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Patient experiences with health care service delivery in Primary Care facilities in Static and Pastoralist Community in an arid and semi-arid context in Kenya

Yvonne Opanga

yvonne.opanga@amref.org

Amref Health Africa

Chris Barasa

Amref Health Africa

Jane Sydney

Amref Health Africa

Mercy Mwangangi

Ministry of Health, Nairobi

Gilbert Wangalwa

Amref Health Africa

Emmanuel Musombi

Amref Health Africa

Lopodo Ekal

Ministry of Health, Turkana County

Sarah Akiru

Ministry of Health, Turkana County

Gilchrist Lokoel

Ministry of Health, Turkana County

Mark Mwanja

Amref Health Africa

Aloise Gikunda

Amref Health Africa

Jarim Omogi

Amref Health Africa

Anthony Arasio

Amref Health Africa

Richard Kiplimo

Amref Health Africa

Evans Osembo
Amref Health Africa
Risper Walumbe
Amref Health Africa Headquarters
Peter Memiah
University of Maryland
Meshack Ndirangu
Amref Health Africa

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Abstract

Background

Patient experiences with primary care services play a pivotal role in shaping health outcomes, especially in arid and semi-arid regions like Turkana County where health systems face unique structural and access challenges. These regions are characterized by static and migratory population necessitating differentiated primary healthcare models. This paper highlights patient experiences levels and its associated factors among patients attending primary care facilities in Turkana County.

Methods

This was a cross-sectional study design targeting 442 participants receiving care within 43 primary care facilities in Loima and Turkana Central sub-counties. Quantitative data was collected using client exit interviews to assess patient experiences focusing on factors such as access to facilities, services received at the facility, satisfaction with the services, delays or waiting time at the facility, amount paid to receive services, access to basic amenities and ability to recommend the facility to others. These experiences provided insights about daily hospital care and quality of care that were assessed in primary care facilities. Descriptive analysis was conducted using frequencies and proportions while bivariate analysis was done using chi square test.

Results

Of the 442 participants interviewed 159 and 283 were from Loima and Turkana Central sub counties respectively. Overall, 82% attended their nearest facility, with significantly higher proximity use in Loima (91%) than Turkana Central (77%; $p < 0.001$). Nearly all participants (97%) received the services sought, with no sub-county difference. Overall satisfaction with the services received was high (95%) with a higher proportion in Loima (98% vs. 94%; $p = 0.049$). Positive patient experiences were most commonly reported in consultation services (55%) and pharmacy services (37%). Despite these positive findings, one-third of participants (33%) reported delays in receiving care, with significantly more reports from Loima than Turkana Central (42% vs. 29%; $p = 0.007$), although the median waiting time was 20 minutes with no significant sub-county variation. In terms of access, most participants (87%) walked to health facilities. Overall perceived accessibility was high (90%), but significantly lower in Loima compared to Turkana Central (83% vs. 94%; $p < 0.001$). Distance to facilities was the most commonly reported barrier (98%), while transport-related cost challenges were significantly more prevalent in Loima than in Turkana Central (33% vs. 0%; $p = 0.007$).

2. Introduction

Primary healthcare approach is essential for achieving universal health coverage and improving health outcomes globally [1, 2, 3]. However, many challenges and bottlenecks hinder effectiveness and quality of primary care services. One of the factors that may reflect the performance, quality and impact of these services is the experiences of patients who use its services [4].

In the global context, the World Health Organization (WHO) and international partners have emphasized the need for people-centered primary care that is accessible, responsive, and accountable. Patient experiences has emerged as a key outcome and quality indicator in health systems worldwide. It reflects how well health systems meet the expectations, preferences, and needs of patients, and is closely linked to trust, service utilization, treatment adherence, and health-seeking behavior [5]. Globally, Primary Health Care (PHC) researchers, practitioners, policymakers and stakeholders have identified similarities in the setting, population group and funding of interventions targeted at improving patient experiences of care. Scoping review literature has also projected that PHC interventions aimed at improving approachability, availability and affordability of PHC services could improve patient experiences and population health outcomes. While access factors are broadly known to be applicable across national health systems, the impact of contextual influences on access to PHC is poorly researched [6].

In sub-Saharan Africa, primary care facilities are often the main source of health care services for the majority of the population, especially in rural and remote areas. However, primary care in sub-Saharan Africa faces many challenges, such as the lack of performance monitoring systems, inadequate financing, shortage of human resources, weak supply chain management, poor infrastructure and equipment, low demand and utilization, and fragmented service delivery [7].

Kenya is advancing towards Universal Health Coverage (UHC) by 2030 with a focus on strengthening access to health services and ensuring quality of care. However, Kenya also faces many challenges in delivering quality primary care, such as unequal distribution of resources, high burden of disease, low coverage of essential services, and low community participation. Moreover, Kenya has a high level of regional and socio-economic disparities in health outcomes and access to health care [8, 9].

