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Determinants and Level of Willingness to Pay for Medical Care Among Residents of Gondar City, Northwest Ethiopia: A Community-Based Cross-Sectional Study

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ABSTRACT

Medical care includes services such as diagnosis, treatment, nursing, and rehabilitation, all aimed at maintaining or restoring the body's health. Payments for these services cover a range of activities, from routine checkups to disease management. In low-income countries, individuals often bear a large portion of healthcare costs out-of-pocket, reaching up to 60% of total spending, compared with about 20% in high-income nations. Willingness to pay (WTP) reflects the maximum amount a person is ready to spend to access a health service. Previous studies have mostly focused on whether patients are willing to pay, but not on the amount they can afford. This study explored the level, average amount, and factors influencing WTP for medical care among residents of Gondar city, Northwest Ethiopia. A cross-sectional survey was conducted from February to March 2022 using systematic random sampling. Structured interviews were conducted by trained data collectors. Data were entered into Epi Info 7 and analyzed using STATA 14. Descriptive statistics summarized the participants' responses, while Tobit regression identified determinants of WTP at a significance level of $p \leq 0.05$. Of 414 respondents (95.8% response rate), 53.6% were willing to pay for medical care, with an average annual WTP of 24.17 USD. Higher WTP was significantly associated with being employed, married, having a family history of healthcare use, good knowledge of medical services, personal history of illness, longer distance from health facilities, and higher wealth status. Overall, the reported WTP was below actual medical costs. Developing tiered cost-recovery strategies targeting vulnerable populations, such as the elderly, less educated, or chronically ill, could improve access to healthcare services.

Keywords: Medical care, Willingness to pay, Determinants, Northwest Ethiopia

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Introduction

Medical care (MC) encompasses a range of health services, including diagnosis, treatment, rehabilitation, and nursing, aimed at maintaining or restoring the body's structure and function. Payments for medical care cover services related to the diagnosis, management, prevention, and treatment of illnesses or injuries, including routine checkups and examinations [1]. Unlike other markets, the pricing of medical care is not strictly regulated, making it difficult to determine its true cost [2, 3]. Access to healthcare is a critical component of social security and plays a key role in individual and societal well-being. It is recognized as a fundamental human right and is essential for achieving broader developmental goals, including the Sustainable Development Goals. To reduce the economic burden on households, healthcare financing systems should provide stability, either through subsidies or fee waivers, to avoid pushing people into financial hardship. Free or subsidized healthcare is considered an effective measure for promoting equity, especially among the poor [4–6]. In Ethiopia, the health financing strategy currently emphasizes public services and fee waiver systems, while private medical care remains largely unregulated. Prior research has predominantly examined whether patients are willing to pay (WTP) for healthcare, but few studies have quantified the actual amounts they can afford. Moreover, the determinants identified often reflect relative proportions rather than concrete monetary values, limiting their applicability across different contexts [7, 8].

Global health expenditure rose to US$7.8 trillion in 2017 from US$7.6 trillion in 2016, with a significant portion allocated to medical care [9]. In 2006, the average cost of medical interventions in the US, Europe, and Asia ranged from US$132 to US$567. High medical costs restrict healthcare access, with only 52% of patients visiting hospitals annually, and only 21% attending more than three visits per year [10–13]. In low-income countries, out-of-pocket payments constitute the primary mode of healthcare financing, representing about 60% of total expenditure, compared to 20% in high-income nations [14, 15]. In Ethiopia, out-of-pocket expenses account for nearly 80% of healthcare costs [16]. Worldwide, WTP for medical care varies widely, from 38% to 93%, with average amounts ranging from US$8.5 to US$250 [17–19]. African countries generally exhibit lower WTP compared to Europe and Asia [20–22]. Most studies report that WTP often falls below the actual cost of services, and that socio-demographic factors, including age, gender, education, and socioeconomic status, significantly influence WTP [2, 7, 8, 23–25].

