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Research Article

DETERMINANTS OF HEALTH SERVICE UTILIZATION IN LOW-INCOME FAMILIES IN THE COASTAL REGION OF MAGINTI ISLAND, WEST MUNA REGENCY: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Accessibility to healthcare services remains a significant challenge among low-income families in coastal regions such as Maginti Island, West Muna Regency. Several socioeconomic and environmental factors are believed to influence the utilization of available health services. This study aimed to identify the factors associated with the utilization of healthcare services among poor families in Maginti Island.
Methods: A quantitative, cross-sectional study was conducted from May to July 2024. A total of 57 respondents were selected using simple random sampling. Data were collected using structured questionnaires and analyzed using univariate and bivariate methods (Chi-square test).
Results: The study found significant associations between healthcare service utilization and three main factors: knowledge of health, availability of transportation, and household income level ($p < 0.05$). Families with better knowledge, easier access to transportation, and higher income levels were more likely to use healthcare services.
Conclusion: Socioeconomic status, transportation access, and knowledge play crucial roles in determining healthcare utilization among the poor in Maginti Island. Strengthening health education and infrastructure is essential to improving healthcare access in coastal communities.

Keywords: *Healthcare, Utilization; Coastal, Community; Access, Barriers, Low-income families*

INTRODUCTION

Access to healthcare services is a fundamental element of a well-functioning health system and essential to ensuring that individuals can attain optimal health outcomes. Healthcare access refers to the availability and reachability of various health services for the general public (1) Quality access to healthcare not only refers to the physical presence of health facilities but also encompasses economic and social dimensions that determine whether individuals can utilize these services effectively (1). Ensuring equitable access is central to improving public health, reducing health disparities, and protecting vulnerable populations.

In Indonesia, healthcare access is often hindered by several structural and systemic challenges. These barriers are typically grouped into three main categories: geographical, economic, and social (2). Geographical accessibility refers to the proximity of health facilities and the availability of transportation. Economic access concerns the financial ability of individuals and households to afford health services, including costs related to travel, consultation, and medication. Social access includes non-material aspects, such as health literacy, communication barriers, cultural beliefs, and satisfaction with service delivery (3). Together, these barriers can significantly hinder individuals, particularly the poor, from receiving timely and adequate care.

Improving healthcare access among impoverished communities is a national priority, as health is closely linked to productivity and social participation. When individuals are healthy, they are more capable of working, supporting their families, and contributing to community development. The Indonesian government recognizes this through efforts to strengthen public health infrastructure and health financing mechanisms (4). However, despite policy efforts, access remains unequal across regions, especially in rural and remote areas where poverty levels are high and health services are limited.

According to recent data from Statistics Indonesia, approximately 25.90 million people in Indonesia live below the poverty line (5). In Southeast Sulawesi Province, this figure includes around 321,530 individuals, accounting for 10.63% of the provincial population (6). In West Muna Regency specifically, 11,810 people, or 14.03% of the population, are classified as poor (7). One of the most affected areas within the regency is Maginti Island. The island, which consists of two villages—Maginti and Kangkunawe—is inhabited by 2,873 residents across 774 households. Of these, 136 households (equivalent to 708 individuals) are categorized as poor, with a monthly household income of less than one million rupiah. This group represents a substantial proportion of the island's total population.

The majority of residents on Maginti Island work as fishermen, a livelihood that is highly dependent on seasonal weather patterns. Storms, high tides, and unpredictable weather can interrupt fishing activities for extended periods, leading to reduced income and increased financial vulnerability. This economic instability limits the ability of families to pay for health services or transportation to health facilities.

To address disparities in access, the Indonesian government introduced legal frameworks, which mandates the government to ensure universal access to healthcare services. One key initiative is the National Health Insurance program. This program aims to provide comprehensive

health coverage, especially for the poor. However, implementation challenges persist. On Maginti Island, for example, only 526 out of 774 poor households are enrolled in the National Health Insurance (NHI) program, leaving 250 households uninsured and potentially unable to afford health services.

