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Original Research Article

Community awareness and utilization of health services at Iringa Regional Referral Hospital in Tanzania: a cross-sectional study

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ABSTRACT

Background: The Iringa Regional Referral Hospital (IRRH) is a vital referral facility for both urban and rural populations in Tanzania's Iringa Region. The assessment aimed to evaluate community awareness, accessibility, and perceptions of service quality, all of which influence effective utilization of referral hospital services.
Methods: A community-based cross-sectional study surveyed 199 adult residents in the IRRH catchment area, using a structured questionnaire that assessed socio-demographic characteristics, awareness and accessibility of services, utilization patterns, information sources, and perceptions of service quality. Descriptive statistics and chi-square tests analyzed factors associated with utilization at a 95% confidence level.
Results: Most respondents recognized that IRRH offers health services, though awareness of specialized options was low (15.1% for rehabilitative care, 7% for specialized clinics). Ninety-three percent had visited IRRH, with inpatient (74%) and diagnostic services (58.3%) being most common. Key factors influencing utilization included age, marital status, service awareness, perceived reliability, and perceived quality, while gender did not significantly impact usage. Barriers included high costs (81.9%), long waits (69.3%), and poor staff attitudes (64.3%). Trustworthy information sources were radio and health workers, and respondents indicated a need for better hospital communication.
Conclusions: While general awareness of IRRH services is high, utilization is influenced by both socio-demographic factors and perceptions of service reliability and quality. Addressing financial, accessibility, and communication barriers, along with strengthening outreach and service quality, is essential to enhance the effective use of referral hospital services.

Keywords: Community awareness, Healthcare utilization, Health service accessibility, Iringa Regional Referral Hospital, Referral hospital, Tanzania

INTRODUCTION

Referral hospitals play a pivotal role in the healthcare system by providing specialized and advanced medical services that cannot be managed at lower-level facilities. In Tanzania, regional referral hospitals serve as essential links between district-level hospitals and national referral centers, offering a range of diagnostic, therapeutic, and emergency services. Hence some studies found that unawareness of the healthcare services, and lack of information and feedback mechanism had affected the utilization of the utilization of the healthcare services.[1]

Despite their importance, utilization of referral hospitals is often suboptimal, particularly in low- and middle-income settings, due to factors such as limited community

awareness, long distances, high costs, long waiting times, and perceived poor quality of care. Understanding these determinants is critical for improving access, efficiency, and equity in healthcare delivery. The need of community awareness on the availability of healthcare services in public health care facilities is important determined factor for the utilization.[2]

Iringa Regional Referral Hospital (IRRH) serves both urban and rural populations across Iringa Region and acts as a central hub for specialized health services. The hospital provides a wide spectrum of services, including maternal and child health, surgery, internal medicine, diagnostics, and limited rehabilitative care. However, gaps remain in community knowledge of available services, especially specialized and outreach programs, which may limit timely access and utilization. Assessing community awareness and perceptions is therefore essential to identify barriers, inform targeted interventions, and strengthen the referral system. Awareness of provision of health care services proved to a catalyst towards the utilization of the healthcare services.[3]

Community perceptions of health services, including trust in healthcare providers, reliability, and quality, strongly influence health-seeking behavior. Furthermore, having history of illness, having under five children in the household can have an influence of utilization of the health care services.[4] Evidence suggests that factors such as affordability, staff attitudes, and communication from healthcare facilities shape utilization patterns.

Moreover, effective dissemination of information through trusted channels, such as radio, health workers, and community networks, can improve awareness and service uptake. This study was conducted to evaluate the level of community awareness, accessibility, and utilization of health services at IRRH, generating evidence to guide strategies for improving service delivery and ensuring equitable access to referral-level care.

METHODS

Study design and setting

A community-based cross-sectional study was conducted between August and September 2025 in urban and rural areas of Iringa Region, Tanzania. The study targeted adult residents in the catchment area of Iringa Regional Referral Hospital (IRRH), the primary referral facility for the region.

Study population and eligibility

The study population included adults aged 18 years and above who had lived in the study area for at least six months. Individuals who were critically ill or unable to provide informed consent were excluded.

