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Research Article

FACTORS INFLUENCING THE UTILIZATION OF HEALTH SERVICES BY NATIONAL HEALTH INSURANCE PARTICIPANTS AT THE BATANG KUIS COMMUNITY HEALTH CENTER

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Abstract
Universal Health Coverage in Deli Serdang Regency has reached 98.6%. However, JKN participant activity and primary health care utilization in several areas remain below the national target. At UPT Puskesmas Batang Kuis, JKN utilization by participants has reached only 67.2% of total users. This study modifies Andersen's theoretical model by incorporating contemporary digitalization indicators (use of the Mobile JKN application and digital queue system) within the knowledge assessment instrument. It aims to analyze factors associated with health service utilization among JKN participants. This quantitative study used a cross-sectional design with 96 respondents selected through simple random sampling. Data were collected using a structured questionnaire tested for validity and reliability, then analyzed using the chi-square test and binary logistic regression. Univariate analysis showed that 51.0% of respondents utilized health services. Individual assessment of the health center was the dominant factor (Exp(B)=13.741). Positive attitudes, family support, and good perceptions of facility quality were the main determinants, while knowledge alone was insufficient. Health centers should improve physical service quality, staff responsiveness, and medicine availability.

Keywords: Andersen's Theory, Health Centers, JKN, Utilization of Health Services

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INTRODUCTION

According to WHO, Universal Health Insurance (Health Law) is a health guarantee so that everyone has access to various promotive, preventive, curative, and rehabilitative health services needed with good quality without financial hardship Rizqi et al., (2022) Health is one of the basic rights of every citizen guaranteed in the 1945 Constitution of the Republic of Indonesia. To realize the highest level of public health, the Indonesian government organizes the National Health Insurance Program (JKN) managed by BPJS Kesehatan as part of efforts to achieve Universal Health Insurance (Health Law). The Health Law aims to ensure that all residents have access to quality health services without experiencing financial hardship (Bappenas, 2020). According to the WHO Report, the coverage of essential health services globally continues to increase, but there are still gaps in the utilization of health services, especially in developing countries that face social, economic, and geographic barriers in access to health services (Septiana et al., 2024) .

Indonesia has shown significant progress in achieving Universal Health Coverage (UHC) through the implementation of the National Health Insurance (JKN) program. By 2025, JKN participation coverage had reached more than 98% of the total population in Indonesia. However, this high participation coverage has not been fully matched by high utilization of health services, including community health centers. This condition indicates that health insurance ownership alone is not enough to encourage people to utilize health services optimally (Juniasti et al., 2025) . The gap between participation coverage and utilization of health services is a serious problem that requires attention. Nationally, the number of BPJS Kesehatan users in primary health facilities (FKTP) community health centers only reached 42.9% in December 2025, far from the target of almost 98% coverage as targeted by the RPJMN (National Medium-Term Development Plan) (Aktif et al., 2025) . This phenomenon indicates that participation in the JKN program does not guarantee active utilization of health services. A similar situation was found in Deli Serdang Regency, where, despite achieving UHC status with 98.6% BPJS coverage, the active participation rate of JKN participants remains below 80% (Kesehatan, 2025) . This situation indicates that factors other than participation influence participants' decisions to utilize health services.

The problem of low utilization of health services was also clearly found at the Batang Kuis Community Health Center (UPT Puskesmas), Batang Kuis District, Deli Serdang Regency. Based on data from the Central Statistics Agency (BPS) of Deli Serdang Regency in 2025, the population of Batang Kuis District was recorded at 74,429 people. Of this number, JKN participants registered in the UPT Puskesmas Batang Kuis work area reached 46,900 people or approximately 67.2% of the total population, however, the number of patient visits throughout 2025 only reached 29,077 visits. This means that more than half of JKN participants in the area did not actively utilize health services at the health center. This condition is in stark contrast to the UHC target and indicates the need for an in-depth study of the factors influencing the utilization of health services by JKN participants at the health center. Health care utilization is the result of a complex process influenced by various individual and social factors. Andersen's Behavioral Model of Health Service Utilization has become the most widely used theoretical framework to explain health care utilization behavior. This theory identifies three main categories of utilization determinants: predisposing factors, which include demographic characteristics, social structure, knowledge, and attitudes; enabling factors, which include family resources such as social support and income; and need factors, which relate to an individual's assessment of their health condition and the quality of care (Americans & Indians, 2005).

