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Research Article

Satisfaction with Primary Health Care Services between Insured and Non-insured patients under Community-Based Health Insurance Scheme: A Comparative Cross-Sectional Facility Based Study in North East Ethiopia

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ABSTRACT

Background: Universal Health Coverage is a situation where all people can access the health services they need without incurring financial hardship. The aim of the study was to compare the overall satisfaction with primary health care among insured and non-insured outpatient service beneficiaries in five Community-Based Health Insurance (CBHI) contracted health centers in North Eastern Ethiopia.

Methods: facility-based cross sectional comparative study design was conducted from March through April 2017 among 311 insured and 301 non-insured outpatients. All statistical analysis was done using Statistical Package for Social Sciences research IBM version 20.0. Multi-variable linear regression analysis was employed to control confounders in determining predictors of patient satisfaction by insurance status. Chi-Square test, unstandardized coefficient (Uβ), standardized coefficient (Sβ) Standard error, with 95% Confidence Interval (CI) and $P < 0.05$ was used to claim statistical significance.

Results: Out of 624 outpatients, 612 respondents with a response rate of 98% were enrolled in this study. The overall, insured and non-insured patient satisfaction was 475 (77.6%), 247 (79.4%) and 228 (75.7%), respectively. The mean score with Standard Deviation of the satisfaction score was 86.14 ± 14.99 among insured and 83.85 ± 17.16 among non-insured under CBHI scheme, respectively. An independent sample t-test showed statistically significant difference where insured patients have a higher mean satisfaction score than their counterpart non-insured with t= 2.031, df=610, P=0.043. And the consultation and diagnosis service are much more performed among non-insured than insured patients on the use of a stethoscope, proper examination, taking the history of past illnesses, asked history treatment taken before arrival at the health facility and explained diagnosis to patients by health care providers with X^2= 4,509 to 14.664, P-value < 0.05.

Conclusions: The study finding shows that insured patients perceived with a higher level of quality of care and satisfaction score. However, non-insured patients received high proportion score on objective quality of care measurements. Therefore, to improve patient experiences at health centers and achieve financial risk protection through CBHI, program managers and health care providers should ensure quality of services to the standards at the health facility to insured and non-insured community members.

Keywords: Community-Based health insurance; Perceived and objective quality of care; Patient satisfaction; Ethiopia

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LIST OF ABBREVIATIONS

AOR: Adjusted Odds Ratio; CBHI: Community Based Health Insurance; CI: Confidence Interval; COR: Crude Odds Ratio; SD: Standard Deviation; SDGs: Sustainable Development Goals; WHO: World Health Organization

BACKGROUND

The world has more access to essential health services in recent years than any other time in human history. However, there are regional disparities and Sub-Saharan African (SSA) countries lag behind in several health services where health facilities are burdened with lack of resources and supplies to function effectively. To overcome these challenges, in 2017 African health ministers agreed to strengthen health systems through adopting a range of interventions which will eventually lead to countries to achieving Universal Health Coverage (UHC) [1]. UHC is a situation where "all people can access the health services they need without incurring financial hardship" [2-4]. The promotion of Ethiopian public health sector on citizen financial protection through insurance scheme has two major components namely; Social Health Insurance (SHI) and Community-Based Health Insurance (CBHI). SHI is recommended for the formal sector and is in preparatory phase of implementation. CBHI meanwhile has been endorsed and is being expanded to secure financial protection for over 85% of the Ethiopian population who are engaged in the informal sector and have limited protection from other sources [5,6].

Health service equity and quality are important indicators in achieving universal health coverage. The Ethiopian Federal Ministry of Health has developed a strategic plan (2016-2020) to achieve quality health service in the whole country [7]. The quality of healthcare in the strategic plan is defined as "Comprehensive care that is measurably safe, effective, patient-centered, and uniformly delivered in a timely way that is affordable to the Ethiopian population and appropriately utilizes resources and services efficiently". Patient-centred service as a component of quality of care is measured through patient satisfaction [7,8].

Patient satisfaction is often associated with positive emotions drawn from interaction with health service providers and quality of care in all aspects. Patient satisfaction is seen as a measurement for both an outcome and as an indicator of the quality of care. Studying healthcare quality from the patient's perspective provides valid and unique information about the quality of care. A number of studies have used patient perspective as a key measure of evaluating healthcare quality and noted that measuring patient satisfaction helps to improve patient experience of care [9-11].

Patient dissatisfaction with poor quality of service is likely to affect their decisions to remain enrolled in the CBHI scheme which ultimately makes the scheme less attractive to new members. Therefore, while removing financial barriers and improving access to care; it is also important that attention is given to the quality of care provided and improving patient experience of care [12]. Since the introduction of CBHI, there is an improved attitude to utilizing healthcare service among the insured members while it gives the freedom to healthcare providers to prescribe the relevant medicines. Is the scheme has also increased health facilities' internal revenue that is ultimately used for quality improvement [6].

Studies conducted in different areas have shown that satisfied patients are more likely to utilize health services, comply with medical treatment, and continue with using healthcare providers while dissatisfied patients are less likely to follow instructions for taking medications, might not attended follow-up care and discourage family members and friends from seeking healthcare services [11,12]. Patient satisfaction studies conducted in Asia and Africa showed that there were differences on satisfaction of insured and non-insured patients. Although there is a shortage of studies on patient satisfaction in Ethiopia, studies conducted in different areas of the country show that there is a low proportion of satisfaction with health services [11,13-16]. Patient waiting time, friendliness of staff, time given for diagnosis and objective quality of services such as physical examination, measuring temperature and measuring weight were significantly associated with the overall satisfaction of patients [11,12,15] [16-19].

In Ethiopia, there have been great efforts put into improvements in increasing health service coverage while little attention has been given to the quality and utilization of services especially in health centers where a significant proportion of patients receive primary health care. Healthcare financing reform, including CBHI, has contributed towards breaking down financial barriers which hamper health service utilization and quality [6]. CBHI has increased healthcare utilization among members and will eventually contribute to the achievement of the goal of universal health coverage [6,20]. An increase in the healthcare demand has increased attention to quality of care on the healthcare supply side. In recent years, various reforms have been used to improve the quality of health services such as the Ethiopian Hospital Alliance for Quality (EHAQ) and Ethiopian Primary Health Care Alliance for Quality (EPAQ).

