

January 2016

# Factors Influencing Care-Seeking Behavior Among Patients In Ethiopian Primary Health Care Units

Orit Abraham

*Yale University*, [orit.abraham@gmail.com](mailto:orit.abraham@gmail.com)

Follow this and additional works at: <http://elischolar.library.yale.edu/ysphtdl>

---

## Recommended Citation

Abraham, Orit, "Factors Influencing Care-Seeking Behavior Among Patients In Ethiopian Primary Health Care Units" (2016). *Public Health Theses*. 1001.

<http://elischolar.library.yale.edu/ysphtdl/1001>

This Open Access Thesis is brought to you for free and open access by the School of Public Health at EliScholar – A Digital Platform for Scholarly Publishing at Yale. It has been accepted for inclusion in Public Health Theses by an authorized administrator of EliScholar – A Digital Platform for Scholarly Publishing at Yale. For more information, please contact [elischolar@yale.edu](mailto:elischolar@yale.edu).

**Factors Influencing Care-Seeking Behavior among Patients in Ethiopian Primary  
Health Care Units**

Orit Abraham

Yale University School of Public Health

April 22, 2016

## **Abstract**

### *Background*

The utilization of primary health care in many countries in sub-Saharan Africa has been limited. The objective of this study was to evaluate the factors that influenced why patients sought care at health centers versus primary hospitals in the primary health care unit (PHCU) in three regions in Ethiopia. The study also examined whether these factors varied based on a patient's clinical or demographic characteristics and by whether they had sought prior care.

### *Methods and Findings*

We conducted a cross-sectional study using face-to-face interviews in the local language with 796 people (99% response rate) seeking outpatient care in three primary health care units. We used unadjusted chi-square tests to detect significant differences between the hospital and health center samples on factors that influenced care-seeking behavior. The frequency of the self-reported factors differed significantly by health facility. Among those at the health center, the top four self-reported factors were distance (47.4%), quality of services (23.3%), previous positive experience (20.1%), and comfort or familiarity (12.4%). Among those at the hospital, the top four self-reported factors were quality of services (31.6%), distance (16.0%), no improvement after first visit to a health facility (15.3%), and level of health providers (14.8%). Those who bypassed lower levels of health care cited quality of services, level of health providers, and previous positive experience as significant reasons for seeking care directly at the hospital.

### *Conclusion*

This study found that there are significant differences in the reasons why patients utilize health centers versus primary hospitals, which highlights the need for tailored reforms based on the community's perceived strengths and weaknesses of different primary care delivery sites.

## Table of Contents

<b>Introduction</b>	4
<b>Methods</b>	6
<i>Ethics Statement</i>	6
<i>Setting</i>	7
<b>Study Design and Sample</b>	7
<b>Data Collection</b>	8
<b>Data Analysis</b>	9
<b>Results</b>	10
<i>Self reported factors by health facility</i>	10
<i>Characteristics associated with self-reported factors in the hospital sample</i>	10
<i>Characteristics associated with self-reported factors in the health center sample</i>	12
<b>Discussion</b>	13
<b>Conclusions</b>	16
<b>Appendix</b>	17
Figure1: Categorization of Chief Complaint	
Table 1: Demographic and Clinical Characteristics by Facility	
Table 2: Reasons for Seeking Care by Facility	
Table 3: Characteristics Associated with Reasons for Seeking Care at the Hospital	
Table 4: Characteristics Associated with Reasons for Seeking Care at the Health Center	

## Introduction

The improvement of primary health care in sub-Saharan Africa has been central in the reduction of maternal mortality, delivery of HIV/AIDS and TB care, and dissemination of preventative services.<sup>1</sup> Although there have been great strides in improving health outcomes as a result, there still remain significant barriers to access and relatively low rates of utilization. Many studies have sought to identify barriers to health care access in low-income countries, but access to healthcare is only the first step to utilization of health services.<sup>2,3,4,5,6</sup> Several socio-demographic, behavioral, economic, and geographic factors affect an individual's decision to actually seek care at a facility even if they can access it, and these factors have been evaluated by even fewer studies.<sup>7,8,9</sup> More specifically, the reasons why patients choose to seek care at a particular facility can illuminate the decision-making processes that populations employ in navigating relatively new primary health care systems.

