



## **Exploring Medical Check-Up Behaviors for Early Detection of Non-Communicable Diseases Among Diponegoro University Students**

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### **Abstract**

**Introduction:** Indonesian Basic Health Research (*Riskesdas*) in 2018 showed that the prevalence of high blood pressure at the age of >18 years increased from 25.8% to 34.1%, obesity at the age of >18 years increased from 14.8% to 21.8%, and smoking prevalence at the age of >18 years increased from 7.2% to 9.1%. This study analyzed the medical check-up behavior to detect non-communicable diseases on Diponegoro University students.

**Methods:** This research was a quantitative research with a cross-sectional research method. This research was conducted in August 2024. Total 400 people were chosen using quota sampling technique. Data collection was carried out using Google Form. The dependent variable was medical check-up behavior and the independent variables were perception of susceptibility, severity, benefits, barriers, cues to action, and self-efficacy. Data analysis of the association used chi square tests.

**Results:** The majority of the respondents were aged  $\geq 21$  years old, female, and come from a non-health faculty. A quarter of the subjects or 101 students (25,3%) had a medical check-up without a doctor's referral. There was no association between perceived susceptibility, severity, benefit, barrier, cues to action, self-efficacy and medical check-up behavior.

**Conclusion:** There was no association between perception of susceptibility, severity, benefits, barriers, cues to action, and self-efficacy and medical check-up behavior among Diponegoro University students. It is important to raise students' awareness on the importance of medical check-ups.

**Keywords:** medical check-up, behavior, non-communicable diseases, university, students.

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### **Introduction**

In life, human beings have the basic right to live a healthy life. Human health can affect the quality of life, so it is considered very important. According to UU no. 17 of 2023, health itself is a healthy condition where a person's physical, mental, and social state is not only free from disease,

making it possible to lead a productive life.<sup>1</sup> However, unfortunately, nowadays, the phrase "it is better to prevent than to cure" seems to be rarely applied by the public. Many actions can be taken to detect diseases as early as possible and prevent the development of certain diseases, but most people are still ignorant and

unconcerned. Nonetheless, as we know, the costs incurred to carry out treatment are much more expensive compared to the costs incurred when we are healthy.<sup>2</sup>

About 71% of deaths in the world in 2016 were caused by non-communicable diseases (NCDs), with the majority of these deaths occurring in middle to low-income countries. Indonesia itself is currently experiencing a double disease burden, where cases of infectious diseases are still high accompanied by an increase in non-communicable diseases.<sup>3</sup> Non-communicable diseases that are the leading cause of death of all ages in Indonesia are occupied by stroke (21,1%), coronary heart disease (12,9%), diabetes with complications (6,7%), hypertension with complications (5,3%), and chronic obstructive pulmonary disease (4,9%). *Riskesdas* 2013 states that among the population aged >15 years, as many as 44.3 million people (26,6%) suffer from central obesity, 42.1 million people (25,8%) suffer from hypertension, 8.9 million people (6,9%) suffer from diabetes mellitus, and 1.2 million people suffer from stroke.<sup>4</sup> *Riskesdas* in 2013 also stated that only about 30% of hypertension and diabetes cases had been diagnosed, the remaining 70% had not been detected, thus potentially causing complications, disability, and premature death.<sup>4,5</sup>

*Riskesdas* data in 2018 stated that there was an increase in key indicators of non-communicable diseases, such as an increase in the prevalence of high blood pressure at the age of >18 years from 25,8% to 34,1%, an increase in the prevalence of obesity at the age of >18 years from 14,8% to 21,8%, and an increase in smoking prevalence at the age of >18 years from 7,2% to 9,1%. *Riskesdas* 2018 also shows that there has been an increase in the prevalence of several types of Non-Communicable Diseases (NCDs) compared to *Riskesdas* 2013.<sup>6</sup>

Unknowingly, there is an increase in the prevalence of non-communicable disease cases caused by lifestyle changes in an unhealthy direction.<sup>7</sup> The increase in the prevalence of this disease can be related to lifestyle such as smoking habits, consumption of fruits and vegetables, alcohol consumption, and so on.<sup>6</sup> The risk

factors for non-communicable diseases themselves are very diverse, including genetic, behavioral (lifestyle), and sociodemographic (age and gender).<sup>8</sup>

