Treatment Satisfaction and Medication Adherence among Hypertensive Patients at Rumah Sakit Umum Daerah Labuang Baji Makassar

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ABSTRACT

Background: The impact of low treatment satisfaction on medication adherence is of particular caution in patients with hypertension. There are few studies related to the relationship between treatment satisfaction and medication adherence in hypertensive patients in Makassar.

Research Objectives: The aims of this study was to determine and analyze the relationship between therapeutic satisfaction and medication adherence in outpatient hypertension patients at Labuang Baji Hospital, Makassar City.

Method: This research is a descriptive study with a cross sectional approach. Data collection was carried out in September-November 2019 at Labuang Baji Hospital, Makassar City. Data were collected prospectively. The number of samples was 150 patients. The MMAS-8 and TSQM II instruments in this study were used to measure medication adherence and treatment satisfaction.

Results: Bivariate analysis using the chi square test. The results found 54% (81) patients adhered to treatment. Of the 81 patients who were adherent, 70.8% (68) patients were satisfied with antihypertensive therapy. The results of this study concluded that treatment satisfaction increased medication adherence.

Keywords: Treatment satisfaction, Medication adherence, Hypertension

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INTRODUCTION

Poor medication adherence and lack of knowledge and awareness about hypertension are the main reasons for poor blood pressure control which is mostly related to the patient's quality of life. In general, adherence to treatment instructions for long-term disease is a major challenge for patients. Meanwhile, medication adherence is a cost-saving measure because it reduces the incidence of complications and the need for additional drugs. Although lifestyle modification (eg weight loss, diet restriction, physical activity, smoking cessation) is an effective approach in controlling hypertension, drug therapy is a mainstay of hypertension control (WHO, 2003). The efficacy of antihypertensive drugs will decrease if they are not taken properly or if the patient's behavior in taking medication is not in accordance with the agreed recommendations of health care providers (WHO, 2003). Many factors influence patient adherence to prescribed therapy, including treatment satisfaction, high incidence of side effects from antihypertensive drugs, health care system problems, quality of life, socio-demographics, lack of knowledge about hypertension, and treatment and clinical variables (1)(2). Adherence to medication is an important and complex medical issue. Patient assessments of effectiveness, comfort, side effects, and overall drug satisfaction have been reported to impact medication adherence in various therapeutic areas (3)(4)(5)(6)

Satisfaction with treatment can be defined as a patient's evaluation of the process of taking the drug and the results associated with the drug. Satisfaction with treatment is more focused and must be distinguished from other aspects of satisfaction(7) Treatment satisfaction was associated with medication adherence. Treatment satisfaction is believed to influence decision making regarding patient health. Therefore, health care providers need to identify patients' level of satisfaction with the

drugs they use. To evaluate this, measures to assess treatment satisfaction have been developed(8). Although research related to assessing adherence, treatment satisfaction, or both has been widely conducted, there are still few studies that show an association between treatment satisfaction and medication adherence in hypertensive patients. This deficiency reflects a lack of studies involving patient satisfaction with medication and many studies assessing the relationship between satisfaction and adherence have focused on care satisfaction, rather than satisfaction with drug therapy (2)(9). Some of them are such as research conducted by Ajay et al., 2018, Iloh et al., 2017 in Nigeria, Zyoud, 2013 in Palestine which found an association between treatment satisfaction and medication adherence. This makes it increasingly important to assess treatment satisfaction and its relation to adherence. Given the small number of studies on the relationship between adherence and treatment satisfaction have been conducted(2)(10), a review of the literature revealed no research on medication adherence and treatment satisfaction among patients with hypertension in South Sulawesi, especially in Makassar City. This is important considering that hypertension sufferers in this region are quite high. One of the hospitals with a high number of outpatient hypertension patient visits in Makassar City is Labuang Baji Hospital. Therefore, a study was conducted on the relationship between patient satisfaction and medication adherence in hypertensive patients at Labuang Baji Hospital, Makssar City. The results of this study will later inform policy and provide interventions.

