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DETERMINANTS OF NATIONAL HEALTH INSURANCE MEMBERSHIP AMONG INDONESIAN WOMEN WITH LIVE BIRTHS

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ABSTRACT

Background: According to WHO statistics, the maternal mortality rate (MMR) in developed countries is estimated at 12/100,000 live births, while in Low and Middle-income countries (LMICs) is 239/100,000 live births. Whilst 99% of all maternal deaths were estimated to occur in LMICs, even though the causes of death can be prevented with the right policies considering that one of the goals of the Sustainable Development Goals is to reduce MMR. Access to the maternal health care (MHC) is the main technique to reduce maternal morbidity and mortality. The study evaluated the factors that influence Indonesia's national health insurance ownership, Jaminan Kesehatan Nasional (JKN), among women who utilize MHC in Indonesia.

Methods: We used data from the 2017 Indonesia Demographic and Health Survey (IDHS) on women with live births (n=5429) in 2016-2017. We conducted analyses at the national level using descriptive statistics and logistic regression through RStudio software

Results: Out of 5717 samples, 61.4% were insured by JKN and 38.6% were uninsured. Women in white-collar employment were 2.37 times (95%s CI = 1.77-2.59) more likely to be insured by JKN, and those living in urban areas had a 1.39 (95% CI = 1.18-1.44) higher chance of being enrolled in JKN.

Conclusion: The study concluded that employment status and place of residence were significant determinants of health insurance ownership in Indonesia.

Keyword: Health Insurance membership, maternal healthcare

Introduction

Despite declines in maternal, newborn, and child mortality since implementation of the Millennium Development Goals in 1990, these burdens remain disproportionately high among disadvantaged groups in low- and middle-income countries (LMICs). Achieving equitable access to high quality

essential maternal health service has been identified as an important instrument for countries to reduce maternal and neonatal mortality and attain Sustainable Development Goals (SDGs) 3.1 and 3.2. Indonesia, a lower-middle income country, has one of the highest maternal mortality ratios (MMRs) in the South-East Asia Region at 305 maternal deaths per 100000 live births, with a substantially higher MMR of 489 in Eastern Indonesia. Aside from the direct loss of life, a maternal death can result in profound negative health consequences for neonates and other children in the household, can lead to household economic deprivation, and productivity losses to society. Indonesia, as of 2021, has made progress towards achieving the Sustainable Development Goal (SDG) target related to maternal health, but more work is needed to ensure that all women in the country have access to high-quality maternal health care. The MMR in Indonesia was 102 deaths per 100,000 live births in 2019, down from 162 deaths per 100,000 live births in 2015, according to the latest data from the Indonesian Ministry of Health. Although this represents a significant decline, the MMR in Indonesia is still high compared to other countries in the region, and there are significant disparities in maternal health outcomes between different regions and socioeconomic groups [1], [2]

Indonesia is a rapidly growing middle-income country with a population of 262 million people, comprising more than 300 ethnic groups and speaking over 730 languages, spread across 17,744 islands. This presents unique challenges for achieving universal health coverage (UHC) and a robust health system. Achieving equitable access to high quality essential maternal health services has been identified as an important instrument for countries to reduce maternal and neonatal mortality and attain SDGs 3.1 and 3.2, which relate to good health and well-being. Inequality in access to health care can contribute to disparities in maternal health outcomes, which is why efforts to improve health care access and reduce inequality are crucial for achieving SDG targets in maternal health [3][2][4].

Indonesia has made substantial progress in expanding access to health services and financial protection for its people. The country under Badan Penyelenggara Jaminan Sosial - BPJS (Social Security Administration Body), which is the government agency responsible for managing several social security programs, including Jaminan Kesehatan Nasional (JKN) or National Health Insurance launched its national health insurance system JKN, in 2014, with the goal of achieving UHC by providing comprehensive coverage for all Indonesians [4][5].

The development of Indonesia's national health insurance system required careful consideration of the diverse health and social conditions across the country. The aim was to create a system that could adapt to the highly variable and heterogeneous conditions and enable healthcare access and impact beyond what was achievable under previous one-size-fits-all systems. This innovative approach recognized the need for a resilient UHC, even in the face of rapidly changing health and development conditions and unexpected events such as natural disasters and economic crises[1], [3].

