REASONS WHY PATIENTS BYPASS LOWER LEVEL PUBLIC FACILITIES: A CROSS SECTIONAL STUDY FROM UGANDA

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Abstract

Background The quality of services in Uganda at higher level health facilities are usually affected negatively by congestion when patients bypass care from their primary care health facilities (PCHF). The reason behind this bypass phenomenon in Uganda is limited. This study was conducted among patients receiving care at Lira Regional Referral Hospital in northern Uganda to identify reasons why patients bypass their PCHF. **Methods** We performed a descriptive cross-sectional study between 29/12/2014 & 30/1/2015, 484 respondents attending the outpatient department were recruited by systematic random sampling. Four focus group discussions (FGDs) each involving 10 participants were conducted. Quantitative data was collected using a validated questionnaire, entered, analysed by Epidata Entry 3.1 and SPSS 18 versions respectively. Descriptive statistics and chi square test for differences in the study population were used. For qualitative data, thematic analysis of transcripts was done. Codes and categories were developed and interrogated following an iterative process based on grounded theory. **Results** The majority (80.4%) of respondents (71.7% females, mean age 18-35 years, SD 0.85) bypassed their PCHF. Factors associated with bypass were: marital status, distance travelled of >10 km and tertiary education. FGDs reported lack of trust in the health care providers, lack of medicines and diagnostic equipment. **Conclusions** Poor quality of health services at PCHF encourages seeking care from higher-level facilities. Utilization of PCHF is limited due to poor infrastructure, shortage of medicines and human resource. Improvement of these issues will support PCHF which in turn can help reverse bypass phenomenon.

Background

The public health service delivery Uganda is structured into National Referral Hospitals (NRHs), Regional Referral Hospitals (RRHs), general hospitals and Health centres IV to I with health centre I being a Village Health Team (VHT)[1].

Health centre II should be present in every parish serves about 5000 people and treat common diseases like malaria. It provides the first level of interaction between the formal health sector and communities, providing outpatient and antenatal care, community outreach services, and linkages with the VHTs. It is headed by an enrolled nurse supported by a mid-wife by running an outpatient department and offering antenatal care, two nursing assistants and one health assistant. Health centre III facility should be found in every sub county offering care to about 20,000 people. It is headed by a senior clinical officer supported by a laboratory technician and should have a functioning laboratory[2-4].

Health centre IVs and general hospitals have wards for men, women and children and admit patients. It should have a senior medical officer, other doctors, operating theatre for carrying out emergency operations and blood transfusions[5].

The Health centre IVs and general hospitals are referral units in a Health sub district. The health care service delivery is done through a decentralized framework in such a way that district health structure is

responsible for all structures in the district except the Lira RRH.

Despite the efforts by government of Uganda and development partners such as World Vision Uganda to increase the number of health facilities across the country so as to improve access to health care, many patients continue to bypass these facilities leading to patient congestion at Lira RRH.

Several studies on bypass showed that participants in Africa and other parts of the world do not want to seek care at their nearest health centres regardless of their areas of residence[6-13]. A study from Pretoria, South Africa found that 69.4% bypassed the nearest health centre because of the long waiting time, long queues, rude staff, and absence of medication[14]. In Kenya, bypass was found among half or more mothers in a rural district attending provincial hospitals for antenatal care, child immunizations and other child health services. The reasons were poor care, lack of drugs and supplies, and poor laboratory services (12%)[10, 15, 16]. Other studies have shown that congestion at hospitals can be attributed to inappropriate referrals and to patients bypassing lower levels of healthcare opting to seek health services directly at higher-level facilities[9, 13, 17, 18].

No information was available about the situation on bypass in Lira RRH. Therefore, the aim of this study was to answer the questions as to the frequency patients bypass lower public health facilities to seek care at the Lira RRH and the underlying reasons why in case this occurs.

The findings and evidence generated will inform policy making and implementation of an effective health referral system in order to reverse this situation.

Methods

Study design

We performed both a quantitative and a qualitative cross-sectional descriptive study. The quantitative part was to determine the frequency of bypassing lower level public health facilities and to describe the factors associated with this bypass. The quantitative part was complemented by a qualitative study with focus group discussions to identify the reasons for patients' bypass. The sample size of 484 for the quantitative part was determined by use of Kramer Greenhouse formula[19].

