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Research Article

Behavioral factor analysis of the accuracy in using gastritis drugs at the Puskesmas Arjuno in Malang City with the Health Belief Model (HBM) approach

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ABSTRACT

This study aims to analyze the behavioral factors according to the Health Belief Model (HBM) theory, which affects the accuracy in using gastritis drugs at Arjuno Health Center, Malang City. This research is a non-experimental study with an analytical observational research design. The instrument used a valid and reliable questionnaire. There were two variables used, the independent variables, namely the factors of the theory of the HBM (Perceived susceptibility, Perceived severity, Perceived Benefits, Perceived barriers, and Self Efficacy), and the dependent variable is the proper usage of gastric drugs. The number of samples used int this study was 80 respondents. The regression test results on each factor of HBM theory on the accuracy of using gastritis drugs ($p < 0.05$) means significantly affected the accuracy of using gastritis drugs except for perceived barriers, which is a significant value of $0.301 > 0.05$. This result is relevant to the theory which states that the higher perceived barriers, the correct use of drug will be lower. Then for the Anova test, all independent variables were tested with the dependent variable and the results means that there is an influence between the HBM theory and the accuracy of using gastritis drugs. If measured simultaneously, factors from the HBM affect the accuracy in using gastritis drugs with a significant effect of 64.9%.

1. INTRODUCTION

One of the non-communicable diseases that attack Indonesian people is gastritis which defined as inflammation of the stomach. This disease is often found to arise suddenly which is usually characterized by nausea or vomiting, pain, bleeding, weakness, decreased appetite, or headaches (Selviana, 2015). Gastritis begins with irregular eating patterns so that the stomach becomes sensitive and followed by an increase in stomach acid (Hungan, Supit & Kabo, 2016).

The percentage of the occurrence gastritic in Indonesia was 40.8% and relatively high, with an occurence of 274,396 cases out of 238,452,952 inhabitants (Khusna, 2016). Gastritis was ranked fourth in the number of cases of the ten most diseases in Malang City in 2018, with 7,007 cases spread in Public Health Centers (Puskesmas) in Malang City.

Gastritis treatment aims to reduce stomach acid by neutralizing stomach acid and reducing gastric acid secretion. Gastritis treatment is also done strengthened the defense mechanism of the gastric mucosa with cytoprotective medicine (Wells, DiPiro, Schwinghammer & DiPiro, 2015).

Inaccuracy in taking medication will create unwanted consequences such as gastritis that does not go away and medical conditions worsen so that patients need treatment in hospital or outpatient and can cause death. According to the World Health Organization [WHO] (2016), the use of a drug is said to be correct if it is following the right patient, the suitable indication of the disease, proper drug selection, the accurate information, correct dose, suitable drug delivery, or dispensing, the appropriate method of administration, good duration of administration, alert to side effects. In addition, proper follow-up, proper assessment of the patient's condition, drugs must meet the requirements, namely that they must be effective and safe with guaranteed quality and are also available at any time at a price that all levels of society can reach (WHO, 2016)

Perception influences a person to seek treatment. Perception itself can be measured by a theory, one of which is the Health Belief Model (HBM). According to the HBM theory, someone who is sick will look for ways to cure his illness with the person's perception. The HBM theory used in this study consists of five constructs, namely perceived susceptibility (risk or vulnerability), perceived severity (seriousness or severity), perceived benefits (value or usefulness), perceived barriers, and self-efficacy (individual motivation) (Attamimy & Qomaruddin, 2017)

2. MATERIALS AND METHODS

This research is non-experimental research with an analytical observational research design through questionnaires. This study aims to analyze the patient's behavioral factors on using gastritis drugs at the Puskesmas Arjuno in Malang City with the HBM theoretical approach. The theory of the HBM has six constructs, which are perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self efficacy (Hidayati, Damayanti & Pristianty, 2020).

Independent variables used in this study are factors from the HBM theory (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self efficacy). The dependent variable used in this study is the accuracy of using gastritis drugs.

