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# *PUBLIC PERCEPTION REGARDING THE SELECTION OF CHEMICAL AND TRADITIONAL MEDICINE FOR HYPERCHOLESTEROLEMIA IN SUKOREJO GIRITIRTO WONOGIRI*

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## *ABSTRACT*

*Hypercholesterolemia can trigger cardiovascular disease, and treatment options use chemical drugs and traditional medicine. The research aimed to determine public perceptions regarding the choice of chemical drugs and traditional medicines for hypercholesterolemia in the Sukorejo Giritirto Wonogiri area. The research method used a descriptive cross-sectional approach, with a purposive sampling technique for respondents who met the inclusion criteria, namely those aged > 17 years, had a history of hypercholesterolemia, and had used chemical drugs, traditional medicines, and a combination of chemical and traditional medicines. Meanwhile, the exclusion criteria are respondents who are not willing to take part in the research. The sample obtained was 80 people. Data analysis uses percentage calculations, and the median value as a cut-off point. The perception assessment criteria are positive perception ≥ median value and negative perception ≤ median value. The results showed that 51,25% of respondents had a positive perception of the choice of chemical drugs, 60% of respondents had a positive perception of the choice of traditional drugs, and 53,75% of respondents had a positive perception of the choice of combination drugs (chemical and traditional) as well as a positive perception of selection of drugs, both chemical drugs and traditional drugs for hypercholesterolemia based on the Health Belief Model (HBM). In conclusion, the majority of Sukorejo people have a positive perception regarding the choice of chemical drugs and traditional medicines for hypercholesterolemia*

***Keywords*****:** *Public Perception, Chemical Drug, Traditional Medicine, Hypercholesterolemia*

## BACKGROUND

High cholesterol levels trigger cardiovascular diseases, such as heart disease and stroke. World Health Organization (WHO) data shows that the prevalence of hypercholesterolemia is 37% in the male population and 40% in the female population, and causes 2,6 million deaths (WHO, 2016). Non-Communicable Disease Profile data in 2016 shows that the majority of the population in Indonesia aged >60 years, 58,7%, have high cholesterol (Kemenkes RI, 2017).

The incidence of hypercholesterolemia is related to factors such as age, gender, history of cholesterol, physical activity, diet, education, employment, Body Mass Index (BMI), and smoking status (Aryani *et al*., 2021). Data on the Profile of Non-Communicable Diseases in Indonesia in 2016 shows that the percentage of high cholesterol based on gender, in men, is 48%, while in women it is 54,3%. Meanwhile, in Central Java in the same year, the prevalence of hypercholesterolemia was 48,1% (Kemenkes RI, 2017).

Treatment for hypercholesterolemia can be done medically using synthetic chemical drugs or with traditional medicine (T. F. Dewi & Nisa, 2019). Treatment can start with self-medication, traditional medicine, and medical treatment using synthetic chemical drugs

carried out by nurses, doctors, health centers, or hospitals (Mulyani, 2016). People's tendency to choose which treatment is good is determined by beliefs, motivation, perceptions, knowledge, and satisfaction that encourage people to overcome health problems (Yanti *et al*., 2022).

Treatment using traditional medicine is generally considered safer than using synthetic chemical drugs. This is because traditional medicines have relatively fewer side effects than synthetic chemical medicines (Bustanussalam, 2016). In addition, long-term use of synthetic chemical drugs is believed to be expensive and can reduce the quality of life due to possible dangerous side effects (Dewi *et al*., 2019). The danger of these side effects has caused people to start reducing the use of synthetic chemical drugs and switching to traditional medicine (back to nature) (Puspariki & Suharti, 2019).

The Food and Drug Supervisory Agency's annual report in 2017 for the use of traditional medicines in Indonesia increased compared to the previous year, namely 83.84% to 84.64% (BPOM, 2017). This shows that the use of traditional medicine in Indonesia is increasing. The 2014 Central Statistics Agency (BPS) report in Central Java for the use of chemical drugs was 90.55% while the use of traditional medicines was 17% (BPS, 2016).

Research stated that the perception that often arises in society regarding the use of traditional medicine is that the content of traditional medicine made in Indonesia is safer (87.8%) and the perception of the use of traditional medicine from generation to generation is 82.7% (T. F. Dewi & Nisa, 2019). According to research results of Nainggolan (2019), the level of public trust in the use of traditional medicine is 39.29%, while the level of public trust in the use of synthetic chemical drugs is 31.27%. People believe in using traditional medicines more than synthetic chemical medicines.

In line with the rapid progress of modern science and technology today, it turns out that the role of traditional medicine has not simply shifted, but instead complements each other. This can be seen from the existence of a national-level herbal medicine industry, namely Deltomed Laboratories and Air Mancur in Wonogiri Regency, which is growing rapidly in the community to maintain health. Based on this, it is important to research public perceptions regarding the choice of synthetic chemical drugs and traditional medicines for the treatment of hypercholesterolemia. This is related to the fact that there has never been any similar research in the community in the Sukorejo Environment, Giritirto Village, Wonogiri District, Wonogiri Regency.

