



Social Health Insurance and Healthcare Seeking Behavior in Urban Ethiopia

ORIGINAL RESEARCH

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ABSTRACT

Background: After years of planning, in 2024 the government of Ethiopia proposes to introduce a compulsory Social Health Insurance (SHI) program for formal sector employees. The proposed scheme will provide access to contracted healthcare facilities at a premium of 3% of the gross monthly income of employees with another 3% coming from the employer.

Objectives: Several studies have examined the willingness to pay (WTP) this premium, however, little is known about the healthcare seeking behavior (HSB) of formal sector employees. This paper investigates both – the determinants of healthcare seeking behavior and among other aspects, WTP the premium. Through these explorations, the paper sheds light on the potential challenges for implementation of SHI.

Methods: Descriptive statistics, logit, and multinomial logit (MNL) models are used to analyze retrospective survey data (2,749 formal sector employees) which covers the major regions of the country.

Findings: Regarding outpatient care, a majority of the visits (55.9%) were to private healthcare providers. In the case of inpatient care, it was the opposite with a majority of healthcare seekers visiting public sector hospitals (62.5%). A majority of the sample (67%) supported the introduction of SHI but only 24% were willing to pay the proposed SHI premium. The average WTP was 1.6% of gross monthly income. Respondents in the two richest income quintiles were more likely to oppose SHI and consider it unfair.

Conclusion: The prominent role of the private sector and the resistance to SHI amongst the two richest income quintiles, suggests that the SHI program needs to actively include private healthcare facilities within its ambit. Additionally, concerted efforts at enhancing the quality of care available at public health facilities, both, in terms of perception and patient-centered care and addressing drug and equipment availability bottlenecks, are needed, if SHI is to garner wider support.

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In the past 20 years, Ethiopia has witnessed a sharp expansion in its public healthcare system. Between 2000 and 2021 there has been a 22-fold increase in the number of health posts, an 11-fold increase in the number of health centers and a four-fold increase in the number of public hospitals [1, 2]. Per capita healthcare spending has grown from \$5.4 US in 2000 to \$36.3 US in 2020 (including COVID-19 spending) [3]. Due to such efforts as well as changes in healthcare seeking behavior, access to essential healthcare services, as measured by the availability of health facilities within a two-hour walking distance has increased from 50.7% in 2000 to more than 90% in 2019 and outpatient (OPD) attendance per capita has increased from 0.27 in 2000 to 1.02 visits in 2020 [4, 5].

At the same time as these supply-side investments, the country has made remarkable progress on the demand-side through the implementation of voluntary Community-based Health Insurance (CBHI) schemes for the rural and informal sectors of the economy. Since 2013, the government has steadily expanded the scheme and as of 2020, CBHI schemes have been implemented in 827 rural districts and urban centers. More than 50% of the target population is enrolled, which is high, compared to other voluntary CBHI schemes in Sub-Saharan Africa. The renewal rate is 82% [6]. While far from universal and shy of the target set by the government [7], the CBHI scheme continues to spread and various steps to enhance the sustainability of the scheme are ongoing.

In marked contrast, a compulsory Social Health Insurance scheme intended for the formal sector of the economy, which was proclaimed in the federal government's gazette more than a decade ago [8] is still awaiting introduction. The proposed scheme sought to cover current and former (pensioners) public sector employees including civil servants, employees of public sector enterprises, non-government organizations, religious institutions, and private sector firms with ten or more employees. The scheme envisaged coverage of essential health services and other critical curative services at any health facility that had concluded an agreement with the EHIA – the agency established to administer the scheme.

While scheme launch has often seemed imminent, it has been delayed repeatedly, arguably, due to two main reasons. First, civil servants and employees of public sector enterprises have expressed their unwillingness to pay the proposed SHI premium of 3% of their monthly gross salaries. While there are no national-level studies, analysis of specific groups of formal sector employees in various parts of the country provides a picture of resistance. For instance, an analysis of six focus group discussions in Addis Ababa suggests that in the case of specific benefit packages, participants from public sector enterprises are willing to pay 3% of their monthly salaries while civil servants offer 0.5% [9]. More formal willingness to pay (WTP) studies conducted in Addis Ababa on various samples, ranging from 250 to 503 civil servants, reveal that between 17% to 35% of the sampled respondents are willing to pay the 3% premium. According to these studies, the mean willingness to pay ranges between 1.5% to 2.5% of gross monthly salaries [10–13]. Analysis of data from other cities (Bahir Dar, Gondar, Dessie City, Mujja) reveals a similar picture with willingness to pay the 3% premium ranging from a low of 17.3% of the 488 sampled civil servants in Bahir Dar to a high of 37.6% of the 375 civil servants sampled in Mujja town [14–17]. In contrast to the low expressed WTP in these studies, other papers provide a more sanguine picture. For instance, in Mekelle, the largest city in the country's Tigray region, a majority (85%) of the 381 public servants were willing to be part of the social health insurance scheme, with a mean WTP of 3.6% of their monthly salary [18]. Although not as high as in Mekelle, surveys amongst teachers in Harar, Wolaita Sodo, Gondar and Akaki Kality (a sub-city of Addis Ababa), yielded WTP rates of between 62% and 74% [19–22]. A meta-analysis covering 18 studies showed that, on average, about 42% of formal sector workers are WTP for SHI [23].

