

RETRACTED ARTICLE: Willingness to Pay for Social Health Insurance Among Health Care Professionals in North Wollo Zone, Amhara Region, Ethiopia: Mixed Method Study

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Background: Ethiopia introduced a social health insurance (SHI) scheme for the formal sector that will cost 3% of the monthly salary as a premium and provide universal health coverage. Since health care professionals (HCP) are the primary front-line service providers, their willingness to pay (WTP) for SHI may have a direct or indirect impact on how the programme is implemented. However, little is known about WTP for SHI among HCP.

Objective: To assess WTP for SHI and associated factors among government employee HCP in the North Wollo Zone, Northeast Ethiopia.

Methods: Using the contingent valuation method, a mixed approach and cross-sectional study design were applied. For the qualitative study design, in-depth interviews were performed with focus persons and officers of health insurance. Multistage systematic random sampling was used to select 636 healthcare professionals. Logistic regression analysis was used to determine independent predictors of WTP for SHI. Qualitative data were analyzed using thematic analysis.

Results: A response rate of 92.45% was achieved among the 636 participants, with 588 healthcare professionals completing the interview. The majority (61.7%) of participants were willing to join and pay the suggested SHI premium. Participants' WTP was significantly positively associated with the presence of under five years of children but their willingness to pay was significantly negatively associated with the female gender and increasing monthly salary. On the other hand, on the qualitative side, the amount of premium contribution, benefits package, and quality of service were the major factors affecting their WTP.

Conclusion: The majority of healthcare professionals were willing to pay for the SHI scheme, almost as much as the premium set by the government. This suggests proof that healthcare financing reform is feasible, particularly for the implementation of the SHI system.

Keywords: Ethiopia, healthcare professionals, social health insurance, willingness to pay

Background

Healthcare financing is the generation, allocation, and use of financial resources in the health system. It includes the mechanisms used to mobilise resources, which include general revenue, social and private health insurance, and out-of-pocket (OOP) expenditures.¹ They can also be mandatory or voluntary. Mandatory schemes are usually national, in which there is a legal obligation for people to pay into them, and are based on the principle of social solidarity. Social health insurance (SHI) is a form of healthcare financing and management based on risk pooling to protect people from catastrophic healthcare costs.²

Many low- and middle-income nations have found it more challenging to sustain adequate healthcare finance over the past 20 years. As a result, families continue to fall farther into poverty and cannot access necessary health care due to large OOP expenditures.^{3,4} In Africa, OOP household expenditure makes up about 40% of overall health expenditure,⁴ and in Ethiopia, it is about 37%.⁵ In 1998, the government of Ethiopia endorsed a health care finance policy by the Council of Ministers. The transition from OOP payment to prepaid mode will be facilitated by this.⁴ However, over the

years, Ethiopia's healthcare financing has been characterised by low government investment, significant reliance on OOP spending, inefficient and unequal resource utilization, and poorly coordinated and unpredictable donor support.⁶ Numerous healthcare financing reforms, including modifying user fees, providing exemptions and fee waivers, and outsourcing non-clinical services, have been attempted thus far, but none have been able to fully address the issues.⁷ Ethiopia's government recently recognised the need for health care finance reforms, including community-based health insurance for the informal sector and SHI for the formal sector.^{7,8}

The SHI was a programme designed to provide coverage for employed people and their families. The suggested premium payment is 3% of their annual earnings.⁴ A member's spouse and children under the age of 18 may also enroll in the SHI programme alongside him or her. When registering dependents as beneficiaries, a member who has more than four children and/or more than one spouse must pay an extra monthly premium for each additional family member.⁸ Outpatient treatment, inpatient care, delivery services, surgical services, diagnostic testing, and generic medications from the health insurance agency's pharmacy list are all included in the insurance benefits package. The following are not covered by the benefit plans: treatment outside of Ethiopia, treatment for drug addiction or abuse, routine medical exams unrelated to illness, cosmetic surgery, dentures, implants, and crowns, organ transplant, dialysis (other than for acute renal failure), and the provision of eyeglasses, contact lenses, and hearing aids.¹

Studies conducted in different parts of Africa and Asia reported that different socio-demographic and economic factors were responsible for the low level of willingness to pay (WTP) for SHI. There is practically little official health insurance coverage in Ethiopia.⁶ A 2016 demographic and health census of Ethiopia reveals that the number of people with health insurance is extremely low; 95% of women and 94% of males do not have any form of insurance.¹⁰ Ethiopia is still in the introduction phase of the Social Health Insurance (SHI) scheme,^{4,11} despite the development of legal frameworks and extensive preparations for its implementation,⁴ which requires government employees to contribute 3% of their gross salary.⁴ The public sector employees' refusal to pay the suggested amount for premium was one of the primary factors that led Ethiopia to continuously delay the introduction of the SHI scheme.^{12,13} Despite health care professionals (HCP) obtaining a fee waiver from the health facilities where they are working, the health service package is not uniform and the fee waiver only applied to the services they obtain from their employer only.⁴ There was only one study in Addis Ababa on WTP for SHI among HCP,¹⁴ which is very different from our study area in the socio-cultural context. Since HCP are the primary front-line service providers, their WTP for health insurance may have a direct or indirect impact on how the programme is implemented. Therefore, this study aims to assess the WTP for SHI and associated factors among government employees/HCP in the North Wollo Zone, northeast Ethiopia.