The results of the recapitulation of the latest non-communicable disease case data in Central Java in 2021 reached 4,262,517 cases, with hypertension occupying the largest proportion, which was 76.5%, followed by diabetes mellitus at 10.7%. These two diseases have the potential to cause further non-communicable diseases, such as stroke, heart failure, kidney failure, and so on. *Riskesdas* in 2018 stated that the prevalence of hypertension in the population of Central Java was 37.57%, with a prevalence of 40.17% in women and 34.83% in men. It is estimated that hypertension patients over 15 years old are more than 8.7 million people (30.4%) of the entire population over 15 years old in Indonesia. The estimated number of people with diabetes mellitus in Central Java in 2021 is around 618 thousand people.<sup>9</sup>

Diponegoro University is one of the state universities with quite a large number of students located in Semarang City, Central Java. A preliminary study was conducted by researchers in February 2024 to 152 students of Diponegoro University through a google form, which was disseminated through the autobase of the X application (Twitter) for 5 days. Based on the results of the preliminary study, it was found that as many as 19,1% (29 students) suffered from various types of non-communicable diseases. A total of 5,9% (9 people) suffered from ulcers, 3,9% (6 people) suffered from GERD, 2,6% (4 people) suffered from hypertension, 3,2% (5 people) suffered from asthma, 1,9% (3 people) suffered from diabetes mellitus, 1,3% (2 people) suffered from anemia, and the rest suffered from heart disease, thalassemia major, cholesterol, dermatitis, and lipomas. Among 19,1% (29 people) with non-communicable diseases, only 6,8% (2 people) routinely carry out medical check-ups. On the other hand, as many as 80,9% (123 students) did not suffer from non-communicable diseases, and only 1,6% (2 people) routinely carry out medical check-ups. As many as 57,9% (88

students) admitted to having a family history of non-communicable diseases, with diseases that are quite often encountered, namely diabetes mellitus, hypertension, coronary heart disease, and cholesterol. Data was also obtained regarding other diseases such as ulcers, breast cancer, liver cancer, lung cancer, hepatitis, gout, liver disease, asthma, stroke, GERD, thalassemia minor, arrhythmia, and hyperthyroidism. Meanwhile, the remaining 42,1% (64 students) did not have a family history of non-communicable diseases. Based on this preliminary study, it was also found that the lifestyle of Diponegoro University students tended to be unhealthy, where 57,2% (87 people) admitted to consuming coffee, 87,5% (133 people) smoked, 31,6% (48 people) consuming alcohol, and 86,1% (131 people) sleeping irregularly. Based on the results of this preliminary study, it can be concluded that Diponegoro University students are at risk of contracting various types of non-communicable diseases.

The Ministry of Health of the Republic of Indonesia has a program called "CERDIK", where one of the recommendations is to conduct health checks or medical check-ups.<sup>10</sup> In addition, Diponegoro University has a "Health Promoting University" program, which includes the Health Center of Non-Communicable Diseases activity.<sup>11</sup> By utilizing existing health services, such as conducting health checks or medical check-ups in accordance with the recommendations of the Indonesian Ministry of Health's program, the prevention of non-communicable diseases can be carried out from the beginning. Therefore, regular health checks or medical check-ups should still be carried out to minimize the risk of an illness as early as possible.<sup>2</sup> Medical check-ups also function to provide further information regarding actions or treatment that must be taken next, so that health problems experienced can be treated before it reaches a more severe phase. Furthermore, health checks or medical check-ups that are carried out regularly are believed to be something important, although there are still people who do not

have the awareness to carry out medical check-ups.<sup>2,7</sup>

This study utilizes the Health Belief Model to explore behaviors related to health and healthcare decision-making. This study aims to describe and examine the relationship between medical check-up behaviors for detect non-communicable diseases among Diponegoro University students, using the Health Belief Model as a theoretical framework. This theory is applied in conjunction with Leavell and Clark's 5 Levels of Prevention, which is commonly used in public health research. The main focus of this study is to raise the topic of the secondary prevention, especially the early diagnosis and prompt treatment.

Based on the explanation that has been described above, the researchers wish to conduct a study entitled of "Medical Check-Up Behavior to Detect Non-Communicable Diseases in Diponegoro University Students". The results of this study are expected to be one of the bases for consideration to improve medical check-up behavior to detect non-communicable diseases in students.

