

# Frequency and reasons of bypassing lower health care facilities in Lira district- Northern Uganda

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## Research Article

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# Abstract

## Background

To improve access to health care for all who need, the government of Uganda increased the number of lower level health facilities across the country. However, many patients prefer to bypass the lower level facilities in favour of the high level facilities. Bypass of health care is the situation that patients seek care at a high level facility farther away than the nearby lower facility. Lira district has 42 lower health facilities and one referral hospital that received all referrals from the region. The ratio between patients with and without referral and the reason for bypass are unknown.

The study aims to get insight into the frequency of and the reasons why patients visit Lira hospital thereby bypassing lower health facilities.

## Methods

We performed a one-month descriptive cross-sectional study among patients visiting the outpatient department of Lira hospital after written informed consent: qualitatively with four focus group discussions (FGD) of ten participants each and quantitatively using validated questionnaires. The questionnaire included socio-demographic questions, their complaints and the reason(s) to visit the hospital, In the FGD the reasons of bypass were discussed. The topic list includes the patients' expectations and experience with the lower facility. Thematic analysis of transcripts was performed. Codes and categories were developed and interrogated following an iterative process. The results of the questionnaires were entered in Epidata 3.1 and analysed with SPSS18.

## Results

387 out of 481(80.5%) respondents recruited by systematic random sampling, bypassed lower health care facilities and were associated with marital status, distance travelled of >10 km from the home town to the hospital and tertiary education. Lack of trust in health care providers, lack of medicines and diagnostic equipment and poor quality of health services at lower health facilities were the main reasons to bypass.

## Conclusion

Improvement of the lack of trust in health care providers and of the poor quality of health services in the lower health care facilities is essential to reduce the bypass problem and to realize health care for all who need within 5 km of the place where they live.

## Introduction

To improve access to health care for all who need, the government of Uganda increased the number of lower level health facilities across the country. Many patients prefer to bypass the lower health care

facilities in favour of the high level facilities. Bypass of health care is the situation that patients seek care at a high level facility farther away than the nearby lower facility.

In Uganda, the public health care service delivery is structured into National Referral Hospitals (NRHs), Regional Referral Hospitals (RRHs), general hospitals and Health centre I to IV with health centre I being a Village Health Team (VHT), Health centre II should be present in every parish to serve about 5000 people and to treat common diseases like malaria and diarrhoea among others. Health Centre III providing care for about 20,000 people and should have laboratory facilities. Health centre IV and general hospitals are referral units in a Health sub district offering emergency operations and blood transfusions.<sup>1</sup> This structure is according to the Uganda Health Sector strategic plan that every household should live within a five km radius from a health facility.<sup>2</sup> Despite the efforts by the government of Uganda and development partners such as World Vision Uganda to increase the number of health facilities across the country and improving access to health care, many patients continue to bypass the lower level facilities in favor of the higher level centres. Bypass of health care facilities is a situation that patients seek care at a higher level health care facility located farther away than the local lower facility nearby the place where they live.<sup>3</sup> Bypass is a global problem in low, middle and higher income countries. In developed countries bypass behaviour is applicable when patients go directly to a hospital to seek care without a referral from their primary care physician.<sup>4</sup> A study among 205 patients of 13 primary care clinics in Japan demonstrated that their experience of primary care was inversely related to bypass these lower level health care centres and to seek care at higher level facilities such as hospitals. Similar results were observed in West Virginia, USA. According to a telephone survey among 1264 adults 32% bypassed local health care facility (ranged between 9.4%-66%). Lack of specialty care and poor access to primary care physicians were related to higher frequency of bypass. However, the greater satisfaction for lower health care the lower the frequency of bypass.<sup>3</sup> In low and middle income countries (LMIC), patients frequently prefer to visit a higher level care centre at the expense of a lower level facility.<sup>3,5,6</sup> In Pretoria (South Africa), a cross sectional descriptive study among 350 patients attending Karen Park Clinic revealed that 69 % of the patients bypassed the lower health care facility because of long waiting time (25%), long queues (24%), rude staff (17%) and lack of essential medication (11%).<sup>7</sup> A study in Kenya mentioned the same reasons i.e. poor health care (21%), lack of medication and supplies (17%) and poor laboratory services (12%).<sup>8</sup> In Nigeria, 93% of the patients went directly to the teaching hospital irrespective of their complaints. This resulted in overcrowding the hospital outpatient department, whereas the majority of the patients' complaints could be treated at lower health care centres.<sup>9</sup> Perceived lack of quality at lower health care facilities was the main reason for women in Western Tanzania to deliver their baby at a more distant facility.<sup>10</sup> Also in rural Uganda women frequently bypass local health care facility to give birth in higher health care facilities farther away from their area of residence. The lack of availability of drugs and of sufficient staff members at the lower health care facility influence the choice of the mothers to go to the higher level facility despite the distance to travel.<sup>11</sup> Bypass results in inefficient health care system both for the individual patient and for the health care system in general.<sup>12</sup>