WTP can be assessed through various methods. Open-ended questions capture the total amount an individual is willing to pay, whereas closed-ended approaches, such as the Contingent Valuation Method (CVM) and Dichotomous Choice (DC) designs, are widely used to estimate WTP for a specific service or price point [2, 26, 27]. In Ethiopia, private medical care is provided at variable costs, often without standardized pricing [16, 19, 28–30]. Private healthcare is often preferred due to factors such as better quality, shorter waiting times, privacy, access to specialists, and personalized attention, but these advantages also increase service costs. However, existing data on WTP in the local context are limited and may not accurately reflect the financial capacity of residents, motivating the need for this study.

High medical costs in some facilities have been linked to treatment delays and even patient deaths before receiving care. This study aims to estimate the average amount Gondar city residents are willing to pay for private medical care and identify its main determinants. The findings will provide valuable information for policymakers and private healthcare providers to design equitable pricing strategies and sustainable, high-volume service models.

Materials and Methods

Study area and period

The study was conducted among residents of Gondar city from February to March 2022. Gondar is located approximately 738 km northwest of Addis Ababa, the capital of Ethiopia [31]. According to projections from the Central Statistics Agency (CSA), the city had a total population of 412,173 and 69,284 households in 2021, comprising 205,737 males and 222,436 females. Administratively, Gondar is divided into six sub-cities and 24 kebeles, which represent the smallest local governance units.

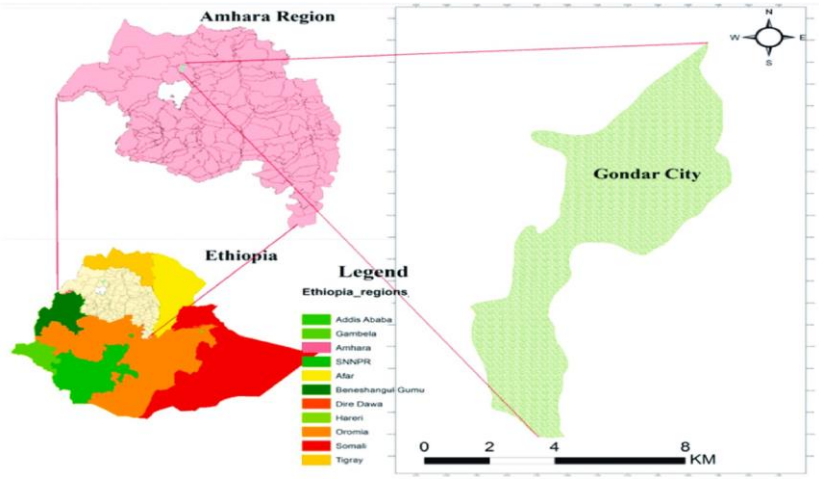

Figure 1

Study area

A map of Gondar city, the study area, was adapted from Tamiru AT, Rade BK *et al*., 2020 [32]. Gondar hosts eleven government-run health facilities and more than thirty private healthcare providers. The city's healthcare facilities deliver comprehensive clinical and community health services to eight administrative zones, covering a

catchment population of approximately 14 million people in Northwest Ethiopia. Based on service type, coverage, capacity, specialization, and accreditation, the available healthcare facilities are categorized as health centers, primary hospitals, general hospitals, specialized hospitals, medium clinics, higher clinics, and specialized clinics. Healthcare coverage in Gondar has improved significantly, rising from 30% in 2007 to 62% in 2018 [33]. Utilization of different healthcare services ranges from 32.5% to 75.3% [29, 34]. Despite these improvements, variations in healthcare access and utilization across the city's population segments remain significant, and the factors contributing to these disparities have not been extensively studied.

Research design and sampling

This study employed a community-based cross-sectional design among Gondar city residents from February to March 2022. Residents who had lived in Gondar for at least six months were eligible to participate, with all adults aged 18 years and above having an equal opportunity for selection.