Ethiopia's ambitious five-year Health Sector Transformation Plan (HSTP 2015 - 2020) targets four main agendas, namely, (1) Quality and Equity of healthcare; (2) Information revolution; (3) Woreda Transformation; and (4) Compassionate, Respectful and Caring Health Workforce [8]. To achieve these goals, establishing a sustainable health care financing system is mandatory. During the last decade, Ethiopia has piloted and moved to expand the tested CBHI scheme throughout the country [7].

This study is based on the concepts of Robyn et al (2013) and Duku et al (2018) to elucidate the experiences of outpatient perceived and objective quality of care measurements among insured and non-insured, under community-based health insurance scheme in north east, Ethiopia [18,21]. A comparative cross-sectional facility-based patient satisfaction study on primary health care services among insured and non-insured outpatient services was conducted in the Tehuledere district of Ethiopia. The main aim of the study was to compare the overall satisfaction with primary health care among insured and non-insured outpatient service beneficiaries in five health centers. The second aim of the study was to explore the relationship between the overall satisfaction and socio-demographic characteristics, objectives and perceived dimensions of quality of care.

METHODS

Study setting

A comparative cross-sectional facility-based study among patients who are insured and non-insured under the CBHI scheme was conducted in Tehuledere district, Amhara region, north east Ethiopia. According to the point estimate of the district population in the year 2017 (CSA), was about 139,341, where males account for 73,973 (53%) and females totalling 65,368 (47%). The majority

135,328 (97.1%) are rural residents. Close to half (53%) of the households in the district were active members of the CBHI Scheme [22]. Health care service in the district are delivered through five health centres, 26 health posts and nine private health facilities. Tehuledere district is one of thirteen districts, where CBHI was introduced as a pilot program since 2010 in Ethiopia [6]. This study was employed in five CBHI contracted health centres from March to April 2017.

Source and study population

The source population of the study was all outpatients who visited the health centres in the study period. The study populations were selected using a systematic random sampling technique among adult patients who had visited the outpatient department during the study period and data were collected from both insured and non-insured patients.

Eligibility criteria

Patients who are insured and non-insured under CBHI scheme and had visited the outpatient departments of health centers were included in the survey. Patients who were critically ill and unable to respond to interviews, urban residents, formal sector employees, students and retired patients and clients who use exempted services were excluded from the interviews because as they do not require insurance coverage.

Sample size determination

The sample size for the study was determined by the double population formula using EPI Info version 7. The sample size was calculated using power formula which was assumed to be 80%. The formula used for the calculation is [23]:

$$n = \frac{p_1(1-p_1) + p_2(1-p_2) * f(\alpha, \beta)}{(p_1-p_2)^2}$$

The assumption was:

n= sample size; P1-proportion satisfaction in the CBHI member clients is taken as 50% because there is no study conducted in health insurance implementing areas; and P2-proportion of satisfaction in non CBHI member clients is taken as 62% from a study conducted in western Shoa, central Ethiopia [13]; α - The level of statistical significant 0.05; β = Type II error 0.2; and none response rate 10%

Therefore, the final calculated sample size was,

$$n = \frac{p_1(1-p_1) + p2(1-p_2) * f(\alpha, \beta)}{(p_1-p_2)^2}$$

$$= \frac{0.5*(1-0.5) + 0.62(1-0.62) * 7.9}{(0.5-0.62)^2} = 284 + 28 = 312$$

Sampling procedures

All five health centers in the district were included in the study. The number of interviewees was proportionally allocated to the number of outpatients that were seen at the health centers in the last three months, prior to the actual data collection. The outpatient lists were obtained from routine Health Management Information System (HMIS) reports of the health facilities. Accordingly, there were 23,746 insured and 18,829 non-insured outpatient attendants in three months. In the health centers, patients who visited the health centers during the study period were registered as insured and non-insured in the record rooms using a daily routine register. From both groups based on the list, interviewees were systematically selected at the 25th interval. The first interviewee was selected using a lottery method from the register.

Data collection

The data collection was conducted using a structured questionnaire which was adopted from studies conducted in Ghana, Burkina Faso and Ethiopian Health insurance pilot study [6,12,18,21]. The data collection tool for the study was an interviewer-administered structured questionnaire. The questionnaire was first prepared in English and then translated into Amharic. The Amharic version of the questionnaire was used for data collection.

The data collectors were trained, diploma level health professionals working in the neighboring woredas. A two-day long training was conducted on principles of data collection, components of instruments and ethical principles. Based on the results of a pretest, tools used in the study were modified. Face to face interview technique was used to collect data using a structured questionnaire. The data were collected from patients during their exit from the facility and interviewees whose age is 18 years old and above were interviewed while caretakers or guardians of those who were below 18 years were interviewed. To protect the collected data from any bias, the data collectors were given strict guidance to confine the whole process and information to themselves and use a separate room for the interviews. The health information technicians identify, provide codes and collect insurance statuses in a separate sheet. Data collectors were kept blind to the insurance status of patients.

Data quality management

The questionnaire was pretested in Wuchale health centre located in the Ambassel district which has a similar setting with the surveyed district and the questionnaire was restructured and rephrased accordingly. The data collection was closely monitored, and regular communication was maintained with supervisors and data collectors. Each questionnaire was reviewed by supervisors to check its completeness and consistency and the completed questionnaires were rechecked by the principal investigator to maintain the quality of the data.

The reliability of twenty-seven Likert scale perceived quality of primary health services measurement instruments was estimated using Cronbach's alpha value of 0.927. This result was much higher than the generally accepted value of 0.80 which was recommended by Kline as cited in Sauer Liberato et al (2016) for cognitive tests [24]. The results confirm that the instrument employed was reliable.

