

Original Article

Assessing the Health System Responsiveness among Outpatients in Boricha District, Ethiopia

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Abstract

Background: Health system responsiveness (HSR) is a crucial indicator of health system performance. However, previous studies have not adequately examined factors such as type of patients, physical disability, type of illness, and community-based health insurance membership. So, the current study considered these factors. This study aims to assess health system responsiveness and its associated factors among outpatients in primary healthcare settings in Boricha District, Ethiopia.

Methods: An institution-based cross-sectional quantitative study was conducted on 368 participants by using a systematic random sampling technique from April 1 to 30, 2024. Data were collected by using tools of Tanzanian similar study through structured and pretested questionnaires administered by interviewers. Multivariable binary logistic regression analysis was used to identify factors associated with overall responsiveness. Adjusted odds ratios with their corresponding 95% confidence intervals were used to determine factors associated with responsiveness, with a significance level of $p < .05$.

Results: The overall responsiveness was 57.7%, with confidentiality and attention rated highest and lowest, respectively. Males were 2.5 times more likely to report good HSR than females (AOR = 2.5, 95% CI: 1.1 to 5). Outpatients attending hospital services had 2.5 times higher odds of acceptable responsiveness than those in health centers (AOR = 2.4, 95% CI: 1.1 to 5.1). Patients with chronic illnesses (AOR = 4.0, 95% CI: 2.1 to 8.5) and those who had prior visits (AOR = 3.8, 95% CI: 1.6 to 9.4) reported higher responsiveness. Patients with perceived good health status (AOR = 5.0, 95% CI: 1.7 to 11.1). Unexpectedly, non-members of community-based health insurance (AOR = 7.0, 95% CI: 2.6 to 19.4) and those treated by traditional healers (AOR = 3.0, 95% CI: 1.3 to 6.7) had higher responsiveness than their counterparts.

Conclusion: Health system responsiveness in Boricha District was 57.7% and significantly associated with gender, facility type, and subjective health status, type of patients, illness category, traditional medicine use, and community-based health insurance membership. Strengthening responsiveness, particularly for females, new patients, and community-based health insurance members, should be a

priority in improving primary healthcare services.

Keywords: Health system, primary healthcare, outpatients, health system's performance, Ethiopia.

Introduction

Health system responsiveness (HSR) refers to how well healthcare services meet the legitimate expectations of individuals, beyond the clinical aspects of care. It includes non-health components such as dignity, confidentiality, autonomy, attention, choice of care provider, amenities, access to social support, and communication, which influence patients' experiences and trust in the system. (1,2).

Health system responsiveness is a pivotal component in assessing the quality of healthcare delivery. Studies have consistently demonstrated a positive correlation between improvements in HSR and enhanced health outcomes such as reduced mortality rates, improved quality of life, decreased disease transmission, and better overall well-being (3–8). Evidence suggests that improved HSR enhances patient satisfaction, promotes timely healthcare utilization, increases treatment adherence, and contributes to achieving universal health coverage (3,4). In contrast, insufficient responsiveness from the healthcare system can lead to people losing trust in care, which can worsen health outcomes, decrease the use of services, and widen the gap in health outcomes (5–7).

Health system responsiveness varies significantly across countries due to economic status, socio-demographic factors, health expenditure, and patients' clinical presentations (9–12). Even in countries with comparable economic conditions, education levels, and health spending, substantial disparities in HSR. (1,6,13).

Studies from Iran, South Africa, and Tanzania highlight common challenges, including poor

autonomy, choice, and access to care, despite variations in overall responsiveness (14–20).

A study from South Africa indicated that the overall HSR was 67%, with the highest responsiveness observed in the ability to choose their healthcare provider (18). A similar study from Tanzania indicated that respect for privacy, dignity, and timely attention received the greatest scores, while basic amenities and access to care received the lowest (19). Another study from Tanzania revealed that uninsured elderly individuals reported better responsiveness than the insured elderly in both outpatient and inpatient care (20).

