

# Willingness to Pay for the Newly Proposed Social Health Insurance among Health Workers at St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia

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**Abstract:** Social health insurance (SHI) is a financial mechanism that allows cross subsidization of the poor by the rich, and the sick by the healthy. Ethiopia is currently introducing SHI to achieve universal health care coverage, but there is no evidence concerning willingness to pay and factors associated with willingness to pay among health workers. The objective of this research was to determine willingness to pay for SHI among health workers and to determine factors associated with willingness to pay. An Institution-based, cross-sectional study was conducted from April- December, 2016, on 420 health workers who work at St. Paul's Hospital Millennium Medical College. Data was collected using a semi-structured self-administered questionnaire, entered using EPI INFO version 7, and analyzed by SPSS version 20. Variables having  $p < 0.2$  at bivariate analysis were fitted to multivariate analysis. Crude and adjusted odds ratios, P-values and 95% CI were computed to show the association of variables. The level of willingness to pay for SHI was 17% (95% CI 13.4-20.3%). Significant associations were found between willingness to pay and perceived quality of health care services under SHI (odds ratio [OR] = 2.74 (1.45-5.20)), perception that SHI will create workload for health workers (OR = 0.47 (0.26-0.87)) and history of large amount of out of pocket money for treatment (OR = 1.84 (1.02-3.31)). The overall willingness to pay was 17%. Policy makers should devise a plan that promotes the level of willingness to pay and identify factors that affect willingness to pay. More studies are required to assess these factors.

**Keywords:** Willingness, Social Health Insurance, Health Workers, St. Paul's Hospital Millennium Medical College

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## 1. Introduction

Insurance is a contract that protects the insured from loss of damage, illness, or death; specifically it is a contract that transfers the risk of a specified loss [1]. Health insurance is a financial mechanism that allows individuals to protect themselves against the financial cost of illness by pooling risks with others in the population [2].

Social health insurance (SHI) is a universal insurance system financed by employee- employer-payroll deductions. An equity fund from the government can also be created to supplement contributions for those who pooling of resources

for health care are not formally employed [3].

The core roles of a SHI scheme include increasing revenue and pooling of resources for health care, so that health risks can be effectively shared among [4]. Out of pocket spending is the major payment strategy for health care in most low and middle income countries [5]. In the last decade low and middle income countries have made considerable progress towards the goal of universal health coverage (UHC) [6].

Ethiopia is currently introducing SHI to achieve universal health. There is no evidence concerning the willingness to

pay for the newly proposed social health insurance scheme in the country [7]. In addition, the majority of the population has no knowledge or experience of health insurance, and investigating willingness to pay among potential enrolls provides vital information for policy makers [8].

Willingness to pay for SHI and factors that determine willingness to pay has not been studied well in Ethiopia. Consequently this study's objective is to determine willingness to pay for SHI among health workers and to determine factors associated with willingness to pay.

## 2. Methods

### 2.1. Study Design

Across sectional study was conducted in St. Paul's Hospital Millennium Medical College (SPHMMC). SPHMMC is one of the four referral hospitals directly under the control of the Federal Ministry of Health and is a teaching hospital for medical students, post graduate students (Field Epidemiologists) and nursing specialties (operation theatre, emergency and ICU).

According to the report obtained from the Human Resource Department of SPHMMC, the hospital provides services to an estimated 200,000 people annually, who are referred from all corners of the country. It has a total bed capacity of 360, and on an average 650 patients visit the hospital as outpatients and emergencies daily.

Currently there are around 2188 total employees in the hospital; of these 1040 are health workers (Medical doctors, Nurses, Midwives Pharmacists, Laboratory technologists, radiology professionals, physiotherapists, and other supportive staffs) who work in various departments. The present cross sectional study was carried out at a specific period in time between April 1, 2016 and December 30, 2016 to determine willingness to pay for SHI among health workers who are currently working at SPHMMC. In total, 420 health workers, selected by stratified and simple random sampling participated in the study.