## Methods

This study is a form of quantitative research with a cross-sectional research method to obtain comprehensive information regarding awareness of carrying out medical check-ups to detect non-communicable diseases among Diponegoro University students at the time the study was conducted. The population is all undergraduate students of Diponegoro University who are actively studying in 2024 or 47,462 students. Sampling was carried out using the quota sampling technique using the Lemeshow formula, with total 400 people were involved. This study aimed to describe and find the relationship between medical check-up behavior to detect non-communicable diseases in Diponegoro University students based on the Health Belief Model theory (perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action, and self-efficacy). In this study, the categorization is based on action expected by the researcher. For

perceived susceptibility, perceived severity, perceived benefit, cues to action, and self-efficacy variables, if it is in accordance with expectations, it is included in the "Good" category, and if it is not in accordance with expectations, it is included in "Poor" category. For perceived barrier variable, if it is in accordance with expectations, it is included in the "Low" category, and if it is not in accordance with expectations, it is included in "High" category.

Data collection is carried out using Google Form. The variables studied consisted of the dependent variable (medical check-up behavior) and independent variables (perception of susceptibility, perception of severity, perception of benefits, perception of barriers, cues to action, and self-efficacy). The normality test was conducted on all variables, including both the independent and dependent variable. The results indicated that the significance value for all variables were  $<0.05$ , suggesting the data is not normally distributed. As the result, conclusions and categorizations cut off use the median values. The research data were analyzed univariately to determine the frequency of each variable and bivariately using the chi-square test to examine the association between medical check-up behaviors and other variables. This research underwent an ethical review by the Health Research Ethics Committee Faculty of Public Health Diponegoro University and was declared to have passed the ethical review (No. 334/EA/KEPK-FKM/2024).

## Results

Table 1 shows the respondents characteristic, majority of the respondents were aged  $\geq 21$  years old, female, and come from a non-health-based faculty. Table 2 shows that 101 respondents (25,3%) had a medical check-up without a doctor's referral, while 299 respondents (74,8%) had a medical check-up with a doctor's referral. A health check-up or commonly referred to as a medical check-up is an overall body examination activity carried out by certain health workers to monitor health conditions and detect

diseases early.<sup>12</sup> In its implementation, patients can take advantage of this health check-up facility with or without a referral from a doctor. In general, referrals from doctors to conduct medical check-ups function to monitor the condition of the disease so that it is not expected to get worse. However, the implementation of medical check-ups independently without a doctor's referral can be useful for maintaining health.<sup>13</sup>

Table 3 shows that the majority of respondents have a perception of susceptibility that is included in the "Good" category, namely 211 respondents (52,8%). Meanwhile, a small number of respondents had a perception of susceptibility that was included in the "Poor" category, namely 189 respondents (47,3%). It was also found that a total of 204 students did not think that they could be affected by NCDs due to lifestyle (50.1%) and a total of 208 students did not think that they could be affected by NCDs due to being passed down by their parents (52.0%). Based on the results of the normality test, which indicated that the data is not normally distributed, so the data categorization was done using the median formula with a cut-off point of 10.

It also shows that the majority of respondents had a perception of severity that was included in the "Good" category, namely 284 respondents (71,0%). Meanwhile, a small number of respondents had a perception of severity that was included in the "Poor" category, namely 116 respondents (29,0%). It was also found that a total of 124 students did not think that NCDs could cause disability (31.0%) and a total of 72 students did not think that NCDs could cause death (18.0%). Based on the results of the normality test, which indicated that the data is not normally distributed, so the data categorization was done using the median formula with a cut-off point of 12.

It also shows that the majority of respondents have perceptions of benefits that fall into the "Good" category, namely 261 respondents (65.3%). Meanwhile, a small number of respondents had a perception of benefits that was included in the "Poor" category, namely 139 respondents (34.8%). It was also found that a total of 40 students did not think that

medical check-ups could help prevent the emergence of NCDs (31.0%). Based on the results of the normality test, which indicated that the data is not normally distributed, so the data categorization was done using the median formula with a cut-off point of 13.

It also shows that the majority of respondents had perceptions of barriers that were included in the "Low" category, namely 238 respondents (59,5%). Meanwhile, a small number of respondents had a perception of barriers that was included in the "High" category, namely 162 respondents (40,5%). It was also found that a total of 130 students were afraid of the result of having NCDs during medical check-up (30.5%) and a total of 97 students were afraid of the possibility of using syringes during medical check-up (24.3%). Based on the results of the normality test, which indicated that the data is not normally distributed, so the data categorization was done using the median formula with a cut-off point of 12.