Studies on HSR in Ethiopia report varying responsiveness levels, ranging from 45.8% to 66.2% (12, 21, 22). Key factors influencing HSR include patient satisfaction, access to private clinics, financial fairness, transport payment, and the use of traditional medicine (21–23). However, these studies focused on specific patient groups, such as those seeking HIV/AIDS or maternal care services, and did not consider factors such as physical disability, community-based health insurance (CBHI) membership, and patient type (new vs. repeat visitors). Despite growing research on HSR in Ethiopia, gaps remain in understanding its determinants among all outpatient department (OPD) patients. This study aims to fill these gaps by examining HSR and its associated factors—including physical disability, CBHI membership, patient type, and illness duration—in primary healthcare facilities in Boricha District; these are important factors due to the type of patients (new vs. repeat): These factors significantly influence patients' information needs and the continuity of their care. Physical disability: Affects accessibility

and equity. Community-based health insurance membership: This membership significantly impacts both financial protection and the perception of fairness. Duration of illness determines the need for ongoing support and continuity, types of health facility dictates available resources and service delivery, uses of traditional medicine reflects cultural preferences, and impacts patient-provider communication. The findings will provide valuable insights for policymakers to enhance healthcare quality and responsiveness in the region

Methods and materials

Study Area

This study was conducted in Boricha District, Sidama National Regional State, Ethiopia. The district has one primary hospital and three health centers serving a population of 122,495. In 2023, approximately 17,600 outpatients visited these facilities.

Study Design and Period

An institution-based cross-sectional study was conducted from April 1 to 30, 2024

Population

All outpatients who received healthcare services in primary healthcare facilities in the district constitute the source population of this study. Patients who were selected to participate in the study were considered the study population.

Eligibility criteria

Patients with hearing impairments were excluded unless they had a caregiver who could facilitate communication; aggressive psychiatric patients and individuals less than 18 years of age were not included in the study.

Sample Size Determination

We used OpenEpi version 3 (24) and a single population proportion formula to determine the sample size for recruiting the participants. Based on a prior study from the Asagirt District, Northern Ethiopia (12), we anticipated a 66.2% HSR among outpatients. With a desired 95% confidence level and a 5% margin of error, the initial calculated sample size was 344. To account for potential nonresponses, we adjusted the sample size to 383 by dividing the initial estimate by an expected response rate of 90%.

$$n = \frac{z^2(1-\alpha/2)p(1-P)}{d^2} = \frac{(1.96)^2 * 0.662 * 0.338}{(0.05)^2}$$

Where n = the required sample size, z = critical value for standard normal distribution (z -statistic) at 95% confidence level ($z = 1.96$), 5% margin of error, p = expected proportion of HSR.

$n=344$, adjusted the sample size to 383 by dividing the initial estimate by an expected response rate of 90%, the final total sample size was 383.

Sampling Procedures

The study participants were selected from all public health facilities within the district, comprising one primary hospital and three health centers. A systematic random sampling technique was employed to select participants from these facilities because of primarily due to the absence of a complete and readily accessible sampling frame that would have allowed for simple random sampling.

The calculated sample size was proportionally allocated to each health facility (HF) based on its OPD client volume (Figure 1). To determine the sampling interval (K), the anticipated number of OPD visits during the data collection period (April 2024) was divided by the calculated

sample size. This estimated number was derived from the previous year's aggregate OPD visit figures for the same month of the health facilities, which totaled 1480. The resulting K value of 3.86 was rounded up to 4, and this consistent interval was applied across all health facilities. The second case was selected as the

initial case through a lottery method, and subsequent cases were chosen for every fourth visitor starting from the second patient in each facility. The data were collected systematically after the patients received the services on their way to the home (exit interviews).