Sample size determination

The sample size was calculated using the single population proportion formula:

$n=Z^2p(1-p)/d^2$

Where: n=required sample size; Z=standard normal deviate at 95% confidence level (1.96)

p=estimated proportion of the population aware or utilizing IRRH services (assumed 50% in the absence of prior data)

d=margin of error (5%, 0.05)

Considering the finite catchment population and logistical feasibility, the sample size was adjusted to 200 participants, accounting for potential non-response and ensuring adequate statistical power.

Sampling procedure

A stratified random sampling technique was used to ensure proportional representation of urban and rural residents. Participants were selected from each stratum based on residential location using simple random sampling.

Data collection tool and procedure

Data were collected using a structured questionnaire developed from literature review and expert input. The questionnaire included six domains: socio-demographic characteristics, awareness of general and specialized IRRH services, accessibility and perceptions, utilization patterns, sources of information, and suggestions for service improvement. Trained data collectors conducted face-to-face interviews after obtaining written informed consent. Confidentiality and voluntary participation were strictly maintained.

Data management and analysis

Data were coded, entered, and cleaned using SPSS version (27). Descriptive statistics, including frequencies and percentages, summarized participant characteristics, awareness, accessibility, and utilization patterns. Associations between utilization and participant characteristics were analyzed using chi-square tests at a 95% confidence level, with p values <0.05 considered statistically significant.

Ethical considerations

Written informed consent was obtained from all participants, and confidentiality was strictly maintained. Participants were informed of their right to withdraw from the study at any time without consequence.

RESULTS

Socio-demographic characteristics

A total of 199 respondents participated in the study. The majority of respondents were aged 20-29 years 85 (42.7%), while minorities were below 20 years 5 (2.5%). Regarding gender, slightly more than half of the respondents were female 107 (53.8%), In terms of marital status, the majority of respondents were married 143 (71.9%), concerning level of education, more than one-third of respondents had primary education 72 (36.2%), while minority had college or university education accounted for 31 (15.6%).

Table 1: Social demographic characteristics (n=199).

Variables	Frequency	Percentage
Age (years)		
<20	5	2.5
20-29	85	42.7
30-39	59	29.6
>39	50	25.1
Gender		
Male	92	46.2
Female	107	53.8
Marital status		
Single	56	28.1
Married	143	71.9
Level of education		
Informal education	32	16.1
Primary education	72	36.2
Secondary education	64	32.2
College/University	31	15.6
Resident		
Urban	137	68.8
Rural	62	31.2
District		
Iringa urban	138	69.3
Iringa rural	61	30.7
Duration lived in the area (years)		
>1	18	9.1
1-5	37	18.6
6-10	88	44.2
>10	56	28.1
Average income per month (TZs)		
<100,000	129	64.8
100,000-300,000	54	27.1
>300,000	16	8.1

In terms of average monthly income, the majority of respondents earned less than TZS 100,000 per month 129 (64.8%), while minority 16 (8.1%) earned above TZS 300,000, indicating that most respondents were from low-income households. Refer to Table 1.

Awareness of availability of general health services

Awareness of general health services at IRRH was highest for inpatient services 170 (85.4%) and immunization services 143 (71.9%). Nearly half of respondents 96 (48.2%) knew about pharmacy services, while awareness of outpatient services 65 (32.7%) and health education programs 53 (26.6%) was relatively low, indicating gaps in community knowledge about some basic services. Refer to Figure 1.

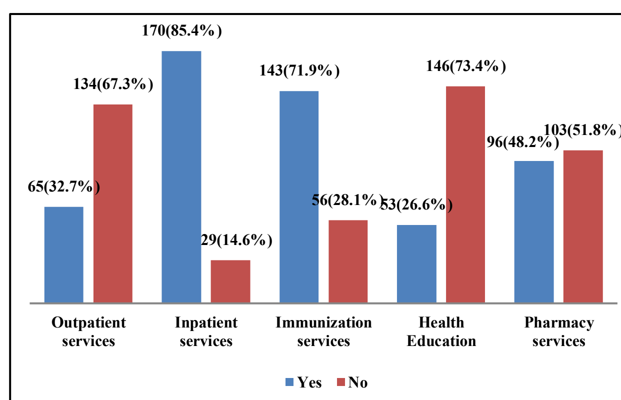

Figure 1: Awareness of availability of general health services at IRRH (n=199).