Data processing and analysis

After all questionnaires were collected, they were checked for completeness, cleaned, coded and finally entered into EPI Info statistical software V.3.5.1(CDC, Atlanta, Georgia, USA) [25] and exported to the Statistical Package for Social Science (SPSS-IBM-version 20) [26]. Descriptive statistics were used to summarize the data by using simple frequency tables and figures. The respondents were asked about their perceived satisfaction of the primary health care services they were received on the day of the interview. The data were scored using a five-level Likert scale of categories. The scores were: 'very good' (5); 'good' (4); 'Somewhat good' (3); 'poor' (2); and 'very poor (1). For each respondent, summary scores, or

a 'mean patient satisfaction' score was calculated by summing individual perceived quality scores for each item and dividing the result by five. The aggregate or 'mean patient satisfaction' score was equaled to three point-one. To produce categorical variables on patient satisfaction, the weighted mean scores less or equal to two were classified as dissatisfied. The mean score greater or equal to four were classified as satisfied. For the mean scores between greater than two and less than four, first median was calculated then the score less than median was classified as dissatisfied and the rest classified and satisfied [27]. To examine the presence of a statistical significant association between the insured and non-insured under CBHI scheme on perceived and objective quality of services, Pearson's Chi-Square test, independent sample t-test, and linear logistic regression model were employed. A bivariate linear regression was analyzed to identify potential predictor variables which have a P-value of 0.2 for transferring candidate variables to multi-variable linear regression. The dependent variable, overall patient satisfaction, and the independent variables were entered into the regression model including, socio-demographic, cost of services, cost of prescribed drugs, provider recording of patient history, provider inquiry into treatment taken before arrival, provider usage of a stethoscope, provider performing a proper physical examination and provider explanation of the diagnosis to the patient. The variables used in the regression model as control were: age, (continuous), gender (male=0 , female=1), married or not married (not married =1, married =0), cost of service (very high=1, high=2, acceptable=3, low=4, very low=5), cost of prescribed drugs (very high=1, high=2, acceptable=3, low = 4, very low=5), provider performance on objective variable (Yes= 1, no=0). Variables with P< 0.05 were claimed as associated factors for patient satisfaction in insured and non-insured outpatient service beneficiaries. The following multiple variable linear regression model was used:

Patient satisfaction=α + β1Age + β2 Sex + β3 Educ+ β4 Marital + β5 cost of Service + β6 cost of drugs + β7 measure weight + β8 measure temp + β9 use stethoscope + β10 proper examination + β11 history of past illnesses + β12 history of present illness + β13 history of treatment + β14 diagnosis explained + εi.

NB: α: constant; β: slop/coefficient; εi: value of standard error

Ethical consideration

Prior to the implementation of the research project ethical clearance was obtained from Wollo University College of Medicine and Health Science Ethical committee. A support letter was also obtained from district health office and submitted to all health centers. Informed written consent was obtained from each study participant after the purpose and objective of the study were clearly shared. Participants were also informed that participation is on a voluntary basis and that they can withdraw from the study at any time if they are not comfortable. For the purpose of confidentiality, the names of participants were not recorded.

Table 1: Socio-demographic characteristics of the study population at visiting outpatient service in Tehuledere district, South Wollo Zone, Amhara Region, April 2017 (n= 612).

Variables	Response category	Community- based health insurance status				Test Statistics	
		Insured (n_1=311)		Non-insured (n_2= 301)			
		Freq.	%	Freq.	%	X^2	*p*-value
Health Center	HC (1)	85	27.3	172	42	76.048	**0.001**
	HC (2)	62	19.9	35	15.8		
	HC (3)	49	15.8	19	11.1		
	HC (4)	82	26.4	30	10		
	HC (5)	33	10.6	45	15		
Age	18 - 30 Years	90	28.9	134	44.5	18.262	**0.001**
	31- 44 Years	117	37.6	97	32.2		
	45 - 64 Years	82	26.4	60	19.9		
	≥ 65 Years	22	7.1	10	3.3		
Sex	Male	228	73.3	185	61.5	9.789	**0.002**
	Female	83	26.7	116	38.5		
Education	Uneducated	141	45.3	64	21.3	75.853	**0.001**
	Able to read and write	84	27	55	18.3		
	Primary education	38	12.2	55	18.3		
	Secondary education	36	11.6	78	25.9		
	TVET@	12	3.9	49	16.3		
Marital Status	Unmarried	47	15.1	114	37.9	42.977	**0.001**
	Married	239	76.8	161	53.5		
	Divorced	12	3.9	12	4		
	Widowed	13	4.2	14	4.7		
Occupation	Private employee	8	2.6	22	7.3	18.173	**0.001**
	Farmer	281	90.3	243	80.7		
	Unemployed	30	9.7	58	19.3		

NB: @ Technical Vocational Education and Training

RESULTS

Socio-demographic characteristics of the study population

Table 1 summarizes the presentation of a comparison of the socio-demographic characteristics of the study participants versus outpatient service beneficiaries among insured and non-insured under the CBHI scheme. Out of 624 outpatients, 612 (98%) respondents with a response rate of 98% were enrolled in this study. Among the total interviewed clients, 311 (50.8%) were insured and 301 (49.2%) were non-insured under the CBHI scheme. The mean age with Standard Deviation (SD) was 39.91±13.57 and 35±13.09 years for insured and non-insured participants, respectively. There was a statistically significant difference in age among study participants with X^2= 18.262, P-value= 0.001. With regards to the gender of participants, 228 (73.3%) were male and 83 (26.7%) were female while 185 (61.5%) of male and 116 (38.5%) female respondents were in the non-insured group, with statistically significant difference in distribution between insurance status and gender at X^2=9.78, P-value= 0.002. In terms of the level of education of respondents, 141 (45.3%) of the insured and 64 (21.3%) non-insured groups are uneducated. On the other hand, 84 (27.0%) of the insured and 55 (18.3%) of the non-insured study participants were able to read and write. The study participants' distribution had a statistically significant difference in distribution between insurance status and educational level at X2=75.85, P-value= 0.001. With regards to marital status, 239 (76.8%) of the insured and 161 (53.5%) of non-insured participants were married whereas 47 (15.1%) of insured and 114 (37.9%) non-insured patients were unmarried. The rest of the respondents were either widowed or divorced. The study participant distribution had a statistically significant difference in distribution between insurance status and marital status at X^2=42.97, P-value= 0.001.

Table 1 presented the socio -demographic characteristics of the study participants. The information depicted identification of contracted health centres, age, sex and educational status, marital status and occupation of outpatients. The result resented includes: Chi- Square test and P-value for checking distribution of insured and non-insured patients.