### 2.2. Sampling Procedures

A total of 420 health workers who are formally employed and who present during the time of data collection were included in the study. Those health workers who were giving free services and those who were foreign in citizenship were not included. The study participants were recruited using a stratified random sampling technique, with selected profession each serving as strata. In this study, Nurses, Medical doctors, Laboratory technologists, Midwives, Pharmacists, Anesthetists, Radiology professionals, Public health professionals, Health Officers and Physiotherapists were participated.

The proportion for each profession was calculated by dividing the number of staff of the respective profession by the total number of health workers in the hospital; finally, the proportion was multiplied by the study sample size. The sample size was estimated using single population proportion

formula.

The sample size was distributed to professional categories proportional to the number of health workers in each profession. Then the participants were selected from each stratum by simple random sampling using lottery method. A list of health workers was obtained from the hospital's Human Resource Department.

For eligible participants who were not found on the day of data collection, the principal investigator revisited him/her at different time intervals, and if the eligible participant could not be found, and then he/she was registered as a non-response.

### 2.3. Data Collection Tools and Procedures

The study was conducted between September 1, 2016 to September 30, 2016 at SPHMMC on health workers using a semi-structured self-administered questionnaire which had open ended and closed ended questions. It was adapted from similar studies based on the objective of the study [9, 10].

For data collection, the principal investigator first described the purpose of the study and they assured confidentiality of participants, neither their names nor any other characteristics that would allow identification of the participants was listed in the questionnaire. The required data was collected after obtaining the verbal and written informed consent of the health workers.

### 2.4. Data Quality Control

The questionnaire was pretested on the pilot area on 21 health workers (5% of the study participants) at Ras desta Damtew Hospital (Addis Ababa, Ethiopia) and the survey questionnaire was adjusted based on the results obtained from the pilot study.

The questionnaire was validated by different teachers and researchers working at Addis continental Institute Of Public Health.

The principal investigator checked the completeness and consistency of filled questionnaire; inconsistencies were corrected during the data entry. Data cleaning was done by running frequencies of each variable.

### 2.5. Data Management

The questionnaire was checked for consistency and completeness by the principal investigator. Totally unfilled and partially filled questionnaires were excluded. Confidentiality of the information was assured by keeping the collected data in a secured place, where the information they gave couldn't be accessed by any other body, except the principal investigator who has the authority. The collected data was cleaned, coded and entered in to EPI-INFO version 7.

### 2.6. Data Analysis

Descriptive frequency analysis was performed to describe the socio demographic characteristics of the study participants. Percentage was calculated for all variables that were related to the objective of the study. Bivariate and

multivariate logistic regression was calculated to find the association between independent and dependent variables. The relationship between dependent and independent variables was assessed using odds ratios (OR) and 95% CI. The significance of association was assessed using a p value of <0.05. Multivariate analysis was performed to control the effect of confounding variables. All analyses were performed using SPSS version 20.

### 3. Results

#### Socio demographic characteristics

The results were analyzed and interpreted based on 409 returned questionnaires out of the 420 questionnaires distributed to the health workers. This constitutes a response rate of 97.3%. The overall number of respondents in the study consisted of 222 males (54.3%) and 187 females (45.7%).

The majority of the respondents were Christians (70.4%, Orthodox; 16.6%, Protestant), and 11.5% of the respondents were Muslims. The majority of the respondents were between the ages of 25-29 years (55.3%), with a mean age of 27.3 years. Among the respondents, 275 (67.2%) were single and 130 (31.8%) were married. The mean family size was 1.2, with standard deviation of 0.49 per married couples.

The majority of the respondents were nurses and doctors, 222 (54.3%) and 91 (22.2%), respectively. Looking at the educational background, 230 (56.2%) of the respondents are first degree holders and 97 (23.7%) had a diploma. In total, 360 (88%) of the health workers had been in service between 1 and 5 years in the hospital, with a mean value of 1.16 years. The mean monthly salary of respondents was 4508 ETB, with a minimum and maximum salary of 1350 ETB and 19163 ETB, respectively.

Detailed socio-demographic characteristic of respondents are provided in the table below.

**Table 1.** Socio demographic characteristics of respondents (n=409), Saint Paul hospital Millennium medical college, Addis Ababa, 2016.

