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The Factors Associated With Ownership of Health Insurance Among Women of Reproductive Health in Guyana

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Abstract

Women of reproductive age are one vulnerable group because of the phase of pregnancy, childbirth, and contraceptive use. Due to those reasons, they need to be covered by health insurance. However, the coverage of health insurance remains low, especially in developing countries including Guyana. This study aimed to examine the factors associated with ownership of health insurance among women of reproductive age. This study used the data from Multiple Indicators Cluster Survey Wave 6 (MICS6) Guyana in 2019-2020. In total, 5,470 women met the criteria. The multivariate analysis was done by 2 models including the community characteristics. It was found some factors related to having or not having health insurance, including living in Damerara-Mahaica and Mahaica-Berbice regions, having Muslim, female, and from Amerindian, East Indian, and Mixed ethnic of household head, having a higher wealth index and education level, aged 30-34, and formerly marriage or never married. The health insurance scheme needs to be arranged especially at tat regional level to ensure women can access maternal services easily and effectively.

INTRODUCTION

In low-middle income countries (LMICs), the coverage of health insurance is still inadequate. Social protection is the collection of public and private policies and programs to avoid, minimize, and eradicate the economic and social vulnerabilities to poverty and deprivation (Likka et al., 2018). Ownership of health insurance as social health protection is a way for the government to facilitate access to health services and defend against financial catastrophe in poor countries (Shao et al., 2022; Y. Wang et al., 2021). Improving health facilities must be balanced with ease and assurance that the community will receive excellent health services, either through subsidies or by paying premiums through health insurance national (Das & Do, 2023). Generally, both private and state health insurance cover the cost of medical care. National health insurance that is owned by the government, not for business, and typically required is known as public health insurance. Companies that offer private health insurance do so primarily for financial gain. By national health insurance scheme, patients could

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receive health insurance from health providers both public (government-owned) and private. (Abd Khalim & Sukeri, 2023). In the Malaysian context, public health insurance also can be used in private health care.

Ownership of health insurance is very important for everyone, especially women of reproductive age (Johnston et al., 2018). At their reproductive age, women must have full health insurance to reduce child mortality and maternal mortality worldwide. In fact, those who are under UHC can easily access mother and child care, including antenatal care, delivery, postnatal, and immunization. Health insurance aims to ensure financial adequacy and financial protection for health care costs with risk pooling, and effective and efficient payments (Conn & Walford, 1998; World Health Organization, 2003). In poor and developing countries, financial constraints are the main reason women of reproductive age find it difficult to get access to health services because they do not have health insurance (Bailey & Lindo, 2017). Meanwhile, in developed countries, personal health insurance ownership is strongly influenced by the level of health literacy (Adepoju et al., 2019). In 2015, around 275,288 women died due to pregnancy and childbirth and this mostly occurred in developing countries (Khalil et al., 2018; Tlou et al., 2017).

Other studies elsewhere have previously reported that socio-demographics, economy, illness experience, insurance benefits, a person's level of awareness, health financing experienced, quality of health services, premium costs, and bureaucracy are variables related to ownership and benefits of health insurance for someone (Adepoju et al., 2019; Bayked et al., 2019; Shao et al., 2022; Tan et al., 2018). Guyana is a country located in the northeastern corner of South America and mainly populated by colonial origin such as Indian. The health insurance in Guyana is not mandatory, citizens can apply the private health insurance for the supplementary services that can cover specialized treatment. In Guyana, to improve the quality of health services, it has been proven that it is heavily influenced by the support of international NGOs or institutions from other countries (Román & Bochnakova, 2017). A national health strategy for Guyana 2013-2020 was created for a comprehensive collaborative process with important stakeholders, as per the country's "Health Vision 2020." (government, civil society, private sector, and NGO). Mostly NGOc is working with global health and strengthening the health system in partnership with Ministry of Health (MoH). WHO defines universal health coverage (UHC) as ensuring that everyone, without regard to financial situation, has access to the entire spectrum of high-quality health services they require, whenever and wherever they need them. Due to poor quality reproductive health services and maternal health services, Universal Health Coverage (UHC) is a national priority program from 2013 to 2020 in Guyana (World Health Organization, 2018). Guyana is one country in South America with high mortality rate (27.7% in 2021) and it's become worse with the UHC service coverage index in 2017 only 72%. Life expectancy at birth is only 69.2 lowest among Latin America and The Caribbean countries. Since women of reproductive age are vulnerable the coverage remains low (21.6%) compared to men of reproductive age which was 26.6%. Moreover, the survey findings of MICS 6 Guyana revealed that coverage of health insurance for children aged 5-17 years old is 5.1% and children under 5 years are 7.3%.

