

# WILLINGNESS TO PAY FOR HEALTH INSURANCE AMONG ATTENDEES OF SELECTED URBAN HEALTH CENTRES IN MYANMAR

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## ABSTRACT

### BACKGROUND:

Reforming health system in Myanmar is crucial aiming to achieve universal health coverage in 2030. High out-of-pocket (OOP) payment is the main cause of increasing financial hardship, and hence, implementing effective health insurance system is necessary to lower the financial burden. Since it is novel for most people, it is mandatory to consider their willingness upon such system.

### OBJECTIVE:

This study aimed to assess the willingness to pay (WTP) status for proposed health insurance plan among the attendees visiting selected urban health centers (UHCs) of Myanmar.

### METHODS:

The cross-section study was conducted on 261 out-patient department (OPD) attendees visiting selected UHCs in Yangon Region, Myanmar from July-December, 2023. Two UHCs were selected using simple random sampling from a purposively selected district, and the participants were recruited consecutively. Face-to-face interview was done using questionnaires and contingent valuation method (bidding approach). Binary logistic regression was done to determine factors influencing the WTP status.

### RESULTS:

The results showed that awareness of the health insurance was low (37.5%). Among all, 61.1% of the participants were willing to pay for the recommended amount [10,000MMK per month per person (~5US\$)] and higher for proposed plan. The WTP was negatively associated with older age group (AOR: 0.35, CI: 0.12-0.97), poor self-rated health status (AOR: 0.32, CI: 0.11-0.95), and not experiencing illness within one year (AOR: 0.46, CI: 0.22-0.94), but positively associated with higher average monthly family income (AOR: 2.07, CI: 1.10-3.88).

### CONCLUSION:

The finding indicates that the WTP level of participants for health insurance was relatively high once it was established. The result also provides amount for monthly premium. Therefore, policy makers should consider building up robust health insurance system with comprehensive coverage, and using the premium as one of the reference values for upcoming health insurance plan.

## KEYWORDS:

Willingness to pay, Health insurance, Contingent valuation, Myanmar

## INTRODUCTION

Accessing equitable health services with financial protection is a priority to achieve Universal Health Coverage (UHC) for low- and middle- income countries (LMICs) in recent decades [1]. However, evidences showed that in many developing countries, the out-of-pocket (OOP) payment is the primary resource for financing health services, pushing families into the catastrophic situation and impoverishment [2, 3]. Still, the South East Asia Region contributes the highest share of OOP on health spending, 40% of current health expenditure (CHE) in 2018 [4]. In Myanmar also, most of the CHE are incurred by OOP payments, 78.2% of total health expenditure in 2020, significantly higher than the recommended threshold of 30% [5-7]. It is also much higher when comparing to neighboring countries, for instance, Thailand whose OOP expenditure is merely 10% in 2020 [8].

One solution for reducing OOP payments and attaining Universal health coverage (UHC) is developing the health insurance system [9, 10]. Myanmar has also implemented different form of health insurance system; the social insurance scheme by Social Security Board (SSB) and the voluntary health insurance scheme by Myanma Insurance with minor role of private health insurance system [11, 12]. Nonetheless, all these plans cover only 2.5% of Myanmar population (51.4 million) [11, 13], due to unawareness and unfamiliar with the insurance system, low acceptability level, and lack of willing to pay premiums [14].

To develop robust health insurance system, it is mandatory to assess willingness to pay (WTP) for health insurance of the people [15]. Extensive literature has been conducted to determine the WTP level for health insurance. Studies from Indonesia (41.2%) and India (19.4%) showed lower WTP for health insurance [16, 17] while South Sudan (68%), East Caribbean (69.5%) and Saudi Arabia (77.9%) studies showed higher WTP status [18-20]. The literature also explored that several factors including socioeconomic and health related ones remained major contributing factors for WTP [14-16, 21-25]. However, there is limited evidence on acceptability and feasibility of health financing reform in Myanmar. Hence, this study aims to assess WTP status, desired amount and its contributing factors for a proposed health insurance plan among attendees of selected urban health centres (UHCs) in Myanmar. The WTP amount resulted could use as a reference rate for defining premiums, and for future policy decision making in feasibility and acceptability of the Myanmar health financing reform.