Explanatory variables	Details	Frequency (n)	Percentage (%)
Gender	Male	222	54.3
	Female	187	45.7
Age	20-24	96	23.7
	25-29	226	55.3
	30-34	62	15.2
	35-39	10	2.4
	>39	15	3.7
	Orthodox	288	70.4
Religion	Protestant	68	16.6
	Muslim	47	11.5
	Catholic	2	0.5
	Others	4	1
Marital status	Single	275	67.2
	Married	130	31.8
	Divorced	4	1
Family size	1-2	334	81.7
	3-4	61	14.9
	>4	14	3.4
Educational level	Diploma	97	23.7
	Degree	230	56.2
	Masters	10	2.4

Explanatory variables	Details	Frequency (n)	Percentage (%)
Profession	General practioners	49	12
	Specialist	23	5.6
	Doctor	91	22.2
	Nurse	222	54.3
	Midwife	21	5.1
	Laboratory technologist	21	5.1
	Pharmacy	16	3.9
	Others	38	9.3
	<3145	189	46.2
	3145-3911	36	8.8
Monthly salary	3912-4725	44	10.8
	>4725	140	34.2
	1- 5 years	360	88
Service years	6-10 years	41	10
	11-15 years	4	1
	16-20 years	1	0.2
	> 20 years	3	0.7

#### Knowledge and Awareness of Respondents about SHI

Out of the 409 respondents, 336(82.2) knew that SHI is going to be implemented in Ethiopia. Of these, the majority of the respondents, 134(39.9%) heard from radio and television, 112(33.3%) heard from their fellow staffs and 90(9.8%) respondents heard from government announcement and news papers. A total of 17% of the respondents didn't know the proposed SHI scheme.

#### Attitude of respondents towards SHI

To measure the attitude of health workers, ten agree-disagree indicators were selected using a Likert scale, which had five responses categories ranging from strongly agree to strongly disagree. Out of the ten indicators, most of the respondents strongly agreed and believed that health workers should get the insurance service freely without payment (86.8%, with a mean score of 4.5), and health workers shouldn't have to pay for health care expenses (83.1%, with a mean score of 4.3).

#### Level of willingness to pay for SHI

Out of 409 study participants who were asked about their willingness to pay for the SHI, 69 (17%) were willing to pay and 340 (83%) were not willing. There was almost a gender similarity in willingness to pay; among male respondents 38 (9.3%) were willing and 184 (45%) were not willing, among female respondents 31 (7.6%) were willing and 156 (38%) were not willing. The majority of health workers who were willing were within the age group of 25-29, and they account for 55%. Among those who were willing, 35(48.6%) preferred a monthly deduction basis to pay for SHI, 26(36.1%) preferred to pay once per annum, and 11(2.7%) preferred to pay half per annum

The result of this study showed that the majority of health workers, 340 (83%), were not willing to pay for SHI. The main reasons for not willing to pay were limited diseases covered by SHI (25%), not being able to afford the premium charges (23%), and fear that implementation of SHI creates workload on health workers (16.4%). The other reasons were lack of adequate information on the SHI scheme (9%), and

lack of confidence in health institutions giving health insurance service (6.1%). A total of 40 (13%) respondents also stated that health workers are serving the general population and providing health care services, and they shouldn't pay for health care expenses - the government should cover their expenses for SHI.

In total, 177 (43.3%) health workers had expended a high amount of out of pocket money for treatment in the previous 12 months; 232 (56.7%) didn't expend any money in the last 12 months. Among those who did expend a large amount of money for treatment, 95 (23.3%) agreed that SHI membership will prevent high out of pocket expenditure.

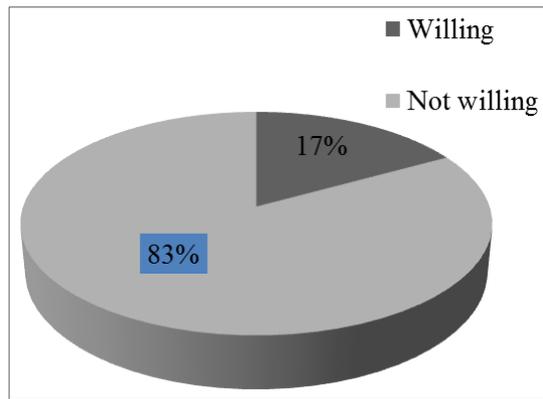


Figure 1. Willingness to pay level of respondents (n=409).