## METHOD

This type of research is descriptive with a cross-sectional approach. This research was carried out from February to March 2023. The population in this research was all people in the Sukorejo neighborhood, Giritirto Village, Wonogiri District, Wonogiri Regency. The sample was part of the community from RW 09 and RW 10 in the Sukorejo area. The number of samples can be calculated based on the following categorical descriptive formula:

$$\mathbf{n} = \sqrt{\frac{Z\alpha^2 xPxQ}{d^2}}$$

Information:
n = sample size
P = proportion of traditional medicine use, namely 78% (Ermawati *et al*., 2022)
Q = 1 – P
d = error tolerance limit (error) 10%
Zα at α 0.05 = 1.96

Sample calculation:

$$n = \frac{(1{,}96)^2 \; x \; 0{,}78 \; x \; (1-0{,}78)}{(0{,}10)^2}$$

$$n = \frac{3{,}8416 \; x \; 0{,}78 \; x \; 0{,}22}{0{,}01}$$

n = 65,92 (rounded to 66)

The addition of 20% dropout was to overcome the possibility of respondents filling out incomplete questionnaires, resulting in a total sample in this study of 79,2 rounded up to 80 samples. The method of sample collection was purposive sampling, which was based on research inclusion criteria, namely people who were >17 years old, had a history of treatment for hypercholesterolemia, and had used traditional medicine, chemical medicine, and a combination of both. People who were not willing to take part in the research were excluded. Primary data was obtained directly from respondents using a questionnaire sheet. The aims and objectives of the research are explained to the respondent first and an informed consent form must be signed if they agree to take part in the research.

The validity test in this study used 48 questions tested on 30 respondents in the Kerdukepik Society, Giripurwo Village, Wonogiri District, Wonogiri Regency. The validity test uses Pearson Product Moment with the condition that if the p-value < 0,05, then the questionnaire item is valid and vice versa. The validity test results showed that 24 questions were valid. Meanwhile, the results of the Cronbach's Alpha reliability test were 0,826, which shows that this questionnaire is reliable.

Data analysis was carried out using descriptive statistical frequency tests on respondents' sociodemographics including age, gender, education, employment, and history of cholesterol treatment as well as public perceptions regarding the choice of chemical drugs, traditional medicines, and combination medicines (chemical and traditional). Assessments are categorized into two, namely positive perceptions and negative perceptions. The data was tested for normality using Kolmogorov-Smirnov with the criteria that if the p-value < 0,05, then the data distribution is not normal, whereas if p > 0,05, then the data distribution is normal (Dahlan, 2014). If the data is normally distributed, the calculation will use the mean value as the cut-off point, while non-normal data distribution uses the median value as the cut-off point. The results of the category assessment show p < 0,05 (table 1), so the data from all questions are not normally distributed, so in this study the median value is used as the middle limit or cut-off point. Perception assessment criteria, namely negative perception ≤ median value, while positive perception ≥ median value.

**Table 1. Mean, Median, and Kolmogrov-Smirnov Results**

| Sub-Variable | Mean | Median | Kolmogrov-Smirnov (*p*) |
|---|---|---|---|
| Perception of choosing chemical drugs for hypercholesterolemia | 68,08 | 68,33 | 0,000 |
| Perception of choosing traditional medicine for hypercholesterolemia | 71,42 | 71,67 | 0,004 |
| Perception of choosing combination drugs (chemical and traditional) for hypercholesterolemia | 69,26 | 69,80 | 0,028 |
| Perception of susceptibility to disease | 74,07 | 75 | 0,000 |
| Perception of the seriousness of the disease | 69,38 | 66,67 | 0,000 |
| Perception of benefits of traditional medicine | 74,07 | 75 | 0,000 |
| Perceived benefits of chemical drugs | 71,77 | 75 | 0,000 |
| Perception of benefits of combination drugs (chemical and traditional) | 72,92 | 75 | 0,000 |
| Perceived barriers to traditional medicine | 68,13 | 66,67 | 0,000 |
| Perceived barriers to chemical drugs | 61,04 | 58,33 | 0,000 |
| Perceived barriers to combination drugs (chemical and traditional) | 64,60 | 62,50 | 0,000 |
| Cue action against traditional medicine | 71,46 | 75 | 0,000 |
| Cue action against chemical drugs | 64,17 | 66,67 | 0,000 |
| Cue action against combined drugs (chemical and traditional) | 67,81 | 66,67 | 0,000 |

Likert scoring is used to calculate public perceptions according to predetermined indicators.

Formula:

$$\text{Respondent scoring} = \frac{Score\ total}{Highest\ score} x\ 100$$

The highest score is calculated in the following way:

a. The highest score for respondents who chose traditional medicine was 15 questions including numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 13, 14, 15, 19, 20, and 21, then multiplied by The highest Likert score is 4, so the highest score is 60.
b. The highest score for respondents who chose chemical drugs was 15 questions including numbers 1, 2, 3, 4, 5, 6, 10, 11, 12, 16, 17, 18, 22, 23, and 24 multiplied by the Likert score The highest is 4, so the highest score is 60.
c. The highest score for respondents who chose a combination of chemical and traditional medicines was 24 questions which included numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24 multiplied by the highest Likert score, namely 4, to obtain the highest score of 96.
d. All respondents' scoring will be calculated by calculating the median value as a cut-off point for assessing the categories of positive perception and negative perception. The perception assessment criteria are positive perception if the respondent's score is ≥ the median value and negative perception if the opposite occurs.

## RESULTS AND DISCUSSION

The majority of respondents characteristics are seniors (46-65 years) as many as 58,75%, female gender as many as 51 respondents (63,7%), and basic education level (Elementary school, Junior high school) as many as 49 (61,25). %), respondents jobless were

47 (58,75%). Respondents had a history of treating cholesterol with chemical drugs, namely 34 (42,5%), 15 respondents (18,75%) with traditional medicines, and 31 respondents (38,75%) with combination drugs.

