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Health insurance in Myanmar: Knowledge, perceptions, and preferences of Social Security Scheme members and general adult population

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Summary

Objective: Our study explores the knowledge, perceptions, willingness to pay, and preferences of potential health insurance beneficiaries about health insurance in Myanmar.

Methods: Cross-sectional survey data were collected among two samples: the general population and Social Security Scheme (SSS) member. Mann-Whitney *U* test and independent sample *t* test were applied to compare the two samples. The data on willingness to pay for health insurance were analyzed using regression analysis.

Results: Low level of knowledge and weak positive perception are found in both samples. More than 90% of the SSS sample and 75% of the general sample are willing to pay health insurance premiums. The largest shares of both samples are willing to pay for monthly premiums between 2000 and 4000 MMK (1.8-3.6 USD). Health status, age, gender, income, and trust are significantly associated with willingness to pay for health insurance among general sample while occupation, civil status, income, and positive perception on prepayment principle are found among SSS sample.

Conclusions: The government of Myanmar should be aware of the preferences of beneficiaries to pay a relatively low level of monthly health insurance premiums without co-payment.

KEYWORDS

ability to pay, health insurance, social security, willingness to pay

1 | INTRODUCTION

Myanmar has committed itself to achieve universal health coverage (UHC) by 2030.[1] The main goal is to assure access to essential health care without financial barriers for the population. There are many challenges to achieve this target, such as a general lack of leadership and insufficient resources in the country, as well as weaknesses in the health system itself such as insufficient supplies and health staff.[2] These challenges need to be adequately addressed to move towards UHC. Especially, assuring necessary resources and capacity building at the health system level are needed.

The current health financing model in Myanmar is mainly based on out-of-pocket payments (OOPPs). In 2014, 50.7% of total expenditure on health was paid for out-of-pocket, while 45.4% came from the government, 0.5% from the Social Security Scheme (SSS), and 3.4% from other private sources.[3] The OOPPs create a financial burden for households. One study in the Magway Region in Myanmar shows that catastrophic health expenditure affects 25.2% of the households in the urban areas and 22.7% in the rural areas.[4] The SSS has low population coverage. Approximately 700 000 employees out of a total of 21.8 million are entitled to SSS benefits. This is about 1.3% of the total population (51.4 million).[5,6]

To achieve UHC, Myanmar needs to reduce the OOPPs to less than 30% of total health expenditure as recommended by the WHO.[7] This can help to prevent catastrophic health expenditure. If Myanmar fails to expand public expenditures on health and/or SSS coverage, the reduction of OOPPs will not be possible. Although the expansion of public spending through increased tax revenues on health care is a challenge for a poor country like Myanmar, there is room for expanding public spending through the establishment of a more comprehensive social health insurance system. The latter is the subject of the new Social Security Law introduced in 2012. This new law makes the enrollment of employees of smaller enterprises in the SSS mandatory and allows for voluntary enrollment of persons in the sectors not covered by the mandatory SSS registration.[6]

In addition, Myanmar is trying to establish different kinds of insurance schemes and approaches—such as "a community initiative maternal and child health voucher scheme," "Hospital Equity Fund," and "Township Based Health Protection Scheme"—in the intermediate stages while moving towards UHC.[8,9]

Evidence from low- and middle-income countries suggests that revenue collection through a comprehensive health insurance mechanism can assure sufficient and sustainable revenues to improve access to essential health care. However, there must be a wide pool of contributors to share the risk of catastrophic medical expenditures by all people enrolled.[10] Thus, there is a need to either expand or reform the SSS risk pool or to create a new national health insurance system. In both cases, population preferences for health insurance should play an essential role. Our study explores the knowledge, perceptions, and preferences of potential health insurance beneficiaries about the nature and size of health insurance premiums as well as cost-sharing mechanisms and the health benefit package. We use cross-sectional survey data collected among two groups: the general population and the current SSS members. The comparison between the groups allows us to explore whether previous experience with health insurance is associated with the preferences for health insurance. By this, the analysis contributes to the discussion about the establishment of UHC in Myanmar. However, it can be useful for other low- and middle-income countries aiming at UHC as well.

2 | METHODS

Our study uses data from a survey conducted among members of the SSS and the general adult population (18+) living in the Yangon region. The survey was conducted between June and August 2015. Ethical clearance was obtained from the Ethical Committee of Lower Myanmar Research Department.

2.1 | Sampling procedure

Multistage cluster sampling was applied for the two samples as follows:

General population sample: We chose the community living in the Yangon region for the pilot study. In the first stage, two townships—Bahan and Ahlone—representing urban areas and two townships—North Dagon and Hlegu—representing suburban areas from Yangon Division were selected. In the second stage, four wards from each township were selected based on the agreement of the local authority. In the third stage, the surveyors randomly selected the number (1-6) from a bowl to be skipped to select the next household. In each household selected, the head or main decision maker was included in the survey. Thus, the survey excluded persons who did not have an address, eg, the homeless people, as well as people aged 18 years or less. Participants who did not want to be involved in the study were able to opt out. The procedure ended when 320 interviews were carried out.

SSS sample: Likewise, a multistage cluster sampling method was chosen for the SSS members. Here, the level of the clusters was based on the existing registration in the SSS. At the time of the survey, the SSS had 77 area offices across the country. Hence, in the first stage, we randomly selected four area offices, namely, Shwe Pyi Thar, Office 5, Kyaut Se, and Bago, according to a generated random number. In the second stage, large organizations (more than 10 employees) within each area office were chosen randomly by generating a random number again. The number of organizations to be selected was determined by the magnitude of the SSS member distribution under the selected area office. Consequently, three nongovernment-owned and three government-owned organizations were selected in Shwe Pyi Thar and Office 5, while two nongovernment-owned and two government-owned organizations were selected in Kyaut Se and Bago. In the third stage, 24 to 26 respondents from each nongovernment-owned organization and seven to nine respondents from each government-owned organization were selected randomly. This reflected the fact that the proportion of SSS members working in nongovernment-owned organizations to those in government-owned organizations is 3:1. Eventually, our SSS sample only included employees of large organizations who have registered with the SSS and are at least 18 years of age. Participants who did not want to be involved in the study were able to opt out but none opted out in this study. The procedure ended when 320 interviews were carried out.

2.2 | Data collection

For the data collection, we developed a questionnaire. The questionnaire was developed in English, then translated in local language, and then verified through a backward translation into English. The questionnaire included five themes: sociodemographic characteristics; the respondent's past health care utilization; knowledge, perception, and practice of health insurance; willingness and ability to pay for health care services; and preferences to pay for health care services. We analyze the data that disclose the knowledge, perception, and preferences about the nature and size of health insurance premiums, cost-sharing mechanisms, and the health services that should be included in the benefit package. The questionnaire is provided in Appendix A.

