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Thesis report

Assessment of Quality of Care Given To Adult Acute Stroke Patients and Associated Factors in Tikur Anbessa Hospital,Zewditu Memorial Hospital,Yekatit 12 medical college Hospital ,Addis Ababa, cross sectional study, 2023

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Assessment of the quality of care given to adult acute stroke patients and associated factors in Tikur Anbessa hospital, Zewditu memorial hospital, Yekatit 12 medical college hospital, Addis Ababa, cross sectional study,2023

Thesis report

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ACRONYMS

AAU=Addis Ababa university

B.P=blood pressure

DM=diabetes mellitus

ICU=intensive care unit

HTN=hypertension

NG=nasogastric

RBS=random blood sugar

SU=stroke unit

TAH=Tikur Anbassa Hospital

ZMH=Zewditu memorial hospital

Abstract

Introduction

Globally, stroke is the second-leading cause of death and the third-leading cause of death and disability combined worldwide.

Even though the prevalence is decreasing in developed countries, it is increasing in developing countries.

Quality of care given during acute phases of stroke has significant effect in improving mortality and morbidity.

Studying the quality of care given for adult acute stroke patients helps to know the level of stroke care given and to improve the service.

Objective

The objective of this study is to identify the quality of care given to adult acute stroke patients in 3 tertiary hospitals.

Methods

A cross sectional study was done by collecting data from adult acute stroke patients in Tikur Anbassa Hospital,Zewditu memorial hospital and Yekatit12 hospital ,Addis Ababa, Ethiopia from September 2023 to December 2023.All patients who fulfill the inclusion criteria were included. Data was analyzed by using the most recent version of SPSS. Data cleaning and analysis was done by the principal investigator. The data was summarized by using frequency distribution and summary tables .The data was further analyzed by using descriptive statistics. Conclusion of the study was drawn based on the analysis result.

Result and conclusion

This study showed that the quality of care given to acute stroke patients in these hospitals is low.

1. INTRODUCTION

1.1 Back ground

A stroke or cerebrovascular accident is defined as an abrupt onset of a neurological deficit that is attributable to a focal vascular cause. The clinical manifestation of stroke is highly variable because of the complex anatomy of the brain and its vasculature. It is the second leading cause of death worldwide with 6.2 million people dying in 2015.(1)

Despite gradual decline in overall stroke death rates in many industrialized countries, stroke remains a leading cause of death and disability worldwide.(2)

Stroke subtypes are ischemic(thrombotic and cardio embolic) and hemorrhagic (intracerebral hemorrhage and subarachnoid hemorrhage).(3)

Even though ischemic stroke is more common in Western population, studies have shown hemorrhagic stroke is more common in Ethiopia.(4)

Recent studies have revealed that Ethiopia is beginning to enter the epidemiologic shift, where the burden of non-communicable diseases (NCDs) such as cardiovascular disease (CVD), cancers, diabetes, chronic respiratory diseases, and injury is increasing while communicable diseases simultaneously remain highly prevalent. According to the WHO, NCDs are estimated to account for 30% of all deaths in Ethiopia, with stroke being one of the most prominent of the NCDs. The Global Burden of Disease Project stated that in 2010 stroke caused 642,000 years of life lost (YLL) due to premature mortality, a 31% increase in stroke-attributable YLL since 1990 .(5)

1.2 Statement of the problem

Quality indicators serve as standards of care by which performance of individual hospitals is measured.(6) The development of indicators to measure hospital performance in stroke care is an important step toward improving stroke care on a national level.(7).

The medical care for acute ischemic stroke in Africa is far from optimal, with little adherence to recommended protocols. There is a lack of public awareness of the disease, imaging infrastructure, personnel, stroke care units, and recovery facilities due to poor funding.(8)

Majority of the patients admitted to the hospital developed complication, aspiration pneumonia being the most frequently affirmed complication during their stay in the wards. (9)

1.3 Significance of the study

Optimal interdisciplinary care and services for stroke patients and their caregivers are critical factors in recovery and quality of life following the initial event. In order to measure current practices in organizations, several indicators have been developed and are used to monitor quality of care for people who had a stroke.(10)

Quality indicators can be used to evaluate the adherence to current guidelines. They can both enforce and accelerate the transfer of new scientific evidence into everyday clinical practice.

An increasing number of quality initiatives for acute stroke care have recently been established in Europe and the United States. Ensuring high standards of care, however, is important not only for acute treatment, but also for rehabilitation efforts in later stages of stroke care.(11)

Monitoring quality of care between healthcare providers might reveal current service needs and identify gaps in delivery of appropriate care.(12)

Adherence to recommended clinical practices improves stroke outcomes. As a result, stroke clinicians are increasingly expected to evaluate the quality of the care they provide so that areas for improvement can be targeted.(13)

The morbidity and mortality of stroke is disproportionately high in developing countries owing to the poor health care system and poor neurologic interventions.(14)

So, to improve this high burden of mortality and morbidity from stroke, standardized quality of care should be given to patients. Studying the quality of care given to adult acute stroke patients in TAH,ZMH and Yekatit 12 hospital enables the level of care given and to identify gaps in patient care process. The result of this research will be used as an input for the hospitals administrators to improve the service.

The gaps identified will also be used as an input for the policy makers in the country for patient management and for the scientific community for further research on the area.

Tikur Anbessa Specialized Hospital,ZMH and Yekatit 12 hospital are chosen as an area for research because they are highly involved in stroke patients management and many patients are referred to these hospitals.

