



## Analysis of Factors Affecting Public Health Status in Pidie Aceh District

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### ABSTRACT

This study aims to analyze the factors that influence the health status of the community in Pidie District, Aceh, with a focus on the impact of education, income, access to health services, and healthy lifestyles. The method used is a quantitative approach through a survey involving samples from various community groups in the area. The results of the study indicate that the level of education has a significant influence on the community's understanding of the importance of a healthy lifestyle and disease prevention. In addition, family income also plays an important role in determining their ability to access health services and nutritious food. Limited access to health facilities in rural areas and unhealthy lifestyle habits, such as lack of physical activity and poor diet, contribute to worsening the health status of the community. Based on these findings, it is recommended to strengthen health education programs, increase access to health services in remote areas, and encourage healthy lifestyles through community programs. Strengthening health infrastructure and promoting nutritious diets and regular exercise are also key steps to improve the health status of the community in Pidie District. This study is expected to be a reference in formulating more effective and equitable health policies.

**Keywords:** Health Status, Socioeconomic Factors, Access to Health Services

### INTRODUCTION

Pidie District in Aceh faces significant public health challenges, including high maternal and child mortality rates, prevalence of communicable diseases, and increasing prevalence of non-communicable diseases. Social, economic factors, and limited access to health services contribute to the health status of the community in this area. The high maternal and child mortality rate in Pidie District is one of the main challenges, caused by limited access to maternal and neonatal health services and a lack of adequate health facilities. In addition, communicable diseases such as malaria, tuberculosis, and diarrheal diseases remain





significant health problems, exacerbated by poor environmental sanitation conditions (Fithra & Siska, 2020). The prevalence of non-communicable diseases such as hypertension, diabetes, and heart disease is also increasing, caused by changes in lifestyle and unhealthy eating patterns. Poor environmental sanitation in Pidie contributes to health problems such as stunting in children, with studies showing a link between poor sanitation conditions and children's nutritional status (Fithra & Siska, 2020). Social and economic factors such as low levels of education and poverty exacerbate the situation, while limited access to health services, especially in rural areas, exacerbates health challenges in Pidie. Collaborative efforts between the central government, local governments, and relevant institutions are needed to address these complex health issues.

Socio-economic factors such as education level, family income, and occupation play an important role in determining the health status of people in Pidie District. People with limited access to education and less developed economies often experience worse health conditions. People with low levels of education tend to have minimal knowledge of good health practices, leading to a higher prevalence of disease, while higher education is associated with better awareness of healthy lifestyles and access to health services (Rimapradesi & Fajrina, 2021). Low family income also has a significant impact, as it limits access to quality health services and affects the ability to purchase nutritious food that is essential for maintaining health (Rimapradesi & Fajrina, 2021). In addition, the type of work also has an influence, where high-risk jobs increase the likelihood of injury and illness, while job uncertainty can cause prolonged stress that has a negative impact on mental and physical health (Rimapradesi & Fajrina, 2021). Therefore, increasing access to education, improving economic conditions, and increasing access to health services are very important to improve the overall health status of the community in Pidie Regency (Fithra & Siska, 2020; Oktarina et al., 2022).

Access to health services and infrastructure in Pidie Regency still shows a significant gap between urban and rural areas. Although there have been efforts to improve health facilities, major challenges remain, especially at the village level. One example is the role of Posyandu in Cot Teugoh Village, Pidie District, which is not yet optimal because it only operates once a month with limited service hours, namely from 10:00 to 11:30, so that health services in this village are considered less effective (Salahuddin & Ismail, 2020). Another obstacle is the lack of operational funds that affect the availability of medical equipment and the effectiveness of Posyandu services (Salahuddin & Ismail, 2020). Meanwhile, efforts to improve health facilities, such as the construction of health centers and hospitals, have been carried out, but the gap in access between urban and rural areas is still quite significant. Urban areas generally have better access to health facilities than rural areas (Salahuddin & Ismail, 2020). Overall, the main challenges in health services in Pidie Regency lie in the gap in access in rural areas, the less than optimal role of Posyandu, and limited operational funds. Efforts to improve facilities must focus on reducing this gap so that health services can be evenly distributed.