Moreover, 69 (16.9%) of the respondents encountered financial problems for treatment in the previous 12 months, and their expense for treatment was covered by their friends (45.3%), by the government (35.9%), or by private insurance (4.7%).

The perception of health workers was sought regarding the quality of health care services under the SHI. In total, 152 (47.2%) perceived it will be good, 136 (33.3%) perceived it will be fair, and 121 (29.6%) perceived it will be poor.

Among the respondents, 197 (48.2%) believed that implementation of SHI will create a workload for health workers.

Furthermore, 178 (43.5%) of respondents exhibited fear on the transparency and accountability of the insurance system in terms of susceptibility to bias and corruption, and 187 (45.7%) want an independent institution to manage the scheme.

Factors associated with willingness to pay

To assess the relationship between SHI and associated factors, both bivariate and multivariate analysis was employed. Using the crude analysis of socio demographic factors; age, educational level of respondents, profession,

fear that SHI will be exposed to corruption, monthly salary, previous history of out of pocket expenditure, fear that SHI implementation will create workload for health workers and belief that SHI increases quality of health care services, were significantly associated with willingness to pay. At an educational level, those who are first degree holders; and for monthly salary, those who earn between 3145 and 3911(ETB) were not significant. In the age group, only those who are between the age of 35 and 39 were significant.

A binary regression showed that overall willingness to pay of health workers was associated with profession (p<0.01), age (p<0.2), salary (p<0.01), educational level (p<0.01), history of large amount of out of pocket money for treatment (p<0.01), perceived quality of care under SHI (p<0.01), belief that SHI will be exposed to corruption (p<0.2), attitude of health workers to the benefits and payment for SHI (p<0.01), and fear that SHI creates workload over health workers (p<0.2).

Variables associated with a p-value <0.2 in the bivariate analyses were considered eligible for inclusion in the multivariate model to control cofounder factors. To manage any potential effect due to confounders, multivariate analysis was used including all those factors that showed significant association in the multivariate analysis.

The multivariate analysis showed that significant associations were found between willingness to pay and perceived quality of health care services under SHI, belief that SHI will creates workload over health workers and history of large amount of out of pocket money for treatment. The multivariate Analysis of overall willingness to pay among health workers showed that socio demographic variables, attitude of health workers to the benefits and payment for SHI and fear that SHI will be exposed to corruption were not significantly associated with willingness to pay (p value> 0.05).

The results of multivariate analysis shows that those health workers who believe that social health insurance scheme will improve the quality of health services were 2.7 times more willing to pay than those who don't believe on the scheme ([OR]=2.74(1.45-5.20)). Health workers who expend large amount of money for treatment in the previous 12 months were 1.8 times more willing to pay for social health insurance than those who didn't expend ( [OR]=1.84 (1.02-3.31)).

Those health workers who believe that social health insurance creates work load over health workers were 53% less willing to pay for SHI than their counterparts ([OR] =(0.47 (0.26-0.87))).

Table 2. Bivariate and multivariate analysis of factors associated with willingness to pay.

Explanatory variables	WTP		COR(95%CI)	AOR(95%CI)	P value
	No	Yes			
Age group					
20-24	82	14	1	1	
25-29	188	38	1.18(0.61-2.30)	0.93(0.44-1.97)	0.849
30-34	50	12	1.41(0.60-3.28)	1.14(0.42-3.08)	0.80
35-39	6	4	3.91 (0.98-15.62)	2.21 (0.41 -12.00)	0.358
>39	14	1	0.42 (0.51-3.42)	0.42 (0.04 -4.00)	0.450