2. LITERATURE REVIEW

Stroke care in Africa usually fell below the recommended standards with variations across countries and settings. Combined efforts from policy makers and health care professionals in Africa are needed to improve, and ensure access, to organized stroke care in as many settings as possible. Mechanisms to routinely monitor usual care (i.e., registries or audits) are also needed to inform policy and practice.(15)

Efforts to improve the adoption of evidence-based interventions for optimal patient outcomes in low-/middle-income countries (LMICs) are persistently hampered by a plethora of barriers. Yet, little is known about strategies to address such barriers to improve quality stroke care.(16)

In a study done in New York state stroke center, national expert panel including physicians, nurses, physiotherapists and occupational therapists identified seven quality-of-care criteria covering the acute phase of stroke based on systematic search of the scientific literature : admission to a specialized stroke unit, antiplatelet therapy initiated among patients with ischemic stroke without atrial fibrillation, oral anticoagulant therapy initiated among patients with ischemic stroke and atrial fibrillation, examination with CT/MRI scan, assessment by a physiotherapist, assessment by an occupational therapist and assessment of nutritional risk. A time frame was defined for each criterion to capture the timeliness of the interventions. The time frame was the second day of hospitalization for all criteria, except initiation of oral anticoagulant therapy where the time frame was the 14th day of hospitalization.(17)

Data on stroke care provision in developing countries are sparse and most of the available studies are biased towards urban settings in reasonably resourced health-care systems. A general overview shows that the quality and quantity of stroke care is largely patchy in low-income and middle-income countries, with areas of excellence intermixed with areas of severe need, depending upon patients' location, socioeconomic status, education, and cultural beliefs.(18)

Patients receiving protocolized care in Haiti achieved higher care quality compared to the baseline group, with higher rates of aspirin administration (91% v. 17%, $p < 0.001$), physical therapy consultation (50% v. 9.6%, $p < 0.001$), and swallow evaluation (36% v. 3.7%, $p < 0.001$).(19)

Low socioeconomic status was associated with a lower chance of receiving optimal acute stroke care. However, the differences in acute care did not appear to explain socioeconomic differences in mortality and readmission risk.(20)

Quality of care for women with ischemic stroke was lower than that for men, and women were less likely to be discharged home. (21)

The number of stroke patients receiving recombinant tissue plasminogen activator (r-tPA) in developing world is extremely low.(22)

Evidence-based care should improve acute stroke outcomes with the same magnitude of effect for stroke patients of all ages. However, there is evidence to suggest that, in some instances, older stroke patients may receive poorer quality care than younger patients.(23)

Four key barriers and 12 subthemes of barriers were identified in giving quality of care in a research done in Ghana.. These include barriers at the patient (financial constraints, delays, sociocultural or religious practices, discharge against medical advice, denial of stroke), health system (inadequate medical facilities, lack of stroke care protocol, limited staff numbers, inadequate staff development opportunities), health professionals (poor collaboration, limited knowledge of stroke care interventions) and broader national health policy (lack of political will) levels. Perceived barriers varied across health professional disciplines and hospitals.(24)

Quality of care may also be influenced by patient and hospital factors.(25)

A minority of acute stroke patients are treated according to established guidelines. Quality improvement interventions, targeted primarily at the health care systems level, are needed to improve acute stroke care in the United States.(26)

Assessment of quality of care indicators in Western Kenya in 2022 showed that overall, 84% of the patients had a brain CT scan on day one of admission,93% had a GCS documented at

admission, 32% were on statins and 3% were screened for dysphagia before oral intake. Among patients with ischemic strokes; none underwent thrombolysis, 24% received DVT prophylaxis, 54% received statins, and 73% received anti-thrombotic therapy by hospital day two.(27)

In a study done in Germany, data were obtained from more than 260 000 patients nationwide. Intravenous thrombolysis was performed in 59.7% of eligible ischemic stroke patients patients (range among participating projects, 49.7–63.6%). Dysphagia screening was documented in 86.2% (range, 74.8–93.1%). For the following indicators, the defined targets were not reached for all of Germany: anti-plateletes within 48 hours, 93.4% (range, 86.6–96.4%); anticoagulation for atrial fibrillation, 77.6% (range, 72.4–80.1%); standardized dysphagia screening, 86.2% (range, 74.8–93.1%); oral and written information of the patients or their relatives, 86.1% (range, 75.4–91.5%). The rate of patients examined or treated by a speech therapist was in the target range.(28).

In a study in US IN 2005, total of 6867 admissions from 98 hospitals were included; the majorities were ischemic strokes (range, 52% to 70%) with transient ischemic attack and intracerebral hemorrhage comprising the bulk of the remainder. Between 19% and 26% of admissions were younger than age 60 years, and between 52% and 58% were female. Black subjects varied from 7.1% (Michigan) to 30.6% (Georgia). Between 20% and 25% of admissions arrived at the emergency department within 3 hours of onset. Treatment with recombinant tissue plasminogen activator (rtPA) was administered to between 3.0% (Georgia) and 8.5% (Massasachuset) of ischemic stroke admissions. Of 118 subjects treated with intravenous rtPA, <20% received it within 60 minutes of arrival. Compliance with secondary prevention practices was poorest for smoking cessation counseling and best for antithrombotics.(26)In 2018,19 604 patients with acute ischemic stroke in the China National Stroke Registry and 194 876 patients in the Get With The Guidelines—Stroke registry in the United States were analysed from June 2012 to January 2013. Compared with their US counterparts, Chinese patients were younger, had a lower prevalence of comorbidities, and had similar median, lower mean, and less variability in National Institutes of Health Stroke Scale (median 4 [25th percentile–75th percentile, 2–7], mean 5.4±5.6 versus median 4 [1–10], mean 6.8±7.7). Chinese patients were more likely to experience delays from last known well to hospital arrival (median 1318 [330–3209] versus 644 [142–2055] minutes), less likely to receive thrombolytic therapy (2.5% versus 8.1%), and more likely to