To ensure the reliability and validity of the questionnaire, we conducted pretest interviews with 30 participants. We provided 1-day training on the fieldwork standards and the specificities of the questionnaire to the surveyor team. A trained surveyor team carried out face-to-face interviews. Informed consent was obtained from the participants before the interview, and the data were kept confidential.

2.3 | Statistical analysis

The two samples were analyzed separately using descriptive statistics, and then compared with Mann-Whitney *U* test for ordinal variables and independent sample *t* test for continuous variables. Software package SPSS 27 was applied for the analysis at this first stage. At the second stage, the data on willingness to pay for health insurance were further analyzed using regression analysis, software package StataSE 14. We applied a two-step procedure where the data on willingness to pay were first analyzed using binary regression (1 = willing to pay, 0 = not willing to pay). Then the data on the willingness-to-pay amount were analyzed using linear logistic regression. At the last step, the two types of willingness-to-pay data were jointly analyzed using sample selection regression to investigate their association. In all statistical analyses, the same set of explanatory sociodemographic variables was used.

3 | RESULTS

The sociodemographic characteristics of the two samples are presented and compared in Appendix B. Overall, we observe some statistically significant differences between the two samples, namely, age, gender, education, civil status, number of adult persons in the households, average household income per month, and level of income after household expenditure.

3.1 | General knowledge, perception, and health insurance

General knowledge and perceptions about health insurance and current health insurance status of the respondents in the two samples are described in Table 1. Only 34.1% of the general population sample state that they have knowledge of health insurance, while 60.9% of the SSS sample has such knowledge. In our study, 1.9% of the general population sample has some kind of health insurance such as private insurance from abroad or enrollment in private health insurance by the employee, and 6.8% of this sample has experience with health insurance either in the past or present. Total six perception questions are asked. Only maximum 60% to 70% of both samples response positive perception on health insurance in financial protection, perceived diseases risk, trust, and prepayment principle. Only 30% to 40% of SSS sample and 40% to 50% of general sample response positive perception to the two questions related with weight of return from health insurance and premium payment. The perception of the general population sample about financial protection and the return from health insurance if they get sick are significantly more positive than those of the SSS sample (at *P* value < 0.05 and *P* value < 0.01, respectively). Moreover, significantly higher percentage of the SSS sample perceives disease risk than the general sample, at *P* value = 0.01. There is no difference between the two samples regarding the perception on insurance benefits, trust in health insurance, and paying out-of-pocket instead of purchasing health insurance.

3.2 | Preferences for future health insurance premiums

The preferences for future health insurance premiums in terms of whom to be covered, frequency of payment, and fund management are compared in Table 2. With regard to the interest to enroll in health insurance, a significantly larger share of the SSS sample is found to have a preference for health insurance (94.4%). They are also willing to pay a higher premium if children under 18 years are covered under their insurance (63.8%), in both cases *P* value = 0.001. In the general population sample, these shares are slightly smaller (40.6%). The samples are equally divided about the enrollment of other household members, ie, about 58% of the respondents in both samples would like to pay the same premium and have other household members enrolled as well. With regard to the funding source, the largest share of the general population sample prefers premiums paid by the household while the SSS sample mostly prefers to pay for health insurance via the employers. For the frequency of payment of insurance premiums, the largest shares in both samples (84.4% and 94.4%, respectively) prefer monthly payments. However,

TABLE 1 General knowledge and perception about health insurance and health insurance status

Variables		General Population Sample, N = 320 n (%)	SSS Members Sample, N = 320 n (%)	Statistical Significance of the Sample Difference *P* Value
Knowledge of health insurance	Yes = 1 No = 0	109 (34.1%) 211 (65.9%)	195 (60.9%) 125 (39.1%)	0.001[a]
Currently enrolled in health insurance	Yes = 1 No = 0 Missing	6 (1.9%) 310 (96.8%) 4 (1.3%)	313 (97.8%) - 7 (2.2%)	0.001[a]
Experience with health insurance	Yes = 1 No = 0 Missing	22 (1.6%) 294 (91.9%) 4 (1.3%)	313 (97.8%) - 7 (2.2%)	0.001[a]
Having health insurance could prevent financial hardship if you get sick	Strongly agree Agree Neutral Disagree Strongly disagree Missing	26 (8.1%) 206 (64.4%) 69 (21.6%) 17 (5.3%) 1 (0.3%) 1 (0.3%)	25 (7.8%) 179 (55.9%) 82 (25.6%) 31 (9.7%) 2 (0.6%) 1 (0.3%)	0.023[a]
Return from health insurance is high when you get sick	Strongly agree Agree Neutral Disagree Strongly disagree Missing	6 (1.9%) 156 (48.8%) 110 (43.4%) 41 (12.8%) 6 (1.9%) 1 (0.3%)	8 (2.5%) 99 (30.9%) 106 (33.1%) 101 (31.6%) 5 (1.6%) 1 (0.3%)	0.001[a]
I do not expect to spend money for seeking healthcare this year because I am healthy (perceive diseases risk)	Strongly agree Agree Neutral Disagree Strongly disagree Missing	31 (9.7%) 72 (22.5%) 56 (17.5%) 141 (44.1%) 19 (5.9%) 1 (0.3%)	24 (7.5%) 64 (20.0%) 29 (9.1%) 182 (56.9%) 20 (6.3%) 1 (0.3%)	0.010[a]
Insurance benefits are higher than the cost of insurance and of giving up user fees	Strongly agree Agree Neutral Disagree Strongly disagree Missing	13 (4.1%) 125 (39.1%) 114 (35.6%) 62 (19.4%) 4 (1.3%) 2 (0.6%)	11 (3.4%) 117 (36.6%) 114 (35.6%) 73 (22.8%) 4 (1.3%) 1 (0.3%)	0.286[a]
I trust the insurance system	Strongly agree Agree Neutral Disagree Strongly disagree Missing	38 (11.9%) 170 (53.1%) 88 (27.5%) 19 (5.9%) 3 (0.9%) 2 (0.6%)	48 (15.0%) 170 (53.1%) 84 (26.3%) 13 (4.1%) 1 (0.3%) 4 (1.3%)	0.156[a]
I would prefer to pay at the time of illness instead of paying for insurance	Strongly agree Agree Neutral Disagree Strongly disagree Missing	17 (5.3%) 86 (26.9%) 72 (22.5%) 107 (33.4%) 36 (11.3%) 2 (0.6%)	26 (8.1%) 67 (20.9%) 39 (12.2%) 167 (52.2%) 20 (6.3%) 1 (0.3%)	0.159[a]

[a]Mann-Whitney *U* test.

a considerable share of the general population sample (10.9%) also states a preference for quarterly payments, which indicates a significant difference between the samples (*P* value = 0.001). Although 44.1% of the general population sample is interested to pay premium on an annual basis with a lower premium, only 24.4% of the SSS sample prefers this option. This difference between the two samples is statistically significant at *P* value = 0.01. The largest shares of both sample groups prefer a government body to take the responsibility of fund manager in a future health insurance system.