Previously, no research had been conducted on Guyana's ownership of health insurance. This is very important to do because the UHC program in Guayana is only recorded until 2020. This gap might be due to limited survey to record the historical event of ownership of health insurance in Guyana. Existing kinds of literature present ownership of health insurance of ethnic Guyana as migrants in other states in America. therefore, to fill the existing gap, this study was conducted to examine the factors associated with ownership of health insurance among women of reproductive health in Guyana.

METHOD

This study used secondary data which is available and open-access. The original survey is Multiple Indicator Cluster Survey 6 (MICS6) from 2019 to 2020 powered by UNICEF (United Nations International Children's Emergency Fund). MICS6 is a survey at the household level which is implemented by many countries over the world and supported and developed by UNICEF. At the national level, MICS was implemented by collaboration between UNICEF and the Ministry of Health and Statistics. MICS is one survey to monitor the progress toward the 2030 Agenda for SDGs (Sustainable Development Goals). The quality of MICS data is ensured by UNICEF as the main organization for standardizing all the survey tools. The implementation of MICS at the national level is provided the by government for field data collection and human resources needed. The MICS consists of 5 questionnaires, including households, women and men aged (15-49 years old), children (5-17 years old), and children

(five years or younger). MICS6 Guyana data is representative at the national level. Households in this survey were selected by using multi-stage stratified cluster sampling methods. The data collection was done face-to-face. The data can be accessed after receiving the approval through the link: https://mics.unicef.org/surveys.

The current study only focuses on women aged 15 to 49 years old. The raw data has been merged from households and women 15-49 years questionnaire using personal ID and household ID. The data analysis for this study used STATA version 17 licensed for Institute for Population and Social Research (IPSR) Mahidol University. The unit of analysis is women of reproductive age 15 to 49 years old and completely answered the questions for households and women's questionnaire. The dependent variable of this study is the ownership of health insurance (yes/no). The potential predictors were divided into two models, the first model is the complete model including community, household, and women characteristics, then the model two only includes household and women characteristics. The statistical analysis was done by univariate, bivariate, and multivariate. The univariate was aimed to present the general characteristics of the women. The bivariate was done using the Chi-Square test to examine the single independent variable with dependent variable. The multivariate analysis was done using Binary Logistic Regression with 2 models tested. Model 1 is the full model which includes geographical characteristics and other independent variables. Model 2 is the model which does not include the geographical characteristic. The best model is defined based on the highest Pseudo-R2. The results were presented by an adjusted odd ratio with confidence interval of 95%. The permission to use the raw data has been accepted after registering through the website.

RESULT AND DISCUSSION

The results of this study revealed that in 2019-2020, among 5,470 women of reproductive age, only 18.94% of them had the health insurance. In terms of the sociodemography factors in Table 1 below, the majority of them reside in the rural areas (71.19%) and coastal areas (73.25%). The distribution of the sample was early equally distributed for all regions, but the majority of them lived in region Demerara – Mahaica (17.24%). In terms of the religion, about three-fourths of them were Christian (71.63%). East Indians were the most ethnic group that dominated the sample of this study (34.00%). Regarding the sex of head household, more than a half of them were male (58.85%). In terms of the wealth index, more than one-fourth of them were categorized as poorest (31.57%). The women's age in this study was dominated by those aged 20 to 24 years old (18.54%). The women mostly have ever attended the school (98.43%) and are currently married or in union (68.70%).

Health insurance coverage in Guyana remains low because the health services are equally distributed, and there are a lot of diseases concerning, including Malaria (Molk, 2016). The result of this study was similar to the report that in 2009, only 16.33% of citizens were covered by health insurance in Guyana (Das & Do, 2023). In Columbia, the percentage of adults aged 18-64 years was 12.8% in 2015 (Cohen et al., 2016). The data from American Community Survey found in 2013, 40.5% of Hispanics, and 25.8% of Blacks were uninsured (Buchmueller et al., 2016). The majority of Guyanese adults living in the state of NYA also did not have health insurance but they have a stable family structure and excellent interpersonal relationships (Hosler & Kammer, 2018). The difficulty in obtaining biomedical health care has made the people of Guyana rely more on traditional methods, namely "Bush Medicine" (Majeed, 2021). At the national level, subsidized health insurance was a hot topic whether it would be paid by tax or not (Molk, 2016).

