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Factors Associated with the Utilization of Health Services in the Working Area of the Community Health Center

Inayyah Nur Fitry Sirajuddin [1], Nurul Fajriah Istiqamah [2,*]

[1] Department of Public Health, Faculty of Public Health, Universitas Sumatera Utara, Indonesia
[2] Department of Health Administration, Faculty of Sport and Health Sciences, Universitas Negeri Makassar, Indonesia
*Email (corresponding author): nurul.fajriah.istiqamah@unm.ac.id

Abstract. *Primary health care utilization at Bantimurung Community Health Center in Maros District is influenced by individual factors such as sex, marital status, health insurance ownership, and accessibility. This quantitative cross-sectional study involved 395 respondents from a population of 31,949 residents, selected via cluster random sampling and Slovin's formula. Univariate analysis revealed an 86.1% service utilization rate, with 89.4% insurance coverage and 80% accessibility. Bivariate Chi-square tests showed a significant association between health insurance ownership and utilization (p=0.001), while sex (p=0.189), marital status (p=0.160), and accessibility (p=0.069) were not significant. These findings highlight the dominant role of financial enabling factors in supporting Universal Health Coverage through Indonesia's JKN program.*

Keywords: *Primary Health Care; Service Utilization; Health Insurance; Community Health Center; JKN*

1. Introduction

Primary health care utilization constitutes a fundamental pillar of the health system to enhance community access to promotive, preventive, and curative services. The utilization of primary health care services involves community access to basic facilities such as community health centers (puskesmas) for early prevention and treatment (Marmot & Wilkinson, 2006). Conceptually, individual factors such as sex, marital status, accessibility, and health insurance coverage influence the level of service use. Models such as Andersen's Behavioral Model explain that predisposing, enabling, and need factors determine health service utilization. Previous studies, such as Abo et al. (2025), have identified health insurance ownership and service accessibility as key determinants of puskesmas utilization (Lederle et al., 2021).

Globally, low utilization of primary care services remains a major challenge in achieving Universal Health Coverage (UHC) according to the WHO, with millions of people facing access gaps due to cost and distance barriers. The WHO emphasizes strengthening primary health care systems to reduce the burden of non-communicable diseases and to enhance health system resilience. For the period 2023–2027, the WHO and its partners support the expansion of essential service coverage, particularly in low- and middle-income countries, where only about 50–70% of the population routinely uses primary care services (Wulandari et al., 2025).

In Indonesia, the transformation of primary care through the Integrated Primary Care (Integrasi Layanan Primer/ILP) initiative aims to strengthen screening and prevention, although challenges such as service fragmentation and a predominantly curative orientation remain substantial. Data from the Ministry of Health in 2025 indicate that puskesmas

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utilization is approximately 70–80%, influenced by the National Health Insurance (Jaminan Kesehatan Nasional/JKN), which covers around 90% of the population, while accessibility in rural areas remains limited. JKN ownership plays a major role in service use, consistent with local findings showing that insured individuals account for 88.1% of primary care utilization (OECD, 2020).

According to data from the Ministry of Health of the Republic of Indonesia (2020), the number of patients utilizing health services within the working areas of community health centers (puskesmas) reaches a substantial figure each year. Based on the 2020 report of the Ministry of Health, the average number of patient visits to puskesmas each month amounts to millions of encounters nationwide. This volume of visits reflects the critical role of puskesmas in providing health services to the population (Agustina et al., 2023).

Although the utilization rate of health services at community health centers (puskesmas) is relatively high, a number of factors continue to influence the level of service use. These factors include geographical accessibility, government policies related to user fees, community awareness of the importance of routine health check-ups, and the availability of adequate health personnel (Abo et al., 2025). A thorough understanding of these determinants is essential for formulating effective strategies to enhance the utilization of health services at puskesmas.

In South Sulawesi, particularly Maros District, the Integrated Primary Care (ILP) initiative was launched in 2025 to integrate services from posyandu to puskesmas, thereby strengthening early detection through community health volunteers and electronic medical records. The utilization of primary care services remains constrained by geographical barriers in rural areas, although the JKN program supports approximately 89% insurance coverage, as observed in Bantimurung. At the regional level, health programs prioritize the prevention of key priority diseases through digital platforms.

Bantimurung Community Health Center (Puskesmas Bantimurung) is one of several facilities providing health services to residents in its catchment area. According to the latest data released by the Maros District Health Office in 2023, the number of visitors utilizing health services in the working area of Puskesmas Bantimurung has increased substantially over the past two years. In 2022, the center served 11,367 visitors, while in 2023 the number of visitors rose to 21,877.

2. Methods

This study employed a quantitative method with a cross-sectional design, aiming to identify the factors associated with the utilization of health services at Bantimurung Community Health Center (Puskesmas Bantimurung). The research was conducted in the working area of Puskesmas Bantimurung in 2025.