It also shows that the majority of respondents had cues to action that were included in the "Good" category, namely 278 respondents (69,5%). Meanwhile, a small number of respondents had a perception of barriers that was included in the "Poor" category, namely 162 respondents (40,5%). It was also found that a total of 83 students did not think that the health conditions in Indonesia encouraged them to do a medical check-up (20.8%) and a total of 81 students did not think that their family condition with a history of NCDs encouraged them to do a medical check-up (20.3%). Based on the results of the normality test, which indicated that the data is not normally distributed, so the data categorization was done using the median formula with a cut-off point of 12.

It also shows that the majority of respondents had self-efficacy that were included in the "Good" category, namely 234 respondents (58%). Meanwhile, a small number of respondents had a self-efficacy that was included in the "Poor" category, namely 162 respondents

(41.5%). It was also found that a total of 38 students did not think that they had the ability to do medical check-ups (9.5%). Based on the results of the normality test, which indicated that the data is not normally distributed, so the data categorization was done using the median formula with a cut-off point of 13.

Table 4 shows that the majority of the students had not undergone a medical check-up. The table also indicates that none of the independent variables based on the Health Belief Model theory are statistically related to the behavior of undergoing medical check-up ( $p$ -value:  $>0,05$ ). There was no significant relationship between perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action, and self-efficacy with the behavior of getting medical check-ups.

Students who had not undergone a medical check-up were more likely to be respondents whose perceived susceptibility, perceived severity, and perceived benefit that included in the "Good" category. This suggests that these students understand that they are at risk for non-communicable diseases even though they are still young. They also recognize that the benefits of medical check-ups are primarily for the prevention of diseases that could be detected through the examinations.

It also shows that those who had not undergone a medical check-up were more likely to be respondents whose perceived barrier included in the "High" category, and cues to action and self-efficacy included in the "Poor" category. This suggests that these students face significant or enough obstacles to be able to undergoing medical check-up. Additionally, these students also lack exposure to non-communicable diseases from family, friends, and the health workers. These are the group that need to be specifically motivated so that they want to do a medical check-up in order to protect themselves.

Table 1. Subjects' Characteristic

Subjects' Characteristic	Total	%
<b>Age</b>		
< 21 years old	165	41.3%
≥ 21 years old	235	58.8%
<b>Gender</b>		
Male	159	39.8%
Female	241	60.3%
<b>Faculty</b>		
Health-based	86	21.5%
Non-Health-based	314	78.5%

Table 2. Medical Check-Up Behavior

MCU	Total	%
Yes	101	25.3%
No	299	74.8%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

Table 3. Data on Health Belief Model theory variables

Variables	Total	%
<b>Perceived Susceptibility</b>		
Good	211	52.8%
Poor	189	47.3%
<b>Perceived Severity</b>		
Good	284	71.0%
Poor	116	29.0%
<b>Perceived Benefit</b>		
Good	261	65.3%
Poor	139	34.8%
<b>Perceived Barrier</b>		
Low	238	59.5%
High	162	40.5%
<b>Cues to Action</b>		
Good	278	69.5%
Poor	122	30.5%
<b>Self-Efficacy</b>		
Good	234	58.5%
Poor	166	41.5%

Table 4. Medical Check-Up Behavior and Health Belief Model theory

Health Belief Model	MCU Behavior				Total		p-value
	Yes		No		F	%	
	F	%	F	%			
<b>Perceived Susceptibility</b>							
Good	67	23.6%	217	76.4%	284	100.0%	0.600
Poor	34	29.3%	82	70.7%	116	100.0%	
<b>Perceived Severity</b>							
Good	67	23.6%	217	76.4%	284	100.0%	0.232
Poor	34	29.3%	82	70.7%	116	100.0%	
<b>Perceived Benefit</b>							
Good	60	23.0%	201	77.0%	261	100.0%	0.154
Poor	41	29.5%	98	70.5%	139	100.0%	
<b>Perceived Barrier</b>							
Low	64	26.9%	174	73.1%	238	100.0%	0.360
High	41	22.8%	125	77.2%	162	100.0%	
<b>Cues to Action</b>							
Good	72	25.9%	206	74.1%	278	100.0%	0.652
Poor	29	23.8%	93	76.2%	122	100.0%	
<b>Self-Efficacy</b>							
Good	60	25.6%	174	74.4%	234	100.0%	0.831
Poor	41	24.7%	125	75.3%	166	100.0%	

