

Utilization of Operating Room in Buleleng Regency Hospital based on Utilization Theory in 2020

ABSTRACT

I Ketut Setia Budi

Magister of Public Health Program of
Institut Ilmu Kesehatan STRADA
Indonesia

Email:

setiabudi7060@gmail.com

Each hospital has an operating room as a central surgical service unit. In this case it should be noted that the central surgical service unit has a different contribution from the inpatient room so it is necessary to maintain the use of this operating room in hospital services. The research objective was to determine the Utilization of Operating Rooms in Buleleng Regency Hospital based on Utilization Theory. This research method is observational analytic with crosssectional design. The study population was patients who received services at IRD and CSI with a sample of 106 respondents taken by purposive sampling with criteria.

The results of this study are predisposing, enabling and need factors where predisposing factors have a dominant influence on the patient's decision to use the operating room with a p-value of 0,000 showing $< \alpha 0.05$ which indicates an influence.

The conclusion of this research is that there is a relationship between Predisposing variable and Enabling Factor variable on the utilization of operating room based on utilization theory, the result of p-value shows $< \alpha 0.05$, which shows that there is an influence. And there is no relationship between variable Need Factor to operating room utilization results p-value results $> \alpha 0.05$ which shows no influence. So it is suggested that the Use of Operating Rooms in Buleleng Regency Hospital is based on Utilization Theory and applies to other rooms.

Keywords: Operating Room, Utilization, and Utilization Theory

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INTRODUCTION

The hospital has several service units that synergize with one another. Each service unit has a different contribution both in the type of service and the benefits generated. Therefore management that is applied in every service can also be different.

The Central Surgical Installation (CSI) is a service unit in a hospital that requires coordination with other units to carry out operations. CSI patients come from Emergency Department (ED) patients, Outpatient Installation (OI) and Inpatient Installation (II) indicated by doctors to undergo surgery. In general, if IGD, OI and II patients increase, CSI patients also increase. The following is a table regarding the number of ED, OI and II patients in Buleleng Hospital (herein after referred to as Buleleng Hospital).

Utilization of CSI in Buleleng Hospital is now experiencing an increase. Hospital management also continues to make improvements in the management of CSI in an effort to offset the increased use of CSI in Buleleng Regional Hospital. One of the improvements made by the management is the addition of specialized doctors, initially the Buleleng Regional Hospital did not have a specialist in urology, but now there is a specialist in urology who practices at the Buleleng Regional Hospital.

The operating room must be managed well because operating activities require maintenance costs, operating costs (costs) and the cost of resources (resource) is expensive. When inefficiencies occur in the operating room, spending increases from normal conditions. Expenditures for activities in the operating room by 40% of total hospital expenses. The amount of operating costs is due to the large amount of resources used to carry out operations including staff (for example: anaesthetists, surgeons, nurses, etc.), equipment and facilities (for pre-operative, perioperative and post-operative) (Fugener et al., 2015) . The research problem raised in this study is the suboptimal use of operating rooms in Buleleng Hospital which is 54% of optimal capacity in the period 2014 to 2016. Every hospital has an operating room as a central surgical service unit. In this case it should be noted that the central surgical service unit has a different contribution from the inpatient room so it is necessary to maintain the use of this operating room in hospital services. The research objective was to determine the Utilization of Operating Rooms in Buleleng Regency Hospital based on Utilization Theory.

METHODS

The design in this study was an observational study with analytic design using survey methods and questionnaires as a means of assistance. Data collection was carried out using a cross sectional approach. With a sample size of 106, the independent variable consisted of predisposing factors, enabling factors, need factors.

While the dependent variable, consisting of: the patient's decision to use the operating room; doctor's direction to the patient to make use of the operating room; operating room utilization. Data were processed and Univariate Analysis on the frequency distribution for variable characteristics, Bivariate Analysis for the Test of the influence of categorical data using chi square and logistic regression tests were used to determine the effect.