Additionally, transportation challenges further compound access issues. Maginti Island lacks reliable public transportation, and the journey to referral hospitals—such as Bombana Hospital on the neighboring mainland—can be expensive, physically demanding, and time-consuming. These difficulties often discourage families from seeking formal medical care, leading many to rely instead on traditional herbal medicine or delay treatment until conditions worsen. Given these challenges, this study aimed to analyze the factors associated with healthcare service utilization among poor households in Kangkunawe Village, Maginti Island, West Muna Regency.

METHODS

Study Design

This research employed a quantitative approach using a correlational study design with a cross-sectional method. A cross-sectional study observes data at a single point in time to examine the relationships between risk factors and their effects. The primary objective of this study was to identify the factors associated with barriers to healthcare accessibility among poor families.

Population and Sample

The population in this study comprised poor families residing on Maginti Island. According to available data, the total number of poor households on the island was 136. Data collection was conducted over a period of three months, from May to July 2024. The sample size was determined using the Slovin formula with a 5% margin of error, resulting in a sample of 57 households (8). The inclusion criteria were as follows: willingness to participate as a respondent, classification as a poor family according to local standards, age of 18 years or older, literacy skills (ability to read and write), and effective communication ability. A simple random sampling method was employed, ensuring that every member of the population had an equal opportunity to be selected as a respondent. This technique was chosen to guarantee that the sample was representative of the broader population, thereby minimizing selection bias.

Data Sources

This study combined primary and secondary data to provide a comprehensive, context specific examination of barriers to healthcare utilization among poor households on Maginti Island. The primary data were obtained through direct, face to face interviews using a structured questionnaire administered to 57 randomly selected poor households between May and July 2024. This questionnaire collected detailed information on health service utilization, level of knowledge, transportation availability, and household income, adapted from previous research instruments (9)(10).

A diverse set of secondary data sources complemented the primary data. Nation wide and regional poverty figures were drawn from the 2023 “Poverty Indicators by Regency/City” dataset published by Statistics Indonesia, providing macro level context for the study area. At the local level, electronic registers supplied by the Maginti and Kangkunawe village offices identified 136 officially recognised poor

households and served as the sampling frame. Administrative data from the BPJS Health West Muna Branch detailed the enrolment status of these households in the NHI, enabling comparisons between poverty status and insurance coverage.

Instruments Of Data Collection

In this study, data collection was conducted using a structured questionnaire. The instrument included: Healthcare utilization: Adapted from Anggraini (2023) (9), consisting of 5 items. Responses were scored 0 (No) and 1 (Yes). Knowledge level: Adapted from Devi & A (2023) (10), consisting of 12 items with answers scored 0 (Incorrect) and 1 (Correct). Transportation availability: 6 items, scored 0 (Not available) and 1 (Available). Income level: 5 items based on the Guttman scale, scored 0 (No) and 1 (Yes). The original authors reported satisfactory internal consistency coefficients for all four sub scales: Knowledge Level (Cronbach's $\alpha = 0.94$; item–total $r = 0.708$–0.857), Transportation Availability ($\alpha = 0.84$; $r = 0.463$–0.716), Income Level ($\alpha = 0.88$; $r = 0.596$–0.819), and Healthcare Utilization ($\alpha = 0.86$; $r = 0.584$–0.807). Each α exceeds the 0.60 benchmark commonly accepted for exploratory survey research, confirming that the questionnaire is internally reliable for use in the present study.

Data Analysis

The collected data were processed and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. The analysis consisted of Univariate Analysis: To describe the distribution of each variable, including frequency and percentage. Bivariate Analysis: To examine the relationship between independent variables (knowledge, transportation, income) and healthcare service utilization using the Chi-square test. A p-value < 0.05 was considered statistically significant.

RESULTS

Respondent Characteristics

The socio-demographic characteristics of the respondents are presented in Table 1. These characteristics include age, gender, occupation, and educational background.