Materials and Methods

Study Design and Setting

A mixed method, an institutional-based cross-sectional study for the quantitative method, and an explanatory study for the qualitative method were used from April 2022 to June 2022. The study was conducted among HCP in the north Wollo zone of Amhara regional state, which is located northeast of Addis Ababa. According to the Zone Health Office (HO) Report of 2020, in the 14 districts of the zone, there were 68 health centers (HC), 6 hospitals (3 primary hospitals, 1 referral hospital, and 2 general hospitals), and a total of 3470 HCP in the government sector.

Population

The North Wollo Zone's entire HCP workforce was regarded as the source population. After being proportionately assigned to study districts, the study participants were chosen using a systematic random sampling process. Key informant interviews with HCP (those who were focal persons for health insurance in healthcare facilities and officers of health insurance) were chosen purposely because they had a close connection to the study's goals. The study comprised all HCP who were permanent workers (had worked for at least six months) and present during the study period. Individuals with hearing impairments and mental instability were excluded from the study.

Sample Size and Sampling Procedures

The required sample size was computed using single population proportion formula assuming the previous study on WTP for SHI among HCPs in Addis Ababa was 28.7%,¹⁴ at a 95% confidence interval (1.96), and a margin of error (5%).

$$n = Z^2p(1 - p)/d^2$$

$n = (1.96)^2(0.287)(1 - 0.287)/(0.05)^2 = 315$ (minimum sample size for population above 10,000) While the total number of HCP in the public health sector of the north Wollo zone during the data collection period was 3470, the correction formula was applied and the sample size would be:

$$nf = ni/(1 + ni/N)$$

$$315/(1 + 315/3470) = 289$$

Where: nf=final sample size, ni=sample size for more than 10,000 population, and N= population size.

Due to the multistage sampling strategy, the estimated sample size is further manipulated by considering the design effect of 2, making the sample size 578. Adding 10% for non-response, the final sample size was estimated to be 636.

The approach for sampling was multistage. Out of the 14 districts in the zone, 5 districts were chosen using a simple random sampling method for the first stage. The sample size was distributed proportionally to the number of HCP each district had, and the number of “districts” included in the sample is dependent on the inclusion of an adequate number of study participants—30% of the “districts”.¹⁶ In the second stage, study participants were selected using a systematic random sampling technique and proportionally allocated to the selected district, and then the health office including the health center and hospital of the district (Figure 1).

Purposive sampling was used to select participants for the qualitative study. Based on their capacity to supply a wealth of information, key informants were chosen. A total of 13 key informants were selected, which included 8 focal persons for health insurance in healthcare facilities and 5 district offices of health insurance (1 officer from each study district). According to the idea of data saturation, which occurs when participants no longer provide any new information, the final sample size for the study was decided.

Dependent Variable

Willingness to pay the proposed amount premium for the SHI.

Independent Variables

Socio-demographic variables: age, gender, marital status, educational status, family size, having children younger than 5 years old, and monthly salary.

Health facility-related factors: quality of health service and satisfaction with the service.

Health status factors in the family include occurrences of the disease in the past 12 months; the existence of chronic disease; episodes of illness; the way of covering medical bills; and a history of difficulty in covering medical bills.

Personal variables: awareness, knowledge, and attitude.

SHI scheme structure: premium amount, benefits package, and double payment.

Data Collection Tool and Quality Control

An interviewer-administered questionnaire was adapted from other similar WTP studies.^{9,14,16,18–21} The tool was first developed in English and then translated into a local language, Amharic. For one day, training was given to data collectors and supervisors about research objectives, data collection tools and procedures, and interview techniques. The principal investigators, together with two supervisors, supervised the technique of data collection and the completeness of tools daily. A pretest was done on 5% of the samples (32 HCP) in a separate district, the Kobo district, and adjustments were made to the questionnaire before the data collection. Under the supervision of the principal investigator and supervisors, three health professionals working in Kobo Hospital collected the data.