Awareness of specialized services available at IRRH

Awareness of specialized services at IRRH varied among respondents. Most were aware of maternal health 156 (78.4%), children's services 154 (77.4%), and surgery 153 (76.9%). Over half knew about diagnostic services such as x-ray 114 (57.3%), while awareness of internal medicine was about half 99 (49.7%). Knowledge of rehabilitative care 30 (15.1%) and specialized clinics 14 (7%) was very low, indicating limited community awareness of some specialized services. Refer to Figure 2.

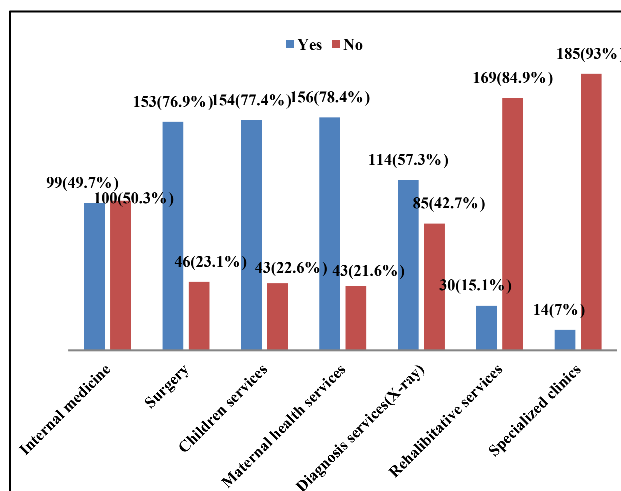

Figure 2: Awareness of specialized services available at IRRH (n=199).

Awareness of campaign/community outreach services coordinated by IRRH

Awareness of IRRH's campaign and community outreach services was low, with only 70 (35.2%) of respondents reporting knowledge of such programs. However, most participants knew the location and working hours of IRRH 188 (94.5%) and were aware that the hospital provides services for all age groups, including children, adults, and the elderly 166 (83.4%). Refer to Table 2.

Accessibility of healthcare services at IRRH

Most respondents lived within 5-10 km of IRRH 78 (39.2%) and mainly used public transport 183 (92%). Despite this, access was perceived as difficult by many participants, with 87 (43.7%) reporting services as very difficult or difficult to access. Affordability was a major challenge, as only 58 (29.1%) considered services affordable. However, the majority perceived the services as reliable 194 (97.5%), culturally appropriate 195 (98%), and of good quality 192 (96.5%). Refer to Table 3.

Table 2: Awareness of campaign/community outreach services coordinated by IRRH (n=199).

Variables	Frequency	Percentage
Campaign/community outreach services coordinated by IRRH		
Yes	70	35.2
No	129	64.8
Knowing location of IRRH and working hours		
Yes	188	94.5
No	11	5.5
If IRRH provides services for all groups (child, adult and elder)		
Yes	166	83.4
No	7	3.5
Do not know	26	13.1

Table 3: Accessibility of the health services at IRRH (n=199).

How far is IRRH from home	Frequency	Percentage
<5	46	23.1
5-10	78	39.2
11-20	49	24.6
>20	26	13.1
Means of transport to IRRH		
Walking	4	2
Bicycle	3	1.5
Public transport	183	92
Others	9	1.5
How easy for you to access services		
Very difficult	87	43.7
Difficult	25	12.6
Average	77	38.7
Easy	8	4
Very easy	2	1
Affordability		
Yes	58	29.1
No	141	70.9
Reliable		
Yes	194	97.5
No	5	2.5
Cultural appropriate		
Yes	195	98
No	4	2
Of good quality		
Yes	192	96.5
No	7	3.5

Barriers to access healthcare services at IRRH

High costs were the most frequently reported barrier to accessing health care services at IRRH 163 (81.9%), followed by long waiting times 138(69.3%) and poor staff attitudes 128 (64.3%). Lack of information also affected a substantial proportion of respondents 124 (62.3%), while distance and transport were reported by fewer participants 37 (18.6%). Preference for private hospitals was minimal 3 (1.5%). Overall, the findings indicate that financial, service delivery, and information-related factors are the main barriers to accessing care at IRRH. (Figure 3).