A high burden of maternal death is often linked to inequality in access to maternal health services. Women from disadvantaged groups, including the poor and those living in rural and remote areas, often face increased financial barriers and limited access to high quality health services, resulting in lower coverage of essential maternal health care services. Numerous studies have demonstrated the positive correlation between insurance ownership and increased access to Antenatal Care (ANC) services [7], [8]. Research conducted in Ghana, Indonesia, and Rwanda revealed that health insurance increases ANC access by 8%, 3%, and 11%, respectively [9]. Despite these findings, disparities in the utilization of National Health Insurance programs persist. Geographic factors such as distance and transportation costs may contribute to these

disparities. For instance, there is a higher concentration of healthcare facilities in the western regions of Indonesia compared to the eastern regions. Additionally, low levels of education associated with poverty may also hinder the utilization of healthcare services. Given these circumstances, this study aims to investigate the factors influencing health insurance ownership among women in Indonesia.

Method

Dataset

This study utilized cross-sectional data from the 2012 and 2017 Indonesia Demographic and Health Survey (IDHS) to measure maternal service utilization. Together with the National Population and Family Planning Board and the Ministry of Health, Statistics Indonesia conducted the survey. The sample was drawn from all 34 provinces of Indonesia using a multi-stage stratified method. The 2012 IDHS was utilized to examine the temporal trend of service between 2012 and 2017, and the 2017 IDHS was used for the primary study. The sample size for women aged 15-49 who completed the interview was 45,607 in the 2012 IDHS and 49,627 in the 2017 IDHS, with response rates of 95.9% and 97.8%, respectively. The DHS applied standardized instruments to ensure the validity and comparability of results across countries[10][11].

We adjusted for the multi-stage structure of the DHS dataset by applying sampling weights. The IDHS only captured complete information on maternal health service utilization for the most recent live birth, and in cases of multiple births, only the last birth was considered, thus each respondent was analyzed only once. After eliminating participants with missing data on the outcome and independent variables, the final sample size was 5,717. The unit of analysis in the study is individual women aged 15-49 years who were included in the 2017 IDHS dataset.

Variables

This study analyzed health insurance ownership as the dependent variable, categorized as having or not having health insurance. Health insurance includes all types managed by the central government, local governments, and private sector. Independent variables included place of residence (urban or rural), age group (divided into seven 5-year intervals), education level (no education, primary, secondary, higher), employment status (unemployed or employed), marital status (never in a union, married/living with a partner, widowed/divorced), wealth status (based on a wealth index calculation), and parity. The wealth index was calculated using data on household ownership of selected assets, housing construction materials, and water/sanitation facilities.

Analyses

We conducted analyses at the national level using descriptive statistics and logistic regression through RStudio software. To control for confounding effects, adjusted odds ratios (aOR) were calculated. The aORs were adjusted for sociodemographic factors such as age, marital status, parity, wealth status, media exposure, education and place of residence. By considering potential confounding factors, the use of aORs provides a more accurate estimate of the relationship between health insurance ownership and other factors.

Result

According to the findings of the study, which analyzed a total of 5717 samples of women who had given live birth in Indonesia, it was revealed that 61.4% of the women were insured under the JKN or the National Health Insurance scheme, while the remaining 38.6% did not have any form of health insurance coverage. This data suggests that a significant portion of women in Indonesia, almost 2 out of 5, are currently without health insurance, and may therefore face challenges accessing healthcare services,

particularly in the event of any pregnancy-related complications.

The determinants of health insurance ownership among women with live births in Indonesia are shown in Table 1. The objective of the analysis is to identify the factors associated with health insurance ownership among this population. Each category is compared to its respective reference group, such as 15-24 years old for the age category, 1 for the parity category, incomplete for the education category, unmarried for the marital status category, unemployed for the employment status category, no exposure for the media exposure category, very poor for the wealth status category, and rural for the area of residency category. The results indicate that two variables are significant determinants of health insurance ownership among pregnant women in Indonesia.