The sample size was calculated using a single population mean formula [35], assuming a 95% confidence level. The standard deviation (σ) of willingness to pay (WTP) was taken from a previous Ethiopian study [7] (US$9.4), with a 5% margin of error applied to the mean WTP (US$18.61), resulting in a margin of 0.93 USD (18.61 × 0.05). The sample size calculation was performed as follows:

$$n = \frac{[Z\alpha/2.\sigma]^2}{d^2} = \frac{[1.96 \times 9.4]^2}{[0.93]^2} = 392.4 \quad (1)$$

The final sample size, accounting for a 10% non-response rate, was determined to be 432 participants. A two-stage sampling technique was employed to select the study subjects. To represent the city, 25% of the total kebeles were considered sufficient, resulting in the random selection of six kebeles using a simple random sampling method. Within the selected kebeles, there were 20,441 households, each assumed to contain at least one adult and household head. Proportional allocation was applied to determine the number of households to be sampled from each kebele. Within the selected households, the respondent was chosen using a systematic random sampling method with a sampling interval of 47. If a household contained more than one adult, one adult was randomly selected as the interviewee.

Data collection tool, type, and procedures

Primary data were collected using an interviewer-administered structured questionnaire designed to capture all relevant information. Data collection methods included face-to-face interviews, focus group discussions, and key informant interviews. The questionnaire was adapted from previously published studies [7, 36], initially prepared in English, and then translated into Amharic. Four trained data collectors conducted interviews with all eligible participants.

The willingness to pay (WTP) was assessed using a bidding format. Initially, participants were asked about their interest in seeking medical care at a private facility. Those who expressed interest were asked if they would pay the first target price of 1500 ETB. This initial bid was derived from prior Ethiopian studies [7], which reported a mean medical care cost of 1850 ETB six years earlier. Adjusting for a 5% discount rate, the expected cost range was estimated at 1500–2405 ETB. Directors of two private health facilities confirmed that the average cost of services ranged between 1500 and 2500 ETB.

If a participant accepted the initial bid of 1500 ETB, the amount was raised to 2000 ETB, and then to 2500 ETB if accepted again, at which point the participant was asked to indicate their maximum WTP. Conversely, if the participant rejected 1500 ETB, the bid was lowered to 1000 ETB, and if accepted, the maximum WTP was recorded. If 1000 ETB was rejected, a final bid of 500 ETB was offered, with the participant asked about their maximum WTP.

The dependent variable, WTP, was measured using the contingent valuation method (CVM) with a bidding price elicitation technique. Data collectors were trained on participant approach, interview procedures, and questionnaire content. Prior to the main study, a pretest was conducted in Debre-Tabor town on 5% of the sample size to ensure clarity and comprehension of the questionnaire.

Methods of data processing and analysis

Completed questionnaires were reviewed to ensure all responses were complete and consistent. The verified data were then entered into Epi Info version 7 and subsequently exported to STATA version 14 for analysis. The average annual willingness to pay (WTP) for medical care was calculated using the following approach:

$$\text{AWTP} = \frac{\sum(\text{WTP1} + \text{WTP2} + \text{WTP3} \ldots + \text{WTP414})}{414} \quad (2)$$

Note: The currency exchange rate in March 2022 was 1 USD = 50.77 ETB. Descriptive data were summarized and illustrated using summary statistics, frequency tables, and figures. To identify factors associated with willingness to pay (WTP), both bivariable and multivariable Tobit regression analyses were conducted. Model assumptions, including normality and homoscedasticity of residuals, were checked using the Breusch-Pagan test for heteroskedasticity ($X^2 = 1.92$, $p = 0.14$) and multicollinearity was assessed via the variance inflation factor (VIF = 1.45). Correlation contingency was used for categorical variables. Model fit was evaluated with a pseudo-R^2 of 0.38. Associations were reported using regression coefficients (β), 95% confidence intervals, and a p-value threshold of <0.05.

Model specification

A Tobit regression model was chosen to handle continuous outcome variables with censoring. The model can be represented as $y = X\beta + \varepsilon$, assuming normally distributed errors $\varepsilon \sim N(0, \sigma^2 I)$. Depending on the analysis, the Tobit outcome may be censored or uncensored. The double open-ended dichotomous choice bidding technique used in the survey is appropriate for this model.

Ethical considerations: Ethical approval was obtained from the University of Gondar Ethical Review Board (approval number VP/RTT/05/749/2022). Local administrative officials in the selected kebeles were informed via official letters. Participants were fully briefed on the study objectives, and informed consent was obtained prior to participation. Participants were free to withdraw at any time, and anonymity was ensured to maintain confidentiality.