Health service utilization

All interviewed patients in both groups have visited the outpatient department for primary health service utilization while 108 (34.7%) of the insured and 118 (39.2%) non-insured group have received laboratory service. In addition, 308 (99%) of the insured and 296 (98.3%) of the non-insured group have been served in pharmacy units in five health centres. Regarding the pharmaceutical services, 229 (73.6%) of the insured and 201 (68.8%) of non-insured have collected drugs and supplies from the health centre. Concerning waiting time spent between reaching health center and seeing their first health care provider, 18 (5.8%) of the insured and 36 (12%) of the non-insured respondents experienced a waiting time of less than 30 minutes while 103 (33%) of the insured and 106 (35%) of the non-insured experienced a half an hour to an hour waiting time.

Perceived satisfaction

Figure 1 depicts the perceived satisfaction levels of the study population. The overall satisfied proportion of the respondents was 475 (77.6%; 95% CI=74.1% - 80.9 %). A little over three-fourths of the insured group,247 (79.4%; 95% CI=74.5% - 83.8%) were satisfied with the primary health care and, three-fourth of non-insured group, 228 (75.7%; 95%CI=70.5% - 80.5 %) were satisfied with the primary health care services. The mean score of availability of medicine for all illnesses was 2.81±1.036 and 3.30±0.946 among insured and non-insured outpatient service beneficiaries respectively. Perceived satisfaction on the availability of all drugs was significantly high among non-insured than insured service beneficiaries with t=-6.087, df=610, P=0.001. The mean score of patients on health care providers' level of compassion and their support to patients was 3.34±0.868 and 3.22±0.924 among insured and non-insured outpatient service beneficiaries respectively. Insured patients positively perceived at t = 3.739, df = 610, P = 0.001. Similarly, facility assistances were perceived as friendly and helpful for patients among insured than non-insured with t =3.198, df =610, P = 0.001. Availability of an alternative payment option, cost of service payments and cost of prescribed drugs were more positively perceived by insured patients than non-insured patients at P = 0.001 (Table 2). The mean score with Standard Deviation of the satisfaction score was 86.14 ± 14.99 among insured and 83.85 ± 17.16 among non-insured under the CBHI scheme respectively. An independent sample t-test showed statistically significant differences where insured patients have a higher mean satisfaction scores than their counterpart non-insured patients with t=2.031, df=610, P=0.043 (Table2).

The table 2 presented the result of 27 Likert Scale reported Perceived quality of care with its associated mean score, Standard Deviation, t- test and p-values. The main categories are: perceived availability healthcare providers, supplies and physical resources; perceived quality of health care delivery; perceived quality of health care conduct; perceived financial and physical accessibility of care; perceived physical structure of the health facility and overall satisfaction of patients.

Objective measurement of quality of care

Table 3 presents the objective quality of care measurement of outpatient beneficiaries. Among 612 respondent patients 117

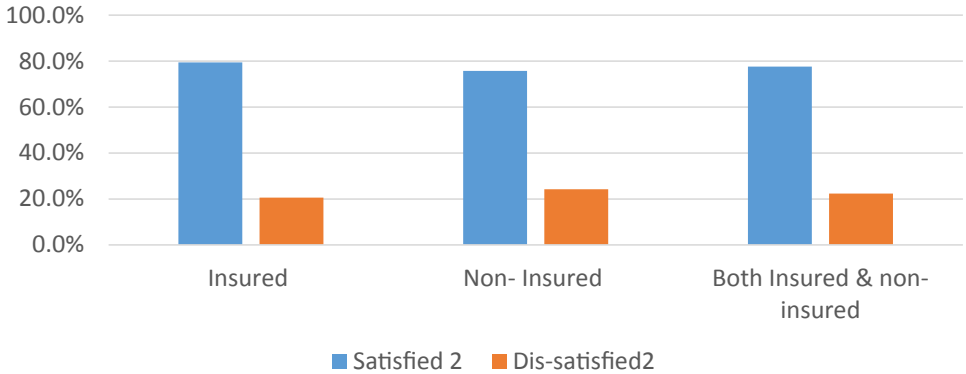

Figure 1: Level of satisfaction in insured and noninsured under CBHI in Tehuledere district, Amhara Region, April 2017.

Table 2: Indicators of level of satisfaction between the insured and non-insured group on health services in Tehuledere district, South Wollo Zone, April 2017 (n=612).

Indicators of health service quality	Insured (N=311)	SD	Noninsured (N=301)	SD	t-test	P-Value
	Mean		Mean			
Perceived availability of health care providers, supplies and physical resources						
Medical supplies and equipment are sufficient	3.08	1.128	2.92	1.072	1.8	0.072
Rooms are sufficient	3.04	1.051	2.9	1.041	1.673	0.095
Adequate/appropriate healthcare providers for women	2.95	0.932	3.1	1.014	-1.797	0.073
There are sufficient, high-quality healthcare providers	3.33	0.934	3.19	1.017	1.757	0.079
Availability of laboratory service	3.29	0.957	3.15	1.022	1.79	0.074
Medicine for all illnesses is always available	2.81	1.036	3.3	0.946	6.087	0.001
Perceived quality of health care delivery						
Healthcare providers conduct quality diagnostic exams	3.02	1.001	2.89	0.987	1.605	0.109
Healthcare providers make appropriate drug prescriptions	3.12	0.923	3.24	1.033	1.518	0.129
The quality of drugs prescribed is good	3.25	0.861	3.13	0.943	1.572	0.116
Treatment provided is efficient and effective	3.34	0.868	3.22	0.924	1.588	0.113
Perceived quality of health care provider conduct						
Healthcare providers show compassion and support for patients	3.57	0.796	3.3	0.965	3.739	0.001
Healthcare providers are respectful to patients	2.98	0.952	3.1	0.984	1.437	0.151
Healthcare providers provide quality follow-up care	3.32	0.97	3.2	1.016	1.524	0.128
Healthcare providers are welcoming during consultations	3.21	0.976	3.08	1.033	1.592	0.112
Healthcare providers respect patient confidentiality	3.35	0.955	3.2	1.052	1.862	0.063
Facility assistants are friendly and helpful to patients	3.59	0.837	3.35	1.011	3.198	0.001
Facility assistants respond to patients' questions	2.92	0.974	3.06	0.998	1.799	0.072
Perceived financial and physical accessibility to care						
Alternative payment options are available	3.51	0.811	3.17	1.071	4.418	0.001
The cost of services is manageable	3.53	0.871	3.24	1.034	3.815	0.001
The cost of prescribed drugs is manageable	3.56	0.832	3.19	1.071	4.782	0.001
Distance to the facility is accessible	3.39	1	3.24	1.069	1.83	0.068
Healthcare providers give sufficient time to their patients	3	1.043	3.16	1.068	1.907	0.057
Waiting time from entering the facility to see the healthcare provider	2.87	1.076	2.7	1.021	1.969	0.049
Perceived physical structure of the facility						
Health facility is clean and orderly	3.14	1.085	2.98	1.034	1.806	0.071
Easy to identify location of specific services at facility	2.71	1.063	2.56	0.963	1.778	0.076
Patients feel comfortable and safe while waiting	3.26	1.022	3.12	1.066	1.708	0.088
Convenience of access to the facility	3.28	1.017	3.14	1.047	1.641	0.101
Overall satisfaction	86.14	14.99	83.85	17.16	2.031	0.043