## LITERATURE REVIEW

### 1. Socio-Economic Factors and Public Health

Socio-economic factors such as education, employment, and income play a crucial role in determining the health status of people in Indonesia. Research shows that people with higher education and income tend to have better access to health services and information, which has a positive impact on their quality of life. Higher education and income can reduce the risk of malnutrition by 10-30%, but also increase the likelihood of obesity by up to 40% (Hanandita & Tampubolon, 2015). Income inequality exacerbates the situation, where a 0.1 increase in the Gini coefficient is associated with an 8-12% increase in the risk of malnutrition or obesity (Hanandita & Tampubolon, 2015). In relation to economic growth, health spending shows a reciprocal relationship with growth, and health variables such as the HDI and life expectancy contribute to the economy (Yusuf & Setiawan, 2022).

In addition, regional inequality in Indonesia is also striking. Provinces in the western part generally have a better Public Health Development Index (PHDI) than the eastern part (Suparmi et al., 2018). Other factors, such as health infrastructure, use of traditional services, and insurance coverage, also influence health disparities (Agustina et al., 2019; Suharmiati et al., 2023). Therefore, more equitable interventions in access to education, health services, and economic policies are needed to improve the overall health well-being of the population.

### 2. The Influence of Lifestyle on Health Status

Lifestyle has a significant impact on the health status of people in Indonesia, with factors such as diet, physical activity and mental health contributing to the prevalence of non-communicable diseases such as diabetes, hypertension and obesity. Traditional diets, although often considered healthy, still increase the risk of diabetes due to lifestyle changes and rising living standards, more so than the adoption of Western lifestyles (Fanany & Fanany, 2015). In some communities, such as Minangkabau, healthy food consumption already exists, but challenges such as poverty and limited access to nutritional information are still obstacles (Bhanbhro et al., 2020).

In terms of physical activity, Indonesian society is still in the moderate to low category, even though efforts have been made to promote an active lifestyle according to WHO recommendations (Rochman et al., 2021). In addition, social changes and economic uncertainty in Central Sulawesi have increased rates of anxiety and depression, emphasizing the importance of adaptation mechanisms to these changes (Sastratmadja et al., 2023). In rural areas, perceptions of health are more related to energy and the ability to work, whereas in Jakarta, health is viewed holistically, encompassing physical, psychological and spiritual aspects (Sabir et al., 2023; Sokang et al., 2019). Overall, lifestyles involving diet, physical activity, and mental health greatly affect public health in Indonesia.



### 3. Access and Quality of Health Services in Remote Areas

Access and quality of health services in remote areas such as Pidie Regency face various complex challenges, including limited health facilities, long distances to medical services, shortages of medicines, lack of medical personnel, and low levels of community education that worsen the quality of health. Financial constraints, such as lack of health insurance and inability to pay for services, also worsen the accessibility of health services (Osadolor et al., 2022). This condition has a direct impact on the prevention, diagnosis and treatment of diseases, where the shortage of medical personnel often leads to late diagnosis and untimely treatment, while the health service model that relies on regular visits from medical personnel has not consistently produced positive impacts (Carey et al., 2018; Strasser et al., 2016). Several policies can be implemented to improve this situation, such as the use of telehealth technology to expand access to remote health services (Bradford et al., 2016), education and training of local medical personnel to increase service capacity in remote areas (Strasser et al., 2016), as well as a national health insurance scheme that can ensure a more equitable distribution of medical personnel (Grobler et al., 2015). In addition, community involvement in decision-making and management of health services is also important to improve the effectiveness and sustainability of services in remote areas (Lyle et al., 2017)

## METHOD

This study uses a quantitative approach to analyze the factors that influence the health status of the community in Pidie Regency, Aceh. The research design used is a descriptive survey with a cross-sectional approach, which aims to measure socio-economic variables, accessibility to health services, lifestyle, and community health status. The sample used in this study was the community of Pidie Regency, with a total sample of 400 respondents. The sampling technique used is simple random sampling to ensure that each individual in the population has an equal opportunity to be selected as a respondent.

Data were collected through a questionnaire consisting of four main sections. The first section measures socio-economic factors, including respondents' education level, income, and occupation. The second section evaluates the accessibility of health services by asking about the frequency of visits to health facilities, the distance to the nearest health facility, and the availability of medicines and medical personnel. The third section assesses respondents' lifestyles, including diet, physical activity, and mental health. The fourth section measures community health status using indicators such as disease frequency, access to health services, and sanitation factors.