Results and Discussion

Sociodemographic and economic characteristics

A total of 414 individuals participated, yielding a 95.8% response rate. The mean age was 36.5 years (SD = 11.89), with 54% aged ≤35 years and the majority between 29–35 years. Males constituted 53.1% (n = 220). Most participants (84.6%, n = 351) had formal education, with 36.8% completing college or university. A majority were married (61.6%, n = 255), while the rest were single, widowed, or divorced. Regarding occupation, 36% were government employees, followed by students (15.5%) and housewives. Approximately 72% of households had fewer than five members, and 75.6% of participants were actively employed, with government employees comprising 36.2%, followed by merchants **(Table 1).**

Table 1. Socio-demographic and economic characteristics of participants and their determinants for willingness to pay for medical care in Gondar city, Northwest Ethiopia, 2022 (n = 414).

Variable	Category	Frequency (n)	Percent (%)
Sex	Male	220	53.1
	Female	194	46.9
Age (years)	<28	111	26.8
	29–35	114	27.5
	36–42	90	21.8
	>42	99	23.9
Current marital status	Married	255	61.6
	Single	139	33.6
	Divorced	12	2.9
	Widowed	10	2.4
Educational status	Unable to read and write	33	8.0
	Able to read and write only	30	7.2
	Primary school	69	16.7

	Secondary school	122	29.5
	College/University	160	38.6
Occupation	Government employee	150	36.2
	Student	64	15.5
	Housewife	63	15.2
	Merchant	50	12.1
	Daily laborer	28	6.8
	Farmer	22	5.3
	Retired	9	2.2
	Others*	28	6.8
Current working status	Currently working	313	75.6
	Retired/Unemployed	101	24.4
Family size	≤4 members	298	72.0
	>4 members	116	28.0
Wealth index	Poor (lowest quantile)	136	32.9
	Medium (middle quantile)	137	33.1
	Rich (highest quantile)	141	34.0

Others*- religious leaders, carpenters.

Participants' health-related characteristics

Among the study participants, 326 individuals (78.7%) reported being aware of medical care (MC). However, nearly half (53.4%) demonstrated poor knowledge regarding MC, highlighting a notable gap of 25.3% between awareness and actual understanding. Most participants (77.8%) did not have any known medical condition or illness. About half (51.2%) reported their current health status as good. More than half (56.5%, n = 234) participated in community-based health insurance programs. Around 55% of participants had never utilized medical care services or visited a private health care facility (PHCF). Additionally, approximately 60% of respondents lived within 7 km of a PHCF **(Table 2).**

Table 2. Health-related characteristics of study participants and determinants of willingness to pay for medical care in Gondar city, Northwest Ethiopia, 2022 (n = 414).

Variable	Category	Frequency (n)	Percent (%)
Awareness of medical circumcision	Yes	326	78.7
	No	88	21.3
Knowledge about medical circumcision	Good	193	46.6
	Poor	221	53.4
History of known chronic medical illness	Yes	92	22.2
	No	322	77.8
Self-reported current health status	Good	212	51.2
	Medium	122	29.5
	Poor	62	15.0
	Severe	18	4.3
Previous visit for medical circumcision	Yes	184	44.4
	No	230	55.6
Family or friend history of medical circumcision	Yes	230	55.6
	No	184	44.4
Number of previous private health facility visits (among those with prior MC, n = 184)	<3 visits	100	54.3
	≥3 visits	84	45.7
Distance to nearest private health facility	<7 km	246	59.4
	≥7 km	168	40.6
Health insurance coverage	Yes	180	43.5
	No	234	56.5

Participants' willingness to pay for medical care

Slightly over half of the participants, 53.62% (n = 222; 95% CI: 48.68–58.50%), expressed willingness to pay for medical care (MC). The primary reasons cited for their willingness included shorter waiting times, higher quality of service, and cleaner facilities at private health care facilities (PHCF) **(Figure 1)**. Across all participants, the average annual willingness to pay for MC at PHCFs was 24.17 USD (95% CI: 21.14–28.40), equivalent to 1258 ETB. When considering specific MC services, 72.2% of participants were willing to pay for registration fees, followed by payment for medicines and drugs (68.2%). Nursing care and rehabilitative services were the least preferred services participants were willing to pay for **(Figure 2).**

Figure 1. Participants reason for WTP for MC in private health facilities among Gondar city residents, Northwest Ethiopia, 2022 (n = 222).