## METHODS

### ETHICAL CONSIDERATIONS

The ethical approval was received from the Institutional Review Board of University of Public Health, Yangon, Myanmar with the approval number [UPH-IRB (2023/MPH/7)]. The participants were requested for voluntary participation, and written informed consent was obtained from each participant.

### STUDY DESIGN, PERIOD AND SETTING

The cross-sectional study design was performed in this study from July, 2023 to December, 2023. The study population were out-patient department (OPD) attendees visiting selected UHCs in Yangon Region, Myanmar. All OPD attendees 18 years and above including both sex who visited UHCs were included. People visiting to take administrative services such as birth registry, etc. were excluded from the study.

### SAMPLING AND SAMPLE SIZE

Yangon region is purposively selected since it is the biggest commercial capital with rapid urbanization in Myanmar. Also, there is diverse mix of socio-economic cluster, hence can represent the population with outcome of interest. Then, one

district (Thingangyun District) was selected purposively as there is a balanced mix of population in terms of place of residence, wealth status and labour force. There are 4 UHCs in this district. Of these, 2 UHCs were randomly selected using simple random sampling.

The sample size was determined using the formula:  $n = \frac{z^2 \cdot p \cdot q}{d^2}$  where n= total number of participants required, z= standard normal deviate for  $\alpha = 1.96$  at 95%CI, p =proportion of willingness to pay from previous literature =41.2% [16]. According to the formula, the minimum required sample size was 258. Thus, each UHC accounted for 129 participants equally assuming the same size, organization structure and workload. After that, all eligible participants attending the centres during the study period were recruited consecutively until the target sample size was reached. Actually, the total sample was 261 in this study.

## DATA COLLECTION METHODS AND TOOLS

The face-to-face interview was done by main investigator and two assistant interviewers in Myanmar language after getting permission from authorized persons. The assistant interviewers (a township health nurse and a trained nurse) were trained by the main interviewer during a one-day training period. The questionnaires and the proposed health insurance plan were used as training tools.

The questionnaires included (a) socio-demographic characteristics [age, gender, marital status, education, occupation, and income], (b) health status and healthcare seeking behavior [experience any illness within 1 year (experience of ill health or hospitalization in last year apart from the current visit), self-rated health status (how participant perceived his or her health by rating it), difficulties occurred in healthcare payments, and coping method (ways that participant used for paying healthcare expenses)], (c) awareness of health insurance, and (d) WTP for proposed health insurance plan [amount of money willing to pay for first bid of recommended amount (10,000MMK), and subsequent bits].

All the variables for questionnaire were based on previous literature, specific context, and existing knowledge. The interview time was about 25 to 30 minutes per participant. Pre-testing was done among 25 OPD attendees in one UHC from the same district and questionnaire was revised as necessary. Reliability statistics were also calculated and Cronbach's alpha based on standardized items value was 0.77, showing reliable results.

## ELICITING WTP FOR A PROPOSED PLAN OF HEALTH INSURANCE

In order to assess WTP, contingent valuation (CV) technique was used with double-bounded dichotomous choice elicitation approach [19]. Firstly, a proposed health insurance plan was developed. All reference values were based and simplified from the pre-existing scheme of Myanmar Insurance under Ministry of Planning and Finance. The insured person could claim the benefits within 10 days of post-hospitalization. The insured person could get healthcare services at contracted public hospitals in accordance with the packages. The expenses for OPD services were not included in this plan. Although description of the proposed plan was divided into 3 parts, people have to buy the whole package [Table 1].

TABLE 1. DETAILED DESCRIPTION OF THE PROPOSED HEALTH INSURANCE PLAN

No.	Proposed health insurance package	Insurance coverage	Benefit packages
1.	Basic cover	-Accidental hospitalization	-20,000MMK/day (max:60days)
		-Any hospitalization	-10,000MMK/day (max:60days)
		-Death from disease or total disability	-1,000,000MMK
		-Accidental death	-2,000,000MMK
2.	Supplementary (1)	-Any surgical treatment	-500,000MMK
3.	Supplementary (2)	-Cancer treatment	-1,000,000MMK

MMK: Myanmar Kyat

The proposed plan was explained to the study population (giving printed fact sheets) and then asked each whether he or she is willing to participate in this plan or not. If they answered “yes”, then the bidding approach was applied. The first bid for the game was 10,000 MMK (~5US\$) per person per month (using basic cover value of Myanmar Insurance as a reference) and asked them if they are willing to pay. The exchange rate used was the official government rate concurrent with the data collection period (1US\$ = ~2000MMK). If they answered “yes”, 1,000 MMK was increased per one bid till the maximum amount they wanted to pay. If the participants did not want to pay the first bid, the bidding amount was reduced by 1,000 MMK per one bid up to the minimum they wanted to pay.