Table 1. Descriptive Statistics of Respondents' Socio-Demographic Characteristics on Maginti Island, May – July 2024.

Variable	n	%
Age		
20-40 years	38	66.7
41-60 years	19	33.3
Gender		
Male	21	36.8
Female	36	63.2
Occupation		
Fisherman	19	33.3
Entrepreneur	10	17.5
Housewife	24	41.1
Unemployed	4	7.0
Education		
Senior High School (SMA)	13	22.8
Junior High School (SMP)	19	33.3
Elementary School (SD)	25	43.9

The majority of respondents (66.7%) are between the ages of 20 and 40, while the remaining 33.3% are aged between 41 and 60. This indicates that the respondents are predominantly in the productive age group, which may influence their health-seeking behavior and economic activity levels.

Female respondents represent a larger proportion of the sample at 63.2%, while males account for 36.8%. The higher percentage of female respondents could

reflect their greater availability or willingness to participate in health-related surveys, or it might be indicative of their central role in managing household health decisions.

Most respondents work as housewives (41.1%) and fishermen (33.3%). A smaller percentage are entrepreneurs (17.5%), and only 7.0% are unemployed. These findings suggest that the economic structure of the community is primarily based on informal and subsistence-level employment, particularly fishing, which may impact household income stability and healthcare affordability.

Educational attainment is relatively low among the respondents. The largest group completed only elementary school (43.9%), followed by junior high school graduates (33.3%) and senior high school graduates (22.8%). Low levels of education may influence health literacy, awareness of available health services, and the ability to navigate the healthcare system effectively.

Knowledge Level, Transportation Availability, Income Level, and Health Service Utilization

Table 2 presents the descriptive distribution of respondents based on their level of knowledge, availability of transportation, income level, and utilization of healthcare services on Maginti Island. These variables are essential for understanding factors that may influence access to and use of health services.

Table 2. Descriptive Distribution of Respondents by Knowledge Level, Transportation Availability, Income Level, and Healthcare Utilization on Maginti Island, May – July 2024

Variable	n	%
Level of Knowledge		
High	24	42.1
Low	33	57.9
Availability of Transportation		
Easy	15	26.3
Difficult	42	73.7
Income Level		
Low	11	19.3
High	46	80.7
Utilization of Healthcare Services		
High	20	35.1
Low	37	64.9

The data indicate that a majority of respondents (57.9%) have a low level of knowledge related to healthcare services. This suggests that limited awareness and understanding of available health facilities, services, and the importance of regular health check-ups may serve as a significant barrier to service utilization. Individuals with low health literacy may be less likely to seek medical help until a condition becomes severe, leading to underutilization of preventive and primary healthcare services.

A notable 73.7% of respondents reported difficulty in accessing transportation. This highlights a major structural barrier to healthcare access, especially in remote or rural settings such as island communities. The lack of reliable and affordable transportation may prevent individuals from reaching health centers, particularly when facilities are located at a considerable distance. This factor likely contributes directly to the low utilization rates observed in the study.

Interestingly, the majority of respondents (80.7%) fall into the high-

income category. This suggests that while economic constraints are often a key determinant in healthcare access, in this context, income alone does not appear to be the main limiting factor. Despite having relatively higher income levels, other barriers—such as knowledge and transportation—still inhibit effective healthcare utilization. This finding underscores the need to consider non-economic barriers when analyzing healthcare access in marginalized or geographically isolated populations.

The study found that only 35.1% of respondents exhibited a high level of healthcare service utilization, while the majority (64.9%) had low utilization. This pattern of low engagement with healthcare systems, despite a relatively high-income profile, indicates that knowledge and accessibility are likely more influential determinants of service use than income in this population. The data suggest that interventions aimed at improving health literacy and transportation infrastructure may be more impactful than purely economic support.

Factors Associated with Healthcare Service Utilization

Table 3 displays the results of the bivariate analysis examining the association between respondents' level of knowledge, transportation availability, income level, and their utilization of healthcare services. This analysis aims to identify which factors are significantly related to healthcare service utilization among poor households on Maginti Island.