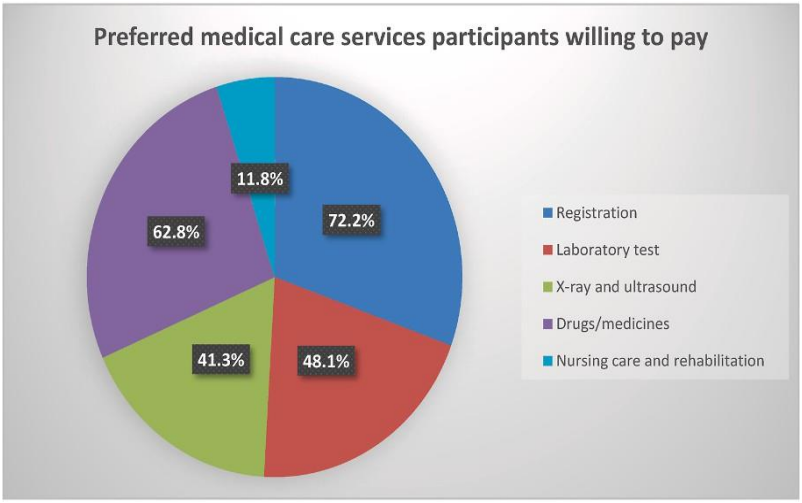

Figure 2. Participants MC services preference to pay in private health facilities among Gondar city residents, Northwest Ethiopia, 2022 (n = 222).

Group mean of willingness to pay per year for medical care

The mean annual willingness to pay (WTP) for medical care (MC) across different socio-demographic and economic groups was calculated, revealing some variations. Males had a mean WTP of 28.52 USD, which was 8 USD lower than that of females. Across age groups, differences in mean WTP were minimal, with the largest gap being 5.1 USD (22.4 USD vs. 27.5 USD). Married participants showed a higher average WTP (26.77 USD) compared to other marital status categories. Furthermore, participants who were currently employed had a higher mean WTP (28.70 USD) than those not working **(Table 3).**

Table 3. Mean WTP per year for MC in PHCF, Northwest Ethiopia,2022 (n = 414).

Variable	Category	n	Mean WTP (95% CI)
Sex	Male	220	28.52 (24.61–32.43)
	Female	194	20.53 (17.27–23.78)
Age (years)	<28	111	24.52 (21.04–28.01)
	29–35	114	22.49 (19.54–25.44)
	36–42	90	24.97 (20.86–29.07)
	>42	99	27.50 (23.43–31.57)
Current marital status	Married	255	26.77 (22.84–30.69)
	Single	139	22.99 (19.80–26.18)
	Divorced	12	14.77 (11.75–17.78)
	Widowed	10	10.99 (9.43–12.56)
Occupation	Government employee	150	21.85 (18.08–25.62)
	Student	64	39.61 (33.55–45.68)
	Housewife	63	14.38 (12.04–16.71)
	Merchant	50	28.92 (25.65–32.20)
	Daily worker	28	2.18 (1.76–2.60)
	Farmer	22	22.06 (19.54–24.57)
	Retired	9	4.92 (3.75–6.09)
	Others*	28	52.89 (46.77–59.02)
Current working status	Currently working	313	28.70 (24.07–33.34)
	Retired/Unemployed	101	23.51 (20.26–26.75)
Family size	≤4 members	298	21.38 (18.30–24.46)
	>4 members	116	33.48 (28.80–38.16)
Awareness of medical circumcision	Yes	326	26.63 (22.86–30.41)
	No	88	17.88 (14.89–20.86)
Knowledge of medical circumcision	Good	193	15.95 (13.16–18.73)
	Poor	221	34.87 (30.66–39.08)
History of chronic medical illness	Yes	92	24.37 (20.34–28.40)
	No	322	25.27 (22.19–28.34)
Self-rated health status	Good	212	24.70 (20.55–28.86)
	Medium	122	22.25 (19.20–25.30)
	Poor	62	32.07 (28.97–35.16)
	Severe	18	17.50 (15.67–19.34)
Previous medical circumcision visit	Yes	184	24.37 (20.34–28.40)
	No	230	25.27 (22.19–28.34)
Family/friend history of MC	Yes	230	31.33 (27.32–35.34)
	No	184	16.57 (13.64–19.49)
Number of prior private facility visits (n=184)	<3 visits	100	24.40 (21.59–27.21)
	≥3 visits	84	26.30 (22.92–29.69)
Distance to private health facility	<7 km	246	23.40 (20.13–26.68)
	≥7 km	168	26.77 (22.67–30.88)
Health insurance coverage	Yes	180	24.50 (21.11–27.88)
	No	234	25.12 (21.18–29.07)

