



RESEARCH ARTICLE

Patient Referral Pattern in Northern Ghana: A Retrospective Study of the Tamale Teaching Hospital

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Abstract

Background: Patient referral involves transferring the responsibility for the care of a patient from one level of care to the other. Several factors account for the referral of patients, and all categories of patients are referred.

Objective: This study sought to assess the most common medical and surgical conditions that are referred, as well as the demographics of patients mostly involved in medical referrals.

Materials and Methods: A retrospective cross-sectional study was conducted to examine the patterns of patient referral from peripheral facilities into the Tamale Teaching Hospital in 2021. Data on patient referral into the facility, including medical condition, age, gender, and other demographic information within a period of one year was retrieved from the nursing department under the consent of the nurse manager and analyzed using SPSS version 23.

Results: A total of 1565 referrals were made into the facility within the period under review. The main reasons for referral were to perform diagnostic investigations and for further management. Majority of the patients (53%) referred to facility were males within the ages of 20-49 years. The commonest conditions that were referred were head injuries (19.9%) followed by fractures (12.8) most of which were sustained through road traffic accidents. Eighty two percent (82%) of the attempted referrals were successful whilst 12% was rejected for various reasons including improper referral procedures, whilst the remaining 6% were to call back after some issues have been resolved.

Conclusion: There is a high rate of patient referral in northern Ghana, most of whom are as a result of head injuries and fractures resulting from road traffic accidents.

Keywords: Conditions, Ghana, Hospital, Patients, Referral pattern.

Citation: Surazu, B., and Korsah, A. K. (2023) Patient Referral Pattern in Northern Ghana: A Retrospective Study of the Tamale Teaching Hospital. *Integrated Health Research Journal* 1(1), 13-17. <https://doi.org/10.47963/ihrij.v1i1.1176>

Received December 23, 2022; **Published** April 20, 2023

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Introduction

Patient referral has been defined as the process of transferring the responsibility for the overall or partial care of a patient, temporarily or permanently to another health provider (At, Allied, & Emergency, n.d.). Most cases of patient referrals are sent to the next level in the health care system. Some few instances however warrant patients be sent to a lower-level facility either for specialist care or on patient request. The ministry of health in their referral policy document alluded to the fact that, the Ghanaian referral system is bedeviled with various challenges such as inadequate primary health care facilities, lack of confidence in first level facilities, lack of standard procedures for referrals, delays in referrals, not using referral forms, negative perceptions on referrals and lack of feedback by receiving facilities (Referral-Policy-Guidelines.Pdf, n.d.). Efficient referral system is an indication of robust health sector and specifically an

indicator of the effectiveness of the primary health care in the country (Steinmann, Baimatova, & Wyss, 2012). A successful referral demands an inter-facility collaboration, cooperation and information transfer. It indicates the health worker's ability to identify signs of a severe or worsening condition at an early stage (Referral-Policy-Guidelines.Pdf, n.d.). The World Health Organization developed the Integrated Management of Childhood Infections (IMCI) as an effective guideline for the management of childhood infections for children between the ages of 2 months to 59 months. An effective referral is an integral part of the IMCI guideline (Beyene, Kassa, Tadele, & Persson, 2021).

Various forms of patient referral exists in health care, including internal referral, which is referral within the same health facility, external referral which involves two health facilities and external referral which sends the patient overseas (Referral-Policy-Guidelines.Pdf, n.d.). Other forms such as the emergency or unplanned referral

describes the transfer of an acutely ill patient, while planned or routine referral transfers a patient for expert opinion, for admission or investigative purposes on a planned basis (Khoja, Shehri, Abdul-Aziz, & Aziz, n.d.).

Excessive or over referral tend to burden and overwhelm receiving facilities such as teaching hospitals. Again, it results in unwarranted medical investigation and procedures, increasing cost. Under referral of the other hand mostly result in medical complications that could have been avoided with specialty care. This variability in over and under referral stems from the lack of certainty on the appropriate referral practice for certain medical conditions (13). The ministry of health policy on referral however states that, all emergency referrals must be received and at least first aid treatment administered. No health facility is allowed to turn away a patient on emergency referral (Referral-Policy-Guidelines.Pdf, n.d.). However, management of medical emergencies are poorly organized, and the essential resources are mostly not available at the receiving facilities. Several factors account for referral of patients from one health facility to the other. Major medical factors sighted in available literature include to get expert opinion about a medical therapy, to obtain assistance in diagnosing and to confirm a diagnosis, patient's condition been too complicated for a general practitioner to manage, to perform a therapeutic procedure and to perform a diagnostic procedure. Non-medical factors that may warrant a referral includes to meet the stipulated guideline in patient care, to fulfill patient's request, to motivate patient to adhere to medical advice and to benefit medical trainees working with a specialist (Donohoe et al., n.d.).

