



Effect of Patient Centered Care Application on Inpatient Outcomes in Rskdia Pertiwi and Rsia Ananda (Woman and Child Hospitals)

Zulkarnain Abubakar, Fridawaty Rivai*, Nurshanty A. Sapada

Department of Hospital Management, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia

Abstract

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***Correspondence:** Fridawaty Rivai, Department of Hospital Management, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia.
E-mail: fridarivai@yahoo.com
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BACKGROUND: Patient-centered care (PCC) is a new paradigm in healthcare that places patients as the center of care to improve health outcomes and increase patient and family satisfaction.

AIM: The study aimed to evaluating the effect of PCC application on inpatient outcomes, notably patient satisfaction, and clinical outcomes in RSKDIA Pertiwi and RSIA Ananda.

METHODS: The study was quantitative analytic with cross-sectional design. A sample of 92 patients were determined proportionally, and selected with the inclusion criteria. Data were collected using measuring tools consisting of PCC questionnaires, patient satisfaction questionnaires, and patient medical record to evaluate the clinical outcomes of patient. Bivariate analysis was carried out to compare the PCC application between the two hospitals, and multivariate analysis to correlate the effect of PCC application to patient satisfaction, and clinical outcomes of inpatient in each hospital.

RESULTS: There was effect of PCC application on patient satisfaction in RSKDIA Pertiwi ($p = 0.017$) and RSIA Ananda ($p = 0.000$), but there was no effect show to the clinical outcomes in RSKDIA Pertiwi ($p = 0.718$) and RSIA Ananda ($p = 0.440$), also there was no differences in the application of PCC ($p = 0.492$) between both hospitals.

CONCLUSION: It can be concluded that the application of PCC attributed to patient satisfaction, but did not affect the clinical outcomes of inpatients at RSKDIA Pertiwi and RSIA Ananda; also there were no differences of PCC application between both hospitals. The hospitals management should improve the application of PCC, particularly in coordination of care.

Introduction

The topic of the quality of service and patient safety has been one of the global issues and major focuses toward the health service, without exception in Indonesia. Hospitals are required to be able to guarantee the quality and safety of patients in providing services. In 2001, IOM in a report "Crossing The Quality Chasm: A New Health System for the 21st Century" recommended a number of fundamentals needed in a health-care system known as Six Aims to Improve Healthcare, one of which is health-care institutions is required to able to provide services that are patient-centered [1].

Patient-centered care (PCC) is defined as care that is both respectful and responsive to the patient's preferences, needs, and values. In addition, this system ensures that patient values are used as guidelines in determining clinical decisions by health-care providers. PCC is one of the dimensions of high quality health services, where its application has been proven to improve the quality of overall health services [1]. PCC is a new paradigm in healthcare that places patients as the center of care. The new paradigm aims to get better

health service outcomes, allocate appropriate resources, and improve patient and family satisfaction [2].

In Indonesia, the hospital's obligation to continuously improve and guarantee the quality of its services is regulated in Pasal 40 UU No. 44 Tahun 2009, which emphasized that hospitals must obtain accreditation periodically at least once every 3 years as part of efforts to improve the quality of services [3]. Accreditation carried out by the Hospital Accreditation Commission (KARS) requires hospitals to adopt and apply quality standards in accordance with the National Hospital Accreditation Standards (SNARS) 1st edition.

The SNARS 1st edition is designed with service standards that focus on patients with a risk management approach at the Hospital. This aims to not only influence the process, output, and outcomes but also to the application where all officers in the accreditation process are involved with the hope that a KARS-accredited hospital has the quality assurance, which will positively influence clinical outcomes and increase satisfaction patient in the long run [4].

In addition to the application of patient-centered standards, the application of PCC in accredited hospitals must be reviewed from the perception of patients as the main stakeholders in the health-care system [5], [6]. The

application of PCC influences the patient's condition and perception of service quality which has an effect on increasing patient satisfaction, clinical outcomes, and hospital outcomes in ongoing process [7]. The results of the previous studies indicate that the application of PCC correlates to patient perceptions, satisfaction levels, and better service quality [8].

The application of PCC through patient involvement in their care can improve functional status, self-care behavior, and patient satisfaction. This process increases the knowledge and concern of patients for the conditions they experience, which makes patients actively involved in care, thereby increasing patient satisfaction and functional status [9]. Through PCC, nurses can better understand the problems experienced by patients individually. This makes patients feel more valued and served well, resulting in increased patient satisfaction [10].