The second reason for the delay is related to the scheme's healthcare coverage. In principle, the SHI could cover costs in both private and public health facilities, as long as there is a contract in place. However, there is a fear that the scheme may restrict coverage to public health facilities rather than covering potentially higher quality private care [24]. Potentially, this may lead to crowding of public healthcare facilities and/or drive up the costs of healthcare as formal sector employees may have

to pay for SHI and still incur out-of-pocket (OOP) expenditures as they seek care in non-contracted private facilities. Unlike the body of literature which has investigated willingness to pay amongst those targeted by the SHI, information on healthcare seeking behavior (HSB) for formal sector employees is limited [25]. The existing literature tends to focus on healthcare seeking behavior for children or for specific diseases such as HIV/AIDS and Tuberculosis [26–29]. Information on the HSB of formal sector employees is needed to shed light on the potential challenges that current patterns of HSB may create for the implementation of the SHI.

This paper contributes to the body of work designed to inform the implementation of the SHI in Ethiopia. Such evidence is clearly needed to direct the efforts of the government and the EHIA as it strives to launch the SHI. This paper responds to such concerns and uses data collected from four major Ethiopian cities and formal sector workers including civil servants, employees of public sector enterprises, employees of private sector enterprises, and pensioners to explore both their HSB and attitudes related to the introduction of SHI such as fairness, affordability, and willingness to pay the SHI premium and thereby to inform the efforts of the EHIA.

DATA AND METHODS

DATA

This study is based on a retrospective cross-sectional household survey, conducted in person in four main cities of the country. The data were collected in June–July 2016. The cities included in the survey were Addis Ababa – the country’s primate city, Bahir Dar, the largest city in the Amhara region, Hawassa, the largest city in the SNNP region, and Mekelle, the largest city in the country’s Tigray region. These cities were purposively selected as they accounted for about 20% of the estimated 4.3 million formal sector employees distributed across five categories – civil servants, public sector enterprise employees, private sector workers, NGO workers, pensioners (former civil servants and public sector enterprise workers).

Power calculations (power of 0.8 and significance of 5%) designed to detect the effect of health insurance on the utilization of inpatient care, outpatient care and out-of-pocket (OOP) health expenditures, yielded sample sizes of 3,000 to 4,200 individuals.¹ Based on budgetary considerations, a sample size of 2,100 households which was expected to yield more than 4,200 individuals was targeted. The distribution of the sample across cities and type of formal sector employees was designed to represent the population of formal sector workers in these four cities. Population-level information on the distribution of formal sector workers across different sectors was available from the Ethiopian Statistical Service and the EHIA. This information was used to distribute the sample size across each sector (see Table A1). However, distribution across both cities and sectors was unavailable for all categories of workers. We did, however, have access to information on the distribution of civil servants across each city. This was used as the basis for distributing the sample across the four cities (see Table A2).

Within each city, sample selection was tailored to the sector in question. For instance, regarding civil servants, in each city, a list of ministries, agencies, and bureaus was drawn up and organizations were selected for the survey based on probability proportion to their employment size and within each selected organization, respondents were randomly surveyed (see Table A3). A tricky part of the data collection was gathering information on pensioners. In each city, the survey team identified the locations where pensioners receive payments and allocated the targeted sample size equally to each of these payment locations. For instance, the Addis Ababa survey team visited the Federal main post office which handles payments for pensioners in Addis Ababa. The office provided a list of pensioners and payment centers in ten locations in the city. Five of these locations were randomly selected and an equal number of pensioners were surveyed from each of

¹ Based on previous studies that have examined the effect of Ethiopia’s community-based health insurance on utilization of inpatient care, utilization of outpatient care and OOP expenditure the effect sizes were set at 2.3 percentage points, 5 percentage points, and 2.2 percentage points, respectively.

these locations at the time that they came to receive payments (see Table A4). A similar approach was followed in other cities.

After ensuring that a selected respondent was willing to participate in the survey, enumerators gathered individual and household-level information. The survey contained a household roster which gathered socio-economic information on all household members, their health status and lifestyle choices, outpatient and inpatient healthcare utilization, financing of healthcare, and whether they currently had any form of health insurance. As it turned out, we were able to gather more information and the sample at hand includes 2,749 formal sector employees and their families (6,894 individuals). The key difference (see Table A1) as compared to the plan is a larger share of public sector workers (54% actual versus a plan of 43%) and smaller shares of private sector workers (38% actual versus 43% planned) and pensioners (8% actual versus 14% planned). In terms of the distribution of the sample across the four cities (Addis Ababa – 56% actual versus 54% planned; Bahir Dar – 10.5% planned versus 12.1% actual; Hawassa – 15% actual versus 15.7% planned; Mekelle – 18.5% actual versus 18.2% planned), the differences between the plan and realization are minor (see Table A2). While not perfect, arguably the sample provides a representative picture of HSB and attitudes towards SHI across formal sector workers residing in these four cities.

METHODS

The paper relies on descriptive statistics, logit, and multinomial logit (MNL) models to examine its objectives. Logit models are used to examine the probability of seeking treatment conditional on reporting an illness while multinomial logit models are used to examine the choice of healthcare provider. Logit models are also used to explore attitudes towards SHI. In all instances, the outcomes are treated as functions of socio-demographic traits such as household demographics, education of household head, household income, and the share of a household with health insurance. The models also control for regional fixed effects and in some instances, sector of employment.

ETHICS CLEARANCE

Informed consent was obtained from respondents prior to data collection. Ethics approval (IDPR/LT-0005/2016) was provided by the Research Ethics Committee of the Institute of Development Policy and Research, Addis Ababa University.

RESULTS

Our discussion of the results begins by commenting on the descriptive statistics of the data, followed by an examination of healthcare seeking behavior in the case of outpatient care and inpatient care. We end the section by assessing attitudes towards the introduction of SHI.

