

Patient satisfaction with referral service and associated factors among public hospitals in and around Addis Ababa, Central Ethiopia

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Abstract

Objective: Studies in sub-Saharan Africa have shown that patient satisfaction with referral procedures and systems is low due to multiple factors. Despite the challenges on patient satisfaction with referral service in Ethiopia, there are only limited studies on overall satisfaction and associated factors with referral services of the hospitals. The purpose of this study was to determine patient satisfaction with referral services and related characteristics among patients referred to referral hospitals in Central Ethiopia, in the year 2021.

Methods: A facility-based multi-center cross-sectional study was conducted at public hospitals in and around Addis Ababa using both quantitative and qualitative data collection methods. The hospitals were selected using a simple random sampling method from the list. Data were collected from 317 referral forms and chart reviews, 310 patient interviews, 27 focused group discussions, and 16 insider observations. The collected data were coded and entered into EPI INFO version 7 and transferred to SPSS version 25 for further analysis. Both binary and multivariable logistic regression models were computed to see the association between independent versus outcome variables. The findings were taken as significant with a *p* value of <0.05 at 95% confidence interval and results were presented with text, graphs, figures, and tables.

Result: Overall level of patients' satisfaction of referral services in Central Ethiopia was 73.5%, confidence interval (67.9%–81.1 %), and near 85% of the participants had got an examination by the respective health care worker on arrival. This study identified that factors that increase odds of patient satisfaction toward referral services were status of communication (adjusted odd ratio 44.09 (95% confidence interval, 5.47, 355.68)), perceived level of experience of health providers who handle the referral process (adjusted odd ratio 6.42 (95% confidence interval, 1.20, 34.42)) and coordination status of the hospitals during referral acceptance (adjusted odd ratio 35.50 (95% confidence interval, 4.87, 258.60)) and these were significantly associated with patient's satisfaction toward referral services. Referral without communication among hospitals was stated as the leading challenge by focused group discussants and very limited practice on referral feedback was reported by insider observers.

Conclusion: This study determined that the overall level of patient satisfaction toward referral services in Central Ethiopia was moderate with identified factors that increase odds of patient satisfaction toward referral system being the way of communication, health provider's experience, and coordination status of the hospitals on referral acceptance. Hence, policymakers and the ministry of health would better consider the aforementioned factors during referral program development and training for improvement of patients' satisfaction with referral services.

Keywords

Referral, patient satisfaction, central Ethiopia

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Introduction

Since 1990, the health care industries have seen current changes toward continuous quality improvement. Health care managers incorporate patient-centered care as a major component in the health care mission Ethiopia's investment in health has resulted in substantial gains in improving the

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health condition of its population. For example, life expectancy has increased from 56.8 years in 2005 to 65.5 years in 2016.¹ Four consecutive Ethiopian Demographic and Health Surveys (EDHS) (2005, 2011, and 2016) have indicated declining trends in neonatal, infant, under-5, and maternal mortality. Ethiopia has met the Millennium Development Goal (MDG4, reducing under-5 mortality) 3 years in advance of the agenda (2015).² The improvement in health outcomes in Ethiopia can also be tied to fast socio-economic developments in general, including large economic growth and the introduction of innovative health strategies such as the Health Extension Program (HEP). The program has certainly contributed to improved public health interventions such as malaria control efforts, access to safe drinking water, improved toilet facilities, and vaccination against childhood diseases, and some of the factors behind improved health outcomes in Ethiopia.³

In this regard, Ethiopia has made progressive improvements in areas of Reproductive, Maternal, Neonatal, and Child Health. For instance, maternal mortality is reduced by 39%, from 676 in 2011 to 420 in 2016 per 100,000 live births. Similarly, in 2019 the national neonatal, infant, and under-5 mortality rates showed a significant reduction to become 43, 30, and 55 per 1000 live births, respectively.^{4,5} Despite all the efforts, the improvements are still not uniform in which some Ethiopian regions have high under-5, infant, neonatal and maternal mortalities due to inequitable access to the health service and inequitable accessibility of health service delivery facilities including referral services.^{4,6,7}

