

Willingness to Pay for Social Health Insurance and its Determinants Among Public School Teachers in Akaki Kaliti Sub-City of Addis Ababa City Administration: Ethiopia. Institution-Based Cross-Sectional Study

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Abstract

Background: Ethiopia is one of the countries with high out-of-pocket payments leading to catastrophic health expenditure. The government of Ethiopia introduced social health insurance scheme to reduce the out-of-pocket payments. However, there is limited evidence on willingness to pay for social health insurance among formal sector employees in the country. This study aimed to assess the willingness to pay for social health insurance and its associated factors among teachers in public school of Addis Ababa.

Methods: An institution-based cross-sectional study was conducted from 10th January to 15th April 2022 on 280 teachers. Systematic sampling technique was used; data were collected using pretested self-administered structured questionnaire. The collected data were analyzed using SPSS version 23. Binary logistic regression analysis was performed to estimate crude odds ratios. In the multivariate model, a significant level at p-value of < 0.05 and adjusted odds ratio with 95%CI was used to determine the statistical association between the willingness to pay and explanatory variables.

Result: Two hundred eight 74.3% were willing to pay for social health insurance. Higher educational status [AOR=5.48; 95%CI (1.80, 16.73)], difficulties associated with healthcare cost [AOR=2.39; 95%CI (1.35, 4.24)], awareness about social health insurance [AOR=5.59; 95%CI (2.98, 10.48)], and knowledge of social health insurance's benefit package [AOR=5.56; 95%CI (3.07, 10.04)] showed significant positive association with willingness to pay for social health insurance. Perception for poor quality of public health facility and trust on a health insurance agency showed significant negative association and teachers lost interest for social health insurance scheme.

Conclusions: Three – fourth of the public-school teachers were willing to pay the premium proposed by the government. Higher educational status, difficulties associated with healthcare cost and awareness about social health insurance were the factors that affect positively the willingness to pay for social health insurance among public school teachers. This can pave the way to start the scheme but attention should focus on improving the quality of public health facilities and the trustfulness on health insurance agency.

Keywords: Social Health Insurance, Willingness to Join, Willingness to Pay, Health Insurance Agency, Universal Health Coverage, Public-Schools, Ethiopia

Background

The Theory of Health Insurance develops the theory of Social Health Insurance (SHI) [1]. Health insurance is a system where individuals or households (HHs) pay small contributions or prepayments to get health services at the time of illness to protect them from catastrophic health expenditures [2]. Health insurance addressed healthcare financial challenges as the cost shar-

ing between beneficiaries and government in the health sector is critical to achieve Universal Health Coverage (UHC) [3, 4]. SHI is a form of either voluntary or mandatory health insurance for formal sector employees, including retirees and pensioners, in a number of developing countries [5]. The formal workforce in Vietnam, Nigeria 1997, Tanzania 2001, Ghana 2005, India 2008 and China 2003 were used SHI as an alternative to direct tax-

based financing of providers and out-of pocket (OOP) payments [6- 12]. SHI is one of the sustainable health care financing (HCF) mechanisms which enhances equitable, quality and sustainable access for government employee in formal sectors in a number of developing countries to improved health services through pooling risk, cross-subsidization and reducing financial barriers at the point of service delivery [13- 15]. These small contributions are pooled together to insure citizens' access to health services by avoiding financial barrier, and to lower the OOP health expenditure [14]. While in high reliance on OOP payment, and OOP health expenditure is the major source of health care financing in LMIC and those with emerging economies compared to developed nations [15, 16]. A survey of 89 countries indicate that 3%, 1.8%, and 0.6% of households face catastrophic health expenditure in low, middle-, and high-income countries, respectively [17]. A survey on long term health spending for individuals leaving in 11 emerging nations/countries with emerging economies paid 75.1% to 97.7% of their private healthcare expenditures [16]. A cross-sectional survey on suffering from catastrophic health expenditures for the HHs shows that in Mongolia for 5.5%, Burkina Faso for 15% and Uganda for 2.6% [18-20]. Over the last decade, total healthcare expenditures (THE) have increased in most East African countries, but like many other LMIC, HCF has been a major challenge for Ethiopians [21].