**Table 2. Frequency Distribution of Respondent Characteristics**

| Characteristics | Frequency | Percentage (%) |
|---|---|---|
| Age | | |
| Adults (26-45) | 12 | 15 |
| Seniors (46-65) | 47 | 58,75 |
| Elderly people (over 65) | 21 | 26,25 |
| **Total** | **80** | **100** |
| Gender | | |
| Man | 29 | 36,25 |
| Woman | 51 | 63,75 |
| **Total** | **80** | **100** |
| Education | | |
| Elementary (Elementary, Middle School) | 49 | 61,25 |
| Intermediate (High School) | 24 | 30 |
| High (≥D3) | 7 | 8,75 |
| **Total** | **80** | **100** |
| Work | | |
| Doesn't work | 47 | 58,75 |
| Work | 33 | 41,25 |
| **Total** | **80** | **100** |
| Cholesterol Treatment History | | |
| Chemical Medicine | 34 | 42,5 |
| Traditional medicine | 15 | 18,75 |
| Combination Medicine (Chemical and Traditional) | 31 | 38,75 |
| **Total** | **80** | **100** |

The age of most respondents is seniors (46-65 years). The results obtained in this research are in line with research conducted by Prastiwi (Prastiwi *et al.*, 2021), the results of this study also show that total cholesterol levels increase in elderly people aged 55-64 years. This is caused by cholesterol plaques that accumulate in the blood vessels of older people (Mulyanto, 2012). Thus, as a person ages, the risk of developing high cholesterol also increases (Winarso *et al*., 2016). Apart from that, the age group over 46 years is starting to feel and experience signs of degenerative disease which causes the opportunity for treatment to become greater (Mutmainna, 2020).

The results of this study show that women predominantly have higher cholesterol levels than men. This is caused by a decrease in estrogen levels in post-menopausal women and decreases again after the age of 70 years (Prastiwi et al, 2021). Apart from that, the research of Reiner *et al.* (2017) shows that the increasing number of respondents is proportional to the increasing age of the respondents, namely men aged ≥ 40 years and women aged ≥ 50 years who have a high risk of developing hypercholesterolemia. These results are also in line with research by Dewi *et al.* (2019) which shows that more women are willing to be respondents and care about health than men.

The results of this research indicate that the level of education in the Sukorejo area is still relatively low, so information regarding chemical medicines and traditional medicines may still be lacking. On the other hand, someone who is highly educated will tend to more easily accept information about chemical medicines and traditional medicines (Ermawati *et al.*, 2022). The more information received, the more knowledge will be gained regarding chemical medicines and traditional medicines (Notoatmodjo, 2012). Therefore, education influences a person's level of information comprehension, knowledge, attitudes, and health

behavior (Oktarlina *et al*., 2018). However, the results of this study are in line with research conducted by Rahman *et al.* (2016) which states that the respondent's education level is not related to the choice of treatment because the majority of respondents' education is primary, secondary, and the minority is higher education, so this depends on whether the respondent wants to know or not about information on choosing chemical drugs and traditional medicine (Nisa & Rahmanindar, 2016).

The majority of respondents who do not work are housewives because there are more women than men. The results of this research are in line with the research of (Oktarlina *et al*., 2018) who explained that mothers or women stay at home more often and socialize more often with others, so that information can also be received more easily and increase the knowledge of housewives. Work factors can also influence perceptions because a person interacts and shares experiences to increase insight and information, including in terms of choosing chemical drugs and traditional medicines (Ermawati *et al*., 2022). The results of this research are different from the research of Dewi and Nisa (T. F. Dewi & Nisa, 2019) which states that work influences people's perceptions of treatment.

The majority of respondents chose chemical drugs, namely 34 people (42,5%). 15 respondents chose traditional medicine with a percentage of 18,75%, and 31 people (38.75%) chose combination medicine (chemical and traditional). The results of this research are in line with research by Ervin (Ervin, 2022), which states that the majority of people use chemical drugs for treatment because people feel that chemical drugs are more practical to use, the therapeutic effect is faster, and there is an opinion that chemical drugs are better than traditional medicines. Apart from that, it is believed that traditional medicine is better because it is believed to be inherited from generation to generation (Puspariki & Suharti, 2019). However, treatment efforts can be carried out using chemical drugs or traditional medicines (Ervin, 2022). People can choose between chemical medicines and traditional medicines depending on their goals, suitability, and habits in maintaining body condition, preventing, curing, and recovering from an illness (Ermawati *et al.,* 2022; Mutmainna, 2020).

**Table 3. Frequency Distribution of Perceived Susceptibility and Seriousness of Hypercholesterolemia**

| Indicator | Perception | | | | | |
|---|---|---|---|---|---|---|
| | Positive | | Negative | | Total | |
| | N | % | N | % | N | % |
| Disease Susceptibility | 60 | 75 | 20 | 25 | 80 | 100 |
| Seriousness of Illness | 67 | 83,75 | 13 | 16,25 | 80 | 100 |

Table 3 shows that respondents had a predominantly positive perception of the seriousness of hypercholesterolemia, namely 67 people (83,75%). Meanwhile, 13 respondents had a negative perception of the seriousness of hypercholesterolemia. The difference between positive perceptions and negative perceptions is 54 people. The majority of respondents also had a positive perception of susceptibility to hypercholesterolemia, 60 people (75%), while 20 people (25%) had a negative perception. This means that the majority of respondents feel vulnerable to hypercholesterolemia. The majority of respondents said they "strongly agree" on the question of whether a healthy lifestyle can prevent an increase in cholesterol. This is supported by research by Lainsamputty & Gerungan (Lainsamputty & Gerungan, 2022), which states that a bad lifestyle can increase cholesterol levels, so lifestyle must be managed well so that the body remains healthy (Lainsamputty & Gerungan, 2022). A healthy lifestyle can be achieved by exercising regularly, dieting, and stopping smoking (Handayani & Simatupang, 2019).