Explanatory variables	WTP		COR(95%CI)	AOR(95%CI)	P value
	No	Yes			
Educational level					
Diploma	86	11	1	1	
Degree	200	30	1.17(0.56-2.43)	0.59 (0.23-1.56)	0.291
Graduated practioners	32	17	4.15(1.77-8.03)	1.16 (0.23-.606)	0.263
Masters	6	4	5.21 (1.27-21.40)	2.02 (0.33-12.55)	0.449
Specialist	16	7	3.42 (1.15-10.15)	0.89(0.15- 5.38)	0.898
Profession					
Doctor	62	29	1	1	
Nurse	195	27	0.30 (0.16-0.54)	0.52 (0.11-2.30)	0.417
Midwife	19	2	0.23(0.49 -1.03)	0.73 (0.09-5.98)	0.772
Laboratory technician	18	3	0.36 (0.10-1.31)	0.70(0.10 -4.91)	0.716
Pharmacy	14	2	0.32(0.68-1.51)	0.69(0.09-5.59)	0.611
Others	31	7	0.31(0.07-1.43)	0.65 (0.13-3.26)	0.510
Salary					
<3145	170	19	1	1	
3145-3911	30	6	1.79 (0.66-4.85)	2.36 (0.72-7.74)	0.157
3912-4725	36	8	1.99(0.81-4.90)	2.53(0.82-7.74)	0.105
>4725	104	36	3.10(1.69-5.68)	1.55(0.45-5.37)	0.489
Social health insurance increases quality of services.					
No	175	16	1	1	
Yes	165	53	3.78(2.09-6.86)	2.74(1.45-5.20)	0.002
Large amount of out of pocket expenditure previously.					
No	202	29	1	1	
Yes	138	40	2.02(1.20-3.41)	1.84 (1.02-3.31)	0.042
SHI implementation creates workload on health workers.					
No	166	46	1	1	
Yes	174	23	0.48(0.28-0.82)	0.47 (0.26-0.87)	0.016
Social health insurance will be exposed to corruption.					
No	142	36	1	1	
Yes	198	33	0.66(0.39-1.11)	0.57(0.31 -1.03)	0.061
SHI benefits and payment					
Disagree	82	6	1	1	
Agree	56	33	1.45(0.71-1.84)	1.41(0.76-2.79)	0.080

## 4. Discussion

This study was intended to find out the level of willingness to pay for SHI, and the factors that determine willingness to pay among health workers. The result of the study showed that the overall willingness to pay is 17%. This is low when compared with a study conducted in Uganda on attitudes of private not for profit health workers in Jinja Diocese to the proposed SHI. The study showed that 53.6% of respondents were willing to pay [11]. The level of willingness to pay found in the present study is also very low when compared to a study conducted in Addis Ababa on formal sector employees, which showed that 90% of the respondents were willing to pay [12].

Another study conducted in Uganda on formal sector employees showed that <50% of the respondents were willing to pay [13].

Willingness to pay was associated with the perceived quality of care under the SHI, belief that implementation of SHI creates workload for health workers, and having a history of large amount of out of pocket money for treatment of illness. The present study was comprised mostly by male respondents (54%). Among male respondents, 9.2% were willing to pay, and from female respondents, 7.8% were willing to pay for the proposed SHI. Among those who were willing, 41% were doctors.

The low level of willingness to pay could be attributed to different factors. Some respondents believed that health workers are providing health care services, and therefore they shouldn't pay for SHI, rather the government has to pay for them. Others believe that SHI is not beneficial for health workers. They previously enjoyed free treatment services, but when they are required to pay, like other government employees, they may not be willing. Limited scope of diseases covered under the SHI could be another reason why health workers were not willing to pay.

Even though income didn't show a significant association with willingness to pay, inability to pay for SHI may be one reason for low level of willingness to pay. Respondents who spend a large amount of money for treatment previously, and those who believe that SHI will improve quality of care, were more willing to pay. This may be due to the fact that study participants are aware of the benefits of SHI. Some respondents had a fear that implementation of SHI would create a high workload on health workers, which could be due to lack of guidelines on how the work will be carried out, in what time schedule and the number of staff who work under the SHI.