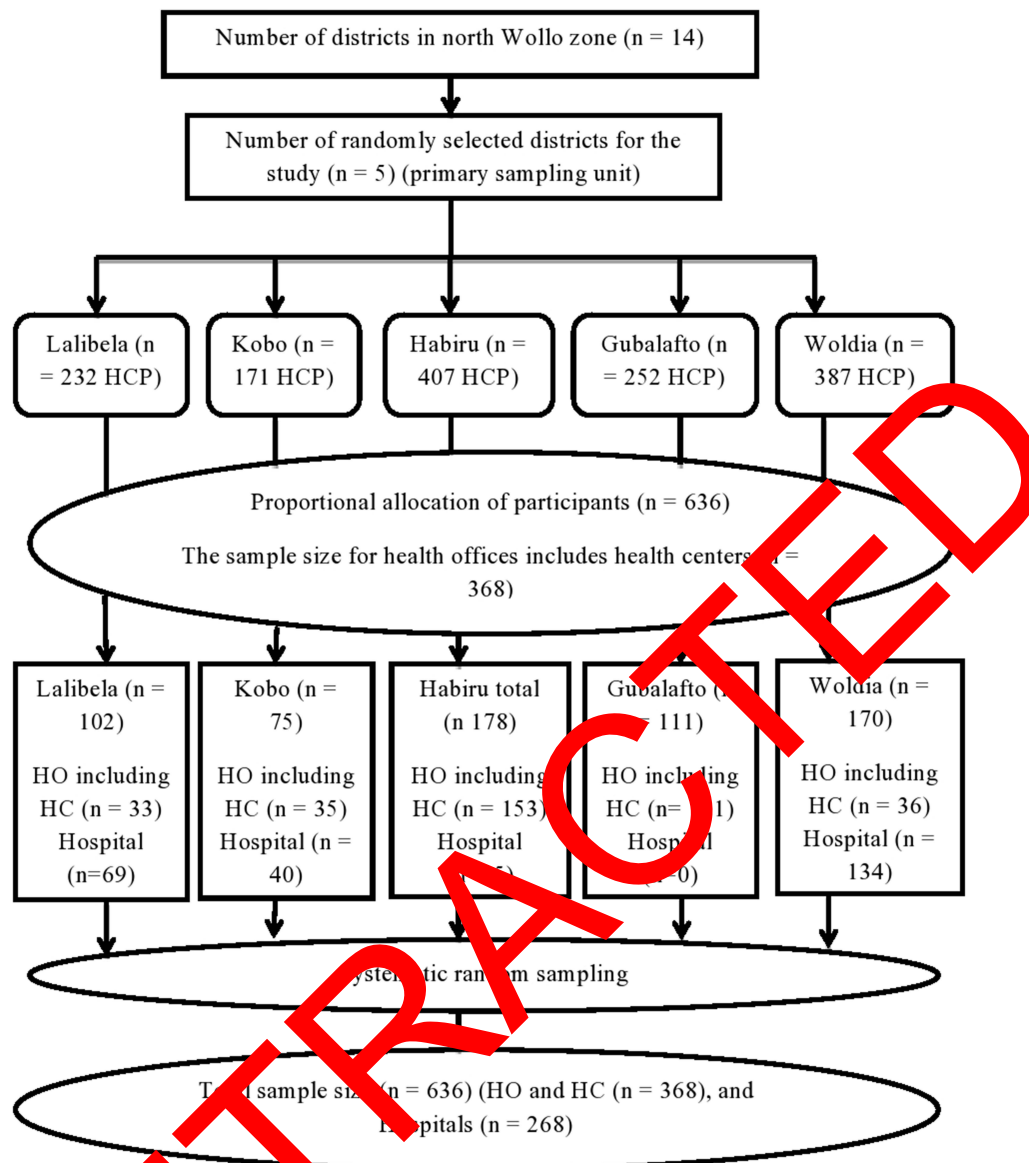


Figure 1 Schematic presentation of sampling procedure in North Wollo zone.
Abbreviations: HO, Health office; HC, Health center.

Key informant interviews and the qualitative data were carried out using semi-structured interview guides to dig further into participants' experiences and perspectives using open-ended questions that were then probed further to stimulate more discussion ([Additional file](#)). The principal investigator collected the data using the following data collection tools and methods: tape recorder, field note documenting, and triangulation.

Data Collection Procedure

After exploring the study subjects' understanding of health insurance, the data collectors and the principal investigator discussed the actual scenario of SHI (nature of the plan and benefits packages).

For the proposed SHI scheme, participants were asked for their WTP, which is 3% of their monthly salary. The first bid amount was purposefully chosen to assess members' willingness to contribute the proposed premium (3% of gross salary) for Ethiopia's proposed SHI programme. The participants were then asked if they would be willing to pay the next higher or lower amount, depending on their response. The next higher bid (4%) was offered if a person responded

“yes” for 3%, and the next lower bid (2%) was offered if a participant responded “no” for 3%. The bidding game continued until someone decided to change their response from inclusion to exclusion.

The qualitative data was collected using an interview guide. The principal investigator performed the interview using an open-ended probing technique and an unstructured interview. To discover more about their knowledge or experiences with SHI, OOP expenditures, the WTP for the SHI scheme, the quality of public health services, and enrollment practices that undermine the scheme, key informants interviews were conducted with five district health insurance officers and eight focal persons for health insurance in healthcare facilities. Each interview lasted between 25 and 35 minutes and was conducted in Amharic, the language spoken in the area at the offices. After obtaining consent from the participants, the interviews were audio-recorded using a tape recorder. Field notes were made while conducting informal interviews.

Data Processing and Analysis

Quantitative Data Analysis

The data were coded, entered into EPI info version 3.1, and then moved to Statistical Package for Social Science (SPSS) version 21.0 software for analysis after being reviewed for accuracy and consistency. Descriptive statistics like frequency and percentage were used to summarize the socio-demographic characteristics of the study participants. After checking the logistic regression's assumptions, binary logistic regression was used to evaluate the association between various independent and dependent variables. Candidates for the multivariable logistic regression analysis were independent variables with $P < 0.25$ on the bivariate binary logistic regression analysis. The Hosmer-Lemeshow test was used to assess the model fitness, and the findings were non-significant. The dependent variable was the subject of a multivariable logistic regression analysis to find variables that had significant associations with it. Finally, a significant correlation between WTP for SHI and the independent variables was established using the adjusted odds ratio AOR, a 95% confidence interval, and a p-value of less than 0.05.