RESULTS

Research on the Relationship between Operation Room Utilization in Buleleng District Hospital based on Utilization Theory was carried out at Buleleng Regional Hospital. The study was carried out in Buleleng District Hospital which is located at Jalan Ngurah Rai No. 30 Singaraja, Kab. Buleleng, Province of Bali. Buleleng Regency Hospital has 8 operating rooms, 2 operating rooms in the emergency room that are used for Emergency / Urgent surgery, 6 operating rooms are in CSIT for elective / planned surgery. The number of visits or the average number of maternity patients per month is an average of 45 mothers / month. Buleleng Regency Hospital is an accredited teaching hospital B, is a referral hospital located in the center of the city of Singaraja which has an area of 10 hectares. high contagious and not contagious.

Table 4.1 Predisposing variable frequency distribution includes education, income, experience and knowledge of the disease in the operating room in Buleleng Regency Hospital in 2019.

Research variable	Frequency (f)	Percentage (%)
Education		
No School	9	8,5
Primary School (PS)	40	37,7
Junior High School (JHS)	47	44,3
Senior High School (SHS)	10	9,4
Total	106	100
Experience		
Do not have	84	79,2
Experienced	22	20,8
Total	106	100
Income		
< 2,5 Million	55	51,9
2,5 Million- 5 Million	42	39,6
> 5 Million	9	8,5
Total	106	100
Knowledge		
Good	22	20,8
Enough	67	63,2
Poor	17	16
Total	106	100

Source: Primary Data for 2019

Univariate analysis results found that on average respondents had a junior high school education of 47 respondents (44.3%), with experience about operating rooms for 84 respondents (79.2%) of respondents had no experience of operating rooms. Respondents have an average income of <2.5 million for 55 respondents (51, 9%). Having sufficient knowledge about the disease 67 respondents (63.2%).

Table 4.2 The Enabling variable frequency distribution includes how to pay for patients, patient distance to access to the hospital, perception of facilities in the operating room, perception of doctor and nurse services and waiting time. Regarding the use of operating rooms in Buleleng Regency Regional Hospital in 2019.

Research variable	Frequency (f)	Percentage(%)
How To Pay		
Public / Private funds	2	1,9
Ansurasi Prabadi/perusahaan	25	23,6
Government's BPJS	55	51,9
Independent;s BPJS	24	23,6
Jasa Raharja	0	0
Total	106	100
Mileage		
1-6 KM	21	19,8
> 6 KM	85	80,2
Total	106	100
Perception of means		
Low	20	18,9
Medium	49	46,2
High	37	34,9
Total	106	100

Perception of doctors and nurses		
Low	16	15,1
Medium	59	55,7
High	31	29,2
Total	106	100
Waiting Time		
<1 Week	91	85,8
> 1 week	51	14,2
Total	106	100

Source: Primary Data for 2019

The results of univariate analysis found that the enabling factor is the fig of paying patients for health services in the operating room mostly using government BPJS guarantees as many as 55 respondents (51.9%). In the mileage to hospital services most of the distance is more than 6 KM by 85 respondents (80.2%) and the waiting time to get service in the operating room is mostly less than 1 week by 91 respondents (85.8%) and Patients' perceptions of facilities and infrastructure in the operating room mostly have medium perception as many as 49 respondents (46.2%) and perceptions of doctors and nurses in operating rooms are mostly medium as many as 59 respondents (55.7%).

Table 4.3 Frequency distribution of Need Factor variables includes perception of disease severity and perception of patient needs in the Operating Room of Buleleng District Hospital 2019.

Research Variable	Frequency (f)	Percentage (%)
perception of the patient's disease severity		
Not severe	41	38,7
Severe	65	61,3
Total	106	100
Perception of patient needs		
True	88	83
False	18	17
Total	106	100

Univariate analysis results found that the Need factor is that most respondents have the perception that the severity of the disease is severe as many as 65 respondents (61.3%) and the perception of patients' needs in the operating room most say 88 respondents (83%).