Patient referral is a process by which a health worker transfers the responsibility of care temporarily or permanently to another health professional or social worker or to the community in response to its inability or limitation to provide the necessary care. That could be due to a lack of skills, knowledge, drugs, and equipment. In addition, searching for expert opinion, additional or different services, and better diagnostic or therapeutic facilities could be reasons for referral.^{8–10} It is a two-way process and ensures that a continuum of care is maintained to patients or clients from primary care health service and to hospitals and within hospitals and vice versa. The receiving health professional communicates back to the referring health professional with specific investigations, findings, diagnoses, offered treatments, and follow-up plans to ensure continuity of care.⁹

Studies in sub-Saharan Africa have shown that patient satisfaction with referral procedures and systems is low due to multiple factors. A study conducted in Nigeria revealed that patient satisfaction with the referral procedure was 53.2%, while satisfaction with care received when referred was 67.7%. The main causes of dissatisfaction were referral approval delays and long appointment dates between referral and specialist consultation.¹¹

The Ethiopian government has established a three-tier health service delivery system that requires an effective two-way referral connection and develops a strategy for an

effective referral system in its national health policy. This strategy focuses on how to improve access to care according to need, assuring continuity and improved quality of care at all levels.¹²

A study conducted in North West of Ethiopia on the referral status of emergency obstetrics and gynecological patients in a tertiary hospital of northwest Ethiopia indicated that only 28% of cases referred with a standard referral letter, in which 70% of them were directly from primary health care units to tertiary hospital and only 5% of referred cases with a complete-time of referral. In addition, the study indicated that 39%, 43%, and 48% of the referred cases were with vital signs, basic investigations, and pre-referral management, respectively.¹¹ From those referred only 10% of cases were referred back (a patient referred back to the lower level of health facilities) with important information.¹³ The referral between Addis Ababa hospitals and those of nearby health facilities is becoming challenging, as it is becoming a source of conflict between hospitals, causes are mainly related to lower satisfaction among patients.¹³ The few studies conducted in Ethiopia gave due emphasis only on the characteristics of referral sheet components and referral system implementation for all emergency cases.¹³

The right to the highest attainable standard of health is a fundamental human right and, central to this right within a hierarchical health system, is the existence of a well-functioning referral system that allows for continuity of care across the different tiers of care.¹³

Studies found long waiting times before patients received the required care in which 79.3% of referred patients were delayed to receive service from the hospital they referred to. Poor communication between receiving and referring health facilities, unnecessary referrals, patient overcrowding, lack of referral with complete and important referral documentation were found as a source of delay in care.^{14–16}

There were limited studies and concrete pieces of evidence on the challenges related to patient satisfaction toward the referral system in Addis Ababa and its surrounding public hospitals in Ethiopia.¹⁷ Therefore, the main objective of this study was to determine client satisfaction with referral services and related characteristics among patients referred to referral hospitals in Central Ethiopia, in the year 2021.

Methods

Study area and period

A facility-based multi-center cross-sectional mixed study was conducted from 1 January 2021 to 30 May 2021 at selected public hospitals in and around Addis Ababa, Ethiopia.

Ethiopia has a total population of about 105 million.¹⁸ About 80% of the population lives in rural areas and is mainly dependent on subsistent agriculture.¹⁹ The population of Ethiopia is characterized by rapid population growth and a young age structure. The 2017 age pyramids have a

relatively narrower base due to the ongoing demographic transition caused by a combination of declining trends in mortality and fertility.

This study was conducted at selected public hospitals in and around Addis Ababa within a 150 km radius of Addis Ababa which is the Capital City of Ethiopia. The city is geographically located at 9°2' North and 38°42' East at the center of the country and has an expanded area of 540 sq. km.

According to the 1994 census, the population of Addis Ababa is 2.3 million of which 28,149 are living in the rural parts of the city. Of the total population, 51.6% are females while 48.4% are male. There were 12 public hospitals in Addis Ababa and 18 public hospitals within a 150 km radius of Addis Ababa during the study period. This study was conducted at 4 out of 12 hospitals in Addis Ababa which are SPHMMC, TASH, Yekatit 12 Hospital Medical College, and ALERT hospital as well as 7 hospitals in a 150 km radius of Addis Ababa from the Oromia region.