The bivariate analysis in Table 2 below was done using Chi-Square and revealed that all independent variables correlated with the dependent variable with p-value < 0.05. Then all independent variables were included in multivariate analysis.

The coverage of national health insurance was defined as a result of low taxes and that insurance was also limited portion of funding from private sector (USAID, 2011). There are no detailed schemes of government to provide free universal health coverage in Guyana because it covers the workers but not the dependents and it cannot be accessed in the public health system (Klatman et al., 2017). From the policy side, health insurance must not be pushed but the universal insurance needs to be subsidized by federal government (Sari et al., 2021). In terms of utilization of health insurance, it was found there was no relation to contraceptive use, but another study found the relationship to long-term contraceptive method (LTCM) (Oesman, 2017; Sari et al., 2021).

The binary logistic regression was done to analyze 2 models. The Models the full model includes community, household, and women's

Table 1. The general characteristics of the respondents

Variables (N = 5,470)	Frequency	Percentage
Ownership of Health Insurance		
No	4,434	81.06
Yes	1,036	18.94
Place of Residence		
Urban	1,576	28.81
Rural	3,894	71.19
Location of Residence		
Coastal	4,007	73.25
Interior	1,463	26.75
Region		
Barima-Waini	460	8.41
Pameroon-Supenaam	505	9.23
Essequibo Islands-West Demerara	738	13.49
Demerara-Mahaica	943	17.24
Mahaica-Berbice	521	9.52
East Berbice-Corentyne	818	14.95
Cuyuni-Mazaruni	334	6.11
Potaro-Siparuni	258	4.72
Upper Takutu-Upper Essequibo	411	7.51
Upper Demerara-Berbice	482	8.81
Religion of Household Head		
None	51	0.93
Christian	3,918	71.63
Hindu	1,069	19.54
Muslim	338	6.18
Rastafarian	32	0.59
Bahai and other religion	62	1.13
Ethnic group of Household Head		
African/black	1,390	25.41
Amerindian	1,101	20.13
East Indian	1,860	34.00
Mixed	1,103	20.16
Chinese, Portuguese, and others	16	0.29
Sex of Household Head		
Male	3,219	58.85
Female	2,251	41.15
Education of Household Head		
Pre-primary or none	227	4.15
Primary	1,436	26.25
Secondary	3,187	58.26
Higher	620	11.33
Wealth Index Quintile		
Poorest	1,727	31.57
Second	1,035	18.92
Middle	959	17.53
Fourth	898	16.42
Richest	851	15.56
Woman's Age		
15-19	930	17.00
20-24	1,014	18.54
25-29	954	17.44
30-34	662	12.10
35-39	642	11.74
40-44	648	11.85
45-49	620	11.33
Ever Attended School		
Yes	5,384	98.43
No	86	1.57
Marital/Union Status of the Woman		
Currently married/in union	3,758	68.70
Formerly married/in union	512	9.36
Never married/in union	1,200	21.94

