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RESEARCH ARTICLE

Effects of Behavior Factor on Patients' Adherence to Antihypertensive Medicine Taking at Pucang Sewu Local Government Clinic Surabaya

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ABSTRACT:
Hypertension is one type of worldwide chronical desease that may cause complication with other perilous diseases. Preventive efforts are necessary to reduce hypertension rate, one of which is by pharmacotherapy. Control over medicine taking should be conducted at consistent and regular basis. This study is therefore aimed at identifying the behavior factor affecting patients' adherence to antihypertensive medicine taking. This study is descriptive qualitative analysis conducted at Pucang Sewu Local Government Clinic, Surabaya. Data collection was conducted with questionnaire and medicine prescription check. The data was analysed with Spearman correlation test to examine the efects of behavior factor upon patient's adherence to antihypertensive medicine taking. The result of the study shows that patients' adherence to hypertensive medicine taking at the Pucang Sewu Clinic was high, that of 72 samples, 51 respondents showed high adherence to antihypertensive medicine taking. The Spearman correlation test shows that patients's attitude significantly affect their adherence to antihypertensive medicine taking, with correlation coefficient 0.701 (significance < 0.0005), which is of the highest influence compared to other factors. Besides the patients' attitude, health facility and means have also affected significantly, while such factors as knowledge and pharmacist's behavior have insignificantly affected adherence to antihypertensive medicine taking in Pucang Sewu Clinic, Surabaya. Information on the influence of behavior towards adherence to antihypertensive medicine taking may help medical and pharmacy staff to decide medical steps for hypertension patients to reduce hypertension rate in Pucang Sewu Clinic, Surabaya.

KEYWORDS: Hypertension, behavior factor, adherence to medicine taking.

INTRODUCTION:

Hypertension or high blood pressure is identified with the systolic blood pressure reaching 140 mmHg or higher and the diastolic pressure 90 mmHg or higher[1]. Hypertension has been the major factor in problems of heart, kidneys and brain (stroke), and one major cause of mortality[2]. Prevention and control of blood pressure for patients diagnosed with hypertension are conducted with both nonpharmacologic and pharmacologic therapy. In the process of pharmacologic therapy, patients may experience DTPs (Drug Therapy Problems).

Factors causing DTPs include unneccesary pharmacologic therapy, additional therapy, ineffective medicine, low medical dose, high medical dose, pharmacologic side effect, and adherence[3]. Adherence involves patient's behavior in taking medicine based on recommendation by the medicine prescriber[4].

According to Lawrence Green[5], human behavior is influenced by three factors: predisposing factors, enabling factors and reinforcing factors. Predisposing factors include, among others, knowledge and attitude, enabling factors include health facility and means, and reinforcing factors include medical staff behavior[6]. Behavioral factor analysis affecting patient's adherence to medicine taking is conducted as an effort to plan a more comprehensive therapy strategy to improve therapy effectiveness[7].

Studies on patient's adherence in medicine taking has been abound. Nafi'ah[8] study on patient's adherence to oral antidiabetic medicine taking at Pucang Sewu Clinic found that patient's adherence profile on medicine dose reaches 88%, adherence to frequency 20%, adherence to interval 12%, adherence to time 48% and adherence to medical duration 24%. Moreover, a study by Butler[9] conclude that patient's inadherence to medicine taking is related to higher systolic blood pressure (3.38 mmHg) and diastolic blood pressure (1.47 mmHg).

Based on the above discussion and on the data on the frequency of hypertension patient visits to Pucang Sewu Clinic reaching 583 visits in November 2015 and 511 in December 2015, this study is interested in analyzing the influence of behavior on patient's adherence to hypertensive medicine taking at Pucang Sewu Clinic.

MATERIALS AND METHODS:

The study was designed as descriptive analytical. This study was conducted at Pucang Sewu Regional Government Clinic located on 72 Pucang Anom Timur Street, Surabaya. The data was collected from May 9 to 27, 2016, comprising the primary and secondary data. The primary data was collected from the answers for questionnaires filled by the correspondents during their visits for treatment and for taking antihypertensive medicine provided by Pucang Sewu Clinic, Surabaya. The secondary data was collected from the prescription submitted by the patients to the pharmacists at Pucang Sewu Clinic, Surabaya. The population is hypertension patients visiting Pucang Sewu Clinic, Surabaya who consumed antihypertensive medicine. The samples in this study were 72 respondents. The samples were taken using non-random sampling with incidental sampling techniques, that the samples were taken incidentally from respondents being met by the researcher on their visits to take and receive antihypertensive medicine at Pucang Sewu Clinic and that they met the inclusion criteria.