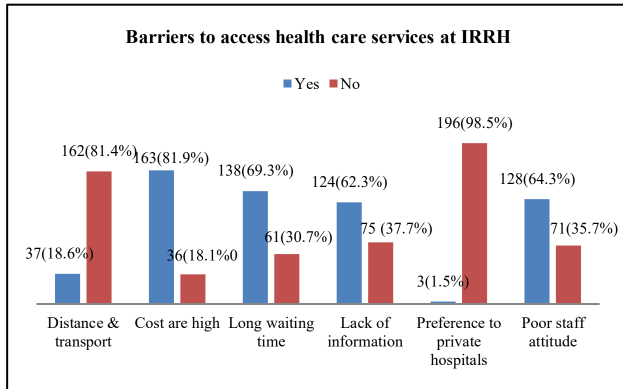

Figure 3: Barriers to access health care services at IRRH.

Utilization of health care services at IRRH

Utilization of health care services at Iringa Regional Referral Hospital (IRRH) was high, with 185 (93%) of respondents reporting having ever visited the facility. Inpatient 148 (74%) and diagnostic services 116 (58.3%) were the most commonly utilized, while outpatient, rehabilitative, and special clinic services were used by relatively few respondents (each about 13%). Most participants visited IRRH once per year 116 (58.6%), and only 43 (21.6%) had ever been referred to Muhimbili National Hospital, indicating that most health needs were managed at the regional level. Overall satisfaction was high, as 183 (92%) would recommend IRRH services, although many respondents also sought care from private clinics 103(51.8%) and other regional hospitals 89 (44.7%), reflecting diversified health-seeking behavior. Refer to Table 4.

Information sources

Radio was the most trusted source of information on IRRH services 148 (74.4%), followed by friends and relatives 107 (53.8%). Health care providers 71 (35.7%) and social media 56 (28.1%) played a moderate role, while posters/flyers 49 (24.6%) and television 45 (22.6%) were less trusted. Community meetings were the least trusted source 7 (3.5%), indicating that mass media and interpersonal networks are the primary channels for information dissemination. Refer to Figure 4.

Table 4: Utilization of health care services at IRRH (n=199).

Variables	Frequency	Percentage
Ever visited IRRH		
Yes	185	93
No	14	7
Outpatient services		
Yes	26	13.1
No	173	86.9
Inpatient services		
Yes	148	74.4
No	51	25.6
Diagnostic services		
Yes	116	58.3
No	83	41.7
Rehabilitative services		
Yes	27	13.6
No	172	86.4
Special clinics services		
Yes	27	13.6
No	172	86.4
How often visited IRRH		
Once per year	116	58.6
2-3time per year	64	32.3
>3times per year	19	9.5
Ever been referred to MNH		
Yes	43	21.6
No	156	78.4
Would recommend HCs of IRRH to others		
Yes	183	92
No	16	8
Where else did you seek treatment apart from IRRH		
Private clinic	103	51.8
Regional based hospital	89	44.7
Traditional healers	7	3.5