(38.0%) of insured and 134 (45.0%) of the non-insured under CBHI scheme were seeking treatment for their illness within one to two days. Seeking health care services do not show significant statistical difference by insurance status with X^2=3.952, P-value= 0.267. Diarrheal disease was the most prevalent reason for visiting health centres with 78 (25.0%) and 86 (29%) for insured and non-insured patients under CBHI respectively. Reasons for visits to health centres were not statistically different between insured and non-insured outpatients with X^2= 3.67, P-value= 0.45. With regards to consultation and diagnosis, insured patients reported that healthcare workers used a stethoscope (133; 43%), properly examined them (196; 63%), took down their history of past illness (253; 81%), asked treatment taken before arrival at health centers (241; 77%) and explained the diagnosis to them (215; 69%). Non-insured patients on the other hand reported that healthcare workers used a stethoscope (157; 52%), properly examined them (214; 71%), took down their history of past illness (269; 89%), asked treatment taken before arrival at health centers (268; 89%) and explained the diagnosis to them (232; 77%). Results showed that the consultation and diagnosis service is better performed among non-insured rather than insured patients on the use of a stethoscope, proper examination, taking note of history of past illnesses, asking about history of treatment taken before arrival at the health facility and explaining of diagnosis to patients by health care providers with X^2= 4,509 to 14.664, P-value < 0.05.

Table 3 presented the descriptive statistics report on objective quality of care measurements by insurance status. The variables reported includes: days spent between onset of illness and visiting health facility; reason for facility visit; consultation and diagnosis services with their respective Chi-Square test results.

Factors affecting client satisfaction

A bi-variable and multivariable linear regression analysis was done to compare factors influencing overall patient satisfaction score among patients who are insured and non-insured under CBHI

Table 3: Characteristics and objective quality of care by insurance status, Tehuledere, Ethiopia, April 2017.

Objective characteristics of quality of care	Insured (N=311)		Non-insured (N=301)		Pearson X^2	P-Value
	Number	%	Number	%		
Days between the onset of illness (sign & symptoms) and seeking facility care						
<1	66	21%	59	20%	**3.952**	**0.267**
1 to 2	117	38%	134	45%	-	-
3 to 4	80	26%	61	20%	-	-
5+	48	15%	47	16%	-	-
Reason for visit						
Diarrhea	78	25%	86	29%	**3.679**	**0.451**
Fever	48	15%	35	12%	-	-
Cough, chest pain	65	21%	66	22%	-	-
Injuries	55	18%	44	15%	-	-
Other#	65	21%	70	23%	-	-
Consultation and diagnosis (Yes 1, No =0)						
Did the provider weigh the patient	41	13%	38	13%	0.042	0.837
Did the provider measure the temperature of the patient	77	25%	60	20%	2.05	0.152
Did the provider use a stethoscope	133	43%	157	52%	5.414	0.02
Did the provider examine the patient (head to toe)	196	63%	214	71%	4.509	0.034
Did the provider ask about history of past illness	253	81%	269	89%	7.84	0.005
Did the provider ask about history of present illness	304	98%	292	97%	0.328	0.567
Did the provider ask if treatment was taken before arrival at facility	241	77%	268	89%	14.564	0.001
Did the provider explain the diagnosis to the patient	215	69%	232	77%	4.903	0.027

scheme (Table 4). On one hand, the multivariable linear regression result showed that α (constant value) of 68.57 and an adjusted β values of 0.358 at cost of service, 0.383 at cost of drugs and 0.116 at the history of treatment for insured outpatients on overall satisfaction score. This result revealed that one standard deviation increased overall patient satisfaction score will have a change in 0.358 at cost of service, 0.383 at cost of drugs and 0.116 at the history of treatment standard deviation for independent variables. The following multivariable linear regression model predicts overall patient satisfaction among insured patients. The cost of services, cost of drugs and history of treatment (r^2=0.571) explained 57.1% of the overall satisfaction score among insured outpatients.

Table 4 presented the statistics of multivariable linear regression analysis. The result helps to compare the main predictor variables by insurance status of study participants.

Patient satisfaction (insured) = 68.57 + 0.358* cost of service + 0.383* cost of drugs + 0.116* history of treatment + 0.

The results showed that α (constant value) of 65.62 and an adjusted β values of -0.081at age, -0.164 at sex, at -0.084 at education, 0.072 at marital status, at 0.518 at cost of service, 0.375 at cost of drugs, .0.078 at use stethoscope, 0.081 at proper examination, 0.105 at diagnosis explained for non-insured outpatients on overall satisfaction score. One standard deviation increase in the overall satisfaction score will have a change in -0.081, -0.164, -0.084, 0.072, 0.518, 0.37, 0.078, 0.081, and 0.105 times standard deviation on independent variables. The age, gender, educational status, marital status, cost of services, cost of drugs, use of a stethoscope, proper physical examination and explaining the diagnosis to patients (r^2 =0.698) explained 69.8 % of the overall satisfaction score among non-insured outpatients. The following multivariable linear regression model predicts the overall patient satisfaction score among non-insured patients.