experience treatment delays (door-to-needle time median 95 [72–112] versus 62 [49–85] minutes). Adherence to early and discharge antithrombotics, smoking cessation counseling, and dysphagia screening were relatively high (eg >80%) in both countries. Large gaps existed between China and the United States with regard to the administration of thrombolytics within 3 hours (18.3% versus 83.6%), door-to-needle time ≤60 minutes (14.6% versus 48.0%), deep venous thrombosis prophylaxis (65.0% versus 97.8%), anticoagulation for atrial fibrillation (21.0% versus 94.4%), lipid treatment (66.3% versus 95.8%), and rehabilitation assessment (58.8% versus 97.4%).(29)

3. OBJECTIVES

3.1 General objectives

-Assess the quality of care given to acute stroke patients

3.2 Specific objectives

- Assess stroke time of arrival
- Know the different kinds of stroke quality indicators
- Assess quality of acute stroke care in 3 hospitals

4. METHODOLOGY

4.1 Study area and period

The study is conducted in TASH,ZMH and Yekatit 12 hospitals, Addis Ababa,Ethiopia,2023.

Tikur Anbassa Specialized Hospital is the largest government owned hospital in the country which is found in Addis Ababa. It is the main referral hospital giving tertiary and comprehensive care for around half a million patients per year both for in-patient and outpatient care.

Zewditu memorial hospital and Yekatit 12 hospitals are also government owned hospitals under Addis Ababa health bureau which give referral services for both inpatient and outpatient cases.

This study was conducted from Sebtember 2023 to February 2023.The period was utilized to prepare the proposal, to collect the data, to analyze the data and to prepare the report.

4.2 Study design

The study is a cross sectional, prospective research which determined quality of care given to adult acute stroke patients in TASH,ZMH and Yekatit 12 HMC in 2023.

4.3 Selection of study population

4.3.1 Source population

The source population is acute stroke patients who visited TASH,ZMH and Yekatit 12 hospital.

4.3.2 Study population

The study population is adult patients who were diagnosed to have acute stroke in 2023.

4.4 Inclusion/exclusion criteria

4.4.1 Inclusion criteria

Patients who have acute stroke and stayed in the hospital 2 or more days.

4.4.2 Exclusion criteria

Stroke patients who stayed below 2 days.

Stroke patients who are below 18 years.

Patients who don't want to participate in the research.

4.5 Sample size and sampling technique

Sample size was calculated by using 50% as prevalence of acute stroke in the source population because we didn't have previously studied prevalence of acute stroke in the same areas or it was difficult to do pilot study.

95% level of confidence and 5% margin of error is considered. Based on this, the following formula is used to calculate the sample size.

$n = z^2$P(1-P/d^2)

n=sample size

Z=standard proportion population at 95 % confidence interval (1.96)

P=estimated proportion of acute stroke (50%)

d=Margin of error (5%)

The sample size becomes 385.This is the minimum sample size that represents reasonably for previously unknown prevalence in the area or doing pilot study is impossible.

Assuming that the sample size is less than 10,000 in the area within the study period, I used the following formula.

n=n°/[1+(n°_1)/N)]

where n°=385

N= The sample from an infinite source population which is 120.

n=sample size which becomes 91.

Taking 10% of incompleteness for data collection, the final sample size becomes 100.

4.6 Data collection procedure

4.6.1 Data Collection Instrument

Data was collected by using structured questionnaire. The questionnaire was prepared by the principal investigator based on previously done similar litreture review and stroke guidelines. The questionnaire includes demography and clinical profiles of acute stroke patients.

*4.6.2*Data collection method

Data was collected by volunteer residents and volunteer interns.

Adequate information was given for those who were volunteer to collect data.

4.7 Study variables

4.7.1 Dependent variable

Presence of acute stroke

4.7.2 Independent variables

Socio demography of the patient(age, sex, address,income)

Quality of acute stroke care measures

4.8 Operational definitions

Adults

Acute stroke patients equal or greater than 18 years old.

Quality of care

The different types of care given to stroke patients which improves the outcome of the patients.

Acute stroke

Stroke that occurs within 2 weeks.

Hypertension

B.P≥140/90

DM

FBS≥126 or HgBA1C≥6.5

Bed side physiotherapy

Physiotherapy given by attendants or by the patients themselves in the ward

Swallow test

Test done for acute stroke patients to assess whether there is a need to NG tube insertion or not.

4.9 Data quality control

The investigator followed the appropriateness of the methodologies. Data collecting volunteers were given adequate information before collecting data and full address of the principal investigator was given to every data collecting volunteer. Every difficulty during data collection was addressed properly and timely.

Every filled questionnaire was checked for completeness before receiving from the data collecting volunteer.

4.10 Data analysis technique

Data was entered and analyzed by using SPSS. Data cleaning was done exclusively by the investigator.

Patient's demography and clinical profiles is demonstrated by using graphs and tables..