Relatively numerous studies have assessed quantitative predictors of primary healthcare utilization and most have focused on infectious disease clinics or antenatal care facilities.<sup>10,11,12,13</sup> Only three studies in the last decade were found that asked respondents the reason for choosing a particular health facility such as a community health center or a hospital. Respondents in a study conducted in Nigeria cited good services (89.5%), nearness to the house (84.1%), prompt attention (69.2%), and availability of essential drugs (68.5%) as reasons for seeking care at a community-based health facility (CBHF) while preference for general hospitals and self-medication were main reasons for non-utilization.<sup>14</sup> Another study in Nigeria asked women why they chose to come to a particular antenatal care facility and found that 45% of respondents came because of distance, 10%

because of cost, 15.7% because of previous experience, and 20.7% through a recommendation.<sup>15</sup> A study in Tanzania asked respondents where they would hypothetically seek care (or seek care for their child) when typhoid symptoms appear, and the reasons for their choice of health facility.<sup>16</sup> The study found that the primary reasons were again distance, drug availability, and good treatment options. The study also found that females were twice as likely as males to cite distance as a reason. While these studies were important for garnering popular reasons for utilization of primary health care services, none compared these reasons among different types of primary health care facilities such as health centers, health posts, or hospitals; or by chief complaint, and only one looked at whether reasons differed by a respondent's demographic characteristics. It is important to study how a patient's reasons for seeking care may differ by type of facility to better identify gaps in quality, services, satisfaction, and resources in the primary care system as a whole. In this way, the community's perceptions, experiences, and care-seeking behaviors can be acknowledged in future primary health care reforms.

In a previous study on patients utilizing the Ethiopian Primary Health Care Unit (PHCU) we evaluated demographic and clinical predictors of a patient having been referred or having sought prior care before visiting a hospital or health center.<sup>17</sup> We found that less than 10% of the total population had been referred and 25% of those who arrived at the hospital and 10% of those who arrived at the health center without having been referred had sought prior care before arriving at the facility. The objective of the current study is to identify the main factors that influenced a patient's decision to seek care at a primary hospital or health center and whether these factors differed by a patient's clinical or demographic characteristics. An added objective of this study is to elaborate on the

findings of the previous study by further evaluating whether reasons for seeking care at a particular facility differed between those who had or had not sought prior care. The findings will provide contemporary data on the factors that influence where and why patients utilize primary care services at a particular facility, and may be helpful in informing interventions aimed at improving the capacity, quality, and efficiency of primary care systems—especially those that are highly decentralized— in low-income countries. The study was conducted in Ethiopia as it is an ideal setting given the Ministry of Health’s major investment in the Ethiopian Health Extension Program since 2003.<sup>18</sup>

## **Methods**

The methods and study design below were largely drawn from the a previous study conducted by this research team with additional information on the collection of the open-ended item used for the purpose of this sub-study.<sup>19</sup>

### *Ethics Statement*

All consent and research procedures were approved by the Human Research Protection Program, Human Subjects Committee (HSC) at the Yale School of Medicine and the Ethiopian Ministry of Health. We obtained exemption from the Yale HSC (protocol number 1405013942) which waived the need for participant consent because no identifying personal health information was obtained. All participants were provided with an information sheet to inform them about the objective of the research, let them know what data would be collected, how they would be used and disseminated, and any risks that would be encountered by participation. Oral consent was most appropriate considering the high rate of illiteracy in rural study sites and the desire to capture a large representative sample. After being informed about the study, risks and benefits, all possible

participants were asked if they would be willing to complete a short verbally-administered survey. The response rate for each sample was 99% with 1% preferring not to participate.

### *Setting*

Since 2006, Ethiopia has invested heavily in its primary care system with the goal of providing accessible and high quality care to its population, 85% of which live rurally.<sup>20</sup> The Primary Health Care Unit (PHCU) has been the cornerstone of the primary care system and consists of care for a population of about 100,000 people including on average 4 health centers, 20 health posts, 40 health extension workers (HEWs), and, recently, a primary care hospital. Across the country as of 2014 the Health Extension Program of the Federal Ministry of Health has trained and deployed more than 35,000 HEWs and created over 8,000 health posts.<sup>21</sup> Although there has been rapid expansion and reorganization of primary health care infrastructure, the factors that influence where a community member chooses to seek care within the PHCU framework have not been assessed. A previously published study by this research team on the population evaluated characteristics that predicted referral patterns and care-seeking behavior, and so relevant results are presented below.<sup>22</sup>

### **Study Design and Sample**

We conducted a cross-sectional study of 3 PHCUs that were purposefully selected to reflect regional and ethnic diversity. In each PHCU (located in Oromia, Tigray, and Southern Nation's Nationalities' and People's Region), we selected 1 hospital and 1-2 health centers with the highest volume during the study period (June-July 2014) and consecutive face-face interviews were conducted with all people who arrived at the medical records office seeking outpatient or emergency care during the working day for the 5-day study period in



each PHCU. For patients who were younger than 18 years old or physically or mentally unable to complete the survey, a parent or relative completed the survey as a proxy (this occurred in 26.4% of cases). Interviews were conducted at the health center and hospital in the local language until similar sample sizes were reached for each facility type (N=418 hospital and N=378 health center for a total sample of N= 796 total). Sample sizes from each PHCU reflect their respective facility volumes and catchment areas (Oromia: N=354, Tigray: N=287, Southern Nation's Nationalities' and People's Region: N=155).