Kenya’s arid and semi-arid regions are characterized by static and migratory populations, and this necessitates implementation of differentiated primary healthcare models because of the challenges related to context [10]. One of the regions in Kenya that faces the most challenges in primary care is Turkana County. This is a county in northwestern Kenya. It is the largest and poorest county in Kenya, with a population of about 1.6 million people, most of whom, approximately 60%, are nomadic pastoralists [11]. The County experiences a harsh and arid climate, frequent droughts and conflicts, and limited infrastructure and development. Turkana County has four main livelihood zones. Nearly 60% of the population is considered pastoral, 20% agro pastoral, 12% fisher folks and 8% are in the urban/peri-urban formal and informal employments [24]. This brings out the need for differentiated models of primary healthcare in order to address the health needs of the population. According to the Kenya Demographic and Health Survey 2022, Turkana County, key health indicators remain below national averages despite efforts to strengthen primary care delivery. For example, under-five mortality is 55 per

1,000 live births compared to the national average of 41, while maternal mortality is estimated at 754 per 100,000 live births versus 355 nationally [13]. The county also has a high burden of communicable diseases such as malaria (18% prevalence) and tuberculosis (incidence 250/100,000) alongside rising non-communicable diseases including hypertension and diabetes [14]. Malnutrition is widespread, with 32% of children under five stunted and 15% wasted, compared to 18% and 5% nationally [15]. Family planning coverage remains low, with an unmet need of 30% compared to 19% nationally [16].

Turkana has a low coverage of primary care services, with only 186 health facilities, 3.4 health workers per 10,000 population, and 25% of the population living within 5 km of a health facility [9, 10]. In addition, 80% of these health facilities are stationed in urban and peri-urban areas making service access for rural populations difficult. While all sub-counties have a level 4 health facility, the vastness of the county makes these critical PHC referral sites inaccessible to rural populations [9,10]. These systemic limitations including limited coverage of health facilities may adversely affect client experiences and perceptions of service quality, ultimately influencing the uptake of essential services [9,10]. These presented characteristics are critical and may as a result affect the ability of the population to obtain sufficient quality of services, in Primary care facilities and their experiences in terms of how these services are delivered to them by the service care providers [23].

The term patient experiences widely used to measure health care quality by identifying potential areas for improvement. Patient experiences can be defined as patients reports of what actually occurred during their interactions with healthcare providers and systems, including aspects such as communication, respect, involvement in decision-making, timeliness and access to services [5]. It is widely recognized as both an important outcome of healthcare and a central component of quality of care [25–28]. It refers to what happens to patients during their encounters with the health system and how they perceive and report those interactions [29]. The concept commonly includes access to services, waiting times, communication and information sharing, respect, physical comfort, emotional support, and the quality of interactions with health professionals while receiving various services [27,30]. Experience can be assessed through patient reports (objective accounts of what occurred, e.g., whether information was provided) or patient evaluations (subjective ratings of care quality). Many validated surveys combine these approaches to capture a more complete picture [31–33].

Research shows that patient experience measures can distinguish true differences in the quality of care between groups, rather than merely reflecting varying expectations, making them a valuable tool for assessing performance and guiding quality improvement [34–36]. Additionally, it can influence adherence, trust, loyalty, and health-seeking behavior. Moreover, patient experiences can affect health care services' efficiency, productivity, and sustainability [22].

Patient experiences in primary care facilities can be influenced by factors such as patient characteristics, provider characteristics, service characteristics, and contextual factors [4]. Studies have shown that some factors associated with patient experiences include patient age and gender, continuity of care, waiting time, communication, and patient trust [6]. However, patient experiences with primary

care services may vary across different regions and settings, depending on the availability, accessibility, affordability, and acceptability of such services [23].

Therefore, it is important to assess patient experiences to services offered primary care facilities and its associated factors in Turkana, as it may provide valuable insights into the strengths and weaknesses of primary care in this region and inform the design and implementation of interventions to improve the quality and impact of primary care. This study assesses patient experiences and its associated factors among outpatients attending primary care facilities in Loima and Turkana Central Sub Counties, Turkana County, Kenya.

3. Methods

3.1 Study Design

The study employed a cross-sectional study design involving quantitative data collection that was conducted through client exit interviews.

3.2 Study Area

Turkana County has 6 sub counties; Loima, Turkana West, Turkana East, Turkana South, Turkana North and Turkana Central as shown in Fig. 1 below. 2 sub counties selected as study were Loima and Turkana Central sub-counties. Loima has predominantly pastoralists and agropastrolists who are mainly migrating populations in a rural context, the wards targeted in Loima were Turkwel, Kotaruk, and Lokiriama which are predominantly inhabited by pastoralist communities with highly mobile populations. Turkwel is characterized by long distances to health facilities and difficult terrain, which makes access to care challenging. Kotaruk experiences seasonal migration, with small health posts that are often insufficient to meet the needs of moving populations. Lokiriama, located near the border, sees significant cross-border movement, further complicating consistent access to healthcare services [10].

In contrast, the targeted wards in Turkana Central Sub-County were Kerio Delta, Kang'atotha, Kanamkemer, and Kalokol that have relatively more settled populations. Kerio Delta comprises communities engaged in small-scale farming with moderate access to health facilities. Kang'atotha has established villages where residents are largely static, though facilities may be under-resourced. Kanamkemer hosts a mix of pastoralist and settled households, with some reliance on outreach programs for health services. Kalokol, a semi-urban ward along Lake Turkana, has a population involved in fishing and trade, benefiting from comparatively better access to health facilities [11].

In the Kenyan context, a ward is the smallest administrative and electoral unit, functioning as a devolved unit of governance below the subcounty level [39].