## STATISTICAL ANALYSIS

The outcome variable was WTP or not for first bid (recommended amount) of proposed health insurance scheme. Data entry, data clean up, data summarization and data analysis were carried out using Statistical Package for Social Science (SPSS-26) software (SPSS Inc, Chicago, IL, USA). Categorical data was presented as number and percentage. The WTP amount was described as mean, standard deviation, median, minimum and maximum. The outcome (WTP) was regarded as dichotomous variable (willing to pay = 1, not willing = 0) and factors influencing WTP for health insurance were assessed by logistic regression model. Firstly, simple logistic regression, then multiple logistic regression (binary logit) was done. The results were expressed as crude odds ratio (COR) and adjusted odds ratio (AOR) respectively along with their confidence interval (CIs). The variance inflation factor (VIF) was also calculated to determine multicollinearity among predictor variables. The VIF value of <5 was regarded as the acceptable level. The P value <0.05 was considered statistically significant in this study.

## RESULTS

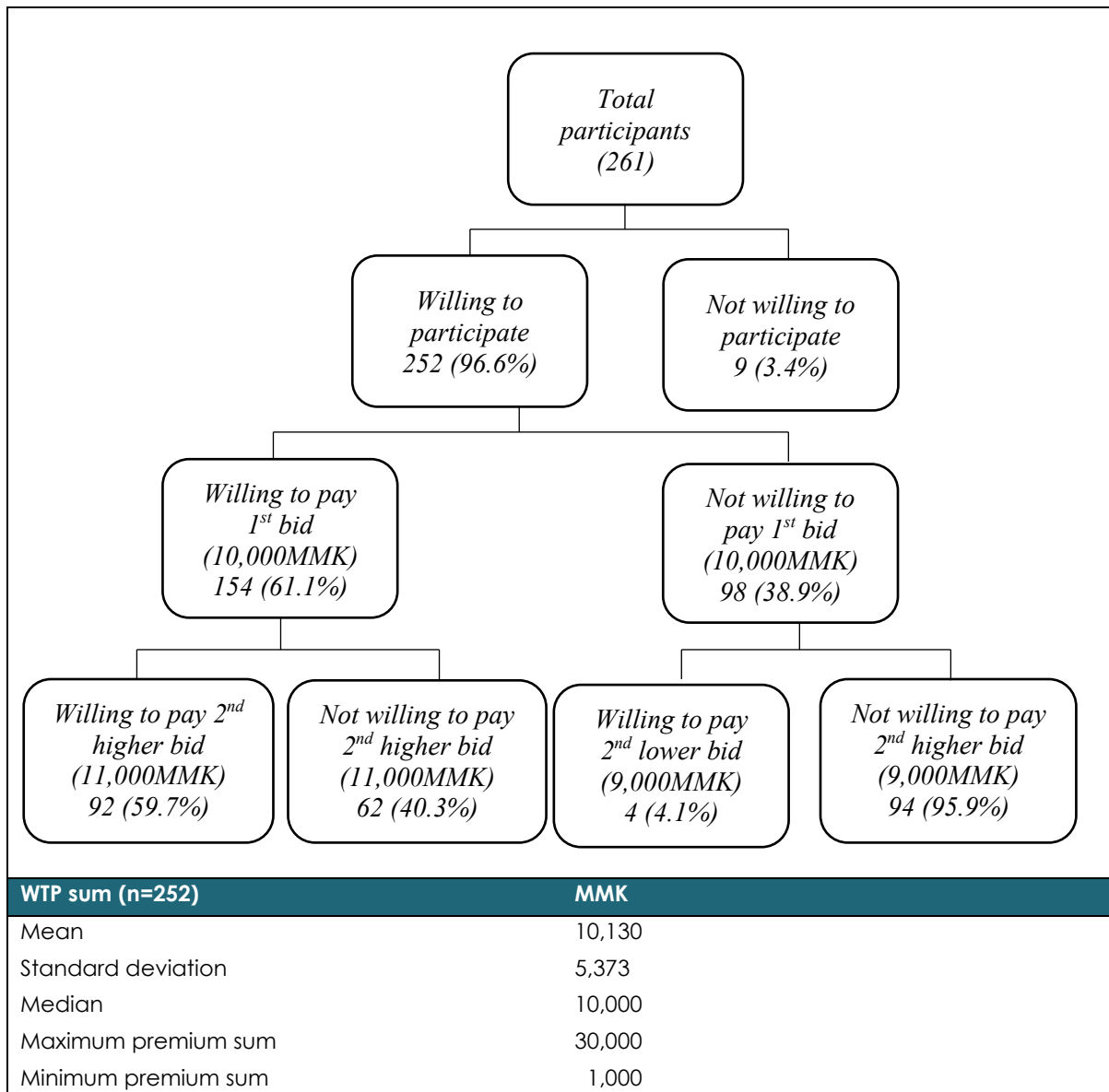
The study included 261 participants where more than half (60.9%) were between 18-44 years, more than two-third (72.4%) were female and 69.7% were married. The proportion of participants with primary to high school level education was 57.1% while 35.2% remained dependent. More than two-thirds (65.1%) had lived with family members less than five where 39% had average family monthly income less than 300,000MMK. More than two-third (73.2%) experienced illness within one year while 59.8% occurred difficulties in health care payments. More than half (56.9%) marked themselves as good health status, however, only one-third (37.5%) knew about the health insurance. Nearly half (44.9%) borrowed money from others to solve their problems [Table 2].