The research stages were initiated with the research permit request to the Health Department of Surabaya City and construction of research instrument. The next step was validity and reliability test of the questionnaire, followed by coordination with the prescription staff or the clinic pharmacist for data collection at Pucang Sewu Clinic, Surabaya. When the data were collected, the next step was data analysis. The last step was writing the research report.

Prior to data analysis, the data were processed through editing, coding and tidying up to have the data ready for analysis. Data analysis was conducted with SPSS Software to examine the influence of free variables (predisposing, enabling and reinforcing factors) on the dependent variables (patient's adherence to antihypertensive medicine taking). The test was conducted with Spearman Correlation since the data do not show normal distribution. The result of analysis was presented in tables of correlation between research variables: the behavior factor on patient's adherence to antihypertensive medicine taking. The correlation coefficient (r) can show the dominating behavior factor on patient's adherence to antihypertensive medicine taking.

RESULT AND DISCUSSION:

This study on behavior factor affecting patient's adherence to antihypertensive medicine taking was conducted at Pucang Sewu Clinic in May 2016 with respondents of hypertension patients meeting the inclusion criteria. Adherence was measured with self-report method using questionnaire that has passed validity and reliability test. This study involved 72 respondents. The data on respondents' demography was presented in Table 1.

Table 1. Data on Respondents' Demography

Classification	n	%
Sex		
Male	15	20.8
Female	57	79.2
Age		
< 40 years	3	4.2
40-49 years	6	8.3
50-59 years	20	27.8
60-69 years	19	26.4
70-79 years	22	30.6
>79 years	2	2.8
Education		
No education	8	11.1
Elementary School	17	23.6
Junior High School	19	26.4
Senior High School	20	27.8
College/University	8	11.1
Occupation		
Pensioner/unemployed	26	26
Housewives	43	43
Civil Servants/Army/Police	1	1.4
Private Employees	1	1.4
House helpers	1	1.4

Table 1 shows that the majority of patients are female (79.2%) who are housewives (59.7%). This may be due to the fact that the male residents work during the day. In the age category, the patients are dominantly between 70-79 years old (30.6%). This data is consistent with Dipiro[10] who states that after menopause, hypertension prevalence on women increases due to hormonal factor. In the educational level, most patients finished senior high school (27.8%). Knowledge of healthy lifestyle and diet pattern do not become reference to whether patients will be spared from risk of hypertension, but implementation of both will affect risk of hypertension[1].

Analysis of the Effect of Research Variables on Patient's Adherence to Antihypertension Medicine Taking:
There are four (4) research variables, first, predisposing factors, represented by knowledge and attitude, and second, enabling factors, represented by health facility and means, and third, reinforcing factors, represented by pharmacy staff, and fourth, patient's adherence. Table 2 presents distribution of free variables and dependent variables of the study.

Tabel 2. Distribution of Research's Free Variables and Dependent Variables in Pucang Sewu Clinic, Surabaya

Variables	n	%
Patient's Knowledge		
Good	39	54.2
Fair	25	32.7
Poor	8	11.1
Patient's Attitude		
Positive	62	86.1
Negative	10	13.9
Health Facility and Means		
Good	34	47.2
Poor	38	52.8
Behavior of Pharmacy Staff		
Good	17	23.6
Poor	55	76.4
Patient's Adherence		
High	51	70.8
Medium	20	27.8
Low	1	1.4

Table 2 shows that patients's adherence to antihypertensive medicine taking at Pucang Sewu Clinic, Surabaya is high, 70,8%. In the research questionnaire, the adherence variable is represented by six (6) questions, including indicators of correct dose, correct interval of taking, correct method of taking, correct duration of taking, and caution of side effect. Most respondents answer that they always and often take hypertension medicine according to the correct dose, interval of taking, method of taking and duration of taking. Their reason for regular antihypertensive medicine taking was physical discomfort, inactivity and fear of sudden heart attack. The next step was data correlation test. Since the data did not show normal distribution, Spearman correlation test was conducted to determine whether the behavior factor variable affects patient's adherence to antihypertension medicine taking, and the extent to which it affects the patient. Table 3 shows Spearman correlation test.