Study setting

The study was carried out in Lira RRH (LRRH) in northern Uganda about 370 km away from the Capital City Kampala. We performed a descriptive cross-sectional study between 29/12/2014 & 30/1/2015, 484 respondents attending the outpatient department were recruited by **systematic random sampling**. The catchment area for LRRH comprises of eight districts in the Lango sub region according to the Health management information system of the Ministry of Health as of 2013/2014. LRRH has nine medical doctors, the doctor to patient ratio is 1:80, a bed capacity of 415, an average annual inpatient admission of 18,000, and an annual average outpatient department (OPD) attendance of 200,000 patients. The OPD

is open from Monday to Friday during working hours. The OPD is the reception/entry point where most patients receive health services in the hospital.

Definition of Bypass

A patient was deemed to have engaged in bypass, if s/he was not living within a 5 km radius of LRRH catchment area and yet chose to seek health services directly from LRRH. More than 80% of Ugandan population lives within 5 km from a nearby health care facility. Any public health facility below the level of a RRH was regarded as lower level health facility

Quantitative data collection

Data was collected using a **validated** structured questionnaire after obtaining a written informed consent of the participants[14].

An interviewer-administered questionnaire was administered to the respondents under the guidance of a research assistant who first explained the purpose of the study and answered any question(s) raised. Three research assistants conducted the interviews. Health providers were not included in the interviews.

Interviews were conducted as soon as the respondents were registered before being seen by the health care providers available. Data was collected from adult patients 18 years and above seeking healthcare at LRRH OPD. We included all patients coming from more than a 5 km radius of LRRH catchment area and were aware of any available public health care facility within the LRRH catchment area. Patients with unsound mind and those who refused to consent were excluded.

A daily adult patients' attendance register in the OPD was used. A total of 484 adults attending the adult OPD were sampled using systematic random sampling with a sampling interval of 9. A random start on each day was got by giving 9 pieces of paper numbered 1 to 9 to a person who was not part of the study to choose. Each day every 9th patient attending the OPD was included until the daily required number of 22 was reached. The process was repeated daily for 22 days till the sample size of 484 was obtained. Patients who participated in the study had stickers put on their files to avoid interviewing a person more than once. Data collected was coded, checked, edited for completeness and entered into Epidata 3.1 computer software, then exported to SPSS for statistical analysis.

Focus group discussion (FGDs)

FGD participants were recruited on the same day by the nurse-in-charge of the OPD with the primary aim of identifying the reasons for patients' bypass. The inclusion criteria was that the participants were adult patients attending LRRH and coming from more than 5 km radius of LRRH and had no referral notes. A total of 20 females and 20 males within the age range of 18-45 years participated in the FGDs. The FGDs was carried out in the boardroom of LRRH.

Four FGDs were held according to the age and gender in order to have groups of people with similar characteristics. The FGD participants were not part of the quantitative survey. FGDs were conducted in the local language 'Lango' with the help of a FGD guide. An open-ended question approach was used to investigate reasons for patients' bypass. Each FGD lasted about 45 minutes in the doctors' boardroom. Other information collected were socio demographic characteristics such as age, gender, occupation, marital status, level of education, distance from health facility, status of health facility functioning at night and type of illness. FGD proceedings were audio taped with a digital voice-recorder and the proceedings were transcribed verbatim. The transcripts were coded.

Variables

Independent variables

The variables included social demographic characteristics such as age, sex, gender, occupation, religion, level of education and distance from health facility, state of lower level facilities and complexity of illness.

Dependent variable

Bypassing lower health facilities or self –referral

Data analysis

Data was summarized into means, median and frequency. The results were presented in tables. Logistic regression was performed to examine the strength of the associations between bypassing the lower health facility and potential predictors. For measuring the relationship between variables, the chi square test (χ^2) and the odds ratios at 95% confidence intervals were computed. Associations between categorical variables were tested using the chi-squared test with reports of the corresponding p-values set at less than or equal 0.05. Percentages were computed. The odds ratio and the corresponding 95% confidence intervals (95% CI) used to summarize the strength of association between logistic regression test. The outcome measure was the bypass of lower level public health care facility.

For qualitative data, thematic analysis of transcripts was done for emerging themes in the local language "Lango". Codes and categories were developed and interrogated following an iterative process. The findings were then translated into English and then finally written in a narrative form.

Results

Socio-demographic Characteristics

Table 1 summarizes the socio demographic characteristics of the study population. A total of 481/484 participants were interviewed from the adult OPD at LRRH giving a response rate of 99.4%. The mean age of participants was 26.5 year and standard deviation 0.85. The majority 347 (72.1%) of the respondents

were female, 134 (27.9%) were male. Two hundred and sixty (53.7%) of respondents were aged between 18- 35 years. One hundred and ninety six (40.5%) of the participants had attained primary education, majority being Christians 457(94.4%) and 323(67.2%) were married and 158(32.8%) were single.