### **Data Collection**

The primary outcomes assessed were self-reported factors that influenced a patient's decision to seek care at the health facility. The questionnaire included an item that asked "What factors encouraged you to seek care at this facility?" with anticipated factors from a list that the interviewer could select—health extension worker, distance, quality of services, level of health providers (referring to skill level, availability of specialists, perceived expertise, etc.), waiting time, lack of information, emergency care, and availability of medications—and room for the interviewer to fill a respondent's other reasons. Open-ended responses were then grouped by similarity (syntax or description by patient) and those with the highest frequency were included in the analysis. The factors health extension worker, waiting time, lack of information, and emergency care were eventually excluded in analysis due to low frequency. The demographics of interest were gender, delay in seeking care, distance from source of care, chief complaint, whether they were seeking preventative or curative services, and whether they had sought prior care. Chief complaint was classified in 1 of 7 categories: maternal and child health, pain, injury, specialized care, chronic care, acute care, and other. Criteria for inclusion in the group were

based on similarity of symptoms and treatment (**Fig 1**). If multiple chief complaints were given, the complaint was classified according to the first complaint recorded (typically the primary complaint).

### **Fig 1. Categorization of Chief Complaint (See Abraham, et.al. 2015)**

#### **Data Analysis**

A standard frequency analysis was used to describe the sample as well as the outcome variables. The demographic and clinical characteristics of patients accessing care at the health centers and hospitals were compared using chi-square statistics for categorical variables and t-tests for continuous variables. A chi-square test was used to assess associations between demographic and clinical variables and the self-reported factors that influenced care-seeking patterns. All data analyses were performed using Statistical Analysis System (SAS), version 9.4.

#### **Results**

The majority of patients from health centers (N=378) and hospitals (N=418) were female (71.4%) with a mean age of 31 years (**Table 1**).<sup>23</sup> People accessing a health center compared with those accessing a hospital were more likely to be female (82.2% and 61.2%, respectively, P-value < 0.001). Almost half of all respondents sought maternal and child health care (MCH), and this was more common among the patients accessing the health center than for those accessing the hospital (59.7% versus 40.6%, respectively, P-value < 0.001). Pain and specialized care needs were more prevalent among patients at the hospital compared with health center. Approximately 76% of patients lived within 1-10 km of the health facility, and people seeking care at the hospital compared with the health center were more likely to have traveled farther than 20 km to access care (27.5% and 5.3%,

respectively,  $P$ -value  $< 0.001$ ). The most cited factors by patients included distance (30.9%), quality of services (27.6%), previous positive experience (15.3%), no improvement after first visit to a health facility (9.4%), level of health providers (8.0%), comfort or familiarity (7.0%), availability of medications (5.9%), and equipment or diagnostic capabilities (5.2%). The results reported below are unadjusted associations.

#### *Self-reported factors by health facility*

The self-reported factors of distance, quality of services, level of health providers, previous positive experience, no improvement after first visit to a health facility, equipment and diagnostic capabilities, and comfort or familiarity differed significantly between the hospital and health center samples ( $p$ -values $<0.05$ )(**Table 2**). Among those at the health center, the top four self-reported factors were distance (47.4%), quality of services (23.3%), previous positive experience (20.1%), and comfort or familiarity (12.4%). Among those at the hospital, the top four self-reported factors were quality of services (31.6%), distance (16.0%), no improvement after first visit to a health facility (15.3%), and level of health providers (14.8%).

#### *Characteristics associated with self-reported factors in the hospital sample*

For those who arrived at the hospital, the characteristics gender, distance from source of care, seeking preventative services, and seeking prior care were significantly associated with the self-reported factor distance (**Table 3**). Among females, 20.8% cited distance as a factor compared to 9.2% of men. Those who were seeking preventative services (not seeking curative services) and those who had not sought prior care were more likely to cite distance as a factor (22.2% and 23.1% respectively).

The characteristics distance from source of care and prior care were significantly associated with citing quality of services. Those who lived less than 20km away from the source of care were more likely to cite quality of services as a reason for seeking care at the hospital (83%). Those who had not sought prior care were also more likely to cite quality of services as an influential factor (38.0%) for seeking care directly at the hospital.

Gender, delay in seeking care, chief complaint, and prior care were significantly associated with reporting level of health providers as an influential factor. Males (22.9%), those who delayed seeking care for greater than 6 months (30.4%), those seeking specialized care (40.6%), and those who had not sought prior care (18.4%) were more likely to self-report the factor level of health providers.

Gender, delay in seeking care, and chief complaint were significantly associated with the availability of medication. Females (11.8%), those who delayed seeking care for greater than 6 months (19.6%), and those seeking chronic care (20.0%) were more likely to cite availability of medications as an influential factor.

Gender, distance from source of care, chief complaint, seeking preventative services, and prior care were significantly associated with citing previous positive experience. Females (13.7%), those living less than 1km away (14.9%), and those who had not sought prior care (16.1%), and those seeking preventative services (17.0%), were more likely to report previous positive experience at the hospital.