Public awareness towards SHI scheme is limited. As a result, there is high probability of rejection among public sector employees which leads to the failure of implementing the risk pooling objectives of SHI. Studies show offering low-cost health insurance is one innovative method through which to finance healthcare provision, guarantee health service and avoid catastrophic OOP health expenditures [22]. The possible barriers to implement the SHI scheme might be either from the consumer's side or/and service delivery side. The interest of employees to participate and pay for SHI is very important. Therefore, conducting research is important for the success of this program through careful analysis of the relationship between public awareness, employee interest and willingness to pay (WTP), and assessing factors affecting the willingness of employees to participate and pay for SHI scheme.

Method

Setting and Design

The Ethiopian Health Insurance Agency (HIA) was established as an autonomous federal organ through regulation No. 191/2010, and issued by the Council of Ministers (CoM) with the objective of implementing health insurance system in the country [22]. Despite that the Ethiopian government plan to fully implement SHI by 2014, SHI has been repeatedly postponed, largely due to strong resistance from public servants' enrollment, and SHI program has been not implemented yet over the past 12 years [23, 24]. This study is assessed the willingness to pay (WTP) for SHI among public school teachers to determine the knowledge and preferences of potential enrollees of SHI and the determinant factors that affects it. A structured self-administered questionnaire was employed on acceptance of SHI and willingness to pay for SHI scheme. The tool had three sections. Section one: Socio-demographic and socio-economic data; Section two: healthcare related factors data; Section three: SHI awareness

data. An institution based cross-sectional study was conducted between 10th Feb. and Apr. 15th 2022

Participant Selection

The source of population for the research was all primary and secondary/preparatory school's teachers of public schools of Akaki Kaliti Sub City, Addis Ababa City Administration. Akaki Kaliti Sub City was selected by random (lottery method) from the 11 Addis Ababa's Sub City administrations. This sub city has 40 schools (28 primary and 12 secondary/preparatory) and total of 4119 teachers. There were 3142 teachers from primary & 977 teachers from secondary public schools. Two sample frames were prepared at Akaki Kaliti Sub City Education Office. Sample frame for all teachers who fulfill the inclusion criteria (teachers had not a three month and above period of service" [2] that belongs to primary (3142) and secondary/preparatory (977) public schools made separately by merging the list of teachers' from each school's registration of Akaki Kaliti sub city education office. From the total sample of 280 (100%) respondents; 214 (76.3%) and 66 (23.7%) were proportionally allocated to the primary and secondary/preparatory public schools' teachers. Subjects were selected from two sample frame using systematic sampling technique based on regular interval of every 14th person based on proportionate to size.

Data Management and Analysis Procedures

All collected data were checked for the completion and clarity just on time of collection of the tools by the researcher. The data were coded, entered into Epi Info version 7.2.4, and exported to and analysed using SPSS version 23. Descriptive statistics (frequencies distribution) and inferential statistics (χ^2) were used to generate results. The final descriptive results presented using tables; and inferential statistics (χ^2) was used to determine the association of categorical predictor variables with the outcome variable. The outcome variable i.e. willingness to pay for SHI premium proposed falls into one of two categories as a dichotomous outcome variable based on one or more categorical predictor variables. Selection process of variables from a large set of covariates those that should be included in the best model was begun by a bivariate analysis of each categorical predictor variable, and any variable having a significant bivariate test was selected as a candidate for the multivariable model at the 0.05 alpha level based on the Wald chi-square statistic. P-value cut-off point of 0.25 used to candidate the predictor variables for the multivariate analysis models to see the effect of its association [25]. Variables that do not significantly related to the outcome but make an important contribution in the presence of other variables and that did change remaining parameter estimates by more than 15% for the other covariate remained in the model as a confounder [25]. Bivariate analysis for crude odds ratio was carried out. The goodness of fit of the model for binary logistic regression models was checked using the Hosmer-Lemeshow goodness of fit resulting in $X^2 = 3.79$, p-value = 0.81. The strength of association used to estimate the adjusted odds ratios for WTP for SHI at 95% CL to answer the specific objectives of the study. Statistical significance were declared at $P < 0.05$.

Results

Sociodemographic Characteristics

Among the total 280 respondents 157(56.1%) were males. The respondent's age ranged from 19 to 58 with mean age of 33.76. The average family size is 3.4 with a median value of 3. The average monthly salary was 9146.20 ETB ranging from 2,400.00

to 13,950.00 ETB with a median value of 9056.00 ETB. Half of 140(50.0%) respondents were bachelor degree holder, whereas 90(32.1%) were master's degree and 50(17.9%) diploma holders. More than half (196) 70.0% of the respondents have worked for six years or above as a public schools which ranged from 1 to 37 years with mean years of 11.96 (table 1)

Table 1: Demographic and Socioeconomic Characteristics of The Study Participants in Akaki Kaliti Sub City, Addis Ababa (n= 280).