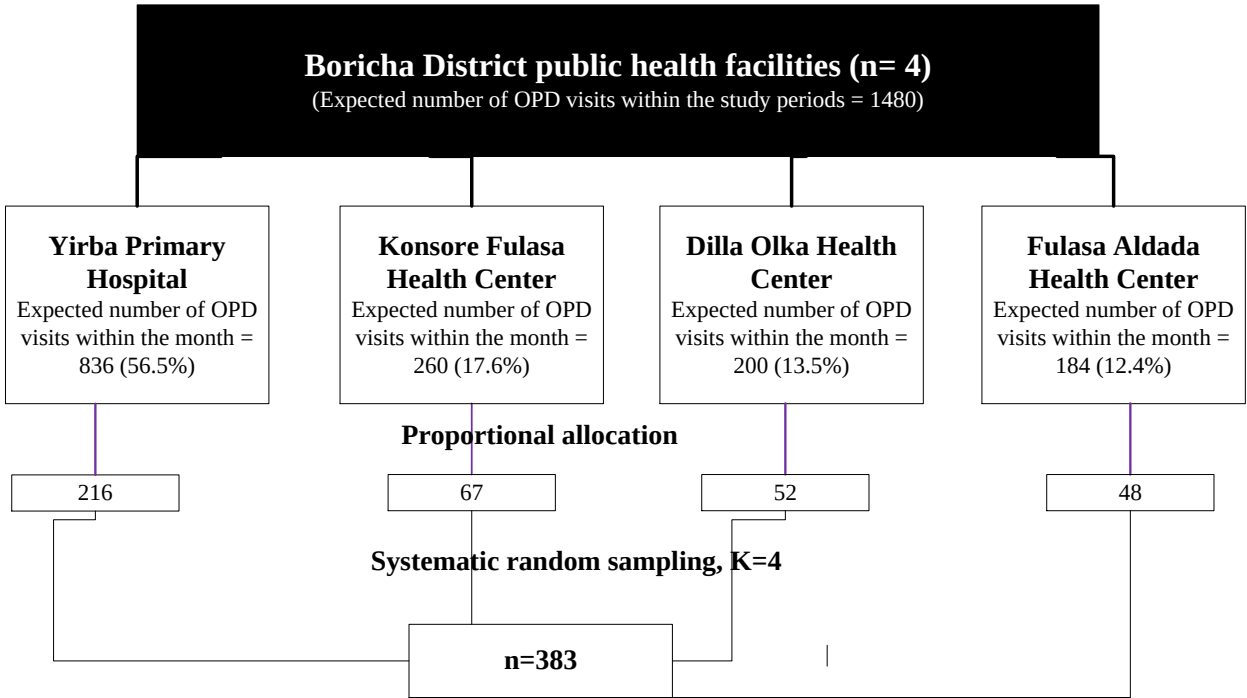


Figure 1: Schematic presentation of the sampling procedure used to select the study participants from Boricha district primary healthcare facilities in 2024.

Variables

Dependent variables:

Health system responsiveness

Independent variables:

Sociodemographic characteristics: Age, gender, marital status, education level, occupation, and place of residence

Health system factors: time to reach healthcare facility, type of healthcare facility

Other factors include payment method, frequency of healthcare visits, use of traditional medicine, physical disability; healthcare costs, type of illness based on duration, and self-rated health status

Data collection instrument and variables

The outcome variable for this study was the HSR of OPD services in the public health centers and primary hospitals in the district. To gather the data, a structured questionnaire with 37 Likert-scale items was used. The questionnaire was based on the Health Systems Responsiveness questionnaires used in a study conducted in Tanzania (19). The items in the questionnaire

were divided into seven domains that evaluate the different aspects of HSR—prompt attention, respect for dignity, communication, quality of basic amenities, respect for confidentiality,

access to care, and autonomy. The domains contained 7, 3, 7, 11, 3, 4, and 2 items, respectively.

Table 1: Examples used to assess the performance for each domain of health system responsiveness.

Domains	items	Ranges of Likert scales for each item.	Likert scales	Possible maximum scores	Actual scores of all items	Percentages(actual scores/actual scores ÷ possible maximum scores)
Prompt attention	7	Very bad to very good	0 to 3	21	If 14	$\frac{14}{21} \times 100\% = 66.7\%$
Communication	7	Very bad to very good	0 to 3	21		
Dignity	3	Very bad to very good	0 to 3	9		$\frac{7}{9} \times 100\% = 77.8\%$
Autonomy	2	Very bad to very good	0 to 3	6		
Confidentiality	3	Very bad to very good	0 to 3	9		
Access to care	4	Waited more than 30 minutes to be served instantly	1 to 4	16		
Basic amenities	11	Strongly disagree to strongly agree	1 to 4	44		