Distance from source of care, chief complaint, seeking preventative services, and prior care were significantly associated with citing no improvement after first visit to a health facility. Those with pain (27.9%), those seeking curative services (21.1%), and those

who had sought prior care (37.3%) were more likely to cite no improvement after their first visit to a health facility and so arrived at the hospital.

Those who had sought prior care were more likely to have reported equipment and diagnostic capabilities (13.0%) as factors that influenced their care seeking behavior. No demographics were significantly associated with having cited comfort or familiarity as a reason for visiting the hospital.

*Characteristics associated with self-reported factors in the health center sample*

Those who had not sought prior care were more likely to have cited distance as an influential factor (49.8%) (**Table 4**). Those who lived 11-20km away and those who had sought prior care were more likely to cite the level of the health providers as an influential factor (5.6% and 3.3% respectively). Those who had not sought prior care were more likely to cite comfort or familiarity (14.1%). Those who lived 11-20km away, those who were seeking chronic care, and those who had sought prior care cited the availability of medications (16.7%, 14.3%, and 11.7% respectively). Females were more likely to have cited previous positive experiences (22.7%). Those who lived greater than 20km away, who were seeking acute care, who were seeking curative services, and who had sought prior care were more likely to cite no improvement after their first visit to a health facility (26.7%, 25.0%, 6.0%, and 18.3% respectively). Those who had sought prior care were more likely to cite equipment and diagnostics as a reason for seeking care at the health facility (5.0%). No demographics were significantly associated with citing quality of services.

## Discussion

Healthcare utilization is an important field of study to inform the development and/or reform of primary health care systems in low-income countries. This study found that there are significant differences in the reasons why patients utilize particular health facilities, specifically health centers and primary hospitals, which highlights the need for tailored improvements based on the community's perceived strengths and weaknesses of different primary care delivery sites. Many patients in this study arrived at the hospital after not having improved after their first visit to a health facility. Furthermore, it appears that many people bypassed lower level health facilities in search of higher quality and higher-level services at the hospital. Although without clinical expertise it cannot be determined whether the individual's chief complaint should have been resolved at the first facility, the frequency of inadequate prior care suggests that either health facilities are not caring for individuals to a degree that they are satisfied with, or individuals are not aware of which facilities would best resolve their complaints.

This study is important in illuminating the potential factors that influence why an individual seeks care at a particular primary health care facility, and the reasons why they arrive at a facility after having sought prior care elsewhere. While the previously published research on this population extracted clinical and demographic predictors of having sought prior care, it did not evaluate self-reported, qualitative factors that influenced a patient's decision to seek care again for the same chief complaint. Furthermore, this evaluation also provided a description of what kind of population seeks care at a particular facility and for what reasons. While older studies have found that patients often prefer hospitals over health centers and the common reasons that play into health care utilization include

distance, previous positive experiences, and quality, this study illustrates how these factors are not consistent across the primary health care system.<sup>24,25,26</sup> For example, this study found that comfort and previous positive experiences were unique to those seeking care at the health center, which could be a potential strength of this particular type of health facility or infrastructure. Especially in a time when many low-income countries are bolstering their primary health care, it is important to analyze patient-centered factors that influence how the community perceives and navigates these primary care systems and how the demands vary across facilities.

A study in 2013 that held focus groups with rural community members in Ethiopia found that participants cited limited quality and comprehensiveness of services at health centers.<sup>27</sup> While our study did find that patients sought care at the hospital for its quality of services and level of health professionals, it also found that many patients arrived at the *health center* in search of higher level care and services after seeking prior care at another facility, often a primary hospital.<sup>28</sup> This could imply that the PHCU as a whole is lacking in comprehensive care, or that an equitable distribution of resources was not attained.

A few findings to note are that patients seeking chronic care at both the hospital and health center cited the availability of medications as a significant factor. Furthermore, a substantial portion that was seeking chronic care at the hospital had not improved after their first visit to a health facility, a greater proportion than those seeking acute care. As the burden of chronic disease is a growing threat in sub-Saharan Africa, the incorporation of chronic disease care into primary health care is a necessity.<sup>29</sup> Delegating this responsibility to either the hospital or health center, or dividing different stages of such care (preventative, secondary, tertiary) among the PHCU, must take into consideration the

above factors (especially the populations' perception of the quality of services and their positive attitudes towards a health facility) and the current capacity of health facilities to deliver quality care.

An individual's decision to seek care at a particular facility is a complex combination of a facility's perceived quality, an individual's self-assessment of the severity of their illness, and their experience during treatment among other considerations. Quality and satisfaction at the very least should not be mutually exclusive and rather synergistic. This population for example, was more likely to seek care at a hospital because of the level and quality of its services, but seek care at a health center because of previous positive experiences and comfort. Why quality does not translate to a positive treatment experience could be attributed to a variety of factors such as crowded environments, a shortage of staff, cost, etc. but further research is required to determine what an individual deems a satisfactory level of quality of care.