Table 3. The associated between level of knowledge, Availability of Transportation, Income Level with Healthcare Service Utilization on Maginti Island, in 2024

Variable	Healthcare Service Utilization				Total		p-value
	High		Low				
	n	%	n	%	n	%	
Level of Knowledge							
High	14	58.3	10	41.7	24	100.0	0.002*
Low	6	18.2	27	81.8	33	100.0	
Availability of Transportation							
Easy	11	73.3	4	26.7	15	100.0	0.001*
Difficult	9	21.4	33	78.6	42	100.0	
Income Level							
High	9	81.9	2	18.1	11	100.0	0.001*
Low	11	23.9	35	76.1	46	100.0	

* Chi-square test,

Among respondents with a high level of knowledge, 58.3% utilized healthcare services at a high level, while 41.7% had low utilization. In contrast, among those with a low level of knowledge, only 18.2% reported high utilization, while the majority (81.8%) had low utilization. The p-value = 0.002, indicating a statistically significant association between knowledge level and healthcare utilization. Respondents with higher knowledge about health are significantly more likely to utilize healthcare services. This suggests that increasing health literacy can directly impact individuals' motivation and ability to seek and access healthcare when needed.

Of those who reported easy access to transportation, 73.3% had high healthcare utilization, compared to only 26.7% with low utilization. Among respondents who reported difficulty with transportation, only 21.4% had high utilization, while 78.6% had low utilization. The p-value = 0.001, which also indicates a statistically significant relationship. Transportation accessibility is a critical determinant of healthcare utilization. Respondents who can more easily reach healthcare facilities are significantly more

likely to use available services. This points to the need for improved transportation infrastructure or mobile health services in remote areas.

Interestingly, 81.9% of respondents in the high-income group had high healthcare utilization, while only 18.1% had low utilization. In the low-income group, only 23.9% reported high utilization, with 76.1% showing low usage. The p-value = 0.001, again confirming a statistically significant correlation. Income level remains a strong predictor of healthcare service utilization. Individuals with higher income may have better financial access to healthcare services, including transportation costs, consultation fees, and medications, leading to increased usage.

DISCUSION

The Relationship Knowledge Level and Utilization of Health Services Among Poor Families on Maginti Island

The findings of this study indicate a statistically significant relationship between knowledge level and the utilization of health services among poor families in Maginti Island. Specifically, 27 out of 37 respondents who reported low utilization of health services also demonstrated a low level of knowledge, while only 10 respondents with high knowledge had low utilization. These results are consistent with the notion that knowledge plays a pivotal role in shaping health-related behaviors and choices, particularly in underserved communities (9). The Health Belief Model posits that individuals' perceptions of health risks and benefits influence their engagement with health services (11). Studies have corroborated that higher health literacy correlates with increased utilization of preventive services and adherence to medical advice (12). However, some research suggests that in certain occupational settings, such as among workers in Japan, health literacy does not significantly impact healthcare utilization, possibly due to structured workplace health programs (13). It is assumed that enhancing health literacy among Maginti Island residents will lead to increased healthcare utilization. This assumption aligns with the theory that informed individuals are more likely to engage in health-promoting behaviors.

Theoretically, knowledge is regarded as a foundational component in the Health Belief Model (HBM), which asserts that individuals are more likely to engage in preventive health behaviors if they possess adequate knowledge and perceive the benefits of such actions (11). This study aligns with other research, which also found a significant relationship between knowledge and health service utilization, emphasizing that higher levels of knowledge correspond to greater likelihood of accessing healthcare (14).

Conversely, some studies in urban populations have suggested that structural factors, such as availability of services or institutional trust, may override the influence of individual knowledge. These differences might be attributed to contextual disparities in resource availability or cultural expectations.

From the researcher's perspective, the low level of healthcare service utilization among individuals with insufficient knowledge may be attributed to limited health literacy and a lack of awareness regarding government-provided services. This interpretation aligns with the Social Cognitive Theory, which suggests that knowledge influences behavior through cognitive processes and self-efficacy.