Each item within the domains of prompt attention, respect for dignity, communication, confidentiality, and autonomy was rated using a Likert scale consisting of four options: very bad, bad, good, and very good, with scores ranging from 0 (very bad) to 3 (very good). In the domain of access to care and basic amenities, each item was rated on a Likert scale with four options: waited for more than 30 minutes, waited up to 30 minutes, waited for less than 30 minutes, and served instantly; and strongly disagree, disagree, agree, and strongly agree, which corresponded to scores of 1 to 4, respectively. The percentages for these domains were calculated in the same way as described above. The responses for each item in these

domains were recorded as numerical values, which were then converted to percentages by summing up the overall scores for each respondent and dividing by the maximum achievable score. For example. If the respondent scores 14 for the prompt attention domain, which has 7 items and a maximum of 21 scores, his/her percentage score for the particular domain would be $\frac{14}{21} \times 100 = 66.7\%$ (Table 1). The minimum HSR score was calculated to be 15 out of a maximum score of 126 for all 37 questions. The overall HSR performance for each respondent was calculated by dividing the total scores by the maximum possible value (126) and then multiplying by 100%. The average of the overall

HSR performance for each respondent represented the overall HSR performance of the public health facilities in the Boricha District. Finally, the overall HSR performance was classified as "acceptable" or "unacceptable"

using the demarcation threshold formula (Table 2). The threshold of 60.1% was determined using the demarcation threshold formula, a method commonly used in responsiveness studies. This ensures comparability with previous findings.

$$((\text{Total highest score}-\text{Total lowest score})/2)+\text{Total lowest score}$$

Table 2: HSR performance criteria to dichotomize into acceptable and unacceptable in primary healthcare in Boricha District, 2024

HSR Domains	Number of items	Min-max scores	Range of unacceptable HSR	Range of acceptable HSR
Prompt attention	7	0-21	<45.2%	≥45.2%
Respect for dignity	3	0-9	< 50%	≥50%
Communication	7	0-21	<52.4%	≥52.4%
Confidentiality	3	0-9	<61.1%	≥61.1%
Autonomy	2	0-6	<50%	≥50%
Access to care	4	4-16	<62.5%	≥62.5%
Basic amenities	11	11-44	<64.8%	≥64.8%
Overall HSR	37	15-126	<60.1%	≥60.1%

Data Quality Control

A standardized WHO tool was used to assess healthcare service delivery (HSR). To ensure cultural and linguistic appropriateness, the questionnaires were translated into the local language (Sidaamu Afoo) and the official language (Amharic), followed by back-translation into English by an independent translator (APPENDIX). A pre-test was conducted on 5% of the final sample size (19 individuals) at a Leku hospital to assess the clarity and relevance of each questionnaire item. Based on pre-test results, minor modifications were made to improve clarity. Inter-rater reliability was assessed to ensure consistency in data collection. To enhance data quality, data collectors received two days of training about the issues of ensuring the accuracy of the data collected, the need to maintain confidentiality and privacy of information gathered, as well as the significance of cultural sensitivity and respect when interacting with respondents. To minimize bias, data collectors were not affiliated

with the facilities included in the study. Patient interviews were conducted as they exited the health facilities. To monitor data collection quality, the principal investigator made unannounced visits to the study sites. Before statistical analysis, a thorough data cleaning process was implemented to ensure data accuracy and consistency.

Data entry and Analysis

Data were analyzed using SPSS version 26. Descriptive statistics (percentages, means, standard deviations) were used to summarize HSR domains and overall HSR. Candidate variables for multivariable logistic regression were selected using a significance level of $p \leq .25$ in bivariate analysis. The final model identified factors associated with HSR using adjusted odds ratios (AOR) with 95% confidence intervals (CI), considering statistical significance at $p < .05$. The Hosmer-Lemeshow test assessed model fitness ($p > 0.05$), and multicollinearity

was checked using variance inflation factors (VIF < 10).