### *Limitations*

The findings of the study need to be evaluated in light of some limitations. As an adjusted analysis was not conducted (frequency in many cells was too low and results would not be especially revealing), potential confounders were not controlled for. The sample size was also relatively small as only those who responded to the open-ended question were considered (68% of the sample) and this was especially small for less frequently cited factors. The overall study included a higher proportion of females, but this may be representative of the population that seeks health care services in the PHCU and especially the health center.



**Conclusions**

In summary, this study provides useful information on some of the most commonly reported factors community members consider when seeking primary health care services in a low resource setting. Each type of facility has unique strengths and weaknesses that should guide how reforms are prioritized and implemented. By constantly evaluating the patients' perspectives, the primary care system can be adequately responsive to the demands of the community.

## Appendix

**Figure 1: Categorization of Chief Complaint**

<b>Category</b>	<b>Self-Reported Chief Complaint</b>	<b>Category</b>	<b>Self-Reported Chief Complaint</b>
1. Maternal and Child Health (MCH)	Antenatal Care	4. Pain	Joint Pain
	Family Planning		Flank Pain
	Pregnancy Complications		Back Pain
	Child's Health		Headache
	Reproductive Health		Miscellaneous Pain
	Delivery		Chest Pain
	Pregnancy Test		Abdominal Pain
	Abortion		Gastritis
	Vaccination		Hemorrhoid
	Antenatal Care		Tooth Ache
2. Specialized Care	Epilepsy	5. Chronic Disease Care	Chronic Disease (Diabetes, Hypertension, Heart Disease)
	Mental Health		Antiretroviral Therapy
	Urinary Problems		Tuberculosis Treatment
	Eye Complications		Respiratory Problems
3. Injury	Injury	6. Acute Care	Fever
	Dog Bite		Infection
			Chills
			Diarrhea
			Dizziness
			Vomiting
7. Other	Swelling		Bleeding
	Follow Up		
	Physical Exam		
	Other		

**Table 1: Demographic and Clinical Characteristics by Facility**

	<b>Total Sample</b> (N=796) N (%)	<b>Hospital Sample</b> (N=418) N (%)	<b>Health center sample</b> (N=378) N (%)	<b>P-value<sup>3</sup></b>
<b>Gender</b>				< 0.001
Female	550 (71.4)	241 (61.2)	309 (82.2)	
Male	220 (28.6)	153 (38.8)	67 (17.8)	
Missing	26	24	2	
<b>Mean age<sup>1</sup> (Standard deviation)</b>	31.0 (12.6)	33.4 (14.6)	28.8 (9.7)	< 0.001
<b>Distance between residence and source of care<sup>2</sup></b>				< 0.001
1-10 km	478 (75.6)	228 (65.3)	250 (88.3)	
11-20 km	43 (6.8)	25 (7.2)	18 (6.4)	
> 20km	111 (17.6)	96 (27.5)	15 (5.3)	
<b>Chief Complaint</b>				< 0.001
Pain	123 (15.5)	86 (20.7)	37 (9.8)	
Maternal and Child Health	394 (49.7)	169 (40.6)	225 (59.7)	
Injury	36 (4.5)	20 (4.8)	16 (4.2)	
Specialized Care	37 (4.7)	32 (7.7)	5 (1.3)	
Chronic Care	99 (12.5)	50 (12.0)	49 (13.0)	
Acute Care	26 (3.3)	14 (3.4)	12 (3.2)	
Other or missing	81 (10.1)	47 (11.2)	34 (9.0)	
<b>Prior Care</b>				<0.001
Yes	221 (28.0)	161 (38.7)	60 (16.1)	
No	568 (72.0)	255 (61.3)	313 (83.9)	
Missing	7	2	5	
<b>Referred</b>				<0.001
Yes	79 (9.9)	57 (13.6)	22 (5.8)	
No	717 (90.1)	361 (86.4)	356 (94.2)	

<sup>1</sup> 43 people did not report their age.

<sup>2</sup> 164 people did not know the distance

<sup>3</sup> P-Values calculated using chi-squared test for categorical variables and Student's t-test for continuous variable age.

**Table 2: Reasons for Seeking Care by Facility**

Factor	Type of Facility		P-value <sup>3</sup>
	Hospital (N = 418) <sup>2</sup>	Health Center (N = 378) <sup>2</sup>	
Distance	67(16.0)	179 (47.4)	<0.001
Quality of Services	132(31.6)	88 (23.3)	0.009
Level of Health Providers	62 (14.8)	2 (0.5)	<0.001
Waiting Time	6 (1.4)	8 (2.1)	0.466
Availability of Medications	33 (7.9)	14 (3.7)	0.12
Previous Positive Experience	46 (11.0)	76 (20.1)	<0.001
No improvement after 1 <sup>st</sup> visit	64 (15.3)	11 (2.9)	<0.001
Equipment	36 (8.6)	5 (1.3)	<0.001
Comfort	9 (2.2)	47 (12.4)	<0.001

<sup>1</sup> Table values are column%

<sup>2</sup> Numbers will not sum to total or 100% as participants could choose multiple reasons.

