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Research Article

THE RELATIONSHIP BETWEEN PERCEPTION OF SUSCEPTIBILITY AND SERIOUSNESS OF DISEASE WITH INDIVIDUALS' ADEQUACY WATER INTAKE IN SOUTHEAST SULAWESI

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ABSTRACT

Background: The majority of people in Southeast Sulawesi had higher prevalence of cardiovascular diseases such as hypertension. One of the problems was they had insufficient water consumption. The individuals' perception of vulnerability and seriousness of the disease were assumed to be causes of this condition. Therefore, this study aims to analyze the relationship and influence of perceived vulnerability and perceived seriousness of disease on the level of adequate water intake in Kendari City and Konawe Regency.
Methods: This research recruited 200 respondents Southeast Sulawesi, especially in Nambo District, Kendari City and Morosi District, Konawe Regency, in May-June 2024. The study used a cross-sectional study. The independent variables are perception of vulnerability and seriousness of the disease. Meanwhile, the dependent variable is adequate daily water intake. Data analysis used the chi-square and liner regression tests
Results: The results showed that perceived vulnerability was related and had a significant effect on adequate water intake (p value=0.038<0.05). Meanwhile, the perception of the seriousness of the disease was not significantly related to the adequacy of daily water intake (p value=0.592>0.05).
Conclusion: This research can be concluded that awareness of the level of self-vulnerability encourages individuals to take corrective actions, one of which is by consuming water according to recommendations, namely at least 2 litters a day. On the other hand, there is no difference between individuals who have or have not felt the severity of their illness. which is significant in consuming water a day.

Keywords: perception, susceptibility, seriousness, disease, water

INTRODUCTION

Adequate water is very important for body health. One of them is that it can prevent the spread of cardiovascular diseases, such as heart disease, heart attacks and strokes.(1) Water intake can affect the changes in cardiovagal outflow that occur sporadically.(2) People who drink regular consumption of water, so the function of the body's organs is maintained. Furthermore, it can have a relaxing effect on blood vessels and ultimately can maintain blood pressure at a good level. This means that the high prevalence of chronic diseases such as hypertension and chronic kidney disease is caused by a lack of water consumption.(3) If we look at the prevalence of hypertension in Southeast Sulawesi Province in 2021, it is around 38.81%. However, there are several cities or districts in Southeast Sulawesi province, such as Kendari City and Konawe Regency, where the prevalence rate is higher compared to Southeast Sulawesi Province, namely 78.99% in Kendari City and 72.70% in Konawe Regency.(4,5) The high prevalence of hypertension is also likely due to insufficient daily water consumption.

However, the level of adequate water consumption also depends on many factors. Among them is the factor of the availability of safe drinking water for the community. In some areas, it is still difficult to access safe drinking water sources. However, there are many bottled waters sold on the market. The price of bottled water is also relatively inexpensive, but when you have to meet the need for safe water for all family members, of course you need sufficient extra income, apart from other basic food needs. Therefore, the level of family or individual income in this case may also be important for adequate water consumption for individuals and families.

Furthermore, adequate water consumption is also influenced by knowledge and awareness of the importance of water for body health.(6–9) Lifestyle is also stated as a factor in adequate water consumption.(7,10) Some groups of people prefer to drink fizzy water or sweetened bottled water. More precisely, this lifestyle behavior occurs in certain groups of people. However, what about individuals or communities who already feel vulnerable to themselves? Do they have the habit of consuming enough water every day? And will those who have suffered from certain diseases and already feel the seriousness of the disease consume enough water? These two questions need to be studied further because it is very important to provide strategies to prevent the spread of chronic diseases in the Kendari City and Konawe Regency areas. Therefore, this study aims to analyze the relationship and influence on the level of adequate water intake in Kendari City and Konawe Regency.

MATERIAL AND METHODS

Research design

This research uses quantitative methods with a cross-sectional study design. This research was carried out in Nambo District, Kendari City and Morosi District, Konawe Regency, Southeast Sulawesi Province, Indonesia in May-June 2024. The independent variables are perceived susceptibility and perceived seriousness of the disease. Meanwhile, the dependent variable is adequate daily water intake.

Population, Sample Size and Technique

The population in this study is families who live in the coastal area of Nambo sub-district, Kendari City, and the mining area of Morosi Sub-district. The number of families

in the Nambo coastal area is 499 families and 339 families in the mining area of Morosi District, Konawe Regency in 202.(11) The sample size was 200 respondents calculated using the Slovin Formula, with a confidence level of 5%. Sampling was taken using Cluster random sampling.

Sample inclusion criteria were aged over 15 years, domiciled in the Nambo and Morosi Districts for at least 2 years, willing to participate in this research as proven by informed consent, and able to communicate well. Meanwhile, the sample inclusion criteria were residing for less than 2 years at the research location, and having a chronic illness that was unable to communicate.