The government of Uganda implemented several health sector reforms aiming at i) improvement of health care access for the entire population, ii) improvement of healthcare outcome and iii) reducing congestion in the higher level facilities due to bypass behaviour of the patients.<sup>13,14,15</sup> Despite these efforts, many patients continue to bypass lower health facilities. Lira district has one regional referral hospital and 42 government-owned lower health care facilities. The hospital receives all referrals from the eight districts in Lango sub region. However the percentages of these patients visiting the referral hospital thereby bypassing lower health facility is unknown as are the reasons for bypassing. Having insight into the reasons is the first step to solve the problem and to improve health care access in the region for all who need.

The aim of this study is to get insight in the frequency that Lira hospital experiences the bypass phenomenon of patients visiting the out-patient department of the hospital and the reasons of those patients to bypass lower health care facilities.

## **Methods**

### **Study design**

We performed a cross-sectional descriptive study consisting of a quantitative part using a structured questionnaire and a qualitative part using focus group discussions (FGDs). In the questionnaire information was asked concerning among others socio-demographic data of the participants, distance between their living and the nearest lower level public health facility and Lira hospital, the mode and time to travel to the hospital, their complaints and the reason(s) to visit the hospital, with or without a referral letter from the lower health service. The aim of the FGD was to get insight into the reasons the patients went to the referral hospital without a referral letter from the lower health service at the expense of the latter. The topic list includes among others in addition to the reason(s) to bypass also the type of services the lower health care facility provides, their experience concerning the expertise of the medical personnel and their expectations from the lower facilities as well as the opening hours.

### **Study setting**

The study was carried out in Lira Regional Referral Hospital in Northern Uganda located about 370 km from Kampala, the Capital of Uganda. The catchment area of the hospital comprises eight districts in the Lango sub region. Lira hospital provides both inpatient and outpatient services. In-patient services include: obstetrics and gynecology, pediatrics, ophthalmology, psychiatry, ear nose and throat, dentistry, medicine, and surgery. Outpatient services include; antenatal care, young child clinic, family planning clinic, primary health care services, sickle cell, diabetic and hypertension clinic. Lira hospital had nine medical doctors, a bed capacity of 415, an average annual number of inpatient admission of 18,000 and a weekly average number of 200,000 patients visiting the outpatient department (OPD). The OPD is open from Monday to Friday from 8:00 -1700 hours.

### **Study population: Inclusion and exclusion criteria**

The study population for both the qualitative and the quantitative part included patients of 18 year and above attending the outpatient department of Lira hospital and living more than 5 km from the hospital. Patients living within a distance of 5 km, admitted to the Emergency unit or have unsound mind were excluded. For the quantitative part, patients with and without a referral letter from the lower health care facility were included, for the qualitative part only patients without a referral letter were eligible.

### **Sample size estimation**

The sample size of 484 for the quantitative part was determined according to the Kramer Green House Formula <sup>16</sup> using the 95% standard Z-score and a power of 80%.

Age was used as a factor estimate for bypassing: the ratio between young and old was 1:1.<sup>17</sup>

### **Sampling procedure**

Systematic random sampling procedure was used using the daily adult attendance register as a sampling frame.

Data was collected over a one-month period. For the quantitative part the sampling interval was determined by the total number of eligible patients attending the outpatient department monthly divided by the sample size of 484. With an average daily attendance of 220 eligible patients, i.e. patients living more than 5 km from the hospital, the sampling interval was calculated as the total number of eligible patients per month divided by the sample size being approximately 9.

An independent person who was not part of the study group included every 9<sup>th</sup> patient attending the OPD in the study until the required number of 22 per day was reached. This warranted that eligible patients had equal chance to participate in the study. The files of the patients who participated in the study were marked to avoid participation of a patient more than once.

For the FGD patients were recruited on the same day as for the quantitative part, on average one female and one male patient each day. Only patients living more than 5 km from Lira hospital without a referral letter were included.