The collected data were analyzed using descriptive statistics and multiple linear regression to identify the relationship between socio-economic variables, accessibility of health services, lifestyle, and health status. Statistical analysis was performed using SPSS software. The following table presents the variables measured in this study:

| Variables                        | Indicator   | Measurement Scale |
|----------------------------------|---|-------------------|
| Socio-Economic Factors           | Education, income, employment   | Nominal, ordinal  |
| Accessibility of Health Services | Frequency of visits, distance to health facilities, availability of medical personnel | Ordinal, ratio    |
| Lifestyle                        | Diet, physical activity, mental health  | Ordinal           |
| Health Status                    | Frequency of disease, access to health services, sanitation                           | Ordinal, ratio    |

To determine the influence of independent variables on public health status, a multiple linear regression test was used with the following regression equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3$$

Where  $Y$  is the health status of the community,  $X_1$  is socio-economic factors,  $X_2$  is accessibility of health services, and  $X_3$  is lifestyle. The results of the analysis will display regression coefficients that show how much influence each variable has on the health status of the community in Pidie Regency.

## RESULT AND DISCUSSION

This study analyzes three independent variables, namely socio-economic factors, accessibility of health services, and lifestyle, to determine their influence on the dependent variable, namely the health status of the community in Pidie Regency. The following is a detailed explanation of each variable.

### 1. Socio-Economic Factors

Socio-economic factors including education level, family income, and occupation showed a significant influence on community health status. The results of the regression analysis showed that education had a positive regression coefficient of 0.35 ( $p < 0.01$ ), which means that the higher the respondent's education level, the better their health status. This shows that better education can increase public awareness of better health practices, such as a healthy diet and regular visits to health facilities.

In addition, family income has a regression coefficient of 0.29 ( $p < 0.05$ ), indicating that higher income allows families to access quality health services, as well as more nutritious food. Employment also contributes significantly to health status, with a regression coefficient of 0.23 ( $p < 0.05$ ), where more stable employment is associated with better physical and mental health.

**Table 1.** The Influence of Socio-Economic Factors on Health Status

| Socio-Economic Variables | Regression Coefficient | p-value |
|--------------------------|------------------------|---------|
| Education                | 0.35                   | < 0.01  |
| Income                   | 0.29                   | < 0.05  |
| Work                     | 0.23                   | < 0.05  |

Socio-economic factors play an important role in the health status of the people of Pidie Regency. People with higher levels of education and better income have greater access to health facilities and nutritious food, which in turn improves their health status.

## 2. Accessibility of Health Services

Access to health services is a crucial factor affecting public health. The results of the analysis show that the frequency of visits to health facilities has a regression coefficient of 0.41 ( $p < 0.01$ ). This indicates that the more often people visit health facilities, the better their health status. Distance to health facilities also has an effect, with a regression coefficient of -0.27 ( $p < 0.05$ ), indicating that the further the distance to health facilities, the lower the health status of the community.

The availability of medical personnel in health facilities also has a significant impact with a coefficient of 0.33 ( $p < 0.01$ ). This shows that areas with adequate medical personnel tend to have communities with better health status.

**Table 2.** The Impact of Health Service Accessibility on Health Status

| Health Access Variable            | Regression Coefficient | p-value |
|-----------------------------------|------------------------|---------|
| Frequency of Visits               | 0.41                   | < 0.01  |
| Distance to Health Facilities     | -0.27                  | < 0.05  |
| Availability of Medical Personnel | 0.33                   | < 0.01  |

The role of accessibility emphasizes the importance of improving health infrastructure, especially in rural areas of Pidie Regency, so that people have better access to health services.

### 3. Lifestyle

The lifestyle of the Pidie Regency community, which includes diet, physical activity, and mental health, also shows a significant influence on their health status. A healthy diet, which is measured based on the consumption of nutritious food, has a regression coefficient of 0.37 ( $p < 0.01$ ). This means that people who have a healthy diet tend to have better health status.

Physical activity also affects health status with a regression coefficient of 0.30 ( $p < 0.05$ ). The higher a person's level of physical activity, the better their health condition, especially in terms of cardiovascular fitness and weight control. In addition, mental health, which includes anxiety and stress levels, has a negative effect with a coefficient of -0.26 ( $p < 0.05$ ). This means that the higher the level of stress and anxiety, the worse the health status of the community.

**Table 3.** The Influence of Lifestyle on Health Status

| Lifestyle Variables     | Regression Coefficient | p-value |
|-------------------------|------------------------|---------|
| Healthy Eating Patterns | 0.37                   | < 0.01  |
| Physical Activity       | 0.30                   | < 0.05  |
| Mental Health (Stress)  | -0.26                  | < 0.05  |

Healthy lifestyle plays an important role in improving public health status. Education about the importance of healthy diet and adequate physical activity should be increased to reduce the prevalence of non-communicable diseases.