Various previous studies have identified several factors associated with the utilization of health services by JKN participants at community health centers. Research (Yoharani et al., 2022) in Jambi City found that income, distance to health facilities, and family support were significantly associated with utilization of JKN services in the PBI group. A study Salsabila et al., (2024) at the Cikarang Community Health Center showed that perceived service quality and patient satisfaction were strong predictors of JKN service utilization. A literature review Nasution et al., (2023) confirmed that knowledge about JKN, attitudes toward health facilities, and service availability were the dominant factors influencing service utilization. Research (Putri & Asyari, 2026) at the Air Tawar Padang Community Health Center demonstrated a significant relationship between attitude and utilization of JKN services (p=0.001), in line with the findings (Fatimah & Indrawati, 2019a) which showed no relationship between knowledge and utilization. These varied results indicate that the determinants of health service utilization are contextual and location-specific, necessitating research in a variety of settings. Based on the description above, this study aims to analyze factors related to health service utilization among National Health Insurance

participants at the Batang Kuis Community Health Center (UPT). The factors examined include knowledge, attitudes, family support, and assessments of community health centers.

RESEARCH METHOD

Research Design

This quantitative study used a cross-sectional design, where data collection for the independent and dependent variables was conducted simultaneously (Utami et al., 2025) . The research period ran from January to June at the Batang Kuis Community Health Center (UPT).

Research Target/Subject

The population in this study was all JKN participants at the Batang Kuis Community Health Center (UPT Puskesmas Batang Kuis), totaling 46,900 people. The sample used in this study was 96 people. The sample size was determined using the Lameshow formula. The sampling technique used was simple random sampling, a sampling technique that uses a sample selection method in which each individual in the population has an equal chance of being selected (Ismah et al., 2024) .

Research Procedures

The research procedure began with obtaining agency permission, followed by secondary data collection in the form of reports or data from community health centers that had been collected and entered into the system. This was followed by primary data collection through direct interviews with respondents using a questionnaire.

Data Collection Instruments and Techniques

The primary instrument used for data collection in this study was a written questionnaire developed based on research variable indicators, specifically Andersen's theory. Primary data sources were obtained directly from respondents' answers during the questionnaire. Meanwhile, secondary data sources were obtained from official administrative data from the Batang Kuis Community Health Center (UPT), such as National Health Insurance participant data and the number of patient visits. Demographic data were obtained from the regional Central Statistics Agency (BPS). All data types are presented in numerical form (quantitative data).

Data Analysis Techniques

Quantitative data analysis was performed using the IBM SPSS Statistics software application. Univariate analysis was used to describe the frequency distribution and percentage of each variable, both dependent and independent. Bivariate analysis was then applied to statistically test the relationship between each independent variable and the dependent variable using the chi-square statistical test with a 95% confidence level and a significance level of p-value <0.05. Finally, multivariate analysis was conducted to determine which independent variable was most dominantly related to the dependent variable and to observe the simultaneous combined effect of both. The statistical analysis technique used in this final stage was the logistic linear regression test.

RESULTS AND DISCUSSION

Before further analyzing the relationships between variables, it is important to first understand the profile of the research subjects. Therefore, the overall characteristics of the respondents can be seen as follows:

Table 1. Respondent Characteristics

No.	Age	Frequency	Percentage
1	< 35 Years	55	57.3
2	> 35 Years	41	42.7
		96	100.00
	Gender		
1	Man	39	40.6

2	Woman	57	59.4
		96	100.00
	last education		
1	Did Not Finish Elementary School	6	6.3
2	Finishing Elementary School	12	12.5
3	Completed Junior High School	11	11.5
4	Completed High School	48	50.0
5	Finishing College	19	19.8
		96	100.00
	Work		
1	Work	48	50.0
2	Doesn't work	48	50.0
Total		96	100.00

Based on the data in table 1. The characteristics of respondents at the Batang Kuis Community Health Center UPT show a dominance of young to early adult productive age (<35 years) as much as 57.3% and female gender as much as 59.4%. This demographic finding is very linear with the Andersen Behavioral Model of Health Services Use Theory framework which places age and gender as structural components of predisposing factors in predicting treatment-seeking behavior (Alkhawaldeh et al., 2023)**.** Women of productive age statistically globally have a much higher frequency of interaction with first-level health facilities due to essential needs such as pregnancy checks, contraception, child immunization, as well as their sociocultural role as the main decision makers for family health (Peruzzo et al., 2025) In addition, the data in Table 1. Indicates that the majority of respondents' education level is high school graduates/equivalent (50.0%), with a proportionally balanced distribution of employment between those actively working (50%) and those not working (50%). This economic structure strongly correlates empirically with the profile in Table 2, which shows that the majority of respondents (60.4%) are registered as beneficiary participants (PBI), whose premiums are fully covered by the state budget (APBN/APBD). This subsidized health insurance membership is a formal enabling factor that reduces financial barriers, provides a sense of security for the lower-middle class, and ensures equal access to treatment modalities (Arimbi, 2022). The following is a tabulation table of respondent data based on type of participation:

Table 2. Respondent Data Tabulation Based on Participation Type

No.	Type of Participation	Frequency	Percentage
1	PBI	58	60.4
2	Non PBI	38	39.6
Total		96	100.00

Table 2. shows that the majority of respondents (60.4%) are registered as beneficiary participants (PBI) whose premiums are fully covered by the APBN/APBD. This subsidized health insurance membership is a formal enabling factor that cuts financial barriers, provides a sense of security for the lower middle class, and ensures equal access to healing modalities (Rumengan et al., 2015). These results are strongly correlated empirically with the economic structure in table 1. indicating that the majority of respondents' education level is high school graduates/equivalent (50.0%), with a proportionally balanced distribution of employment between those actively working (50%) and those not working (50%).

Univariate Analysis

The following is a tabulation of respondent data based on knowledge, attitudes, family support, and assessment of community health centers.

Table 3. Respondent Data Tabulation

No.	Knowledge	Frequency	Percentage
1	Good	68	70.8
2	Not good	28	29.2
		96	100.00
	Attitude		
1	Good	62	64.6
2	Not good	34	35.4
		96	100.00
	Family Support		
1	Good	65	67.7
2	Not good	31	32.3
		96	100.00
	Individual Assessment	62	64.6
1	Good	34	35.4
2	Not good	96	100.00
	Utilization		
1	Utilise	49	51.0
2	Not Taking Advantage	47	49.0
Total		96	100.00

Based on the summary of Table 3, it is noted that of the total 96 respondents, 51.0% (49 people) categorized themselves as actively utilizing health services at the Batang Kuis Community Health Center (UPT Puskesmas Batang Kuis). Meanwhile, the remaining 49.0% had not utilized their health insurance adequately. This utilization rate, which is stuck at around half of the total sample, confirms the existence of a wide implementation gap between the government's macro policies—where Deli Serdang Regency has achieved Universal Health Coverage of 98.6%—and the realization of the utilization of facilities at the grassroots level (Sinthya Wulandari, 2025).

The dynamics of fluctuations in the number of visits are influenced by the distribution of internal indicators of respondents in Table 3, which shows a varied portrait of knowledge categorized as good (70.8%), good attitudes (64.6%), good family support (67.7%), and a good individual assessment of the quality of the health center at 64.6%. Although the percentage of the good value group dominates, the existence of a minority fraction ranging from 29% to 35% of respondents with poor status in each independent variable is a restraint on the rate of increase in utilization of vulnerable groups with negative perceptions and support, which requires measured management intervention (Putri & Asyari, 2026).

Bivariate Analysis

The bivariate analysis below explains the relationship between the level of knowledge and the use of health services among national health insurance participants at the UPT Batang Kuis Community Health Center.

Table 4. The Relationship Between Knowledge Level and Use of Health Services

No.	Level of Knowledge	Category	Score	P value

1	Good	Utilise	33(48.5)	
		Not taking advantage of	35(51.5)	0.587
2	Not good	Utilise	16(57.1)	
		Not taking advantage of	12(42.9)	

Referring to the research findings above, the results of the chi-square statistical test showed a p-value of 0.587, meaning >0.05. Therefore, these results indicate no significant influence between the level of knowledge on the utilization of health services. This study agrees with the research of Fatimah and Indrawati, which stated that there is no correlation between the level of knowledge and the utilization of health services (Fatimah & Indrawati, 2019). Good knowledge does not determine whether someone will utilize health services at the Community Health Center as a participant in the National Health Insurance. This shows that knowledge alone is not enough to improve health services. Therefore, a comprehensive strategy is needed to change public perceptions so that they utilize health services at primary health facilities by improving the quality of health services and providing easy-to-understand information. The utilization of health services is likely influenced by other factors, such as attitudes towards services, family support, previous experiences, and assessments of the quality of health services at the Community Health Center (Jauhar, 2025).

This finding also scientifically proves that an individual's cognitive information mastery regarding regulatory aspects, JKN rights and obligations, and the insurance bureaucratic flow is not the main driver of health behavior (Fatimah & Indrawati, 2019). Someone who fully understands how tiered referrals work or the function of the Mobile JKN application is not necessarily willing to queue at the Community Health Center if they consider their physical complaints to be mild, have a preference for self-medication, or trust traditional medicine more. Knowledge is passive and requires other psychological triggers to turn into real action in the clinic (Arruan & Amiruddin, 2025).