Results

Socio-Demographic Characteristics

Among the 383 sampled participants, 368 completed the study, yielding a 96.1% response rate. Males accounted for 58.2% (214/368). The majority (46.7%) were aged 36–55 years, followed by those aged 56–80 years (20.7%). Most participants were married (74.5%), and 87.6% (322/368) resided in rural areas. Regarding education, 38.3% had no formal education, while 24.7% had completed primary education (Table 3).

Table 3: Sociodemographic characteristics of the study participants in primary healthcare facilities in Boricha District, 2024

Variables and response categories	Categories	Frequency (%) (n=368)
Gender	Male	214 (58.2)
	Female	154 (41.8)
Age	18-35	120 (32.6)
	36-55	172 (46.7)
	56-80	76 (20.7)
Marital status	Married	275 (74.7)
	Single	57 (15.5)
	Others	36 (9.8)
Residence	Rural	322 (87.5)
	Urban	46 (12.5)
Educational status	No formal education	141(38.3)
	Primary education	91 (24.7)
	Secondary education	82 (22.3)
	Diploma and above	54 (14.7)
Family size	≤3	8 (2.2)
	4-6	198 (53.8)
	≥7	162 (44)

Health and health-facility-related characteristics

Among participants, 50.5% presented with acute illnesses (≤6 months duration), while 49.5% had chronic illnesses (>6 months). Only 4.5% reported having a physical disability. Most (77.7%) rated their health as good. Notably, 30.4% had sought care from traditional healers in the past year. Regarding healthcare access, 81.5% could reach a facility within one hour without a vehicle, while 16% required up to two hours. Approximately 90% of patients reported medical expenses ≤200 ETB. The study found that 26% of participants were new visitors. Nearly 70% (69.8%) were enrolled in community-based health insurance (CBHI). Health centers accounted for 44.6% (164/368) of patient visits. (Table 4).

HSR performance

The overall health system responsiveness (HSR) score among outpatients was 57.7% (95% CI: 56.1%–59.3%). Among the seven domains, confidentiality had the highest performance (81.0%), indicating a strong perception of privacy protection. While autonomy and clear communication were both rated at 57.9%. Respect for dignity followed at 55.6%, while basic amenities and access to care were rated at 54.0% and 53.1%, respectively. Prompt attention received the lowest score (47.8%), indicating delays in service provision (Table 5).

Factors affecting the overall HSR

Based on the bivariable binary logistic regression analysis of the overall HSR and the independent variables, gender, age, marital status, place of residence, educational level, type of healthcare facility, type of illness based on duration, disability, self-rated health status, CBHI membership, type of illness based on duration, use of traditional medicine, healthcare costs, and travel time to reach the healthcare facility were

Table 4: Health- and health facility-related characteristics of the study participants in primary healthcare facilities in Boricha District, 2024

Variables	Categories	Frequency (%) (n=368)
Type of illness based on duration	Acute	186 (50.5)
	Chronic	182 (49.5)
Physical disability	Yes	17 (4.6)
	No	351 (95.4)
Perceived health status	Good	286 (77.7)
	Bad	82 (22.3)
CBHI membership	Yes	257 (69.8)
	No	111 (30.2)
Type of patients	New visitors	96 (26.0)
	Repeat visitors	272 (73.9)
Traditional medicine use	Yes	112 (30.4))
	No	256 (69.6)
Medical expenses (ETB)	<200	331 (89.9)
	≥200	37 (10.1)
Time taken to reach the HF (hours)	1	300 (81.5)
	2	59 (16.0)
	3	9 (2.4)
Type of public HF visited	Health center	164 (44.6)
	Primary hospital	204 (55.4)

Table 5: The level of each domain and overall HSR among OPD patients at primary healthcare facilities in Boricha District, Sidama National Regional State, 2024 (n=368).