MATERIALS AND METHODS

This research was conducted in March-November 2019. The data collection was carried out in September-November 2019 at Labuang Baji Hospital, Makassar City.

The population in this study were outpatients diagnosed with hypertension and received antihypertensive drugs at Labuang Baji Hospital, Makassar City in 2019. The population data for hypertension patients from January to December 2018 was 540 patients (average 45 patients per month). The sample in this study were some of the hypertensive patients who went to the Labuang Baji Hospital, Makassar City during the June-August 2019 period who met the predetermined criteria. The sample was selected by concecutive sampling method.

The inclusion criteria in this study are:
1. Patients diagnosed with hypertension at least one month before being included in the study and taking at least one antihypertensive drug
2. Aged ≥ 18 years
3. Willing to be part of the sample by signing the informed consent.

The exclusion criteria in this study were: Pregnant women

The sample size in the study from the estimated calculation = 150 patients

Research variable

The variables in this study consist of:

Independent variable and dependent variable
1. Independent variable: Treatment satisfaction
2. Dependent variable: Medication adherence
3. Confounding variables: Gender, age, level of education, duration of disease, number of drugs, comorbidities

Research Instruments
1. Data collection sheet, to collect sociodemographic data, clinical data.
2. TSQM v.II questionnaire to measure treatment satisfaction. TSQM v.II totaled 11 questions consisting of four domains.
   Assessment scoring uses a scale scoring algorithm. The TSQM scale scores ranged between 0–100 and no score was calculated lower or higher than the threshold score for this range.
3. The modified MMAS-8 questionnaire to measure medication adherence, amounting to 8 questions consisting of 1 positive (favorable) question and 6 negative (unfavaorable) questions in the form of a Yes and No choice and 1 question item (no.8) with 3 options.

Data collection techniques used data collection sheets, questionnaires, and direct interviews. Prospective data collection. Types of data are primary data and secondary data. Primary data is qualitative data obtained from interviews with respondents, through filling out questionnaires, while secondary data is a medical record document containing clinical data and general patient data. Included in secondary data is data from literature searches. Patients who were willing to participate in the study provided informed consent and answered general questions through interviews. Bivariate analysis was used to determine the relationship between the independent variable (treatment satisfaction) and the dependent variable (medication adherence). Bivariate analysis was performed using the Chi square test. This test was chosen because the data is categorized as scale. The significance test of the relationship with a significance of p <0.05. Bivariate analysis was performed using SPSS for windows.

RESULTS AND DISCUSSION

The research that was conducted at the Labuang Baji Hospital Makassar City during September - November 2019 regarding the relationship between treatment satisfaction and medication adherence in outpatient hypertension patients, 150 respondents were obtained with the following data:

1. Characteristics of respondents

   The characteristics of the respondents involved in this study can be seen in table 1.

Table 1. Characteristics of respondents of period September – November 2019

Characteristics (n)	Frequency (n)	Percentage (%)
Gender		
Male	78	52,0
Female	72	48,0
Total	150	100
Age (years)		
20 – 60	57	38,0
61 – 90	93	62,0
Total	150	100
Education Level		
Low	53	35,3
High	97	64,7
Total	150	100
Duration of diseases		
≤ 1	32	21,3
2	37	24,7
≥ 3	81	54,0
Total	150	100
Comorbid		
No	59	39,3
Yes	91	60,7
Total	150	100
The number of drugs taken per day		

1 – 3	59	39,3
4 – 5	55	36,7
≥ 6	36	24,0
Total	150	100

Table 2. Frequency distribution of treatment satisfaction and medication adherence to outpatient hypertension patients at Labuang Baji Hospital Makassar City period September-November 2019

Variable	Frequency (n)	Percentage (%)
Treatment satisfaction		
Satisfied	96	64
Not satisfied	54	36
Total	150	100
Medication adherence		
Low	27	18
Moderate	42	28
High	81	54
Total	150	100

In further analysis, medication adherence was categorized into adherence and non-adherence. The high level of adherence is categorized as adherent, low and moderate is categorized as non-adherence.

2. Bivariate Analysis
Bivariate analysis using the chi square test between the independent and dependent variables is presented in the table below.