DESCRIPTIVE STATISTICS – SOCIO-ECONOMIC CHARACTERISTICS AND CURRENT HEALTH INSURANCE STATUS

The sample consists of 6,894 individuals of which 2,749 are current or former employees and fall into one of three categories – public sector workers (civil servants or public sector enterprise workers), private sector workers including NGOs, and (former public sector workers) pensioners. The sample consists of 54% public sector workers, and 38% private sector workers while the remainder (8%) are pensioners. About half the sample is male and 72% are adults. The average household size is 4.3. Since the sample consists of formal sector workers it is not surprising that about 60% have tertiary education. Education levels are highest amongst public sector workers – 77% have tertiary education as opposed to 73% amongst private sector workers. Regarding monthly income, pensioners have the lowest income while private sector employees record the highest income (Table 1).

	FULL SAMPLE	EMPLOYEES	PUBLIC SECTOR	PRIVATE/ NGO	PENSIONER
City					
Addis Ababa	0.513	0.560	0.532	0.575	0.670
Bahir Dar	0.115	0.105	0.118	0.071	0.176
Hawassa	0.177	0.150	0.169	0.155	0.004
Mekelle	0.195	0.185	0.180	0.199	0.150
Sex (Male = 1)	0.486	0.576	0.531	0.608	0.717
Age					
Under 18 years old	0.280	0.003	0.001	0.004	0.015
18–34 years old	0.399	0.505	0.464	0.619	0.524
35–55 years old	0.243	0.398	0.488	0.331	0.359
More than 55 years old	0.078	0.094	0.047	0.046	0.102
Household size					
One person	0.069	0.152	0.143	0.178	0.094
2–3 persons	0.243	0.314	0.292	0.332	0.369
4–5 persons	0.454	0.385	0.410	0.346	0.395
6 and more persons	0.234	0.150	0.155	0.144	0.142
Monthly income in Birr ^a (household/individual)	9027.362 (8971.435)	530.534 (5781.062)	4966.103 (5125.078)	6374.473 (6744.358)	2682.605 (3522.130)
Education ^b (head of household/individual)					
No formal schooling	0.037	0.008	0.004	0.007	0.039
Primary education	0.154	0.063	0.039	0.054	0.266
Secondary education	0.210	0.203	0.187	0.207	0.293
Tertiary or university degree	0.599	0.725	0.771	0.732	0.402
Self-assessment health status					
Very poor	0.001	0.001	0.000	0.001	0.004
Poor	0.011	0.014	0.010	0.010	0.060
Good	0.063	0.078	0.081	0.060	0.138
Very good	0.228	0.242	0.240	0.254	0.207
Excellent	0.697	0.666	0.670	0.676	0.591
N	6,894	2,749	1,475	1,041	233

Table 1 Socio-economic characteristics.

Notes: Standard deviations are in parentheses; ^a Income refers to the household income for the full sample and to individual incomes in the employee and sector-specific samples. ^b Education refers to the education level of the household head in the full sample and to individual education in the employee and sector-specific samples.

Table 2 provides information on knowledge of insurance and the current health insurance status of sample respondents. While almost all respondents had heard of health insurance, a much smaller fraction – about 40% – was able to provide correct answers to a set of five questions on the functioning of insurance. There is limited variation across public and private sectors. On average, about 52% of households have at least one household member who has health insurance. This figure varies substantially across sectors with 77% of private sector workers reporting that at least one household member has health insurance while the corresponding figures are 21% among pensioners and about 40% amongst public sector workers. For a majority of current employees (about 75%), their employer pays the insurance premium.

	EMPLOYEES	PUBLIC SECTOR	PRIVATE/ NGO	PENSIONER
Heard of health insurance (HI)	0.939	0.938	0.954	0.884
Fully informed how HI works ^a	0.397	0.416	0.399	0.266
-Only those who fall sick should consider HI (=not correct)	0.941	0.952	0.950	0.828
-You pay the premium but do not know whether you get the money back (=not correct)	0.651	0.655	0.665	0.571
-HI is like a saving scheme, you will receive interest and principal (=not correct)	0.686	0.726	0.652	0.588
-You pay a premium for HI to finance future health care needs (=correct)	0.816	0.809	0.844	0.730
-With no claim, premiums will be returned (=not correct)	0.724	0.761	0.723	0.489
N	2,749	1,475	1,041	233
Any household member has HI	0.523	0.395	0.774	0.209
Percentage of household members with HI	18.1 (29.7)	37.9 (35.14)	11.32 (27.33)	25.04 (33.30)
Proportion of household members in HI-category				
0 %	0.477	0.605	0.226	0.791
1–20%	0.127	0.104	0.178	0.039
21%–50%	0.249	0.189	0.371	0.087
more than 50%	0.147	0.103	0.224	0.083
N	2,723	1,462	1,031	230
Monthly health insurance premium (Birr)	82.89 (200.25)	104.52 (214.26)	71.07 (193.56)	0.000 (0.000)
N	471	209	242	20
Annual health insurance cap	13057.30 (30215.96)	12614.48 (35415.03)	13742.89 (24049.1)	9857.14 (8198.10)
N	532	275	243	14
Ratio of HI premium to income	0.025 (0.072)	0.036 (0.090)	0.017 (0.053)	0.000 (0.000)
N	471	209	242	20
Who pays for HI				
Employer	0.756	0.757	0.747	0.894
Self	0.011	0.021	0.004	0.000
Both	0.233	0.222	0.249	0.106
N	1,414	576	791	47

Table 2 Characteristics related to health insurance.