Table 5. The Relationship Between Attitudes and Use of Health Services

No.	Attitude	Category	Score	P value
1	Good	Utilise	42 (43.8)	
		Not taking advantage of	20 (20.8)	0.001
2	Not good	Utilise	7 (7.3)	
		Not taking advantage of	27 (28.1)	

Referring to the research findings above, statistical analysis using the chi-square test between attitudes and the use of health services by National Health Insurance participants, obtained an ap value of 0.001, meaning <0.05. Thus, it can be concluded that there is a significant influence between attitudes and the use of health services among National Health Insurance participants at the Batang Kuis Community Health Center UPT.

Attitude is classified as a predisposing factor; someone who has a positive view of the effectiveness and usefulness of health facilities will have a stronger internal drive to utilize these services. The research findings indicate an influence of attitude on the utilization of health services. This research is in line with research by Singal et al., (2018) and Putri & Asyari, (2026) which found a relationship between attitude and utilization of community health centers. Respondents with positive attitudes tend to utilize health services more frequently than respondents with negative attitudes. Positive attitudes reflect positive acceptance of community health center services, trust in national health insurance procedures, and the belief that health services at community health centers are beneficial for national health insurance participants. Conversely, negative attitudes make respondents reluctant to utilize health services, even though they are registered as national health insurance participants.

Table 6. The Relationship Between Family Support and Use of Health Services

No.	Attitude	Category	Score	P value
1	Good	Utilise	43 (44.8)	

		Not taking advantage of	22 (22.9)	
2	Not good	Utilise	6 (6.3)	0.001
		Not taking advantage of	25 (26.0)	

Referring to the research findings above, the interpretation using the Chi-Square test between family support and the utilization of health services by National Health Insurance participants obtained a p-value of 0.001, meaning <0.05. Therefore, it can be concluded that Ha is accepted, meaning there is a significant influence between family support and the utilization of health services by National Health Insurance participants at the Batang Kuis Community Health Center (UPT).

Family support in Andersen's model is classified as a supporting factor that facilitates individuals' access to health services. Based on the results of this study, there is an influence of family support on the utilization of health services among National Health Insurance participants. This research is in line with (Lende et al., 2021b) , which states a relationship between family support and the utilization of health services using their health insurance cards. Family support is a significant influence in encouraging National Health Insurance participants to utilize health services. Respondents with good family support are more likely to utilize health services at the Community Health Center (Puskesmas). This support can include family members driving them to the Puskesmas, reminding them to seek treatment immediately when sick, advising them to use National Health Insurance facilities, and providing assurance that going to the Puskesmas is the right decision. Conversely, respondents with poor family support are more likely to not utilize health services. This suggests that a lack of encouragement from family can be a barrier to health service utilization.

Table 7. The Relationship Between Community Health Center Assessment and Health Service Utilization

No.	Individual Assessment	Category	Score	P value
1	Good	Utilise	43 (44.8)	
		Not taking advantage of	22 (22.9)	0.001
2	Not good	Utilise	6 (6.3)	
		Not taking advantage of	25 (26.0)	

Referring to the research findings above, statistical analysis using the Chi Square test between the assessment of the health center and the utilization of health services by JKN participants obtained a value of ap = 0.001 which means <0.05, so it can be concluded that Ha is accepted, meaning there is a significant influence between the assessment of the health center and the utilization of health services by JKN participants at the UPT Batang Kuis Health Center.

Community health center assessments were classified into need factors, which represent aspects of patient satisfaction, and evaluation of health service quality as important indicators. The results of this study demonstrate a significant influence between community health center assessments and utilization of health services by JKN participants. This research aligns with research conducted by Lende et al., 2021a, which examined the influence of individual assessments on health service utilization. The more favorable respondents' assessments of community health center services, the greater their likelihood of utilizing them. Positive assessments can be formed from respondents' experiences regarding waiting room conditions, facility cleanliness, ease of registration procedures, staff responsiveness, medication availability, and ease of consultation with health workers. Conversely, respondents with less favorable community health center assessments tended to utilize health services less. This suggests that perceived service quality is a crucial factor in encouraging or discouraging JKN participants from utilizing community health center services.

Multivariate Analysis

To analyze the simultaneous influence and interaction between independent variables on the dependent variable, the results of the multivariate analysis test used were logistic linear regression which are presented in the following table.