Study design

A facility-based multicenter cross-sectional study design was conducted at selected public hospitals in and around Addis Ababa by using both quantitative and qualitative study data collection methods.

Study populations

All patients who received referral service in the selected public hospitals, all patient referral sheets, and charts as well as all health professionals who were working in selected public hospitals during the study period were source populations for the study. The assigned health professionals have played a role either in the focused group discussion section or as insider observers.

Inclusion criteria

Participants included patients who received referral service in the selected public hospitals, health professionals with a minimum of half a year of experience in health care related to referral service, and has experience in case management and referral forms and charts of patients.

Exclusion criteria

Health professionals with less than 6 months of experience, self-referrals (patients who arrived in hospitals without referral form), and charts without referrals forms were excluded from this study.

Sample size determination

This study has four components of data collection. As the result, the study needed a stage of sample size determination.

The hospitals were selected using a simple random sampling method from the list. The hospitals around Addis Ababa were listed first based on their geographic location in the four directions from Addis Ababa followed by simple random sampling. The sample sizes required for this evaluation survey were determined for each component separately using appropriate techniques as follows.

First component. The required sample size for the first component (representative desk reviews of referral letters, patients' charts and reports) was determined using single population proportion formula using the following assumption: proportion standard letter or complete referral letter used is 28.2%.⁹

Adding 10% for nonresponse the total of 342 referral letters, patients' charts and reports were to be reviewed for completeness, clarity, and conciseness to the standard out of which 317 samples (93% response rate) were analyzed and 25 samples were rejected due to incompleteness.

Second component. The required sample size for the second component (representative patient survey for a telephone interview) was determined using single population proportion formula using the following assumption: the proportion of the patients referred to the hospital was 14%.²⁰

Adding 10% for nonresponse the total 318 patients were to be interviewed out of which 310 patients (97.4% response rate) were interviewed and 8 patients were not due to lack of consent.

Third component. The sample size required for the third component was determined purposively for the number of participant health care workers and the size of the collected data was determined by saturation point. A total of 27 focus group discussions (FGDs) of an average of six members (total of 162 participants) were carried out.

Fourth component. In the same manner as the third component, the required sample for the fourth Component, the sample of health care providers was determined purposively and the size of collected data was determined by saturation of information. A total of 16 insider observations (8 in Addis Ababa and 8 out of Addis Ababa) were conducted by 32 observers.

Sampling techniques

For quantitative sections (first and second components): of the total 30 public hospitals, a total of 10 hospitals (4 hospitals in Addis Ababa and 6 hospitals within a 150 km radius of Addis Ababa) were selected using a simple random sampling technique. A systematic random sampling method was used to select 342 patients for an interview out of which 317 were interviewed and 310 referral letters and charts were reviewed using hospital records. On the systematic random sampling, the random number ($k=3$) for repetition was calculated using previous similar season 6-month referrals in selected hospitals.

in and around Addis Ababa and dividing the number to sample size (n). Accordingly, every third chart and every third patient were selected and interviewed after consent. The selected patients were communicated appointed for an interview at their convenience on the same day or week of admission and a telephone-based interview was conducted on a few patients.

For qualitative sections (third and fourth components). Purposive sampling techniques were applied for both focus group discussions and insider observations

Operational definition. Patients who rated <75% from the item of patient satisfaction toward referral questionnaire were classified under “unsatisfied,” and the patients who rated >75% from the item of patient satisfaction toward referral questionnaire were classified under “satisfied.”¹⁴

Data collection tool and methods

The data collection tool for each component was developed after a review of relevant literature and guideline accordingly. The socio-demographic questions as well as referral-related interviews and checklists were adapted from similar literature and Ministry of Health (MOH) guidelines on referral linkage.^{14,16}

First component. A representative desk reviews of referral letters, patients’ charts and reports to collect information about completeness, clarity, and conciseness of referral form of the selected hospitals. Data were collected using a review checklist prepared for the review from the national referral guideline and patient referral form.