The population is a generalization region consisting of objects or subjects that possess certain qualities and characteristics determined by the researcher to be studied and from which conclusions are drawn (Parasuraman et al., 1988). In this study, the population comprised all male and female residents living in the working area of Puskesmas Bantimurung, totaling 31,949 individuals. In health research, sample criteria typically include inclusion and exclusion criteria, which are used to determine whether a subject can be selected as a sample and to delimit the scope of the variables under investigation.

2.1. Inclusion Criteria

a. Respondents residing within the working area of Bantimurung Community Health Center, Maros District.
b. Respondents who are willing to provide information.

2.2. Exclusion Criteria

a. Respondents who do not reside within the working area of Bantimurung Community Health Center, Maros District.
b. Respondents who are not willing to provide information.

The sampling technique used in this study was cluster random sampling. Cluster random sampling is a sampling method applied when the study population or data source is very large or widely dispersed; in such cases, the population is heterogeneous and consists of groups, so samples are selected based on predefined geographical areas of the population (Parasuraman et al., 1988). After the study area was determined, a total population of 31,949 individuals was obtained.

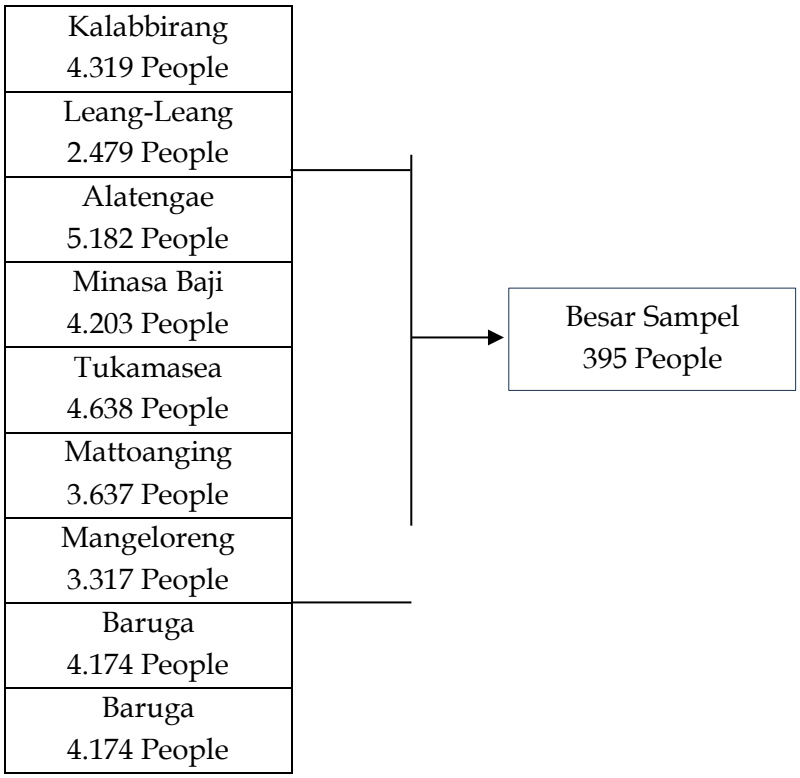

Figure 1. Distribution of the Population Using the Cluster Random Sampling Technique

To determine the required sample size, the researchers used Slovin's formula. Based on this calculation, the minimum sample size was 395 respondents. The number of respondents drawn from each cluster was then determined proportionally to the size of the population in each cluster .

$$n = fi.\ Sn$$

Description:

π = Sample Size

$$fi = \frac{\text{Number of population per cluster}}{\text{Total population of all selected clusters}}$$

Sn = Total sample from all selected clusters

Based on the above formula, the sample size for each cluster is as follows:

Table 1. Sample Allocation by Cluster

No.	Clusters	Total Population (Persons)	Sample Size (Persons)
1.	Kalabbirang	4.319	53
2.	Leang-leang	2.479	31
3.	Alatengae	5.182	64
4.	Minasa Baji	4.203	52
5.	Tukamasea	4.638	57
6.	Mattoanging	3.637	45
7.	Mangeloreng	3.317	41
8.	Baruga	4.174	52
	Total	13.675	395

The data analysis techniques used in this study were univariate and bivariate analyses. Univariate analysis was applied to describe each study variable, including the independent variables (sex, marital status, insurance ownership, and accessibility) and the dependent variable (utilization of health services).

3. Results and Discussion

3.1. Univariate Analysis

3.1.1. Sex

Table 2. Distribution of Respondents by Sex

Sex	frequency	Percent (%)
Male	176	44,6
Female	219	55,4
Total	**395**	**100**

Source : Primary Data, 2026

Based on Table 2, it can be seen that there were 219 female respondents (44.6%) and 176 male respondents (44.6%).