Patient satisfaction (non-insured) = 65.62 + -0.081*age + -0.164*Sex + -0.084*educ + 0.072*Marital status + 0.518* cost of service + 0.375* cost of drugs + 0.078* use of stethoscope + 0.081* proper examination + 0.105* diagnosis explained + 0

The variability (r^2) explained by the socio-demographic characteristics, perceived and objective measurement of quality of care 57.1% and 69.8% of insured and non-insured outpatient satisfaction score, respectively.

DISCUSSION

The Ethiopian Federal Ministry of Health in its journey towards Universal Health Coverage, achieving equity and quality of primary health care services and avoiding financial risk of its citizens gets the desired level of interventions to be implemented during the second growth and transformation strategic period (2015-2020) [6-8]. During the last decade, the Ethiopian public health sector implemented equity and quality initiatives and piloted the community-based health insurance scheme which it strives to scale up to 80% of households' coverage at 80% of woredas, the lowest administrative units, by the year 2020. These strategies and interventions are in line with the global commitment of Sustainable Development Goals (SDGs) set to be achieved by 2030 in which quality of care and financial risk protection is

Table 4: Comparison of unadjusted and adjusted linear regression coefficients for mean overall patient satisfaction score by insurance status and dimensions of independent variables, Tehuledere, South Wollo, April 2017.

Variable overall patient satisfaction	*Insured*					*Non-insured*				
	uβ	**s.e.**	**sβ**	**95% CI**	**P- value**	**uβ**	**s.e.**	**sβ**	**95% CI**	**P- value**
Constant	68.57	5	-	(58.72, 78.43)	0.001	65.62	4.92	-	(55.94,75.31)	0.001
Age (Continuous)	-0.0718	0.044	0.068	(-0.15, 0.015)	0.106	-0.106	0.051	0.081	(-0.207,-0.005)	0.039
Sex (Male= 1, Female = 0)	-0.358	1.26	0.011	(-2.85, 2.13)	0.778	-5.773	1.185	0.164	(-8.10,-3.44)	0.001
Education (literate=1, illiterate =0)	2.415	1.24	0.085	(-0.03, 4.86)	0.053	-3.538	1.589	0.084	(-6.66, -0.41)	0.027
Marital status (married =1 unmarried= 0)	-0.275	1.34	0.008	(-2.91, 2.36)	0.838	2.475	1.215	0.072	(0.08, 4.86)	0.043
Cost of health service (very high 1, very low 5)	11.563	1.91	0.358	(7.78, 15.33)	0.001	18.177	1.818	0.518	(14.60, 21.75)	0.001
Cost of prescribed drugs (very high 1, very low 5)	12.127	1.86	0.383	(8.46, 15.79)	0.001	13.259	1.809	0.375	(9.69, 16.82)	0.001
Did provider measure your weight (Yes =1, No= 0)	2.338	1.89	0.056	(-1.38, 6.06)	0.218	-0.352	2.146	0.007	(-4.57, 3.87)	0.87
Did provider measure temperature (Yes= 1, No = 0)	0.26	1.63	0.008	(-2.96, 3.48)	0.874	-2.199	1.839	0.051	(-5.81, 1.42)	0.233
Did the provider use stethoscope (Yes =1, No= 0)	2.599	1.39	0.09	(-0.15, 5.35)	0.064	2.693	1.18	0.078	(0.37, 5.01)	0.023
Did the provider properly examined the patient (Yes =1, No= 0)	-0.86	1.23	0.029	(-3.28, 1.56)	0.485	3.061	1.314	0.081	(0.47, 5.64)	0.02
Did the provider asked history of past illness (Yes =1, No= 0)	0.618	1.64	0.017	(-2.61, 3.85)	0.707	2.871	1.905	0.052	(-0.87, 6.62)	0.133
Did the provider ask history of present illnesses (sign and symptoms)?	-2.005	3.71	0.021	(-9.32, 5.31)	0.59	4.355	3.342	0.043	(-2.22,10.93)	0.194
Did the provider ask if treatment was taken before arrival at facility (Yes =1, No= 0)	3.96	1.55	0.116	(0.89, 7.02)	0.012	-1.118	2.006	0.02	(-5.06, 2.83)	0.578
Did the provider explain the diagnosis to the patient (Yes =1, No= 0)	0.295	1.36	0.01	(-2.40, 2.98)	0.83	4.278	1.532	0.105	(1.26, 7.29)	0.006

NB: $_{U}\beta$: unstandardized coefficient; $_{S}\beta$: standardized coefficient; Dependent variable: overall satisfaction; Positive value of β indicates an increased overall satisfaction score per unit increase in independent variables score. All bold values are significant at *P* <0.05 in the column labeled *P*-value.

relevant to the first sustainable development goal of 'no poverty', the second sustainable development goal of 'zero hunger' and the third sustainable development goal of 'good health and well-being for people' and the tenth sustainable goal of 'reducing inequality' [28]. Despite the significant relationship of quality of care, and patient satisfaction by insurance status, few studies have been documented. Therefore, this study aimed at comparing patient satisfaction using perceived and objective measures of quality of care between insured and non- insured service beneficiaries under the CBHI scheme in Tehuledere woreda, north east, Ethiopia. Overall this study revealed that there is a significant difference in perceived quality of care scored between insured and non-insured patients. However, with objective measurement of quality of care, non-insured patients received higher perceived quality of care than their counterpart insured patients.

The findings of this study show that a slightly higher than three fourth 77.6% (95%CI=74.1% -80.9 %) of patients were satisfied with the services. However, it was also revealed a high proportion (79.4%) of insured patients is satisfied when compared to 75.7% non-insured out patients. An independent sample t-test was conducted to compare the overall satisfaction score for insured and non-insured patients under CBHI. There were significant differences in scores (M=86.14 ± (SD) 14.99) among insured and (M=83.85 ± (SD) 17.16) among non-insured under CBHI scheme; t (610)=2.031, P=0.043 (two tailed) (Table 3). This finding is nearly in line with a study conducted in India where 82% of insured and 73 % of non-insured clients were satisfied with the services received [17]. The findings of this study also reveal that the difference was statistically significant where insured patients have a higher mean of satisfaction score than their counterpart non-insured with (t=2.031, df =610, P=0.043). This is similar to a study conducted in Ghana that found a statistically significant difference in the satisfaction of currently insured and non-insured clients [29]. Although the findings differ from a study conducted in Burkina Faso and Ghana where the studies reported high overall satisfaction score among insured than non-insured patients, but the difference were not statistically significant at P<0.05 [18,30]. The reported magnitude of satisfaction score in this study indicates a high proportion of patients when compared with other studies were 62% West Shoa, 65% Addis Ababa, 57% Jimma and 54% Welaita, in Ethiopia [13,14,15,30]. However, the result of this study shows lower overall patient satisfaction proportion when compared with another study conducted in Ghana where 88% of insured and 86% of non-insured were either very satisfied or satisfied with the healthcare services [12]. This difference could be explained by the experience of patients and cultural values of patients for time, infrastructure, and cost of services. Moreover, the study area may influence patient experience, while this study was conducted in Health Center, other include hospitals.