Second component. Representative patient quantitative survey was conducted to collect data about the perspective of the patients during the referral process challenges faced and overall satisfaction with the referral service. This patient survey was conducted among patients who have at least one referral service utilization using structured questionnaires by the data collectors through face-to-face interviews (95%) or telephone (5%). The telephone-based interview was conducted only on 5% of the patients when the face-to-face interview was not possible due to feasibility and other reasons. The questionnaire was developed after a review of relevant literature and guideline to increase the comparability of the finding. Hence, this component allows the collection of information on patients’ perspectives on the referral process. Satisfaction and challenges they faced in the referral process were investigated. Data of this component were collected by trained and experienced interviewers who had prior experience in referral service and interviews.

Third and fourth components. Separate open-ended guiding questions were used for the focused group discussions and the insider observations. The FGD was facilitated by trained

physicians and senior liaison officers who recorded (wrote) the reflections of participants on each of the questions till saturation point are reached. The insider observations were also conducted by trained physicians and senior liaison officers who recorded the situations of the public hospitals. The copies of collected data were returned for participants when correction or comment was needed

Data quality control

To ensure the quality of data questionnaire, checklist, and discussion guide were pretested for feasibility, consistency, and completeness on the population with similar characteristics out of the study area.

The necessary modification was made based on the result of the pretest (10%) before actual data collection. The questionnaire, checklists, and discussion guides were prepared in English, translated to local languages including Amharic and Afan Oromo before data collection was initiated and back to English after data collection. Three days of training was given for data collectors and supervisors on the objectives of the study, the method of data collection, how to use data collection tools, and how to maintain the confidentiality of the information and the autonomy of patients.

The overall data collection process was monitored by the trained supervisors (physicians) assigned to each hospital and the authors. A focused group discussion was conducted at a quiet place in the hospitals. Paper copies of field notes were stored in a locked cabinet of the supervisors. Soft copies of FGD translation files and the pretranscription audio record were stored in encrypted files on password-protected computers and qualitative data analysis was started at the field concurrently with data collection. Finally, to ensure trustworthiness the qualitative finding techniques like member check and audit trial were applied during and after data collection.

Statistical analysis

For quantitative data. The collected data were coded and entered into the computer using EPI-INFO Version 7 software. Then data was exported to SPSS version 25 for analysis. In the first step, descriptive statistical analysis was used to produce tabulated percentages, mean, median, and range of variables. Both binary and multivariable logistic regression models were computed to see the association between independent versus outcome variables. The findings were taken as significant with a p value of <0.05 at 95% confidence interval. Then the results were presented with text, graphs, figures, and tables.

For qualitative data. Codebook with the coding tree was created after data collection by the author. The collected data were analyzed using the thematic content analysis technique. The themes were started before data collection and consolidated and finalized after the data is available. First, the

recorded data were transcribed verbatim by the experts in the local language used for data collection and translated to English. The translated material was read through to get a picture of the whole and understand the importance of the material. The translated data were cleaned and analyzed using the thematic content analysis technique. The preliminary categories and codes were created by taking into consideration: the number of times the subject will come up, the number of participants who will discuss the topic, the intensity of the conversation around the topic. Then, the content of the preliminary categories was reanalyzed by the investigator. The categories and codes were displayed and recategorized to create grand themes. Finally, the concept was narrated to answer research questions.

Results

The socio-demographic factor of the patients

In this study among all participants, 53.5% were females, marital status among participants shows that 58.7% were married while 33.1 % were single. The mean age of the research participants was 30 years with a standard deviation of 17 years. Religion distribution shows that 49.4% were Christian orthodox, whereas 26.1% were Muslims and 24.5% are protestant in religion.

The occupational status of the participants shows that 23.2% are nongovernmental organization (NGO) or government workers, 16.1% of the population were farmers, and have their own private business, while 4.8% are unemployed and the rest are daily laborers, students, and merchants.

The educational level in the study shows 23.2% of the participants are unable to write and read, while 30.3% of the participants have a Diploma and above. The age distribution among the study groups shows that 33.5% are below the age of 25, while 31.6% of the participants are above 36 years old (Table 1).