Study showed that patient involvement in decision-making toward care was positively correlated with improvement in functional status, self-care behavior, and patient satisfaction [11]. This study evaluates patients' perceptions of the application of PCC in two different setting mother and child hospitals in Makassar, both in ownership, hospital class, and different levels of accreditation: RSKDIA Pertiwi which is a Class B mother and child hospital owned by the South Sulawesi provincial government and is accredited by SNARS 1st edition at the level Utama, and RSIA Ananda which is a private Class C mother and child hospital and has been accredited by SNARS 1st edition at the level "Madya."

Although accredited, the level of inpatient satisfaction in both hospitals has not reached $\geq 90\%$ according to the Hospital Minimum Service Standards according to the Health Ministry of Indonesia. In addition, there are no data on achieving clinical outcomes in both hospitals, where patient outcomes as a guarantee of service quality in both hospitals have not been achieved. This study aims to evaluate the application of PCC and its effect on patient outcomes in the form of patient satisfaction and clinical outcomes of inpatient at RSKDIA Pertiwi and RSIA Ananda, and to compare the application of PCC between both hospitals.

Materials and Methods

This study was conducted at the RSKDIA Pertiwi and RSIA Ananda from May to July 2019. The study was quantitative analytic with cross-sectional design approach. This study was designed to evaluate the effect of independent variables on two dependent variables: PCC on Patient Satisfaction and Clinical Outcomes of Inpatient in RSKDIA Pertiwi and RSIA Ananda.

The population in this study was all patients with post-emergency cesarean section who was hospitalized in RSKDIA Pertiwi and RSIA Ananda. The total sample was 92 patients who were determined proportionally: Twenty-one patients in RSKDIA Pertiwi and 71 patients in RSIA Ananda. The samples were collected with the following inclusion criteria: (1) In a conscious state; (2) admitted to the hospital with impartus status; (3) underwent emergency cesarean section surgery; (4) indication of emergency CS with prolonged 2nd stage, fetal distress, oligohydramnios, induction failure, or cephalopelvic disproportion; (5) the patients did not experience severe preeclampsia, eclampsia, or HELLP syndrome; (6) the patient did not experience severe systemic diseases such as heart failure, kidney failure, liver failure; (7) inpatients ≥ 1 day; and (8) performed outpatient control at least 7 days after hospitalization.

Data were collected using a measuring instrument in the form of a PCC application questionnaire, patient satisfaction questionnaire, and medical record data to review the clinical outcomes of the patient (inpatient) which consisted of length of stay (LOS), the presence or absence of phlebitis, the presence or absence of Hospital Acquired Infection, and presence or absence of surgical site infection at least 7 days after hospitalization.

The data were collected and analyzed using SPSS Version 22. Univariate analysis was performed to obtain the results of the characteristics of respondents and describe the achievements of each of the variables studied. Bivariate analysis of Mann–Whitney test was used to measure the comparison between the application of PCC in the RSKDIA Pertiwi and RSIA Ananda. Meanwhile, multivariate analysis of logistic regression tests was used to measure the effect of PCC application on patient satisfaction and clinical outcomes in RSKDIA Pertiwi, and linear regression tests were used to see the effect of PCC application on patient satisfaction and clinical outcomes at RSIA Ananda.

Results

Table 1 shows the characteristics of respondents in RSKDIA Pertiwi. At the onset, the majority of respondents were at the ideal age of pregnancy (18–35 years old) with 66.7%, while most of them were housewives and unemployed with 57.1%. In the next category, the most ethnic groups were from Makassar, which reached 57.1%, while the highest level of education was high school or equivalent with 33.3% and postgraduate education of 4.8%. In the category of religion, the majority of respondents are Muslim, reaching up to 81.8% and the rest are Christians. Furthermore, the majority of respondents utilize national insurance (BPJS Kesehatan) by 81%

and others seek treatment at their own expense or use private insurances at 9.5%, respectively. At the inpatient room, most respondents were at Class 3 with 42.9%, and others were moderately distributed in each class moderately where the percentage of each class was VIP/VVIP with 19%, Class 1 with 23.8%, and Class 2 with 14.3%. In the category of pregnancy history, 61.9% of respondents were multipara, and only 33.3% of patients had a history of cesarean section. Furthermore, 66.7% of patients were without cesarean section history, and 38.1% of patients were in the first pregnancy (primipara).