Table 2. The bivariate analysis related to ownership of health insurance

Variables (N = 5,470)	Own Health Insurance		Total	p-value
	Yes	No		
Place of Residence				<0.001
Urban	442 (42.66%)	1,134 (25.58%)	1,576 (28.81%)	
Rural	594 (57.34%)	3,300 (74.42%)	3,894 (71.19%)	
Location of Residence				<0.001
Coastal	852 (82.24%)	3,155 (71.15%)	4,007 (73.25%)	
Interior	184 (17.76%)	1,279 (28.85%)	1,463 (26.75%)	
Region				<0.001
Barima-Waini	47 (4.54%)	413 (9.31%)	460 (8.41%)	
Pameroon-Supenaam	64 (1.18%)	441 (9.95%)	505 (9.23%)	
Essequibo Islands-West	157 (15.15%)	581 (13.10%)	738 (13.49%)	
Demerara	286 (27.61%)	657 (14.82%)	943 (17.24%)	
Demerara-Mahaica	71 (6.85%)	450 (10.15%)	521 (9.52%)	
Mahaica-Berbice	104 (10.04%)	714 (16.10%)	818 (14.95%)	
East Berbice-Corentyne	66 (6.37%)	268 (6.04%)	334 (6.11%)	
Cuyuni-Mazaruni	23 (2.22%)	235 (5.30%)	258 (4.72%)	
Potaro-Siparuni	48 (4.63%)	363 (8.19%)	411 (7.51%)	
Upper Takutu-Upper Essequibo	170 (16.41%)	312 (7.04%)	482 (8.81%)	
Upper Demerara-Berbice				
Religion of Household Head				<0.001
None	14 (1.35%)	37 (0.83%)	51 (0.93%)	
Christian	834 (80.50%)	3,084 (69.55%)	3,918 (71.63%)	
Hindu	133 (12.84%)	936 (21.11%)	1,069 (19.54%)	
Muslim	40 (3.86%)	298 (6.72%)	338 (6.18%)	
Rastafarian	6 (0.58%)	26 (0.59%)	32 (0.59%)	
Bahai and other religion	9 (0.87%)	53 (1.20%)	62 (1.13%)	
Ethnic Group of Household Head				<0.001
African/black	460 (44.40%)	930 (20.97%)	1,390 (25.41%)	
Amerindian	99 (9.56%)	1,002 (22.60%)	1,101 (20.13%)	
East Indian	233 (22.49%)	1,627 (36.69%)	1,860 (34.00%)	
Mixed	240 (23.17%)	863 (19.46%)	1,103 (20.16%)	
Chinese, Portuguese, and others	4 (0.39%)	12 (0.27%)	16 (0.29%)	
Sex of Household Head				<0.001
Male	526 (50.77%)	2,693 (60.74%)	3,219 (58.85%)	
Female	510 (49.23%)	1,741 (39.26%)	2,251 (41.15%)	
Education of Household Head				<0.001
Pre-primary or none	22 (2.12%)	205 (4.62%)	227 (4.15%)	
Primary	180 (17.37%)	1,256 (28.33%)	1,436 (26.25%)	
Secondary	555 (53.57%)	2,632 (59.36%)	3,187 (58.26%)	
Higher	279 (26.93%)	341 (7.69%)	620 (11.33%)	
Wealth Index Quintile				<0.001
Poorest	121 (11.68%)	1,606 (36.22%)	1,727 (31.57%)	
Second	148 (14.29%)	887 (20.00%)	1,035 (18.92%)	
Middle	188 (18.15%)	771 (17.39%)	959 (17.53%)	
Fourth	267 (25.77%)	631 (14.23%)	898 (16.42%)	
Richest	312 (30.12%)	539 (12.16%)	851 (15.56%)	
Woman's Age				<0.001
15-19	59 (5.69%)	871 (19.64%)	930 (17.00%)	
20-24	211 (20.38%)	803 (18.11%)	1,014 (18.54%)	
25-29	229 (22.10%)	725 (16.35%)	954 (17.44%)	
30-34	164 (15.83%)	498 (11.23%)	662 (12.10%)	
35-39	134 (12.93%)	508 (11.46%)	642 (11.74%)	
40-44	132 (12.74%)	516 (11.64%)	648 (11.85%)	
45-49	107 (10.33%)	513 (11.57%)	620 (11.33%)	
Ever Attended School				<0.001
Yes	1,033 (99.71%)	4,351 (98.13%)	5,384 (98.43%)	
No	3 (0.29%)	83 (1.87%)	86 (1.57%)	
Marital/Union Status of the Woman				<0.001
Currently married/in union	709 (68.44%)	3,049 (68.76%)	3,758 (68.70%)	
Formerly married/in union	137 (13.22%)	375 (8.46%)	512 (9.36%)	
Never married/in union	190 (18.34%)	1,010 (22.78%)	1,200 (21.94%)	

characteristics. Table 3 below revealed, in model 1 the women's residences in East Berbice-Corentyne and Mahaica-Berbice had 53% and 48% probability of not being covered by health insurance when compared to those from the Barima-Waini region. Regarding the religion, the Muslim women had 58% probability of not being covered by health insurance compared to those with no religion. After adjusting to other independent variables compared to household heads from African/black, those from Mixed, East Indian, and Amerindian tended to not be covered by health insurance by 48%, 57%, and 45% respectively. About the gender of household head, compared to males, women of reproductive age who lived with a female as head of household were 1.31 times more likely to have health insurance. Compared to households that graduated from pre-primary or none attended school, those who graduated from higher were 2.11 times more likely to have health insurance. Regarding the wealth index, compared to the poorest, those from second, middle, fourth, and richest were more likely to have health insurance by 2.20; 2.98; 4.70; and 6.52, times respectively after adjusting to all independent variables. In terms of the women's age, compared to women aged 15 to 19 years old, those in age 20-24, 25-29, 30-34, 35-39, 40-44, 45-49 were more likely to have health insurance by 5.12; 5.92; 6.32; 4.67;5.14;4.14 times respectively. The marital status of women found that compared to those married or in the union, those who were formerly married or in union and those never married or in the union were more likely to have health insurance by 1.29 and 1.33 times.