Table 4.4 The dependent variable frequency distribution includes Patient Decisions, physician directives and realization of utilization in the Operating Room of Buleleng District Hospital in 2019.

Research Variable	Frequency (f)	Percentage (%)
Patient decision		
Yes	82	77,6
No	24	22,4
Total	106	100
Doctor's Referral		
Directed	60	56,6
Do not directed	46	43,4
Total	106	100
Realization of Utilization		
Yes	64	60,4
No	42	39,6
Total	106	100

Univariate analysis results found that the dependent variable most of the patients had the decision "yes" to use the operating room as many as 82 respondents (77.6%) with the direction of doctors and nurses in the operating room correctly as many as 60 respondents (56.6%) and the realization of utilization operating rooms obtained from secondary data that the majority of operations performed in the operating room of Buleleng Regional Hospital were 64 respondents (60.4%).

Bivariate Analysis

The Relationship of Predisposing Factors to the Utilization of Operating Rooms in Buleleng Regency based on Utilization Theory.

Table 4.5 Cross Tabulation of Predisposing Factors on Operating Room Utilization in Buleleng District Hospital based on Utilization Theory.

Research Variable	Operating Room Utilization		p-value
	Yes	No	
Education			0,042 ^{a)}
No school	7	2	
PS	28	12	
JHS	24	23	
SHS	5	5	
Total	64	42	
Experience			0.400 ^{b)}
Do not have	22	32	
Experienced	42	10	
Total	64	42	
Income			0,001 ^{b)}
< 2,5 Million	24	31	
2,5 Million- 5	35	7	
Milion	5	4	
> 5 Million			
Total	64	42	
Knowledge			0,308 ^{b)}
Good	12	10	
Enough	44	23	
Poor	8	9	
Total	64	42	

a) Statistical test Chi square Level of significance is 0.05

b) Phi statistical test (cremear V) Level of significance is 0.05

Based on the table that the cross tabulation of most of the characteristics of respondents can use the operating room. That the logistic regression test selection shows the results of the p-value on a statistical test that the education, and the income of respondents affect the utilization of the operating room and experience and knowledge do not significantly influence the utilization of the operating room.

Table 4.6 The Enabling variable cross tabulation includes how to pay for patients, patient distance for access to hospital, perception of facilities in the operating room, perception of doctor and nurse services and waiting time. Regarding the use of operating rooms in Buleleng Regency Regional Hospital in 2019.

Research Variable	Operating Room Utilization		p-value
	Yes	No	
How To Pay			

Public / Private funds	2	0	0,315 ^{b)}
personal / company insurance	12	13	
Government's BPJS	36	19	
Independent's BPJS	14	10	
Jasa Raharja	0	0	
Total	64	42	
Mileage			0,035 ^{b)}
1-6 KM	31	21	
> 6 KM	33	21	
Total	64	42	
perception of means]Low			0,004 ^{a)}
Medium	5	11	
High	34	25	
	35	26	
Total	64	42	
Perception of doctors Low			0,004 ^{a)}
Medium	5	11	
High	34	25	
	35	26	
Total	64	42	
Waiting Time			,974 ^{b)}
<1 Week	55	36	
> 1 Week	9	9	
Total	64	42	

a) Statistical test Chi square Level of significance is 0.05

b) Phi statistical test (crenear V) Level of significance is 0.05

Based on the cross tabulation variable Enabling includes how to pay patients, patient distance for access to hospital, perceptions of facilities in operating rooms, perceptions of doctor and nurse services and waiting times. Regarding the use of operating rooms in Buleleng District Hospital, that there is a significant relationship in the mileage variable p-value = 0.035, perception of facility p-value = 0.004 and perception of doctors p-value = 0.004.