<sup>3</sup> P-Values calculated using chi-squared test for categorical variables.

**Table 3: Characteristics Associated with Reasons for Seeking Care at the Hospital (N=416)**

Characteristics	N <sup>2</sup>	Distance (%)	P <sup>3</sup>	Quality of services (%)	P <sup>3</sup>	Level of health providers (%)	P <sup>3</sup>	Comfort (%)	P <sup>3</sup>	Availability of medication (%)	P <sup>3</sup>	Previous positive experience (%)	P <sup>3</sup>	No improvement (%)	P <sup>3</sup>	Equipment (%)	P <sup>3</sup>
<b>Gender</b>			0.002		0.707		0.001		0.301		0.013		0.014		0.879		0.714
Female	241	20.8		33.2		10.8		2.9		5.0		13.7		14.9		8.7	
Male	153	9.2		31.4		22.9		1.3		11.8		5.9		14.4		9.8	
<b>Delay in Seeking Care</b>			0.757		0.621		0.033		0.541		0.007		0.256		0.737		0.640
<1 week-3 weeks	172	11.6		36.6		15.1		1.2		7.0		9.3		19.8		7.6	
1-6 months	60	13.3		30.0		13.3		3.3		3.3		6.7		23.3		5.0	
6 months-greater than 1 year	46	8.7		32.6		30.4		2.2		19.6		2.2		25.0		4.4	
<b>Distance between residence and source of care</b>			0.021		0.001		0.759		0.614		0.678		0.021		0.002		0.028
1-10km	228	22.4		39.0		13.6		3.1		6.6		14.9		11.4		5.7	
11-20km	25	16.0		44.0		16.0		0.0		8.0		4.0		28.0		12.0	
≥20 km	96	9.4		18.8		16.7		2.1		9.4		5.2		26.0		14.6	
<b>Chief Complaint</b>			0.309		0.104		<0.001		0.708		0.002		<0.001		<0.001		0.738
Pain	86	15.1		37.2		8.1		2.3		2.3		7.0		27.9		9.3	
MCH	169	20.1		32.5		13.6		3.0		5.9		20.1		11.2		9.5	
Injury	20	5.0		10.0		5.0		0.0		5.0		0.0		5.0		5.0	
Specialized Care	32	9.4		28.1		40.6		0.0		18.8		3.1		9.4		3.1	
Chronic Care	50	18.0		20.0		12.0		4.0		20.0		4.0		26.0		10.0	
Acute Care	14	21.4		35.7		21.4		0.0		0.0		14.3		21.4		0.0	
Other	45	8.9		40.0		20.0		0.0		8.9		2.2		2.2		11.1	
<b>Preventative Services</b>			0.009		0.469		0.180		0.058		0.434		0.003		<0.001		0.081
Yes	265	22.2		29.4		11.8		3.9		6.5		17.0		5.2		11.8	
No	153	12.5		32.8		16.6		1.1		8.7		7.6		21.1		6.8	
<b>Prior Care</b>			<0.001		0.001		0.011		0.721		0.407		<0.001		<0.001		0.011
Yes	161	5.0		21.7		9.3		2.5		9.3		3.1		37.3		13.0	
No	255	23.1		38.0		18.4		2.0		7.1		16.1		1.6		5.9	

<sup>1</sup> Table values are row%

<sup>2</sup> Numbers and percentages do not sum to total or 100% as participants could choose multiple reasons.

<sup>3</sup> P-Values calculated using chi-squared test for categorical variables.