Perception of vulnerability has the greatest influence on individuals to carry out healthy behavior to reduce the risk of developing disease (Trisna *et al.*, 2019). A positive perception of susceptibility to hypercholesterolemia means that respondents take preventive and treatment measures to avoid the dangers of high cholesterol (Nurhidayah *et al.,* 2020). The

high-fat diet factor causes total cholesterol levels in the blood to increase, resulting in a person becoming susceptible to hypercholesterolemia (Yoeantafara & Martini, 2017). Someone older will be susceptible to the risk of cholesterol plaque buildup in the blood vessels (Winarso *et al.*, 2016).

Actions taken to treat or prevent depend on the perceived benefits (Narsih & Hikmawati, 2020). The results of this research are in line with research conducted by Purnama & Yulistiani (Purnama & Yulistiani, 2022), which states that the higher a person's perceived vulnerability, the higher the efforts to prevent disease. Perceptions of vulnerability will have an impact on a person's health so that it will encourage a person to make changes to healthier behavior (Fitriani *et al.*, 2019).

The majority of respondents have a positive perception of the seriousness of the disease (83,75%) because people believe the hypercholesterolemia they suffer from will become serious if left untreated and not treated appropriately (Kushargina *et al.,* 2022). The majority of respondents said they "disagree" with the question about being afraid of having a cholesterol check-up. This means that respondents are not afraid of having cholesterol checks.

Perception of seriousness according to Hayden states that the perceived seriousness determines whether or not preventive measures are taken against the disease (Hayden, 2010). Perceptions of seriousness are influenced by medical information or a person's knowledge and beliefs about the difficulties caused by an illness (Trisna *et al.*, 2019). An increase in LDL cholesterol levels can cause plaque buildup in blood vessels, especially coronary arteries, and will cause various diseases, not only hypercholesterolemia but arteriosclerosis and even heart disease (Bulfiah, 2021).

Apart from that, anxiety and fear of hypercholesterolemia are reasons for someone to carry out routine prevention, examination, and treatment (Lainsamputty & Gerungan, 2022). Perceptions of seriousness encourage a person to seek treatment and preventive measures for an illness they suffer from (Nisa & Rahmanindar, 2016). Perception of seriousness refers to a person's medical information, knowledge, and beliefs regarding the difficulties experienced due to a serious illness (Simangunsong *et al.*, 2020).

**Table 4. Frequency Distribution of Perceptions of Selecting Chemical Drugs/ Traditional Medicines/ Combination for Hypercholesterolemia Based on the Health Belief Model (HBM)**

| Indicators | Perception (total n = 80 respondent) | | | | | |
|---|---|---|---|---|---|---|
| | Positive [n (%)] | | | Negative [n (%)] | | |
| | A* | B* | C* | A* | B* | C* |
| Benefit | 48 (60%) | 62 (77,5%) | 43 (53,75%) | 32 (40%) | 18 (22,5%) | 37 (46,25%) |
| Obstacle | 70 (87,5%) | 66 (82,5%) | 69 (86,25%) | 10 (12,5%) | 14 (17,5%) | 11 (13,75%) |
| Action Cue | 47 (58,75%) | 53 (66,25%) | 62 (77,5%) | 33 (41,25%) | 27 (33,75%) | 18 (22,5%) |

Information:
A = Perceptions of Selecting Chemical Drugs
B = Perceptions of Selecting Traditional Medicines
C = Perceptions of Selecting Combination Drugs (Chemical and Traditional)

Respondents had a positive perception of greater benefits for traditional medicine options (77,5%) than chemical and combination medicines. But the positive perception of barriers was greatest for chemical drugs (87,5%), although it was slightly different from combination drugs. Then the perception of its action is greatest for combination drugs (77,5%).

Respondents felt there were benefits to using traditional medicine. The majority of respondents said they "disagree" with the question point of consuming traditional medicine for cholesterol twice the dose of the drug. Traditional medicine with medicinal plants cannot be consumed freely and carelessly, because medicinal plants also have side effects *(Agustanti et al.*, 2021). Even though the side effects of traditional medicines are fewer than those of

chemical medicines, traditional medicines must be consumed according to fixed measurements and doses. This is in line with the explanation of Agustanti *et al.* (Agustanti et al., 2021) that excessive doses of traditional medicines can cause poisoning, so their use must be by the recommended dosage.

The results of this research are also in line with research conducted by Afro which stated that the greater the benefits obtained, the greater the health efforts made by a person to treat the disease (Afro *et al.*, 2021). Perceived benefits are beliefs related to the effectiveness of various healthy behaviors to reduce the threat of disease (Trisna *et al.*, 2019). The perceived benefits are positively related to disease prevention efforts (Barakat & Kasemy, 2020). Perceived benefits can increase the urge to choose better behavior (Nisa & Rahmanindar, 2016).

The majority of respondents had a positive perception of barriers to chemical drugs (87,5%). This means that respondents do not feel any obstacles in using chemical drugs. Perceived barriers related to decision-making to choose chemical treatment for hypercholesterolemia. Perceived barriers include the burden of expensive chemical drugs, the side effects of chemical drugs, and the dangers of expired chemical drugs. The majority stated "agree" on the question of the burden of expensive chemical drugs. The results of this study are similar to research conducted by Fitriani et al. (Fitriani *et al.,* 2019) that someone who feels obstacles will find it difficult to carry out treatment while someone who feels there are no obstacles will find it easy to carry out treatment. The smaller the obstacles faced in carrying out preventive measures, the greater the perception of carrying out treatment measures (Afro *et al.*, 2021). Barriers are a characteristic of carrying out prevention efforts, if the prevention efforts carried out are expensive, difficult burdensome, and unpleasant it causes someone to avoid the prevention efforts that will be carried out (Simangunsong *et al.,* 2020).