Notes: Standard deviations are in parentheses; ^a Fully informed how HI works = 1 if the respondent chose the correct answer for all five questions.

SEEKING OUTPATIENT HEALTHCARE

Conditional on experiencing an illness in the two months preceding the survey, 85.5% of respondents seek treatment. Amongst those who don't seek treatment, the majority (more than 50%) expect to recover naturally and hence don't seek any care. Amongst those who do seek care, almost all (94%), opt for formal care. In terms of sector of care, 56% opt for care at a private health facility while the remainder opt for a public facility (see Table 3). The interaction between sector and type of provider is illustrated in Figure 1. A majority of the care is provided by doctors

in private facilities (47%), followed by doctors in public facilities (25%), health workers in private facilities (19%), and health workers in the public sector (9%). There are no sharp differences across types of employment. Despite the higher costs of doctor visits to private facilities, where the cost of outpatient care is 2.66 times the cost of doctor-provided care in public facilities, the bulk of formal sector workers opt for private care due to the perceived capability of staff and the availability of drugs while the cheaper cost of care is the main reason for choosing public sector facilities (see Table 4).

	FULL SAMPLE	EMPLOYEES	PUBLIC SECTOR	PRIVATE/ NGO	PENSIONER
Illness or injury in the last 2 months	0.115	0.145	0.139	0.139	0.206
Seeking any treatment	0.855	0.871	0.897	0.853	0.813
N	779	394	203	143	48
Who provided treatment					
Informal treatment ^a	0.061	0.057	0.090	0.008	0.054
Self-medication	0.041	0.045	0.079	0.000	0.027
Religious/traditional healer	0.020	0.012	0.011	0.008	0.027
Treatment sector					
Public health centre, clinic, or hospital	0.444	0.435	0.433	0.395	0.588
Private health centre clinic, or hospital ^b	0.556	0.565	0.567	0.605	0.412
Treatment type and sector					
Health worker ^c – Public sector	0.190	0.169	0.186	0.134	0.212
Health worker – Private sector	0.089	0.110	0.083	0.160	0.061
Doctor – Public sector	0.250	0.263	0.244	0.261	0.364
Doctor – Private sector	0.470	0.458	0.487	0.445	0.364
Treatment cost (Birr)	745.972 (2813.531)	893.958 (3408.822)	592.294 (941.787)	1366.310 (5462.932)	851.400 (2247.338)
Delay in seeking treatment (days)	2.397 (4.120)	2.435 (4.603)	2.650 (5.421)	2.271 (3.895)	2.000 (2.000)
N	655	335	177	121	37
Hospitalization in the last 12 months					
Inpatient care duration	9.131 (11.977)	9.043 (12.695)	9.444 (15.874)	8.267 (8.103)	12.000 (9.644)
N	122	69	36	30	3
Inpatient care sector					
Public sector	0.625	0.612	0.559	0.633	1.000
Private sector	0.375	0.388	0.441	0.366	0.000
Inpatient care cost (Birr)	5062.39 (6623.97)	4654.333 (5632.223)	4026.400 (5635.470)	5722.321 (5821.649)	2012.333 (438.641)
N	118	66	35	28	3

Table 3 Healthcare seeking.

Notes: Standard deviations are in parentheses. ^a Informal treatment refers to self-medication and religious and traditional healers. ^b Private sector includes NGO and missionary facilities. ^c Health worker includes health officers, nurses, and midwives.

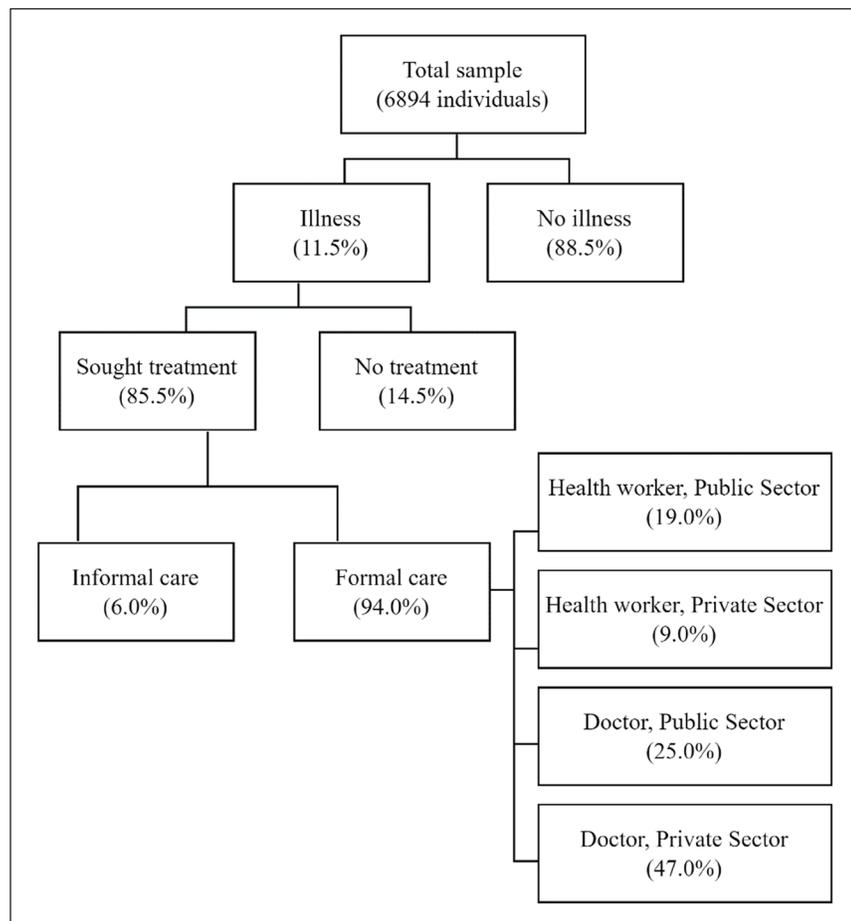


Figure 1 Healthcare seeking choices.