Table 1: Characteristics of respondents

Characteristic of respondents	RSKDIA Pertiwi (n=21)		RSIA Ananda (n=71)	
		%		%
Age				
Ideal (18–35 years)	14	66.7	58	81.7
At risk (> 35 years)	7	33.3	13	18.3
Religion				
Islam	17	81.8	70	98.6
Christian	4	19.2	1	1.4
Ethnicity				
Makassar	12	57.1	36	50.7
Bugis	5	23.8	31	43.7
Toraja	2	9.5	0	0
Mandar	0	0	1	1.4
Others	2	9.5	3	4.2
Occupation				
Public Sector	5	23.8	4	5.6
Private Sector	2	9.5	13	18.3
Entrepreneur	1	4.8	9	12.7
Professional	0	0	3	4.2
Unemployed	12	57.1	33	46.5
Others	1	4.8	9	12.7
Monthly income				
IDR<1,000,000	0	0	12	16.9
IDR 1,000,000-3,000,000	2	9.5	14	19.7
IDR 3,000,000-5,000,000	7	33.3	12	16.9
IDR>5,000,000	0	0	3	4.2
No Income	12	57.1	30	42.3
Payment method				
Out of Pocket	2	9.5	0	0
National Insurance (BPJS)	17	81	69	97.2
Private insurances	2	9.5	2	2.8
Education				
Without formal school	1	4.8	0	0
Primary	2	9.5	7	9.9
Secondary	2	9.5	4	5.6
High school	7	33.3	19	26.8
Non-degree vocational diploma	2	9.5	12	16.9
Bachelor degree	6	28.6	25	35.2
Postgraduate degree	1	4.8	4	5.6
Inpatient room				
VIP/VVIP/Pavillun	4	19	4	5.6
Class 1	5	23.8	18	24.4
Class 2	3	14.3	21	29.6
Class 3	9	42.9	28	39.4
Pregnancy history				
Primipara	8	38.1	30	42.3
Multipara	13	61.9	41	57.7
History of CS				
History of CS (-)	14	66.7	27	38
History of CS (+)	7	33.3	44	62

At RSIA Ananda (Table 1), the majority of patients' age also ranged around the ideal age of pregnancy (18–35 years old) with 81.7%, where 98.6% of respondents were Moslem and only 1.4% were Christians. About 50.7% came from Makassar, and 43.7% were Buginese, while the rest came from Mandar, and other ethnicities. In the category of occupation, most respondents were housewives or unemployed with 46.5%, followed by private employees at 18.3%. At the education level, most respondents were bachelor by 35.2% and the smallest percentage was at the master and junior/senior high school education level of 5.6%. Table 1 also shows that the majority of respondents applied national insurance at 97.2% and only 2.8%

with private insurance. Whereas, in the inpatient room, respondents at RSIA Ananda were quite distributed, which consisted of Class 3 with 39.4%, Class 2 with 29.6%, Class 1 with 24.4%, and VVIP/VIP with 5.6%. Furthermore, the majority of respondents at RSIA Ananda had a history of cesarean section surgery which reached 62%. Whereas in the history of pregnancy, 57.7% of respondents were multipara patients and 42.3% were primipara (first pregnancy).

The application of PCC is a patient's perception of care covering eight dimensions in the form of respect for patient preferences and value, information, education, and communication, coordination of care, emotional support, physical comfort, involvement of family, continuity and care, and access to care, as measured by the PCC application questionnaire. Table 2 shows that the application of PCC is good with the percentage of respondents in RSKDIA Pertiwi at 66.7% and in RSIA Ananda with 69%.

Table 2: Frequency of variables

Variables	RSKDIA Pertiwi (n=21)			RSIA Ananda (n=71)		
		%	mean		%	mean
The application of PCC						
Poor	7	33.3	67.14	22	31	67.12
Good	14	66.7		49	69	
Patient satisfaction						
Not satisfied	15	71.4	66.62	35	49.3	72.75
Satisfied	6	28.6		36	50.7	
Clinical outcomes						
Not achieved	5	23.8	4	19	26.8	4
Achieved	16	76.2		52	73.2	

According to the achievements of the PCC in each hospital (Table 3), it is clear that the dimension of Respect for Patient Preferences and Values was the highest according to respondents in RSKDIA Pertiwi at 90.5%, while RSIA Ananda showed the highest percentage in the dimension of Information, Education, and Communication. Meanwhile, the dimension of Coordination of Care showed the lowest percentage of application in both hospitals.