Value	Frequency	Percentage
Gender		
Male	157	56.1
Female	123	43.9
Age Category (Years)[24]		
≤ 30	77	27.5
31 – 40	135	48.2
> 40	68	24.3
Household Size Category (Number)[24]		
< 3	49	17.5
4 – 6	174	62.1
> 6	57	20.4
Duration of Service Category (Years)[26]		
< 6	84	30.0
6 – 10	140	50.0
> 10	56	20.0
Educational status		
Diploma	50	17.9
Bachelor degree	140	50.0
Master's degree	90	32.1
Monthly salary (ETB)[26]		
< 6488.00	33	11.8
6488.00 – 10024.00	72	25.7
> 10024.00	175	62.5

Health and Medical Care Characteristics of Respondents

Two hundred thirty one (82.5%), 39(13.9%) and 10(3.6%) were used a direct out-of-pocket payments, traditional insurance (Ekub, Idir, or group based contribution) and freely from external aid as the source of their medical care payments respectively. About 207 (73.9%) of the teachers perceived their health status (self-rated health status) was bad and they did seek medical attention and health service with in the last 12 months prior to the survey either for emergencies or/and chronic medical care. Out

of the 207 medical seekers, in 183 (88.4%) getting money to pay for medical expense was difficult for the households who encountered illness in the family. Two third of the respondents that encountered a difficult of pay for medical bills; 142 (68.6%) had no money from pocket, and the rest one third 65 (31.4%) either hadn't third party to cover healthcare related payment or had unable to loan/borrow from their relative and neighbors on time of seeking care. (table 2).

Table 2: Health Related Characteristics Of Study Participants in Akaki Kaliti Sub City, Addis Ababa (n= 280)

Value	Frequency	Percentage
Methods of Health expenditures (Multiple)		
Direct Out-of-Pocket Expenditure	231	82.5
Traditional insurance (Ekub, Idir, group based contribution)	39	13.9
External aid/any third party	10	3.6
Government financing/Free service letter	11	3.9
Seek medical attention in the past 12 months		

Yes	207	73.9
No	73	26.1
Faced difficulty in paying health expense (n= 207)		
Yes	183	88.4
No	24	11.6
Spending pattern during difficult time in paying health expense (Multiple, n=207)		
Cut from other essential expenditures as OOP payment	142	68.6
Borrow from relative and/or neighbor	38	13.6
Any third party to cover healthcare related payment	34	12.2

The Magnitude of SHI's Awareness and Knowledge among Public School Teacher

The majority 199 (71.1%) of the respondents have heard about SHI from different source. Majority 185(92.9 %) were heard from radio and television, 122 (61.3%) from peers and friends, 97(48.7%) from health professionals and 27(13.6%) from newspaper as their source of information about the SHI. Among 199 (71.1%) of the respondents have heard about SHI; 195(98.0%) knows about SHI's membership either as voluntary/mandatory, 186 (93.5%) knows the health service package of SHI, 137(68.9%) know the objective of the scheme, 122(61.3 %) knows the possible financial source of SHI, 107(53.8%) heard the proposed amount of salary rate, 81(40.7) timing of payment from payroll based. Among 137(68.9%) those knows the objective of the scheme; 137(100%) believes that the scheme reduce healthcare related financial barriers at the point of service delivery through risk sharing and 136 (99.3%) them believes that SHI should provide quality and sustainable UHC coverage to the beneficiary if the scheme will be established. The knowledge of

the health service package content of SHI for the beneficiary to cover the healthcare service cost was high as 186(93.5%) among the respondents that heard about the scheme; where 139(74.4%), 117(62.9%), 112(60.2%), 105(56.4%), 85(45.7%), 58(31.2%) and 25(13.4%) believes as the SHI scheme cover the healthcare cost for outpatient care service, inpatient care, diagnosis service, delivery service, surgical care service, generic drugs cost and dialysis of acute renal failure service associated cost respectively. From 195(98.0%) teachers with the knowledge of SHI's membership; 161(82.6%), 154(79.0%), and 94(48.2%) think as any government employee, any private employee and any pensioners shall be members of the SHI scheme respectively. Among 122(61.3 %) teachers those with knowledge of the proposed sources of finance for SHI; 97(79.5%), 87(71.3%), 33(27.0%) and 66(54.1%) believe that the members' contributions, the employers' contributions, the investment income and other related sources should be the sources of finance for SHI scheme respectively. (Table 3)