TABLE 2 Preferences for health insurance premiums

Variables		General Population Sample, N = 320 n (%)	SSS Members Sample, N = 320 n (%)	Statistical Significance of the Sample Difference *P* Value
Preference for health insurance	Yes = 1 No = 0	250 (78.1%) 70 (21.9%)	302 (94.4%) 18 (5.6%)	0.001[a]
Preference to pay extra for health insurance if the children under 18 were included in the insurance scheme	Yes = 1 No = 0 Missing	130 (40.6%) 185 (57.8%) 5 (1.6%)	204 (63.8%) 116 (36.3%) -	0.001[a]
Preferences to enroll other household members if the premium rate will be the same for all	Yes = 1 No = 0	186 (58.1%) 134 (41.9%)	188 (58.8%) 132 (41.2%)	0.873[a]
Preference for funding source	Household members/yourself Employer (hold from salary) Government via tax Missing	214 (66.9%) 21 (6.6%) 80 (25.0%) 5 (1.6%)	42 (13.1%) 247 (77.2%) 28 (8.8%) 3 (0.9%)	-
Preference for frequency of payment	Annually Quarterly Monthly Missing	9 (2.8%) 35 (10.9%) 270 (84.4%) 6 (1.9%)	6 (1.9%) 9 (2.8%) 302 (94.4%) 3 (0.9%)	0.001[a]
Preference for paying annually if the premium price would be lower	Yes = 1 No = 0 Missing	141 (44.1%) 169 (52.8%) 10 (3.1%)	78 (24.4%) 237 (74.1%) 5 (1.6%)	0.001[a]
Preference for fund manager	Government/SSS Private health insurance CBHI Other Missing	155 (48.4%) 73 (22.8%) 86 (26.9%) 1 (0.3%) 5 (1.6%)	209 (65.3%) 43 (13.4%) 64 (20.0%) - 4 (1.3%)	-

[a]Mann-Whitney *U* test.

3.3 | Willingness to pay insurance premiums and co-payments

The willingness to pay insurance premiums under different conditions and the willingness to pay a co-payment are described in Table 3. More than 90% of the SSS sample is willing to pay health insurance premiums to use essential health care services free of charge when needed. However, only 75% of the general population sample is willing to pay health insurance premiums. In both samples, about 50% of the respondents who are unwilling to pay for health insurance state that they object to pay insurance premiums. The share of those unwilling to pay because of inability to pay is smaller in both samples. The largest share of both sample groups is willing to pay for monthly premium between 2000 and 4000 MMK (1.8-3.6 USD). However, the mean of the exact maximum willingness-to-pay amount for the general population sample is higher (2467 MMK/2.3 USD) than that of the SSS sample (2135 MMK/1.9 USD). Based on the current premium rate set by the SSS (4% of their income), we asked respondents about their willingness to pay more for better quality of care, free choice of provider, and shorter waiting time, respectively. More respondents from the SSS sample are willing to pay higher premiums for all three situations than from the general population sample (*P* value = 0.001). About 40% of both samples are willing to pay a co-payment per visit to the health facility if the premium would decrease from 4% per month of their salary to 2%. However, 40% of the SSS sample is willing to pay a higher premium up to 6% if there is a tradeoff for a lower co-payment, while only 20% of the general population sample is willing to do so.

TABLE 3 Willingness to pay insurance premiums and co-payments

Variables		General Population Sample, N = 320 n (%)	SSS Members Sample, N = 320 n (%)	Statistical Significance of the Sample Difference *P* Value
Willing to pay for health insurance premium to be able to use free of charge essential healthcare services when needed	Yes = 1 No = 0	245 (76.6%) 75 (23.4%)	298 (93.1%) 22 (6.9%)	0.001[b]
Reason for being unwilling to pay for health insurance (only for those who stated unwillingness to pay)	Reject to pay Unable to pay Reject and unable to pay Other reason Missing	35 (50.7%) 16 (23.2%) 12 (17.4%) 6 (%) 6 (8.7%)	11 (50%) 9 (40.9%) 1 (4.5%) 1 (4.5%) -	-
Maximum amount of money that is willing to pay every month for health insurance for him/herself[c] (only for those who stated willingness to pay)	<2000 MMK[c] 2000-<4000 MMK[c] 4000-<6000 MMK[c] >6000 MMK[c] Missing	105 (43%) 109 (44.7%) 23 (9.4%) 7 (2.9%) 1 (0.3%)	161 (54%) 118 (39.6%) 17 (5.7%) 2 (0.7%) -	0.003[b]
Exact maximum amount that is willing to pay every month for health insurance for him/herself (MMK)[c] (only for those who stated willingness to pay)	Mean Median SD	2467 2000 1615	2135 2000 1197	0.008[a]
Willing to pay more than 4% of income for health insurance for better quality of care	Yes = 1 No = 0	115 (35.9%) 205 (64.1%)	186 (58.1%) 134 (41.9%)	0.001[b]
Willing to pay more than 4% of income for health insurance for if the insurance allow choice of provider	Yes = 1 No = 0	110 (34.4%) 210 (65.6%)	165 (51.6%) 155 (48.4%)	.001[b]
Willing to pay more than 4% of income for health insurance for shorter waiting time	Yes = 1 No = 0	131 (40.9%) 189 (59.1%)	179 (55.9%) 141 (44.1%)	0.001[b]
Willing to pay co-payments per visit to the healthcare facility if the insurance premium could decrease from 4% per month of the income to 2% per month	Yes = 1 No = 0 Missing	138 (43.1%) 181 (56.6%) 1 (0.3%)	154 (48.1%) 166 (51.9%) -	0.217[b]
Willing to paying a higher premium, 6% instead of 4% of the income per month, in exchange for lower co-payments	Yes = 1 No = 0 Missing	62 (19.4%) 256 (80.0%) 2 (0.6%)	130 (40.6%) 190 (59.4%) -	0.001[b]

[a]Independent *t* test.

[b]Mann-Whitney *U* test.

[c]Exchange rate 1000 MMK = 0.81 USD (2015).

3.4 | Willingness to pay for health insurance by the general population sample

The data on willingness to pay stated by the general population sample are further analyzed by regression analysis. We use binary probit regressions to examine the association between variables such as socio demographic characteristics, knowledge, perception, and practice towards health insurance or social security and the willingness to pay for health insurance. The results are presented in Table 4. Health status is significantly associated with the willingness to pay for health insurance, ie, better health status is related to a lower willingness to pay for health insurance (*P* value <0.05). Perception of disease risk (getting chance of illness) and trust in the health insurance system are positively associated with the willingness to pay for health insurance, at *P* value < 0.05 and *P* value < 0.01, respectively.