4.11 Ethical clearance

Proposal approval was obtained from the department of neurology research committee, department of neurology, and from advisors ,and Addis Ababa public health and emergency management directorate before data collection and from Addis Ababa health bureau to conduct the research in ZMH and Yekatit 12 hospital.

All information collected from patients was kept confidentially and used only for the intended purpose. Personal information including names of patients was not included in the questionnaire. Completed questionnaires were stored by the investigator.

4.12 Dissemination of results

The study results will be disseminated to advisors, department of neurology research committee, CHS, AAU,Addis Ababa public health and emergency management directorate and as per approval for responsible stakeholders. It will also be further disseminated as per needed to wider scientific community by using different presentation methods.

6. Result and discussion

6.1 Socio-demographic characteristics of the study participants

In this study 100 study participants were involved making a response rate of 100%. Twenty three percent of the study participants were in the age group of >70 years.55% of the study participants were male and 90% of them were from Addis Ababa ,and 92% had a house hold monthly income <5,000 ETB.

Table 1. The socio-demographic characteristics of the study participants having Acute Stroke disease in TASH , ZMH and Y12HMC,2023.

Variable	frequency	Percent
Age of the study participants		
31-40	14	14
41-50	20	20
51-60	17	17
61-70	26	26
>70	23	23
Sex of the study participants		
Male	55	55
Female	45	45
Residence		
Addis Ababa	90	90
Out of Addis Ababa	10	10
Monthly income (ETB)		
<5,000	92	92
5,000-10,000	7	7
>10,000	1	1

6.2 Stroke related clinical characteristics of the study participants

Fifty four percent of the stroke patients were admitted in ward and 83% of the patients arrived at the health facility after 4.5 hours of stroke attack. 72% of the patients had CT brain image and 39% were imaged between 1 hr to 1 day duration of hospital admission. 70% of the study participants stayed in the hospital 2-7 days.

Table 2. Stroke related clinical characteristics of the study participants

Variable	frequency	Percent
Place of admission		
EOPD	12	12
SU (TASH)	26	26
MICU	8	8
Ward	54	54
Duration of stroke at arrival in hours		
<4.5	17	17
≥4.5	83	83
Type of brain image the patient has		
CT	72	72
MRI	11	11
CT and MRI	15	15
Neither	2	2
Duration of imaging after emergency acceptance		
<15min	5	5
15Min-1hr	38	38
1hr-1day	39	39
>1day	18	18
Duration of hospital stay in days		
2-7	70	70
8-15	30	30

Stroke related characteristics of the study participants

Majority (71%) of them had ischemic stroke and from those stroke patients 45% had documented NIHSS and 64% of the participants took aspirin and statin. From patients in TASH, 38% of the participants were admitted in the stroke unit. 43.5% were not admitted due to ineligibility criteria for admission. 53% of the study participants used Indwelling urethral catheter and 57% had hypertensive disease and 75.4% of the hypertensive patients' blood pressure was measured every four hours. 91% of the participants were assessed for smoking status.

Table 3. Stroke related characteristics of the study participants

Variable	frequency	Percent
Types of strokes		
Ischemic	71	71
Hemorrhagic	27	27
Uknown	2	2
Stroke patients documented in national institute of health stroke scale (n=71)		
Yes	45	45
No	26	26
Medication of Ischemic stroke (n=71)		
Aspirin	1	1
Statin	4	4
Aspirin and statin	64	64
Neither	4	4
Patient admitted to stroke unit (from TASH)		
Yes	38	38
No	62	62
If not admitted reason(n=62)		
In eligibility	27	43.5
Lack of bed	22	35.5
Others	13	21
Mode of urinary draining usage of the patient		
Indwelling urethral catheter	53	53
Condom catheter (males)	10	10
Diaper	15	15
Other	22	22
Patient was hypertensive		
Yes	57	57
No	43	43
Frequency of blood pressure checked (n=57)		
Every 4hrs	43	75.4
Twice daily	13	22.8

Not at all	1	1.8
Types of investigation done for the patient		
ECG	37	37
Echocardiography	15	15
Carotid Doppler	5	5
Patient assessed for smoking		
Yes	91	91
No	9	9
Patient /attendant get nutritional education to care for the patient	52	52

6.3 Quality of care of acute stroke patient

Swallowing test was done for 73% of the participants and 86% were on DVT prophylaxis and 95% of the patient's position were frequently changed and from those position changed 35.8% were changed every 2 hrs. 49% of the patients' RBS was measured every 4 hours and 77% of the participants were on bedside physiotherapy and from those 83.1% of the physiotherapies were performed by attendants.

Table 4.The characteristics of quality of care of acute stroke patient

Variable	**frequency**	**Percent**
Swallowing test done		
Yes	73	73
No	27	27
Patient on DVT prophylaxis		
Yes	86	86
No	14	14
Patient on frequent position change		
Yes	95	95
No	5	5
Frequency of position change (n=95)		
Every 2 hrs.	34	35.8
Every 4hrs	23	24.2
Every 8hrs	16	16.8
<3 times/day	22	23.2
Frequency of RBS		
Every 4hrs	49	49
Twice daily	16	16
Once daily	4	4
Not at all	31	31
Patient on physiotherapy		
Yes	77	77
No	23	23
Physiotherapy performer		
The patient him/her self	12	15.6
Attendant(s)	64	83.1
Physiotherapist	1	1.3
Frequency of physiotherapy		
Every 2hrs	21	27.3
Every 4hrs	11	14.3
Every 8hrs	13	16.9
<3 times/day	32	41.6

6.4 The chi-square association of the selected quality of care and independent variable

The finding of this study showed that age was statistically significant for position change type of stroke quality of care. Previous study showed older patients get lower quality of care than younger patients due to presumed poorer prognosis in the older patients (Luker JA,et.al 2011;11(1):1-10.)