In this study, socio-demographic characteristics like age, sex, education and marital status didn't show a significant effect on overall satisfaction scores among insured patients. However, characteristics like older age, males, education levels and the unmarried status of non-insured patients significantly related to reducing overall satisfaction score. This finding was in line with a study conducted in China and Pakistan where males had a lower level of satisfaction [19,31].

The availability of medicines for all illness was found to have a statistically significant difference between insured and non-insured outpatients under the CBHI scheme. This finding was consistent with a study conducted in Ghana where pharmacy service is the cause of dissatisfaction [12]. However, our finding is different from a study conducted in Burkina Faso, which did not show any statistical difference between the insured and non-insured groups on the availability of medicines for all illness [18]. Obviously, health care service is measured with its curative outcome where availability of drugs and supplies would have vital role. Therefore, clients who receive prescribed drugs feel they will be cured and feel satisfied rather than clients who cannot find their prescribed drugs.

The result of this study showed that insured outpatients were positively perceived quality of health care providers and their assistants conducts as friendly and helpful than their counter part non-insured patients. The comparison of mean scores was fund statistically significant difference.

This is in line with a similar study conducted in Burkina Faso [18]. While this finding showed a statistically significant difference between the insured and non-insured groups on the compassion and support provided to patients by healthcare providers a similar study conducted by Robyn et al (2013) did not show any statistical difference [18].

The cost of health care is directly related to patient satisfaction. In this study, the cost of services and prescribed drugs were more affordable to insured than non-insured patients. This finding is also consistent with a study conducted in Burkina Faso in which the cost of services and prescribed drugs are perceived as manageable by insured groups and showed a statically significant difference between the insured and non-insured groups [18,24].

With regards to waiting time, insured patients have perceived the time they spent to get health services as fair than their counterparts which is also statistically significant (P=0.043). This finding is in line with a study conducted in Ghana [21]. This finding was also consistent with studies conducted in Bangladesh, Ghana, Botswana and Ethiopia where shorter waiting time creates high level of satisfaction of clients [12,15,17,32,33]. This can be explained by the value the rural community gives for time. In this study, there is no statistical difference in relation to on-set of illness, reasons for health facility visit and health-seeking behavior by CBHI enrollment status (P=0.267) which is consistent with a study conducted in Burkina Faso [18].

With regards to consultation and diagnosis services, in this study it was documented that a non-insured outpatient 5.4 times examined using stethoscope, 4.5 times served complete physical examinations 1.84 times higher in inquiring about their history of past illness, 14.56 times in inquiring about history of treatment resumed before current consultation and 4.9 time in receiving information on their diagnosis than their counter part insured patients. This finding was in line with Duku et al (2018) and Robyn et al (2013) reports of the assessment on the quality of care and insurance status in Ghana and Burkina Faso, respectively.[18,21]. In addition, our findings on objective quality of care services specifically on the use of a stethoscope and complete physical examination were similar to a study conducted in Burkina Faso [18].

LIMITATION OF THE STUDY

The study design was cross sectional health facility-based survey design; therefore, a cause and effect relationship could not be established. In addition, this study does not address health care providers' perceptions of effects of community-based health insurance on access, equity and quality of services.

CONCLUSION

The study finding shows that insured patients perceived with a higher level of quality of care and satisfaction score. However, non-insured patients received high proportion score on objective quality of care measurements of comprehensive diagnosis and consultation services. Therefore, to improve patient experiences at health centers and achieve the achieve financial risk protection through functional CBHI, program managers and health care providers should ensure quality of services to the standards at the health facility to insured and non-insured community members. Moreover, the health center managers need to fulfil the availability of essential drugs to reduce dissatisfaction of insured patients and attract more members to the CBHI scheme. Operational research using rigorous methods like community based matched case control study and exploratory qualitative study to understand the perception of health care providers are recommended.

DECLARATIONS

Ethical Approval and consent to participate

The research protocol of this health facility based cross sectional study was reviewed and ethical clearance was obtained from institutional review board (IRB) of Wollo University. An official letter of permission was submitted to Tehuledere district, and the five health centers' administrations. An informed written consent was obtained from all study participants after providing brief explanations about the purpose and procedure of the study. To maintain the confidentiality of collected data, anonymity was maintained throughout the research process. Furthermore, the right to withdraw from participation at any time was respected.

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Consent for publication

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Availability of data and materials

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

Competing interests

The authors declare that they have no competing interests.

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Authors Contribution

The authors' responsible were as, AFA, AYD, MDA, BFD, ZTT, TRM, NB, TY, SAM, WSA, AHF, ADM, TA, TT, LN, ASB, AAA, & SY. AFA, NB, TY, & MDA: designed the research. All authors contributed in the development of methodology. AFA,NB, & TY supervised the data collection and ensure the quality of collected data. AFA, AYD, MDA, BFD, ZTT, TRM, NB, TY, SAM, WSA, AHF, ADM, TAB, TTH, LNA, ASB, AAA & SY. AFA, NB, TY, & MDA analyzed, interpreted the findings and drafted the manuscript. AYD, BFD, ZTT, TRM, SAM, WSA, AHF, ADM, ASB, AAA & SY participated in the validation process. MDA the corresponding author submitted the paper for publication. All authors reviewed the manuscript and approved the final version for submission.