From the population of outpatient gastritis patients to the Puskesmas Arjuno in three months as many as ± 100 patients, the number of research samples is 80 respondents; this result is following the calculation with the Slovin formula with an error tolerance of 5% with following equation:

$$n = N / 1 + N(e)^2 \quad (1)$$

n = number of samples

N = total population

e = fault tolerance

Inclusion criteria in this study were outpatient gastritis patients at the Puskesmas Arjuno, gastritis patients were using gastritis drugs (antacids), and gastritis patients who could communicate and write well according to the adult age category. These gastritis patients were willing to be respondents to the study. Exclusion criteria in this study were gastritis patients who had complications, gastritis patients in children, gastritis patients who were not willing to be respondents, and gastritis patients who did not take treatment at Puskesmas Arjuno. The data collection method used a questionnaire with 21 questions tested for validity and reliability to 30 respondents. The data analysis technique used is the Normality Test, T-test (partial), Anova test, and the Coefficient of Determination with the help of SPSS 23.0.

3. RESULTS AND DISCUSSIONS

Based on **Table 1**, according to Tussakinah, Masrul and Burhan (2018), which states that gender factors affect the occurrence of gastritis, where women suffer from gastritis more than men. Various research results show that the incidence of gastritis in women is more than in men because women feel stress more quickly, and also when they are busy with work causing late eating, it causes stomach acid to increase (Sunarmi, 2018). Gastritis can affect both men and women, but the data obtained that gastritis attacks many women from young

Table 1. Characteristics of respondents by gender, age, and type of work

Characteristics	Number of Respondents	Percentage
Gender		
Man	16	20%
Woman	64	80%
Age		
21 - 30 years old	25	31%
31 - 40 years old	14	18%
41 - 50 years old	14	18%
51 - 60 years old	17	21%
61 - 70 years old	10	12%
Profession		
Housewife	39	49%
Self-employed	13	16%
Private sector employee	15	19%
Etc.	13	16%

Table 2. Test results of the effect of each component of Health Belief Model

HBM Components	Value Significance	Value	Information
Susceptibility	0.000	0.05	Take effect
Severity	0.000	0.05	Take effect
Benefits	0.000	0.05	Take effect
Barriers	0.301	0.05	No effect
Self-Efficacy	0.000	0.05	Take effect

Table 3. Test results of the coefficient of determination on each component of the Health Belief Model

HBM Components	R	R^2	Adj.R^2
Susceptibility	0.534	0.285	0.276
Severity	0.529	0.280	0.270
Benefits	0.594	0.353	0.345
Barriers	0.117	0.014	0.001
Self-Efficacy	0.523	0.274	0.264

Table 4. Test results of the overall effect of Health Belief Model components

Model	Value Significance	value	Information
Regression	0.000	0.05	Take effect

to old age. Gastritis can be caused by an unhealthy lifestyle, usually because of busyness which also causes stress and irregular eating (Sani, Tina & Jufri 2016).

According to the age data group, the most significant number of respondents was in the age range between 21-30 years, and the smallest number was range 61-70 years old (**Table 1**). According to Hermawati, Suhadi and Saktiansyah (2018), which states that age also influences gastritis. in this study, gastritis mainly attacks young adults. At that age is the age where humans become productive as workers who are busy with work. At the age of 51-60 years, most respondents are housewives who take care of household needs so that they forget to eat well, thus causing gastritis (Sunarmi, 2018).

Based on **Table 2**, it is said to be influential if the significance value is <0.05, it is known that the perceived susceptibility obtained a significance value of 0.000 < 0.05. These results indicate a significant effect between perceived susceptibility and the accuracy of using gastritis drugs. It shows that respondents have a high perception of susceptibility to gastritis and feel the risk or danger in their disease, resulting in high healthy behavior by using gastritis drugs properly. The results of this study following research by Fitriani, Pristianty and Hermansyah (2019), that there is a significant influence between the perceived susceptibility factor and diabetes mellitus patient compliance.

