

## **SOCIOECONOMIC DETERMINANTS OF HEALTH INSURANCE MEMBERSHIP OF WOMEN OF REPRODUCTIVE AGE IN INDONESIA**

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### **Abstract**

Health insurance membership is important thing in maternal healthcare, which has been a public health concern in the global and national setting. Indonesia has gradually started the implementation of universal health coverage whose aim is to provide prepaid health care for all citizens. Therefore, the identifications of factors related to health insurance membership prior to this program is necessary for achieving the effective targets. This paper was aimed to assess socioeconomic determinants of healthcare membership in women of reproductive age. The data derived from Indonesian Demographic and Health Survey (DHS) in 2012 was analyzed. The amount of 15,112 women as the population was analyzed in which only 6,041 (40.0%) of women were covered by insurance with majority of the insurance was provided by social security program. The multivariate regression showed that the elderly women and women living in urban area were more likely to be facilitated by health insurance (AOR 1.03 and 1.22, respectively,  $p < 0.001$ ). Women with college level education were more likely to have health insurances compared to women with primary school or below education background (AOR 2.34,  $p < 0.001$ ). The analysis also indicated a positive association among women and the spouses' education background on women's health insurance membership. Interestingly, the number of women living in Java and Bali who possessed health insurance membership was lower compared to women in other areas (AOR 0.75,  $p < 0.001$ ). The study demonstrated the importance of socioeconomic factors in determining health insurance membership for women of reproductive age. Consideration on socioeconomic determinants is important in order to advance the universal health coverage program to improve maternal and child health in Indonesia.

**Keywords: socioeconomic factor, health insurance membership, maternal health.**

### **Presenting Author's biography**



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## INTRODUCTION

Maternal health is still a major global public health problem especially in developing countries, including Indonesia [1]. Several factors attributing to high maternal mortality and morbidity include the lack of education, the lack of maternal health care, and the presence of comorbidities [2]. Proposed strategy to reduce maternal mortality and morbidity includes increasing health care services and reducing risk factors for comorbidities, prioritized on high risk groups with low socio-economic status [3,4].

The current maternal mortality in Indonesia remains high, with relatively low levels of poor antenatal care, skilled birth attendance, and postpartum care utilization [5]. Therefore, Indonesian government has focused on improving the maternal healthcare utilization to reduce mortality and morbidity, including providing free healthcare access for pregnancy, delivery, and postpartum for poor citizens [6]. By reducing the financial barriers, it is expected that the maternal healthcare utilization might eventually reduce maternal mortality and morbidity in Indonesia [6].

Health insurance as an important element in health care utilization [7] will be more effective with the universal health coverage policy in Indonesia started in 2014 [8]. Therefore, the identification of factors related to health insurance membership prior to this policy was crucial to ensure the effective implementation. Previous studies have reported the importance of socio-economic factors in association with health insurance membership [9,10]. This paper aimed to assess socioeconomic determinants of healthcare membership in women of reproductive age.

## METHODS

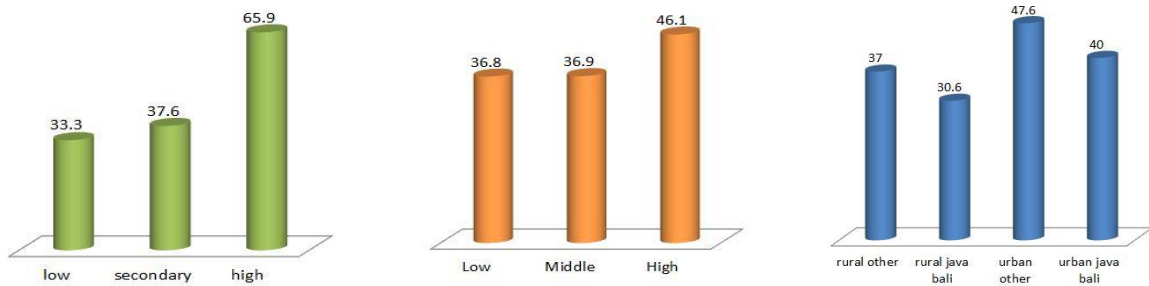
The data of Indonesian Demographic and Health Survey (IDHS) in 2012 was analyzed. This cross sectional and national representative survey was conducted by Statistics Indonesia (*Badan Pusat Statistik*—BPS) in collaboration with National Population and Family Planning Board (BKKBN), and the Ministry of Health (Kemenkes—MOH), and ICF International which provided technical support and was supported by USAID [5]. In 2012, IDHS identified 47,533 eligible women for individual women interview and 45,607 women completed the questionnaire (96% response rate).