3.1.2. Marital Status

Table 3. Distribution of Respondents by Marital Status

Marital Status	Frequency	Percent (%)
Married	232	58,7
Single	145	36,7
Widowed/Divorced	18	4,6
Total	**395**	**100**

Source : Primary Data, 2026

Based on Table 3, it can be seen that 232 respondents (58.7%) were married, 145 (36.7%) were single, and 18 respondents (4.6%) were widowed or divorced.

3.1.3. Accessibility

The distribution of respondents based on their accessibility to Bantimurung Primary Health Center can be seen in Table 4 below:

Table 4. Distribution of Respondents by Accessibility

Role of Health Workers	Frequency	Percent (%)
Accessible	316	80,0
Not Accessible	79	20,0
Total	**395**	**100**

Source : Primary Data, 2026

Based on Table 4, there were 77 respondents (20.0%) who stated that access to health services was not accessible, while 318 respondents (80.0%) stated that access to health services was accessible.

3.1.4. Insurance Ownership

The distribution of respondents based on health insurance ownership can be seen in Table 5 below:

Table 5. Distribution of Respondents by Health Insurance Ownership

Insurance Ownership	Frequency	Percent (%)
Not Insured	42	10,6
Insured	353	89,4
Total	**395**	**100**

Source : Primary Data, 2026

Based on Table 5, there were 42 respondents (10.6%) who reported not having health insurance, while 353 respondents (89.4%) reported having health insurance.

3.1.5. Utilization Of Health Services

Table 6. Distribution of Respondents by Utilization of Health Services

Health Insurance Ownership	Frequency	Percent (%)
Not Utilizing	55	13,9
Utilizing	340	86,1
Total	**395**	**100**

Source : Primary Data, 2026

Based on Table 6, it is known that 55 respondents (13.9%) did not utilize health services, while 340 respondents (86.1%) utilized health services.

3.2. Univariate Bivariate

To determine whether the relationship between the independent and dependent variables is statistically significant, a Chi-square test was performed as follows:

Table 7. Association Between Individual Characteristics and Utilization of Health Services

Variabels	Utilizing				p-value =0,05
	Yes		No		
	(n)	(%)	(n)	(%)	
Sex	147	83,5	29	16,5	
Male	193	88,1	26	11,9	0,189
Female					
Marital Status					
Single	119	82,1	26	17,9	
Married	204	87,9	28	12,1	0,160
Widowed/Divorced	17	94,4	1	5,6	

Source : Primary Data, 2026

The analysis of the association between sex and utilization of health services showed that 147 respondents (83.5%) in the male group utilized health services. In the female group, 193 respondents (88.1%) reported utilizing health services. The statistical test yielded a p-value of 0.189, indicating that the null hypothesis failed to be rejected; therefore, there is no statistically significant difference in the proportion of health service utilization between male and female respondents.

The analysis of the association between marital status and utilization of health services showed that 119 respondents (82.1%) in the unmarried group utilized health services, 204 respondents (87.9%) in the married group utilized health services, and 17 respondents (94.4%) in the widowed/divorced group utilized health services. The statistical test yielded a p-value of 0.160, indicating that the null hypothesis failed to be rejected; thus, there is no

statistically significant difference in the proportion of health service utilization among unmarried, married, and widowed/divorced respondents.

Table 7. Association Between Enabling Characteristics and Utilization of Health Services

Variabels	Utilizing				p-value =0,05
	Yes		No		
	(n)	(%)	(n)	(%)	
Accessibility					
Accessible	63	78,7	16	20,3	0,069
Not Accessible	277	87,7	39	12,3	
Insurance Ownership					
Insured	311	88,1	42	11,9	0,001
Not Insured	29	69,0	13	31,0	

Source : Primary Data, 2026

The analysis of the association between accessibility and utilization of health services showed that 63 respondents (79.7%) who perceived accessibility as affordable utilized health services at the community health center, whereas 277 respondents (87.7%) who perceived accessibility as unaffordable also utilized health services. The statistical test yielded a p-value of 0.069, indicating that the null hypothesis failed to be rejected; in other words, there is no statistically significant difference in the proportion of health service utilization between respondents who perceived accessibility as affordable and those who perceived it as unaffordable at Bantimurung Community Health Center.

The analysis of the association between health insurance ownership and utilization of health services showed that 311 respondents (88.1%) who had health insurance utilized health services, whereas 29 respondents (69.0%) who reported not having health insurance also utilized health services at the community health center. The statistical test yielded a p-value of 0.001, leading to rejection of the null hypothesis, which indicates a statistically significant difference in the proportion of health service utilization between respondents with health insurance and those without health insurance.