HEALTHCARE CHOICE	TWO MAIN REASONS MOTIVATING CHOICE	SATISFIED WITH THE TREATMENT	AVERAGE COST OF TREATMENT (S.D)
Health worker – Public facilities	Cost of care (41%) Proximity (20.5%)	81.7%	199.4 (587.9)
Health worker – Private facilities	HI covers the cost of treatment (39.6%) Proximity (15.1%)	92%	371.0 (473.1)
Doctor – Public facilities	Cost of care (19.4%) Medicine is available at the location (16.7%)	83.9%	476.0 (1113.1)
Doctor – Private facilities	Capable staff (16.1 %) Medicine is available at the location (15.4%)	92%	1265.2 (4080.7)
Inpatient care – Public facilities	Cost of care (23.1%) Staff availability (18.5%)	79.2%	2360.3 (2526.2)
Inpatient care – Private facilities	Compassionate staff (29.3%) Staff capability/availability (17.1%)	93.3%	9358.1 (8542.9)

Table 4 Properties of healthcare choices.

Table 5 provides a multivariate analysis of the probability of seeking outpatient care (logit model) from a formal provider and subsequently the probability of seeking outpatient care from one of four formal healthcare providers (multinomial logit). Two points stand out. First, the role of income, and second, the effect of access to insurance. As compared to the poorest quintile, individuals in the richest income quintile are five percentage points (p -value < 0.10) more likely to seek formal care. As may be expected, access to insurance translates into a higher probability of using formal care. Residing in a household where a member has health insurance is associated with a five percentage point (p -value < 0.05) increase in seeking formal care.

	SEEKING TREATMENT	SEEKING FORMAL TREATMENT	CHOICE OF FORMAL HEALTHCARE PROVIDER			
			HEALTH WORKER PUBLIC SECTOR	HEALTH WORKER PRIVATE SECTOR	DOCTOR PUBLIC SECTOR	DOCTOR PRIVATE SECTOR
Sex (female as reference)	-0.016 (0.467)	-0.014 (0.485)	0.009 (0.777)	0.009 (0.720)	-0.051 (0.163)	0.033 (0.413)
Age (under 18 years old as reference)						
18-34 years old	-0.045 (0.182)	-0.034 (0.247)	-0.082 (0.083)	0.072 (0.012)	-0.016 (0.750)	0.025 (0.642)
35-55 years old	-0.007 (0.835)	-0.020 (0.404)	-0.102 (0.021)	0.009 (0.727)	0.050 (0.308)	0.042 (0.439)
55 years and older	-0.090 (0.041)	-0.013 (0.670)	-0.145 (0.005)	0.025 (0.516)	0.146 (0.047)	-0.025 (0.731)
Household size (1 person as reference)						
2-3 persons	0.047 (0.267)	0.003 (0.912)	0.031 (0.539)	0.084 (0.006)	-0.080 (0.184)	-0.036 (0.598)
4-5 persons	0.061 (0.190)	-0.059 (0.056)	0.074 (0.186)	0.026 (0.378)	0.040 (0.542)	-0.140 (0.046)
6 and more persons	0.091 (0.059)	0.000 (0.992)	0.033 (0.612)	0.072 (0.051)	-0.029 (0.682)	-0.077 (0.344)
Education-Household head (no formal education as reference)						
Primary education	-0.133 (0.030)	-0.018 (0.756)	0.005 (0.964)	-0.140 (0.083)	0.234 (0.006)	-0.099 (0.438)
Secondary education	-0.124 (0.026)	-0.017 (0.769)	-0.132 (0.242)	-0.103 (0.229)	0.212 (0.007)	0.022 (0.859)
Tertiary/university education	-0.068 (0.161)	0.004 (0.938)	-0.065 (0.565)	-0.126 (0.107)	0.109 (0.112)	0.082 (0.492)
Household income (First quintile(poorest) as reference)						
Second quintile	-0.013 (0.686)	0.028 (0.370)	-0.039 (0.487)	0.099 (0.018)	-0.040 (0.487)	-0.019 (0.775)
Third quintile	0.016 (0.634)	-0.023 (0.558)	-0.053 (0.364)	-0.009 (0.762)	0.026 (0.674)	0.036 (0.603)
Fourth quintile	0.016 (0.643)	0.017 (0.639)	-0.045 (0.498)	-0.010 (0.747)	-0.021 (0.746)	0.076 (0.316)
Fifth quintile	-0.021 (0.624)	0.052 (0.078)	-0.158 (0.006)	0.043 (0.251)	-0.134 (0.025)	0.249 (0.001)
Any household member has HI	0.020 (0.370)	0.049 (0.019)	-0.076 (0.019)	0.022 (0.345)	-0.031 (0.396)	0.085 (0.039)
N	757	645		594		

Table 5 Probability of seeking outpatient care and choice of outpatient care provider – marginal effects.

Notes: This table reports the determinants of seeking any healthcare (first column), seeking formal healthcare (second column) and the choice of healthcare provider (the last four columns) conditional on the incidence of illness. The first two columns are based on logit models and the last four columns on a multinomial logit model. All models include control variables for region (city). P-values are in parentheses.