Accordingly, enhancing health education is likely to empower families to make more informed decisions and subsequently increase their utilization of healthcare services.

The Relationship Transportation Availability and Utilization of Health Services Among Poor Families on Maginti Island

This study demonstrates a statistically significant relationship between transportation availability and the utilization of health services among poor families in Maginti Island. Out of 37 respondents who reported low health service utilization, 33 indicated limited access to transportation, while only 4 had adequate transportation. These findings reinforce the view that physical accessibility remains a major determinant of healthcare utilization in remote areas. Transportation is recognized as a critical determinant of healthcare access. Studies have shown that lack of transportation correlates with missed medical appointments and delayed care, particularly in rural areas (15). Conversely, some urban studies suggest that transportation barriers are less significant due to the availability of public transit systems, highlighting the contextual nature of this determinant. The interpretation is that improving transportation infrastructure or providing transportation assistance will enhance healthcare utilization among residents. This is grounded in the theory that logistical support can mitigate access barriers (16).

Supporting this, Andersen's Behavioral Model of Health Services Use highlights enabling factors—such as transportation—as essential conditions that facilitate or hinder healthcare access (17). The results of this study are consistent with findings by Kurniati and Sulastri (2018), who concluded that improved transportation access significantly increases the probability of utilizing healthcare services (18).

However, other studies conducted in urban settings, suggest that transportation may be a less significant barrier when healthcare facilities are densely distributed, and public transport is readily available (19). This contrast highlights the context-specific impact of transport barriers in rural or island communities versus urban environments.

It can be assumed that on Maginti Island, where public transportation is scarce and healthcare centers are distant, the absence of reliable transportation directly discourages families from seeking timely care. This interpretation aligns with the ecological model of health behavior, which underscores the influence of environmental and infrastructural factors on individual actions. Thus, enhancing transportation infrastructure could serve as a strategic entry point to improve healthcare access for marginalized populations.

The Relationship Income Level and Accessibility of Health Services Among Poor Families on Maginti Island

The data analysis revealed a significant association between income level and accessibility of health services. Among the 37 respondents reporting poor access to health services, 35 had low income levels, whereas only 2 with higher incomes reported similar issues. This suggests that financial capacity remains a critical determinant in the ability to access health services, even when services are theoretically available. Economic theories suggest that income influences healthcare access through affordability of services and associated costs. Empirical studies have demonstrated that

lower-income individuals are more likely to forgo necessary medical care due to cost concerns . However, in countries with universal healthcare systems, income disparities may have a reduced impact on healthcare access, indicating the role of systemic factors in mediating this relationship.

This result supports Grossman's Health Capital Model, which posits that income enhances an individual's capacity to invest in health through medical care, transportation, and preventive behaviors. Similar findings were reported in a study of coastal communities in Southeast Sulawesi, where higher income levels were significantly correlated with increased utilization of health services (20).

Contrastingly, some public health scholars argue that with strong universal health coverage systems, income disparities should not significantly affect service utilization. For instance, a study in several middle-income countries indicated minimal differences in healthcare utilization across income groups due to government subsidies (21). It is assumed that increasing income levels or reducing healthcare costs will improve access to services. This aligns with the theory that financial capacity directly affects healthcare-seeking behavior (22).

Nevertheless, in the context of Maginti Island, the researcher posits that even minimal direct or indirect costs—such as transportation fares, lost income due to time away from work, and medication expenses—may act as significant deterrents for low-income families. This interpretation is consistent with the concept of "opportunity cost" in health economics, which asserts that individuals are likely to forgo healthcare if the associated costs outweigh the perceived benefits (23). Consequently, income-enhancing interventions and targeted subsidies may be necessary to bridge the access gap.