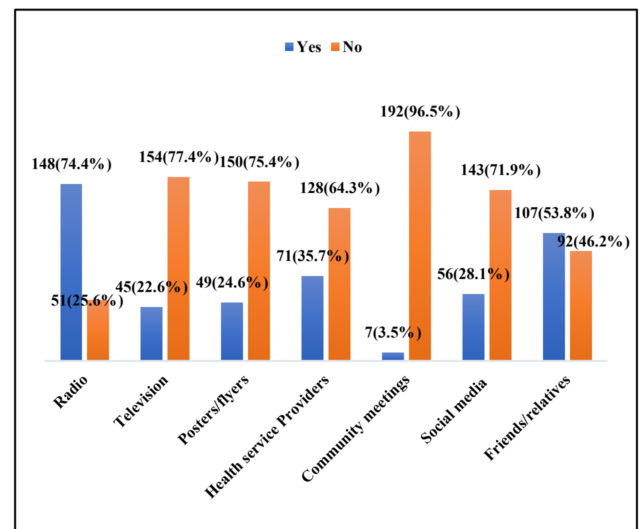

Figure 4: The sources of information trusted most regarding IRRH services (n=199).

Motivation for using IRRH healthcare services

The main motivating factors for using health care services were reduction of service costs 181 (91%) and shorter waiting times 159 (79.9%). Improved staff behavior and attitudes were also reported by a large proportion of respondents 150 (75.4%), indicating the importance of patient-provider interactions. Better awareness and outreach programs motivated over half of the respondents 113 (56.8%), while improvement in the overall quality of health care services was reported by a relatively smaller proportion 52 (26.1%). Overall, the findings suggest that affordability, efficiency, and respectful care are the key drivers of health service utilization. Refer to Figure 5.

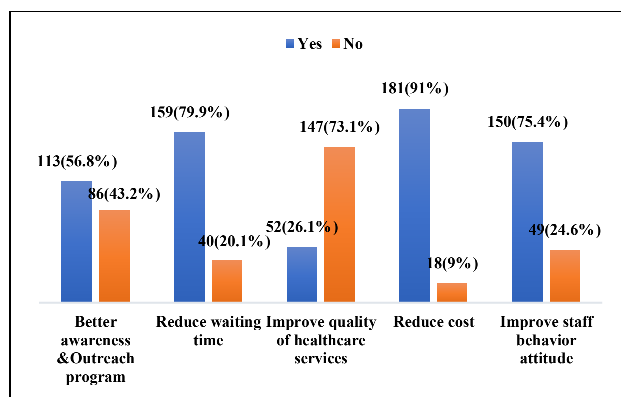

Figure 5: Motivation for using healthcare services (n=199).

Table 5: Determined factors for the utilization of IRRH health care services.

Variables	Ever visited IRRH		χ^2	P value
	Yes (%)	No (%)		
Age (years)				
<20	1 (20)	4 (80)	44.17[a]	0.001
20-29	78 (91.8)	7 (8.7)		
30-39	58 (98.3)	1 (1.7)		
>39	48 (96)	14 (4)		
Gender				
Male	86 (93.5)	6 (6.5)	0.69[a]	0.793
Female	99 (92.5)	8 (7.5)		
Marital status				
Single	46 (82.1)	10 (17.9)	14.97[a]	0.002
Married	139 (97.2)	4 (2.8)		
Aware of IRRH services provided				
Yes	185 (94.4)	11 (5.6)	40.25[a]	0.001
No	0 (0)	3 (100)		
Reliable services at IRRH				
Yes	184 (94.8)	10 (5.2)	41.75[a]	0.001
No	1 (20)	4 (80)		
Quality health services				
Yes	181 (94.3)	11 (5.7)	14.24[a]	0.001
No	4 (57.1)	3 (42.9)		

Determined factors for the utilization of the IRRH health care services

At a 95% confidence level, 93.0% of participants reported having ever visited Iringa Regional Referral Hospital (IRRH). Utilization was significantly associated with age (χ^2=44.17, p<0.001) and marital status (χ^2=14.97, p=0.002), with higher visitation among adults ≥20 years and married participants. Awareness of services (χ^2=40.25, p<0.001), perceived reliability (χ^2=41.75, p<0.001), and perceived quality of health services (χ^2=14.24, p<0.001) were also significant predictors of utilization, whereas gender showed no significant association (χ^2=0.69, p=0.793). These findings indicate that age, marital status, and positive perceptions of hospital services strongly influence healthcare-seeking behavior at IRRH, highlighting the importance of improving awareness and perceived quality to enhance utilization. Refer to Table 5.