TABLE 4 Willingness to pay of the general sample (binary probit regression and linear regression)

	Willing to Pay for Health Insurance (1 = Yes, 0 = No) Binary Probit Regression, N = 295				Exact Amount of Payment Stated in MMK (1000 MMK = 0.81 USD) Linear Regression, N = 295	
Independent Variables	**Coef.**	**SE**	**Margin**	**SE**	**Coef.**	**SE**
Age	−0.004	0.007	−0.001	0.002	−18.867**	7.577
Gender	−0.172	0.203	−0.047	0.055	−673.299**	220.667
What is your primary occupation activity at present?	−0.042	0.199	−0.012	0.054	−308.801	218.504
What is your highest educational level?	−0.028	0.211	−0.008	0.058	218.625	224.829
What is your civil status at present?	0.138	0.210	0.038	0.057	−362.620	234.192
How would you rate your overall health status at present?	−0.295*	0.152	−0.081*	0.041	−14.890	154.017
How many adult persons (age 18 or higher) are there in your household?	0.001	0.022	0.000	0.005	−12.501	17.992
How many children (under the age 18) are there in your household?	0.052	0.095	0.014	0.026	120.886	96.972
Considering the income of all household members and all sources of income (eg, wages, social welfare, pensions, rents, fees, etc.), what is your average net monthly household income?	−0.002	0.003	−0.001	0.001	7.465**	2.880
Which of the following is true regarding your current household income?	0.122	0.254	0.033	0.069	−485.429	276.141
Knowledge of health insurance	−0.312	0.200	−0.085	0.055	−303.446	161.178
Experience of health insurance	−0.068	0.547	−0.019	0.149	−486.965	522.607
Currently registered in any kind of health insurance	0.430	0.768	0.117	0.210	583.840	864.056
Having health insurance could prevent financial hardship if you get sick?	−0.076	0.167	−0.021	0.046	14.864	187.416
Return from health insurance is high when you get sick.	0.249	0.139	0.068	0.038	217.360	148.321
I do not expect to spend money for seeking health care this year because I am healthy.	0.212*	0.087	0.058*	0.024	161.248	92.597
Insurance benefits are higher than the cost of insurance and of giving user fees.	0.099	0.135	0.027	0.037	−131.852	136.403
I trust health insurance system.	0.584**	0.137	0.160**	0.038	537.611**	152.088
I would prefer to pay at the time of illness instead of paying for insurance.	0.012	0.053	0.003	0.0144	3.948	17.362
Cons	−2.087	1.707	-	-	2315.974	1978.944
		LR χ^2 = 58.89 Prob > χ^2 = 0.000 Pseudo R^2 = 0.184			Prob > F = 0.000 R-squared = 0.182 Adj R-squared = 0.126 Root MSE = 1662.7	

*P < 0.05;

**P < 0.01.

We also use linear regression analysis to examine the association between the variables and the exact amount of payment the respondents stated that they are willingness to pay (only for those willing to pay). The age of the respondent is significantly associated with the willingness-to-pay amount, ie, the older the age the lower the amount willing to pay (P value < 0.01). Women are willing to pay lower amounts than the men do (P value < 0.01). If income is

higher, the amount one is willing to pay for health insurance is also higher (*P* value < 0.01). Trust in the health insurance system is significantly associated with the amount stated by the respondents, ie, the higher the trust the higher the amount willing to pay for health insurance (*P* value < 0.01).

3.5 | Willingness to pay for health insurance by the SSS sample

Similar regression analyses are carried out for the SSS sample as shown in Table 5. The binary probit regression shows a significant association between the employment organization and the willingness to pay for health insurance. Employees from private organizations are more willing to pay for health insurance than public sector employees (*P* value < 0.05). The subsequent linear regression analysis shows that civil status, income, and willingness to pay for health insurance before illness (prepayment principle) are significantly associated with the amount the respondents are willing to pay for health insurance. A person living with a partner is willing to pay a higher amount (*P* value < 0.01). If income is higher, the amount one is willing to pay for health insurance is also higher (*P* value < 0.01). Respondents with positive attitude on prepayment for health insurance before illness are willing to pay a higher amount (*P* value < 0.05).

For both samples, the sample selection regression did not show different results, and no significant association between the two regression components (binary selection and linear) was observed.

4 | DISCUSSION

As shown by our results, knowledge about health insurance is very low among the general population sample (34.1%), and even among the SSS sample, this knowledge is limited (60.9%). The limited knowledge among SSS might be because of the weakness in provision of education and information regarding health insurance among the members. The evidence suggests that uninsured individuals who have more knowledge about health insurance and financial issues are more likely to enroll in health insurance, according to a RAND Corporation study.[11] Thus, it is important to improve the knowledge level of all population groups in order to expand the SSS or initiate a new health insurance scheme. For beneficiaries, knowledge of health insurance such as what is covered, which services are free, which additional services might cause out of pocket payment, how to access health care under the insurance, and which services are eligible to get reimbursement are important.

The findings of significant percentage of people who prefer to have health insurance (75-95%) suggest that there might be public support for extending the SSS coverage or implementing a new health insurance system. However, the weak positive perception on health insurance—financial protection, return and benefit from the health insurance, perceived disease risk, and prepayment principle—among both samples emphasizes the requirement to send a proper and clear message to the population. Our study also confirms the influence of perception on the willingness to pay for health insurance. The more positive the perception on disease risk, the higher the trust in the health insurance system, and the greater the financial protection by prepayment, the higher the amount willing to pay in premiums. Fewer than 7% of the respondents in both samples do not trust health insurance indicating the potential of higher enrolment if the government of Myanmar extends the current SSS or implements a new health insurance system. Moreover, this finding together with previously discussed high percentage of people who prefer to have health insurance highlights the need to address the other hindering factors of enrolment in the current SSS system among those who are compulsory or voluntarily eligible to be SSS member. Fenenga et al also show that community trust in the health insurance system and health care providers are associated with active membership in the National Health Insurance System in Ghana.[12]

Our study shows that almost all respondents in the general sample lack social security or health insurance. The main causes are a weak enforcement of the social security law although SSS is available for smaller enterprises (threshold of five workers), and the limited capacity of the SSS with a limited network of providers to extend its

TABLE 5 Willingness to pay of the SSS sample (binary probit regression and linear regression)