This study sought to identify the most common medical and surgical conditions that are referred into the accident and emergency unit of the Tamale Teaching Hospital as well as the demographics of patients mostly involved in these referrals.

Materials and Methods

Study Design and Setting: This is a retrospective study record review that was conducted at the Accident and Emergency unit of the Tamale Teaching Hospital. The Tamale Teaching Hospital is the third largest teaching hospital in Ghana, and the only tertiary health facility in the northern part of Ghana. The facility receives referral cases from the five regions of northern Ghana as well as from parts of the middle belt. The hospital was established in 1974 to serve as a regional hospital for the then northern region. The hospital was however upgraded to the status of a teaching hospital in 2005 with over 480 bed capacity (Dosoo & Adongo, 2020).

As the third largest tertiary health facility in the country, the hospital has specialized medical, surgical, and gynecological departments. As a teaching hospital, the facility engages in the training of all calibers of health personnel as well as a center for medical research.

The accident and emergency ward is an international standard emergency ward with approximately 50 bed capacity. The ward is divided into four units, often

referred to as zones which includes triage, red, orange, and yellow zone. Patients are admitted into the various zones according to the severity of their conditions which is decided by their triage scores. The ward manages both adult and pediatric medical and surgical conditions. The accident and emergency unit abides by the ministry of health's policy on referral for health facilities. The unit has a 24-hour communication system to which referral facilities are expected to call and present cases prior to referrals. The unit receives over a thousand patients annually, both referrals and walk-in-patients.

Data Collection and Analysis: The accident and emergency ward has a robust communication system through which all peripheral health facilities call in to inform and present cases before referrals are made. Information on any call received is documented by the receiving nurse, which is compiled and made available at the nurse manager's office. This information was retrieved and analyzed. All telephone calls received concerning patient referrals to the ward were included in the study. Data collected during this telephone conversation includes patient's name, age, sex, condition and vital signs of patient, referral diagnosis, name of referral hospital and location of referral hospital. Information on patients that were referred into the ward from October 2020 to October 2021, with a total 1565 patients was retrieved and analyzed with the permission of the ward management. Statistical Package for Social Sciences (SPSS) version 23 was used to analyze the data. Data was analyzed using frequencies and charts.

Ethical consideration: Permission to use the data was requested from the nursing department of the facility as the data was readily available. Permission was subsequently granted before the data was released and analyzed for publication. Consent from participants was not possible as it was a retrospective study and participants could not be reached.

Results

A total of 1565 patients including males, females, children, adults and the aged were referred into the ward within the period under review. The referral of 273 cases were unsuccessful for various reasons. Various conditions including medical, surgical as well as cases of road traffic accidents (RTA) were referred to the unit. Majority (21%) of the patients referred to the ward were between the ages of 20-29 years. This was closely followed by those aged 30-39 years which amounted to 18%, then 14% of the patients were within the age bracket of 40-49 years. The aged constituted the least age group with those above 90 years being only 3 patients whilst 4% were within 80-89 years group (**Figure 1**).

Majority of the patients that were referred into the ward within the period under review were males. With a population of 1064 patients, the male gender constituted 69% of patients referred into the emergency ward of the Tamale Teaching Hospital, whilst the female gender made up the remaining 31% (**Figure 2**).

Most of the cases referred into the ward within the period of

review were surgical cases. This was made up 941 patients which constituted 62% whilst medical cases were 583, constituting 38%. Patients that were referred as a result of road traffic accidents 594, constituting 39%.

With regard to referral diagnosis from referring or peripheral facilities, patients that were referred in with a referral diagnosis of head injuries were 311, which constituted 19.9%. Patients referred in with fractures were 200, whilst those with other surgical conditions such as acute abdomen, lacerations, burns, hernias, intestinal obstructions, gastric outlet obstruction were 449 which constituted 28.7%. cardiovascular conditions such as hypertension, cardiovascular accident (CVA) and heart failures constituted 16.7% (Table 1).