Data collection and analysis

The data collection process uses a structured questionnaire. Collection of adequacy levels of water intake based on 24 hour recall. Objective criteria for water intake: Good: if >2000 ml per day, and Poor if <1999 ml per day. Millilitre measurements are based on the glass used to drink water.

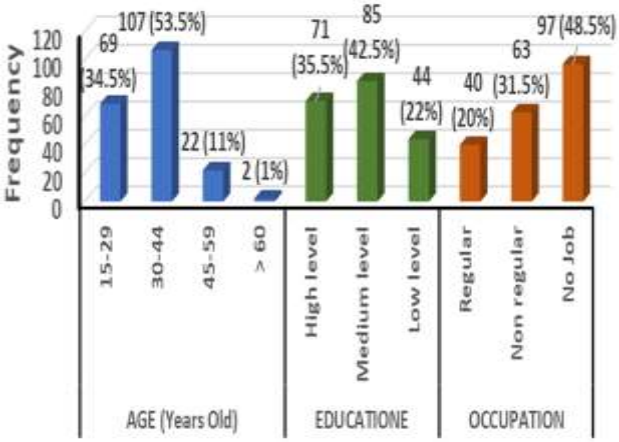
Perception of Vulnerability is defined as a view or response to information obtained from the respondent's condition as a result of external influences that threaten an individual's life. The measurement method is using a Likert scale with 15 questions with a rating of 1-4: Strongly agree=4, agree=3, disagree=2, and strongly disagree=1 for positive questions. For negative statements with the opposite order of assessment. Objective criteria are categorized as Good if the score is ≥ 62.5% and Poor if the score is <62.5%.

Perception of the seriousness of the disease is defined by the respondent's perceived belief in how serious the disease condition is and how dangerous the consequences of the disease are. Assessment using a Likert scale as above. Objective criteria are categorized as Good if the score is ≥ 62.5% and Poor if the score is <62.5%. Data analysts used Chi-square and liner regression.

RESULTS

Participants' characteristics

There were 200 participants in this study, most of whom were aged between 30 -44 years, namely early adulthood (53.5%). The mean age of participants was 34.1 ± SD. 9.16 Years (Figure 1). There is a very small proportion of participants aged over 60 years or elderly, namely only 1%) Participants aged under 30 years are also involved (34.5%), as well as participants aged 45-59 years or classified as elderly adults (11%).



Notes: Mean of age: 34.1± SD. 9.16 years old; High level=Above diploma; Medium level= Senior high school; Low level= below Junior high school

Figure 1. The Characteristics of participants

Based on Age, Education and Occupation

The education level of the participants in this study was mostly at the Senior High School level (42.5%), and the least had low education, namely Junior High School or below (22%). There are also quite a lot of

participants with higher education, namely diploma and above (35.5%) (Figure.1). Regarding employment status, the majority of participants did not have a job, namely as housewives (48.5%). However, participants who work non-permanently, such as entrepreneurs, including honorary workers, are also the second largest, namely around 31.5% and the smallest proportion are those who work permanently, such as civil servants (20%) (Figure 1).

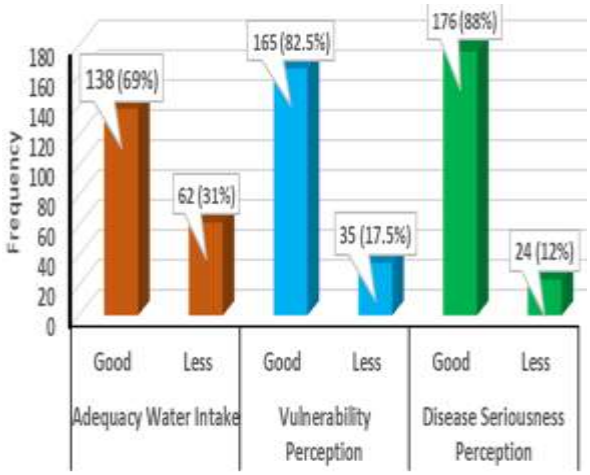


Figure 2. Distribution of Adequacy Water Intake, Vulnerability Perception, and Disease Seriousness Perception

Figure 2 shows that the majority of adequacy levels of water intake are good (69%). However, there are still those whose water intake is insufficient, namely around 31%. Likewise, the perception of susceptibility and perception of the seriousness of the disease are also mostly in the good category, namely 82.5% and 88%, respectively. Participants who had a low perception of susceptibility were around 17.5% and those who had a low perception of the seriousness of the disease were even lower, around 12%.

The effect of Vulnerability and Disease Seriousness Perception on Adequacy of water intake

The results of the chi-square test showed that there was no significant relationship between vulnerability perception and diseases seriousness perception with adequacy water intake (X2cal=0.441<X2tab=3.841), and (X2cal=0.977<X2tab=3.841) (Table-1). Participants with good and poor perception of vulnerability had the largest proportion of participants with sufficient levels of adequate water intake. Likewise, for participants with good and poor perceptions of the seriousness of the disease, the largest proportion was good in terms of their water intake.