## Discussion

### *Perceived susceptibility*

Perceived susceptibility is one of the Health Belief Model theory which is one of the motivating factors for someone to adopt a certain health behavior. In this case, the more someone feels vulnerable to contracting a disease, the more likely they are to carry out health behaviors such as medical check-ups to prevent or reduce the risk of the disease.<sup>14</sup> This research is in line with Onoruoiza, et al. (2015) which states that someone who considers themselves at high risk tends to be more likely to behave healthily to prevent the emergence of a disease.<sup>15,16</sup> While there is a slight difference in the percentages of students with "Good" and "Poor" perceived susceptibility who get medical check-ups, the statistical of the Chi-Square test showed that there was no significant relationship between the perceived susceptibility variable and medical check-up behavior among Diponegoro University students, suggesting that perceived susceptibility does not have a significant impact on the likelihood of getting a medical check-up. This is in line with Asih, et al. (2021) which states that perceived

susceptibility is not significantly related to respondents' disease prevention behavior.<sup>17</sup> This research also shows the results that respondents with a poor perception of susceptibility were more likely to undergo medical check-ups compared to respondents with a good perception of susceptibility. This means that even though an individual feels vulnerable and at risk of contracting a non-communicable disease, this does not mean that this can affect the individual's overall behavior in carrying out medical check-ups. This could possibly occur due to the existence of other variables not studied that could influence the health behavior taken.

### *Perceived severity*

Perceived severity in the Health Belief Model theory refers to the possibility of an individual considering the possible consequences of an illness. Usually the intended consequences include death, disability, and even consequences on social life. While there are some differences in the percentages of students with "Good" and "Poor" perceived severity who get medical check-ups, the statistical of the Chi-Square test showed that there

was no significant relationship between the perceived severity variable and medical check-up behavior among Diponegoro University students, suggesting that perceived severity does not have a significant impact on the likelihood of getting a medical check-up. This is in line with Asih, et al. (2021) which states that perceived severity is not significantly related to respondents' disease prevention behavior.<sup>17</sup> This research also shows the results that respondents with a poor perception of severity were more likely to undergo medical check-ups compared to respondents with a good perception of severity. This means that even though an individual knows and understands the possible consequences of a non-communicable disease, this does not mean that this can influence the individual's overall behavior in carrying out medical check-ups. This could possibly occur due to the existence of other variables not studied that could influence the health behavior taken.

#### *Perceived benefit*

Perceived benefits in the Health Belief Model theory are related to the health behavior taken by a person. This is because when someone feels the benefits or effectiveness obtained from a health behavior with the aim of reducing the risk of existing disease.<sup>18</sup> While there are some differences in the percentages of students with "Good" and "Poor" perceived benefit who get medical check-ups, the statistical of the Chi-Square test showed that there was no significant relationship between the perceived benefit variable and medical check-up behavior among Diponegoro University students, suggesting that perceived benefit does not have a significant impact on the likelihood of getting a medical check-up. This research is not in line with Damayanti, et al. (2023) which states that there is a significant relationship between perceived vulnerability and perceived benefits and changes in health behavior of hypertensive patients.<sup>19</sup> The results of this research regarding perceived benefits showed that 65,3% of respondents had a good perception of the benefits regarding medical check-ups. On the other hand, this

research also shows that respondents with poor perception of benefits were more likely to undergo medical check-ups compared to respondents with good perception of benefits. This means that even though an individual has an understanding of the benefits that may be obtained by carrying out a health check-up, this does not mean that this can influence the individual's overall behavior in carrying out a medical check-up. This is not in line with Rosalia (2020) who states that a person's level of confidence in an effort to reduce the threat of disease will increase disease prevention behavior.<sup>20</sup>