3.3 Discussion

The findings of this study indicate that sex is not significantly associated with the utilization of health services in the study area. Theoretically, Andersen's Behavioral Model positions demographic characteristics such as sex as predisposing factors that may influence health-seeking behavior, but they do not necessarily determine utilization behavior directly because they interact with more dominant enabling and need factors (Purba et al., 2022). Recent research in China has shown that the effect of sex on health service use can be shaped by income structure, employment status, and prior service experiences (e.g., experiences of non-utilization), such that the role of sex is not always significant, particularly when economic barriers are stronger than gender-related differences (Jia et al., 2025). Similarly, empirical studies among migrant populations in China report that although sex is included in the model, its effect becomes attenuated in the presence of enabling variables such as family support and health insurance coverage (Song et al., 2025). Consistently, studies in Indonesia

have demonstrated that gender differences in service utilization tend to be nonsignificant when the national insurance scheme (JKN) and access policies are relatively equitable (Cheng et al., 2025). These variations may be driven by cultural context and health system structures that differ across countries, implying that gender does not necessarily influence utilization in all settings (Cheng et al., 2025).

With respect to marital status, this study also found no significant association with health service utilization. In theory, married individuals may have stronger social support to seek care and make health-related decisions at the household level, which could potentially increase utilization. However, recent empirical findings are not always consistent. In a study conducted in China using Andersen's structural model, marital status was not a strong predictor once enabling factors and other health behaviors were incorporated into the model, causing its effect to weaken or lose statistical significance (Jia et al., 2025). In addition, several studies in the Indonesian context under the JKN system suggest that access and financial protection are more decisive than social structures such as marital status in driving primary care utilization (Cheng et al., 2025). This further reinforces that in settings with broad health insurance coverage and free primary care services, the role of marital status in service utilization becomes less dominant compared with other enabling factors such as insurance ownership.

Regarding accessibility, the descriptive results of this study show that most respondents perceived access to services as adequate; however, its statistical association with utilization was not significant. Conceptually, accessibility is classified as an enabling variable and is frequently linked to health service utilization in the literature, but empirical results vary depending on the distribution of facilities and the geographic characteristics of the study area. For instance, a model of health care access determinants in Tanzania found that distance, ability to pay for transportation, and health insurance coverage strongly influenced service access, especially in rural areas, although the magnitude of these effects differed across population settings (Cheng et al., 2025). Recent evidence from low- and middle-income countries also suggests that although insurance coverage tends to increase utilization, geographical barriers remain an important moderating factor that can attenuate the impact of financial protection (Rahman et al., 2024). Therefore, the nonsignificant role of accessibility in this study is likely influenced by the relatively even distribution of health facilities in Bantimurung (Rahman et al., 2024). With the expansion of the JKN program and facility networks in Indonesia, physical access barriers to primary care have become less pronounced in many regions, which may explain why accessibility did not show a significant association in this analysis.

In contrast to the previous variables, health insurance ownership was found to have a significant association with health service utilization, which is consistent with many recent studies, including those conducted in Indonesia. A multinational study using ENHANCE data showed that insurance status, as an enabling factor in Andersen's model, is strongly correlated with overall health service utilization in Indonesia, although inequities persist in the use of higher-level services (Cheng et al., 2025). Similar research has demonstrated that health insurance generally increases visit rates and protects respondents from cost-related barriers, which are often a major cause of non-utilization of primary or preventive health services (Park, 2025). This aligns with more recent findings indicating that in systems with broad insurance coverage, variations in utilization are more strongly determined by clinical need factors than by sociodemographic characteristics (Endalamaw et al., 2025). Global

literature also confirms that health insurance can increase antenatal care visits and stimulate the utilization of facility-based services, although the magnitude of the effect varies by geographical context and national policy implementation (Wulandari et al., 2025).

The significant role of insurance ownership observed in this study reinforces the concept of financial protection as a core component of Universal Health Coverage as advocated by the World Health Organization. Health insurance functions not only as a financing mechanism but also as a means of enhancing perceived financial security when accessing care. Recent longitudinal studies have shown that individuals with insurance are approximately 1.8–2.4 times more likely to visit primary care services compared with those without coverage (Ravaghi et al., 2023).

Taken together, the findings of this study underscore that in the era of universal health coverage and the JKN program, enabling factors—particularly health insurance ownership—are strong predictors of health service utilization, whereas predisposing factors such as sex and marital status tend to be nonsignificant once financial barriers have been substantially reduced.

Conclusions

The utilization of health services in the working area of Bantimurung Community Health Center is relatively high (86.1%). The health insurance ownership variable was found to be significantly associated with health service utilization, whereas sex, marital status, and accessibility did not show statistically significant relationships.

These findings indicate that, in the context of JKN implementation and the expansion of primary care services, enabling factors—particularly financial protection—play a primary role in driving the utilization of health services.

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Conflicts of Interest

The authors declare that there is no conflict of interest.

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