For employment status, the aOR of 2.37 means that women who work in white-collar jobs have 2.37 times higher odds of being insured by JKN compared to women who had no occupation, after adjusting for other variables in the model such as age, marital status, birth order, education, and exposure to internet. For residency, the aOR of 1.39 means that women who live in urban areas have 1.39 times higher odds of being insured by JKN compared to rural groups, after adjusting for other variables in the model. The confidence intervals (95% CI) for employment status ranges from 1.77 to 2.59, which means that we can be reasonably confident that the true effect lies somewhere between these values. In both cases, since the p-values are less than 0.05, we can conclude that there is statistically significant evidence of an association between employment status and residency with JKN enrollment after adjusting for other variables in the model.

Table 1 Contributing Factors to 2017 Enrollment in Jaminan Kesehatan Nasional (JKN)

Variables	aOR	95% CI		P-Value
		Lower	Upper	
AGE				
15-24yo	Ref.			
25–34yo	1.15	0.95	1.2	0.248
35–42yo	1.34	1.03	1.45	0.054
42–49yo	1.79	0.98	2.48	0.073
PARITY				
1	Ref.			
2	0.99	0.82	1.03	0.695
3	1.09	0.86	1.16	0.655
4	1.05	0.77	1.14	0.915
>5	1.28	0.86	1.48	0.284
EDUCATION				
Incomplete	Ref.			
complete primary	0.97	0.73	1.06	0.684
Incomplete Secondary	0.92	0.69	1	0.461
Complete Secondary	1	0.74	1.1	0.855
Higher/Vocational	1.28	0.89	1.44	0.238
MARITAL STATUS				
Unmarried	Ref.			
Married	1.4	0.89	1.7	0.187
EMPLOYMENT				
None	Ref.			
Blue Collar	1.2	1.02	1.25	0.073
White Collar	2.37	1.77	2.59	<0.001
MEDIA EXPOSURE				
not at all	Ref.			
<1 a week	1.29	1.1	1.31	0.615
>1 a week	1.49	1.12	1.63	0.781
WEALTH STATUS				
Very Poor	Ref.			
Poor	0.88	0.7	0.93	0.173
Middle	0.92	0.71	0.97	0.365
Rich	0.85	0.65	0.91	0.15
Very Rich	1.07	0.78	1.18	0.812
AREA OF RESICENCY				
Rural	Ref.			
Urban	1.39	1.18	1.44	<0.001

Discussion

This study examined the determinants of health insurance ownership among women with live births in Indonesia. The results of the study indicate that two variables emerged as significant determinants of health insurance ownership among pregnant women in Indonesia. These findings are consistent with previous research on health insurance coverage and access to healthcare in Indonesia. Specifically, the study found that urban residence and formal white collar employment status were significant predictors of health insurance coverage and access to healthcare services among live birth women.

The results of this study support previous research that has established the urban-rural divide as a significant factor in health insurance coverage and access to healthcare in Indonesia. Urban residents generally have better access to healthcare services due to factors such as proximity to healthcare facilities, transportation infrastructure, and greater availability of healthcare resources. Meanwhile, rural residents face greater challenges in accessing healthcare, which is reflected in their lower rates of health insurance coverage. Moreover, the study found that formal employment status is an important predictor of health insurance coverage among pregnant women in Indonesia. Women employed in the formal sector are more likely to have access to health insurance through their employers or government programs such as the National Health Insurance Program (JKN). This

finding highlights the importance of employment status in ensuring access to healthcare services in Indonesia and underscores the need for targeted policies that address the healthcare needs of the informal sector workforce, who are less likely to have access to health insurance [12]–[15].

A significant disparity exists between urban and rural areas regarding insurance ownership among women in five countries (Burkina Faso, DR Congo, Cameroon, Gabon, and Kenya). Rural participants consistently demonstrated a lower percentage of insurance ownership, aligning with previous research indicating that rural populations face greater obstacles in accessing healthcare. Thus, place of residency is a significant factor associated with insurance ownership among women in these countries[16].