Qualitative Data Analysis

Thematic analysis was used to collect, transcribe, code, and analyze the data. Through repeated readings of the text data, themes and groupings were apparent. Factors for WTP for the SHI scheme were taken into consideration when designing the key informants' interview guide and transcripts. A coding scheme was created based on this theme to indicate frequent themes found in the transcript evaluation. Throughout the data analysis phase, codes were improved. This procedure resulted in the creation of descriptive categories to display the components, each of which was given a “name” to serve as the basis of an explanation for the occurrence that was being observed. Triangulation was used to present both the quantitative and qualitative data results. To support the quantitative findings, selected quotes that were the most helpful in describing the qualitative findings were written under each quantitative finding. Non-demand-side quotes are written separately as supply-side quotes and presented by their theme.

Operational Definitions

Willingness to join- is defined as the motive of individuals to enroll in SHI to gain benefits from the scheme regardless of the amount of payment.

Willingness to pay (WTP) - means the maximum (non-zero) amount that individuals are willing to pay for the insurance scheme, elicited through a double bounded contingent valuation method, specifically by applying a bidding game.²²

Chronic Illness Experience- In this study, participants or their family members who get an illness symptom lasting more than 6 months preceding the data collection period.²³

Knowledge of SHI- Eight questions covering SHI ideas, roles, and beneficiaries were used to assess the participants' knowledge of SHI. Participants who answered the question properly were labeled as “correct response”, while those who didn't were labeled as “not correct response”. The weight of each item was equal. As a result, each right response received a score of 1, while each incorrect response received a score of 0. Hence, the total score for all knowledge questions would fall between 0 and 8. If the participant's overall knowledge score was greater than or equal to 4 (or 50%), it was deemed good and otherwise poor.²¹

Attitude towards SHI- Attitude is defined as what health professionals think or feel about SHI and is measured using six questions. Each question contains five points on the Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). The sums of these items yield a total score of at least 6 and at most 30. Then the score was

calculated and graded as negative attitude for values less than 50% of the maximum attainable score and positive attitude for values above 50% of the maximum attainable score.²¹

Ethical Consideration

Ethical clearance was obtained from the ethics review board of Wollo University College of Medicine and Health Science (Ref. No. RCSPG-129-14), and a supporting letter was obtained from the North Wollo zone health office. All of the study participants were informed about the purpose of the study, their right to participate or to draw at any time if they do not want, and their confidentiality. Informed written consent was obtained from all study participants after explaining the purpose of the study and confidentiality of the information was maintained during or after data collection by excluding names as identification in the questionnaire. The participants' informed consent included the publication of anonymized responses. This study was conducted following the Declaration of Helsinki.

Results

Socio-demographic Characteristics of Participants

A total of 588 HCP participated in the study, resulting in a response rate of 92.45%. The majority of the participants were male (312; 53.1%). The mean age of the participants was 33.8 ± 6.86 years. Of the total participants, 266 (45.2%) were first-degree holders. Regarding family size, 326 (55.4%) of participants had a family size of ≤ 3 , and 432 (73.5%) participants have children younger than 5 years old. The average monthly salary of the participants was 7699.11 ± 1849.274 Ethiopian Birr (ETB) (Table 1).

Table 1 Socio-Demographic Characteristics of Health Professionals in North Wollo Zone, Ethiopia, June 2022

| Study Variables | | N (%) |
|---|---------------------------|------------|
| Gender | Male | 312 (53.1) |
| | Female | 276 (46.9) |
| Age (years) | ≤ 30 | 222 (37.8) |
| | 30–40 | 286 (48.6) |
| | ≥ 41 | 80 (13.6) |
| Marital status | Married | 372 (63.3) |
| | Currently single | 216 (36.7) |
| Educational status | Diploma | 266 (45.2) |
| | First degree | 266 (45.2) |
| | Master's degree and above | 56 (9.5) |
| Monthly salary in ETB (1 USD = 51.84 ETB) | ≤ 7430 | 288 (49.0) |
| | 7431–9490 | 226 (38.4) |
| | > 9491 | 74 (12.6) |
| Family size | ≤ 3 | 326 (55.4) |
| | 4–6 | 244 (41.5) |
| | ≥ 7 | 18 (3.1) |
| Presence of under five years children | Yes | 432 (73.5) |
| | No | 156 (26.5) |

Abbreviation: ETB, Ethiopian Birr.

Health Status and Health-Related Characteristics of Study Participants

Eighty-four (14.3%) participants had a family history of chronic medical illness, and 208 (35.4%) had a history of at least one episode of illness in the last 12 months. Of those who had a history of illness, 96.2% of them received treatment, and 74%, 17.5%, and 8.5% obtained the treatment from a governmental health facility, private health facility, and community pharmacies, respectively. Regarding medical bills for treatment (for those who had a history of illness within 12 months of the survey), 74% and 26% of the medical expense was covered by the employer and OOP, respectively. Among the 148 participants who had received treatment from governmental health facilities, 69 (46.6%) were unsatisfied with the service quality (Table 2).

Awareness, Knowledge, and Attitude of Participants Toward SHI

All (100%) of the participants heard about SHI, and the majority (42.5%) of participants got the information from their friends. Of those participants who had previously heard of SHI, 98.3% of them thought that it provides benefits. (Table 3). The mean score of participants' knowledge about SHI was 6.1 (SD = ± 1.18). Nearly 99% of the participants had good knowledge; the mean score of participants' attitudes about SHI was 22.1 (SD = ± 2.46), and 98.3% of the participants had a positive attitude about SHI.