The study was comprised mostly of male respondents (54%), and is similar to a study conducted in Ilorin, Nigeria, on awareness and coverage of the national health insurance scheme among formal sector workers, where 58% of participants were male [14]. Among male respondents, 9.8%

were willing to pay and from female respondents, 7.8% were willing to pay for the proposed SHI, but gender didn't show significant association with willingness to pay. This is similar to a study conducted in Malaysia among academic staff of a public university, which showed that gender had no significant association with willingness to pay [15].

Among those who were willing to pay in the present study, 41% were doctors. This is lower than a study conducted in Kenya on private sector doctors, where 50% of them supported the implementation of SHI [16]. The result of the present study is also lower than a study conducted in Addis Ababa, on willingness to pay for compulsory health insurance among government employees, which showed that 83.3% of the respondents were willing, and another study conducted in southern Ethiopia on willingness to pay for SHI which showed that 71.2% of the respondents were willing [7, 12].

As the investigators insight, willingness to pay could be affected by income, geographical location and profession, since health workers in the private sector and non health care workers were more willing to pay.

The majority of the present respondents agreed that SHI membership will prevent high out of pocket expenditure (mean score of 3.3). Previous history of large amount of out of pocket expenditure had a significant association with willingness to pay ( $p = 0.042$ ). This is similar with a study conducted in Ghana, on the perceptions and experiences of health care providers and clients on the national health insurance scheme, in which most health care providers said that SHI had made services accessible to the insured without any payment at the point of consumption [16]. In addition, a study conducted in Nigeria on awareness and coverage of the national health insurance among formal sector workers showed that 91.6% of the respondents agreed SHI will reduce out of pocket financial expenditure [14].

There was significant association between willingness to pay and perceived quality of care under the SHI. Those health workers who believed that the SHI scheme improves the quality of services provided by healthcare givers were 2.7 times more willing to pay than those who don't believe in the scheme. This shows that if the quality of care under the SHI scheme is good, the level of willingness to pay increases. This result is opposite in contrast to a study conducted in South Africa on the readiness of health workers for the implementation of national health insurance which showed that 73% of health workers perceived the quality of services will be low under SHI [16].

However, a study in Uganda, Kampala, showed that 62% of respondents thought that the proposed SHI scheme would improve the quality of services [13].

Fear that SHI creates a workload on health workers showed a significant association with willingness to pay. This is similar to a study conducted in Uganda on the attitude of health workers to a proposed SHI scheme, where most of the participants believed that SHI creates a workload and they were not willing to pay [9].

Fear that SHI will be exposed to corruption showed a

significant association with willingness to pay. Similarly, a study conducted in Uganda on public and private health care workers showed that some employees were not willing to pay due to the fear that implementation of SHI will be prone to corruption [17].

Socio demographic factors had no predicting effect on respondents' support for the SHI. This is similar to a study conducted on patients attending specialist clinics at the National University of Malaysia Medical Center, where most of the socio demographic variables were not predictor of willingness to pay [18]. However, a study conducted on government employees in Addis Ababa showed that income, level of education and history of chronic illness demonstrated a significant association with willingness to pay [12]. Another study conducted in Nigeria among health workers and household heads showed that levels of education, sex, and occupation of respondents affected willingness to pay [19]. These studies are cross sectional and one time studies, so we can't exactly explain the exact causes for the variation in willingness to pay. The variation of results could be attributed to biases occurred during the data collection, processing and analysis.

High level of awareness and willingness to participate and pay a premium are some of the prerequisite factors that could contribute to a successful SHI scheme, but the present study showed that knowledge had no significant association with willingness to pay. This result is in contrast to a study conducted in Nigeria on knowledge and attitude of civil servants towards the national health insurance, in which a significant association exists between willingness to participate in the national health insurance scheme and awareness of the scheme ( $p < 0.05$ ) (20).

A study conducted among formal sector employees in Ethiopia showed that 55% of the respondents didn't know about the SHI, but 71.3% were willing to pay [7]. In this study, 82.2% of the respondents were aware of SHI; government announcement was the major source of awareness. This is similar to a study conducted in South Africa on knowledge, awareness and readiness of private sector doctors on the implementation of national health insurance, where 91% of doctors were aware of the proposed National Health Insurance, and their main source of information was government workshops [16]. A study conducted in south east Nigeria on awareness and perception of national health insurance scheme among radiographers showed that there was high level of awareness (100%), and seminars in the hospital were the main source of information [21]. This study showed that, 17% of the participants are still unaware of the SHI. This is similar to a study conducted among health workers in South Africa, Soweto clinic, where a significant number of health workers were not aware of the national health insurance [18].