Table 4.7 Cross tabulation of Need Factor variables includes perception of disease severity and perception of patient needs in the Operating Room of RSUD Kab. Buleleng in 2019.

Research Variable	Operating Room Utilization		P-value
	Yes	No	
Perception of patient's disease severity			0,261 ^{b)}
Do not severe	22	19	
Severe	42	23	
Total	64	42	
perception of patient needs			0.549 ^{b)}
True	52	36	
False	12	6	
Total	64	42	

a) Statistical test Chi square Level of significance is 0.05

b) Phi statistical test (crenear V) Level of significance is 0.05

The results of the cross tabulation analysis of the Need Factor variable include the perception of the severity of the disease and the perception of the patient's needs in the Operating Room of the District Hospital. Buleleng there is no significant relationship with $p\text{-value} > 0.05$ including the perception of the severity of the patient's disease 0.261 and the perception of the patient's needs 0.549

A multivariate test will then be conducted to find out the factors that influence the Utilization of Operating Rooms in Buleleng Regency Hospital based on Utilas Theory through a logistic regression statistical test after the sytat test logistic variables are met.

Table 4.8 Multivariate Analysis Knowing the Relationship of Operating Room Utilization in Buleleng District Hospital based on Utilization Theory. Judging from the predisposing factors, enabling factors, need factors in the Buleleng Regional Hospital in 2019

Independent's Variable	AOR	Variabel Dependen (Nilai p-value)*		
		Patien Decision	The Direction Of Doctors And Nurses	Operating Room Utilization
<i>predisposing factors</i>	0,300	0,000	0.004	0,855
<i>Enabling Fakctors</i>	0,500	0,002	0,013	0,068
<i>Need Faktor</i>	0,019	0,068	0.438	0,113

* Logistic Regression statistical test level of Significant 0.05

Based on data analysis with statistical tests that the use of operating rooms based on the theory of utilization analyzed in the researchers include predisposing factors, enabling and need factors where predisposing factors have a dominant influence on patient decisions in the use of operating rooms with the results of $p\text{-value} 0,000$ showing $< \alpha 0,05$ which shows there is influence. Likewise with the influence of doctors and nurses, there is a close relationship with the $p\text{-value}$ of 0.004, showing $< \alpha 0.05$, while in the operating room utilization itself there is no significant relationship because the $p\text{-value}$ of 0.855 shows $> \alpha 0.05$. That the predisposing factor has an All Old Ratio (AOR) of 0.300 which means that the predisposing factor 3 times has the opportunity to have a relationship in terms of decision making, accepting doctor's direction and utilizing the operating room at CSI Hospital Buleleng. The enabling factor that the results of the $p\text{-value}$ on the patient's need is 0.002 shows $< \alpha 0.05$ which means there is a close relationship between the enabling factors on patient decisions and the influence of doctors and nurses direction on the use of the operating room based on the theory of $p\text{-value}$ utilization results. 0.002 shows $< \alpha 0.05$. That the enabling factor has an All Old Ratio (AOR) of 0.500 which means that the predisposing factor is 5 times as likely to have a relationship in terms of decision making, receiving doctor's direction and utilizing the operating room at CSI Buleleng Hospital.

In Need factors that do not have a close relationship with operating room utilization based on the results of the $p\text{-value}$ on the patient's decision 0.068, doctor and nurse directives 0.438 and operating room utilization 0.113 shows $> \alpha 0.05$ That the factors need factors have All Old Ratio (AOR)) 0.019 which means that the need factor has a very small chance of 0.1 times the chance to have a relationship in terms of decision making, receiving doctor's direction and utilizing the operating room at CSI Buleleng Regional Hospital.