In qualitative findings, even though all participants had prior experience in several health insurance concepts, like risk-sharing and cost-sharing, they still held the opinion that the government was in charge of providing health insurance. One participant stated:

Health insurance is about helping each other in times of ill health based on prior contributions. But the government should provide us full health insurance because I don't want to pay for the service I have provided since I am at risk due to my job. You see other institutions like telecommunication; the Electric Corporation gives free service to their employees. Why does not the health sector provide full insurance for HCP? I think it is not fair in the same country. (Female 34 years, district health insurance officer)

Table 2 Health Status and Health-Related Characteristics of Health Professionals in North Wollo Zone, Ethiopia, June 2022

| Variables | Response | N (%) |
|---|-------------------------|------------|
| Presence of chronic illness among family members (n = 588) | Yes | 84 (14.3) |
| | No | 504 (85.7) |
| Presence of any illness during the last 12 months (n = 588) | Yes | 208 (35.4) |
| | No | 380 (64.6) |
| Seeking treatment for the recent episode of illness (n = 208) | Yes | 200 (96.2) |
| | No | 8 (3.8) |
| Place of treatment sought (n = 200) | Public health facility | 148 (74.0) |
| | Private health facility | 35 (17.5) |
| | Community pharmacy | 17 (8.5) |
| Source of health expenditure (n = 200) | OOP | 52 (26.0) |
| | Employer | 148 (74.0) |
| Satisfaction with quality of services at public health facilities (n = 148) | Satisfied | 33 (22.3) |
| | Neutral | 46 (31.1) |
| | Not satisfied | 69 (46.6) |

Abbreviation: OOP, Out-of-pocket.

Table 3 Awareness of Social Health Insurance Schemes Among Health Professionals in North Wollo Zone, Ethiopia, June 2022

| Descriptions | Response | N (%) |
|--|--|------------|
| Ever heard of the social health insurance scheme (n=588) | Yes | 588 (100) |
| | No | – |
| Source of information for SHI scheme (n=588)* | Mass media | 182 (30.9) |
| | Family | 96 (16.3) |
| | Friends | 250 (42.5) |
| | Insurance agency | 68 (11.6) |
| Believe that SHI has benefits (n = 588) | Yes | 578 (98.3) |
| | No | 10 (1.7) |
| Benefit of SHI scheme (n = 578)* | Prevent unexpected health expenditure | 331 (57.3) |
| | Help others who cannot afford their medical cost | 127 (22.0) |
| | Have timely care in times of illness | 70 (15.6) |
| | Improve health services quality | 64 (11.1) |
| Information on the source of finance for SHI(n = 578)* | Members' contribution | 565 (97.7) |
| | Employers' contribution | 25 (4.3) |
| | Investment Income | 17 (2.9) |

Note: *Multiple responses is possible.

Abbreviation: SHI, social health insurance.

Level of Willingness to Pay for Social Health Insurance

Two hundred fifty (61.7%) participants were willing to join and pay for the proposed SHI premium (3% of their gross monthly salary). Of these, 110 (44%) participants who were willing to pay the initial bid were also willing to pay the first higher bid (4%), and none of the participants were willing to pay the second higher bid amount (5%). Among those participants who were not willing to pay the initial bid, 100 (64.9%) were willing to pay the first lower bid (2%), and 54 (35.1%) who were not willing to pay the first lower bid were willing to pay the second lower bid (1%). The overall estimated mean WTP was 2.76% (95% CI 2.67–2.86) of their gross monthly salary (Figure 2).

The majority (76.9%) of participants were happy about SHI since it addresses financial inaccessibility to health care or is another source of revenue for the government.

One participant stated that

I am happy to contribute to SHI, even if am in good health condition it helps others (Male 27 years, health facility health insurance focal person).

Access to free health services 206 (51%), financial security in times of ill health; 120 (29.7%), helping others who cannot afford their medical bills 58 (14.4%) and frequently ill; 20 (5%) were mentioned as the main reasons for their WTP. Of those who were not willing to join, 184 (33.1%), the main reasons were: 96 (52.2%) thought the government should cover the cost, 36 (19.6%) were not willing to pay double (wife and husband), and 30 (16.3%) preferred OOP payment (Table 4).

Factors Associated with Willingness to Pay for Social Health Insurance

Participants' WTP was significantly associated with their gender, salary, having children less than 5 years old, premium amount, service level, and insurance benefit packages. Females were 42.6% less likely to be willing to join the scheme as compared to males (AOR = 0.426, 95% CI = 0.196–0.926). Participants who had children younger than 5 years were 2.79