3.3 Sampling Procedure

The study employed a multistage sampling approach to ensure representation across health facility levels.

1. **Selection of Sub-counties**
2. Two sub-counties in Turkana County, **Loima and Turkana Central** were purposively selected. The two sub counties were selected to bring out the differences in two contexts.
3. **Facility Sampling and Stratification**: Client exit interviews were conducted in 9 wards across the two sub-counties (Loima and Turkana Central), 4 wards (Turkwel, Kotaruk Loima and Lokiriama) were targeted in Loima while 5 wards (Kerio Delta, Kang'atotha, Kanamkemer and Kalokol) were targeted in Turkana Central.
4. Facilities within the two sub counties were randomly selected and stratified by levels and faith-based status as shown in Fig. 2 below. From the public and faith-based health facilities across the two sub-counties, a sample of 43 facilities was drawn using Probability Proportionate to Size (PPS), ensuring representation based on facility level and ownership type.

- **Level 2 (Dispensaries)**: Due to their large numbers, a proportion was selected randomly.
- **Level 3 and 4 facilities** and **faith-based facilities** were **all included** in the study due to their limited numbers, allowing full representation within those strata.
- This stratification ensured that both the **level of care** (dispensary, health center, hospital) and **management type** (public vs. faith-based) were proportionately represented.
- 442 patients were surveyed during the client exit interviews (159 from Loima sub-county and 283 from Turkana central sub-county).

3.4 Sample Size Determination (Exit Interviews)

The target sample size for client exit interviews was **384**, which was calculated using **Cochran's formula** for estimating a population proportion at 95% confidence level and 5% precision, assuming a 50% prevalence for acceptability of services (most conservative estimate):

Out of the targeted sample size of 384, a total of 442 clients were interviewed, with a non-response rate of 15% accounted for, resulting in 115% of the intended sample being reached.

In order to get the number of patients per facility, probability proportion to size was used to allocate the number of patients to be interviewed given the number of patients a facility receives daily. A systematic sampling method with a skip pattern of 10 was used to randomly pick patients/guardians having been served at the health facility given the total number of patients served in all selected facilities was 3792.

3.5 Distribution of Exit Interviews Across Facilities

Using Probability Proportionate to Size (**PPS)**, the number of interviews per facility was proportionally allocated based on the **daily outpatient attendance data**. Facilities with higher client loads were assigned more interviews.

- Across the **43 sampled facilities**, exit interviews were conducted in **9 wards** (4 in Loima and 5 in Turkana Central).
- A total of **3792 clients** were recorded as having accessed services in the selected facilities during the data collection period.
- A **systematic random sampling** method was employed within facilities, with every **10th patient** selected for interview, ensuring randomness and representativeness.

The study included clients aged above 18 years and parents/guardians of clients who are under 18 years who are currently receiving care within the selected health facilities in Loima and Turkana Central sub-counties. The aim was to obtain patient feedback on their experiences with the quality of services provided using client exit interviews.

3.6 Participant Recruitment

Participants were recruited and approached by trained research assistants from a total of 43 primary care facilities. The RAs approached clients after they had completed their clinical visit. Participants receiving services from the facilities on the day of the survey were approached for the interviews as they exited the facilities from different service delivery points until the desired sample size was achieved. Only those who were willing to take part in the study were interviewed after written informed consent was obtained (The consent form has been attached for reference). The research assistants were not involved in the provision of clinical services and had no prior clinical or supervisory relationship with the patients. The team of research assistants were residents of the area who understood and could communicate in the local language to all participants. For the illiterate participants, informed consent process was conducted orally in the participant's preferred language by trained RAs fluent in both Swahili and Turkana language. The consent form was read aloud verbatim, and participants were given the opportunity to ask questions and seek clarification. Consent was documented using a thumbprint, in the presence of a literate witness where required [12].

The team worked with trained local Research Assistants from Turkana County who were both fluent in English, Kiswahili, and Turkana language, RAs conducted all interviews in the participants' preferred language. During data collection, interviews conducted in Kiswahili or the local language were audio-recorded with participants' consent. The recordings were later transcribed verbatim and translated into English for analysis by trained personnel familiar with the local context. Quality assurance measures were undertaken throughout the process, including cross-checking of transcripts against audio recordings, review of translated transcripts by members of the research team, and verification to ensure that meaning, context, and key nuances were accurately preserved.

3.7 Ethical Considerations

Approvals

Our research involved human participants and was performed in accordance with the Declaration of Helsinki, undergoing approval by an appropriate ethics committee. The study was approved by Amref

Ethics and Scientific Review Committee. The study protocol number was P1465-2023. All ethical procedures were conducted and maintained throughout the study period.

Informed Consent

and participant withdrawal

All participants were provided with information about the study objectives, procedures, risks, and benefits, and were given adequate time to consider participation before consenting. Participation was entirely voluntary, and only individuals who agreed to take part were interviewed. No incentives were provided. Written informed consent was obtained prior to data collection. Written informed consent was obtained from all participants who voluntarily agreed to participate in the study. For participants who were unable to read the information sheet, the study information was verbally explained in their preferred local language by trained research staff. The explanation covered the study objectives, procedures, potential risks and benefits, confidentiality measures, and participants' rights, including the right to decline participation or withdraw at any time without consequences. To confirm understanding, participants were encouraged to ask questions and were asked to explain key aspects of the study in their own words before providing consent.