However, the benefits of chemical drugs are based on healing and safety in consuming chemical drugs as an effort to lower cholesterol. The majority of respondents said they "agree" with the belief that chemical drugs can cure cholesterol. The most frequently used chemical drugs for hypercholesterolemia are statins (Agung, 2021). The most widely used type of statin is simvastatin to increases levels of HDL cholesterol or good cholesterol (Handayani & Simatupang, 2019).

Most respondents had a positive perception of action cues using combination drugs (chemical and traditional) (77,5%). This is because respondents received encouragement to carry out treatment with a combination of drugs (chemical and traditional). The majority of respondents stated "agree" to the question of information about traditional medicine obtained from family, relatives, and friends/those closest to them and "disagree" to the question of whether consuming chemical medicine is more prestigious. Yanti & Nurhayati (Yanti & Nurhayati, 2022) also stated the same thing, that people tend to agree because they receive information about traditional medicines and chemical medicines and groups, family, relatives, and friends/closest people. However, people tend to agree with the opinion that taking chemical drugs is more prestigious than traditional medicine.

The majority of respondents said they "agreed" with the question of the length of time to cure the disease using traditional medicine and "agreed" with the question of the high cost of chemical medicine. This could be the reason why there is still a negative perception of the benefits of drug combinations. Interactions between conventional drugs and medicinal plant extracts and/or their metabolites have been studied preclinically in the last few decades to demonstrate that the combination is a good therapeutic strategy, to increase the effectiveness of treatment while reducing the potential for side effects. However, clinical studies evaluating this interaction are limited or inconclusive. While these benefits may be a reality in some

interactions, negative impacts are also possible. Therefore, research should be encouraged to uncover the frequency and nature of these interactions. More than one bioactive metabolite present in a single plant extract may be responsible for the therapeutic activity. Administering herbal medicines alone or in combination with conventional medicines can change the intensity of the effect of the active compound depending on its chemical nature and how it works, thus influencing the treatment results in three aspects, namely additive, supra-additive (synergistic), or infra-additive (antagonistic) effects (Déciga-Campos *et al*., 2022). The results of this research are not in line with research by Yanti & Nurhayati (2022), which states that people tend to agree that the treatment time with traditional medicine to cure disease is not long, but people tend to agree that the cost of chemical treatment is affordable.

**Table 5. General Frequency Distribution of Perceptions of Drug Selection for Hypercholesterolemia**

| Drug selection | Perception | | | | | |
|---|---|---|---|---|---|---|
| | Positive | | Negative | | Total | |
| | N | % | N | % | N | % |
| Chemical Medicine | 41 | 51,25 | 39 | 48,75 | 80 | 100 |
| Traditional medicine | 48 | 60 | 32 | 40 | 80 | 100 |
| Combination Medicine (Chemical and Traditional) | 43 | 53,75 | 37 | 46,25 | 80 | 100 |

Related to Table 6 most of the respondents choose traditional medicine (60%). One of the factors why people prefer traditional medicine over chemical medicine traditional medicine is safer than chemical medicine, and traditional medicine has relatively fewer side effects than chemical medicine (Oktaviani *et al.*, 2020). Cultural factors also encourage people to consume traditional medicine because of the legacy passed down from their ancestors who used traditional ingredients to treat their own families (BPOM, 2014; R. S. Dewi *et al.*, 2019). Apart from traditional medicine, people also use chemical medicines regularly to treat hypercholesterolemia (Handayani & Simatupang, 2019). These results are in line with research by Yanti & Nurhayati (Yanti & Nurhayati, 2022) who explains that a good response to the choice of medicine, both chemical medicine and traditional medicine, has the potential to create positive perceptions.

**Table 6. Frequency Distribution of Respondents' Choice Perceptions of Chemical Drugs/Traditional Medicine/Combination Medicine for Hypercholesterolemia**

| Indicators | | Perception (total n = 80 respondent) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Positive [n (%)] | | | Negative [n (%)] | | |
| | | A* | B* | C* | A* | B* | C* |
| a. | Chemical Medicine | 21 (26,25%) | 11 (13,75%) | 15 (18,75%) | 13 (16,25%) | 23 (28,75%) | 19 (23,75%) |
| b. | Traditional medicine | 4 (5%) | 12 (15%) | 9 (11,25%) | 11 (13,75%) | 3 (3,75%) | 6 (7,5%) |
| c. | Combination Medicine (Chemical and Traditional) | 16 (20%) | 25 (31,25%) | 19 (23,75%) | 16 (18,75%) | 6 (7,5%) | 12 (15%) |

Information:
A = Perceptions on Selecting Chemical Drugs
B = Perceptions on Selecting Traditional Medicines
C = Perceptions on Selecting Combination Drugs (Chemical and Traditional)

The majority of respondents who use chemical medicine had a positive perception of chemical medicine also (26,25%). The chemical drug that is widely consumed by respondents to lower cholesterol levels is simvastatin which is taken at night regularly every day. Therefore, respondents who suffer from high cholesterol must visit health services regularly to control their condition every month (Nanis & Bakhtiar, 2020). Respondents also carried out non-pharmacological therapy such as managing a good diet, avoiding consuming fatty foods, consuming fruit and vegetables, and light exercise by walking. The results of this research are the same as research by Lainsamputty & Gerungan (Lainsamputty & Gerungan, 2022), which states that good self-acceptance has the potential to give rise to positive perceptions regarding the choice of chemical drugs. Psychological factors or perceptions influence the choice of

chemical drugs because psychology is the motivation for choosing to take chemical drugs (Elfariyanti *et al*., 2020).