REFERENCES

1. World Health Organization: Sixty-seventh session of the WHO Regional Committee for Africa: Final Report, Brazzaville: World Health Organization. Regional Office for Africa; 2017.
2. Vega J, Frenz P. Integrating social determinants of health in the universal health coverage monitoring framework. Revista Panamericana de Salud Publica. 2013; 34(6): 468-472.
3. Carrin G. World Health Organization: Community based health insurance schemes in developing countries: facts, problems and perspectives. WHO. Geneva; 2003.
4. Ekman B. Community-based health insurance in low-income countries: a systematic review of the evidence. Health policy and planning. 2004; 19(5): 249-270
5. Bennett S. The role of community-based health insurance within the health care financing system: a framework for analysis. Health policy and planning. 2004; 19(3): 147-158.
6. Ethiopian Health Insurance Agency. Evaluation of Community-Based Health Insurance Pilot Schemes in Ethiopia. Final Report. Addis Ababa, Ethiopia; 2015.
7. Federal Ministry of Health. Ethiopian national health care quality strategy 2016-2020: Trasforming te qality of health care in Ethioia. FMOH: Addis Ababa, Ethiopia; 2016
8. Federal Ministry of Health. Health Sector Transformation Plan (2015/16-2019/20). FMOH: Addis Ababa, Ethiopia; 2015.
9. Glenn C, McMichael A, Feldman SR. Measuring patient satisfaction changes patient satisfaction. J Dermatol Treat. 2012; 2: 81-82.
10. Kusi A, Hansen KS, Asante FA, Enemark U. Does the National Health Insurance Scheme provide financial protection to households in Ghana?. BMC Health Services Research. 2015; 15(1):331.
11. Bekele A, Taye G, Mekonnen Y, Girma W, Degefu A, Mekonnen A, et al. Levels of outpatient satisfaction at selected health facilities in six regions of Ethiopia. Ethiopian Journal of Health Development. 2008; 22(1): 42-48.
12. Fenny AP, Enemark U, Asante FA, Hansen KS. Patient satisfaction with primary health care–a comparison between the insured and non-insured under the National Health Insurance Policy in Ghana. Global J Health Science. 2014; 6(4): 9.
13. Birhanu Z, Assefa T, Woldie M, Morankar S. Determinants of satisfaction with health care provider interactions at health centres in central Ethiopia: A cross sectional study. BMC Health Services Research. 2010 ; 10(1):78.
14. Oljira L, Gebre-Selassie S. Satisfaction with outpatient health services at Jimma hospital, South West Ethiopia. Ethiopian Journal of Health Development. 2001; 15(3): 179-184.
15. Sagaro GG, Yalew AW, Koyira MM. Patients' satisfaction and associated factors among outpatient Department at Wolaita Sodo University Teaching Hospital, Southern Ethiopia: a cross sectional study. Sci J Clin Med. 2015; 4(5): 109-116.
16. Tateke T, Woldie M, Ololo S. Determinants of patient satisfaction with outpatient health services at public and private hospitals in Addis Ababa, Ethiopia. Afr J Prim Health Care Fam Med. 2012: 4(1).
17. Devadasan N, Criel B, Van Damme W, Lefevre P, Manoharan S, Van der Stuyft P. Community health insurance schemes & patient satisfaction-evidence from India. The Indian journal of medical research. 2011; 133(1): 40.
18. Robyn PJ, Bärnighausen T, Souares A, Savadogo G, Bicaba B, Sié A, et al. Does enrollment status in community-based insurance lead to poorer quality of care? Evidence from Burkina Faso. International journal for equity in health. 2013; 12(1): 31.
19. Yan Z, Wan D, Li L. Patient satisfaction in two Chinese provinces: rural and urban differences. International Journal for Quality in Health Care. 2011 ;2 3(4): 384-389.
20. Jütting JP. Do community-based health insurance schemes improve poor people's access to health care? Evidence from rural Senegal. World development. 2004; 32(2):273-288.
21. Duku SK, Nketiah-Amponsah E, Janssens W, Pradhan M. Perceptions of healthcare quality in Ghana: Does health insurance status matter?. PloS one. 2018;13(1): e0190911.
22. Tehuledere Woreda Health Office. Community-Based Health Insurance: Annual Report for the year 2016. Tehuledere Woreda: Haik, Ethiopia; 2016.
23. Whitley E, Ball J. Statistics review 4: sample size calculations. Crit Care. 2002; 6(4): 335-341.
24. Sauer Liberato AC, Cunha Matheus Rodrigues R, Kim M, Mallory C. Reliability and validity of the Treatment Satisfaction Questionnaire for Medication among Portuguese speaking Brazilian patients with hypertension. Journal of clinical nursing. 2016; 25(13):1931-1940.
25. Centers for Disease Control and Prevention. EPI Info. Epi Info™ V.3.5.1. CDC; 2008.
26. Statistical Packages for Social Science, Inc.: IBM SPSS Statistics Base 20. SPSS Inc., Chicago; 2011.
27. Bahrampour A, Zolala F. Patient satisfaction and related factors in Kerman hospitals. Eastern Mediterranean Health Journal 2005; 11(5): 905-912.

28. United Nations, Open Working Group on Sustainable Development Goals: Proposal of the Open Working Group on Sustainable Development Goals, New York, 19 July 2014.

29. Abuosi AA, Domfeh KA, Abor JY, Nketiah-Amponsah E. Health insurance and quality of care: Comparing perceptions of quality between insured and uninsured patients in Ghana's hospitals. International J Equity Health. 2016; 15(1): 76.

30. Badacho AS, Tushune K, Ejigu Y, Berheto TM. Household satisfaction with a community-based health insurance scheme in Ethiopia. BMC research notes. 2016; 9(1): 424.

31. Jalil A, Zakar R, Zakar MZ, Fischer F. Patient satisfaction with doctor-patient interactions: a mixed methods study among diabetes mellitus patients in Pakistan. BMC Health Services research. 2017; 17(1): 155.

32. Bamidele AR, Hoque ME, Heever HV. Patient satisfaction with the quality of care in a primary health care setting in Botswana. South African Family Practice. 2011; 53(2): 1-10.

33. Aldana JM, Piechulek H, Al-Sabir A. Client satisfaction and quality of health care in rural Bangladesh. Bulletin of the World Health Organization. 2001; 79: 512-517.15(1):19.