Factors influencing willingness to pay for medical care in PHCF and their effects

Marital status was significantly associated with participants' willingness to pay (WTP) for medical care. Married individuals were prepared to pay 14.49 USD more than those who were unmarried, after adjusting for other factors (β = 14.49, 95% CI: 0.49, 28.49). The marginal effect indicated that switching from unmarried to married status could increase WTP by 6.84 USD relative to the average (dy/dx = 6.84, 95% CI: –1.27, 14.97).

Employment status also played a key role. Participants who were currently working were willing to pay 19.66 USD more than those who were unemployed or retired (β = 19.66, 95% CI: 4.83, 34.49), with a marginal effect showing an 11.24 USD increase over the mean WTP (dy/dx = 11.24, 95% CI: 2.47, 20.01).

Having a family or friend history of medical care further increased WTP. Individuals with such a history were willing to pay 25.74 USD more than those without it (β = 25.74, 95% CI: 13.36, 38.12). The corresponding marginal effect suggested an increase of 12.34 USD from the mean (dy/dx = 12.34, 95% CI: 5.12, 19.55).

Knowledge of medical care was another important determinant. Participants with good knowledge were willing to pay 36.16 USD more than those with limited understanding (β = 36.16, 95% CI: 22.48, 49.83), and the marginal effect showed a 19.93 USD increase from the average WTP (dy/dx = 19.93, 95% CI: 12.04, 27.81). Similarly, individuals with a personal history of medical illness offered 16.64 USD more than those without previous illness (β = 16.64, 95% CI: 0.49, 31.80), corresponding to a marginal effect of 4.54 USD (dy/dx = 4.54, 95% CI: –4.80, 13.89).

Distance from the health facility slightly increased WTP. Each additional kilometer was associated with an increase of 1.98 USD (β = 1.98, 95% CI: 0.37, 3.60), and the marginal effect suggested an increase of 0.94 USD from the mean (dy/dx = 0.94, 95% CI: –0.02, 1.90).

Finally, participants with higher wealth status were willing to pay substantially more. Those with a high wealth index were ready to pay 29.51 USD above the amount offered by participants with a low wealth index (β = 29.51, 95% CI: 14.38, 44.63), with a marginal effect indicating an increase of 17.61 USD over the mean WTP (dy/dx = 17.61, 95% CI: 8.76, 26.45) **(Table 4).**

Table 4. Maximum likelihood of tobit econometric analysis for determinants of WTP for MC among Gondar city residents, West Ethiopia, 2022 (n = 414) 192 participants were left censored, D-Dummy variable; N-numeric variable; R-reference category; *significant with p-value 0.05 to 0.01, ** p-value 0.01 to 0.001, ***p-value <0.001.