DISCUSSION

This study evaluated community awareness and utilization of health services at Iringa Regional Referral Hospital (IRRH) in Tanzania, highlighting both strengths and gaps in service uptake. Overall, general awareness of IRRH was high, with majority of participants reporting having ever visited the hospital, and inpatient, and diagnostic services being the most frequently utilized.

This demonstrates the hospital's critical role as a regional referral center for complex and acute conditions.

However, awareness of specialized services, including rehabilitative care, and specialized clinics, remained low, indicating limited community knowledge of the full range of services offered. These findings align with studies from other low- and middle-income countries, which report high general visibility of referral hospitals but low awareness of specialized services, potentially limiting optimal utilization.

Socio-demographic factors significantly influenced utilization patterns. Age and marital status were strongly associated with service use, with adults' ≥20 years and married individuals more likely to access care, possibly reflecting greater healthcare needs and family-oriented health-seeking behaviors. Gender did not significantly affect utilization, suggesting relatively equitable access across sexes. While in previous studies was found that gender, male dominance in decision making in the household, inadequate health services and unfavorable transport affected the utilization of health care services.[5]

Importantly, perceptions of service reliability and quality were also significant predictors of utilization, underscoring the role of patient trust and perceived service standards in healthcare-seeking decisions. This supports the view that improving patient experience and ensuring consistent service quality can enhance utilization rates. Incostrast to other studies was found that lack of facilities, personnel, shortage of medicine, and opening hours of the health facilities resulted to poor health status of the community.[6]

Financial and structural barriers were prominent, with high costs, long waiting times, and poor staff attitudes cited as major obstacles. Similarly, a systematic review done in India found that the cost to be one of bottlenecks in accessing the health care services.[7] Furthermore, this corresponded with the previous study which found that long waiting time, communication, negative staff attitudes, high cost, and lack of grievance mechanism affects the healthcare services utilization.[8]

Lack of detailed information about available services affected respondents, reflecting a critical gap in community outreach and health education. This linkage with study conducted in Uganda which found that negative staff attitude, limited information, and inadequate financial capacity hinder community to access healthcare services.[9]

The predominance of radio and health workers as trusted sources of information indicates opportunities for strengthening communication strategies to improve awareness of both general and specialized services. Addressing affordability, accessibility, and communication gaps, alongside improvements in staff behavior and service efficiency, is essential to optimize utilization. Similarly previous study found that poor communication to be key hindering factor for provision of quality healthcare services.[10]

Overall, these findings highlight that while community awareness of IRRH exists, targeted interventions focusing on information dissemination, service quality, and patient-centered care are critical for enhancing equitable and effective utilization of referral hospital services.

The study's merits include its community-based approach, which enables realistic assessments of health care awareness, accessibility, and usage. Primary data was gathered via structured questionnaires, which provided context-specific insights pertinent to the IRRH catchment region. The study examined a wide range of characteristics, including demographics, use patterns, and perceived service quality. Using descriptive statistics and chi-square tests, it found significant connections between factors and service consumption at a 95% confidence level. The study identified actionable hurdles such as high costs, lengthy wait times, and staff attitudes, which will inspire policy and program reforms for both general and specialty health care.

The study employed a cross-sectional technique, gathering data at one specific time, which restricts the ability to establish causal relationships. It faced potential recall bias and social desirability bias due to self-reported data, with respondents possibly exaggerating positive behaviors or downplaying negative experiences. Additionally, the study only covered the Iringa regions and was limited to a quantitative approach.

CONCLUSION

This study highlights that while awareness of Iringa Regional Referral Hospital (IRRH) is high, its service utilization is impacted by socio-demographic factors, particularly age and marital status, along with perceptions of service quality. Despite overall awareness, knowledge of specialized services is limited. Key barriers include costs, long waiting times, negative staff attitudes, and insufficient information. To improve utilization, the study recommends targeted health education, reducing waiting times, enhancing affordability, strengthening patient-provider interactions, and employing effective communication strategies. Ongoing monitoring and evaluation of service use and patient satisfaction are also advised to ensure equitable access to quality care.

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