Throughout the consenting process, the research assistants ensured that all participants understand their rights as participant including the right to withdraw from the study at any time. They were reassured that if they withdraw or refuse to participate, they will continue to utilize the health care services from the facilities without any consequences.

Safeguarding Confidentiality

Participants' information was gathered in a place ensuring total privacy and they were treated with utmost confidentiality as well as remaining private. No personal details were shared with anyone outside of the authorized research team. Each participant was assigned a unique Identification (ID) number for identification.

3.8 Data Collection Methods and Instruments

The study tool was adapted from the Kenya Community Score Card Guidelines for Social Accountability in Primary Health Care, 102_ALMA_KenyaCSCGuidelines2022_V8.indd (chu4uhc.org). which is a nationally endorsed participatory monitoring and accountability framework used to assess service delivery and client experience (13,14). As such, the original tool has been previously implemented and validated within the Kenyan primary health care context as a structured approach for capturing community and facility performance across key service delivery domains (13,14). For the study, the adapted questionnaire retained core thematic domains from the validated Community Score Card framework, including respectful and compassionate care, waiting time, availability of medicines and diagnostics, responsiveness to community needs, and facility cleanliness (15, 16). Adaptation was done to align the tool with the specific objectives of assessing patient experiences (15,16).

To ensure contextual validity, the adapted tool underwent expert review and pretesting in a similar setting prior to full data collection, a process consistent with the cross-cultural adaptation of primary care assessment tools in Kenya (17). This process assessed clarity, relevance, cultural appropriateness, and consistency of interpretation, and led to minor refinements to ensure the tool's relevance to the local context (18,19). Reliability in implementation was enhanced through standardized training of Research Assistants, use of uniform administration procedures, and supervision during data collection (20). These measures ensured the consistency and dependability of the tool across respondents and study sites, minimizing interviewer bias and ensuring that the data captured high-quality clinical and community behaviors (21).

3.9 Data Management and Analysis

Completed questionnaires were checked daily for completeness and consistency by the field supervisors before being entered into KOBO. Data cleaning included checking for missing values, outliers, and inconsistencies across related variables, with corrections made by cross-referencing the original questionnaires.

All analyses were conducted using R (version 4.4). Descriptive statistics were computed to summarize participant characteristics and facility-related variables. Categorical variables were presented as frequencies and percentages, and continuous variables as medians with interquartile ranges due to non-normal distributions. Bivariate associations between study sites (Loima vs Turkana Central) and client outcomes were assessed using Pearson's Chi-square tests for larger categorical counts, Fisher's exact tests for small cell counts, and Wilcoxon rank-sum tests for skewed continuous variables. P-values less than 0.05 were considered statistically significant.

4. Results

Table 1 illustrates the overall findings obtained from the 442 participants interviewed in Primary Care centers in Loima (N = 159) and Turkana Central (N = 283) sub-counties. 82% of the participants reported attending the nearest facility, but this differed significantly by sub-county ($p < 0.001$), with higher proximity use in Loima (91%) than Turkana Central (77%). Nearly all participants (97%, 430/442) received the services they sought at the facility, with no significant difference between sub-counties (96% in Loima vs. 98% in Turkana Central; $p = 0.36$).

Overall experience with services received was from 95% (410/430) of respondents. Experience was marginally higher in Loima (98%, 150/153) than in Turkana Central (94%, 260/277; $p = 0.049$). As illustrated in Table 1. Among participants with good experiences (n = 410), the most commonly cited areas of services were:

- Consultation services (55%, 227/410 overall; 51% in Loima vs. 58% in Turkana Central; $p = 0.15$).
- Pharmacy services (37%, 153/410; similar across sub-counties, $p = 0.53$).
- Antenatal care (ANC) visits (18%, 75/410; $p = 0.14$).

- Immunization (16%, 64/410; marginally higher in Loima at 20% vs. 13%; p = 0.063).
- Laboratory services (13%, 55/410; lowest rated, p = 0.39).

Other services cited by respondents (10%, 43/410; p = 0.11) were; Child clinic and treatment of illness, Comprehensive care clinic, Family planning services, Fever, HIV tests, Injections, Nutrition services, Outpatient department and Supplements

Delays and Waiting Times

A third of participants (33%, 148/442) reported delays in receiving medical attention, with a significantly higher proportion in Loima (42%, 66/159) than in Turkana Central (29%, 82/283; p = 0.007). Median waiting time at the facility was 20 minutes (IQR 6–40 overall), with no significant sub-county difference (30 min [IQR 10–45] in Loima vs. 20 min [IQR 5–40] in Turkana Central; p = 0.15).

Financial and Amenity Aspects

Only 15% (64/430) reported paying fees for services, with no sub-county difference (16% in Loima vs. 14% in Turkana Central; p = 0.53), aligning with free primary care policies but indicating some out-of-pocket costs persist as shown in Table 1.

Access to basic amenities (e.g., water, sanitation, seating) during the visit was reported by 61% (268/442) overall, significantly lower in Loima (53%, 85/159) than in Turkana Central (65%, 183/283; p = 0.021) as shown in Table 1.