**TABLE 2. SOCIO-DEMOGRAPHIC AND HEALTH-RELATED CHARACTERISTICS OF THE STUDY POPULATION (N=261)**

Characteristics	Category	No	%
Age (years)	18-44	159	60.9
	45-59	70	26.8
	60 and above	32	12.3
Gender	Male	72	27.6
	Female	189	72.4
Marital status	Currently married	182	69.7
	Currently not married	79	30.3
Education	No formal education	10	3.8
	Primary to high school level	149	57.1
	University and above	102	39.1
Occupation	Dependent	92	35.2
	Currently working	169	64.8
Family size	1-5	170	65.1
	5 and above	91	34.9
Average monthly family income (MMK) (N=249)	<=300,000	97	39
	>300,000	152	61
Self-rated health status (N=260)	Good	148	56.9

Characteristics	Category	No	%
	Fair	86	33.1
	Poor	26	10
Experience any illness within 1 year	Yes	191	73.2
	No	70	26.8
Difficulties occurred in healthcare payments	Yes	156	59.8
	No	105	40.2
Awareness of health insurance	Yes	98	37.5
	No	163	62.5
Coping method (multiple response)	Borrowing money	70	44.9
	Ask help from others	47	30.1
	Withdrawing from savings	38	24.4
	Selling assets	30	19.2
	Pawning properties	9	5.8
	Doing extra jobs	3	1.9
	Drawing children out of school	1	0.6

TABLE 3. SUMMARY STATISTICS OF DOUBLE-BOUNDED DICHOTOMOUS CHOICE QUESTIONS AND WTP STATUS FOR PROPOSED HEALTH INSURANCE



When the participants were explained about proposed health insurance plan and asked for their willingness, majority of them (96.6%) answered that they were willing to participate. As for the WTP, 154 (61.1%) out of 252 participants were willing to pay the recommended amount (1<sup>st</sup> bid). After performing up and down bidding approaches, maximum premium sum was 30,000 MMK (~15US\$), and minimum was 1,000 MMK (~0.5US\$). The average amount of willingness to pay was 10,130 MMK (~5US\$) [Table 3]. The final regression analysis found that participants with older age group (60 years and above) (AOR: 0.35, CI: 0.12-0.97), poor self-rated health status (AOR: 0.32, CI: 0.11-0.95), and not experiencing illness within one year (AOR: 0.46, CI: 0.22-0.94) were negative predictors for WTP. On the other hand, those with higher average monthly family income (AOR: 2.07, CI: 1.10-3.88) were positively predictors for WTP. Moreover, the mean VIF value of 2.02 refers to low multicollinearity level [Table 4].