The model 2 covers the variables from households and women themselves. Regarding the religion, the Muslim women had 62% probability of not being covered by health insurance compared to those with no religion. After adjusting to other independent variables, compared to household heads from African/black, those from Mixed, East, and Amerindianindiann tended to not be covered by health insurance by 27%, 61%, and 32% respectively. Regarding the gender of the household head, compared to males, women of reproductive age who lived with females as head of household were 1.30 times more likely to have health insurance. Compared to a household that graduated from pre-primary or none attended school, those who graduated from high school were 2.17 times more likely to have health insurance. Regarding the wealth index, compared to the poorest, those from second, middle, fourth, and richest were more likely to have health insurance by 2.20; 3.09; 4.90; and 7.01, times respectively after adjusting to all independent variables. In terms of the women's age, compared to women aged 15 to 19 years old, those in age 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49 were more likely to have health insurance by 4.81; 5.57; 5.91; 4.41;4.66;3.89 times respectively. The marital status of women found that compared to those married or in the union, those who were formerly married or in union and those never married or in the union were more likely to have health insurance by 1.38 and 1.24 times. Model 1 is the best model because all independent variables can explain the dependent variables by 17.41% which is higher than Model 2 which was 16.51%. Pseudo R2 for Model 1 means that all independent variables in this model can explain 17.41% of ownership of health insurance. Then all independent variables in Model 2 can explain 16.51% of ownership of health insurance.

A similar study conducted in Indonesia found the same results which revealed the economic status is a significant factor related to health insurance ownership and the study in China found living in rural, being elderly, and having non-communicable diseases the factors people register for health insurance (Meng et al., 2015). Supported the findings of this study, the study using Indonesia Family Life Survey (IFLS) found job, knowledge, education, chronic condition, marital status, and inpatient care were significantly associated with health insurance ownership (Astari & Kismiantini, 2019; Prasetyo & Haksama, 2022). Health insurance has linkage to the domestic political concerns based on the study in Indonesia (Pisani et al., 2017). In Congo, the findings were similar to this study that stated the increased age will 10% increase the probability of women having health insurance (Dimbuene et al., 2022).

There are many agendas arranged to decrease uninsured, for example by reducing total healthcare costs with a focus on quality, not quantity (Misir, 2015). An issue of universal health coverage was also faced in countries in South East Asia, for instance, the Philippines and Vietnam which focus on encouraging voluntary, and Thailand which used the tax that connected to the Ministry of Health and local health authorities (Mills, 2014). In Nigeria, health care can be accessed through several sources including, out-of-pocket, tax revenue, donor, and health insurance from social and community (Uzochukwu et al., 2015). The importance of health insurance for women of reproductive age was found in the study in Ghana, Indonesia, and Rwanda that found most of the women used health insurance for de-

Table 3. The multivariate results of correlation between independent variables and health insurance ownership

Variable	Model 1			Model 2		
	AOR	95% CI	p-value	AOR	95% CI	p-value
Place of Residence						
Urban (ref)						
Rural	0.89	0.73 - 1.09	0.273			
Location of Residence						
Coastal (ref)						
Interior	1.02	0.66 – 1.56	0.937			
Region						
Barima-Waini (ref)						
Pameroon-Supenaam	0.71	0.49 – 1.03	0.072			
Essequibo Islands-West Demerara	0.80	0.57 – 1.12	0.193			
Demerara-Mahaica	0.92	0.70 – 1.21	0.550			
Mahaica-Berbice	0.52	0.36 – 0.77	0.001**			
East Berbice-Corentyne	0.47	0.34 – 0.65	0.000***			
Cuyuni-Mazaruni	1.08	0.69 – 1.69	0.729			
Potaro-Siparuni	0.75	0.43 – 1.30	0.308			
Upper Takutu-Upper Essequibo	1.04	0.65 – 1.66	0.861			
Upper Demerara-Berbice	1					
Religion						
None (ref)						
Christian	0.69	0.34 – 1.38	0.294	0.65	0.33 – 1.29	0.220
Hindu	0.58	0.28 – 1.23	0.158	0.52	0.25 – 1.09	0.085
Muslim	0.42	0.19 – 0.93	0.032*	0.38	0.17 – 0.84	0.016*
Rastafarian	0.52	0.16 – 1.66	0.268	0.52	0.16 – 1.67	0.276
Bahai and other religion	0.82	0.29 – 2.33	0.707	0.85	0.30 – 2.40	0.767
Ethnic Group						
African/Black (ref)						
Amerindian	0.55	0.39 – 0.78	0.001**	0.68	0.50 – 0.93	0.015*
East Indian	0.43	0.33 – 0.56	0.000***	0.39	0.31 – 0.52	0.000***
Mixed	0.62	0.51 – 0.77	0.000***	0.73	0.60 – 0.89	0.002**
Chinese, Portuguese, and others	0.90	0.26 – 3.13	0,873	0.91	0.26 – 3.16	0.883
Sex of HH Head						
Male (ref)						
Female	1.31	1.11 – 1.54	0.001**	1.30	1.11 – 1.53	0.001**
Education of Household Head						
Pre-primary or None (ref)						
Primary	1.05	0.63 – 1.77	0.825	1.01	0.61 – 1.67	0.975
Secondary	0.95	0.58 – 1.57	0.853	0.97	0.59 – 1.58	0.890
Higher	2.11	1.25 – 3.56	0.005**	2.17	1.30 – 3.64	0.003**