Recommendation of the facility to others and Facility Accessibility

96% (425/442) would recommend the facility to others, with no significant difference (98% in Loima vs. 95% in Turkana Central; p = 0.11) as shown in Table 1. Median reported proximity (distance in km) was 3.0 km (IQR 1.0–6.0 overall), similar across sub-counties (p = 0.49). Time taken to reach the facility differed significantly (p < 0.001) as shown in Table 1

- ≤ 30 minutes (category 1): 55% overall (43% in Loima vs. 62% in Turkana Central).
- 31–60 minutes (category 2): 35% (46% in Loima vs. 28% in Turkana Central).
- 60 minutes (category 3): 10% (11% in Loima vs. 9.5% in Turkana Central).

Mode of Transport Used

Most participants (87%, 383/442) walked to the facility, 13% using motorbikes with no sub-county difference (p = 0.95) as shown in Table 1. Overall facility

accessibility was rated high at 90% (397/442), but significantly lower in Loima (83%, 132/159) than in Turkana Central (94%, 265/283; p < 0.001) as shown in Table 1.

Challenges Faced in Accessing Facilities: Among those reporting challenges (n = 45 subset), the predominant issue was distance (98%, 44/45; similar across sub-counties, $p > 0.99$). Other challenges included:

- Lack of transport (24%, 11/45; $p = 0.30$).
- High cost of transport (20%, 9/45; significantly higher in Loima at 33% vs. 0% in Turkana Central; $p = 0.007$).
- Inaccessible roads (4.4%, 2/45; $p = 0.51$).
- Insecurity (2.2%, 1/45; $p > 0.99$).

Table 1
Characteristics of Participants by setting levels (Loima and Turkana Central Sub-Counties)

Characteristic	N	Overall N = 442[1]	Loima N = 159[1]	Turkana Central N = 283[1]	p-value[2]
Closest facility	442	361 (82%)	144 (91%)	217 (77%)	< 0.001
Services Received at the facility	442	430 (97%)	153 (96%)	277 (98%)	0.36
Satisfaction with the services	430	410 (95%)	150 (98%)	260 (94%)	0.049
Services most satisfied with/Immunization	410	64 (16%)	30 (20%)	34 (13%)	0.063
Services most satisfied with/ANC Visit	410	75 (18%)	33 (22%)	42 (16%)	0.14
Services most satisfied with/Laboratory Services	410	55 (13%)	23 (15%)	32 (12%)	0.39
Services most satisfied with/Pharmacy	410	153 (37%)	53 (35%)	100 (38%)	0.53
Services most satisfied with/Consultation	410	227 (55%)	76 (51%)	151 (58%)	0.15
Services most satisfied with/ Other	410	43 (10%)	11 (7.3%)	32 (12%)	0.11
Delays in receiving medical attention	442	148 (33%)	66 (42%)	82 (29%)	0.007
Waiting time at the facility	442	20 (6, 40)	30 (10, 45)	20 (5, 40)	0.15
Fee payment for services	430	64 (15%)	25 (16%)	39 (14%)	0.53
Access to basic amenities	442	268 (61%)	85 (53%)	183 (65%)	0.021
Facility Recommendation to others	442	425 (96%)	156 (98%)	269 (95%)	0.11
Proximity to facility	442	3.0 (1.0, 6.0)	3.0 (1.0, 8.0)	3.0 (1.0, 6.0)	0.49
Time taken to reach facility	442				< 0.001
1		245 (55%)	69 (43%)	176 (62%)	
2		153 (35%)	73 (46%)	80 (28%)	
3		44 (10.0%)	17 (11%)	27 (9.5%)	
Mode of transport used	442				0.95

[2]Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test

Characteristic	N	Overall N = 442[1]	Loima N = 159[1]	Turkana Central N = 283[1]	p-value[2]
Foot		383 (87%)	138 (87%)	245 (87%)	
Motorbike		59 (13%)	21 (13%)	38 (13%)	
Facility Accessibility	442	397 (90%)	132 (83%)	265 (94%)	< 0.001
Challenges Faced/Distance	45	44 (98%)	26 (96%)	18 (100%)	> 0.99
Challenges Faced/ Lack of Transport	45	11 (24%)	5 (19%)	6 (33%)	0.30
Challenges Faced/ Inaccessible Roads	45	2 (4.4%)	2 (7.4%)	0 (0%)	0.51
Challenges Faced/ Insecurity	45	1 (2.2%)	1 (3.7%)	0 (0%)	> 0.99
Challenges Faced/ High cost of Transport	45	9 (20%)	9 (33%)	0 (0%)	0.007

[1]n (%); Median (Q1, Q3)

[2]Pearson's Chi-squared test; Fisher's exact test; Wilcoxon rank sum test

5. Discussion

Patient experience is increasingly recognized as a critical dimension of healthcare quality, encompassing all interactions that shape patients' perceptions across the continuum of care, extending beyond satisfaction to emotional, psychological, and practical aspects of care (15). This study examined patient experiences within primary care facilities in Loima and Turkana Central sub-counties, focusing on access, utilization, and health system challenges.