Table 7. The chi-square relation of the selected quality of life and independent variable

Variable	Age					Chi square value	
	31-40	41-50	51-60	61-70	>70		
Patient on DVT prophylaxis							
Yes	11	17	17	22	19	3.69	0.450
no	3	3	0	4	4		
Patient on frequent position change							
Yes	10	20	17	26	22	19.71	0.001
No	4	0	0	0	1		
Patient on physiotherapy							
Yes	10	16	15	18	18	2.47	0.651
no	4	4	2	8	8		

6.5 The chi-square association of the selected quality of care and independent variable

The finding showed that sex was statistically significant for patient/attendant nutritional education and physiotherapy types of care. Previous study showed quality of care for women with ischemic stroke was lower than that for men,but reasons were not determined on that study (Reeves MJ,et.al,2009;40(4):1127-33.)

Table 6. The chi-square relation of the selected quality of life and independent variable

Variable	Sex		Chi square	p-value
	male	female		
Patient on DVT prophylaxis's				
Yes	46	40	0.567	0.451
no	9	5		
Patient on frequent position change				
Yes	51	44	1.33	0.249
no	4	1		
Patient on physiotherapy				
Yes	41	36	0.416	0.019
No	14	9		
Patient/attendant get nutritional education			1.09	0.029
Yes	26	26		
No	29	19		

6.6 The chi-square association of the selected quality of care and independent variable

The finding of the study also showed that type of stroke was statistically significant for DVT prophylaxis, frequent position change and physiotherapy. Althugh there is no similar study done showing this,it may be due to different factors that needs to be studied in the future.

Table 7. The chi-square relation of the selected quality of life and independent variable

Variable	Types of strokes			p-value
	Ischemic	hemorrhagic	Unknown	
Patient on DVT prophylaxis's				
Yes	62	24	0	0.002
no	9	3	2	
Patient on frequent position change				
Yes	68	26	1	0.013
no	3	1	1	
Patient on physiotherapy				
Yes	57	20	0	0.027
No	14	7	2	
Attendant get nutritional education				
Yes	40	12	0	0.190
No	31	15	2	

Conclusion and recommendation

Conclusion

From the study, it can be concluded that the quality of care given to acute stroke patients is low.

The following findings were statistically significant.

- Age with frequent position change.
- Sex with nutritional education and physiotherapy.
- Quality of care with frequent position change, DVT prophylaxis, and physiotherapy.

Recommendation

rTPA should be available in stroke unit of TAH.

Physiotherapists should be involved in hospital patient management.

Strength and limitation

Strength

The study can give important information on level of acute stroke care in these hospitals.

It is a multicenter study.

Limitation

Since the study is cross sectional study,it doesn’t tell temporal relationship among variables.

Since it is not observational ,it may not reflect real practice.

References

1. Kasper D, Fauci A, Hauser S, Longo D, Jameson J, Loscalzo J. Harrison's principles of internal medicine, 19e: Mcgraw-hill New York, NY, USA:; 2015.

2. Lederman RJJJ. Bradley's neurology in clinical practice. 2012;308(16):1694-.

3.Fox GN, Moawad NSJJofp. UpToDate: a comprehensive clinical database. 2003;52(9):706-10.

4.Alemayehu CM, Birhanesilasie SKJCMR. Assessment of stoke patients: occurrence of unusually high number of haemorrhagic stroke cases in Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia. 2013;2(5):94-100.

5.Gebremariam SA, Yang HSJE. Types, risk profiles, and outcomes of stroke patients in a tertiary teaching hospital in northern Ethiopia. 2016;3:41-7.

6.Wiedmann S, Norrving B, Nowe T, Abilleira S, Asplund K, Dennis M, et al. Variations in quality indicators of acute stroke care in 6 European countries: the European Implementation Score (EIS) Collaboration. 2012;43(2):458-63.

7.Heuschmann PU, Biegler MK, Busse O, Elsner S, Grau A, Hasenbein U, et al. Development and implementation of evidence-based indicators for measuring quality of acute stroke care: the Quality Indicator Board of the German Stroke Registers Study Group (ADSR). 2006;37(10):2573-51.

8.Uwishema O, Berjaoui C, Correia IFS, Anis H, Karabulut E, Essayli D, et al. Current management of acute ischemic stroke in Africa: a review of the literature. 2022;29(11):3460-5.

9.Asgedom SW, Gidey K, Gidey K, Niriayo YL, Desta DM, Atey TMJJos, et al. Medical complications and mortality of hospitalized stroke patients. 2020;29(8):104990.

10.Belanger A, Houle J, Beaudet L, Lapointe TJCJoC. CLINICAL AND ORGANIZATIONAL QUALITY INDICATORS IN THE ACUTE PHASE FOR OPTIMAL STROKE MANAGEMENT IN ADULTS: A SCOPING REVIEW. 2021;37(10):S119.

11.Grube MM, Dohle C, Djouchadar D, Rech P, Bienek K, Dietz-Fricke U, et al. Evidence-based quality indicators for stroke rehabilitation. 2012;43(1):142-6.