Table 3: Respondents' Awareness and Knowledge on SHI, Akaki Kality Sub City, Addis Ababa (n= 280)

Variable Description	Value	Frequency	Percentage
Heard about SHI (N = 280)	Yes	199	71.1
	No	81	28.9
Source of information about SHI (Multiple, n = 199)	Radio and television	185	92.9
	Friends/Peers	122	61.3
	Health professionals	97	48.7
	News Paper/guidelines	27	13.6
Knowledge of SHI membership (n = 199)	Yes	195	98.0
	No	4	2.0
About the membership of SHI (Multiple, n = 195)	Any government employee	161	82.6
	Any private institution employee	154	79.0
	Any pensioners	94	48.2
Knowledge of health service package of the SHI (n = 199)	Yes	186	93.5
	No	13	6.5
The health service package of the SHI scheme for the beneficiaries (Multiple, n = 186)	Outpatient care service	139	74.4

	Inpatient care service	117	62.9
	Diagnostic service	112	60.2
	Delivery service	105	56.4
	Surgical care service	85	45.7
	Generic drugs cost	58	31.2
	Dialysis of acute renal failure	25	13.4
Knowledge of SHI's objective (n = 199)	Yes	137	69.9
	No	62	30.1
The benefit of SHI for the beneficiaries (Multiple, n = 137)	The scheme reduce healthcare related financial barriers at the point of service delivery through risk sharing	137	100
	Provision of quality and sustainable universal health care coverage to the beneficiary	136	99.3
Knowledge of the proposed sources of finance for SHI (n = 199)	Yes	122	61.3
	No	77	38.7
Possible sources of finance for SHI scheme (n = 122)	Members' contributions	97	79.5
	Employers' contributions	87	71.3
	Investment incomes	33	27.0
	Other related sources	66	54.1

Prevalence of Willingness to Pay for SHI among Public School Teachers

Among the total of 280(100%) respondents, 257(91.8%) were willing to join SHI scheme. About 208(74.3%) of them had willingness to pay for SHI, while 49(17.5%) them interested to join, but had no WTP for SHI and 23(8.2%) were not interested to be the part of the SHI scheme at all.

Factors that were identified for those decided to willing to pay for the scheme; 208(100%) of the need secured health insurance for their family, 152(73.1%) for healthcare protection of the scheme and minimizing the out of pocket payment, 93(44.7%)

for helping the society at risk, and 8(3.8%) to get admiration from friends and family. About 72(25.7%) the respondents' had not willing to pay for the SHI scheme and not being enrolled were; 64(88.9%) for their experiences of poor quality of public health facility service, 65(90.3%) were preference of out of pocket (OOP) payment for health service, 48(66.7%) considering SHI scheme does not cover all the health care costs, 43(59.7%) had no trust on a health insurance agency, 41(56.9%) claims the proposed amount was too much, 46(63.9%) need for some preconditions from government like back payments, and 35 (48.6%) for lack of money to pay. (table 4)

Table 4: Willingness to Pay for Social Health Insurance among Public School Teachers, Akaki Kality Sub City, Addis Ababa, May 2022

Description of variables	Value	Frequency	Percentage
The importance of SHI for teachers (N = 280)	Yes	270	96.4
	No	10	3.6
Willingness to join SHI scheme (N = 280)	Yes	257	91.8
	No	23	8.2
Willingness to pay for SHI scheme (n = 280)	Yes	208	74.3
	No	72	25.7
Main reason for Willingness to Pay for SHI (multiple, n = 208)	Health insurance for their family	208	100
	Thinking that the SHI would provide healthcare protection	152	73.1
	For helping the society at risk	93	44.7
	To get admiration from friends and family	8	3.8

WTJ, but don't want to Pay for SHI scheme (N = 72)	Yes	49	17.5
	No	23	8.2
Reason for not Willingness to Pay for SHI (multiple, n = 72)	Experiences of poor quality of public health facility service	64	88.9
	Preference of out of pocket payment for health service	65	90.3
	Considering SHI scheme doesn't cover all the health care costs	48	66.7
	Had no trust on a health insurance agency	43	59.7
	The proposed amount was too much	41	56.9
	Need for some preconditions from government like back payments	46	63.9
	Lack of money to pay	35	48.6

