0.4	Unfit
Goodness of Fit Index (GFI)	GFI ≥ 0.9	0.05	Unfit
Adjusted Goodness of Fit Index (AGFI)	AGFI ≥ 0.9	0.46	Unfit

The structural fitting model test results that hybrid data models cannot confirm the research model.

Table 6. Research Hypothesis test results

H	Structural path	T- Value	result	Conclusion
H1:	Bedside Handovers Education Interventions → Patient Satisfaction	3.64	Hypothesis confirmed by data	There was an effect of bedside handover education for nurses on patient satisfaction
H2:	Improved Implementation of Bedside Handovers → Patient satisfaction	3.66	Hypothesis confirmed by data	There was an effect of improvement of bedside handovers implementation on patient satisfaction
H3:	Bedside handovers perceived by the patient → Patient Satisfaction	4,4	Hypothesis confirmed by data	There was an effect of the bedside handover perceived by patient on the patient's satisfaction
H4:	Age → Patient satisfaction	7,1	Hypothesis confirmed by data	There was an influence of patient's age factor on patient satisfaction
H5:	Gender → Patient Satisfaction	-3,34	Data did not confirm the hypothesis	There was no influence of patient gender factors on patient satisfaction
H6:	Patient health status → Patient Satisfaction	-2.07	Data did not confirm the hypothesis	There was no influence of patient health status factors on patient satisfaction

H7:	Education Level → Patient Satisfaction	3.55	Hypothesis confirmed by data	There was an effect of patient education factors on patient satisfaction
H8:	Educational intervention of bedside handovers, Improved implementation of bedside handovers , Bedside handovers perceived by patients, Age, Gender, Health status, Education level → Patient Satisfaction	R ² 93%	Hypothesis confirmed by data	Simultaneously there were effects of bedside handover educational interventions, improvement in the implementation of bedside handovers , bedside handovers perceived by patients, age, sex, health status and education level on patient satisfaction

Discussion

The intervention, used in this study, consisted of bedside handover training followed by simulation in the patient's room. The duration of the training was given for 120 minutes. Before entering the main topics, participants were asked to answer the pre-test questions and then at the end of the training, participants were asked to return to answer the post test questions. The educational topic adopted from Standard Operating Protocol for Implementing Bedside Handover in Nursing, Griffith University, Australia (1). The material consisted of: the steps of implementing bedside handovers (preparation, introduction, information exchange, patient involvement and review of patient safety). In order to help nurse uses better communication with patient, effective communication using SBAR technic also introduced as script. There were 83 nurses from the intervention group participated in training.

Simulation material was combined with bedside handover SOP in the ward that had been modified and approved by Nurse Manager of MMC Hospital. The communication scripts compiled refer to Peplaw interpersonal communication. Before entering the patient's room, we made sure the readiness of the participating nurses who did the handover including preparing the handover sheet and the medication scheme. At the end of handover, before continuing the handover to the next patient, we asked all nurses who took part in the simulation to come back to gather ask their feelings and experiences speaking directly in front of the patient.

The educational intervention in this study was conducted so that nurses understood the techniques of implementing each of the bedside handover principles themselves. The results of this study did not show the effect of bedside handover educational interventions on the improvement of bedside handover implementation. This means that although

nurses have been given knowledge in class, the implementation of bedside handovers has not increased.

However, the effect of an increase in the implementation of the side handover has a significant impact with bedside handover perceived by patient. This result was supported by research conducted by Sand-Jecklin and Sherman in 2013 (11) ($p = 0.029$) and the nurse involves the patient in the discussion during the handover ($p = 0.017$). The improvement in the implementation of bedside handovers was done so that nurses understand the techniques of implementing each of the bedside handover principles. Post implementation of bedside handover, patient felt better and positively happy to hear their health information near them. Therefore, the implementation of the bedside handover must be carried out in a structured and consistent manner.

Path diagram showed that bedside handover education intervention had a significant effect on patient satisfaction $t = 3.64$ where the value of $t > 2$ is significant. Thus this hypothesis was proven to have an effect on patient satisfaction. Research on Improving Patient Satisfaction With Nursing Communication Using Bedside Shift Report conducted by Radtke, showed patient satisfaction increased from an initial 76% to 90% (2). This study used Peplau communication technique in surgical room to improve patient satisfaction scores for nurse communication. Other variable that was significant increase patient satisfaction was bedside handover improvement ($t = 3.66$). This finding supported by research that conducted by Kullberg, Sharp, Johansson, Brandberg, & Bergenmar, 2017 (3). A cross-sectional method was used to compare patient satisfaction in intervention and control groups ($p = 0.0058$).