In the analysis, the subjects were women who had been pregnant and therefore had the probability of being exposed to maternal healthcare, as many as 15,112 women. The socioeconomic variables included: 1) women's education background (the last completed degree), 2) family wealth ( household access and resources), and 3) women's occupation (working versus not working). We also included the spouses' education background and occupation (working versus not working) in the analysis model. Health insurance membership was defined as being a member of health insurance of any type. SPSS software was used for statistical analysis which included descriptive statistics, univariate analysis using chi square and logistic regression, as well as multivariate analyses using logistic regression [11].

## RESULTS AND DISCUSSIONS

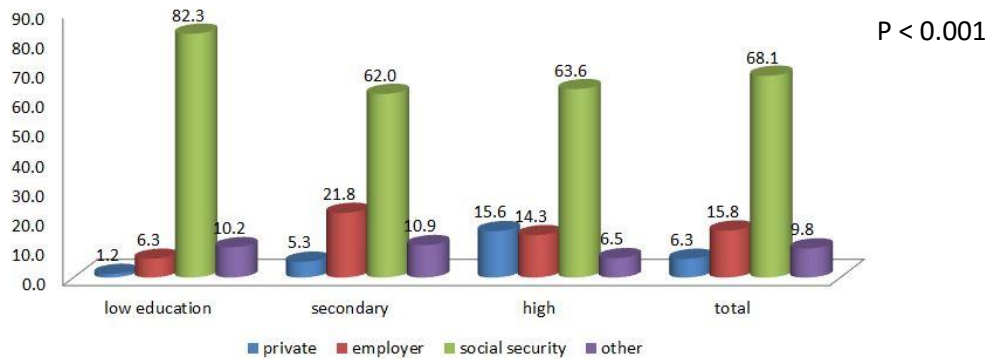
The data of 15,112 women were analyzed with the findings that only 6,041 women (40.0%) were covered by insurance. Of those who had insurance membership, 67.8% obtained it from the social security, 15.8% from the employer, 6.3% from private insurance, and the rest was by others, for example provided by the spouse's occupation facility. Examination on the socio-economic and demographic differences of type of health insurance owned by these women was carried out with a result of significant difference of health insurance type in association with the factors of women's education, family wealth, as well as

geographic location. Women with low education background (primary school or below) had less proportion of health insurance membership compared to women with high education background (66.7%: 34.1%), as shown on figure 1.



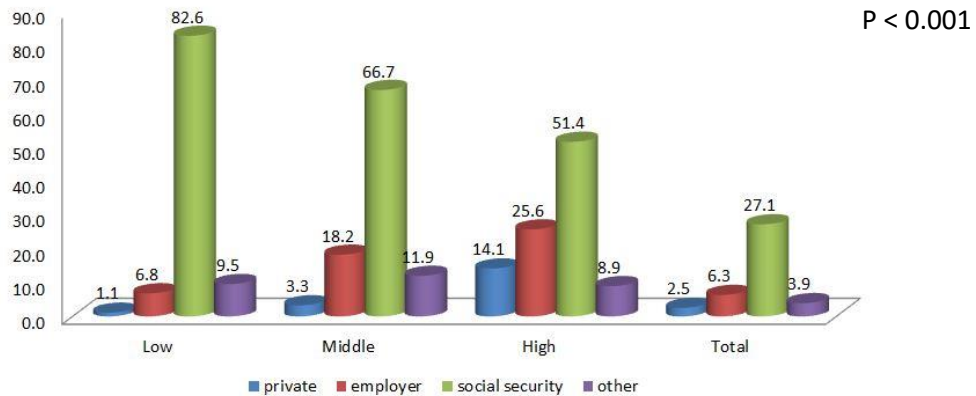
**Figure 1.** Health insurance membership in association with level of education, wealth, and geographical location.