The socio demographic characteristics of the 40 participants in the FGDs were similar to the quantitative survey except the age distribution of 18-45 years.

Table 2 shows factors associated with patients' bypassing lower level facilities to seek care at LRRH where marital status and distance travelled of greater than 10 km were found to be statistically significant with p- value of 0.036 and 0.001 respectively.

Table 3 on Logistic regression analysis of the odds of bypassing lower health public facilities was significant for those participants who attained tertiary education with p -value of 0.036.

Bypass of lower public health facilities

In the quantitative study, 387 (80.4%) participants bypassed lower public health facilities and 94(19.6%) did not bypass i.e. they were officially referred.

Quality of care at lower public health facilities

According to the qualitative interviews, the availability and quality of care were lack of trust in the health care providers was the main reason for bypassing lower facilities (30.9%). The second most common reason was lack of drugs (20.2%) followed by lack of diagnostic equipment (16.9%).

Lack of trust in the health care providers

Mistrust was a significant finding in this study with lots of implications for the person seeking care and the health care provider. Mistrust and low numbers of health care providers in the lower level public health facilities who at the same time lack empathy was mentioned by many participants in the discussion as the number one reason for their decision to bypass lower level facilities.

" When I went to the health center to deliver my third baby, I found one nurse who was the same person at the reception for registration, supposed to dispense drugs and the same one to attend to me and by the time she came to help me during labor my baby had already died and I was very tired and could not push any more" (27 year old female)

A 30 year-old lady had the testimony below:

" I went to the health center due to stomach pain for 3 days but when I reached there, I was told that the woman (nurse) went for a seminar and the "doctor" is away (went to Lira town). So I decided to come to LRRH"

Similar experiences of mistrust shared by other participants:

"Upon arrival, at about 10.00pm one night, having been in labor for over one day, the nurse told me to go and bring a lantern and kerosene for her lighting otherwise she would not attend to me. She said it in a very rude and mean way even though she could see that I was in pain. I returned home and was brought on a 'boda-boda' motorcycle to LRRH. So since then I come to LRRH when am sick or any of my family members is sick." (31year old female)

Many participants strongly expressed their disappointment at the health providers' style of handling patients when they go for consultation at these health facilities.

"Two months ago I went to the health center IV to get treatment for a serious wound on my leg which was dirty and smelling bad but when it was time for me to see the doctor, he started yelling at me that I am smelling bad and asking why I have taken all this time while am rotting alive and he continued saying many nasty things that I regretted so much for my condition and was so embarrassed for a person of my age. I simply needed help and that is why he is a doctor to help us and make us get better and probably not smell bad." (45 year-old male)

Lack of drugs

The other common reason for bypassing lower level facilities among FGDs participants was lack of drugs even for the common problems like Malaria:

"I arrived at the health center, I was seen by the nurse and she told me the drugs are out of stocks so you can go and buy from the drug shop" (23 year old female)

Even simple medicines such as 'Paracetamol' are commonly out of stock as reported by a participant who went to her nearest health facility with fever but was told to go and buy.

"When I got no medication at all I waited for transport for three hours before reaching LRRH the next day so that I can get some form of medication" (40 year old female)

"My child was very hot and was found to have malaria from a nearby clinic but when I took my child to the government health center to get treatment I was told that the drugs for malaria is finished yet I saw the Lorry bringing drugs the previous day and we were told that the drugs are available so I wondered. So I decided to bring my child to the main hospital" (22 year old female)

Inadequate diagnostic equipment

Nearly in all the FGDs inadequate diagnostic equipment was a serious reason impeding the respondents to attend the lower level health facilities as reported: *'We were told that the nurses are able to test for malaria but when I took my child and suspected him to have malaria they could not test for malaria she then sent me to do it in a private lab in a nearby clinic and then take the results to her. So I decided to come straight to LRRH'* (21year old female).