Age had an influence on patient satisfaction in this study. Age consistently influences patient satisfaction as a variable that determines patient satisfaction (4). Patient satisfaction was generally higher among older people than at young ages in the Asian and African American groups (4). M. In this study, no evidence of gender effected patient satisfaction; although patient satisfaction crosses tabulation resulted female respondents more satisfied 61.9%.

Poor patient health conditions lead to lower overall patient satisfaction than patients with better health conditions (4). As patients who always experience more severe pain and symptoms report lower satisfaction. Furthermore, patients who have chronic diseases have low satisfaction scores. Patients with more than one disease also have a low level of satisfaction (3). The results of this study did not prove the influence of patient health status on patient satisfaction. The results of cross tabulation between sex and patient satisfaction showed the number of respondents with very good health status (53.9%) more satisfied than respondents who had good health status 45, 3%.

The level of education was inversely proportional to the level of patient satisfaction with nursing care. What's more, educated people have lower levels of satisfaction with health care compared to people who are less educated. This fact is not consistent with the results of several studies which state that those who are less education tend to be less satisfied. A quasi-experimental study studies that patient satisfaction does not increase despite increased education (13).

Based on the results of the data processing of the path diagram shows that the variable influence of bedside handover educational interventions, improvement in the implementation of bedside handovers, bedside handovers felt by patients, age, sex, health

status, education level on patient satisfaction has a value of $R^2 = 93\%$. This means that simultaneously, it is proven that there are effects of bedside handover educational interventions, increased implementation of bedside handovers; bedside handovers that are felt by patients, age, gender, health status, education level contributes 93% to patient satisfaction.

Conclusion

This study proven the effect of bedside handover educational interventions, improved implementation of bedside handovers, bedside handovers perceived by patients, age, sex, health status, education level contributed 93% to patient satisfaction. Therefore, if a bedside handover is carried out properly and consistently it will increase patient satisfaction.

Research implication

Theoretical Implications

The application of Peplau nursing theory very applicative helped researchers to develop bedside handover scripts. Specifically, the implementation of bedside handover when nurses around the patient's room. Peplau nursing theory help us to move from every stages; when nurses entering the patient's room; introduce their self, identify the patient's needs, review the patient's development and work together to make further nursing plans to the termination stage. Kurt Lewin's theory about the implications of the planned changes also used as a research base to facilitate the smooth transition from traditional handover around nurse station to bedside handover was very applicable.

Managerial Implications

Bedside handover has a significant effect on patient satisfaction. It is expected that there is a policy from the management to use the bed side handover method while exchanges information between nurses.

Recommendation

The results of this study are expected to provide evidence based practice for nurse student when transferring patient information. Through lectures/ face to face, watching bedside handover videos and simulation/ role-play can increase nurses' knowledge about bedside handovers.

The results of this study are expected to be used as material for the consideration of making patient handover standard procedure. For further research, it can be used as reference materials and considerations in developing nursing management, especially regarding the handover next to patients with a more comprehensive method such as mixed methods with bigger samples. From the results of this study it is also expected that the community as patients or families will have the opportunity to be directly involved as partners in their care. We encouraged patients contribute to confirm and to clarify health information that is not understood during treatment.

Strength and Limitations

1. This study used a nonprobability sampling that was incidentally ask any patient who was currently being treated based on criteria for sampling to two groups without randomization. If randomization technique was carried out it will produce better

- output.
2. The number of respondents in this study was only 118 respondents. According to Lisrel's theory in determining the sample using SEM analysis requires at least 5 (5 constant values) times the number of indicator variables used. In this study there are 52 indicator variables so the number of samples needed should be $52 \times 5 = 260$ respondents.
 3. Observation instruments as used to collect data in this study, nominal scale of "yes" and "no" produced models that were not fit in the SEM test, it would be better if the observation instrument used a Likert scale or rating scale in subsequent studies.

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