	Willing to Pay for Health Insurance (1 = Yes, 0 = No) Binary Probit Regression, N = 309				Exact Amount of Payment Stated in MMK (1000 MMK = 0.81 USD) Linear Regression, N = 309	
Independent Variables	**Coef.**	**SE**	**Margin**	**SE**	**Coef.**	**SE**
Age	−0.001	0.014	−0.000	0.001	7.196	7.658
Gender	−0.238	0.305	−0.022	0.028	−299.554	158.053
What is your primary occupation activity at present?	0.735*	0.350	0.068*	0.031	123.129	185.972
What is your highest educational level?	0.210	0.294	0.019	0.027	186.887	165.816
What is your civil status at present?	0.344	0.331	0.032	0.030	446.560**	172.700
How would you rate your overall health status at present?	−0.124	0.209	−0.011	0.019	110.701	109.791
How many adult persons (age 18 or higher) are there in your household?	0.044	0.092	0.004	0.009	−81.161	48.872
How many children (under the age 18) are there in your household?	0.006	0.102	0.001	0.010	47.498	61.917
Considering the income of all household members and all sources of income (eg, wages, social welfare, pensions, rents, fees, etc.), what is your average net monthly household income?	−0.001	0.008	−0.000	0.001	10.526**	3.666
Which of the following is true regarding your current household income?	0.266	0.297	0.025	0.027	93.601	155.457
Knowledge of health insurance	0.062	0.278	0.006	0.026	−11.080	151.336
Experience of health insurance	0	-	0	-	0	0
Currently registered in any kind of health insurance	0	-	0	-	0	0
Having health insurance could prevent financial hardship if you get sick?	0.222	0.176	0.021	0.016	67.641	103.983
Return from health insurance is high when you get sick.	0.019	0.173	0.002	0.016	86.707	89.119
I do not expect to spend money for seeking health care this year because I am healthy.	0.037	0.119	0.003	0.011	117.804	67.665
Insurance benefits are higher than the cost of insurance and of giving user fees.	0.223	0.177	0.021	0.016	167.886	98.259
I trust health insurance system.	−0.003	0.191	−0.000	0.018	136.465	107.530
I would prefer to pay at the time of illness instead of paying for insurance.	0.078	0.108	0.007	0.010	132.261*	63.035
Cons	−2.212	2.011	-	-	−1808.218	1077.352
		LR χ^2 = 15.60 Prob > χ^2 = 0.552 Pseudo R^2 = 0.109			Prob > F = 0.000 R-squared = 0.203 Adj R-squared = 0.156 Root MSE = 1176.8	

*P < 0.05.

**P < 0.01.

coverage.[6] Our study has explored the preferences of potential health insurance beneficiaries about the nature and size of health insurance premiums as well as cost-sharing mechanisms. The result may provide information to expand or reform the SSS risk pool, or establish a new national health insurance system. We find that the respondents are willing to pay for health insurance within the average range of 2000 and 4000 MMK (1.8-3.6 USD). This amount is higher than the current contribution of both SSS members which is 1.5% of their income (45-465 MMK or 0.04-0.4 USD) and employers which is 2.5% of their income (75-775 MMK or 0.07-0.7 USD).[13] The very low amount of the current contribution is because the social security law was implemented in 1954 and has not been updated with the rise in wages leading to low contributions to the SSS. Thus, Myanmar needs to address this issue in order to maintain the financial stability of the SSS fund especially if it wants to expand the risk pool. Evidence shows that an affordable premium is a major factor to enroll in health insurance in developing countries.[14] At the same time, the amount affordable differs between the nonpoor and poor in Myanmar. The nonpoor can afford to spend three times more than the poor to access health care.[15] These findings highlight the need to set premiums at a rate affordable by the majority of the target population as well as to set a rate which makes the system sustainable. In addition, our study also shows that higher income levels are willing to pay higher premiums, which is generally expected and observed in WTP studies.[16-18]

With regard to the timing and fund management, the majority of both groups in our study prefer to pay on a monthly basis and to have a government body to act as a fund manager. People living in a lower middle-income country like Myanmar have difficulties to pay premiums annually as we find that only a small percentage among both samples (20-30%) can save from their monthly income. The income of the majority of the samples is just sufficient to make ends meet or not enough for their living expenses. Both groups are not willing to pay more than 4% of their salary even with a small co-payment. Again, both groups are not willing to pay a co-payment even with a low premium, ie, 2% of their salary. We conclude that there is a willingness to pay 4% of their salary in premiums with no co-payment. These findings are similar to the findings of one study conducted in Kenya where the government is the most preferred and trusted agency to manage the fund and people prefer to get a comprehensive benefit package with no co-payment.[19] However, in the Kenyan study, the majority prefers to pay through taxation while our study found that payment made by beneficiaries themselves or through employee are the preferred payment channels.

The study has several limitations that need to be acknowledged. In particular, we did not explore the knowledge on health insurance in detail such as benefit coverage and reimbursement policy/process, and the experience of health insurance including quality of health care received because health insurance or SSS participation is not mandatory among the general sample. In other words, the majority of the population is not aware of their eligibility to enroll in the SSS and remains uninsured in Myanmar. The study has relatively small sample sizes, covering only one region, restricting the possibility to make generalizations. Moreover, our findings are not representative for the whole country as we selected a limited number of regions and townships for the survey among the general population while the sampling of the SSS population was a multistage random sampling for country. Thus, the retrieved WTP amount could vary across regions.

5 | CONCLUSION

This study has explored the low level of health insurance knowledge in Myanmar. Despite this lack of knowledge, there is an interest to enroll in health insurance although there is a very low enrollment into the one and only SSS in Myanmar. Promoting knowledge and awareness could help to increase the coverage of the SSS. The government of Myanmar should be aware of the preferences of beneficiaries to pay a relatively low level of health insurance premiums without co-payment. Moreover, the monthly collection of premiums seems a lesser burden to households than an annual payment. The current SSS system needs to take action to update the calculation of premiums as contributions should be proportional to the current salary scale in order to ensure the sustainability of the SSS.

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ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The Ethics Review Committee on Medical Research Involving Human Subjects, Department of Medical Research, approved to conduct the current survey under the theme of "A Universal Health Insurance Scheme in Myanmar" with reference letter no.106/ethics 2015.

AVAILABILITY OF DATA AND MATERIALS

The datasets generated during and analyzed during the current study are available from the corresponding author on reasonable request.

AUTHORS' CONTRIBUTIONS

CYM—formulation of research question, design of methodology, conducting the research and data collection, data analysis, preparation of manuscript specifically writing the initial draft and revision; MP—design of methodology, data analysis, preparation of manuscript specifically critical review; WG—design of methodology, preparation of manuscript specifically validation, and critical review.

AUTHOR AGREEMENT/DECLARATION

All authors have seen and approved the final version of the manuscript being submitted. All authors warrant that the article is the authors' original work, has not received prior publication, and is not under consideration for publication elsewhere.

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APPENDIX A

SURVEY: PREFERENCES AND WILLINGNESS TO PAY FOR HEALTH INSURANCE IN MYANMAR

ROUND 1/May-June 2015/MYANMAR

FIELDWORK CARRIED OUT BY:
FIELDWORK MANAGED BY:

THE QUESTIONNAIRE SHOULD BE FILLED IN ONLY FOR RESPONDENTS WHO ARE 18 YEARS OLD OR OLDER.