### **Data collection**

Quantitative data was collected using an interviewer-administered structured questionnaire. The questionnaires were administered to the respondents by three trained research assistants. They first explained the purpose of the study, answered any question(s) raised. After obtaining written informed consent the participant filled in the questionnaire with the help of one of the research assistant when needed.

### **Focus Group Discussions**

Qualitative data was collected by focus group discussions (FGDs). Four FGDs were conducted each group consists of 10 females and 10 males within the age range of 18-45 years. The FGDs were conducted in the boardroom of the Lira hospital in the local language 'Lango' and lasted about 45 minutes. The FGD discussions were audio-recorded with a digital voice-recorder. The proceedings were transcribed verbatim, translated into English by a local English secondary school teacher and coded.

## **Data analysis**

Quantitative data was entered into Epi Data 3.1, cleaned, coded and exported to SPSS for statistical analysis. Data was summarized into descriptive statistics of mean, median and frequencies. Logistic regression was performed to examine associations between bypassing and potential predictors. For measuring the relationship between variables chi square test, the odds ratio at 95% confidence interval were calculated, a p value < 0.05 was considered significant. The topic list of the qualitative data includes apart from participants' socio demographic characteristics, the distance from their living to the nearest lower level health facility and to the Lira hospital, the kind of services offered in the lower health care facility, the working hours especially at night, the experience of the participants concerning the medical expertise of the personnel, the reasons to choose care at Lira hospital for their present complaint(s) instead of the nearby lower health care facility and suggestions to be changed in the lower facility to seek care in the future. The transcript was open coded. Codes were grouped to form categories. Thematic analysis was done using the framework approach.<sup>18</sup>

## **Ethics Approval and consent to participate**

Ethical clearance was obtained from the Medicine Research and Ethics Committee of a University in Central Uganda, Approval number REC REF 2014-151. Written informed consent was obtained from all participants.

## **Results**

387 out of 481(80.5%) respondents recruited by systematic random sampling, bypassed lower health facilities and were associated with marital status, distance travelled of >10 km from the home town to the hospital and tertiary education. Lack of trust in health care providers, lack of medicines and diagnostic equipment and poor quality of health services at lower health care facilities were the main reasons to bypass.

Of the 481 participants, 94 (19.6%) had referral letters, 387 (80.5 %) had not and had by passed lower public health facilities. The majority 347 (72.1%) of the respondents were female and 134 (27.9%) were male. 196 (40.5%) of the participants had attained primary education, 52 (11%) had tertiary education. The majority were Christians 457 (94.4%), 323 (67.2%) were married. Significant differences in characteristics between by-passers and non by-passers attending the outpatient department of Lira hospital were being married and living more than 10 km from Lira hospital (Table 1) There was a significant difference in bypassing between those who attained tertiary education and those with no

formal education [odds ratio 0.475 (0.465-486)] (Table 2). The most cited reason to seek health care at Lira hospital was trust in qualified health care providers (31.5%), followed by availability of health care provider (20.5%) and medication (15.2%). Other reasons were recommendation by friends or family (12.8%) and living close to the hospital (10.8%). Lack of trust in the service of health providers (30.9%), lack of drugs (20.2%) and lack of diagnostic equipment (16.9%), long waiting time (5.4%) and attitude of the staff (4.1%) were the main reasons for bypassing lower level facilities and to seek care at higher level facilities.

## **FGD transcripts**

Three main themes emerged from the FGD transcripts: lack of trust in the service and in the style of handling patients of the health care provider, lack of drugs and inadequate diagnostic equipment in the lower health care facilities

### Lack of trust in the service and in the style of handling of the health provider

Lack of trust is for the health providers and the health facilities an important issue. Participants repeatedly mentioned that they do not trust the competence and capability of health providers at the lower level facilities and that providers lack the required skills to deliver the necessary services.

*“When I went to the health centre to deliver my third baby, I found one nurse who was the same person at the reception for registration, who was supposed to dispense drugs and she was the same one to attend to me. By the time she came to help me during labour my baby had already died”* (27- year- old female, **FGD 1**)

*“I went to the lower health centre due to stomach pain for 3 days. I was told that the woman (nurse) went for a seminar and the “doctor” was away (went to Lira town). So I decided to go to Lira Regional Referral Hospital”* (34-year –old female, **FGD 2**)

The lack of requirements to provide health services at lower health care facilities contributes to the lack of trust in these facilities. Participants expressed their disappointment about the health providers’ rude style of handling patients when patients go for consultation at the lower health care facilities.