Responsiveness domain	Performance level %, (95% CI)	Standard deviation	Unacceptable, HSR, frequency (%)	Acceptable HSR, frequency (%)
Autonomy	57.9 (54.9 to 60.8)	28.8	124 (33.7)	244 (66.3)
Dignity	55.6 (52.9 to 58.7)	26.1	145 (39.4)	223 (60.6)
Communication	57.9 (55.9 to 60.0)	19.8	129 (35.1)	239 (64.9)
Amenities	54.0 (53.0 to 54.0)	9.4	331 (89.9)	92 (10.1)
Access to care	53.1 (51.7 to 54.5)	13.8	259 (70.4)	109 (29.6)
Confidentiality	81.0 (79.3 to 82.7)	16.8	10 (2.7)	358 (97.3)
Attention	47.8 (44.9 to 50.7)	27.9	133 (36.1)	235 (63.9)
Overall HSR	57.7 (56.1 to 59.3)	15.7	139 (37.8)	229 (62.2)

identified as candidates for binary logistic regression in multivariable analysis. In multivariable logistic regression, gender, healthcare facility type, perceived health status, CBHI membership, visit type (new vs. repeat), illness duration, and traditional medicine use were significantly associated with HSR. Males were 2.5 times more likely to report acceptable

HSR than females (AOR: 2.5, 95% CI: 1.1–5.0). Patients visiting the primary hospital had 2.5 times higher odds of acceptable HSR compared to those visiting health centers (AOR: 2.5, 95% CI: 1.1–5.0). Patients who rated their health as good had 5 times higher odds of reporting acceptable HSR (AOR: 5.0, 95% CI: 1.6–11.1). Unexpectedly, patients not enrolled in CBHI

reported 7 times higher odds of acceptable HSR than insured patients (AOR: 7.0, 95% CI: 2.6–19.4), which warrants further investigation. Repeat visitors were 3.8 times more likely to report acceptable HSR than new patients (AOR: 3.8, 95% CI: 1.6–9.4), suggesting a possible role of familiarity in patient satisfaction. Similarly,

patients with chronic illness were more likely to report acceptable responsiveness than those with acute illness (AOR: 4.2, 95% CI: 2.1–8.5). Interestingly, those who had used traditional medicine in the past year reported 3 times higher odds of acceptable HSR (AOR: 3.0, 95% CI: 1.3–6.7) (Table 6).

Table 6: Factors associated with the overall HSR among outpatients at Boricha District public health facilities, Sidama National Regional State, Ethiopia, 2024 (n=368).

Characteristics		Overall HSR		COR (95% CI)	AOR (95%CI)
		Unacceptable n (%)	Acceptable n (%)		
Gender	Male	52 (14.1)	162 (44.0)	1	1
	Female	98 (26.6)	56 (15.2)	0.2 [0.1, 0.3]	0.4 [0.2, 0.9]*
Age	18-35	27 (7.3)	93 (25.3)	2.5 [1.5, 4.3]	1.4 [0.5, 4.4]
	36-55	73 (19.8)	99 (26.9)	1	1
	56-80	50 (13.6)	26 (7.1)	0.4 [0.2, 0.7]	0.7 [0.3, 1.8]
Marital status	Single	15 (4.1)	42 (11.4)	1.7 [0.9, 3.1]	0.7 [0.2, 2.3]
	Married	102 (27.7)	173 (47.0)	1	1
	Others	33 (9.1)	3 (0.8)	0.05 [0.02, 0.2]	0.4 [0.09, 1.9]
Residence	Rural	141 (38.3)	181 (49.2)	1	1
	Urban	9 (2.4)	37 (10.1)	3.2 [1.5, 6.9]	1.1 [0.4, 3.4]
Educational status	No formal education	92 (25.0)	49 (13.3)	1	1
	Primary	29 (7.9)	62 (16.8)	4.0 [2.3, 7.0]	1.9 [0.8, 4.8]
	Secondary	21 (5.7)	61 (16.6)	5.5 [3.0, 10.0]	1.3 [0.4, 3.9]
	≥Diploma	8 (2.2)	46 (12.5)	10.8 [4.7, 24.7]	1.3 [0.3, 5.2]
Type of HF	Health center	81 (22.0)	83 (22.6)	1	1
	Primary hospital	69 (18.8)	135 (36.7)	2.0 [1.25, 3.3]	2.4 [1.1, 5.1]*
Type of illness	Acute	120 (32.6)	66 (17.9)	1	1
	Chronic	30 (8.2)	152 (41.3)	9.2 [5.6, 15.1]	4.2 [2.1, 8.5]**
Physical disability	Yes	12 (3.3)	5 (1.3)	0.3 [0.09, 0.8]	2.1 [0.3, 13.5]
	No	138 (37.5)	213 (57.9)	1	1
Perceived health status	Good	79 (21.5)	207 (56.2)	1	1
	Bad	71 (19.3)	11 (3.0)	0.06 [0.03, 0.1]	0.2 [0.09, 0.6]**
CBHI membership	Yes	137 (37.2)	120 (32.6)	1	1
	No	13 (3.5)	98 (26.6)	8.6 [4.6, 16.1]	7.0 [2.6, 19.4]**
Type of patients	New visitor	80 (21.7)	16 (4.3)	0.07 (0.04, 0.1)	0.3 [0.1, 0.6]**
	Repeat visitor	70 (19)	202 (54.9)	1	1
Time taken to reach the HF (hours)	1	112 (30.4)	188 (51.1)	1	1
	2	36 (10.0)	23 (6.2)	0.4 (0.2, 0.7)	0.9 [0.4, 2.4]
	3	2 (0.5)	7 (1.9)	2.0 (0.4, 10.2)	1 [0.1, 9.1]