Most participants (82%) reported attending their nearest facility, reflecting reliance on local services in rural and underserved settings where transport options are limited (16). However, this varied by sub-county, with higher use of nearby facilities in Loima (91%) compared to Turkana Central (77%). Walking was the predominant mode of transport (87%), reinforcing evidence that distance, poor infrastructure, and limited transport remain major barriers to access in similar contexts (17–19). Although overall service utilization was high (97%), these findings highlight important inequities in access pathways across settings.

Overall positive patient experience was high (95%), consistent with findings from other low- and middle-income countries where reported satisfaction is often high despite resource constraints, partly influenced by patient expectations (20). However, there was a statistically significant difference between Loima (98%) and Turkana Central (94%) (p = 0.049), indicating contextual variation in perceived quality of

care. Positive experiences were most frequently reported in consultation (55%) and pharmacy services (37%), while immunization services showed no significant differences between sub-counties.

Waiting time emerged as a major challenge, with 33% of participants reporting delays in receiving care, significantly higher in Loima (42%) than Turkana Central (29%; p = 0.007). Although median waiting time was 20 minutes and not statistically different between sites, perceived delays suggest broader inefficiencies beyond measured waiting time. Evidence consistently shows that waiting time is a key determinant of patient experience and is associated with reduced service utilization, poorer retention, and weakened continuity of care (22).

Only 15% of participants reported paying for services, indicating partial persistence of out-of-pocket or informal payments despite free primary healthcare policies (23). Access to basic amenities was reported by 61% overall but was significantly lower in Loima (53%) than Turkana Central (65%; p = 0.021). The availability of water, sanitation, and waiting space is essential for dignity and perceived quality of care and strongly influences patient experience even when clinical services are adequate (24).

Distance was the most frequently reported barrier to access (98%), while transport costs were significantly higher in Loima (33% vs. 0%; p = 0.007), highlighting additional economic barriers in more remote settings (25). These findings demonstrate the combined influence of geographic, infrastructural, and socioeconomic determinants of healthcare access in arid and semi-arid regions.

Overall, patient experience is shaped by both health system factors (waiting time, provider interaction, facility amenities) and structural determinants (distance, transport, infrastructure). These findings underscore the need for context-specific primary care strengthening strategies, including improved service efficiency, enhanced facility infrastructure, and innovative outreach models such as community-based care and mobile services (26–27). Strengthening patient-centred care, communication, and provider responsiveness remains essential for improving trust, adherence, and sustained utilization of primary care services (28–30)

5.1 Clinical Implications

The findings from this study have several important clinical implications for strengthening primary care delivery in resource-limited and geographically dispersed settings. The strong reliance on the nearest health facility (82%), combined with the high proportion of participants walking to facilities (87%), indicates that physical proximity remains a primary determinant of care utilization [31]. This underscores the need to decentralize essential services, expand outreach models such as mobile clinics and community-based service delivery, and ensure consistent availability of frontline services in peripheral facilities to prevent delayed care and disease progression [32].

The high overall experience rate (95%) despite documented barriers such as delays, transport costs, and infrastructure gaps suggests that patient experience alone should not be used as a proxy for service quality [31]. Clinicians and facility managers should therefore complement experience metrics with

objective quality indicators, including waiting time audits, clinical outcome monitoring, and service readiness assessments, to obtain a more accurate picture of care performance [33].

Delays in receiving medical attention, reported by one-third of participants and significantly higher in Loima, indicate workflow inefficiencies that may compromise timely diagnosis and treatment Clinically, prolonged delays can worsen health outcomes, particularly for acute conditions, maternal and child health needs, and infectious diseases [34–35].

The association between access to basic amenities and patient experience highlights that clinical quality is inseparable from the care environment [31]. Adequate water, sanitation, seating, and shelter are not merely infrastructural considerations; they directly influence patient dignity, infection prevention, adherence to care, and willingness to return for follow-up [36]. Ensuring minimum facility standards should therefore be considered a clinical quality priority rather than an administrative add-on.

Transport costs and geographic barriers especially pronounced in Loima have direct clinical consequences because they delay presentation, reduce continuity of care, and increase the likelihood of complications [37]. Integrating transport support mechanisms, community referral systems, and scheduled outreach services can reduce missed visits and improve treatment adherence [38].

Finally, the strong association between willingness to recommend facilities and positive experience suggests that patient experience is closely linked to trust in providers [31]. Clinically, this reinforces the importance of patient-centered communication, respectful care, and shared decision-making as core competencies for healthcare workers [39]. Training programs that strengthen interpersonal and communication skills should therefore be considered essential clinical capacity-building interventions [40].

6. Limitations

The study used a self-reported measure of patient experiences, which may be subject to social desirability bias, recall bias, and response bias. Second, the study did not include some potential factors that may affect patient experiences, such as patient-provider interaction, communication, information, respect, and trust. Fourth, the study did not explore the differences in patient experiences by gender, age, education, income, and other socio-demographic characteristics. Fifth, the study was conducted in one county in Kenya, which may limit the generalization of the results to other settings.

Despite these limitations, this study provides valuable insights into the factors associated with patient experiences with primary care in Turkana County, Kenya with representation from two sub counties (Loima and Turkana Central). The study suggests that patient experiences can be improved by addressing the issues of waiting time, access to basic amenities, willingness to recommend, location and distance of the facility, and means of transport. The study also contributes to the literature on patient experiences with primary care in sub-Saharan Africa and globally, by highlighting the similarities and differences in the factors that influence patient experiences in different contexts. The study has

implications for policy makers, health managers, and health workers, who can use the findings to design and implement interventions to improve the quality and impact of primary care in Turkana County, Kenya, and other similar settings.