The Mann–Whitney test for comparison of the application of PCC in RSKDIA Pertiwi and RSIA Ananda resulted in $p = 0.492$, which meant there was no significant difference in the application of PCC in RSKDIA Pertiwi and RSIA Ananda. In addition, Table 1 shows that there was no significant difference in the application of PCC in the two hospitals, both from the achievement of the application and the mean values in the two hospitals.

The logistic regression test results of the effect of the application of PCC to patient satisfaction in RSKDIA Pertiwi showed $p = 0.012$ (Table 4), and in the linear regression test, the application of PCC to patient satisfaction at RSIA Ananda showed $p = 0.000$ (Table 5). According to these results, there was an affect of the application of PCC to patient satisfaction both in RSKDIA Pertiwi and RSIA Ananda.

Meanwhile, the results of the logistic regression test on the effect of the application of PCC on clinical outcomes in RSKDIA Pertiwi showed $p = 0.718$

Table 3: Frequency of the dimensional of the PCC application

Dimensions	RSKDIA Pertiwi			RSIA Ananda		
	(n=21)	(%)	Mean	(n=71)	(%)	Mean
Respect for patient preferences and values						
Poor	2	9.5	8.90	20	28.2	8.52
Good	19	90.5		51	71.8	
Information, education and communication						
Poor	8	38.1	8.23	12	16.9	8.73
Good	13	61.9		59	83.1	
Coordination of care						
Poor	11	52.4	7.52	29	40.8	8.34
Good	10	47.6		42	59.2	
Emotional support						
Poor	11	52.4	8.28	28	39.4	8.41
Good	10	47.6		43	60.6	
Physical comfort						
Poor	8	38.1	8.24	25	35.2	8.34
Good	13	61.9		46	64.8	
Involvement of family						
Poor	3	14.3	8.76	22	31	8.49
Good	18	85.7		49	69	
Continuity and transition						
Poor	7	33.3	8.57	20	28.2	7.94
Good	14	66.7		51	71.8	
Access to care						
Poor	3	14.3	8.62	23	32.4	8.35
Good	18	85.7		48	67.6	

(Table 4), while the results of the linear regression test on the effect of the application of PCC on clinical outcomes at RSIA Ananda showed $p = 0.440$ (Table 5).

Table 4: Effect of PCC application on inpatient outcomes in RSKDIA Pertiwi

Variables	B	SE	Wald	Df	Sig.	Exp (B)
Patient satisfaction	2.079	1.133	5.714	1	0.017	0.067
Clinical Outcomes	0.383	1.060	0.130	1	0.718	1.467

These findings indicate that there was no affect of the application of PCC on clinical outcomes both in RSKDIA Pertiwi and RSIA Ananda.

Table 5: Effect of PCC application on inpatient outcomes in RSIA Ananda

Variables	B	SE	Beta	t	Sig.
Patient satisfaction	1.240	0.142	0.726	8.760	0.000
Clinical Outcomes	-0.008	0.010	0.093	-0.776	0.440

Discussion

This study shows that the application of PCC in RSKDIA Pertiwi was relatively low. However, based on the frequency distribution of the PCC dimensions shows that the dimension of respect for patient preferences and values was very well implemented according to respondents, followed by dimension of involvement of family and access to care.

Likewise, the application of PCC in Ananda RSIA which is also relatively low, but if it is seen based on the frequency distribution of the PCC dimension it is known that the Information, Education and Communication dimensions have been well implemented according to respondents, followed by the dimension of respect for patient preferences and values, as well as continuity and transition. Respecting patient needs and their preferences, involvement of family, and access to information are the main elements in PCC [12]. It can

be said that although the application of PCC in both hospitals is relatively low, but both hospitals have applied the basic principles of PCC application.

The high percentage of the dimension of respect for patient preferences and values in RSKDIA Pertiwi and dimension of Information, Education, and Communication in RSIA Ananda is due to the application of the accreditation standards that focus on patients, particularly related to Standard of Patient and Family Rights and Management of Communication and Education [4]. In RSIA Ananda is also supported by the role of doctors and nurses/midwives who are on average young at RSIA Ananda, with more friendly and communicative services to patients.