Variable	Type*	Adjusted β	Std. Error	t-value	p-value	95% CI (β)	Marginal effect† Dy/dx (95% CI)	Significance
Age (years)	N	0.05	0.28	0.18	0.858	–0.51, 0.61	0.09 (–0.24, 0.42)	
Male (Ref: Female)	D	6.81	5.96	1.14	0.253	–4.90, 18.53	2.66 (–4.18, 9.51)	
Currently married (Ref: Not married)	D	14.49	7.12	2.03	0.043	0.49, 28.49	6.84 (–1.27, 14.97)	*
Formal education (Ref: No formal education)	D	15.50	9.93	1.56	0.119	–4.02, 35.04	8.60 (–2.31, 19.51)	
Currently working (Ref: Retired/unemployed)	D	19.66	7.54	2.61	0.009	4.83, 34.49	11.24 (2.47, 20.01)	**
Family size (members)	N	4.72	1.88	2.51	0.013	1.62, 8.42	3.14 (0.97, 5.30)	*
Family/friend history of MC (Ref: No)	D	25.74	6.29	4.09	<0.001	13.36, 38.12	12.34 (5.12, 19.55)	***
Good knowledge of MC (Ref: Poor)	D	36.16	6.95	5.20	<0.001	22.48, 49.83	19.93 (12.04, 27.81)	***
Awareness of MC (Ref: No)	D	10.10	8.90	1.13	0.257	–7.40, 27.61	7.40 (–2.52, 17.33)	
Previous MC visit (Ref: No)	D	0.10	10.14	0.01	0.992	–19.83, 20.04	–3.74 (–15.68, 8.20)	
Number of healthcare facility visits	N	–1.40	2.86	–0.49	0.624	–7.04, 4.23	–1.01 (–4.43, 2.39)	
Chronic illness (Ref: No)	D	16.64	7.70	2.16	0.031	1.49, 31.80	4.54 (–4.80, 13.89)	*
Self-rated health: Medium/Poor/Severe (Ref: Good)	D	7.03	7.14	0.98	0.326	–7.02, 21.08	0.01 (–8.65, 8.66)	
Wealth index – Medium (Ref: Poor)	D	11.47	7.85	1.46	0.145	–3.96, 26.92	9.37 (0.58, 18.17)	
Wealth index – Rich (Ref: Poor)	D	29.51	7.69	3.84	<0.001	14.38, 44.63	17.61 (8.76, 26.45)	***

Has health insurance (Ref: No)	D	2.27	6.27	0.36	0.718	–10.07, 14.61	3.09 (–4.08, 10.26)	
Distance to facility (km)	N	1.98	0.82	2.42	0.016	0.37, 3.60	0.94 (–0.02, 1.90)	*
Hospital (Ref: Clinic)	D	10.76	6.26	1.72	0.087	–1.56, 23.08	2.42 (–4.72, 9.57)	(†)
Constant		–114.75	18.51	–6.20	<0.001	–151.14, –78.36	–	
/σ (sigma)		51.83	2.65			46.61, 57.06		

This study aimed to assess the willingness to pay (WTP) for medical care (MC) and the factors influencing it, providing insights for designing cost-recovery strategies that ensure sustainable and high-volume MC in private health care facilities (PHCF). Over half of the participants (53.6%) expressed a willingness to pay, yet the average amount they were willing to pay—24.17 USD per year—remained below the actual cost of services in PHCF.

The proportion of participants willing to pay aligns closely with previous studies conducted in Debre Markos, Ethiopia (53.1%) [30], Bugna district, Northwest Ethiopia (54.2%) [19], Gemmachis district, Oromia (49.5%) [17], and Sierra Leone (51.9%) [37], suggesting limited recent variation in WTP across similar settings. Conversely, lower WTP rates were reported in Nepal (47.6%) [38], Ghana [21], Burundi, and Guinea-Bissau [22], which may reflect differences in sample sizes or non-random sampling methods. Meanwhile, higher WTP percentages were observed in Hong Kong (78.3%) [39], China (91%) [40], Malaysia (75%) [41], and Wolaita Sodo, Ethiopia (61.3%) [23]. These discrepancies can be attributed to differences in study populations, with some including patients with chronic conditions, higher hypothetical target prices, or institutional-based designs.

The mean WTP of 24.17 USD (95% CI: 21.14, 28.40) was higher than figures reported in community-based studies from India (6.5 USD), Nepal (7 USD), Sierra Leone (8.5 USD), and Northwest Ethiopia (9.52 USD). This variation may reflect the impact of inflation, changes in the cost of medical supplies, and differences in study period or sampling techniques. On the other hand, this WTP was lower than estimates reported in Hong Kong (68.38 USD) [39] and China (128 USD) [42], where advanced diagnostic imaging, hospital admission costs, and home care services were included. Institutional-based studies in India [43] and Indonesia [44] similarly reported higher WTP values, likely due to differences in payment schemes and patient populations.