**TABLE 4. DETERMINANTS OF WTP FOR PROPOSED HEALTH INSURANCE (N=252)**

Variables	WTP n (%)	COR	95% CI	P	AOR	95% CI	P
Age (years)							
18-44	105(67.3)	1			1		
45-59	40(60.6)	0.75	0.41-1.36	0.338	0.97	0.48-1.96	0.937
60 and above	9(30)	0.21	0.09-0.49	<0.001*	0.35	0.12-0.97	0.045*
Sex							
Male	40(57.1)	1			1		
Female	114(62.6)	1.26	0.72-2.20	0.423	1.77	0.87-3.61	0.118
Marital status							
Currently married	113(64.2)	1			1		
Currently not married	41(53.9)	0.65	0.38-1.13	0.126	0.75	0.39-1.47	0.404
Education							
No formal education	3(30.0)	1			1		
Primary to high school level	74(51.8)	2.50	0.62-10.06	0.196	2.51	0.56-11.29	0.231
University and above	77(77.9)	8.17	1.95-34.23	0.004*	4.82	0.99-23.43	0.051
Occupation							
Dependent	43(49.4)	1			1		
Currently working	111(67.3)	2.10	1.23-3.58	0.006*	1.82	0.90-3.72	0.098
Family size							
1-4	104(63.0)	1			1		
5 and above	50(57.5)	0.79	0.47-1.35	0.390	0.82	0.43-1.55	0.542
Average family monthly income (MMK)							
<=300,000	43(46.2)	1			1		
>300,000	107(72.8)	3.11	1.80-5.37	<0.001*	2.07	1.10-3.88	0.024*
Self-rated health status							
Good	96(66.7)	1			1		
Fair	47(58.0)	0.69	0.39-1.21	0.197	0.66	0.33-1.33	0.246
Poor	10(38.5)	0.31	0.13-0.74	0.008*	0.32	0.11-0.95	0.040*
Experience any illness within 1 year							
Yes	114(61.6)	1			1		
No	40(59.7)	0.92	0.52-1.63	0.782	0.46	0.22-0.94	0.034*
Difficulties occurred in healthcare payment							
Yes	84(54.9)	1			1		
No	70(70.7)	1.98	1.16-3.39	0.013*	1.54	0.81-2.93	0.189

Variables	WTP n (%)	COR	95% CI	P	AOR	95% CI	P
Awareness of health insurance							
Yes							
No	69(72.6)	1			1		
	85(54.1)	0.44	0.25-0.76	0.003*	0.74	0.38-1.42	0.372
Mean VIF	2.02						

\* Refers to statistically significant results

## DISCUSSION

This study was conducted among 261 OPD attendees aiming to assess WTP for proposed health insurance plan. The result of the study revealed that almost all of the participants were willing to participate for proposed health insurance plan though their level of willingness to pay amount were different from each other.

Nearly two-third of the participants had difficulties in making payment for medical expenses and mostly used coping method was borrowing money from others. It is highlighted that although drawing children out of school to solve financial difficulties showed less than 1%, it is somewhat of an alarming sign for country to become widening the poverty gap. Correspondingly, one Ethiopia study stated that nearly half of the respondents had difficulties for paying medical costs and more than one-third of them had to borrow money from someone to cover the costs [26]. Differing from current study, a West Africa study reported that approximately 40 percent who met difficulties in making payments had to use their savings as a coping method for paying medical costs [24].

About one-third of the participants were aware about health insurance in the current study, and this is in agreement with an India study done in 2013 [27]. Elsewhere, Bawa and Ruchita presented the higher results where majority of the respondents were aware of the health insurance [17]. Nonetheless, Oo et al. stated that merely 8.4 percent of participants from Myanmar had awareness about health insurance [28] indicating that the awareness level was unsatisfactory in Myanmar. The reason might be due to differences in education status, socio-demographic circumstances, and lack of robust health insurance system. Hence, it is mandatory to develop proper channel for advocacy and awareness raising about nature of health insurance, how it works and which benefits could be received to break such barriers.