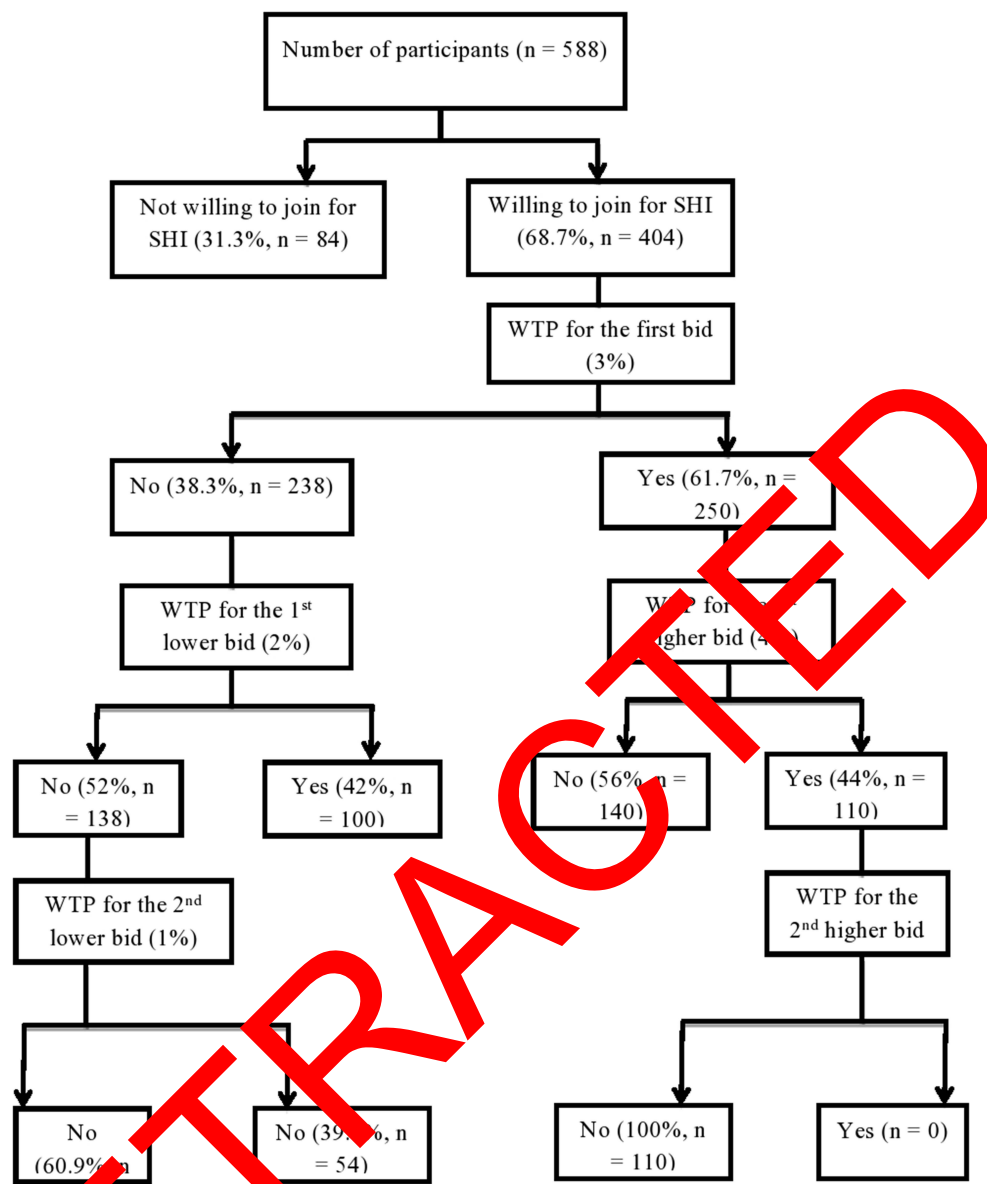


Figure 2 Willingness to pay for SHI among healthcare professionals of North Wollo zone, Ethiopia.

more likely to be willing to pay than their counterparts (AOR = 2.790, 95% CI = 1.026–7.587). Additionally, participants who had a monthly salary of \leq 7430 ETB were 35.7% more likely to pay as compared to participants who had salaries of 7431–9410 ETB (AOR = 0.643, 95% CI = 0.281–1.473), and participants who had a monthly salary of \leq 7430 ETB were 83.6% more likely to pay as compared to participants who had $>$ 9491 ETB (AOR = 0.164, 95% CI = 0.056–0.478) (Table 5).

Premium Amount

The Ethiopian government's suggested 3% of gross monthly salary contribution is used to elicit participants' WTP. For instance, if a person gets ETB 5000 per month, the monthly premium is ETB 150. Even though the majority (76.9%) of participants were pleased that SHI had been implemented, they were not happy to contribute to the scheme for several reasons, including their low monthly salary and the extremely high and steadily rising cost of living. Their perspective was also somewhat influenced by the current trend of free health care. This extensive history is anticipated to serve as a barrier that

Table 4 Reasons for Willingness/Unwillingness to Pay for Social Health Insurance

| Variables | N (%) |
|--|------------|
| Reasons for WTP for SHI | |
| Provides free access to medical care at the point of service | 206 (51.0) |
| Financial security in times of ill health | 120 (29.7) |
| Helping others who cannot afford their medical bills | 58 (14.4) |
| Facing frequently ill | 20 (5.0) |
| Reasons for not joining SHI | |
| Government should cover the cost | 96 (52.2) |
| Double payment wife and husband | 36 (19.6) |
| Preferring OOP | 30 (16.2) |
| SHI scheme does not cover all the health care costs | 14 (7.6) |
| Healthcare providers lost interest in paying for SHI | 6 (3.0) |
| Poor quality of health service | 2 (1) |

Abbreviations: OOP, Out-of-pocket; SHI, Social health insurance; WTP, Willingness to pay.

discourages many individuals from accepting the idea of financing healthcare services. They suggested that the government increase compensation and take into account the professional risk if they are required to contribute. One participant stated that:

I know that health insurance is good, but with this low salary, we cannot afford it. Every month, we are on credit. So how can we contribute 3% to health insurance? (Male 38 years, district health insurance officer)

But another participant stated that:

I am willing to contribute 3%. If the contribution is too small, it can't cover even the basic health services, and the sustainability of the scheme will be questioned. (Male 42 years, health facility health insurance focal person)

Benefit Packages

Most (61.5%) of the participants argued that unless health insurance provides comprehensive coverage, they will not be protected because they do not know what health problems they will face. One participant stated:

As long as an illness affects the normal way of life, why do we prioritise it? (Male 30 years, health facility health insurance focal person)

But 1/3rd of participants believed that since resources are limited, luxurious services such as cosmetic Surgery can be excluded, but some healthcare services like dialysis, vision, and dental care should be included. One participant stated:

I agree that certain treatments should not be included in the benefits package because they may cost a lot of money to treat a small number of patients when that money could have been used to save many more. It makes sense to start by concentrating on diseases that the majority of people experience. (Male 33 years, health insurance officer)

Enrolment

The proposed SHI is criticised by more than 1/3rd of participants because it asks for salary deductions from both the wife and the husband if both of them are government employees. One participant stated:

Table 5 Factors Associated with WTP for SHI Among Health Professionals in North Wollo Zone, Ethiopia, June 2022

| Study Variables | | WTP for SHI | | COR (95% CI) | AOR (95% CI) |
|---|---------------------------|-------------|------------|-----------------------|----------------------|
| | | Yes (%) | No (%) | | |
| Gender | Male | 204 (65.4) | 108 (34.6) | 1 | 1 |
| | Female | 200 (72.5) | 76 (27.8) | 0.718 (0.505–1.021)* | 0.426 (0.196–0.926)* |
| Age (years) | < 30 | 165 (73.7) | 59 (26.3) | 1 | 1 |
| | 30–40 | 80 (62.5) | 48 (37.5) | 1.354 (0.905–2.027) | 0.935 (0.229–3.817) |
| | ≥ 41 | 159 (67.4) | 77 (32.6) | 0.807 (0.515–1.265) | 0.692 (0.223–2.143) |
| Marital status | Married | 274 (73.7) | 98 (26.3) | 1 | 1 |
| | Currently single | 130 (60.2) | 86 (39.8) | 1.85 (1.294–2.643) | 0.706 (0.257–1.937) |
| Educational status | Diploma | 204 (76.7) | 62 (23.3) | 1 | 1 |
| | First degree | 182 (68.4) | 84 (31.6) | 6.016 (3.704–9.826) | 0.970 (0.430–2.796) |
| | Master's degree and above | 18 (32.1) | 38 (67.9) | 4.571 (1.167–8.482) | 0.346 (0.087–1.380) |
| Monthly salary in ETB (1 USD = 51.84 ETB) | ≤ 7430 | 232 (80.5) | 56 (19.5) | 1 | 1 |
| | 7431–9490 | 142 (62.8) | 87 (37.2) | 6.016 (3.512–10.513)* | 0.643 (0.281–1.473)* |
| | > 9490 | 30 (40.0) | 44 (59.5) | 2.479 (1.449–4.241)* | 0.164 (0.056–0.478)* |
| Presence of under five years children | Yes | 314 (72.5) | 118 (27.5) | 1.951 (1.332–2.858)* | 2.790 (1.026–7.587)* |
| | No | 107 (57.7) | 79 (42.3) | 1 | 1 |
| Presence of chronic illness among family members | Yes | 238 (64.4) | 132 (35.6) | 1.783 (1.254–2.535)* | 0.389 (0.102–1.476) |
| | No | 116 (61.9) | 72 (38.1) | 1 | 1 |
| Place of treatment sought | Public health facility | 121 (81.7) | 27 (18.3) | 1 | 1 |
| | Private health facility | 30 (85.7) | 5 (14.3) | 1.339 (0.476–3.767) | 1.122 (0.224–5.614) |
| | Community pharmacy | 158 (79.0) | 42 (21.0) | 0.156 (0.055–0.447) | 0.001 (0.000–0.025) |
| Source of health expenditure | Out of pocket | 37 (71.1) | 15 (28.9) | 1 | 1 |
| | Employer | 121 (85.2) | 21 (14.8) | 0.550 (0.265–1.143)* | 1.991 (0.894–4.437) |
| Satisfaction with quality of services at public health facilities | Satisfied | 352 (69.0) | 158 (31.0) | 1 | 1 |
| | Neutral | 22 (78.6) | 6 (21.4) | 1.646 (0.655–4.138) | 0.504 (0.131–1.943) |
| | Not satisfied | 30 (60.0) | 20 (40.0) | 0.673 (0.371–1.222) | 6.42 (1.241–33.288) |

Note: *Significant at $p < 0.05$.

Abbreviations: AOR, Adjusted odds ratio; COR, Crude odds ratio; CI, Confidence interval; SHI, Social health insurance; WTP, Willingness to pay.

I and my wife are government employees; if I have to pay, my family, including my wife, should not pay, meaning all should get the service like community health insurance. It means that the scheme should exclude double payment from the wife and husband. (Male 45 years, health facility health insurance focal person)

Quality of Service

Most participants questioned the quality and availability of drugs in government health facilities compared to private health facilities. Nearly all of the participants expressed their dissatisfaction with the current services provided by

government health facilities, which are characterized by a persistent lack of drugs and diagnostic tools. Thus, it was indicated by every participant that before the SHI was implemented, the current health care needed to be improved. This was stated by one participant.