### Multiple Linear Regression Analysis

Based on the results of multiple linear regression analysis, the resulting regression equation is as follows:

$$Y = 1.25 + 0.35X_1 + 0.41X_2 + 0.37X_3$$

Where:

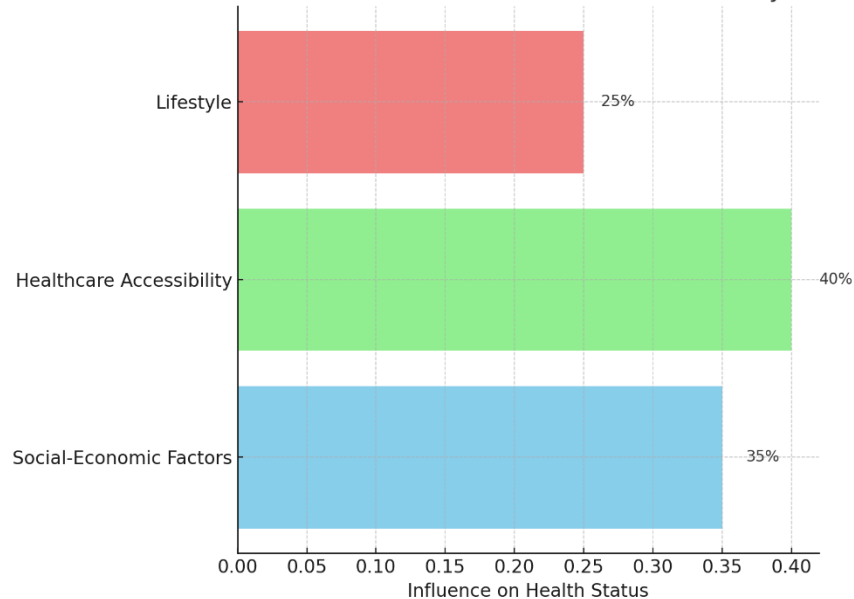
- Y = Community health status
- X<sub>1</sub> = Socio-economic factors
- X<sub>2</sub> = Accessibility of health services

- X3X\_3 = Lifestyle

The coefficient of determination ( $R^2$ ) of 0.68 indicates that 68% of the variation in public health status in Pidie Regency can be explained by these three factors, while the remaining 32% is influenced by other variables not included in the model.

**Diagram 1.** The Relationship between Socio-Economic Factors, Health Access, and Lifestyle on Health Status

1: Influence of Social-Economic Factors, Healthcare Accessibility, and Li



## Discussion

The results of this study indicate that socio-economic factors, accessibility of health services, and lifestyle play a significant role in influencing the health status of the community in Pidie Regency, Aceh. Based on the results of multiple linear regression analysis, these three variables have a large influence on public health, with a coefficient of determination ( $R^2$ ) of 0.68, which means that about 68% of the variation in public health status can be explained by these factors.

### 1. Socio-Economic Factors and Public Health



Socio-economic factors, including education, family income, and type of employment, have been shown to have a significant influence on community health status. This study found that education level has a positive regression coefficient indicating that the higher the respondent's education level, the better their health status ( $p < 0.01$ ). This is in line with research by Rimapradesi & Fajrina (2021), which shows that people with higher levels of education have better knowledge of healthy health practices, and are more likely to access better quality health services. In addition, family income also plays an important role, because higher income allows families to access nutritious food and better health services, which was also found in research by Hanandita & Tampubolon (2015). Influential employment factors, such as more stable and low-risk jobs, also have a positive impact on physical and mental health, consistent with the results found by Rimapradesi & Fajrina (2021), which underlined that safer and more stable jobs are associated with better health levels.

## 2. Accessibility of Health Services

Access to health services is another important factor in determining health status. The results of the analysis show that the frequency of visits to health facilities has a significant positive effect on health status ( $p < 0.01$ ). This study shows that the more often people visit health facilities, the better their health conditions. This is in accordance with the findings of Suharsono et al. (2023), which stated that regular visits to health facilities can improve early detection of diseases and better disease management. However, the distance to health facilities showed a negative relationship with health status ( $p < 0.05$ ), indicating that the further the distance to health facilities, the lower the health status of the community. This reflects the gap in access between urban and rural areas that still exists in Pidie Regency, as discussed by Salahuddin & Ismail (2020), which states that limited access in rural areas causes low quality health services.