Health insurance has been linked to better health outcomes due to improved access to healthcare services, while a lack of coverage can result in delayed or foregone care, leading to poorer health outcomes. The COVID-19 pandemic has had a significant impact on health insurance coverage, particularly among low-income adults who lost their jobs and subsequently lost their insurance coverage. As a result, these individuals were more likely to delay or forgo healthcare services due to cost. This emphasizes the crucial role of ensuring affordable healthcare access for all individuals, especially those who are economically vulnerable[17].

The study conducted an investigation on the association between health insurance ownership and cancer screening behavior among Indian women. The results demonstrated that women who had health insurance were more likely to undergo cervical, breast, and oral cancer screenings. This observation indicates that access to healthcare services facilitated by insurance may play a crucial role in promoting preventive health behaviors, including cancer screening. Furthermore, the study discovered that employment status was also a significant factor in cancer screening behavior. Specifically, employed women exhibited higher odds of taking all three cancer screenings compared to those without employment. This finding suggests that employment status may also contribute to the promotion of preventive health behaviors. In summary, the study highlights the positive association between employment status, health insurance ownership, and cancer screening rates among Indian women[18]

The outcomes of this study can offer valuable insights for policymakers to develop strategies aimed at augmenting the number of participants in the Jaminan Kesehatan Nasional (JKN) program, particularly among women who intend to become pregnant and give birth. The research findings provide policymakers with a specific target group: rural mothers who are giving birth and unemployed. By targeting this particular demographic, policymakers can take proactive measures to provide accessible and affordable health insurance coverage to this vulnerable group.

Since JKN is Indonesia's national health insurance system with the aim of achieving Universal Health Coverage (UHC) by providing comprehensive coverage for all Indonesians. Therefore, JKN is a key component of Indonesia's strategy to achieve UHC. The review highlights that while JKN has expanded access to health services and financial protection for many Indonesians, there are still challenges to achieving UHC in Indonesia due to its unique health system challenges and diverse population. The review also suggests that further improvements are needed to strengthen the implementation of JKN and achieve UHC in Indonesia[4].

Furthermore, the study's results suggest that there may be underlying socio-economic factors that contribute to the lower participation rates in the JKN program among this particular demographic. Policymakers could explore and address these underlying factors to develop more effective strategies to encourage JKN participation. By conducting further research,

policymakers can gain a more in-depth understanding of the unique challenges faced by rural mothers who are giving birth and unemployed and use this information to develop tailored interventions that can better meet their specific needs.

Overall, this study provides useful insights that can inform policy development and implementation to increase JKN participation among women who are planning to give birth in rural areas and are unemployed. By developing and implementing effective policies, policymakers can ensure that vulnerable populations have access to the necessary healthcare services, which can ultimately contribute to improved health outcomes and better quality of life.

Conclusion

In conclusion, this study investigated the determinants of health insurance ownership among women with live births in Indonesia. The findings revealed that formal employment status and urban residency were significant predictors of health insurance coverage and access to healthcare services among women with live births. Some supporting study also highlighted the significant role of health insurance in promoting preventive health behaviors, such as cancer screenings. Moreover, the study findings offered valuable insights to policymakers by identifying a specific target group - rural mothers who are giving birth and unemployed - for measures aimed at augmenting the number of participants in the JKN program. Policymakers could explore the underlying socio-economic factors contributing to lower JKN participation rates among this group to develop more effective strategies to encourage JKN enrollment.

The study also contributes to the broader literature on health insurance coverage and access to healthcare in Indonesia and highlights the significant urban-rural divide in healthcare access. Policymakers could use this information to develop targeted policies that address the healthcare needs of the rural population, who face greater challenges in accessing healthcare services. Additionally, the study highlights the importance of employment status in ensuring access to healthcare services in Indonesia and underscores the need for policies that address the healthcare needs of the informal sector workforce, who are less likely to have access to health insurance.

Conflict of interest

The authors declare that there are no competing interests.

Ethics approval

The 2017 IDHS survey secondary data used in this study. The ICF International Institutional Review Board (IRB) assessed and granted approval for the survey's procedures and questions in 2017. For the safety of human subjects, the ICF IRB, the Indonesian Ministry of Health, and the BKKBN all reviewed the survey's protocols.

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