On the other hand, the dimension of coordination of care was the dimension with the lowest percentage of PCC according to respondents both in RSKDIA Pertiwi and RSIA Ananda. This shows that beside effective communication, the application of Coordination of Care also requires, collaboration, and standardization of processes to ensure that planning, coordination, and implementation of care can support and respond to each patient's needs and targets [4].

Statistical tests show the effect of the application of PCC to patient satisfaction both in RSKDIA Pertiwi and RSIA Ananda. Studies show that health-care delivery that is in accordance with patient needs and involving patients in their care is positively correlated with patient satisfaction [11]. In PCC, nurses better understand the problems experienced by patients individually. This makes patients feel more valued and served, thereby increasing patient satisfaction [10].

Involving patients in their care could increase the patient's knowledge and concern for the conditions they are experiencing, thus making patients more actively participated in their care, also increasing patient satisfaction [9]. Study showed a significant differences in satisfaction levels in the group receiving

PCC compared to the control group, with the results of patients treated with PCC having a higher level of satisfaction [8], [13].

Studies showed that the application of PCC can improve patient experience of better health-care quality, and create new value in services. The PCC concept designs healthcare processes to meet patient needs [14]. In general, satisfaction can be achieved when quality is able to meet expectations and needs [15]. The success of PCC can meet the needs and expectations of patients for quality of care so that makes patients more satisfied with the service.

Meanwhile, statistical tests show there is no effect of the application of PCC on clinical outcomes in RSKDIA Pertiwi or at RSIA Ananda. According to several studies, the application of PCC affect clinical outcomes associated with functional status improvement. This is due to PCC application which can increase patient compliance with doctor orders and therapies given [9], [11], [16].

The application of PCC also has a positive impact on clinical outcomes related to patients' self-care behavior after discharge from hospital; patients treated with PCC are able to deal with symptoms and changes in conditions experienced in carrying out their daily activities [9], [11], [17]. In addition, the application of PCC is associated with a decrease of the anxiety level of patients during their care [18], [13].

Clinical outcomes associated with PCC in the previous studies are subjective, which assessed using the patient-reported outcome measure (PROMs) model after the patient discharge from the hospital. Whereas, clinical outcomes assessed in this study are clinical related and objective through the patient's medical record.

Study evaluated the similarity clinical outcomes with this research show that no significant correlation between PCC application with clinical outcomes, including length of stay (LOS), postoperative infection, falls and postoperative complications, in patients treated with PCC compared with those not treated with PCC [8].

The two different of clinical outcomes assessed in the previous studies indicated that clinical outcomes assessed in this study are influenced by clinical management related. This result is attributed by the monitoring of suboptimal implementation of clinical pathway after cesarean section surgery, especially related to post-operative length of stay [19], [20].

In addition, clinical outcomes assessed in both hospitals are associated by host-related risk factors, operation-related risk factors, and microbe-related risk factors [21], [22], [23], [24]. Therefore, if the infection control and prevention program in both hospitals are well implemented, it will affect the achievement of related-clinical outcomes.

Statistical test also shows that there was no significant difference in the application of PCC in

RSKDIA Pertiwi and RSIA Ananda. The successful application of PCC is associated with organizational culture that encourages staff to be more sensitive to the needs of patients in the hospital. In addition, it is needed effective leadership, adequate resourcing to support the model of care, staff capacity building, and active involvement of patients and families in all facet of the organization to achieve PCC [25].

It is intended that PCC can be implemented well and meet the concept. Patients, families, health workers, and health service leaders collaborate on policy making and program development, implementation and evaluation, both in research, facility design, professional education, and health service provision. The application of PCC does not correlate directly with the level of accreditation, type of ownership and hospital class, but this requires the role of all stakeholders and the commitment of health-care organizations in implementing PCC in accordance with predetermined concepts.

Recommendation

It is hoped that hospital management will improve the application of PCC by applying the concept of PCC holistically in providing services, particularly in the dimension of coordination of care. Effective communication is needed between service providers, patients and staff, as well as collaboration between professions and standardization processes to ensure that care plans, service coordination, and care applications support and respond to each patient's unique needs. This supports the fulfillment of patient expectations of service quality and increases overall patient outcomes.

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