Table 3. Analysis of the relationship between age gender and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

Gender	Medication adherence		Total (%)	*p* value
	adherence	non-adherence		
Male	42 (53,8)	36 (46,2)	78 (100)	
Female	39 (54,2)	33 (45,8)	72 (100)	0,969
Total	81 (54,0)	69 (46)	150 (100)	

Table 4. Analysis of the relationship between age groups and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

Age (years)	Medication adherence		Total (%)	*p* value
	adherence	non-adherence		
20 – 60	27 (47,4)	30 (52,6)	57 (100)	
21 – 90	54 (58,1)	39 (41,9)	93 (100)	0,202
Total	81 (54,0)	69 (46)	150 (100)	

Table 5. Analysis of the relationship between education level and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

Education Level	Medication adherence		Total (%)	*p* value
	adherence	non-adherence		
Low	30 (56,6)	23 (43,4)	53 (100)	0,636

High	51 (52,6)	46 (47,4)	97 (100)	
Total	81 (54,0)	69 (46)	150 (100)	

Table 6. Analysis of the relationship between duration of diseases and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

Duration of diseases (years)	Medication adherence		Total (%)	p value
	adherence	non-adherence		
≤ 1	22 (68,8)	10 31,3)	32(100)	
2	14 (37,8)	23 (62,2)	37 (100)	0,034
≥ 3	45 (55,6)	36 (44,4)	81 (100)	
Total	81 (54,0)	69 (46)	150 (100)	

Table 7. Analysis of the relationship between comorbid and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

Comorbid	Medication adherence		Total (%)	p value
	adherence	non-adherence		
No	38 (64,4)	21 35,6)	59 (100)	
Yes	43 (47,3)	48 (52,7)	91 (100)	0,039
Total	81 (54,0)	69 (46)	150 (100)	

Table 8. Analysis of the relationship between number of drugs taken per day and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

The number of drugs taken per day	Medication adherence		Total (%)	p value
	adherence	non-adherence		
1 – 3	24 (40,7)	35 (59,3)	59 (100)	
4 – 5	36 (65,5)	19 (34,5)	55 (100)	0,025
≥ 6	21 (58,3)	15 (41,7)	36 (100)	
Total	81 (54,0)	69 (46)	150 (100)	

Table 9. Analysis of the relationship between treatment satisfaction and medication adherence at Labuang Baji Hospital Makassar City period September - November 2019

Therapeutic Satisfaction	Medication adherence		Total (%)	p value
	adherence	non-adherence		
Satisfied	68 (70,8)	28 (29,2)	96 (100)	0,001

| Not satisfied | 13 (24,1) | 41 (75,9) | 54 (100) | |
| Total | 81 (54,0) | 69 (46) | 150 (100) | |

150 outpatient hypertension patients at the Labuang Baji Hospital Makassar City for the period September - November 2019, it was found that the number of male patients was not much different from female patients (table 1). In the age group the patients were predominantly aged> 60 years (table 1). This age is the age with a high prevalence of hypertension (11). The incidence of hypertension increases with age. Increasing age will cause several physiological changes. Hypertension is a multifactorial disease that arises because of the interaction of various factors. With increasing age, blood pressure will also increase. Blood pressure increases because the flexibility of the large blood vessels decreases with age. After the age of 45 years, the artery walls will experience thickening due to the accumulation of collagen in the muscle layer, so that the blood vessels will gradually narrow and become stiff (12). This is presumably because at that age humans experience a decline in the function of organs and organ systems including blood circulation, especially if accompanied by an unhealthy lifestyle.