Effect of Patient's Knowledge on Adherence:
The result of the study as presented in Table 2 shows that 39 respondents (54.2%) have good knowledge. The correct answers provided by the respondents are mostly related to indicators causing hypertension. This good knowledge is possibly due to the education factor of the respondents. It is apparent that educational level can affect one's knowledge and ability in implementing

healthy lifestyle and particularly in preventing hypertension. However, Spearman's correlation analysis presented in Table 3 shows that the knowledge has insignificant influence on patient's adherence to hypertensive medicine taking with correlation coefficient 0.133 and sig. value 0.134. this may be due to the fact that this study only evaluate patients from their level of knowing or understanding without evaluating the implementation of patients' knowledge to their present condition.

Table 3. Distribution of Free and Dependent variables in the Research at Pucang Sewu Clinic, Surabaya

Adherence	*Correlation coefficient* (r)	Sig (2-tailed)	Description
Patient's Knowledge	0.178	0.134	Insignificant
Patient's Attitude	0.701	0.000 (<0.0005)	Significant
Health Facility and Means	0.328	0.005	Significant
Pharmacy Staff Behavior	0.179	0.133	Insignificant

The Effect of Patient's Attitude to Adherence:
Attitude is a person's response to stimulus related to his or her perception. Indicators of length of medicine consumption and medicine taking according to the recommendation are represented by five (5) questions in the questionnaire. The result shows that the majority of the respondents shows positive attitude (86.1%) (Table 2). Respondent's positive attitude in this study is shown by taking the medicine at a regular basis according to the staff recommendation. Spearman correlation analysis related to patient's attitude on adherence to antihypertensive medicine taking shows a significant influence with correlation coefficient value 0.701 and significance value lower than 0,0005 as presented in Table 3. Patients' positive attitude shows significant effect on their adherence to antihypertensive medicine taking. One reason for the significant relation is because they have understood the consequence of taking hypertension theraphy. Patients' positive attitude on antihypertensive medicine taking needs to be maintained and increased into optimum. Some methods to maintain dan increase patient's attitude include providing them with information related to the purpose of theraphy, risks and consequences of patient's adherence or disobedience in medicine taking. Information can be provided by the health officers in the regional clinics particularly by physicians and pharmacy staff.

Effect of Health Facility and Means to Adherence:
Health facility and means includes anything being made for the purpose of providing ease and comfort for patients. This becomes an appropriate consideration when including questions related to health facility and means enjoyed by patients. Health facility and means are represented by four (4) questions and four (4) indicators:

antihypertensive medicine availability, access to the regional government clinics, comfort in the prescription service waiting room, and availability of information on hypertension. The result of health facility and means variable shows that health facility and means at Pucang Sewu Clinic Surabaya is not good (52.8%) (Table 2).

Respondents' answers on questions on health facility and means include limitation of hypertension medicine and information availability. Medicine availability is considered insufficient due to relatively minimun medicine prescribed to patients, only for 3-5 days consumption, although some were given medicine for 1-2 weeks. The study also shows that the clinic does not provide information related to hypertension in posters, magazines, brochures, leaflets. The result of Spearman correlation analysis test shows that health facility and means affect significantly to patient's adherence to antihypertensive medicine taking at Pucang Sewu Clinic Surabaya (correlation coefficient 0.328 and sig. 0.005, Table 3). Efforts to improve health facility and means may be done based on the result of the study, by making available medicine and information in posters, brochures, leaflets on hypertension disease.

The Effect of Pharmacy Staff Behavior on Adherence:
In this study, health officer behavior are of the pharmacy staff. The pharmacy staff behavior indicator includes providing comprehensible information on risk of complication, side effect and method of theraphy, and nonpharmacological theraphy. The study shows that the pharmacy staff behavior at Pucang Sewu Clinicf Surabaya is considered not good by the respondents (76.4%) (Table 2). Based on the answers to the questionnaires, respondents consider the pharmacy staff as not providing sufficient information related to the risk of complication, side effect, and nonpharmacological theraphy. The result of Spearman correlation analysis shows insignificant effect of pharmacy staff behavior and patient's adherence to antihypertensive medicine taking, with correlation coefficient 0.179 sig. 0.133 (Table 3). This may be due to the fact that respondents receive information on hypertension and its theraphy from other health officers, such as physicians, that patients show high adherence, not because of the pharmacy staff behavior providing them information on teraphy on patients.

CONCLUSION:
Based on the above result and discussion, conclusion may be drawn that the greatest behavior factor affecting patient's adherence to antihypertensive medicine taking is patient's attitude, with correlation coefficient 0.701 and sig. 0.000. Besides, patient's attitude, health facility and means also show significant influence with correlation coefficient 0.328 and sig. 0.005. On the other hand, the knowledge and pharmacy staff behavior show insignificant influence with correlation coefficients 0.178 AND 0.179 respectively.

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