*Significant at a p-value < 0.05 and ** significant at a p-value <0.001

Discussion

This study was carried out to determine the level of the overall and individual domains of HSR among outpatients in primary healthcare facilities at Boricha District, Sidama National Regional State, Ethiopia, and to identify associated factors. The findings revealed that 57.7% (95% CI: (56.1% to 59.3%)) of healthcare users perceived the health system to be responsive to their needs, while 42.3% of patients demanded improved responsiveness within the health system in their district.

The overall HSR (57.7%) in this study was lower than that reported in Iranian studies among diabetic patients (67%) and heart failure patients (84%). This discrepancy may be due to differences in healthcare settings, as prior studies were conducted in specialized care units where patients receive more structured care. Additionally, cultural differences in patient expectations and satisfaction might contribute to these variations. The relatively higher confidentiality score (81%) in our study aligns with findings from Tehran (15), possibly due to strong ethical regulations and privacy norms in both contexts (15, 16). However, the result of overall HSR in the current study is higher than that of the study conducted in Tehran among psychiatric patients (53%) (14).

The observed overall HSR in this study was significantly higher than the normalized HSR score of 52% reported for Ethiopia by the WHO African Region (4). This discrepancy may be attributed to the fact that the WHO data represents a national average, while the present study focuses on a specific district within Ethiopia.

The current point estimate of the overall HSR (57.7%) was higher than that reported in a previous study conducted in northern, Ethiopia (55.3%) (21). This discrepancy can likely be attributed to differences in the study populations. While the present study assessed HSR among all outpatients from primary healthcare facilities

within the district, the previous study focused solely on case-specific responsiveness among HIV-positive individuals. Furthermore, it's important to acknowledge that regional variations in cultural norms, beliefs, and expectations regarding healthcare services within Ethiopia may also contribute to these observed differences. Such factors can significantly influence healthcare-seeking behaviors.

The overall HSR performance in the current study was significantly lower than that reported by Asagirt District (magnitude: 66.2%) (12) and Wolaita Zones (magnitude: 68.3%) (22) of northern and southern Ethiopia, respectively. The discrepancy may be due to the differences in the source populations of the studies. Additionally, the healthcare system in the Wolaita Zone may employ an integrated care approach for managing HIV and other health conditions. This approach, which emphasizes coordination between healthcare providers, support services, and community resources, aims to address the holistic needs of HIV-positive patients. Such an integrated system could potentially lead to higher HSR by enhancing accessibility and patient engagement.

The present study demonstrated that HSR varies across domains. Respect for confidentiality emerged as the strongest area, followed by autonomy and communication, while basic amenities, access to care, and prompt attention exhibited relatively lower scores. Among the seven domains assessed, confidentiality consistently outperformed others, aligning with findings from studies conducted in Tanzania (19) and Ethiopia (12,21,22). This superior performance may be attributed to users' heightened expectations of privacy and the diligent safeguarding of personal information by healthcare professionals.