Variable	Model 1			Model 2		
	AOR	95% CI	p-value	AOR	95% CI	p-value
Wealth Index Quintile						
Poorest (ref)						
Second	2.20	1.62 – 2.99	0.000***	2.20	1.62 – 2.99	0.000***
Middle	2.98	2.17 – 4.09	0.000***	2.98	2.17 – 4.09	0.000***
Fourth	4.70	3.42 – 6.45	0.000***	4.70	3.42 – 6.45	0.000***
Richest	6.52	4.73 – 8.98	0.000***	6.52	4.73 – 8.98	0.000***
Women's Age (Old Years)						
15 – 19 (ref)	5.12	3.65 – 7.19	0.000***	4.81	3.43 – 6.73	0.000***
20 – 24	5.92	4.17 – 4.50	0.000***	5.57	3.94 – 7.88	0.000***
25 – 29	6.32	4.37 – 9.15	0.000***	5.91	4.09 – 8.52	0.000***
30 – 34	4.67	3.19 – 6.81	0.000***	4.41	3.03 – 6.40	0.000***
35 – 39	5.14	3.52 – 7.49	0.000***	4.66	3.21 – 6.77	0.000***
40 – 44	4.14	2.81 – 6.10	0.000***	3.89	2.65 – 5.72	0.000***
45 – 49						
Ever Attended School						
Yes (ref)						
No	0.38	0.12 – 1.26	0.113	0.36	0.11 – 1.20	0.096
Marital/Union Status of Women						
Currently married/ in union (ref)						
Formerly married/ in union	1.29	1.01 – 1.65	0.043*	1.38	1.08 – 1.75	0.010*
Never married/ in union	1.33	1.07 – 1.67	0.012*	1.24	0.99 – 1.55	0.059

****p-value*<0.001, ***p-value*<0.01, **p-value*<0.05
Model 1Pseudo R2 = 0.1741
Model 2Pseudo R2 = 0.1651

livery, compared to antenatal care (W. Wang et al., 2016). Besides those, the health insurance for women of reproductive health is also useful for contraceptive use and reproductive health treatments. This study can be policy implication that proposes that government provide the universal health insurance, especially among women of reproductive age considering the economic conditions and women's age. The findings can be generalized beyond women of reproductive age in Guyana, but not for all populations at all ages. The low rate of health insurance coverage among Guyana's reproductive age women could be caused by factors other than those included in this study. Further study can add more predictors and can be engaged with a qualitative study. However, further studies that included multilevel aspects can be more detailed explaining the barriers of not having health insurance. Moreover, the qualitative study can also help to explore the barriers from specific perspectives and points of view.

CONCLUSION

The health insurance coverage among women of reproductive age in Guyana remains low only 18.94%. The factors that were found associated with owning health insurance include females as household heads, highest wealth index, having higher education, being aged 30-34 years old, and being formerly married or in a union. However, the factors that reduce the probability of having health insurance include living in regions Damerara-Mahaica and Mahaica–Berbice, being Muslim, and having household heads from ethnic groups Amerindian, East Indian, and Mixed. There is need for improvement in health insurance management especially at the regional level and to ensure that health services are equal-

ly distributed. The scheme of universal health insurance is also important to be conceived so all citizens can access health services, especially women of reproductive age.

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