It is better to improve the quality and availability of services before implementation of the scheme; for example, government facilities should avoid frequent stockouts of drugs (Male 28, health facility health insurance focal person).

Discussion

Local context studies and suggestions are necessary for the development and implementation of an equitable and resilient healthcare finance system. This study was conducted to quantify WTP for the SHI scheme and related determinants among HCP. The majority of study participants are willing to pay for the proposed SHI scheme by the government. Service level (availability and quality) were concerns raised by the study participants.

This study found that 61.7% of the participants were willing to join and pay the proposed SHI. This is relatively in line with the study results from Debre Markos, which were 69.8%,¹⁹ and South Sudan, which were 68.8%,²⁰ but it is relatively higher compared to previous studies in Addis Ababa, which were 28.7%,¹⁴ and Arba Minch, which were 36.7%,²⁵ but it is lower than the study results from Mekele, which were 85.3%²¹ and Gondar, which were 80%.²⁶ The variation could be due to different research times, places, methodologies, and participants' understanding of the value of the SHI system, rising healthcare expenses, or it could be because HCP obtain free health services as a result; they rely on the free health services rather than the SHI scheme. This high level of agreement on SHI has significant implications for health policy because the majority of HCP would support the proposed healthcare funding alternative under the condition that some changes are made to the policy packages.

This study's findings showed that the average WTP for SHI was estimated to be 2.76% of participants' monthly salaries, which is comparable to the government's proposed premium.⁴ However, it is lower than reports from Mekele (3.6%)²¹ but higher than the study findings from Addis Ababa (2.5%).¹⁴ This may be because this study only included healthcare professionals, who often receive their medical care free and are hence unlikely to accept even a small financial contribution. Getting free health services is something that health professionals are interested in. The motivation behind this interest could be the fact that health professionals felt that the government should pay for their medical bills or that they should not be expected to pay for the healthcare that they provide to others.²⁷

According to this study, WTP was significantly associated with gender, monthly income, and the presence of children under the age of five. In line with a study done in Nigeria, men participants were 57.4% more likely to be willing to pay than female ones.²⁸ The monthly salary might be the reason for this. Participants who had children under the age of 5 were 2.79 times more likely to be willing to make a payment than participants who did not. This is consistent with the study result conducted in Arba Minch.²⁵ The likelihood of needing healthcare services is higher for individuals with children under the age of five since the possibility of illness is higher. As a result, their desire to join and pay would be higher to avoid future medical costs. This study demonstrated that participants with higher monthly salaries were less likely to pay for SHI than those with lower monthly salaries. Participants with monthly salaries of 7430 ETB or less were more likely to be willing to pay SHI than participants with monthly salaries of 7431 ETB or higher. It is consistent with research carried out in South Sudan²⁴ and Nigeria.²⁸ This might be because higher money leads to greater health, which reduces the need for health insurance. However, it contradicts the study results conducted in Mekelle,²¹ Addis Ababa,¹⁴ and Saudi Arabia.²² This may be because they can pay the premiums for health insurance, and their contribution to SHI's progress is positive. The higher ability-to-pay of households with higher income levels can be used to explain these findings, and WTP appeared to be higher with a higher ability-to-pay.

The majority of participants in the qualitative study agreed to contribute 2% on average, which is less than the quantitative figure. The methodology used to elicit their WTP can be attributed to the differences. This study revealed that the main reasons for not being willing to participate in the SHI scheme were the government should cover the cost, there is a double payment between wife and husband, and the SHI scheme does not cover all the health care costs. This is similar to a study conducted in Mekele,²¹ Addis Ababa,¹⁴ and Nigeria²⁸ in which the main reason is that healthcare services should be covered by the government. Furthermore, the main factors influencing WTP for the SHI were

premium amount, service level, and insurance benefit packages. Even if the participants are aware of the rationale for prioritising (a lack of resources), some benefit packages like dentistry, dialysis, and vision care should be included.

In the interviews with the key informants, the quality of healthcare provided in public health institutions was a significant topic. Most participants were not happy with the amount and quality of health treatments offered in public facilities. They proposed that improving the availability of pharmaceuticals and equipment, hiring more healthcare workers, and locating medical facilities closer to the community will all help SHI become more widely accepted.

Limitations of the Study

Without prior exposure to SHI, study participants were asked about their WTP. Because of this, individuals can have high expectations or might not consider it a serious plan that would soon come to pass. As a result, their choice may differ from the one they would have made if they had to make it in a real-life scenario. Additionally, the government's proposed starting bid of 3% of gross salary for the bidding game may have an impact on participants' initial bid choices. This first-choice bias could affect participants' final WTP for the SHI bid.

Conclusion

In conclusion, 61.7% of study participants are willing to pay for the suggested SHI scheme. Their average WTP was 2.76% of their monthly salary, which is close to the premium set by the government. This higher acceptance rate has important policy implications for the successful implementation of the scheme. Even though key informants indicated a lower WTP, most informants agreed to contribute if some benefit packages were included and services were improved. Further dialogue with HCP is essential for the successful implementation of the programme.

Abbreviations

HCP, Healthcare professionals; OOP, Out-of-pocket; SHI, Social health insurance; WTP, Willingness to pay.

Data Sharing Statement

All relevant data are within the paper.

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Author Contributions

All authors made substantial contributions to the conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed on the journal to which the article will be submitted; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

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The authors declare that they have no competing interests.

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