12.Wiedmann S, Hillmann S, Abilleira S, Dennis M, Hermanek P, Niewada M, et al. Variations in acute hospital stroke care and factors influencing adherence to quality indicators in 6 European audits. 2015;46(2):579-81.

13.Luker JA, Wall K, Bernhardt J, Edwards I, Grimmer-Somers KJIJoS. Measuring the quality of dysphagia management practices following stroke: a systematic review. 2010;5(6):466-76.

14.Alene M, Assemie MA, Yismaw L, Ketema DBJBn. Magnitude of risk factors and in-hospital mortality of stroke in Ethiopia: a systematic review and meta-analysis. 2020;20(1):1-10.
15.Urimubenshi G, Cadilhac DA, Kagwiza JN, Wu O, Langhorne PJIJoS. Stroke care in Africa: a systematic review of the literature. 2018;13(8):797-805.
16.Baatiema L, de-Graft Aikins A, Sarfo FS, Abimbola S, Ganle JK, Somerset SJHE. Improving the quality of care for people who had a stroke in a low-/middle-income country: A qualitative analysis of health-care professionals' perspectives. 2020;23(2):450-60.
17.Gropen T, Gagliano P, Blake C, Sacco R, Kwiatkowski T, Richmond N, et al. Quality improvement in acute stroke: the New York state stroke center designation project. 2006;67(1):88-93.
18.Brainin M, Teuschl Y, Kalra LJTLN. Acute treatment and long-term management of stroke in developing countries. 2007;6(6):553-61.
19.Rouhani SA, Marsh RH, Rimpel L, Anderson K, Outhay M, Edmond MC, et al. Protocolized emergency department observation care improves quality of ischemic stroke care in Haiti. 2020;10(3):145-51.
20.Langagergaard V, Palnum KH, Mehnert F, Ingeman A, Krogh BR, Bartels P, et al. Socioeconomic differences in quality of care and clinical outcome after stroke: a nationwide population-based study. 2011;42(10):2896-902.
21.Reeves MJ, Fonarow GC, Zhao X, Smith EE, Schwamm LHJS. Quality of care in women with ischemic stroke in the GWTG program. 2009;40(4):1127-33.
22.Fekadu G, Chelkeba L, Melaku T, Gamachu B, Gebre M, Bekele F, et al. Management protocols and encountered complications among stroke patients admitted to stroke unit of Jimma university medical center, Southwest Ethiopia: Prospective observational study. 2019;48:135-43.
23.Luker JA, Wall K, Bernhardt J, Edwards I, Grimmer-Somers KAJBhsr. Patients' age as a determinant of care received following acute stroke: a systematic review. 2011;11(1):1-10.
24.Baatiema L, Aikins Ad-G, Sav A, Mnatzaganian G, Chan CK, Somerset SJBo. Barriers to evidence-based acute stroke care in Ghana: a qualitative study on the perspectives of stroke care professionals. 2017;7(4):e015385.
25.Reeves MJ, Gargano J, Maier KS, Broderick JP, Frankel M, LaBresh KA, et al. Patient-level and hospital-level determinants of the quality of acute stroke care: a multilevel modeling approach. 2010;41(12):2924-31.

26.Stroke PCPRWGJ. Acute stroke care in the US: results from 4 pilot prototypes of the Paul Coverdell National Acute Stroke Registry. 2005;36(6):1232-40.

27.Odour C, Keter A, Diero L, Siika A, Williams LJEAMJ. Stroke types, risk factors, quality of care and outcomes at a referral hospital in Western Kenya. 2015;92(7):324-32.

28.Wiedmann S, Heuschmann PU, Hillmann S, Busse O, Wiethölter H, Walter GM, et al. The quality of acute stroke care—an analysis of evidence-based indicators in 260 000 patients. 2014;111(45):759.

29.Wangqin R, Laskowitz DT, Wang Y, Li Z, Wang Y, Liu L, et al. International Comparison of Patient Characteristics and Quality of Care for Ischemic Stroke: Analysis of the China National Stroke Registry and the American Heart Association Get With The Guidelines—Stroke Program. 2018;7(20):e010623.

Annexes

Questionnaire

Consent form for the data collector

My name is Taye Birku (NR2).I am doing my post graduate research on assessing the quality of care given to adult acute stroke patients, cross sectional study in TASH,ZMH and Yekatit 12 hospital 2023.

I Strongly need your help to complete this questionnaire.

Thank you very much for your cooperation.

Email: birkutaye9@gmail.com

Phone number: 0910375894

Consent form for the patient

My name is Dr.Taye Birku. I am doing my post graduate research on quality of care given to adult acute stroke patients, cross sectional study in TASH,ZMH and Yekatit 12 hospitals 2023.

I request you to participate on this research. The research will not bring any consequences on your health or quality of care given to you.

Thank you very much for participating in this research.

Questionnaire

Socio-demographic data

1. Study number……..
2. Medical record no…….
3. Age (year) A.≤30 B.31_40 C.41-50 D.51-60 E.61-70 F.>70
4. Sex A. Male B. Female
5. Address A. A.A B. Out of A.A
6. Monthly income (ETB) A. Below 5000 B.5000-10,000 C. Above 10,000

Clinical profiles

7. Where is the patient admitted A.EOPD B.SU C.MICU D. Ward

8.How long was the duration of the stroke at arrival

A.Less than 4.5 hours B.Greater than 4.5 hours

9.Which type of brain imaging does the patient have?