**Table 4: Characteristics Associated with Reasons for Seeking Care at the Health Center (N=377)**

Characteristics	N <sup>2</sup>	Distance (%)	P <sup>3</sup>	Quality of services (%)	P <sup>3</sup>	Level of health providers (%)	P <sup>3</sup>	Comfort (%)	P <sup>3</sup>	Availability of medication (%)	P <sup>3</sup>	Previous positive experience (%)	P <sup>3</sup>	No improvement (%)	P <sup>3</sup>	Equipment (%)	P <sup>3</sup>
<b>Gender</b>			0.643		0.828		0.509		0.169		0.287		0.011		0.001		0.295
Female	309	47.9		23.6		0.7		13.6		4.2		22.7		1.6		1.6	
Male	67	44.8		22.4		0.0		7.5		1.5		9.0		9.0		0.0	
<b>Delay in Seeking Care</b>			0.693		0.396		0.955		0.371		0.827		0.378		0.346		0.955
<1 week-3 weeks	109	45.9		22.0		0.9		8.3		3.7		16.5		7.3		0.9	
1-6 months	6	50.0		16.7		0.0		0.0		0.0		0.0		16.7		0.0	
6 months-greater than 1 year	4	25.0		50.0		0.0		25.0		0.0		0.0		25.0		0.0	
<b>Distance between residence and source of care</b>			0.096		0.935		0.039		0.284		0.005		0.118		<0.001		0.134
1-10km	250	47.2		24.4		0.4		13.6		2.4		21.2		2.0		1.2	
11-20km	18	27.8		27.8		5.6		16.7		16.7		5.6		0.0		5.6	
≥20 km	15	26.7		26.7		0.0		0.0		6.7		6.7		26.7		6.7	
<b>Chief Complaint</b>			0.109		0.226		0.323		0.121		0.005		0.101		<0.001		0.738
Pain	37	62.2		27.0		2.7		5.4		2.7		13.5		5.4		2.7	
MCH	225	49.8		25.3		0.0		13.3		2.7		25.3		0.4		1.8	
Injury	16	50.0		12.5		0.0		6.3		0.0		12.5		0.0		0.0	
Specialized Care	5	60.0		0.0		0.0		20.0		0.0		0.0		0.0		0.0	
Chronic Care	49	38.8		20.4		2.0		22.5		14.3		16.3		4.1		0.0	
Acute Care	12	33.3		41.7		0.0		0.0		0.0		8.3		25.0		0.0	
Other	33	30.3		12.1		0.0		6.1		0.0		9.1		9.1		0.0	
<b>Preventative Services</b>			0.364		0.597		0.553		0.067		0.861		0.079		0.016		0.602
Yes	116	45.8		24.1		0.4		14.5		3.8		22.5		1.5		0.9	
No	262	50.9		21.6		0.9		7.8		3.5		14.7		6.0		1.5	
<b>Prior Care</b>			0.035		0.506		0.001		0.021		<0.001		0.066		<0.001		0.007
Yes	313	35.0		20.0		3.3		3.3		11.7		11.7		18.3		5.0	
No	60	49.8		24.0		0.0		14.1		2.2		22.0		0.0		0.6	

<sup>1</sup> Table values are row%

<sup>2</sup> Numbers and percentages do not sum to total or 100% as participants could choose multiple reasons.

<sup>3</sup> P-Values calculated using chi-squared test for categorical variables.

- 
- <sup>1</sup> Van Lerberghe, W. The world health report 2008: primary health care: now more than ever. World Health Organization. 2008.
- <sup>2</sup> Meyer, S. B., Luong, T. C., Mamerow, L., & Ward, P. R. (2013). Inequities in access to healthcare: analysis of national survey data across six Asia-Pacific countries. *BMC health services research*, 13(1), 1.
- <sup>3</sup> Mills, A., Ataguba, J. E., Akazili, J., Borghi, J., Garshong, B., Makawia, S., ... & McIntyre, D. (2012). Equity in financing and use of health care in Ghana, South Africa, and Tanzania: implications for paths to universal coverage. *The Lancet*, 380(9837), 126-133.
- <sup>4</sup> O'Donnell, O. (2007). Access to health care in developing countries: breaking down demand side barriers. *Cadernos de Saúde Pública*, 23(12), 2820-2834.
- <sup>5</sup> Ojanuga, D. N., & Gilbert, C. (1992). Women's access to health care in developing countries. *Social science & medicine*, 35(4), 613-617.
- <sup>6</sup> Peters, D. H., Garg, A., Bloom, G., Walker, D. G., Brieger, W. R., & Hafizur Rahman, M. (2008). Poverty and access to health care in developing countries. *Annals of the New York Academy of Sciences*, 1136(1), 161-171.
- <sup>7</sup> Nteta, T. P., Mokgatle-Nthabu, M., & Oguntibeju, O. O. (2010). Utilization of the primary health care services in the Tshwane Region of Gauteng Province, South Africa. *PloS one*, 5(11), e13909.
- <sup>8</sup> Taffa, N., Chepngeno, G., & Amuyunzu-Nyamongo, M. (2005). Child morbidity and healthcare utilization in the slums of Nairobi, Kenya. *Journal of Tropical Pediatrics*, 51(5), 279-284.
- <sup>9</sup> Simkhada, B., Teijlingen, E. R. V., Porter, M., & Simkhada, P. (2008). Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *Journal of advanced nursing*, 61(3), 244-260.
- <sup>10</sup> Saha, D., Akinsola, A., Sharples, K., Adeyemi, M. O., Antonio, M., Imran, S., ... & Levine, M. M. (2013). Health care utilization and attitudes survey: understanding diarrheal disease in rural Gambia. *The American journal of tropical medicine and hygiene*, 89(1 Suppl), 13-20.
- <sup>11</sup> Chimbindi, N., Bärnighausen, T., & Newell, M. L. (2013). An integrated approach to improving the availability and utilisation of tuberculosis healthcare in rural South Africa. *SAMJ: South African Medical Journal*, 103(4), 237-240.
- <sup>12</sup> Tsegay, Y., Gebrehiwot, T., Goicolea, I., Edin, K., Lemma, H., & Sebastian, M. S. (2013). Determinants of antenatal and delivery care utilization in Tigray region, Ethiopia: a cross-sectional study. *Int J Equity Health*, 12(30), 1475-9276.
- <sup>13</sup> Fotso, J. C., Ezeh, A., Madise, N., Ziraba, A., & Ogollah, R. (2009). What does access to maternal care mean among the urban poor? Factors associated with use of appropriate maternal health services in the slum settlements of Nairobi, Kenya. *Maternal and child health journal*, 13(1), 130-137.