Table 8. Influence and Interaction Between Independent Variables on Dependent Variables

No.	Variables	Score
1	Attitude	7,231
2	Family support	5,707
3	Health Center Assessment	13,741
Constant		0,000

Based on the findings of the logistic linear regression statistical test, the health center assessment variable is the most dominant variable among the attitude and family support variables because the health center assessment has a p-value (0.000) so it can be concluded that the health center assessment has a significant effect on the utilization of health services. The Exp (B) value of 13.741 indicates that respondents with a good health center assessment have a smaller chance of not utilizing health services compared to respondents with a less good assessment.

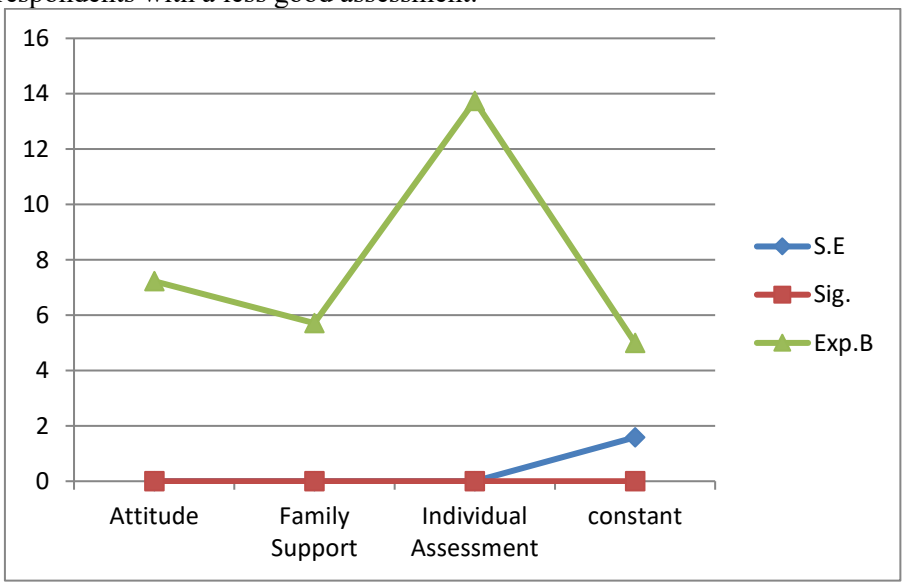


Figure 1. The simultaneous effect and interaction between the independent variables and the dependent variable

Overall, the variables that significantly influenced the multivariate logistic linear regression analysis were attitudes, family support, and community health center assessment, while knowledge did not significantly influence it. The variable with the strongest influence on health service utilization was community health center assessment, as it had a lower significance value and the highest probability value among the other variables after being interpreted against the utilization of health services at the community health center.

The dominance of community health center assessment variables aligns closely with the development of the Andersen Behavioral Model in its latest phases, which integrates components of health system evaluation and patient satisfaction as factors driving service utilization. Positive public assessments are generally shaped by tangible qualities they directly experience, such as the physical comfort of waiting rooms, the friendliness and responsiveness of staff, the availability of medications, and the efficiency of contemporary bureaucratic systems such as the JKN Mobile Application and digital queuing systems (Arruan & Amiruddin, 2025) . When community health centers are able to convey an impression of excellent quality, patients' psychological and geographic barriers can be significantly reduced, thereby increasing the probability of optimal use of their JKN insurance rights (Yoharani et al., 2022).

CONCLUSION

Based on the results of a study on factors influencing the utilization of health services among National Health Insurance participants at the Batang Kuis Community Health Center (UPT), it can be concluded that the majority of respondents (49 respondents) have utilized health services. The analysis shows that the level of knowledge does not significantly influence the utilization of health services. In contrast, attitudes, family support, and assessment of community health centers are proven to have a significant influence on the utilization of health services. The variable with the strongest influence on the utilization of health services is the assessment of the community health center, because it has a lower significance value and the highest probability value among other variables after being interpreted against the utilization of health services at the community health center. These findings indicate that psychological factors, social support from family, and community perceptions of the quality of health center services play a role in encouraging the utilization of health services, while the level of knowledge alone is not sufficient to influence respondents' decisions in using health services.

DECLARATION ON THE USE OF AI AND ASSISTIVE TECHNOLOGY IN THE WRITING PROCESS

The authors used Claude in the preparation of this manuscript to assist with language editing, paraphrasing, grammar correction, and translation. After using this tool, the authors carefully reviewed and revised the content as needed and are responsible for the final content of the publication.

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AUTHOR CONTRIBUTION

Author 1: Author, Reviewer, Data Editor.
Author 2: Supervisor/Consultant
Author 3: Examiner

STATEMENT ON CONFLICT OF INTEREST

The authors assert that they have no known competing financial interests or personal relationships that could be construed as influencing the results reported in this paper.

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