Results of the study (table 1) it was found that patients with hypertension disease duration of three years and over were 54% (81 people) at most, or about twice as many patients with disease duration less than or equal to two years. Table 1. also found that there were 60.7% more patients with comorbid hypertension (91 people) than without 39.3% (59 people). These results can be explained that high blood pressure in the long term will damage the endothelial arteries and accelerate atherosclerosis. Complications from hypertension include damage to organs such as the heart, eyes, kidneys, brain, and large blood vessels. Hypertension is a major risk factor for cerebrovascular disease (stroke, transient ischemic attack), coronary artery disease (myocardial infarction, angina), kidney failure, dementia, and atrial fibrillation. If people with hypertension have other cardiovascular risk factors, it will increase the mortality and morbidity due to these cardiovascular disorders. According to the Framingham Study, patients with hypertension have a significantly increased risk for coronary disease, stroke, peripheral artery disease, and heart failure (13). There are comorbids in hypertensive patients so that they need several drugs for their treatment (table 1) However, in some cases hypertensive patients without comorbids need two or more antihypertensive drugs to achieve the desired blood pressure goals. Giving more than one antihypertensive drug therapy will increase the likelihood of achieving the desired blood pressure.

Based on the results of the study (table 2), it was found that the majority of respondents had a high level of adherence with drug use (54%). High adherence affects patient satisfaction (64%) with the therapy used (6) The results of this study are in line with previous studies reported by Osamor and Owumi (2011)(14) in Nigeria (50.7%) and El Zubier (2000) Eastern Sudan (59.6%). Although lower than that reported by Boima et al. (2015)(15) in Ghana and Nigeria (33.3%), Akintunde (2015)(16) in Nigeria (36.8%), and Lubelo et al. (2015)(17) in the Demographic Republic of Congo (45.8%). These variations may be due to differences in study groups, assessment methods, and the number of drugs taken and the complexity of treatment regimens.

The results of the study found that the proportion of adherence to treatment was significantly higher in respondents who were satisfied with therapy (70.8%) than those who were not satisfied (p = 0.001). The number of drugs taken (p = 0.025), comorbids (p = 0.039), and duration of hypertension (p = 0.034) were associated with medication adherence. Gender, age, education level did not correlate with medication adherence (table 7-9).

The level of adherence can also be related to the amount of medication the patient is taking. The large number of drugs that must be taken by the patient, can be used as an excuse for patients not to take the medicine. The reason could be because the patient in question is already bored with the drugs he is taking, plus the many types of drugs that must be taken while the patient concerned does not like the taste of the medicine. The greater the amount of drug that must be consumed, the more patients are less likely to be adherent to drug use. Basically, the routine of taking medicine is certainly not liked especially in large quantities. Another thing can exacerbate this situation, if the patient has been suffering from hypertension for a long time so that the feeling of being bored with taking a lot of drugs will often approach him. The results of this study are in line with several studies that show a significant relationship between the number of drugs consumed and medication adherence. Other factors that also influenced medication adherence in this study were comorbidities and duration of hypertension. The study reported by Iman et al. 2015 shows an association between low adherence and the number of comorbidities. Another study in Iran, is also in line with this study which reported that the more comorbids, medication adherence will decrease in hypertensive patients. Some also showed a significant relationship between long suffering from hypertension and medication non-adherence (18).

As explained above, the results of bivariate analysis with chi square found that the comorbid treatment satisfaction variables, the number of drugs taken per day, and the duration of the disease each had a significant relationship with medication adherence (p <0.05). Other variables did not show a significant relationship with medication adherence. For the variable age, it has a value of p = 0.202 (p <0.250) so that it is still included in the logistic regression test.

The results of this study are in line with research conducted in several places abroad, Ajayi et al. 2018 (19) in Ibadan-Nigeria, Mathew et al. 2017(20), Saarti et al. 2016 in Beirut and Zyoud et al. 2013 in Paletsina which reported a significant relationship between therapeutic satisfaction and medication adherence. Another study that supports this study, Iloh et al. 2017 (21) in Nigeria which also reported medication adherence and therapeutic satisfaction had a significant relationship.

CONCLUSION

The results of research that was conducted at Labuang Baji Hospital Makassar City during September - December 2019 regarding the relationship between therapeutic satisfaction and medication adherence, it was concluded

that there was a relationship between therapeutic satisfaction and medication adherence. Hypertension patients who were satisfied with their hypertension therapy had greater medication adherence. In future study, will use Morisky Medication Adherence Scale (MMAS-8) and Binary Logistic Regression analysis.

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