Factors Associated with Willingness to Pay for SHI among Public School Teachers

In the unadjusted regression analysis, and after controlling for other confounding factors; age, gender, monthly salary, work experience, family size, knowledge of membership for SHI, knowledge about the finance source for SHI, the proposed amount of monthly salary deduction rate and the time of payment were not significantly associated with the current willingness to pay for the SHI scheme. Teachers have been working in secondary/preparatory schools were 3.02(AOR = 3.02; 95% CI: 1.31, 6.98) times more likely to be willing to pay for SHI as compared to those teachers working in primary schools. Higher educational status were 5.48(AOR = 5.48; 95% CI: 1.80, 16.73) times more likely to be willing to pay for SHI as compared to those teachers who were first and diploma holders. Teachers that ever had a history of difficulty of covering their medical bills were 2.39(AOR

= 2.39; 95 % CI: 1.35, 4.24) times more likely to be willing to pay compared with those who didn't have. Participants who ever heard about SHI were 5.59(AOR = 5.59; 95 % CI: 2.98, 10.48) times more likely to be enrolled to SHI than those who never heard about SHI. Preference of respondents for objective of SHI for the beneficiary as well as prior information about the components and contents that included and excluded in the SHI benefit packages that the schemes cover were 5.98 (AOR = 5.98; 95 % CI: 3.31, 10.81) and 5.56(AOR=5.56; 95 % CI: 3.07, 10.04) times more likely to pay for SHI than those who had no concern about the objective and the benefit health package of SHI respectively. Teachers that lost trust on government's health insurance agency to offer the intended benefit packages were 0.011 (AOR = 0.011; 95 % CI: 0.003, 0.037) less likely to pay for SHI compared to those had trust the agency(table 5).

Table 5: Factors associated with the Willingness to Pay for Social Health Insurance among Public School Teachers, Akaki Kality Sub City, Addis Ababa, May 2022

Variables	WTJP for SHI		COR (95% C.I.)	AOR (95% C.I.)
	Yes n (%)	No n (%)		
School type				
Primary	64(29.9%)	150(70.1%)	1	1
Secondary/preparatory	8(12.1%)	58(87.9%)	3.09(1.40, 6.85) **	3.02(1.31, 6.98) **
Educational Status				
Diploma	31(62.0%)	19(38.0%)	1	1
Bachelor degree	98(70.0%)	42(30.0%)	1.43(0.73, 2.81)	1.32(0.57, 3.06)
Master's degree	79(87.8%)	11(12.3%)	4.43(1.88, 10.31) **	5.48(1.80, 16.73) **
Experience of any difficulty to pay for healthcare cost				
No	37(38.1%)	60(61.9%)	1	1
Yes	35(19.1%)	148(81.9%)	2.61(1.51, 4.52) **	2.39((1.35, 4.24) **
Ever heard about the SHI				
No	42(51.9%)	39(48.1%)	1	1
Yes	30(15.1%)	169(84.9%)	6.07(3.38, 11.88) ***	5.59(2.98, 10.48) ***
Knowledge about objective of the SHI scheme?				

No	44(50.6%)	43(49.4%)	1	1
Yes	28(14.5%)	165(85.5%)	6.03(3.37, 10.78) ***	5.98(3.31, 10.81) ***
Knowledge about the service package of the SHI				
No	46(48.9)	48(51.1%)	1	1
Yes	26(14.0%)	160(86.0%)	5.90((3.305, 10.52) ***	5.56(3.07, 10.04) ***
Trust on a HIA				
No	32(13.5%)	205(86.5%)	0.012(0.003, 0.040) ***	0.011(0.003, 0.037) ***
Yes	40(93.0%)	3(7.0%)	1	1
The goodness of fit of the model was checked using the Hosmer-Lemshow goodness of fit resulting in $X^2 = 3.79$, p -value = 0.81 which indicates the model was good				