Type of health insurance membership also varied in association with women’ education background , as shown on figure 2. Most low educated women received their health insurance membership through social security (82.3%), while most of high educated women had social insurance from social security as well, but the proportion was lower (63.6%), showing increased proportion of private and employer provided health insurance among these women.



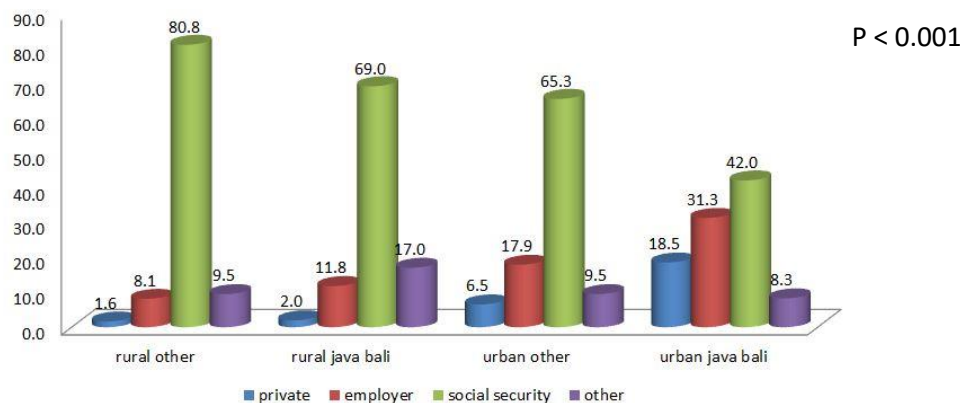
**Figure 2.** Type of health insurance membership by level of education

Family wealth also determined health insurance membership as shown on figure 2, in which women from wealth families had higher proportion of health insurance membership compared to women from poorer family (47.1% vs 36.8%). There was also significant different in type of health insurance membership ( $p < 0.001$ ).The majority of health insurance types for poorer women were provided by social security (82.6%) while lower proportion of this type of insurance was shown in richer family (51.4%).In addition,the proportion of having private and employer provided insurances (14.1% and 25.6% respectively) were higher in richer family than poorer family.



**Figure 3.** Type of health insurance membership by family wealth

Geographic location seemed to affect the type of health insurance membership in which women in the rural areas were more likely to have health insurance membership from social security, while women in the urban areas mostly obtained their health insurance from private insurances. There was also a difference between types of health insurance membership in Java and Bali compared to other island as shown on figure 3.



**Figure 4.** Type of Insurance based on the geographical location

On univariate model, the analysis found out that older women living in urban area with higher education, working women, or women from wealthy family were more likely to have insurance membership (Table 1). Interestingly, women living in Java and Bali island had lower health insurance membership compared to women from other areas. This finding is allegedly related to social security insurance policy, which potentially have differential distribution with higher proportion of access among individuals outside Java or Bali compared to women in Java and Bali [12].

The spouses' educations as well as spouses' occupations were also significantly associated to higher probability in having health insurance membership ( $p < 0.05$ ). On multivariate regression, the significant effect for this association was revealed, in which the wealth was inversely associated with health insurance membership (AOR 0.82 and 0.87 for second and third tertile compare to the lowest tertile). On further investigation, we found that wealth was correlated with husband and wife education (Pearson correlation 0.44,  $p < 0.001$ ) and therefore, it is possible that wealth was a mediator or intervening variable in the association between education and health insurance membership, with income as potential pathway.