Then the perceived severity obtained a significance value of 0.000 < 0.05, it indicates that there is a significant influence between perceived severity on the accuracy of using gastritis drugs. Perceived severity is an individual's subjective perception of how severe the physical and social consequences of the illness he will suffer. It shows that respondents have a high perception of the severity or seriousness of gastritis so that it has a

high impact on healthy behavior as well. The results of this study were following research by Fitriani, et al., (2019), there is a significant influence between the perceived severity factor and diabetes mellitus patient compliance.

The perceived benefits obtained a significance value of 0.000 < 0.05, it indicates that there is a significant influence between perceived usefulness on the accuracy of using gastritis drugs. Perceived benefits refer to the individual's assessment of the value or efficacy of behaving to reduce the risk of disease. This shows that respondents who have a high perception of the benefits of using gastritis drugs correctly, and respondents realize that there are great benefits from using gastritis drugs properly so that it results in an optimal therapeutic effect. The results of this study were following research by Attamimy and Qomaruddin (2018), there is a significant effect between the perceived benefits factor and dengue fever prevention behavior.

The significance value of perceived barriers is 0.301 > 0.05, it indicates an insignificant effect between perceived barriers and the accuracy of using gastritis drugs. Perceived barriers are personal views or judgments about how significant the barriers are to adopting or taking the recommended action. It shows that respondents who perceive obstacles to the desire to use gastritis drugs correctly are still high, resulting in not achieving the effectiveness of therapy. When someone still perceives obstacles to doing healthy behavior, the healthy behavior will not be carried out. The high category dominates the results of this study.

Based on **Table 3**, the results of the coefficient of determination of perceived susceptibility on the accuracy of application gastritis drugs with an R^2 value of 0.285. The results indicate that the effect on the accuracy of gastritis drugs caused by perceived susceptibility is 28.5%, and the impact on the accuracy of the use of gastritis drugs caused by other factors outside the study by 71.5%. The R^2 of perceived severity on the accuracy of oral antidiabetic use with an R^2 value of 0.280, this indicates that the effect on the accuracy of gastritis drug use caused by perceived severity is 28.0% and the impact on the accuracy of gastritis drug use driven by other factors outside the study by 72%. The results of the R^2 of perceived benefits on the accuracy of the use of gastritis drugs with an R^2 value of 0.353. This result indicates that the effect on the accuracy of the use of gastritis drugs caused by perceived benefits is 35.3%, and affected the accuracy of the use of gastritis drugs caused by other factors outside the study is 64.7%. The coefficient of perceived barriers to the accuracy application of gastritis drugs with an R^2 value of 0.014 (**Table 3**), which indicates the effect of perceived barriers is 0.1%, while the other factors are 99.9%. The results of the coefficient of determination of self-efficacy on the accuracy of using gastritis drugs with an R^2 value of 0.274. It can be seen the results of the coefficient of determination of perceived benefits on the accuracy of using gastritis drugs with an R^2 value. Of 0.353, this indicates that the effect on the accuracy of gastritis drugs caused by perceived benefits is 35.3%, and the impact on the accuracy of the use of gastritis drugs caused by other factors outside the study is 64.7%.

Based on the HBM research results, the overall significance value of 0.000 < 0.05 (**Table 4**), which means HBM factor affects the accuracy in using gastritis drugs. This result is in line with research conducted by Arlini (2014), that there is a significant influence from the HBM in forming the right or wrong behavior of a patient regarding gastritis he is experiencing.

4. CONCLUSIONS

Partially measured HBM factors that affect accuracy in using gastritis medicine are perceived susceptibility, perceived severity, perceived benefits, and self-efficacy, while perceived barriers do not affect accuracy in using gastritis medicine. If measured simultaneously, factors from the HBM affect the accuracy in using gastritis drugs with a significant effect of 64.9%.

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