Overall, the average WTP aligns with government-subsidized prices in general and tertiary hospitals but falls short of current PHCF costs. Among participants unwilling to pay, primary reasons included non-affordability (71.9%), high expense (54.7%), perceived inadequate care (26.6%), and existing disease conditions (14.1%).

The findings highlight that while MC is available through both public and private channels via health insurance and out-of-pocket payments, rising costs in PHCF may limit access and threaten long-term financial sustainability for both providers and patients. To improve service coverage and ensure affordability, inclusive cost-recovery models and health promotion initiatives are essential. Ethiopia's current health financing strategy incorporates fee waiver systems, yet these mechanisms are not yet widely applied to private facilities.

Regarding individual determinants, participants who were actively working were willing to pay 19.66 USD more than retired or unemployed participants, reflecting higher income and financial capacity. This is consistent with studies from rural Taiwan [2] and Ethiopia [7], although other research has found employment status to have no effect [45, 46]. Married participants exhibited a WTP 14.49 USD higher than those unmarried, suggesting that spousal financial support may positively influence health-seeking behavior, a finding corroborated by studies in Malaysia and China [8, 40].

A family or friend history of MC increased WTP by 25.74 USD, likely due to greater awareness of health care benefits and understanding of potential complications from delayed treatment [47]. Knowledge about MC also played a significant role: participants with good knowledge were willing to pay 36.16 USD more than those with limited understanding, consistent with evidence that informed individuals are more likely to adopt and invest in health services [48].

while the average WTP for MC among Gondar city residents is lower than the actual cost in PHCF, it provides important guidance for designing equitable pricing and cost-recovery strategies. Efforts to increase public knowledge, target financially vulnerable groups, and incorporate family or community influence may enhance willingness and ability to pay, ultimately supporting sustainable health care provision in private facilities.

Participants with a higher wealth index ("rich") were willing to pay 29.51 USD more for medical care (MC) in private health care facilities (PHCF) than those with a lower wealth index ("poor"), consistent with findings from Malaysia [41], Burundi [21], Ghana [22], and Ethiopia [7]. Wealthier individuals are more likely to seek better quality services and can afford higher costs, whereas limited financial resources constrain access to private care [49].

Those with a history of medical illness were willing to pay 16.64 USD more than participants without prior illness, supporting evidence from other studies [16, 26, 28, 45, 46]. Frequent interactions with health facilities improve awareness and knowledge of medical care, positively influencing willingness to pay (WTP) [42, 50].

The study also found that WTP increased by 1.98 USD for every additional kilometer from a health facility, likely reflecting the added economic burden of travel, which encourages acceptance of available payment options to access services [45, 51].

Factors such as age, sex, education, family size, previous medical examinations, frequency of facility visits, self-reported health, awareness, type of facility, and health insurance were not significantly associated with WTP, reflecting mixed results reported in prior studies [16, 26, 28, 45, 46].

Limitations of this study include a relatively small and homogeneous sample, which may reduce generalizability. Strengths include the use of a bidding elicitation approach with a well-described scenario and recruitment across multiple kebeles. Nevertheless, hypothetical bias may have slightly overestimated WTP. The study did not account for tailored payment packages or explore reasons for unwillingness to pay qualitatively. Future research should address these aspects for a more comprehensive understanding of WTP in private health facilities.

Conclusion

nearly half of participants were willing to pay for MC, but the average WTP was below the actual cost of services in PHCF. Determinants of WTP included marital status, employment status, family/friend history of MC, knowledge about MC, history of chronic illness, wealth index, and distance from the health care facility. Key motivators for WTP were better service quality, shorter waiting times, direct physician access, and confidentiality, while barriers included non-affordability, high costs, inadequate care, and illness.

Policy implications include developing sustainable private health care systems that maintain service provision through high-volume coverage, set affordable pricing, and implement multi-tiered interventions targeting vulnerable populations, such as the elderly, less educated, severely ill, or poor. Further qualitative research is recommended to explore reasons for unwillingness to pay, and future studies should consider tailoring WTP assessments and service packages to participants' ability to pay.

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