FILL IN THE FOLLOWING INFORMATION:

SAMPLING POINT										
REGION										
RESPONDENT ID NUMBER										

APPENDIX A (Continued)

DATE OF THE INTERVIEW (DD/MM/YYYY)			/			/	2	0	1	5
START TIME (USE 24 HOURS CLOCK)			:							
INTERVIEWER ID NUMBER										

CONDUCT THE INTERVIEW ONLY IF THE RESPONDENT ANSWERS WITH YES IN THE INFORMED CONSENT FORM.
ASK THE QUESTIONS FOLLOWING THEIR ORDER IN THE QUESTIONNAIRE.
READ THE EXACT WORDING OF THE QUESTIONS, AND AFTERWARDS, IF NECESSARY, MAKE CLARIFICATIONS.
USE LOCAL CURRENCY FOR ALL RELEVANT QUESTIONS (MMK).
PLEASE TRY TO AVOID "DON'T KNOW" ANSWERS AND REFUSALS.
IF THE RESPONDENT REFUSES TO ANSWER, KEEP THE ANSWER BOX BLANK.
IF THE RESPONDENT RESPONDS WITH "DON'T KNOW", FILL IN DNK IN THE BOX.

INFORMED CONSENT PROCEDURE

- The aim of this survey is to collect data on the citizens' opinion about the quality, access and price of medical services they use and about the characteristics of a future health insurance system in Myanmar.
- The survey is not commissioned by the government or a health insurer.
- This survey is part of an international research project at the Maastricht University, the Netherlands and funded by the NUFFIC. NUFFIC (the Dutch organization for internationalization of higher education) has awarded six Netherlands Fellowship Programme PhD grants to Maastricht University, four of which to the Faculty of Health, Medicine and Life Sciences. The Nuffic grant is a Dutch scholarship programme intended for mid-career professionals, originating from developing countries, who wish to carry out PhD research projects in the Netherlands.
- The data collected during the survey will be used for research purposes only, namely for statistical analyses and reports.
- Your answers will not be related to your personal details (address, etc.) and will be completely confidential.
- Answers to all questions are highly important to the project, so we hope that you will share your opinions and thoughts by answering all questions in the questionnaire.

Informed consent:
0.1 Do you agree to participate in this survey?
0.1.1 Yes
0.1.2 No
0.2 Are you over 18 years old?
0.2.1 Yes
0.2.2 No

Section 1. Socio-demographic

Finally, there are some questions about your socio-demographic characteristics. Please note that your data will be kept confidential. There are many individuals with the same socio-demographic characteristics. The complete information about socio-demographic characteristics will be highly important for our further analysis of the data.

1. In which year were you born?

1.1..... yyyy

2. What is your gender?

2.1 Male

2.2 Female

3. What is the name of the Ward and or Township you live in?

3.1.....

4. What is your primary occupation activity at present?

4.1 Farmer

4.2 Soldier

4.3 Factory

4.4 self-employed

4.5 Family business

4.6 Public sector (government)

4.7 Private-cooperation

4.8 Student

4.9 Unemployed and looking for a job

4.10 Unemployed not looking for a job (e.g. housewife)

4.11 Pension (because of age)

4.12 Pension (because of illness)

4.13 other, specify .....

5. What is your highest educational level?

5.1 I never went to school

5.2 I never went to school, but I can read and write

5.3 primary school

5.4 middle school

5.5 high school

5.6 vocational training

5.7 graduate and higher degree (university degree)

5.8 other, specify .....

6. What is your civil status at present?

6.1 Never married and single

6.2 Living with a partner without marriage

6.3 Married (living together)

6.4 Married (living separately)

6.5 Divorced and single at present

6.6 Widow/er and single at present

7. How would you rate your overall health status at present?

7.1 Very poor

7.2 Poor

7.3 Moderate

7.4 Good

7.5 Very good

8. Do you have any kind of social protection status?

8.1 Formal sector

8.2 Informal sector

8.3 Civil servant

8.4 Other, please specify: .....

9. How many adult persons (age 18 or higher) are there in your household?

9.1 ..... adult household members

10. How many children (under the age 18) are there in your household?

10.1 ..... children in the household

11. Considering the income of all household members and all sources of income (e.g. wages, social welfare, pensions, rents, fees, etc.), what is your average net monthly household income?

11.1 .....MMK

12. Which of the following is true regarding your current household income?

12.1 Allows to build savings

12.2 Allows to save just a little

12.3 Only just meets the expenses

12.4 Not sufficient/need to use savings

12.5 Not really sufficient/need to borrow

Section 2. Past Behaviour

The first set of questions concerns medical services that YOU used during the last 12 months

(June 2014 – May 2015), and the money that you paid for receiving these services.

1. Did you experience any symptoms of illness during the past 12 months?

1.1 Yes

1.2 No

If not, please go to section 3.

2. Did you seek/receive healthcare services during the past 12 months (physician visit or hospitalization)?

2.1 Yes

2.2 No, because I did not find it necessary

2.3 No, because I purchase medication myself

2.4 No, because of long distance

2.5 No, because of high out-of-pocket expenditures (translation, too much money)

2.6 No, due to another reason, please specify: .....

→If not, please go to section 3.

The following questions concern your last use of healthcare services.

3. Which of the following service types can best describe your last use of healthcare services? (select only one service type related to the very last use of healthcare services)

3.1 Visit to nearby health centre

3.2 Visit to general practitioner

3.3 Visit to outpatient medical specialist at public hospital

3.4 Visit to outpatient medical specialist at private hospital

3.5 Hospitalization (incl. one day hospitalization)

3.6 Traditional healer

3.7Other, please specify: .....

→If traditional healer or other, please go to section 3.

4. Why did you choose this kind of health service?

4.1 it was the closest facility

4.2 I had to pay less than in other facilities

4.3 I had to wait less than in other facilities

4.4 It provided the best quality services

4.5 It was recommended to me

4.6 I was brought there

4.7 Other, please specify: .....

5. How far was this facility from your home in terms of travel/transportation time?

5.1 __:__ HH:MM

6. How long did you wait at the facility to meet with a healthcare provider?

6.1 ..... HH:MM

7. Are you overall satisfied with the quality of healthcare received during your last use of healthcare services?

7.1 Very good

7.2 Good

7.3 Normal

7.4 Poor

7.5 Very poor

8. Why?

8.1 .....

9. Which kind of methods were used to cover all costs related to your last use of healthcare services? (multiple answers possible)

9.1 Social security scheme only (SSS)

9.2 Community based health insurance only (CBHI)

9.3 Out-of-pocket expenditures only (OOP)

9.4 Other, please specify: .....

→If no OPP, please go to section 3.