Referral among the public hospitals

This study has shown that the overall satisfaction of patients toward referral service was 73.5% confidence interval (CI: 67.9%–81.1%) was satisfied. Among the respondents, 83.9% believe that the health provider who handled the referral process is experienced. Among the participants, 76.8% believe that the health care provider explain the referral process. Among the respondents, 84.5% stated that their health care professional thoroughly examined them while the rest stated they did not. The major causes of dissatisfaction reported by the patients were lack of communication, lack of ambulance service, and too long waiting time before referral and examination.

In the study group, 74.5% believe that the current consultation way of communication had a positive effect on them. The extent of communication during the referral system is high according to 64.2% of the population group in the study,

Table 1. Socio-demographic factor of patient satisfaction to referral service among health facilities in and around Addis Ababa, Central Ethiopia 2021.

| Variables | Category | Value | | |
|------------------------|---|---------------------|------------|------|
| Age | Mean | 30.4 | | |
| | Standard deviation | 17.8 | | |
| Variables | Category | Frequency | Percentage | |
| Sex | 1. Male | 144 | 46.5 | |
| | 2. Female | 166 | 53.5 | |
| Marital status | 1. Single | 105 | 33.9 | |
| | 2. Married | 182 | 58.7 | |
| | 3. Widowed/divorced/separated/pediatric | 23 | 7.4 | |
| Religion | 1. Orthodox | 153 | 49.4 | |
| | 2. Muslim | 81 | 26.1 | |
| | 3. Protestant | 76 | 24.5 | |
| Variables | 1. Catholic | 0 | 0 | |
| | Category | Frequency | Percentage | |
| | Occupational status | Farmer | 50 | 16.1 |
| | | Government employee | 64 | 20.6 |
| | | NGO employee | 8 | 2.6 |
| | | Merchant | 46 | 14.8 |
| | | Daily Labor | 34 | 11 |
| Unemployed | | 15 | 4.8 | |
| Other | 93 | 30 | | |
| Average monthly income | 1. 0–600 birr | 227 | 73.2 | |
| | 2. 601–1600 birr | 41 | 13.2 | |
| | 3. 1601–3200 birr | 32 | 10.3 | |
| | 4. 3201–5250 birr | 7 | 2.3 | |
| | 5. >5250 birr | 3 | 1.0 | |
| | 6. Total | 310 | 100 | |

NGO: nongovernmental organization.

whereas 66.1% of the study participants believe that consultancy has a positive effect on their care.

During the multivariable analysis for the level of satisfaction on referral system, factors such as thinking of current referral way of communication affect the care, feeling of the health provider who handles the referral process as experienced and explaining referral acceptance of the hospital as well coordinated had a statistically significant association with the level of satisfaction with the referral system (Table 2).

Those patients who had positive thought in the current referral way of communication effect on their care were 44.09 times (adjusted odd ratio (AOR): 44.09, 95% CI: 5.47–355.68) more likely to be satisfied with the referral service they received as compared with those who thought it as it has a negative effect. Also, those who were felt the health provider who handled their referral process as an experienced were 6.42 times (AOR: 6.42, 95% CI: 1.20–34.42) more likely to be satisfied relative to those patients who feel the health provider who handle the referral process as inexperienced.

Furthermore, this study found that those patients who explained the referral acceptance of the hospital as well

Table 2. Factors associated with the level of satisfaction with referral service of health facilities among patients who had been referred at certain government facilities in Ethiopia, 2021.