This study showed that 9% of the respondents were not willing to pay because of lack of adequate information about the insurance scheme. This is similar to a study conducted in Uganda on health workers attitude to SHI, which showed that some staff members were not willing to pay due to lack of

information about the insurance scheme [11].

Among the respondents, 230 (56.3%) of them agreed that SHI reduces the burden of medical bills. This is similar to a study conducted in Nigeria on government civil servants, in which 148 (39%) agreed that SHI reduces the burden of medical bills [20].

A total of 40 respondents (13%) in the present study said that health workers are serving the population and providing health care services, and they shouldn't pay for health care expenses, it must be the government's responsibility to finance the program. The results are consistent with a study conducted in Osun state, Nigeria, on knowledge and attitude of civil servants towards the national health insurance, where 12.4% believed that the government alone should pay for health service expenses [22].

Those who spend large amount of money previously were more willing to pay. This might be because of their belief that the social health insurance membership reduces direct out of pocket expenditure.

The result of the study showed that socio demographic variables, such as monthly salary, didn't show a significant association with willingness to pay. In total, 82% of health workers have heard about SHI, but most of them were not willing to pay. Among the study participants, 17% didn't know that SHI is going to be implemented in Ethiopia, and among those who are not willing, 9% were because of lack of adequate information about the SHI.

A total of 13% of the respondents said that health workers shouldn't pay for health care expenses, and the government should cover the expense on behalf of health workers.

#### 4.1. Strength of the Study

a. Standardized questionnaires and pre-tested data collection tools were used for data collection and random sampling technique was applied to select the study participants.

b. The study is the first of its kind in the study area and will trigger other researchers to work more on similar issues in a different set up.

#### 4.2. Limitation of the Study

a. Lack of prior research studies on the topic: There was no any previous study on similar topic both at national and regional level and the research was limited to undertake comparisons on the findings.

b. As it is difficult to establish cause-effect relationship with a cross-sectional study design, it is not possible to generalize the exact causes for the low level of willingness to pay for social health insurance in the study area.

## 5. Conclusions

The results of the study showed that willingness to pay among health workers for the proposed SHI is small and similar to other willingness to pay studies. Some healthcare workers believed that SHI creates a work load over health

workers. Willingness to pay was also associated with a history of large amount out of pocket money for treatment.

## Recommendations

(1). Most of the health workers were not willing to pay for the proposed SHI scheme and implementation would be easier if potential enrollees knew how it works and what the benefits would be.

(2). There are still health workers who are not aware of the SHI, and policy makers should do adequate awareness and discussion programs with health workers at various levels for the successful implementation of the scheme.

(3). Health policy makers should engage key stakeholders, such as health workers, and should promote the scheme so that everyone will be familiar with it.

(4). Workshops and seminars regarding SHI have to be arranged and regularly conducted in hospitals.

(5). Willingness to pay was predicted by belief that SHI creates work load over health workers. This shows that there is a need from the government to inform and aware health care givers how the service will be given and in what time schedule, including whether it is part time or regular work.

## List of Abbreviations

CBHI	Community based health insurance
ENT department	Ear, nose and throat department
ICU	Intensive care unit
JHPIEGO	Johns Hopkins program on international education in
Gynecology and Obstetrics	
NHI	National health insurance
OOP	Out of pocket expenditure (spending)
SHI	Social health insurance
UHC	Universal health coverage
WTP	Willingness to pay
ETB	Ethiopian Birr

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## Author's Contributions

YL designed the study, participated in data collection, acquisition of funding, analysis and interpretation, write-up, drafted the manuscript, and critically revised the manuscript. YM participated in analysis and interpretation, and critical revision of the manuscript. SA participated in critical revision of the manuscript and general supervision of the research group. All authors reviewed and approved the final manuscript.

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