**Table 1.** Univariate and Multivariate Logistic Regression on Determinants of Health Insurance Membership

Factors	Unadjusted OR (p)	Adjusted OR (p)	Adjusted OR (p)
Age	1.03(<0.001)	1.03(<0.001)	1.03(<0.001)
Living in Urban area	1.44(<0.001)	1.26(<0.001)	1.22(<0.001)
Living in Java Bali Island	0.84(<0.001)	0.77(<0.001)	0.75(<0.001)
Education			
<b>Primary School or Less</b>	Ref	Ref	Ref
<b>Secondary Education</b>	1.21(<0.001)	1.13(0.004)	1.10(0.026)
<b>Higher Education</b>	3.87(<0.001)	2.44(<0.001)	2.34(<0.001)
Working woman	1.36(<0.001)	1.15(<0.001)	1.15(<0.001)
Husband’s education			
<b>Primary School or Less</b>	Ref	Ref	Ref
<b>Secondary Education</b>	1.28(<0.001)	1.17(<0.001)	1.14(0.002)
<b>Higher Education</b>	3.78(<0.001)	2.22(<0.001)	2.14(<0.001)
Husband is working	1.33(0.025)	1.37(0.016)	1.37(0.017)
Family Wealth			
1 <sup>st</sup> Tertile	Ref	Ref	-
2 <sup>nd</sup> Tertile	1.01(0.914)	0.82(<0.001)	-
3 <sup>rd</sup> Tertile	1.46(<0.001)	0.87(0.006)	-

Our final model consisted of age, geographical location, occupation, and education as shown on table 1. Health insurance membership was positively associated with older age living in urban area, level of education, working woman, husband’s level of education, and working husband. Women living in Java or Bali Island were less likely to own health insurance compared to their counterparts (AOR 0.75,  $p < 0.001$ ). Our finding showed the importance of socioeconomic factors in health insurance membership, which includes education, occupation, and husbands’ education. Women who had lower education, not working, with spouse with lower education or without occupation were more likely to be uncovered by health insurance (Table 1). Previous studies also showed that low socioeconomic status was a major predictor for not having health insurance membership in the developing countries [10,13,14].

Therefore, it is important to address these vulnerable groups for effective targeting in increasing health insurance coverage, specifically for social or government funded health insurance. Improvement in health insurance coverage has been shown to be an important factor in improving access to healthcare, particularly for women of reproductive age [7]. Women covered by health insurance were more likely to access antenatal care as well as to utilize skilled birth attendance for delivery [6,15]. Special considerations should also be made regarding with women from rural areas since previous studies had showed that financial barriers for maternal healthcare utilization was not only related to medical cost, but also non-medical cost including transportation [16]. Improvement in maternal healthcare utilization

have proven to improve maternal and child health and to reduce maternal and child morbidity and mortality [3,17].

### Conclusion and Recommendation

Our analysis showed that socioeconomic and geographic locations were associated with health insurance membership for women of reproductive age in Indonesia. It is important to take account of these socioeconomic and geographical determinants to increase health insurance membership, especially in implementation of universal health coverage in Indonesia. Effective targeting for increasing health insurance membership should target vulnerable groups which include women living in Java and Bali, in rural area, and in low socioeconomic status. Improving access to maternal healthcare by reducing financial barrier through health insurance ownership might be an important step to improve maternal and child health in Indonesia.

### REFERENCES

- [1] N. Prata, P. Passano, A. Sreenivas, C.E. Gerdt, Maternal mortality in developing countries: challenges in scaling-up priority interventions, *Women's Heal.* 6 (2010) 311–327. doi:10.2217/whe.10.8.
- [2] M. Macleod, B. Strachan, R. Bahl, L. Howarth, K. Goyder, M. Van de Venne, D. Murphy, A prospective cohort study of maternal and neonatal morbidity in relation to use of episiotomy at operative vaginal delivery, *BJOG An Int. J. Obstet. Gynaecol.* 115 (2008) 1688–1694. doi:10.1111/j.1471-0528.2008.01961.x.
- [3] O.M. Campbell, W.J. Graham, Strategies for reducing maternal mortality: getting on with what works, *Lancet.* 368 (2006) 1284–1299. doi:10.1016/S0140-6736(06)69381-1.
- [4] M. Målqvist, B. Yuan, N. Trygg, K. Selling, S. Thomsen, Targeted interventions for improved equity in maternal and child health in low- and middle-income settings: a systematic review and meta-analysis., *PLoS One.* 8 (2013) e66453. doi:10.1371/journal.pone.0066453.
- [5] A. Statistics Indonesia (Badan Pusat Statistik—BPS), National Population and Family Planning Board (BKKBN), and I.I. 2 Kementerian Kesehatan (Kemenkes—MOH), Indonesian Demographic and Health Survey, 2013.
- [6] Z.M. Kesuma, V. Chongsuvivatwong, Utilization of the Local Government Health Insurance Scheme (JKA) for Maternal Health Services Among Women Living in Underdeveloped Areas of Aceh Province, Indonesia., *Asia. Pac. J. Public Health.* 27 (2015) 348–59. doi:10.1177/1010539514524818.
- [7] A.B. Comfort, L. a Peterson, L.E. Hatt, Effect of health insurance on the use and provision of maternal health services and maternal and neonatal health outcomes: a systematic review., *J. Health. Popul. Nutr.* 31 (2013) 81–105. <http://www.ncbi.nlm.nih.gov/pubmed/24992805>.
- [8] Y. Vidyattama, R. Miranti, B.P. Resosudarmo, The Role of Health Insurance Membership in Health Service Utilisation in Indonesia, *Bull. Indones. Econ. Stud.* 50