| Explanatory variables | Satisfaction with referral service | | COR, 95% CI | AOR, 95% CI | p value |
|--|------------------------------------|---------------|-----------------------|-----------------------|---------|
| | Satisfied | Not satisfied | | | |
| Current referral way of communication affects your care | | | | | |
| Positive | 222 | 26 | 79.69 (31.29–202.96)* | 44.09 (5.47–355.68)** | 0.000 |
| Negative | 6 | 56 | | | |
| Health provider who handles your referral process experience | | | | | |
| No | 8 | 42 | | | |
| Yes | 220 | 40 | 28.88 (12.62–66.07)* | 6.42 (1.20–34.42)** | 0.030 |
| Referral acceptance of the hospital | | | | | |
| Well-coordinated | 207 | 26 | 23.89 (4.58–124.55)* | 35.50 (4.87–258.60)** | 0.000 |
| Not well-coordinated | 39 | 14 | 1.08 (0.19–5.97) | 6.96 (0.75–64.77) | 0.088 |
| Too long waiting time | 5 | 11 | 1.36 (0.20–9.28) | 4.54 (0.41–49.76) | 0.216 |
| Difficult to obtain information | 2 | | | | |

CI: confidence interval; COR: crude odd ratio; AOR: adjusted odd ratio.
* $p < 0.05$; ** $p < 0.01$.

Table 3. Socio-demographic characteristics of focus group discussion members, Ethiopia 2021.

| Variables | | Category | Value | |
|---------------------|-----------------|-----------|------------|--|
| Age | | Mean | 24 | |
| | | Range | 22–34 | |
| Variables | Category | Frequency | Percentage | |
| Sex | Male | 87 | 54 | |
| | Female | 75 | 46 | |
| Profession | MPH | 3 | 1.85 | |
| | Physicians | 8 | 4.93 | |
| | Health officers | 60 | 37.03 | |
| Years of experience | Nurses | 91 | 56.17 | |
| | 1–2 years | 78 | 48 | |
| | >2 years | 84 | 52 | |

MPH: masters in Public Health.

coordinated were 35.50 times (AOR: 35.50, 95% CI: 4.87–258.60) more likely to be satisfied as compared with those who were considered it as difficult to obtain information see detail in Table 2.

FGD result

Socio-demographic characteristics of the participants.

All the participants were health professionals with a mean age of 24 years and 52% had the experience of more than 2 years on patient referral services. About 54% of the participants were male and most of them were nurses and health officers (93%) for details in Table 3.

The role of the individuals involved in the referral system

All of the respondents who participated in this study stated that their main role in the referral system is communicating

with other facilities, facilitating the exchange of the patient as well as making sure the patient gets appropriate care is also one role according to about three-fourths of the respondents.

More than one-third of the respondents answered that it is their role to identify the appropriateness of the referral including making sure that the service for which the patient is referred is available in the facility and giving feedback to the catchment area facilities.

Improvement in the policies and guidelines of the referral linkage

On the discussion about the guidelines and policies used in the hospitals for referral purposes, only one out of four of the hospitals had their referral guideline, [ID 7, 9] and more than one-third of the participants said they are using the guideline provided by the MOH, whereas the remaining do not know whether or not a guideline is available.

The success of the referral system

When asked about the success of the referral system for the discussion and close to two-thirds of that of the respondents' stated that most the patients are getting appropriate service promptly and about half of the discussants believe that due to the effectiveness of the current referral system the overall mortality and morbidity have decreased.

The challenges faced in the referral service

All of the respondents have identified, lack of adequate training for the staff working in the current referral systems is one of their biggest challenges, and around three-fourths of the participants said that one of the challenges that they face is that patients are referred without communication and half of them stated that referral of patients without investigation is a

major problem. The other one out of four claimed that one of the challenges they face is that liaison was not empowered enough and needs to have a mandate on whether or not to accept patients and external interference should be minimized [ID 1, 2]. The others also raised that referral of the patient to the facility despite the service not being available as one of the challenges they face [ID 4].

The suggestions to improve the referral system

All of the respondents suggested that adequate staff training will significantly improve the referral system. About half of the respondents believe the current referral system needs an overall revamping and more than one-third of the participants suggested an accountability system need to be installed at catchment area where the feedback from the referred facility is implemented while a further quarter [ID 5 and others] of the respondents believe to improve the current referral system, a well-written guideline involving the referral system with clear role and responsibilities should be prepared and implemented.

Insider observation result

Socio-demographic characteristics of the observers. All the participants were health professionals with a mean age of 26 years and 62.5% having experience of more than 2 years on patient referral services; see details in Table 4.