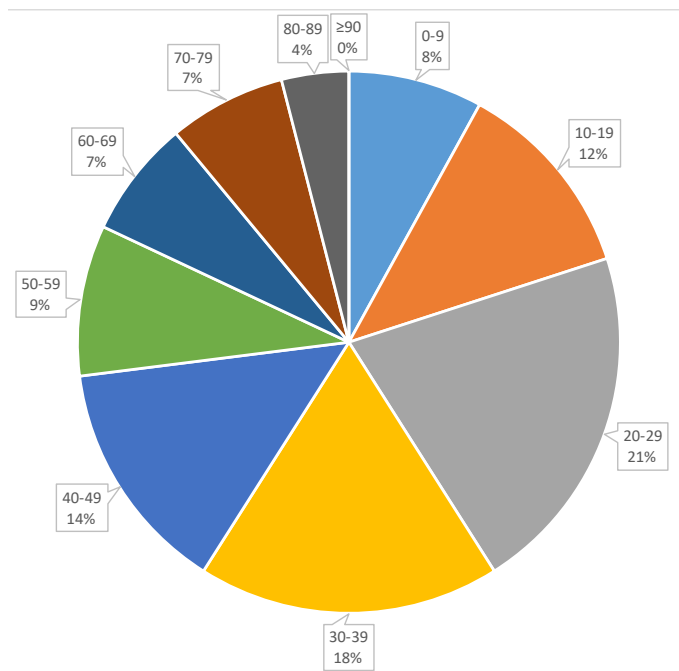


Figure 1: Age distribution of study participants.

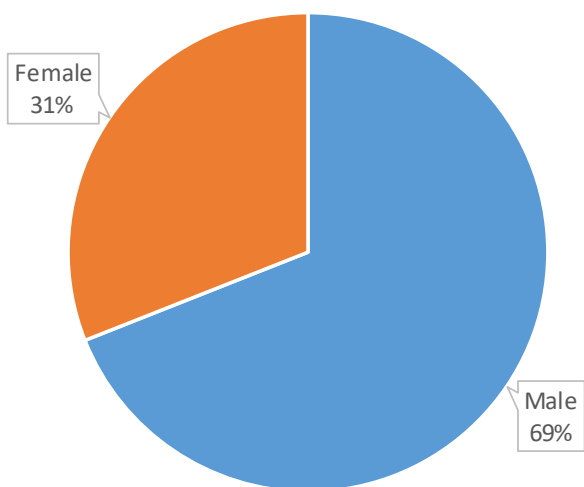


Figure 2: Sex distribution of study participants.

Table 1. Referral diagnosis of patients referred into the emergency ward.

Condition	Frequency	Percentage
Head Injuries	311	19.9%
Fractures	200	12.8%
Cardiovascular conditions	261	16.7%
Other surgical conditions	449	28.7%
Other medical conditions	322	20.6%
Missing	22	1.5%
Total	1565	100%

Table 2. Gender distributions of the various conditions.

Condition	Male (%)	Female (%)	Total
Head Injuries	213 (68.5)	98 (31.5)	311
Fractures	135 (67.5)	65 (32.5)	200
Cardiovascular conditions	159 (60.9)	102 (39.1)	261
Other surgical conditions	293 (64.3)	156 (35.6)	449
Other medical conditions	253 (78.6)	69 (21.4)	322

With regards to the number of patients that were permitted to be referred to the facility during the telephone conversation, 82% of patients were permitted whilst 12% were not permitted (Figure 3).

The northern region emerged as the region with the most frequently referred cases with a total number of 716, constituting 48%. This was followed by the upper east region with 24% and the Savannah region with 10% of the total referred cases. The Ahafo region, Western north and Central regions did not refer any case to the facility during the period under review (Table 3).

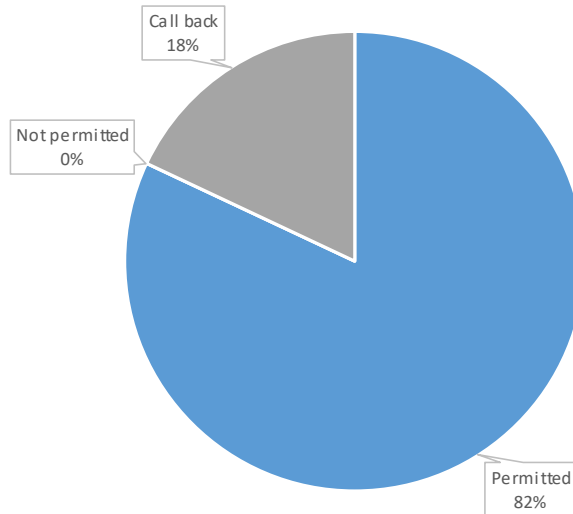


Figure 3: Patients that were permitted to be referred to the facility during the telephone conversation

Discussion

Patient referral has been an integral part of the health care system. This study sought to identify the most common medical and surgical conditions that are referred into the accident and emergency unit of the Tamale Teaching Hospital as well as the demographics of patients mostly involved in these referrals. The age distribution of patients referred to the facility reveals that, more than 60% of patients are below 50 years old. This can be attributed to

various factors. To begin with, the population of Ghana is generally described as a youthful population and as such, young people are always expected to dominate in all aspects of the population (Kpessa-whyte, 2018). Furthermore, the major medium of transportation in northern Ghana is through motorcycles, which are mostly used by the youth. This comes with a high prevalence of road traffic accidents. It is therefore not unexpected that, RTA cases constitutes a chunk of referrals to the facility. This further explains the finding that, majority of the patients referred are males. The male gender as a result of their masculine activities are daring and more likely to engage in risky behaviors, leading to RTAs (Dinye & Ahmed, n.d.). Finally, the accident and emergency unit is the first point of contact for all surgical and trauma cases into the Tamale Teaching Hospital.