- (2014) 393–413. doi:10.1080/00074918.2014.980380.
- [9] M. De Allegri, B. Kouyaté, H. Becher, A. Gbangou, S. Pokhrel, M. Sanon, R. Sauerborn, Understanding enrolment in community health insurance in sub-Saharan Africa: a population-based case-control study in rural Burkina Faso., *Bull. World Health Organ.* 84 (2006) 852–858.  
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2627536/> (accessed September 19, 2015).
- [10] J.K. Kimani, R. Ettarh, C. Warren, B. Bellows, Determinants of health insurance ownership among women in Kenya: evidence from the 2008-09 Kenya demographic and health survey., *Int. J. Equity Health.* 13 (2014) 27. doi:10.1186/1475-9276-13-27.
- [11] IBM SPSS software, (2016). <http://www-01.ibm.com/software/analytics/spss/> (accessed March 22, 2016).
- [12] R. Hartwig, R. Sparrow, S. Budiayati, A. Yumna, N. Warda, A. Suryahadi, A.S. Bedi, Effects of decentralized health care financing on maternal care in Indonesia, *ISS Work. Pap. Ser. / Gen. Ser.* 607 (2015) 1–42.  
[http://repub.eur.nl/pub/77964?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+Delicious%2Feadi%2Fpm+\(EADI+premium+member+news\)](http://repub.eur.nl/pub/77964?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+Delicious%2Feadi%2Fpm+(EADI+premium+member+news)) (accessed October 31, 2015).
- [13] A. Nandi, A. Ashok, R. Laxminarayan, The Socioeconomic and Institutional Determinants of Participation in India’s Health Insurance Scheme for the Poor., *PLoS One.* 8 (2013) e66296. doi:10.1371/journal.pone.0066296.
- [14] S. Burrowes, Knowledge, Attitudes and Practices Regarding Community-Based Health Insurance in Demebecha Town, Ethiopia, 2014: A Cross-Sectional Design, in: 143rd APHA Annu. Meet. Expo (Oct. 31 - Nov. 4, 2015), APHA, 2015.  
<https://apha.confex.com/apha/143am/webprogram/Paper318386.html> (accessed November 21, 2015).
- [15] G.B. Gomez, N. Foster, D. Brals, H.E. Nelissen, O.A. Bolarinwa, M.E. Hendriks, A.C. Boers, D. van Eck, N. Rosendaal, P. Adenusi, K. Agbede, T.M. Akande, M. Boele van Hensbroek, F.W. Wit, C.A. Hankins, C. Schultz, Improving Maternal Care through a State-Wide Health Insurance Program: A Cost and Cost-Effectiveness Study in Rural Nigeria., *PLoS One.* 10 (2015) e0139048. doi:10.1371/journal.pone.0139048.
- [16] E. Erlyana, K.K. Damrongplisit, G. Melnick, Expanding health insurance to increase health care utilization: will it have different effects in rural vs. urban areas?, *Health Policy.* 100 (2011) 273–81. doi:10.1016/j.healthpol.2010.11.008.
- [17] C. Ronsmans, S. Scott, S.N. Qomariyah, E. Achadi, D. Braunholtz, T. Marshall, E. Pambudi, K.H. Witten, W.J. Graham, Professional assistance during birth and maternal mortality in two Indonesian districts., *Bull. World Health Organ.* 87 (2009) 416–23.  
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2686212&tool=pmcentrez&rendertype=abstract> (accessed October 29, 2015).