Insider observation was done by extensively trained data collectors consisting of physicians and senior liaison officers with backgrounds from public health officers, MPH, and nurses. The observation was conducted to assess the knowledge, skill, patience, and behavior of health care providers. In addition, institutions' payment systems, completeness of referral papers, and trend of patient counseling were also observed.

The tools used to do this assessment were the following:

- Professional knowledge, skill, patience, and behavior?
- How legal is the payment system?
- How adequate of explanation and counseling?
- How completeness and comprehensive are the written protocols or referring patients to and from the hospital?
- How thorough is the examination of patients to identify the reason for the referral?

During this observation, all health professionals working in adult, pediatric, and OBGYN units were assessed. According to this observation, almost all health care professionals are competent and good at delivering service. But in some of the hospitals, there were problems observed on health care workers' patience. Some health care workers were seen as not having the patience to talk to the patients.

Table 4. Socio-demographic characteristics of insider observers, Ethiopia 2021.

| Variable | Category | Value | |
|--------------------------------|------------------------|-----------|------------|
| Age | Mean | 24-34 | |
| | Range | 26 | |
| Variable | Category | Frequency | Percentage |
| Sex | Male | 18 | 56 |
| | Female | 14 | 44 |
| Profession | MPH | 4 | 12.5 |
| | Physicians | 8 | 25 |
| | Public health officers | 12 | 37.5 |
| | Nurses | 8 | 25 |
| Experience in referral service | 1-2 years | 12 | 37.5 |
| | >2 years | 20 | 62.5 |

MPH: masters in Public Health.

Looking at the payment system of the hospitals, it was observed to be legal in all study areas. But there were challenges observed during the process of payment, for instance, in the majority of the study areas the finance is far away from the service area creating frustration on the patients and attendants and delay in the referral process.

There was a good trend in the explanation and counseling of patients. Nearly two-thirds of the patients were counseled and told about their condition accordingly. But still, some negligence was observed in explaining the details of the patient's condition.

The referral protocols were also observed. In most institutions, there were written protocols. The problem was on utilization and abiding by that protocol. Practically, the charts were not complete in some institutions. For instance, the time of referral, name, and signature of the referring health care worker was not stated clearly in most of the observations. In addition, writing diagnoses clearly and attaching relevant investigations were also problems observed (ID 11). Referral feedbacks were rarely available. These were limitations observed in most hospitals.

Regarding patient evaluation, in all study areas, a patient examination was observed to be thorough enough to reach on relevant diagnosis and reason of referral. The problem observed was that during some days where the patient flow becomes increased the health care workers tend to rush which could probably decrease the quality of care.

Discussion

Most developing countries lack reliable data regarding their referral system, communication flow, and their strong and weak points. A weak referring system leads to suffering from a critical shortage of medical experts and equipment that calls for the need of referring patients from one hospital to another. As a component of the health care delivery service, a good referral system increases the efficiency of the health system by maximizing the appropriate use of health care facilities.

Among the study participants interviewed after being referred, 53.5% were females, marital status among participants shows that 58.7% were married while 33.1% were single. Regarding Religion distribution, 49.4% were Christian orthodox, whereas 26.1% were Muslims and 24.5% are Protestants. The educational level in the study shows 23.2% of the participants are unable to write and read, while 30.3% of the participants have a diploma and above. The occupational status of the participants shows that 23.2% are NGO or government workers, 16.1% of the population were farmers, and have their own private business, while 4.8% are unemployed and the rest are daily laborers, students, and merchants.