This young man had this to say “ *I have a real testimony of what happened to me, I was feeling dizzy and having a lot of headache and very weak and I wanted to know what was wrong with me like less blood or malaria. So when I reached the health center I found the nurse and described my problem to her and she told me something called the strips got finished and she could not check me. I got stuck as I was very weak and could not move farther so my brothers arranged and brought me to Lira regional*” (FGD 2, 34 year old male)

“ We the village people thought that the health center was nearer to us to treat us but also test before treating to know what is wrong with you but most times you are simply given drugs without testing, so I thought if they cannot even test for things like malaria which is the common problem then what is the use of the health center”. (41year old male)

Discussion

According to our study 80.4% of the participants visiting the OPD of the LRRH bypassed the lower public health facilities. The main characteristics of these patients were marital status, attained tertiary education and had to travel > 10 km. Reasons to bypass the lower health care facilities were lack of trust in the health care workers, lack of drugs and lack of diagnostic equipment and tests.

Younger female participants accounted for 56.0% of the by-passers. This implied that most of the respondents were energetic and therefore able to move longer distances to seek health care services and more likely to bypass the lower level facilities. Similar results were described by Bronstein in Tanzania who found that self-referral to tertiary hospitals was common among females because of the perception of quality maternal and newborn health services offered particularly during delivery[16, 20, 21]. This finding among participants who travelled a distance of >10 km compared to those who travelled a distance between 5-10 km may be attributed to by-passers of young age who are energetic, mobile and more likely to lead to bypass. The findings were similar to a study in Pretoria, South Africa[14].

Attainment of tertiary education compared to those with no formal education was a significant factor associated with bypass among the participants. These findings were in agreement with other study findings in Chad[13]. However, similar studies in Nigeria found that patients’ educational status had no influence on whether they were referred or not as both the educated and uneducated bypassed lower levels of health care[17, 22, 23].

Another factor influencing bypassing was occupation. Most of the by-passers were peasant farmers (42%) of low socio economic class. They may not be adequately aware of the referral system and its significance as evidenced that only 19.6% having some form of referral note. The similar findings were reported in other studies[10, 13, 24-26].

Marital status was found to be a significant factor in bypassing. Married respondents were more likely to bypass compared to single respondents. This may probably be explained by the possible social and

financial support that the partner may offer which subsequently facilitates bypass. Similar findings described in USA[7].

In the FGDs conducted, participants cited lack of trust and empathy as an important reason for bypassing lower public health facilities. Trust is a fundamentally important aspect of medical treatment relationships yet a vulnerable and fragile commodity. Studies have established that patient trust predicts use of preventive services, adherence and continuity of care as well as satisfaction. In health care, the absence or presence of trust in patient-provider relations can have life changing consequences. A patient who trusts a provider is more likely to seek care, to comply with treatment recommendations and to return for follow up care than a person who has little trust in a specific provider or health care system[13, 18, 27, 28]. Mistrust was a very significant finding in this study with lots of implications for the person seeking care and the health care provider. Another reason cited for bypassing lower level facilities was lack of drugs for common problems like Malaria. This leads to disconnect in the continuity of care and patients' care becomes expensive. Nearly in all the FGDs it was clear that inadequate diagnostic equipment was a serious reason impeding the respondents from seeking care at lower level health facilities.

Bypassing and the reasons why are not only a problem in low and middle- income countries.

In addition to recent studies in Mozambique and Tanzania, Ghana and India also in Florida and Switzerland bypassing was described. The reasons why patients seeking care at higher level facilities were in all studies better quality of service, better access to advanced technology and competence of the staff, despite the distance they have to travel[9, 15, 28-33].

Bypassing lower health facilities creates congestion at higher-level facilities because many patients present with health problems that could be effectively handled at lower levels[9, 10, 13, 15, 29, 31].

Consequently, the higher level facilities performing the roles of the lower level facilities cause resource wastages, longer waiting times and unnecessary long queues and delays to access health care, deserving illnesses worsening and increased cost of health[5, 6, 10, 20, 34-36].

Strength and limitations of the study

The study was carried out in a general OPD at LRRH; therefore the findings could not be generalized for the whole of Uganda. In addition, patients attending specialized units such as Ophthalmology, Orthopedic and Ear Nose and Throat were not included in the study. The participants were interviewed by nurses in uniform that could have led to bias in the responses.

LRRH comprised eight districts in the Lango sub region and received referrals from these districts. We performed quantitative and qualitative study with very limited drop out giving strength to the validity of the study for the Lira area. The findings of our study were in accordance to recent data obtained from several studies performed both in Western countries (Canada and Switzerland and USA) and African countries (Mozambique, Ghana, Kenya, Chad and Tanzania)

Conclusions

The majority of respondents seeking health care services from Lira RRH bypassed lower public health facilities. Our study indicated that utilization of services at these facilities is limited due to poor infrastructure, inadequate medicines and health supplies, shortage and low motivation of human resource. Improving the quality of care and health outcomes is incumbent upon competent and skilled health workers' availability at different levels of health facilities and a practical referral protocol/note implementation.