However, the majority of respondents with a history of cholesterol treatment using chemical drugs had the most negative perception of traditional medicine (28,75%). Traditional medicines that are widely consumed by Sukorejo people to lower cholesterol include boiled bay leaves, boiled coriander water, honey, boiled ginger, and boiled avocado leaves. Bay leaf decoction contains flavonoids as strong antioxidants which can prevent the oxidation of LDL (Low Density Lipoprotein) or bad cholesterol (Widiyono *et al.*, 2021). Honey, boiled coriander water, and boiled ginger are used as antioxidants to maintain the body's immune system and lower cholesterol (BPOM, 2017; Bulfiah, 2021). Decoction of avocado leaves contains high levels of flavonoid compounds, one of which is the compound quercetin, which functions to lower blood cholesterol levels by preventing oxidation of LDL (Low-Density Lipoprotein) (Rustanti *et al.*, 2021).

Yanti & Nurhayati (Yanti & Nurhayati, 2022) also stated that the public's good response has the potential to give rise to a positive perception of the choice of traditional medicine because people feel satisfaction from consuming traditional medicine and want natural ones to cure illnesses. Therefore, psychological factors (perception) influence the choice of traditional medicine. Apart from that, cultural factors also influence the choice of traditional medicine because people believe that consuming traditional medicine is part of the nation's culture.

Table 7 also shows that most combination medicine respondents choose traditional medicine (31,25%). Traditional medicines and chemical drugs are important elements in efforts to maintain and restore public health. Therefore, sufficient quantities and types are needed according to needs, both chemical and traditional medicines, so that they can be useful for supporting people's quality of life. People's good quality of life is proportional to the success of treatment in recovering and alleviating disease symptoms (Agustanti *et al*., 2021). Successful treatment is related to drug selection based on public perception, both positive and negative perceptions. Psychological factors or perceptions of satisfaction with consuming chemical drugs and traditional medicines influence the choice of chemical drugs and traditional medicines (Ervin, 2022).

The limitation of this research is the use of descriptive observational research methods, so the data analysis carried out only aims to provide an overview of the existing problem. Therefore, experimental research methods for further research are needed. Also, this research is only limited to one area at a time, consider carrying out similar research in a larger area.

## CONCLUSION

The conclusions of respondent characteristics in the Sukorejo, Giritirto, Wonogiri neighborhood are dominated by elderly (46-65 years) (58,75%), female (63,7%), basic education (SD, SMP) (61, 25%), jobless (58,75%), history of cholesterol treatment with chemical drugs (42.5%). The majority of respondents, 41 people (51.25%), had a positive perception of the choice of chemical drugs for hypercholesterolemia, while 39 people (48.75%) had a negative perception. Most respondents (60%) had a positive perception of the choice of traditional medicine for hypercholesterolemia, while 32 respondents (40%) had a negative perception. The majority of respondents, 43 people (53.75%), had a positive perception of the choice of combination drugs (chemical and traditional) for hypercholesterolemia, while 37 people (46.25%) had a negative perception. Suggestions for further research are to use experimental research methods using counseling, animated videos, and providing brochures or leaflets to increase knowledge regarding the selection of chemical drugs and traditional medicines for other diseases with a wider coverage area

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**BIBLIOGRAPHY**

Afro, R. C., Isfiya, A., & Rochmah, T. N. (2021). Analisis Faktor Yang Mempengaruhi Kepatuhan Terhadap Protokol Kesehatan Saat Pandemi Covid-19 Pada Masyarakat Jawa Timur: Pendekatan Health Belief Model. *Journal of Community Mental Health and Public Policy*, *3*(1), 1–10. https://doi.org/10.51602/cmhp.v3i1.43

Agung, L. R. (2021). Pengaruh Daun Salam (Syzygium polyanthum) Terhadap Kadar Trigliserida Dan Kolesterol Total Darah Pada Penderita Dislipidemia. *Jurnal Ilmiah Kesehatan Sandi Husada*, *10*(2), 408–412. https://doi.org/10.35816/jiskh.v10i2.617

Agustanti, K. N. E., Restyana, A., & Savitri, L. (2021). Persepsi Penggunaan Obat Tradisional dan Hubungannya Terhadap Kualitas Hidup Masyarakat di Desa Pulungdowo Kecamatan Tumpang Kabupaten Malang. *Jurnal Kesehatan Mahasiswa UNIK*, *2*(2), 70–85.

Aryani, A., Herawati, V. D., Keperawatan, P. I., & Surakarta, U. S. (2021). Kondisi Lanjut Usia yang Mengalami Hiperkolesterolemia di Pos Pelayanan Terpadu (Posyandu) Lanjut Usia Desa Betengsari, Kartasura : Pilot Study. *Jurnal Perawat Indonesia*, *5*(1), 527–536. https://doi.org/10.32584/jpi.v5i1.759

Barakat, A. M., & Kasemy, Z. A. (2020). Preventive health behaviors during the coronavirus disease 2019 pandemic based on the health belief model among Egyptians. *Middle East Current Psychiatry*, *27*(1). https://doi.org/10.1186/s43045-020-00051-y

BPOM. (2014). Peraturan Kepala Badan Pengawas Obat Dan Makanan Republik Indonesia Nomor 12 Tahun 2014 Tentang Persyaratan Mutu Obat Tradisional. *Badan Pengawas Obat Dan Makanan*, 1–25.

BPOM. (2017). Laporan Tahunan Badan Pengawasan Obat dan Makanan tahun 2017. *Badan Pengawas Obat Dan Makanan*, 1–265.