Overall, 75% of the patients were satisfied by the current referral process and near to 85% of the participants have got an examination by the respective health care worker after their arrival. The study also shows that almost three-fourths of participants believe that the current consultation way of communication had a positive effect on them which is much better than the finding at TASH where only 45.5% of them had a positive effect. The extent of communication during the referral system is high according to 64.2% of the population group in the study, whereas nearly two-thirds of the study participants believe that consultancy has a positive effect on their care.²⁰

Health care professionals' high extent of communication during referral service would increase the likelihood of being high-quality referral by 6.46 times (AOR: 6.46, 95% CI: 2.89–14.45). As compared with low extent/poor communication. The study was done in Zomba, Malawi also showed that poor communication was a factor that negatively affected the smooth provision of referral health care services in Zomba.¹⁹

Finally, health care professionals' extent of consultation during referral service would increase the likelihood of being high-quality referral by 2.6 times (AOR: 2.597, 95% CI: 1.0052–6.412) as compared with low extent/poor extent of consultation on the care of the clients. The study done at Zomba Malawi yielded a result that shows the shortage of skilled health care providers was one of the factors that negatively affected the provision of quality referral service.¹⁹

Those patients who had a positive thought about the effect of the current referral way of communication on their care were 44.09 (AOR: 44.09, 95% CI: 5.47–355.68) times more likely to be satisfied with the referral service they received as compared to those who thought it as it has a negative effect. Also, those patients who reported the health provider who handled their referral process as an experienced were 6.42 (AOR: 6.42, 95% CI: 1.20–34.42) times more likely to be satisfied relative to those patients who feel the health provider who handled the referral process as inexperienced. This finding is similar to the findings from the study done in London where patient-centered styles of consulting in which patients are actively involved in decision making and doctors inform patients fully about management choices (correlation coefficient (Spearman) 0.39 and 95% CI: 0.28–0.49).²¹

Age and occupation were not statistically associated with patient satisfaction; this finding was not similar to the finding in Mekelle, Ayder hospital where patients with formal education and an age group of 18–25 patients are associated with referral satisfaction. This may be because patients with formal education and in those adolescent age groups have less difficulty of communication and so better satisfaction.²²

Strengths and limitations

This study was conducted in multiple centers which are representative of the hospitals in central Ethiopia with appropriate sampling techniques to assure generalization to similar health facilities. The study used both quantitative and qualitative methods with similar and coherent findings. The similarity of major findings in different health institutions like the status of standards, shortage of referral feedback, and present significant effect of communication on both quality of referral and patient satisfaction would be valuable data for policymaking and interventions. The response rate was 97% for a patient interview and 93% for referral papers and chart evaluations and 100% for qualitative sections. This study was conducted using a cross-sectional design which makes it difficult to assess the cause and effect relationship of the different variables. There are also few previous quantitative analytical studies regarding patient referral systems which limit our effort to compare our results with the previous ones. The wide confidence intervals on some of the findings are also the limitations of this study

Conclusion

This study determined the overall level of patients' satisfaction of referral services in Central Ethiopia revealed was moderate and identified that factors that increase odds of patient satisfaction toward referral system were communication, health provider experience, and referral acceptance of the hospital coordination status, respectively. Only a limited number of referrals have their feedbacks sent to their referring institutions and it is recommended that feedback should be improved better to be part of the institution's culture to attain high-quality referral service. Hence, policymakers on the health of would be better to consider referral communication, health provider experience, and referral acceptance of the hospital coordination status during referral program development and training for improvement of patient's satisfaction with referral services. Further quantitative studies covering the wider catchment of referral in Ethiopia are suggested to fill the gaps in this study.

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Author contributions

D.K. contributed to the conception, design, and conduct of the study, analyzed and interpreted the data, and prepared the manuscript. D.B.D. contributed to the design and conduct of the study, analyzed and interpreted the data, and prepared the manuscript. All authors read and approved the final manuscript.

Availability of data and materials

Datasets used in the current study are available from the corresponding author and principal investigator upon reasonable request.

Declaration of conflicting interests

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Ethics approval and consent to participate

Ethical clearance was obtained from the research and ethics review board of St. Paul's Hospital Millennium Medical College with Ethical Review Board Ref. No. Pm24/190. The respective hospitals were communicated and permission was obtained from the respective hospital's responsible bodies before data collection. Confidentiality of information was maintained throughout the study process. Participation in this study was voluntary and participants had full right not to participate or withdraw from the study after signing on written informed consent. There was no personal relation and no conflict of interest between the authors, supervisors, facilitators, and participants. The potential risk of participation in this study is negligible.

Informed consent

Written informed consent was obtained from all subjects before the study.

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Supplemental material

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