Table 1. The effect of Vulnerability and Disease Seriousness Perception on Adequacy of water intake

Independent Variables		Adequacy Water Intake		Total	Chi-Square tests
		Good	Less		
Vulnerability Perception					
Good	Count	116	49	165	$X^2_{cal.}$=0.441< X^2_{tab}*= 3.841
	%	70.3%	29.7%	100.0%	
Less	Count	22	13	35	
	%	62.9%	37.1%	100.0%	
Disease Seriousness Perception					
Good	Count	122	54	176	$X^2_{cal.}$=0.977< X^2_{tab}*= 3.841
	%	69.3%	30.7%	100.0%	
Less	Count	16	8	24	
	%	66.7%	33.3%	100.0%	
Total	Count	138	62	200	
	%	69.0%	31.0%	100.0%	

Dependent Variable: Adequacy of Water Intake
*Linier regression test

Furthermore, if you look at the regression coefficient figure of 21,582, it means that for every 1% increase in perceived vulnerability (X), water intake (Y) will increase by 21,582. The magnitude of the influence of perceived vulnerability on drinking water intake was 2.1%, while the greatest influence

was influenced by other factors (97.9%). Meanwhile, the perception of the seriousness of the disease did not have a significant effect on the adequacy of water intake (p value=0.592 > 0.05).

DISCUSSION

This research has stated that perceptions of vulnerability have a positive effect on the adequacy of water intake in Kendari City and Konawe Regency, Southeast Sulawesi. For every 1% increase in the level of perceived vulnerability felt about oneself, the individual will increase their water intake by 21,582 ml per day. However, the influence of a person's perceived vulnerability is quite small, namely around 2.1%. The effect of perceived vulnerability when tested using chi-square did not show a significant difference between good and poor perceptions of vulnerability regarding the level of adequacy of water intake.

This study has shown that individuals who have a good level of perception about their own vulnerability to disease tend to have a minimum drinking water intake of 2 liters per day or even more. However, of those who have a good perception of their own vulnerability, there are still those whose water intake is less than the recommended standard. This shows that an individual's water adequacy is not only influenced by his perception of his own vulnerability, but there are still other factors. As is known, there are many large mining industries in the Morosi District area. In this area, of course, there have been many changes in the physical conditions of the air, water and land. From the results of previous studies, the level of air pollution in the Morosi sub-district mining area was stated to exceed the quality standard, namely seen from the concentration of PM10 particulates reaching 97.83 µg/Nm3, compared to the quality standard of 75 µg/Nm3, especially in the afternoon.(12)

This high air pollution is caused by many factors including pollution from motorized vehicles and also mining industry activities in the Morosi District area. Vulnerability of water intake in the Morosi mining area has also been carried out in previous studies which show a relationship with high levels of protein urine and urine creatinine as an indication of chronic disease disorders, including impaired kidney function in the Morosi mining area.(13,14) Meanwhile, in the Abeli sub-district, namely the coast, the scarcity of drinking water is clearly a challenge. From previous studies, it was stated that in the Abeli area there were high rates of chronic diseases including hypertension and diabetes mellitus.(15)

The high number of chronic diseases is also triggered by the behavior of consuming less drinking water as stated in previous studies. Where the behavior of drinking water with high urine protein levels is a parameter for impaired kidney function.(16–18) This study is also supported by previous studies which state that the causes of vulnerability to drinking water intake are influenced by many other factors such as anthropogenic changes.(19) Anthropogenic change is a dangerous phenomenon originating from human activities, including industrial, urban and agricultural activities which produce liquid, solid and gas waste. This waste ultimately threatens drinking water sources, including water shortages and water stress.(20–22) Besides that, climate change has resulted in a scarcity of drinking water sources which has resulted in vulnerability to drinking water intake.(21) This shows that the level of individual

perception of self-vulnerability has a very small influence compared to the factors of climate change and anthropogenic change. Likewise, it can be said that there is no influence on the individual's perception of the level of seriousness of the disease with drinking water intake.

CONCLUTION

The results of this study can be concluded that the influence of perceived self-vulnerability has a positive influence on the level of adequate daily water intake. Every 1% increase in an individual's perception of their own vulnerability will increase their drinking water intake by 21,582 ml per day. However, an individual's perception of the seriousness of the disease does not significantly influence their drinking water intake. Based on this study, health promotion to increase awareness of drinking water as recommended by the Ministry of Health must be carried out. Implementing effective health promotion can reduce the habit of drinking fizzy drinks and increase water consumption.(23) Through health promotion, individual knowledge can be increased, especially regarding the benefits of adequate water intake against the dangers of body dehydration.(9,24-25)

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