BPS. (2016). Persentase Penduduk yang Mempunyai Keluhan Kesehatan dan Penggunaan Obat menurut Provinsi dan Jenis Kelamin 2009-2014. *Badan Pusat Statistik RI Tahun 2009-2014*.

Bulfiah, S. N. F. (2021). Manfaat Jahe Merah dalam Menurunkan Kadar Kolesterol Darah. *Jurnal Penelitian Perawat Profesional*, *3*(1), 81–88. https://doi.org/10.37287/jppp.v3i1.324

Bustanussalam. (2016). Pemanfaatan Obat Tradisional (Herbal) Sebagai Obat Alternatif. *BioTrends*, *7*(1), 1–10.

Dahlan, S. (2014). *Statistik untuk Kedokteran dan Kesehatan* (6th ed.). Salemba Medika.

Déciga-Campos, M., Ventura-Martínez, R., González-Trujano, M. E., & Silveira, D. (2022). Editorial: Pharmacological interaction between drugs and medicinal plants. *Frontiers in Pharmacology*, *13*(December), 1–3. https://doi.org/10.3389/fphar.2022.1081090

Dewi, R. S., Ilahi, S. F. N., Aryani, F., Pratiwi, E., & Agustini, T. T. (2019). Persepsi Masyarakat Mengenai Obat Tradisional Kecamatan Tampan Kota Pekanbaru. *Jurnal Penelitian Farmasi Indonesia*, *8*(2).

Dewi, T. F., & Nisa, U. (2019). Faktor-Faktor yang Berhubungan dengan Pemanfaatan Obat Tradisional pada Pasien Hiperkolesterolemia di Rumah Riset Jamu "Hortus Medicus." *Indonesian Journal of Clinical Pharmacy*, *8*(1). https://doi.org/10.15416/ijcp.2019.8.1.49

Elfariyanti, Maifera, Fauziah, & Hardiana. (2020). Gambaran Prefensi Masyarakat Terhadap Obat Jaya Pendahuluan Salah satu aspek penting dalam kehidupan yang dapat membuktikan tinggi rendahnya standar yang dimiliki seorang individu adalah

kesehatan. Seseorang yang merasa sakit akan melakukan berbagai up. *Prosiding Seminar Nasional Multidisiplin Ilmu Universitas Asahan Ke-4*, *September*, 1185–1195.

Ermawati, N., Oktaviani, N., & Pramudita, R. (2022). Persepsi Masyarakat terhadap Penggunaan Obat Tradisional Sebagai Upaya Preventif Covid-19 di Kota Pekalongan. *JCPS (Journal of Current Pharmaceutical Sciences)*, *5*(2), 500–505.

Ervin, R. D. (2022). Analisis Faktor Yang Berpengaruh Terhadap Keputusan Pembelian Obat Tradisional Dan Obat Sintetik Pada Masyarakat Desa Bumiaji Kota Batu. In *Universitas Islam Negeri Malang*. Universitas Islam Negeri Malang.

Fitriani, Y., Pristianty, L., & Hermansyah, A. (2019). Pendekatan Health Belief Model (HBM) untuk Menganalisis Kepatuhan Pasien Diabetes Melitus Tipe 2 dalam Menggunakan Insulin. *PHARMACY: Jurnal Farmasi Indonesia (Pharmaceutical Journal of Indonesia)*, *16*(2), 167. https://doi.org/10.30595/pharmacy.v16i2.5427

Handayani, M., & Simatupang, A. (2019). The Use of Station in Hypercholesterolemia. Majalah *Kedokteran UKI Vol XXXV No.3*, *XXXV*(3), 96–103.

Kemenkes RI. (2017). *Profil Penyakit Tidak Menular*. Kementerian Kesehatan RI.

Kushargina, R., Dainy, N. C., & Suryaalamsyah, I. I. (2022). Edukasi Lansia Dengan Pendekatan Health Belief Model: Lansia "Serasi"(Sehat Dengan Makan Sayur Dan Buah Setiap Hari). *JMM (Jurnal Masyarakat Mandiri)*, *6*(1), 451–463.

Lainsamputty, F., & Gerungan, N. (2022). Korelasi Gaya Hidup dan Stres pada Penderita Hiperkolesterolemia. *Jurnal Ilmiah Kesehatan Sandi Husada*, *11*, 138–146. https://doi.org/10.35816/jiskh.v11i1.719

Mulyani, S., & Herniwati. (2016). Faktor-faktor yang Berhubungan dengan Pemilihan Pengobatan Tradisional pada Keluarga dalam Mengatasi Masalah Kesehatan di Kampo Enta Kelurahan Bone Lipu kKbupaten Buton Utara. *Jurnal Gizi Ilmiah*, *3*(2), 79–91.

Mulyanto, D. (2012). *Panjang Umur dengan Kontrol Kolesterol dan Asam Urat*. Cahaya Atma Pustaka.

Mutmainna, B. (2020). Karakteristik Masyarakat Desa Baula Kecamatan Tellu Limpoe Kabupaten Sidenreng Rappang Terhadap Obat Tradisional dan Obat Modern. *Journal of Pharmaceutical Science and Herbal Technology*, *5*(1), 43–48.

Nainggolan, M. (2019). Gambaran Tingkat Kepercayaan Masyarakat Terhadap Penggunaan Obat Tradisional dan Obat Kimia Sintetis di Desa Siantar Tonga-Tonga I Kecamatan Siantar Narumonda. *Karya Tulis Ilmiah*.