*“One night upon arrival at about 10:00 pm having been in labour 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. When I went back home I was brought on a ‘boda-boda’ (motorcycle) to Lira hospital. So since then I come to the hospital when I am sick or any of my family members is sick”* (31-year- old female, **FGD2**)

*“Two months ago I went to the health centre IV to get treatment for a serious wound on my leg which was dirty and smelling bad. As I was entering the examination room, the doctor in charge 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. 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, FGD3)*

### Lack of drugs

Another reason for bypassing lower health care facilities as mentioned by the FGDs participants was lack of drugs due to stock outs even for the simple conditions like malaria.

*"I arrived at the health centre, 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, FGD 2)*

*"When I got no medication at the health centre, I waited for transport for three hours before reaching Lira hospital the next day to get some form of medication" (40 –year-old female, FGD1)*

*"My baby was hot and was diagnosed at a nearby clinic to have malaria. But when I took my child to the government health centre to get treatment I was told that the drugs for malaria are finished. Yet I saw the lorry bringing drugs the previous day and we were told that the drugs are available so I wondered. I decided to bring my baby to the main hospital" (22- year -old female, FGD2)*

### Inadequate diagnostic equipment and resources

Inadequate diagnostic equipment was the most serious reason impeding the participants of the FGDs to attend the lower level health care facility.

*" When I took my baby to the hospital, I was informed that the nurses were 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 Lira hospital" (21year old female, FGD1)*

*"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 centre, I found the nurse and described my problem to her and she told me something called the strips were 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 hospital" (34-year-old male, FGD4).*

*"We the village people thought that the health centre was nearer to us to treat us but also to test before treating to know what is wrong. But most times you are simply given drugs without testing. So I thought if they are not able even to test for things like malaria which is the common problem then what is the use of the health centre". (41years, male, FGD 4)*

## **Discussion**

In our study 80.5% of the participants visited the outpatient department of Lira Regional Referral Hospital without a referral letter and bypassed the nearby lower health facilities. The characteristics of patients by passing lower health centres were being married, living more than 10 km from Lira hospital and having tertiary education. The main reasons for bypassing lower level health facilities were lack of trust in the competence of the health care workers and in the facilities: lack of drugs and inadequate diagnostic equipment and resources. Important reasons for seeking care at Lira hospital without referral were trust in and availability of the health care providers and of diagnostic tests and medication.

The reasons to bypass lower health care facilities in the present study were similar as described in other countries: i.e. rude staff, lack of medication, (perceived) lack of competence of the staff, lack of availability of personnel (nurses and doctors) were the most frequent reasons for bypass as also described in studies from South Africa<sup>7</sup>, Kenya<sup>8</sup> and Tanzania.<sup>10</sup>

The travel distance to reach the higher level facility, often more than 10 km from their living, was not an obstacle to bypass the lower facility despite the use and costs of public or personal transportation. More than 60 % of the patients in a study in South Africa prefer the travel distance to receive good quality of care.<sup>7,11</sup> The availability of public transport and personal means of transport are important conditions for travelling to reach the higher level centres.

We found that females (<35 year) accounted for 56.0% of the by-passers. Probably they are able to travel longer distances to seek health care services. Similar results were described by Bronstein in Tanzania: self-referral to tertiary hospitals was common among females assuming that better maternal and new born health services will be offered particularly during delivery.<sup>10,19,20</sup> Tertiary education, an important characteristic in our bypass population might contribute to little confidence in the health care provided at the lower facility similar observations were described by Parkhurst.

Studies in Mozambique, Tanzania, USA and Switzerland established that better quality of service, better access to advanced technology and competence of the staff at the higher level facilities were the main reasons for patients bypassing, despite the distance they have to travel and the costs involved.<sup>5,11,21,22,23,24</sup> Consequently, the high level facilities perform the roles of the lower level facilities which will result in wastages of resources, unnecessary longer waiting times and delays to access of health care especially for those who needed high level care.<sup>1,11</sup>

Lack of trust in the (perceived) experience of health providers to provide adequate medical treatment and lack of support of lower health care concerning diagnostic equipment and resources were important findings in the present study and were frequent reasons for by passing lower facilities. A patient who trusts his health, his health care provider is more willing to adhere to treatment recommendation than a person who has little or no trust.<sup>25,26,27,29</sup>

The importance of a trusting relationship between patient and health care providers for patient's satisfaction was also described by (Aoki et al Family practice 2017, 206-212).<sup>28</sup>

When patients visit these facilities, the health care provider is not readily available due to other work related demands then patients loose trust in the lower facilities.