A. CT B. MRI C. Both D. Neither

10.After how long since arrival at emergency does the patient have imaging?

A.Within 15 min B.15 min_1hour C.1 hour_1 day D.After 1 day

11.How long does the patient stay in the hospital

A.48 hour_1 week B.1 week_2weeks

12.Which type of the stroke does the patient have?

A. Ischemic B. Hemorrhagic C. Unknown

13.If the patient has ischemic stroke does he/she have documented NIHSS

A.yes B.No

14.If the patient has ischemic stroke, on which medication is he/she?

A. Aspirin B. Statin C. Both D. Neither

15.Is/was the patient admitted to stroke unit?

A. Yes B. No

16.If no for question15,why was the reason?

A. Ineligiblity B. Lack of bed C. Other

17 Did the patient get rtPA?

A. Yes B. No

18.If no for question17,why was the reason?

A. Ineligiblity B. Lack of the medication C. Patient refusal D. other

19.Was swallowing test done for the patient?

A. Yes B. No

20.Is the patient on DVT prophylaxis?

A. Yes B. No

21.s the patient on frequent position change?

A. Yes B. No

22.If yes for question 21,how frequent is it?

A. Every 2 hours B. Every 4 hours C. Every 8 hours D. Less than 3 times per day

23.Which mode of urinary drainage is the patient using?

A. Indwelling urethral catheter B. Condom catheter (for males) C. Diaper D. other

24.Is the patient hypertensive?

A. Yes B. No C. Unknown

25.If yes for question 24 ,how frequent is the blood pressure checked?

A. Every 4 hours B. twice daily C. once daily D. not at all

26.If yes for question 26,how frequent is the random blood sugar checked?

A. Every four hours B. twice daily C. Once daily D. Not at all

27.Is the patient on physiotherapy?

A. Yes B. No

28.If yes for question 27, who is doing?

A. The patient him/her self B. Attendant/s C. physiotherapist

29.If yes for question 27,how frequently is it done?

A. Every 2 hours B. Every 4 hours C. Every 8 hours D. less than 3 times per day

30.Which investigation was done for the patient?

A.ECG B. Echocardiography C. Carotid Doppler

31.Is the patient assessed for smoking?

A. Yes B. No

32.If the patient is smoker, does he/she get education for smoking cessation?

A. Yes B. No

33.Does the patient /do the attendants get nutritional education how to care for the patient?

A. Yes B. No

የመረጃ ሰብሳቢ የስምምነት ፈቃድ መጠየቂያ

ስሜ ዶ/ር ታዬ ብርቁ ይባላል። የድህረ ምረቃ ጥናቴን የአዋቂዎች አጣዳፊ ስትሮክ ታካሚዎች ላይ ያለውን የአገልግሎት ጥራት በተመለከተ ነዉ። እርስዎም ከታማሚዎች መረጃ በመሰብሰብ ይተባበሩኝ ዘንድበአክብሮትእጠይቃለሁ።

በጥናቱ ስለተሳተፉ አመሰግናለሁ።

ስልክ ቁጥር-0910375894

ኢሜል-birkutaye9@gmail.com

የታካሚዎች የስምምነት ፈቃድ መጠየቂያ

ስሜ ዶ/ር ታዬ ብርቁ ይባላል። የድህረ ምረቃ ጥናቴን የአዋቂዎች አጣዳፊ ስትሮክ ታካሚዎች ላይ ያለውን የአገልግሎት ጥራት በተመለከተ ነዉ። እርስዎም በዚህ ጥናት ላይ ይሳተፉ ዘንድ በአክብሮት እጠይቀዎታለሁ። በዚህ ጥናት ላይ ስለተሳተፉ በጤናዎትም ሆነ በሚያገኙት አገልግሎት ላይ ተጽኖ አይኖረዉም።

በጥናቱ ስለተሳተፉ አመሰግናለሁ።

የጥናት መጠይቅ

ሶሺዮ ዲሞግራፊ

1.ተራቁጥር…….

2. የህክምና ካርድ ቁጥር……

3.እድሜ (አመት) ሀ.≤30 ለ.ከ31-40 ሐ.ከ41-50 D.51-60 E.61-70 F.>70

4.ጾታ ሀ.ወንድ ለ.ሴት

5.አድራሻ ሀ.አ.አ ለ.ከአ.አዉጭ

6.የወርገቢ (ብር) ሀ.ከ5000 በታች ለ.5000-10,000 ሐ.ከ10,000 በላይ

ክሊኒካል መረጃዎች

7. ታካሚዉ የት ነዉ የተኛዉ? ሀ.ኢመርጀንሲ ለ.ስትሮክ ዩኒት ሐ.አይሲዩ መ.ዋርድ

8.ስትሮኩ ከተከሰተ ከ ምን ያህል ጊዜ ነዉ ድንገተኛ የደረሱት? ሀ.4.5 ሰአት በታች ለ.4.5 ሰአት በላይ

9.ታማሚዉ/ዋ የትኛዉ የጭንቅላት ምርመራ ነዉ ያለዉ/ያላት?

ሀ.ሲቲ ለ.ኤም አር አይ ሐ.ሁለቱም አላቸው መ.ሁለቱም የላቸውም

10.ታማሚዉ/ዋ ድንገተኛ ክፍል ከደረሰ/ች ከምን ያህል ጊዜ በኋላ ነዉ የጭንቅላት ምርመራ የተሰራዉ?