These patterns are emphasized in the results emerging from the MNL model. The two clearest effects are those related to income and access to health insurance. Individuals belonging to the highest income quintile are far more likely to seek care from private sector providers. For instance, as compared to the poorest quintile, individuals belonging to the richest income quintile are 25 percentage points (p-value < 0.01) *more likely* to seek care from doctors in the private sector and 13 percentage points (p-value < 0.05) *less likely* to access care from doctors in the public sector. The differences in healthcare seeking behavior between the poorest and other income quintiles is not particularly pronounced. Individuals residing in households with

access to health insurance are about nine percentage points (p -value < 0.05) more likely to seek care from doctors at private facilities while avoiding the use of public sector health workers (p -value < 0.05). We also estimated an alternative specification to examine differences in healthcare seeking behavior across employees in different sectors (see Table A5). The results indicate that the sector of employment does not influence HSB as opposed to income which remains salient.

SEEKING INPATIENT HEALTHCARE

Approximately two percent of the sample has experienced an episode of hospitalization in the 12 months preceding the survey with an average duration of nine days. In contrast to outpatient care a majority of the sample (62.5%) made use of public facilities (Table 3). On average, the cost of public facilities is about a quarter of that in private facilities, and the main attraction of using public facilities is their lower cost. Private facilities are costlier and staff at such facilities are considered more compassionate and capable (Table 4). A logit analysis (Table 6) of the probability of using public care confirms the effect of income on healthcare choice and shows that households in the higher income quintiles have substantially lower probabilities of using publicly provided care. As compared to the lowest income quintile, respondents in the top three income quintiles are 36 to 56 percentage points (p < 0.001) less likely to use public care. The availability of health insurance reduces the probability of using public healthcare by 26 percentage points (p -value < 0.05). The inclusion of the sector of work does not alter the role of income in influencing the choice of healthcare provider but does wash out the effect of health insurance, suggesting that access to health insurance may be serving as a proxy for working in the private sector.

	FULL SAMPLE	EMPLOYEES
Sex (female as reference)	0.120 (0.327)	0.077 (0.523)
Age (under 18 years old as reference)		
18–34 years old	0.000 (.)	0.000 (.)
35–55 years old	-0.011 (0.934)	0.038 (0.806)
55 years and older	-0.011 (0.963)	0.218 (0.299)
Household size (1 person as reference)		
2–3 persons	0.073 (0.663)	0.061 (0.722)
4–5 persons	0.001 (0.995)	-0.085 (0.612)
6 and more persons	0.007 (0.965)	-0.041 (0.791)
Education ^a (less than secondary education as reference)		
Secondary education	0.031 (0.840)	0.083 (0.559)
Tertiary/university education	0.163 (0.390)	0.282 (0.137)
Income ^b (First quintile (poorest) as reference)		
Second quintile	-0.105 (0.272)	-0.104 (0.292)

Table 6 Probability of using inpatient care from a public facility – marginal effects.

Notes: This table reports determinants of inpatient healthcare for the full sample (first column) and for formal sector employees (second column) using logit models. All models include control variables for region (city). P-values are in parentheses. ^a Education refers to the education level of the head of household for the full sample and to an individual's education in the employees' sample. ^b Income refers to household income for the full sample and to an individual's income in the employees' sample. As there were insufficient observations in the first category of the 'Education' variable, the first two levels were merged to create a reference category.

(Contd.)

	FULL SAMPLE	EMPLOYEES
Third quintile	-0.365 (0.003)	-0.487 (0.000)
Fourth quintile	-0.563 (0.000)	-0.550 (0.001)
Fifth quintile	-0.513 (0.000)	-0.489 (0.001)
Any household member has HI	-0.255 (0.034)	-0.174 (0.176)
Employment Sector (Public sector as reference)		
Private sector		0.135 (0.259)
N	74	63

ATTITUDES TOWARDS SOCIAL HEALTH INSURANCE

The available data provides an opportunity to examine, among other issues, willingness to pay for the scheme. Relevant information on the attitude of respondents towards various aspects of SHI is provided in [Table 7](#). While knowledge about the plans for SHI was already widespread (83% of the sample had heard of SHI) in 2016, knowledge about the SHI premium was not widespread (40% knew the premium). Except for pensioners, all others who indicated that they knew the premium had accurate knowledge of the amount of the SHI premium. After being informed about the premium, about 40% considered it fair and a slightly higher proportion (44%) considered the premium to be affordable. The percentages do not differ considerably across types of employment. Notwithstanding the relatively high fairness and affordability rating, only about 24% were willing to pay 3% or more of their monthly income as a premium. The willingness to pay the 3% premium is similar across employment sectors (23.5% versus 28.7% for the public and private sectors, respectively). Only a minority of respondents were unwilling to pay at all (12.8%). While a majority of the sample (67%) supported the introduction of SHI, the average WTP was 1.6% of monthly income ranging from a low of 1.2% for pensioners to a high of 1.7% for private sector workers. A little more than half the sample (53%) is concerned that after paying for SHI they may not get adequate access to healthcare services. The two main concerns are long waiting times and lack of drugs.