To have continuous duty coverage in the lower facilities is not easy to realize due to the low numbers of the health providers available at these facilities.

In many developing countries as also in Uganda, primary care facilities and district hospitals are set up to provide health care to all who need it, also in resource limited countries with few hospitals and doctors. However, in practice frequently patients bypass the lower facility in favour of the higher health centres resulting in congestion at the last ones whereas most patients could also be treated at lower level facilities. This behaviour hampers the implementation of a functioning referral system that is essential to realize successful health care delivery.

### **Strength and limitations of the study**

The strength of the study is that both a quantitative and qualitative methods were used to get insight in the frequency and reasons of the bypass phenomenon at the outpatient department of Lira Regional Referral Hospital. The study revealed important issues that need improvement to reduce the bypass phenomenon. The limitation is that the study was performed during one month in one hospital at the outpatient department. Patients attending specialized clinics such as Ophthalmology, Orthopaedic or Ear Nose and Throat were not included. Our findings are therefore not applicable for the whole of Uganda although similar results were obtained in studies in other countries. <sup>24, 25, 28,29</sup>

## **Conclusion**

Improvement of the lack of trust in health care providers and the poor quality of health services is essential to reduce the high frequency of bypass problem and to contribute to and realize health care for all who need within 5 km of the place where they live.

More than 80% of respondents, mostly females seeking health care services at Lira Regional Referral Hospital bypassed lower public health facilities due to poor infrastructure, inadequate medicines and health supplies, shortage and low motivation of human resource. Improving the quality of care and health outcomes require competent and skilled health care workers as well as availability of medicines and diagnostic tests at different levels of health facilities.

The results of the study give policy makers insight in the service patients experienced at the lower health facilities. Improvement of the quality of care at these facilities require availability of essential medicines, ensuring performance of simple tests to diagnose and treat simple conditions as well as improvement of human resources.

## **Recommendations**

Lower health care facilities should improve quality of services to all patients There is urgent need to conduct staff trainings including improvement of the medical knowledge, social behaviour and to have sufficient stock of commonly used drugs. Implementation of a practical referral protocol, raising public awareness as to the different levels of health facilities as well as improvement of the shortages of medicines, diagnostics and human resources will contribute to increased satisfaction of the quality of the lower facilities and reduce frequency of bypass.

## **Declarations**

### *Ethics approval and consent to participate*

Ethical clearance was obtained from Makerere University Kampala Institutional Research and Ethics Committee (SOMREC)

#REC REF 2014-151

Written informed consent was obtained from all participants.

### *Consent for publication*

Not applicable

### *Availability of data and materials*

All data are available upon request from the corresponding author

### *Competing interest*

The authors mentioned no financial or scientific competing interest that may influence in writing the manuscript.

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### *Authors' contribution*

SO: planned and developed the protocol, collected and analysed the data, wrote the first draft of the manuscript and edited the final version

IKB: contributed to the approval of the design and the final protocol, and provided substantial contribution in the statistical analysis and commented on the first draft

JFN: provided logistic and intellectual support in the focus group discussions and commented on the first draft and was involved in editing of the final version.

All authors read and approved the final version of the manuscript. The views expressed in this article are those of the authors and do not reflect the official positions of their institutions.

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## Tables

**Table 1: Factors associated with patient's bypass of lower level health facilities.**

	Non by-passers	By-passers	X <sup>2</sup> test	P-value (p≤0.05)
<b>Gender</b>				
Female	62	284		
Male	34	101	3.263	0.072
<b>Marital status</b>				
Single	72	86		
Married	73	250	3.178	0.036
<b>Distance (Km)</b>				
5-10	52	277		
>10	42	104	10.703	0.001
<b>First seeking health services at LRRH</b>				
No	68	290		
Yes	26	95	0.356	0.551
<b>Health facility operating at night</b>				
No	35	147	0.108	0.742
Yes	61	237		

**P-value ≤0.05**

Table 2: Logistic regression analysis of the odds of bypassing lower health care facilities

Characteristics	Non by-passers		By-passers		Odds ratio (95% CI)	P-Value
	No.	%	No.	%		
<b>Education Level</b>						
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
<b>Age (years)</b>						
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
<b>Occupation</b>						
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