DISCUSSION

A. Predisposing variables for operating room users

The results showed that there was a relationship between the variables of the respondents' characteristics in the research which were categorized in the Predisposing variable including education, income, experience and knowledge of the disease in the operating room in Buleleng Regency in 2019 to the operating room beneficiary in Buleleng Regional Hospital. That the operating room utilization is based on the theory of utilization analyzed in the researchers including predisposing, enabling and need factors where the predisposing factor has a dominant influence on the patient's decision to use the

operating room with a p-value of 0,000 showing $< \alpha 0.05$ which indicates an influence. Similarly, the influence of doctors and nurses is closely related to the p-value of 0.004 showing $< \alpha 0.05$ while in the use of the operating room itself there is no significant relationship because the p-value of 0.855 shows $> \alpha 0.05$ has an All Old Ratio (AOR) of 0.300 which means that predisposing factors are 3 times as likely to have a relationship in terms of decision making, receiving doctor's direction and utilizing operating room at CSI Buleleng Regional Hospital.

B. Variable Enabling Factors towards operating room utilization

The results showed there was a relationship between the Enabling Variables including how to pay for patients, patient distance to access to the hospital, perception of facilities in the operating room, perception of doctor and nurse services and waiting time. Regarding the use of operating rooms in Buleleng Regency Regional Hospital in 2019.

In the enabling factor that the results of the p-value on the patient's need is 0.002 showing $< \alpha 0.05$ which means there is a close relationship between the enabling factors on patient decisions and the influence of doctor and nurse directives on the operating room utilization based on the theory of p-value utilization results 0.002 shows $< \alpha 0.05$ has an All Old Ratio (AOR) of 0.500 which means that the predisposing factor is 5 times as likely to have a relationship in terms of decision making, accepting doctor's direction and utilizing the operating room at CSI Hospital Buleleng.

Based on previous research by Khan, M.A., Sheraz, M. & Shmad, S., 2016 about Operating Room Utilization and Efficiency. That the previous research explained in a descriptive manner about the efficient use of the operating room based on the theory of utilisation that of the 78 patients who performed operations in the operating room or operating room expressed satisfaction in service in an efficient operating room.

C. Variable Need Factors for operating room utilization

The results showed there was no relationship between the Need Factor Variables including the perception of the severity of the disease and the perception of the patient's needs in the Operating Room of the District Hospital. Buleleng in 2019 that the Need factor is that most of the respondents have the perception that the severity of the disease is severe as many as 65 respondents (61.3%) and the perception of patients' needs in the operating room mostly stated that they were 88 respondents (83%). In Need, the factors that do not have a close relationship with the use of operating rooms based on the results of the p-value on the patient's decision 0.068, referral of doctors and nurses 0.438 and the use of the operating room 0.113 shows $> \alpha 0.05$ has an All Old Ratio (AOR) 0.019 which means need factors have a very small chance of 0.1 times the chance to have a relationship in terms of decision making, receiving doctor's direction and utilizing the operating room at CSI Buleleng Regional Hospital.

The results of a statistical analysis that states H_0 is accepted that there is no need factor relationship to the operating room utilization, or in other words there is no close relationship between the need factor to the operating room utilization, this is from the opinion of the researcher and the results are descriptive (qualitative) that the questions related to the need factor regarding the severity of the disease by the patient, although the doctor has explained but the patient and family will be more silent and say they don't know. So the statistical results do not show a significant value.

CONCLUSION

Based on the results of data analysis of 106 respondents that the conclusions can be described as follows:

- a. There is a relationship between Predisposing variables to operating room utilization based on utilisation theory, the results of p-value showed $< \alpha 0.05$, which shows that there is an influence 3 times the opportunity to use operating room based on utilisation theory.
- b. There is a relationship between the Enabling Factor to the operating room utilization results the p-value shows $< \alpha 0.05$ which shows that there is an influence 5 times the opportunity to use the operating room based on utilization theory
- c. There is no relationship between variable Need Factor to operating room utilization results p-value results $> \alpha 0.05$ which shows that there is a small chance of 0.1 times the opportunity to use operating room based on utilization theory

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