[Table 8](#) presents a series of exploratory regressions, *in seriatim*, on the link between various socio-economic traits and the perception that the SHI premium is not fair, that it is not affordable, and that SHI should be opposed. The analysis yields several patterns. First, income and the perception that the SHI premium is unfair are positively correlated. For instance, respondents in the two richest quintiles are 10 percentage points (p -value < 0.05) more likely to perceive the premium as unfair as opposed to the lowest income quintile. These two quintiles are not different from the poorest quintile in terms of premium affordability perceptions but still consider the premium unfair. Consistent with the unfair premium perception, the two richest quintiles are 10–13 percentage points (p -value < 0.01) more likely to oppose SHI. In fact, there is greater resistance from all other income groups as compared to the poorest, but the extent of the resistance is higher amongst the two richest quintiles.

DISCUSSION

This paper was motivated by the challenges underlying the introduction of compulsory SHI in Ethiopia. Key strengths of the paper include the availability of data representative of formal sector workers residing in four of the country's main cities, coverage of both private and public sector employees and information which allowed us to examine HSB, attitudes toward SHI, and willingness to pay for SHI. Covering these issues yields a more complete picture of the issues which may be encountered by the government as it sets out to implement SHI.

	EMPLOYEES	PUBLIC SECTOR	PRIVATE/ NGO	PENSIONER
Heard of Social Health Insurance (SHI)	0.832	0.872	0.758	0.906
N	2,749	1,475	1,041	233
Aware of SHI-covered services/medicines	0.393	0.440	0.302	0.455
N	2,273	1,276	786	211
Know SHI premium	0.396	0.410	0.352	0.469
N	2,278	1,278	789	211
Knowledge of the SHI premium in Birr	132.14 (157.14)	139.28 (173.26)	157.81 (132.81)	19.42 (35.44)
N	877	513	270	94
Knowledge of SHI premium as a share of income	0.031 (0.036)	0.034 (0.039)	0.032 (0.031)	0.013 (0.027)
The SHI premium is fair				
Yes	0.397	0.377	0.390	0.550
No	0.399	0.441	0.345	0.341
Don't know	0.204	0.182	0.265	0.109
N	2,270	1,274	785	211
The SHI premium is affordable				
Disagree	0.361	0.406	0.325	0.233
Neither agree nor disagree	0.199	0.175	0.247	0.166
Agree	0.439	0.419	0.428	0.602
N	2,253	1,265	777	211
SHI WTP as share of income (%)	1.624 (1.307)	1.645 (1.196)	1.704 (1.516)	1.207 (0.996)
N	2,163	1,210	750	203
SHI willingness to pay – category				
No willingness to pay	0.128	0.101	0.155	0.187
Less than 3% of monthly income	0.629	0.664	0.559	0.680
3% and more of monthly income	0.243	0.235	0.287	0.133
Support SHI				
Support	0.665	0.669	0.658	0.663
Neither support nor oppose	0.074	0.060	0.102	0.058
Oppose	0.26	0.271	0.239	0.279
Concerned that after paying for SHI, will not receive adequate healthcare service	0.529	0.564	0.512	0.381
Concerned about:				
Long waiting time	0.863	0.873	0.844	0.864
Lack of drugs	0.837	0.859	0.799	0.827
Lack of adequate diagnosis facilities	0.724	0.726	0.715	0.753
Quality of staff	0.660	0.642	0.684	0.704
Availability of staff	0.517	0.528	0.484	0.593
N	2,270	1,274	785	211

Table 7 Attitudes towards Social Health Insurance.
Note: Standard deviations are in parentheses.

	SHI IS NOT FAIR	SHI PREMIUM IS NOT AFFORDABLE	OPPOSING SHI
Sex (female as reference)	-0.023 (0.302)	-0.002 (0.926)	-0.009 (0.642)
Age (under 34 years old as reference)			
35–55 years old	0.046 (0.052)	0.071 (0.002)	0.042 (0.047)
55 years and older	0.024 (0.591)	-0.001 (0.988)	0.041 (0.324)
Household size (1 person as reference)			
2–3 persons	0.043 (0.198)	0.005 (0.882)	0.021 (0.476)
4–5 persons	0.017 (0.610)	-0.015 (0.653)	0.016 (0.586)
6 and more persons	-0.005 (0.905)	-0.006 (0.877)	-0.052 (0.116)
Education (no formal education as reference)			
Primary education	-0.123 (0.393)	0.077 (0.603)	-0.101 (0.492)
Secondary education	-0.132 (0.347)	0.042 (0.766)	-0.142 (0.321)
Tertiary/university education	-0.110 (0.430)	0.089 (0.527)	-0.131 (0.359)
Income (First quintile(poorest) as reference)			
Second quintile	0.062 (0.087)	0.041 (0.257)	0.069 (0.026)
Third quintile	0.039 (0.284)	0.026 (0.488)	0.051 (0.099)
Fourth quintile	0.108 (0.004)	0.074 (0.050)	0.127 (0.000)
Fifth quintile	0.099 (0.013)	0.059 (0.134)	0.101 (0.003)
Any household member has HI	-0.051 (0.031)	-0.016 (0.476)	0.024 (0.241)
Employment Sector (Public sector as reference)			
Private/NGO sector	-0.073 (0.003)	-0.066 (0.006)	-0.030 (0.154)
Pensioners	-0.092 (0.048)	-0.147 (0.000)	0.002 (0.967)
Aware of SHI-covered services/medicines	-0.020 (0.348)	-0.059 (0.004)	-0.064 (0.001)
N	2233	2216	2189

Table 8 Probability of opposing SHI and that it is unfair, unaffordable, and opposed – marginal effects.