Discussion

From the total 280 respondents 157(56.1%) were males, and half of 140(50.0%) respondents were bachelor degree holder. 231(82.5%) of the respondents were used a direct out-of-pocket payment as the source of their medical care payments. Out of the 207 medical seekers, in 183 (88.4%) getting money to pay for medical expense was difficult for the households who encountered illness in the family. The majority 199 (71.1%) of the respondents have heard about SHI from different source from which 195(98.0%) knows about SHI's membership, 186 (93.5%) knows the health service package of SHI, 137(68.9%) know the objective of the scheme, 122(61.3 %) knows the possible financial source of SHI, 107(53.8%) heard the proposed amount of salary rate, 81(40.7) timing of payment from payroll based. Teaching in secondary/preparatory schools, higher educational status, and history of difficulty of covering their medical bills, and ever heard about SHI were the factors that associated positively with willingness to pay for SHI. Lost trust on government's health insurance agency to offer the intended benefit packages negatively associated with the willingness to pay for SHI. Respondents' age, gender, monthly salary, work experience, family size, knowledge of membership for SHI, knowledge about the finance source for SHI, the proposed amount of monthly salary deduction rate and the time of payment were not significantly associated with the current willingness to pay for the SHI scheme.

Self-rated perceived their health status was bad (73.9%) among Akaki Kality public school teachers in contrast to the previous study findings, which was better among health professionals in government hospitals in Mekelle City for 87.5% and among government-owned company employees in Northwest Ethiopia for 94.1%; this might be due to the difference of target participant, time of study (COVID-19 outbreak era) and the institutions [26, 27]. The OOP payments for healthcare expenditures for teachers is 88.4%; which is lower compared to study on the willingness to pay for SHI among women from low-income HHs of Karachi, Pakistan (91%) and a survey on long term health spending for individuals leaving in 11 emerging nations/countries with emerging economies paid 75.1% to 97.7% of their private healthcare expenditures was from direct OOP [28]. But the OOP expenditure was higher compared to previous studies done in Ethiopia; study among government-owned company employees in Northwest Ethiopia (63.4% and 36.5%), and study among health professionals in government hospitals Mekelle City (75.6% and 20.1%), where their medical bills expense were covered from OOP and had free medical access from

third party respectively. The OOP health expenditure in this study was much far away from WHO's target that health expenditure be viewed as catastrophic whenever it is greater than or equal to 40% of a household's non-subsistence income [26, 27-29]. Higher level of awareness about SHI was seen in this study compared to other studies; 14.4% among government employee in Mujja town, 45% among Sodo town teachers, (47.3%) among civil servants' in Northwest Ethiopia, and 63% among healthcare providers in Addis Ababa [27, 30-32]. But the awareness level of SHI in this study was less when compared with study in central Vietnam which was 91.8% and 84.8% among health professional in Mekelle Town [26, 33]. The difference in the study result and other previous studies could be due to the variation in study target, study design, geographical variation and temporal variations that exposed the study population to different means of information mechanisms related to SHI. This study showed that overall willingness to pay 3% of their monthly salary for SHI was 74.3% which was comparable with study among health professionals in government hospitals, Mekelle City (74.9%) and among teachers in Wolaita Sodo Town (74.4%). The willingness to pay for SHI found higher than study among health care providers in Addis Ababa (28.7%), among government-owned company employees in Northwest Ethiopia (32%), among government employees in Mujja Town (37.6%) and among civil servants' in Northwest Ethiopia (66.6%) [27, 30, 31, 34]. But it found lower than the willingness and ability to pay for SHI in Nigeria (82%) and among public servants in Mekelle City, Northern Ethiopia (85.3%)

In the final multivariable logistic regression model, respondents who had higher educational level were 5.48(AOR = 5.48; 95% CI: 1.80, 16.73) times more likely to be willing to pay for SHI as compared to those teachers who were first and diploma holders [24, 35]. The finding of this study is consistent with findings reported from Nigeria and in Ethiopia; Addis Ababa, Wolaita Sodo Town and in South Ethiopia [31, 34-36].

Teachers that ever had a history of difficulty of covering medical bills were 2.39(AOR = 2.39; 95 % CI: 1.35, 4.24) times more likely to be willing to pay compared with those who didn't have which is consistent with findings in rural China [37]. It is also consistent with a study revealed from Ghana, the northern part of Ethiopia, Mekelle city and southern part Ethiopia, Wolaita Sodo town[26, 31, 38].