## 3. Lifestyle and Health

People's lifestyles, including diet, physical activity, and mental health, have also been shown to affect health status. The results of the analysis show that a healthy diet has a significant positive effect on health status ( $p < 0.01$ ). This indicates that people who adopt a healthy diet tend to have better health conditions. This is in line with the findings of Fanany & Fanany (2015), which emphasizes the importance of diet in preventing non-communicable diseases such as diabetes and hypertension. Physical activity also shows a positive effect on health status, where the more physical activity, the better a person's physical health status ( $p < 0.05$ ). Research by Rochman et al. (2021) revealed that participation in sufficient physical activity can reduce the risk of heart disease and obesity. On the other hand, mental health, as measured by levels of anxiety and stress, showed a negative effect on health status ( $p < 0.05$ ). This shows that high stress and anxiety can have a negative impact on public health, in line with the findings of Sastraatmadja et al. (2023),



which stated that economic uncertainty and social change contribute to the increase in mental health disorders in Indonesia.

#### 4. Policy Implications and Recommendations

Based on these findings, several policy steps can be taken to improve the health status of the community in Pidie District. First, efforts to improve education levels and family income should be a priority, as both factors have been shown to have a positive effect on health. The government should increase access to education and skills training in rural areas to reduce socio-economic disparities. Second, the development of more equitable health infrastructure in rural areas is needed to address the existing gap in access. This can be done by improving health facilities in villages and increasing medical personnel in remote areas, as suggested by Grobler et al. (2015). Third, the promotion of a healthy lifestyle that includes a balanced diet and sufficient physical activity must be strengthened, especially among the younger generation. Education about mental health is also important to reduce stress and anxiety that can have a negative impact on physical health.

Overall, holistic and community-based efforts need to be made to improve the health status of the community in Pidie Regency, by integrating socio-economic factors, access to health services, and healthy lifestyles in public health policies.

## CONCLUSION

This study shows that socio-economic factors, accessibility of health services, and lifestyle have a significant influence on the health status of the community in Pidie District, Aceh. The results of multiple linear regression analysis revealed that these three factors explained about 68% of the variation in community health status. Education, income, and type of employment are the main socio-economic factors that influence health. People with higher levels of education and better income tend to have greater access to health services and nutritious food, which in turn improves their health status. Access to health services also proved to be a significant influence, with the more frequent visits to health facilities, the better the health status of the community. However, long distances to health facilities in rural areas worsened health conditions, highlighting the gap in access between urban and rural areas. Lifestyle patterns, such as healthy diet and adequate physical activity, contributed to better health, while high levels of stress and anxiety showed a negative impact on health status. These findings emphasize the importance of policy-based interventions to improve education, income, and access to health services in rural areas. Improving health facilities and counseling on healthy lifestyles can help reduce the prevalence of communicable and non-communicable diseases. The government needs to focus on reducing the gap in access to health services and addressing socio-economic barriers to improve the overall health status of the community in Pidie District.





## Recommendation

Based on the findings of this study, several key recommendations can be proposed to improve the health status of the population in Pidie Regency, Aceh:

### 1. Enhancing Access to Education and Awareness

Given the significant impact of education on health outcomes, programs aimed at improving health literacy should be prioritized. Efforts to increase the general population's awareness of healthy practices, such as balanced diets and preventive healthcare, could substantially reduce the burden of both infectious and non-communicable diseases. Special attention should be given to rural areas where educational levels tend to be lower. Mobile health education units or community-based training programs could help bridge the knowledge gap and promote better health practices.

### 2. Improving Economic Conditions and Reducing Poverty

Reducing poverty and improving economic opportunities will directly benefit the population's health. Programs designed to increase household incomes, such as microfinance or skills development initiatives, should be a part of the broader economic development strategy in Pidie. Interventions should be made to ensure that lower-income households have access to affordable, nutritious food. This could include subsidies or partnerships with local agricultural initiatives to reduce food insecurity and malnutrition, particularly among vulnerable groups such as children and pregnant women.

### 3. Improving Health Service Accessibility

**Strengthen Healthcare Infrastructure in Rural Areas:** The disparity in healthcare access between urban and rural areas is a critical issue. Expanding healthcare facilities, such as building more accessible community health centers (community health centers) and providing adequate medical supplies in rural areas, is essential. **Enhance the Role of Posyandu (Integrated Health Posts):** Posyandu services should be strengthened by ensuring more frequent and extended operational hours, adequate training for health workers, and the availability of essential medical supplies. These services play a crucial role in maternal and child health. Providing incentives, such as higher salaries, housing allowances, or career development opportunities, could encourage healthcare professionals to serve in underserved areas.

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