- 
- <sup>14</sup> Adebayo, A. M., & Asuzu, M. C. (2015). Utilisation of a community-based health facility in a low-income urban community in Ibadan, Nigeria. *African Journal of Primary Health Care & Family Medicine*, 7(1), 1-8.
- <sup>15</sup> Sholeye, O. O., Abosede, O. A., & Jeminusi, O. A. (2013). Client perception of antenatal care services at primary health centers in an urban area of Lagos, Nigeria. *World Journal of Medical Sciences*, 8(4), 359-364.
- <sup>16</sup> Kaljee, L. M., Pach, A., Thriemer, K., Ley, B., Ali, S. M., Jiddawi, M., ... & Wierzba, T. (2013). Utilization and accessibility of healthcare on Pemba Island, Tanzania: implications for health outcomes and disease surveillance for typhoid fever. *The American journal of tropical medicine and hygiene*, 88(1), 144-152.
- <sup>17</sup> Abraham, O., Linnander, E., Mohammed, H., Fetene, N., & Bradley, E. (2015). A Patient-Centered Understanding of the Referral System in Ethiopian Primary Health Care Units. *PloS one*, 10(10), e0139024.
- <sup>18</sup> Federal Democratic Republic of Ethiopia MOH. 2010 Health Sector Development Program IV 2010/11-2014/15. 2010.
- <sup>19</sup> Abraham, O., Linnander, E., Mohammed, H., Fetene, N., & Bradley, E. (2015). A Patient-Centered Understanding of the Referral System in Ethiopian Primary Health Care Units. *PloS one*, 10(10), e0139024.
- <sup>20</sup> Ringheim K, Teller C, Sines E. Ethiopia at a crossroads: Demography, gender, and development. Population Reference Bureau. 2009. Available: [www.prb.org/policy\\_brief](http://www.prb.org/policy_brief).
- <sup>21</sup> Federal Democratic Republic of Ethiopia MOH. 2010 Health Sector Development Program IV 2010/11-2014/15. 2010.
- <sup>22</sup> Abraham, O., Linnander, E., Mohammed, H., Fetene, N., & Bradley, E. (2015). A Patient-Centered Understanding of the Referral System in Ethiopian Primary Health Care Units. *PloS one*, 10(10), e0139024.
- <sup>23</sup> Abraham, O., Linnander, E., Mohammed, H., Fetene, N., & Bradley, E. (2015). A Patient-Centered Understanding of the Referral System in Ethiopian Primary Health Care Units. *PloS one*, 10(10), e0139024.
- <sup>24</sup> Adebayo, A. M., & Asuzu, M. C. (2015). Utilisation of a community-based health facility in a low-income urban community in Ibadan, Nigeria. *African Journal of Primary Health Care & Family Medicine*, 7(1), 1-8.
- <sup>25</sup> Sholeye, O. O., Abosede, O. A., & Jeminusi, O. A. (2013). Client perception of antenatal care services at primary health centers in an urban area of Lagos, Nigeria. *World Journal of Medical Sciences*, 8(4), 359-364.
- <sup>26</sup> Kaljee, L. M., Pach, A., Thriemer, K., Ley, B., Ali, S. M., Jiddawi, M., ... & Wierzba, T. (2013). Utilization and accessibility of healthcare on Pemba Island, Tanzania: implications for health outcomes and disease surveillance for typhoid fever. *The American journal of tropical medicine and hygiene*, 88(1), 144-152.
- <sup>27</sup> Bradley, E., Thompson, J. W., Byam, P., Webster, T. R., Zerihun, A., Alpern, R., ... & Curry, L. (2011). Access and quality of rural healthcare: Ethiopian Millennium Rural Initiative. *International Journal for Quality in Health Care*, 23(3), 222-230.
- <sup>28</sup> Abraham, O., Linnander, E., Mohammed, H., Fetene, N., & Bradley, E. (2015). A Patient-Centered Understanding of the Referral System in Ethiopian Primary Health Care Units. *PloS one*, 10(10), e0139024.



---

<sup>29</sup> Maher, D., Smeeth, L., & Sekajugo, J. (2010). Health transition in Africa: practical policy proposals for primary care. *Bulletin of the World Health Organization*, 88(12), 943-948.