In this study, participants who ever heard about SHI were 5.59(AOR = 5.59; 95 % CI: 2.98, 10.48) times more likely to

be enrolled to SHI than those who never heard about SHI. The result was in line with these of study's findings from Osun State, Nigeria, the central part of Ethiopia, Addis Ababa, the northern part of Ethiopia, Mekelle city, the Northwest Ethiopia and southern part Ethiopia, Wolaita Sodo town [26, 27, 31, 32, 34, 39]. Preference of respondents for objective of SHI for the beneficiary as well as prior information about the components and contents that included and excluded in the SHI benefit packages that the schemes cover were 5.98(AOR = 5.98; 95 % CI: 3.31, 10.81) and 5.56(AOR=5.56; 95 % CI: 3.07, 10.04) times more likely to accept SHI than those who had no concern about the objective and the benefit health package of SHI respectively. This result was comparable with that of a study findings in central Vietnam, in Karachi, Pakistan and the comprehensive benefits package proposed by a proclamation to provide for social health insurance in Ethiopia [2, 28, 33].

Respondents that lost trust on government's health insurance agency to offer the intended benefit packages were 0.011(AOR = 0.011; 95 % CI: 0.003, 0.037) less likely to pay for SHI compared to those had trust the agency [32]. In contrast to this, trust on government's health insurance agency was reported to be as one of the key determinants for a viable health insurance scheme in sub-Saharan Africa [40]. Technical capacity building, strong government commitment, and the international donor support will be needed to realize the benefits of health insurance programs in Sub-Saharan Africa.

An institution based cross-sectional study was conducted, and a structured self-administered questionnaire was employed on acceptance of SHI and willingness to pay for SHI scheme. Subjects were selected from two sample frame using systematic sampling technique based on regular interval based on proportionate to size. The data were coded, entered into Epi Info version 7.2.4, and exported to and analysed using SPSS version 23. Any variable having a significant bivariate test was selected as a candidate for the multivariable model at the 0.05 alpha level based on the Wald chi-square statistic. The goodness of fit of the model for binary logistic regression models was checked using the Hosmer-Lemeshow goodness of fit resulting in $X^2 = 3.79$, p -value = 0.81. The strength of association used to estimate the adjusted odds ratios for WTP for SHI at 95% CL to answer the specific objectives of the study. Statistical significance were declared at $P < 0.05$.

Limitations of the Study

The research was fully done used quantitative approaches. Information that was difficult to capture through quantitative techniques were excluded from the research. The reason why teachers were not willing to pay for SHI scheme among the public school teachers lack of potential depth

Conclusions

The study indicated that three – fourth of the study participants were willing to pay for proposed Ethiopian Social Health Insurance scheme. Higher educational status, difficulties associated with healthcare cost, awareness about SHI and knowledge of SHI's benefit package were the factors that affect positively the willingness to pay for SHI among the public school teach-

ers. Strengthening the awareness creation and the promotion of SHI scheme for teachers directly using all available channels of communication helps to reach most of Ethiopian households through their students indirectly. This is crucial to start, and for the successful implementation of SHI program. However; attention should focus on improving the quality of public health facilities and the trustfulness teachers on health insurance agency.

List of Acronyms and Abbreviations

- A.A. Addis Ababa
- ACIPH: Addis Continental Institute of Public Health
- AOR: Adjusted Odds Ratio
- CI: Confidence Interval
- COR: Crude Odds Ratio
- COVID-19: Coronavirus Disease of 2019
- EFY: Ethiopian Fiscal Year
- ETB: Ethiopian Birr
- EWC: Ethiopian Workers Confederation
- FMOH: Federal Ministry of Health
- GDP: Gross Domestic Product.
- HCF: Health Care Financing
- HHs: Households
- HIA: Health Insurance Agency
- LMIC: Low and Middle-Income Countries
- NHA: National Health Account
- OOP: Out of Pocket payment
- RHBs: Regional Health Bureaus
- SHI: Social Health Insurance
- SPSS: Statistical Package for the Social Sciences
- THE: Total health expenditure
- UHC: Universal Health Coverage
- US\$: United States' Dollar
- WHO: World Health Organization
- WTJ: Willingness to join
- WTP: Willingness to pay

Ethics Approval and Consent to Participate

The research was conducted after approval of ethics from Institutional Review Board of Addis continental Institute of Public. All procedures are according to the guideline.

Consent for Publication

"Not applicable"

Availability of Data and Materials

The datasets used and/or analysed during the current study available from author on reasonable request

Competing Interests

I declare that we have no any competing interests

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Author Contributions

degefa uma is author this research article, designed the study, performed the data collection and the statistical analysis, wrote and revised the final manuscript.

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