Our findings align with previous research conducted in Ethiopia (21), demonstrating a higher level of responsiveness among participants with a positive perceived health status.

Our study found that women reported lower HSR than men which was aligned with previous studies (20,25), which may be attributed to privacy concerns, gender norms, and limited access to female healthcare providers. Previous studies in Ethiopia have suggested that gender-based barriers, such as discomfort with male providers and longer wait times, contribute to lower responsiveness among female patients. Additionally, cultural and societal norms particularly in rural areas, may lead to a hesitancy among women especially, older individuals with lower educational levels, to assert their rights and voice their healthcare needs. Addressing gender disparities in HSR may require increasing female healthcare providers and implementing gender-sensitive training for staff. Further research is needed to explore whether improving the representation of female healthcare workers could enhance HSR for women.

Patients who sought care at primary hospitals were more likely to report higher HSR when compared to those who visited health centers. While both facilities are integral to primary healthcare, several factors contribute to the differences. Primary hospitals often possess more resources, including better-trained healthcare professionals and advanced equipment, enabling them to address complex health conditions. Furthermore, primary hospitals typically have larger staffing levels to accommodate higher patient volumes and a wider range of services. This can result in shorter wait times and more personalized care. These factors collectively contribute to the observed disparity in HSR between primary hospital and health center visitors. So, the district healthcare administrators should facilitate the coordination between hospitals and health centers.

Unexpectedly, CBHI members reported lower HSR than non-members. One possible explanation is that insured patients might have higher expectations regarding service quality and faster access, leading to greater dissatisfaction when these expectations are not met. Additionally, Delays in finalizing CBHI agreements by district administrators, despite

patients having paid their premiums, resulted in patients experiencing difficulties accessing services as insured members, contributing to a perception of poor responsiveness. This discrepancy between patient financial obligation and service provision underscores the need for immediate policy interventions. Future research should explore the reason behind the unexpected findings that CBHI members reported lower HSR than non-members to identify areas for improvements in health care service delivery to ensure patients.

Chronic patients reported higher HSR than those with acute illnesses. This may be due to established provider-patient relationships, where chronic patients receive ongoing care and become more familiar with healthcare processes. Similarly, repeat patients perceived better HSR than first-time visitors, possibly because they had prior experiences with the system and knew how to navigate services more efficiently. So, the direction aids and a reception team should be established for the first-time patients (unfamiliar patients).

Strengths and weaknesses

The minimal time lapse between service delivery and data collection, which occurred on the same day was the strength of the study. As it reduces the potential for recall bias, ensuring the reliability of the collected data. However, there might be external factors (such as patient emotions or waiting times) could still influence their immediate responses. Another drawback of this study was exclusively relied on patient's perspectives. It had not incorporated the viewpoints of healthcare providers; the study may have missed crucial factors that influence HSR.

Conclusion

This study found that the overall HSR among outpatients in Boricha district was 57.7%. Key

factors influencing HSR included gender, type of healthcare facility, perceived health status, CBHI membership, type of illness (acute vs. chronic), and type of patients (new patients vs. repeat patients). Strengthening responsiveness, particularly for females, new patients, and community-based health insurance members, should be a priority in improving primary healthcare services. Further, researchers should conduct further research to understand the unexpected negative association between CBHI membership and HSR. Identify specific barriers and develop targeted interventions to improve the experience of CBHI members.

Acknowledgement

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Ethical considerations

The study received ethical clearance from the Institutional Review Board (IRB) of the College of Medicine and Health Sciences, Hawassa University (Ref. No: IRB/144/16). The study objectives were communicated to the participants and informed verbal consent was obtained before the interviews. Participants were assured of their right to refuse participation at any time, without affecting the service they receive. Any data collected from individual patients was not shared for other purposes, and confidentiality was maintained.

Data availability statement

The data that support the findings of this study are available on request from the corresponding

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Conflicts of interest

The authors declared no conflicts of interest exist.

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