The findings from this study bear significant implications for public health policy, health system strengthening, and community-level interventions, particularly within isolated and economically disadvantaged regions such as Maginti Island. First, the significant association between knowledge and healthcare utilization highlights the importance of integrating community-based health education as a foundational component of primary healthcare delivery. Health literacy, as supported by the Health Belief Model, is not merely a passive trait but an active determinant of behavioral health outcomes (11). This underscores the need for culturally sensitive, context-specific education campaigns that can inform, empower, and enable individuals to recognize the value of health services and engage with them appropriately.

Second, transportation constraints emerged as a tangible structural barrier to healthcare access. The implications are twofold: infrastructural development and health system redesign must jointly address logistical inequities. From a policy standpoint, this finding advocates for improved rural transport networks, mobile clinics, or community ambulance systems that can reduce geographic isolation. Health services should be adapted to the realities of rural geographies rather than expecting rural populations to conform to urban-centric service models.

Third, the association between income level and service utilization reinforces existing global evidence on the social determinants of health. Economic hardship constrains healthcare-seeking behavior through both direct (e.g., cost of services, medications, transportation) and indirect

(e.g., lost wages, opportunity costs) mechanisms. This underscores the need to strengthen financial protection mechanisms for the poor. The provision of subsidies, insurance expansion, and zero-cost essential services become imperative in mitigating economic barriers and ensuring equity in access (24).

Collectively, these findings contribute to a deeper understanding of access dynamics in rural Indonesian settings and provide a framework for designing contextually grounded, equity-oriented interventions.

CONCLUTION

This study reaffirms that access to healthcare is not determined solely by the physical presence of health facilities but is deeply shaped by the social, economic, and infrastructural context in which individuals reside. On Maginti Island, the interrelated barriers of low health literacy, inadequate transportation, and constrained income collectively impede health service utilization among low-income families.

The findings align with broader literature on the social determinants of health and underscore the urgency of targeted, context-responsive interventions. Knowledge gaps must be addressed through community-tailored education; transportation barriers require systemic infrastructural solutions; and financial constraints necessitate strengthened social protection mechanisms.

The study's contribution lies in its integrated perspective—linking individual knowledge, structural access, and economic capacity within a singular framework of health behavior. While the findings are specific to Maginti Island, they resonate with the challenges faced in many rural, underserved settings globally. Future research should explore the longitudinal effects of targeted interventions and examine how community participation can amplify the impact of health system reforms.

Ultimately, achieving universal health coverage and equitable health outcomes in Indonesia and similar contexts requires a paradigm shift—from health services designed around urban ideals to systems that are flexible, inclusive, and grounded in the lived realities of rural populations.

Recommendations for Policy and Practice

Based on the empirical findings and theoretical synthesis, several key recommendations are proposed for policymakers, healthcare providers, and community health practitioners:

1. Enhance Health Literacy Through Community-Based Interventions. Government and health institutions should collaborate to implement targeted health education programs. These should employ community health workers and local champions to disseminate information about disease prevention, service availability, and health rights in local dialects. Integration with schools, religious institutions, and local leadership structures will enhance reach and cultural acceptability.
2. Develop and Support Rural Health Infrastructure and Mobile Services. Infrastructure development should prioritize not only the physical construction of roads and transport services but also the strategic positioning of healthcare facilities to minimize travel burdens. Investments in mobile health units or periodic outreach services can significantly expand service delivery in remote locations like Maginti Island.

3. Subsidize Healthcare for Low-Income Populations. Policymakers should consider expanding existing health insurance coverage to include transportation stipends and indirect health costs. Furthermore, direct subsidies for healthcare or conditional cash transfers linked to healthcare utilization could incentivize health-seeking behaviors among low-income households.
4. Monitor and Evaluate Health Access Inequities Continuously. Routine data collection on healthcare utilization patterns disaggregated by income, location, and literacy levels should be institutionalized to identify access gaps in real time. This can guide adaptive programmatic responses and ensure that no subpopulation is left behind.
5. Foster Intersectoral Collaboration for Holistic Solutions. Health system improvements should not operate in isolation. Collaboration with departments of transport, education, social welfare, and local governance will ensure a multidimensional approach to addressing health access determinants.

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