7. Conclusion

The study offers valuable guidance for policy makers, health managers, and health workers to improve Primary Care in Turkana County, Kenya, and similar areas. It suggests enhancing Patient experiences by addressing waiting times, access to amenities, facility recommendation rates, location, distance, and transportation options especially in sub counties such as Loima. Recommended interventions include implementing systems to reduce waiting times, providing essential amenities at health facilities, promoting community engagement in primary care, improving facility accessibility and availability, and offering affordable transportation. These measures aim to improve service efficiency, patient comfort, community involvement, and overall access to health care.

Declarations

Ethics approval: Our research involved human participants and was performed in accordance with the Declaration of Helsinki, undergoing approval by an appropriate ethics committee. The study was approved by Amref Ethics and Scientific Review Committee. The study protocol number was P1465-2023. All ethical procedures were conducted and maintained throughout the study period. informed consent was obtained from the participants.

Consent for publication: N/A

Availability of data and materials

All relevant data are within the manuscript and its Supporting Information files. In case of any reason to make the datasets available, this is acceptable and will be done with on reasonable request from the corresponding author and permission from the collaborating investigators.

Competing interests

The authors declare that there are no conflicts of interest regarding the publication of this paper. All authors have contributed significantly to the creation of this manuscript and have read and approved the final version submitted. There are no financial or personal relationships with other people or organizations that could inappropriately influence our findings.

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Authors' contributions

1. YO; Yvonne Opanga	Conceptualization of the study, protocol development, RA training, implementation of the study, supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
2. CB; Chris Barasa	Study conceptualization, protocol development, resource mobilization, RA training, implementation of the study, supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
100. JS; Jane Sydney	Supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
500. MM; Mercy Mwangangi	Study conceptualization, protocol review, resource mobilization, data review and validation, report review, manuscript review and finalization
5. GW; Gilbert Wangalwa	Study conceptualization, resource mobilization, data review and validation, report review and validation, dissemination manuscript development and review
6. EM; Emmanuel Musombi	Study conceptualization, data review and validation, report writing, review and validation, dissemination, manuscript development and review
7. LE; Lopodo Ekal	Study conceptualization, protocol development, resource mobilization, RA training, implementation of the study, supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
8. SA; Sarah Akiru	Study conceptualization, protocol development, resource mobilization, RA training, implementation of the study, supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
1. GL; Gilchrist Lokoel	Study conceptualization, protocol development, resource mobilization, RA training, implementation of the study, supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
10. MM; Mark Mwanja	Study conceptualization, protocol development, supervision of data collection, data review and validation, report review, manuscript review and finalization
11. AG; Aloise Gikunda	RA training, supervision of data collection, analysis, data review and validation, report writing, manuscript review and finalization
50. JO; Jarim Omogi	Conceptualization of the study, protocol development, RA training, supervision of data collection, analysis, data review and validation, report writing, manuscript development, review and finalization
1000. AA; Anthony Arasio	Study conceptualization, protocol review, resource mobilization, data review and validation, report review, manuscript review and finalization

14. RK; Richard Kiplimo	Data quality reviews, data cleaning and analysis, review and validation, report writing, manuscript review
1. EO; Evans Osembo	Data review and validation, report review, manuscript review and finalization
16. RW; Risper Walumbe	Data review and validation, report review, manuscript review and finalization
17. PM; Peter Memiah	Data review and validation, report review, manuscript review and finalization
18. MN; Meshack Ndirangu	Study conceptualization, resource mobilization, data review and validation, report review and validation, dissemination manuscript development and review