The following questions concern the money that you paid for your last use of healthcare services.

10. How much did you spend in total for your last use of healthcare services?

10.1 ..... MMK

11. How much of this was for pharmaceuticals (medicines)?

11.1 ..... MMK

12: Did you have to borrow money to cover the above expenses for your last use of healthcare services and pharmaceuticals?

12.1 Yes

12.2 No

→If yes:

12A: From whom did you borrow?

12A.1 .....

12B: How much of the borrowed money did you use to pay for your last use of healthcare services?

12B.1 .....MMK

13: Did you have to sell assets to cover the above expenses for your last use of healthcare services?

13.1 Yes

13.2 No

→If yes:

13A: What kind of assets did you sell?

13A.1 .....

13B: How much of the money from the sold assets did you use to pay for your last use of healthcare services?

13B.1 ..... MMK

14: Did you use any other ways to cover the expenses for this last healthcare service?

14.1 Yes, please specify: .....

14.2 No

SECTION 3. KNOWLEDGE, PERCEPTION AND PRACTICE OF HEALTH INSURANCE

Some citizens of Myanmar have health insurance. We would like to know your opinion on this. The following questions ask about your knowledge, perception and practice of health insurance.

1. Do you know what health insurance is?

1.1 Yes

1.2 No

In this survey, health insurance is a contract between a policyholder (enrolee) and a third-party payer or government health program to reimburse the policyholder for all or a portion of the cost of medically necessary treatment or preventive care provided by health-care professionals. (ref: Understanding Health Insurance).

2. Have you ever heard about the following health insurance schemes in Myanmar? (multiple answers possible)

2.1. Social Security Scheme (SSS)

2.2. Community based health insurance (CBHI)

2.3. Private health insurance

2.4. Other, please specify: .....

3. From what source did/do you receive information about health insurance? (multiple answers possible)

3.1. Employer

3.2. Public media

3.3. News paper

3.4. Journals

3.5. TV

3.6. Radio

3.7. Co-workers

3.8. Friends

3.9. Other, please specify .....

4. Are you eligible to enrol to any kind of health insurance?

4.1. Yes

4.2. No

5. Do you have health insurance at present?

5.1 Yes

5.2 No, I have never had

5.3 No, but I had in the past

→If never had, please go to question 9.

6. Do/Did you know your benefit package?

6.1 Yes

6.2 No

7. Is/Was it clear to you how to use your health insurance?

7.1 Yes

7.2 No

8. Do you usually seek healthcare at the health centre which has a contract with your health insurer?

8.1 Yes

8.2 No

If no, why .....

Perception on health insurance

	1. Strongly Agree	2. Agree	3. Neutral	4. Disagree	5. Strongly Disagree
9. Having health insurance could prevent financial hardship if you get sick					
10. Return from health insurance is high when you get sick.					
11. I do not expect to spend money for seeking healthcare this year because I am healthy.					
12. Insurance benefits are higher than the cost of insurance and of giving up user fees.					
13. I trust the insurance system.					
14. I would prefer to pay at the time of illness instead of paying for insurance					

Section 4. Willingness to pay

There are some discussions about the introduction of health insurance for all citizens in Myanmar. This means that every adult person (above the age of 18 years) will pay a certain amount of money every month to an insurer and will be able to receive essential healthcare services free of charge when needed.

The following services are currently included:

Ambulatory care: General practitioner care and/or family doctor

Hospital care

Laboratory tests, including x-ray and imaging

Pharmaceuticals

Loss of income when ill

Maternal care

Maternity leave

Healthcare in case of employment accidents

Survivors pensions

There will be no money paid back if no services are used. Children under five will be insured through the government and they will pay neither insurance premiums nor out of pocket payments for essential healthcare services.

Essential healthcare services include visits to physician in case of illness, hospitalizations due to illness, pregnancy or injury and pharmaceutical prescribed by a physician. Both public and private providers can be used under the insurance scheme.

The payment of insurance premium by every adult non-poor person will be an important precondition for making this insurance system sustainable.

1. Are you willing to pay every month an insurance premium to be able to use free of charge essential healthcare services when needed?

1.1 Yes

1.2 No

→If yes, please go to question 3. If not, please answer question 2 and go to section 5.

2. Why are you unwilling to pay for health insurance?

2.1 I do not want to pay for health insurance

2.2 I am not able to pay for health insurance

2.3 I do not want and I am not able to pay for health insurance

2.4 Other, please specify: .....

→After question 2, go to section 5

3. What is the maximum amount of money that you are willing to pay every month for health insurance for yourself?

3.1 Less than 1000 MMK

3.2 Between 1000 MMK and 2000 MMK

3.3 Between 2000 MMK and 3000 MMK

3.4 More than 4000 MMK

4. Considering the payment range that you have chosen above, what is the exact maximum amount of money that you are willing to pay every month for health insurance for yourself?

4.1 ..... MMK

5. Are you certain that you are also able to pay this amount every month for health insurance for yourself?

5.1 Yes

5.2 No

→If yes, please go to section 5.

6. What is the exact maximum amount of money that you are able to pay every month for health insurance for yourself?

6.1 ..... MMK

Section 5. Preferences

Imagine you can have the following health insurance package which includes:

1 Ambulatory care: General practitioner care and/or family doctor

2 Hospital care

3 Laboratory tests, including x-ray and imaging

4 Pharmaceuticals

5 Loss of income when ill

6 Maternal care

7 Maternity leave

8 Healthcare in case of employment accidents

9 Survivors pensions

There is no price set yet. There are also no co-payments yet. This is the amount you have to pay when you actually use the services in your benefit packages, on top of your monthly premium.

Below you are asked to rank different insurance options based on your preferences. There are no right or wrong answers. We are interested in your personal preferences.

1. Please rank the following types of co-payments from most-attractive (1) to least attractive (7)

1.1 25% of the costs per visit to a healthcare facility # .....
1.2 2000 MMK per visit to a healthcare facility # .....
1.3 No co-payments # .....
1.4 1000 MMK per visit to a healthcare facility # .....
1.5 10% of the costs per visit to a healthcare facility # .....
1.6 50% of the costs per visit to a healthcare facility # .....
1.7 3000 MMK per visit to a healthcare facility # .....

2. If the premium could decrease from 4% per month of your salary to 2% per month, would you be willing to pay co-payments per visit to the healthcare facility?