Note: This table reports the determinants of attitudes toward SHI. SHI is not fair (first column), SHI premium is not affordable (second column) and ‘I oppose SHI.’ (third column) using logit models. All three are binary dependent variables (1 = yes, 0 otherwise). All models include control variables for region (city). P-values are in parentheses. As there were insufficient observations in the first category of the ‘Age’ variable, the first two levels were merged to create a reference category.

Regarding the use of outpatient care, conditional on falling ill, 85.5% of the respondents sought care within a couple of days (2.4 days) of falling ill. Almost all respondents (94%) sought formal care with a majority of the care (55.6%) being provided by private health clinics or hospitals. Income and access to health insurance were the two most important factors determining the choice of healthcare provider with richer households and those with health insurance more likely to opt for care from doctors in private facilities. The private sector was preferred due to the perception of more capable staff and the availability of drugs. This is consistent with studies on patient satisfaction which demonstrate that patients perceive that they are more likely to receive patient-centered and higher-quality health services in the private sector [14, 15, 18, 30–31].

In the case of inpatient care, the picture was the opposite. A majority of healthcare visits were to public sector hospitals (62.5%). Given the cost of accessing inpatient care at private facilities (four times that of public care), the greater reliance on the public sector for inpatient care is not surprising. The results show that it is not the employment sector that matters but income and arguably the position of respondents within their sector of employment that determines their healthcare choices. Despite the lower costs, the perception of lower quality public sector healthcare drives higher-income households to the private sector while lower-income households have little choice but to visit public health facilities.

The limited access to health insurance combined with the relatively expensive care offered by doctors at private facilities suggests that a substantial proportion of healthcare costs must be financed through out-of-pocket (OOP) expenditures [3]. Despite this burden, the willingness to pay the proposed SHI premium of 3% of monthly income is low. About 24% of formal sector respondents were willing to pay this premium and the average WTP was 1.6% of monthly income. These figures are similar to those reported in the bulk [10–17] of the existing literature. A quarter of respondents (26%) were opposed to the introduction of SHI. The analysis showed that higher income respondents were more likely to oppose the introduction of SHI.

This pattern of results suggests that the low WTP and opposition to SHI is driven not only by affordability concerns, but other concerns as well. There are two main concerns. First, concerns about low-quality services at public facilities. While the use of SHI is not expected to be restricted only to public facilities, it is most likely that EHIA will initially contract mainly public facilities which reduces the attractiveness of SHI. Second, is the fear of double payment. Since SHI is expected to be mandatory it raises the possibility that formal sector workers must pay SHI premiums while still paying out-of-pocket for the use of healthcare services at private facilities. The interaction between the low quality of healthcare at public facilities and the additional cost of accessing care translates into an unwillingness to pay the 3% premium even amongst those respondents who find it affordable. Conversely, the availability of higher quality care (more patient-centered, availability of drugs and equipment) is likely to increase the willingness to pay the SHI premium [32]. Indeed, in the context of the CBHI, the importance of investing in quality of care, specifically, the availability of drugs and equipment, has been recognized by the government [6].

CONCLUSION

One of the key reasons for the lack of implementation of the SHI despite the announcement of the policy in the government's official gazette in 2010 has been the affordability of the proposed SHI premium [10–17]. The analysis of healthcare usage in this paper suggests that in addition to affordability, the interaction between the quality of healthcare on offer at public facilities and the willingness to pay for the available quality even amongst those for whom the premium is affordable, reduces support for SHI. Concerns about the double burden of expenditure (payment of SHI premium and no reductions in OOP expenditure) and access to healthcare coverage only at public facilities makes the SHI unattractive, even if affordability is not an issue.

What are the policy implications of these findings? First, given the predominant use of private facilities, especially for outpatient care, it is imperative that the EHIA signs contracts with private providers or at the very least articulates the intention to sign contracts with private providers even if it does not happen at program inception. Even if the proposed SHI covers a part of the cost of accessing private care it should be an attractive proposition as compared to the current situation where access to health insurance is limited, and a substantial proportion of expenditure is financed out-of-pocket. Second and perhaps most importantly, prior to the launch of SHI, and as was the case prior to the introduction of the voluntary CBHI schemes, concerted efforts to enhance the quality of care – both, in terms of perception (patient-centered care) and in terms of addressing actual bottlenecks (waiting time to see a professional, availability of drugs, and equipment) – are needed to enhance support for SHI. The strong link between income and the use of private healthcare facilities underlines the idea that richer respondents are more likely to oppose the introduction of SHI. A combination of ensuring access to private healthcare facilities

DATA ACCESSIBILITY STATEMENT

The data set used for this study is available from the corresponding author.

ADDITIONAL FILE

The additional file for this article can be found as follows:

- **Appendix Tables.** Tables A1 to A5. DOI: <https://doi.org/10.5334/aogh.4240.s1>

ETHICS AND CONSENT

Informed consent was obtained from respondents prior to data collection. Ethics approval (IDPR/LT-0005/2016) was provided by the Research Ethics Committee of the Institute of Development Policy and Research, Addis Ababa University.

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COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

ZZ Data curation, Data analysis, Methodology, Writing – Original draft; **AM** Conceptualization, Survey design, Sampling approach, Data collection, Data curation, Writing – Reviewing and editing; **DS** Survey design, Sampling approach, Data collection, Data curation, Writing – Reviewing and editing; **ZS** Conceptualization, Funding acquisition, Writing – Review and Editing **GA** Conceptualization, Survey design, Sampling approach, Data collection, Project administration, Writing – Reviewing and editing; **AB** Conceptualization, Survey design, Sampling approach, Funding acquisition, Writing – Original Draft

All authors confirm full access to all data used in the study and accept responsibility for the journal submission.

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