Nanis, A. T. A., & Bakhtiar, R. (2020). Dislipidemia Dengan Riwayat Pengobatan Tradisional: Studi Kasus Dengan Pendekatan Kedokteran Keluarga. *Jurnal Kedokteran* Mulawarman, *7*(3), 34. https://doi.org/10.30872/j.ked.mulawarman.v7i3.4615

Narsih, U., & Hikmawati, N. (2020). Pengaruh Persepsi Kerentanan Dan Persepsi Manfaat Terhadap Perilaku Remaja Putri Dalam Pencegahan Anemia. *Indonesian Journal for Health* Sciences, *4*(1), 25. https://doi.org/10.24269/ijhs.v4i1.2328

Nisa, J., & Rahmanindar, N. (2016). *Health Belief Model Keteraturan Pemeriksaan Antenatal Ibu Hamil Selama Pandemi Covid-19*. *11*(1), 1–23.

Notoatmodjo, S. (2012). *Metodologi Penelitian Kesehatan*. Jakarta: PT. Rineka Cipta.

Nurhidayah, Agustina, V., & Rayanti, R. E. (2020). Penerapan Perilaku Pencegahan Penyakit Diabetes *Mellitus* Menggunakan Health Belief Model Di Puskesmas Sidorejo Lor – Salatiga. *Jurnal Keperawatan Muhammadiyah*, *5*(2), 61–69.

Oktarlina, R. Z., Tarigan, A., Carolia, N., & Utami, E. R. (2018). Hubungan Pengetahuan Keluarga dengan Penggunaan Obat Tradisional di Desa Nunggalrejo Kecamatan Punggur Kabupaten Lampung Tengah. *Jurnal Kedokteran Unila*, *2*(1), 42–46.

Oktaviani, A. R., Takwiman, A., Santoso, D. A. T., Hanaratri, E. O., Damayanti, E., Maghfiroh, L., Putri, M. M., Maharani, N. A., Maulida, R., Oktadela, V. A., & Yuda, A. (2020). Pengetahuan Dan Pemilihan Obat Tradisional Oleh Ibu-Ibu Di Surabaya. *Jurnal*

*Farmasi Komunitas*, *8*(1), 1. https://doi.org/10.20473/jfk.v8i1.21912

Prastiwi, D. A., Swastini, I. G. A. P., & Sudarmanto, I. G. (2021). Gambaran kolesterol total pada lansia di Puskesmas I Denpasar Selatan. *Meditory : The Journal of Medical Laboratory*, *9*(2), 68–77. https://doi.org/10.33992/m.v9i2.1526

Purnama, P., & Yulistiani, M. (2022). Hubungan antara Komponen Health Belief Model dengan Perilaku Pencegahan Covid-19 pada Masyarakat. *Faletehan Health Journal*, *9*(02), 164–169. https://doi.org/10.33746/fhj.v9i02.378

Puspariki, J., & Suharti, S. (2019). Persepsi Masyarakat Terhadap Pengobatan Tradisional Berdasarkan Pendidikan di Kabupaten Purwakarta. *Journal of Holistic and Health* Sciences, *3*(1), 54–59. https://doi.org/10.51873/jhhs.v3i1.39

Rustanti, E., Puspita, E., Puspita, S., & Rohmani, S. (2021). Pemanfaatan Tanaman Herbal Daun Alpukat dan Pemeriksaan Kolesterol Darah pada Lansia. *Jurnal Bhakti Civitas* Akademika, *IV*(1), 12–17.

Simangunsong, D. E., Sianipar, K., & Purba, J. (2020). Perilaku dan Persepsi Keyakinan Ibu Hamil Terhadap Screening HIV di Kota Pematangsiantar. *Jurnal Penelitian Kesehatan "*SUARA *FORIKES" (Journal of Health Research "Forikes Voice")*, *11*(2), 202. https://doi.org/10.33846/sf11222

Trisna, F. H. T., Saraswati, L. D., Udiyono, A., & Ginandjar, P. (2019). Hubungan Persepsi Ibu dengan Kepatuhan Ibu dalam Pemberian Imunisasi Dasar pada Balita (Studi Di 7 Puskesmas Kota Semarang). *Jurnal Kesehatan Masyarakat (Undip)*, *7*(1), 149–154.

WHO. (2016). Raised Cholesterol. In the *World Health Organisation (WHO)*.

Widiyono, W., Aryani, A., & Herawati, V. D. (2021). Pemberian air rebusan daun salam (Syzygium polyanthum) dapat menurunkan kadar kolesterol pada lansia dengan hiperkolesterolemia. *Holistik Jurnal Kesehatan*, *15*(1), 39–47. https://doi.org/10.33024/hjk.v15i1.3351

Winarso, A., Rusita, Y. D., & Yunianto, B. (2016). Pengaruh Bawang Merah (Allium Cepa, L.) terhadap Penurunan Kadar Kolesterol Darah Pada Penderita Hiperlipidemia di Wilayah Kerja Puskesmas Karangnongko Kabupaten Klaten. *Jurnal Ilmu Kesehatan*, *5*(1), 58–63. https://doi.org/10.37341/interest.v5i1.21

Yanti, D., & Nurhayati, N. (2022). Perbandingan Preferensi Masyarakat Terhadap Obat Tradisional dan Obat Sintetik di Apotek Quality Kota Bekasi Tahun 2019. *Jurnal Ayurveda* Medistra, *4*(1), 1–8. https://doi.org/10.51690/medistra-jurnal123.v4i1.55

Yoeantafara, A., & Martini, S. (2017). Pengaruh Pola Makan terhadap Kadar Kolesterol Total. *Media Kesehatan Masyarakat Indonesia*, *13*(4), 304. https://doi.org/10.30597/mkmi.v13i4.2132