Mistrust in the health providers can be addressed through enforcement of the staff code of professional conduct. Prompt procurement and proper use of essential medicines and ensuring simple tests are done and simple conditions treated can improve quality of care and build trust at the lower public health facilities. Strengthening human resource and existing health facilities can improve health care services and staff retention in remote and hard to reach areas. Drug and diagnostic availability does not necessarily translate into better health outcomes. Other factors such as raising public awareness of the different levels of health facilities and a community based study to understand more deeply why patients continue bypassing lower health facilities are important as well.

Abbreviations

PCHF: primary care health facilities,

FGD: focus group discussion

SPSS: statistical package for the social sciences

SD: standard deviation

KM: kilometer

NRH: national referral hospital

RRH: regional referral hospital

VHT: village health team

OPD: outpatient department

Declarations

Ethical approval and consent to participate

Ethical approval and clearance was obtained from the School of Medicine Research and Ethics Committee, Makerere University Kampala in Uganda **(REC REF 2014-151)**. A written informed consent

was got from each participant before participating in the study. The participants were given all the necessary information concerning the study to assist them to make an informed consent. Confidentiality was ensured such that only the research team had access to the information given. Study code numbers were used to identify the questionnaires and no names were included on the questionnaires that also apply for the FGD. Those who declined consent had their choices respected with no prejudice or consequence. Participants were free to exit the study at any point they wished.

Availability of data and material:

Available in the dataset: attached in a file.

Competing interests

The authors' declare that they have no competing interests.

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Authors' contributions

SO planned, developed protocol, collected and analyzed data and wrote the manuscript.

BIK contributed to the approval of the design and provided substantial contribution in the statistical analysis and the final protocol.

NJF provided logistic and intellectual support in the focus group discussions and provided substantial contribution in the statistical analysis and the final protocol.

All authors have read and approved the final version.

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Tables

Table 1 Socio demographic characteristics of respondents

Socio demographic characteristics	Frequency (n=481)	Percentage (%)
Gender		
Female	347	72.1
Male	134	27.9
Age (years)		
18-35	260	54.0
35-45	91	19.0
46 and above	130	27.0
Education		
No formal education	121	25.2
Primary education	194	40.3
Secondary education	113	23.5
Tertiary education	53	11.0
Occupation		
House wife	129	26.8
Peasant farmer	230	47.8
Small scale business	91	18.9
Others	31	6.5
Religion		
Christian	457	95.0
Muslim	20	4.2
Others	4	0.8
Marital status		
Single	158	32.8
Married	323	67.2

Table 2 Factors associated with patient's bypass of lower level health facilities

	Non by-passers	By-passers	X2test	P-value (p<0.05)
Gender				
Female	62	284		
Male	34	101	3.263	0.072
Marital status				
Single	72	136		
Married	73	250	3.178	0.036
Distance (Km)				
10	52	277		
10	42	104	10.703	0.001
First seeking health services at RRH				
No	68	290		
Yes	26	95	0.356	0.551
Health facility operating at night				
No	35	147	0.108	0.742
Yes	61	237		

Table 3 Logistic Regression analysis of the odds of bypassing

Education Level	No.	%	No.	%		
No formal education	30	31.3	91	23.5	1 (reference)	0.726
Primary education	40	41.6	156	40.3	0.362 (0.234-0.456)	0.420
Secondary education	20	20.8	94	24.2	0.582(0.472-0.680)	0.125
Tertiary education	6	6.3	46	12.0	0.475(0.465-0.486)	0.036
Age (years)						
18-35	45	47.0	215	56.0	1(reference)	0.528
35-45	19	20.0	73	19.0	3.458(3.123-3.560)	0.146
46 and above	32	33.0	99	26.0	2.766(2.500-2.876)	0.251
Occupation						
House wife	25	26.0	94	25.0	1(reference)	3.926
Peasant farmer	44	46.0	157	42.0	3.245(3.200-3.314)	0.345
Small scale farmer	17	18.0	65	17.0	2.756(2.650-2.876)	0.520
Self employed	9	9.0	39	10.0	2.122(2.009-2.135)	0.265
Others	1	1.0	20	6.0	4.650(4.520-4.786)	0.210

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [STROBEchecklistv4combined.pdf](#)
- [DatasetforDr.SamuelOkoriNew.pdf](#)