On exploring the prevalence of WTP status, almost all of the participants were willing to participate in the proposed health insurance plan in the current study. Among these participants, nearly two-thirds were willing to pay for the first bid of recommended amount and higher but the rest of them were willing to pay lower. Policymakers may conclude from this result that most people are in favor of such a system. This finding could help policymakers create a strategy that encourages the greatest amount of public participation. Likewise, study done in St. Vincent and Grenadines, and South Sudan where about two-third were willing to pay [19, 20]. This might be due to more or less similar socio-economic position, level of awareness and level of knowledge about health insurance among countries.

Different from current study, one Myanmar study conducted during 2019 highlighted that member of SSS had higher proportion of WTP with over 90 percent [13]. There are certain reasons for such diversity. Firstly, the Myanmar SSS is well-known for Myanmar people to certain extent since it has established decades ago. In addition, participants from previous study are the SSS members so they have already awareness about the benefits of health insurance. This was consistent with one West Africa study which was done in informal sector revealed that WTP for first premium was nearly 90 percent [24]. The explanation for higher WTP might be that different income of the participants and level of knowledge about benefits of health insurance. Nonetheless, one Indonesia study done in 2022 described that less than half of the participants were willing to pay for cost sharing NHI [16]. Similarly, WTP was just less than one-fifth of the study population in India study [17]. The reasons for lower WTP might be lack of trust in existing schemes, low knowledge associated with health insurance and socio-economic status of the participants.

The WTP amount was assessed using bidding game approach in this study. The first bid of recommended amount is 10,000 MMK (~5US\$). By comparing with previous studies, the South Sudan study mentioned that the WTP amount for majority was 50 local currency (5US\$), consistent with the current study [20]. Yet, the 2021 Mongolia study set the first bid as 12US\$ and nearly half showed their willingness [29]. These diverse results could be due to different income status, nature of health insurance system and different bid offers. As for policy perspectives, this result can be used as one of the reference values in setting the premium for upcoming health insurance plan.

After regression analyses, it was found that the older age group (60years and above) was less likely to pay than younger age groups (45-59 years, and 18-44 years). Similarly, a systematic review of WTP for health insurance in low-and-middle income countries stated that increasing age and reduced WTP were strongly correlated [25]. A plausible explanation is that some of the older people had to depend on their children and some earned fewer amount of pension that they could not afford to invest in insurance. Another influencing factor in current study was average monthly family income. Participants with higher household income were more willing to pay status and this is in conformity with economic theory. Correspondingly, Nugraheni et al. stated that increased income was correlated with higher WTP [16]. Perhaps, increased household income has certainty for source of payment to demand and purchase health insurance. A less anticipated result is that participants with poor self-rated health status showed less WTP which remained against the hypothesized relationship. Meantime, participants experiencing illnesses within a year were more likely to have greater participation since people who are generally risk averse remain more prepared to cover cost-sharing, and this finding is also concordant with the study by Nugraheni et al [16].

The significant strength in this study is that it was done using contingent valuation method (bidding game), one of the most reliable and common methods for financial evaluation, to elicit WTP amount of the participants. This could allow the participants to meet the most suitable amount for them. However, Since the study area belongs to urban hub, there might be limitation to apply the result of the study in the rural area. Hence, further studies should be done among rural population in order to assess their willingness and raise awareness among them. Moreover, participants could only answer whether they would like to pay or not for the proposed plan and they could not suggest what kind of health care services they wanted to be included due to certain close-ended questions. Studies using qualitative approach should be recommended in future to explore in-depth understanding about the health services needed for the population.

## CONCLUSION

The results from this study provide an insight into key factors regarding the WTP status and its influencing factors. Almost all of the participants in the study were willing to participate in proposed health insurance. Among them, nearly two-thirds were willing to pay above the recommended amount of premium. Determinants of WTP for health insurance in this study were age, average monthly family income, self-rated health status, and experiencing any illness within one year. Since average monthly individual income of most participants was found to be low, the premium for proposed plan could be adjusted according to the individual and household income. The results of the study suggested that the acceptance level of participants regarding health insurance was satisfactory once it was established. The result also provides amount for monthly premium of the participants. Therefore, policy makers should consider building up robust health insurance system with comprehensive coverage and using the premium as one of the reference values for upcoming health insurance plan.

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### Conflicts of interest

Authors declare that there is no conflict of interest.

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