ሀ.በ15 ደቂቃ ለ.ከ15 ደቂቃ_1ሰአት ሐ.ከ1ሰአት_1ቀን መ.ከ1 ቀን በኋላ

11.ታማሚዉ/ዋ ሆስፒታል ዉስጥ ለምን ያህል ጊዜ ቆይቷል/ለች?

ሀ.ከ48ሰአት_1ሳምንት ለ.ከ1 ሳምንት_2 ሳምንት

12.ታማሚዉ/ዋ የትኛዉ የስትሮክ አይነት ነዉ ያለዉ/ያላት?

ሀ. የጭንቅላት ደም ስር መዘጋት ለ.ጭንቅላት ዉስጥ ደምመፍሰስ ሐ.አይታወቅም

13.ታካሚውዉ/ዋ የጭንቅላት ደምስር መዘጋት ካለዉ/ላት የተመዘገበ NIHSS አለው/ላት?

ሀ.አዎ ለ.አይ

14.ታማምዉ/ዋ የጭንቅላት ደም ስር መዘጋት ካለዉ/ላት የትኛዉን መድሀኒት ነዉ እየወሰደ/ች ያለዉ?

ሀ. አስፕሪን ለ. የኮሌስትሮል መቀነሻ ሐ.ሁለቱንም መ. ምንም አይወስዱም

15.ታማሚዉ/ዋ ስትሮክዩኒት ገብቶ/ታ ነበር?

ሀ.አዎ ለ.አይ

16. ለጥያቄ 15 መልሱ አይ ከሆነ ለምን?

ሀ.መስፈርት ባለማሙአላት ለ.የአልጋ እጥረት ሐ.ሌላ

17.ታማሚዉ/ዋ rtPA ወስዶ/ዳነበር?

ሀ.አዎ ለ.አይ

18.ለጥያቄ 17 መልሱ አይ ከሆነ ለምን?

ሀ. መስፈርት ባለማሙአላት ለ.የመድሀኒት እጥረት ሐ.ታማሚዉ ባለምስማማቱ መ.ሌላ

19.ታማሚዉ/ዋ መዋጥ የመቻል ምርመራ ተደርጎለታል/ላታል?

ሀ.አዎ ለ.አይ

20.ታማሚዉ/ዋ የደም ስር መርጋት መከላከያ እየወሰደ/ች ነዉ?

ሀ. አዎ ለ.አይ

21.ታማሚዉ/ዋ በየጊዜዉ እየተገላበጠ/ች ነዉ?

ሀ. አዎ ለ.አይ

22.ለጥያቄ 21 መልሱ አወ ከሆነ በየምን ያህልጊዜ?

ሀ.በየ 2 ሰአት ለ.በየ 4 ሰአት ሐ.በየ 8 ሰአት መ.በቀን 3 ጊዜ በታች

23.የትኛዉን የሽንት ማስወገጃ ነዉ እየተጠቀመ/ችያለዉ/ችዉ?

ሀ.የሽንት ቧንቧ ካቴተር ለ.ኮንዶምካቴተር (ለወንዶች) ሐ.ዳይፐር መ.ሌላ

24.ታማሚዉ/ዋ ግፊት አለዉ/ላት?

ሀ. አዎ ለ. አይ ሐ.አይታወቅም

25.ለጥያቄ 24 መልሱ አወ ከሆነ ግፊቱ በየምን ያህል ጊዜ እየተለካነዉ?

ሀ.በየ 4 ሰአት ለ.በቀን 2 ጊዜ ሐ.በቀን 1ጊዜ መ.አይለካም

26. የስኪር ምርመራ በየምን ያህል ጊዜ ይለካል?

ሀ. በየ 4 ሰአት ለ.በቀን 2 ጊዜ ሐ.በቀን 1 ጊዜ መ.አይለካም

27.ታማሚዉ/ዋ ፊዚዮታራፒ እየሰራ/ች ነዉ?

ሀ. አዎ ለ. አይ

28.ለጥያቄ 27 መልሱ አወ ከሆነ ማነዉ የሚያሰራዉ/ራት?

ሀ.ታማሚ ዉ ራሱ/ሷ ለ.አስታማሚዉች ሐ.ፊዚዮቴራፒስት

29. ለጥያቄ 27 መልሱ አወ ከሆነ በየምን ያህል ጊዜ ነዉ የሚሰራዉ/ምተሰራዉ?

ሀ.በየ 2 ሰአት ለ.በየ 4 ሰአት ሐ.በየ8 ሰአት መ.በቀን 3 ሰአት በታች

30.ታማሚዉ/ዋ ከሚከተሉት ዉስጥ የትኛዉ ምርመራ ተሰርቶለታል/ላታል?

ሀ. ኢሲጂ ለ.የልብ አልትራሳዉንድ ሐ.የደም ስር ዶፕለር

31.ታማሚዉ/ዋ አጫሽ መሆን አለመሆኑ/ኗ በመርመራ ወቅት ተጠይቆአል/ለች?

ሀ. አዎ ለ. አይ

32.ታማሚዉ/ዋ አጫሽ ከሆን/ነች ማጨስ እንዲያቆም/ታቆም የግንዛቤ ትምህርት ተሰቶታል/ቷታል?

ሀ. አዎ ለ. አይ

33.ታማሚዉ/ዋ እንዲሁም አስታማሚዎች ታማሚዉን/ዋን ለመንከባከብ የሚያግዝ የስነምግብ የግንዛቤ ትምህርት አግኝተዋል?

ሀ. አዎ ለ. አይ