#### *Perceived barrier*

Perceived barrier in the Health Belief Model theory in this research can be seen in terms of costs, benefits, access to health services, and so on which have the potential to hinder respondents' behavior in carrying out medical check-ups. This is in line with Fadilah, et al. (2020) which states that perceived barriers influence an individual's health behavior because a person tends to think there will be many physical, psychological and social difficulties if they adopt this behavior.<sup>21</sup> While there are some differences in the percentages of students with "Low" and "High" perceived barrier who get medical check-ups, the statistical of the Chi-Square test showed that there was no significant relationship between the perceived barrier variable and medical check-up behavior among Diponegoro University students, suggesting that perceived barrier does not have a significant impact on the likelihood of getting a medical check-up. This research is in line with Sri, et al (2017) who stated that perceived barriers are not significantly related to a person's medical check-up behavior.<sup>22</sup> This research also shows that respondents with good perception of barriers tend to have more medical check-ups compared to respondents with poor perception of barriers. This means that someone with a positive perception of barriers tends to be more likely to adopt a health behavior. This is in line with Afro, et al. (2021) which states that the greater the barriers felt by an individual in making efforts to prevent



disease, the less likely a person will be to carry out a health behavior.<sup>23</sup>

#### *Cues to action*

Cues to action in the Health Belief Model theory in this research means triggering or encouraging someone to carry out health examination behavior. In this case, the impetus can come from family, friends, other people, medical personnel, and others. This is in line with Sri, et al. (2017) which states that health conditions and suggestions from other people are more likely to be taken into consideration by someone to maintain their health condition.<sup>22</sup> While there is a slight difference in the percentages of the students with “Good” and “Poor” cues to action who get medical check-ups, the statistical of the Chi-Square test showed that there was no significant relationship between the cues to action variable and medical check-up behavior among Diponegoro University students, suggesting that cues to action does not have a significant impact on the likelihood of getting a medical check-up. This research is in line with Sri, et al (2017) which states that cues to action are not significantly related to a person's medical check-up behavior.<sup>22</sup> This research also shows that respondents with good cues to action were more likely to undergo medical check-ups compared to respondents with poor cues to action. This means that someone who has encouragement to carry out health behavior is more likely to have a medical check-up compared to someone who does not have encouragement to carry out health behavior. This is in line with Sri, et al (2017) who stated that people who get a sign to act will be more likely and increase their chances of having a medical check-up.<sup>22</sup>

#### *Self-efficacy*

Self-efficacy is related to a person's self-confidence and sense of control in making health behavior changes.<sup>24,25</sup> In this research, self-efficacy is associated with a person's confidence in his or her ability to carry out medical check-ups needed to prevent the threat of non-communicable diseases. While there is a slight difference in the percentages of the students with

“Good” and “Poor” self-efficacy who get medical check-ups, the statistical of the Chi-Square test showed that there was no significant relationship between the self-efficacy variable and medical check-up behavior among Diponegoro University students, suggesting that self-efficacy does not have a significant impact on the likelihood of getting a medical check-up. This research is not in line with Hamidah & Hendiarto (2014) which states that there is a significant relationship between self-efficacy and a person's healthy behavior.<sup>25</sup> This research also shows that respondents with good self-efficacy were more likely to undergo medical check-ups than respondents with poor self-efficacy. This means that someone with good self-confidence regarding their ability to carry out health behavior tends to be more likely to undergo a medical check-up compared to someone who has poor self-confidence.

#### **Conclusion**

There was no significant association between perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action, and self-efficacy with student medical check-up behavior. All variables studied in this research need to be improved. Even though there is no significant association between perceived susceptibility, perceived severity, perceived benefit, perceived barrier, cues to action, self-efficacy and student medical check-up behavior, it is hoped for Diponegoro University to develop educational programs regarding health and non-communicable diseases, as well as promoting the “Health Promoting University” program, especially Health Center of Non-Communicable Diseases, to raise students' awareness of the importance of medical check-ups. For future researchers, it is hoped that they can conduct further research to determine whether the results differ from those of this study, as well as to explore additional variables or methods that were not included so that the results of future research can complement this research.

#### **Ethics approval**

This research underwent an ethical review by the Health Research Ethics Committee Faculty of Public Health Diponegoro University and was declared to have passed the ethical review (No. 334/EA/KEPK-FKM/2024).

### Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to the privacy protection agreement between the author and the respondent but are available from the corresponding author.

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### Author Contribution

VA analyzed and interpreted all of the respondents' data. PN and NH correcting all the analyzed and interpreted data, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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