2.1 Yes
2.2 No

→If yes: Please state for the following co-payment levels which you would accept for a lower monthly premium (state yes or no)

2.2.1 50% of the costs per visit to a healthcare facility Y/N
2.2.2 25% of the costs per visit to a healthcare facility Y/N
2.2.3 10% of the costs per visit to a healthcare facility Y/N
2.2.4 3000 MMK per visit to a healthcare facility Y/N
2.2.5 2000 MMK per visit to a healthcare facility Y/N
2.2.6 1000 MMK per visit to a healthcare facility Y/N

3. Would you be interested in paying a higher premium, 6% instead of 4% of your income per month, in exchange for lower co-payments? (Please state yes or no)

3.1 Yes
3.2 No

→If yes: Please state for the following co-payment levels which you would accept

3.3.1 25% of the costs per visit to a healthcare facility Y/N
3.3.2 10% of the costs per visit to a healthcare facility Y/N
3.3.3 2000 MMK per visit to a healthcare facility Y/N
3.3.4 1000 MMK per visit to a healthcare facility Y/N
3.3.5 No co-payments at all Y/N

4. Would you be willing to pay more for health insurance if children under 18 were included in the insurance scheme?

4.1 Yes
4.2 No

5. Would an insurance be more attractive if other adult household members could be insured as well for the same rate?

5.1 Yes
5.2 No

6. Who do you prefer to pay the insurance premium?

6.1 Household members/yourself

6.2 Your employer directly (they will hold it in from your salary)

6.3 The government via taxes

7. How do you prefer to pay the premium?

7.1 Annually (all in once)

7.2 Quarterly

7.3 Monthly

8. If the premium price would be lower when paid annually would you prefer to pay the premium annually?

8.1 Yes

8.2 No

9. Who should manage the pooled money?

9.1 The government (SSS)

9.2 Private health insurance

9.3 Community based health insurance

10. Which service is most important for you to be included in the insurance package? (Select maximum 3 services)

10.1 Ambulatory care: General practitioner care and/or family doctor

10.2 Hospital care

10.3 Laboratory tests, including x-ray and imaging

10.4 Pharmaceuticals

10.5 Loss of income when ill

10.6 Maternal care

10.7 Maternity leave

10.8 Healthcare in case of employment accidents

10.9 Survivors pensions

11. Which services could be excluded from the package, in exchange of a lower premium? (multiple option possible)

11.1 Ambulatory care: General practitioner care and/or family doctor

11.2 Hospital care

11.3 Laboratory tests, including x-ray and imaging

11.4 Pharmaceuticals

11.5 Loss of income when ill

11.6 Maternal care

11.7 Maternity leave

11.8 Healthcare in case of employment accidents

11.9 Survivors pensions

12. Are there any services which are currently not included in the above description, for which you would be willing to pay more? (Multiple answers are possible)

12.1 Yes. Medical consultation by phone

12.2 Yes, Vision and hearing aid

12.3 Yes, Dental services,

12.4 Yes, help for Alcohol and substance abuse

12.5 Yes, Treatment in out of town emergencies

12.6 Yes, Consultation of traditional healers

12.7 Yes, Transportation

12.8 Yes, compensation for the time loss of a care giver

12.9 Yes, medical check-up

12.10 Yes, different namely, ...

12.11 No

13. Would you be willing to pay more than 4% of your income for better quality of care?

13.1 Yes

13.2 No

14. Would you be willing to pay more than 4% of your income if you could choose to which care provider/hospital you can go to?

14.1 Yes

14.2 No

15. Would you be willing to pay more than 4% of your income if there was a shorter waiting time?

15.1 Yes

15.2 No

his is the end of the questionnaire.
Thank you for your participation!

END TIME (USE 24 HOURS CLOCK) :

APPENDIX B

Socio-demographic characteristics

			General population sample	SSS population sample	Significance of the differences between the samples
Age	Years		N=320	N=320	
		Median	50	31	.001**
		Mean	50	33	
		SD	15	11	
Gender			N=320	N=320	
	Male	N (%)	133 (41.6%)	107 (33.4%)	.034*
	Female	N (%)	187 (58.4%)	213 (66.6%)	
Occupation			N=320	N=320	
	Public	N (%)	12 (3.8%)	80 (25%)	
	Private	N (%)	24 (7.5%)	240 (75%)	
	Self-employed	N (%)	98 (30.6%)	-	
	Family Business	N (%)	37 (11.6%)	-	
	Pension	N (%)	29 (9.1%)	-	
	Students	N (%)	4 (1.3%)	-	
	Unemployed	N (%)	106 (33.1%)	-	
	Other	N (%)	10 (3.1%)	-	
Education			N=320	N=320	
	Illiterate	N (%)	5 (1.6%)	2 (0.6%)	.445**
	Primary School	N (%)	36 (11.3%)	18 (5.6%)	
	Middle School	N (%)	62 (19.4%)	61 (19.1%)	
	High School	N (%)	114 (35.6%)	109 (34.1%)	
	Graduate and Higher degree	N (%)	98 (30.6%)	124 (38.8%)	
	Other	N (%)	5 (1.6%)	6 (1.9%)	
Civil Status			N=320	N=320	
	Single	N (%)	48 (15%)	166 (51.95)	
	Married	N (%)	230 (71.9%)	144 (45.0%)	
	Living with a partner without marriage	N (%)	-	3 (0.9%)	
	Separated	N (%)	3 (0.9%)	3 (0.9%)	
	Divorced	N (%)	4 (1.3%)	-	
	Widow	N (%)	34 (10.6%)	4 (1.3%)	

APPENDIX B (Continued)

			General population sample	SSS population sample	Significance of the differences between the samples
	No answer	N (%)	1 (0.3%)	-	
Self-reported health status			N=320	N=320	
	Very poor	N (%)	5 (1.6%)	2 (0.6%)	.767**
	Poor	N (%)	32 (10.0%)	30 (9.4%)	
	Moderate	N (%)	105 (32.8%)	121 (37.8%)	
	Good	N (%)	166 (51.9%)	149 (46.6%)	
	Very good	N (%)	12 (3.8%)	18 (5.6%)	
Adult persons in the households	Number of person		N=319	N=320	
		Median	3	3	.300**
		Mean	4	4	
		SD	2	2	
Under 18 years in the households	Number of person		N=249	N=314	
		Median	1	1	.608**
		Mean	1	1	
		SD	1	1	
Average household income per month	Amount (MMK)***		N=314	N=320	
		Median	300,000	300,000	.001**
		Mean	434,698	335,073	
		SD	477,764	201,507	
Level of income after household expenditure			N=320	N=320	
	Savings	N (%)	12 (3.8%)	9 (2.8%)	.189**
	Save a little	N (%)	48 (15%)	101 (31.6%)	
	Meet the expenses	N (%)	219 (68.4%)	173 (54.1%)	
	Not sufficient/need to use saving	N (%)	10 (3.1%)	6 (1.9%)	
	Not sufficient/need to borrow	N (%)	20 (6.3%)	31 (9.7%)	
	No answer	N (%)	11 (3.4%)	-	

*Mann-Whitney U Test; **Independent samples t-test; ***Exchange rate 1000 MMK = 0.81 USD (2015)