Table 3. Distribution of regions and number of patients referred to the facility.

Region	Number of referrals	Percentage
Northern	716	45.7
Upper East	359	22.9
Savannah	151	9.6
Bono East	92	5.8
North East	84	5.3
Oti	58	3.7
Upper West	28	1.7
Volta	6	0.38
Bono	4	0.25
Ashanti	2	0.13
Western	1	0.06
Eastern	1	0.06
Grater Accra	1	0.06
Ahafo	0	0
Western North	0	0
Central	0	0
Missing	62	3.9
TOTAL	1,503	100

According to the nurses at the accident and emergency unit, most of the patients have been referred to the facility due to the severity of the condition, whilst others such as those with head injuries were referred for diagnostic investigation such as computerized tomography scan (CT scan). These are the reasons stated by the referral facilities during telephone conversations regarding referrals. In the whole of northern Ghana, only Tamale has a functional CT scan. This has been sighted as major causes of referral in other jurisdictions as well (Berkeley & Med, 1976). Fractures, which are mostly sustained from RTAs was observed as the second most referred conditions after head injuries. This is similar to other studies conducted in Australia where fractures were the number one condition referred to a tertiary health facility (At et al., n.d.).

In the health sector, some attempts to refer patients to the next level may be unsuccessful for various reasons. Some factors that impede patient referrals include inadequate bed space at the receiving facility, inadequate essential materials such as oxygen, diagnostic equipment and specialist health personnel, missing and inadequate information, challenges with communicating systems

(Michael Weiner, M.D., M.P.H. Anthony J. Perkins, M.S.1, and Christopher M. Callahan, 2015). Majority of the calls that were received regarding referrals were successful and the patients were brought in. However, various challenges such as inadequate bedspace, incomplete information, and inadequate essentials such as oxygen impeded the referral of about 12% of cases.

The majority of patients referred into the facility were surgical cases. This includes patients with acute surgical conditions and RTAs. Road traffic accidents are a major cause of patient referral in Ghana and specifically in northern Ghana. Most RTAs results in head injuries which in most cases leads to a referral to the facility. The facility is the only health facility in the entire northern Ghana with a functional CT scan equipment as well as a highly recognized neurosurgeon. The Tamale Teaching Hospital has a robust surgical department which attend to general surgical and neuro-surgical condition as well as other specialized surgical cases. This results in a huge referral of surgical cases besides those of trauma and RTAs. This is expected as referrals to neurosurgeons has been documented as a major referral point in Australia (At et al., n.d.).

Cardiovascular conditions such as hypertension, heart failures and cerebrovascular accidents were the third major referral diagnosis. Cardiovascular conditions such as hypertension has ranked in the top five out-patient and emergency ward visits for the past 15yrs in Ghana (12). These conditions are part of a broader group of conditions described as chronic non-communicable diseases. These conditions account for about 60% of the estimated 58million deaths each year globally (Health, 2012). In other jurisdictions, cardiovascular conditions were reported as the third major most common conditions referred to a specialist (At et al., n.d.).

This study highlights the common and major conditions which accounts for patient referral in northern Ghana. It also highlights the gender and age distributions of patients most commonly referred.

The study is limited by the fact that it is a retrospective study and thus researchers lacked the opportunity to ascertain from participants the challenges encountered during referral. Also, incomplete missing data was a challenge as the authors could not correct or complete any incomplete data.

Conclusion

The accident and emergency unit of the Tamale Teaching Hospital receives a huge number of referred cases from peripheral facilities across both northern and middles belts of Ghana on annual basis. Most of the patients referred to the facility are males within their youthful ages. The major conditions referred to the facility are surgical conditions, including head injuries, fractures, and other surgical emergencies such as acute abdomen. Medical conditions commonly referred to the facility includes cardiovascular conditions such as hypertension, heart failures and stroke. Adequate and complete record keeping should be practiced

among nurses. This will reduce the occurrence of missing information and provide a complete database for future care of patients.

Declarations

Conflict of Interest: The authors have no competing interest to declare. The study was self-funded with no external support.

Acknowledgement: The authors would like to acknowledge the staffs of the Accident and Emergency ward of the Tamale Teaching Hospital for their effort in generating and compiling the data and to the management for releasing the data. We are grateful.

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