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Figures

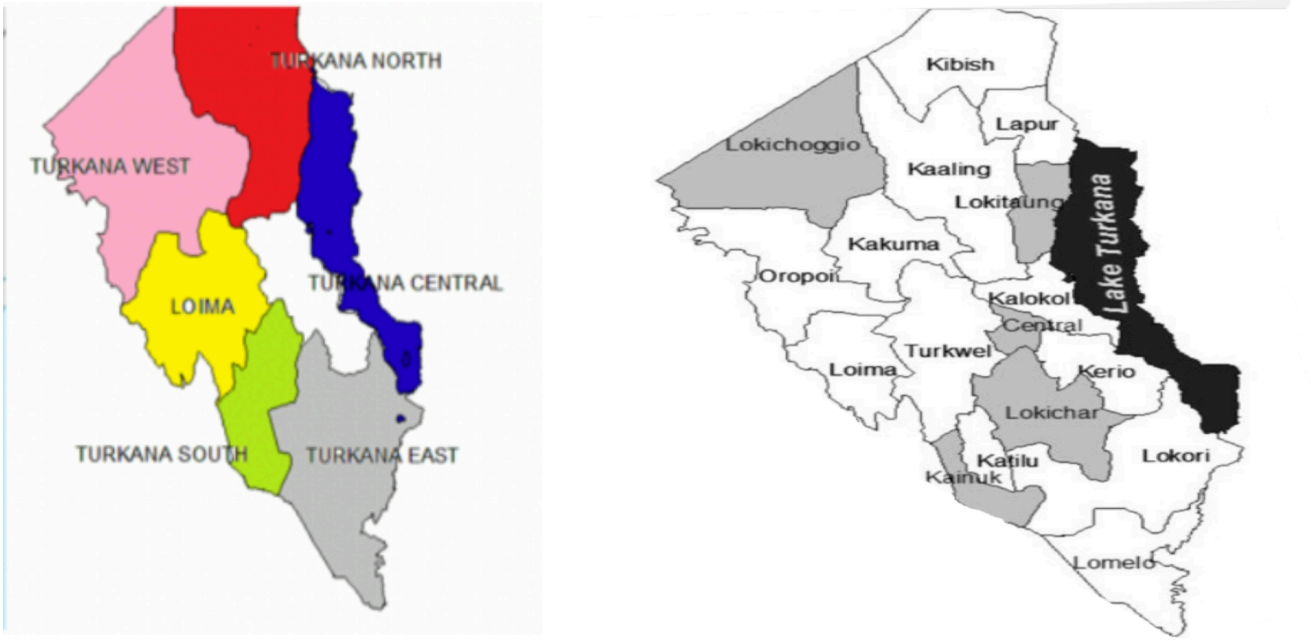


Figure 1

Maps of Turkana County, sub counties and Wards

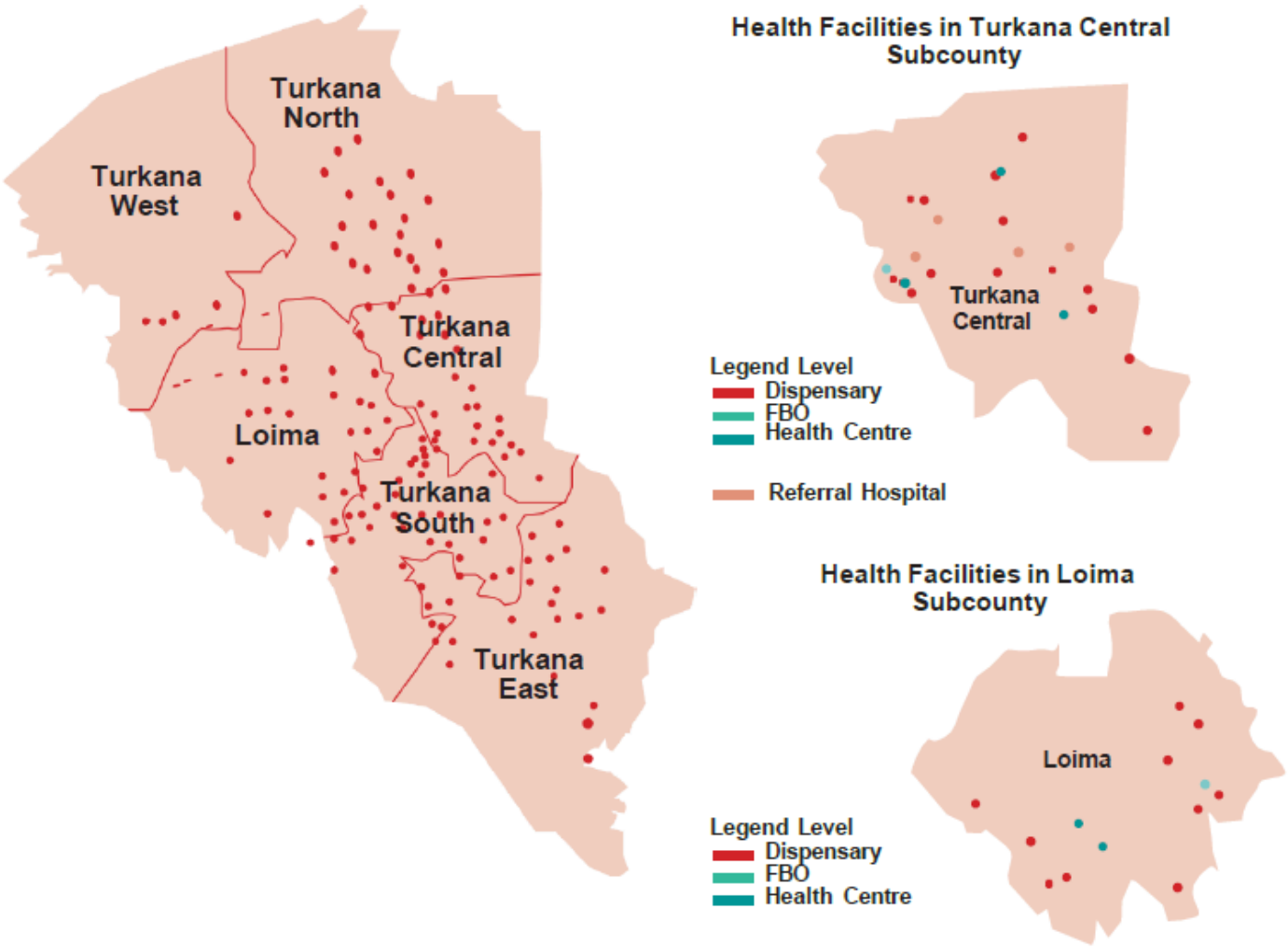


Figure 2

Map showing the facilities targeted in Loima and Turkana Central sub counties.

Supplementary Files

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