ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF EMERGENCY MEDICINE

ASSESSMENT OF PATIENTS' READINESS FOR HOSPITAL DISCHARGE AND ASSOCIATED FACTORS AMONG MEDICAL EMERGENCY PATIENTS IN BLACK LION SPECIALIZED TEACHING HOSPITAL ADULT EMERGENCY DEPARTMENT, ADDIS ABABA, ETHIOPIA JANUARY 2020G.C.

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A RESEARCH TO BE SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, DEPARTMENT OF EMERGENCY MEDICINE IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR MASTERS OF SCIENCE DEGREE IN EMERGENCY MEDICINE AND CRITICAL CARE NURSING.

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APPROVAL SHEET

As thesis research advisor, I hereby certify that I have read and evaluated this thesis Prepared under my guidance by Migbaru Getachew entitled Assessment of patients' readiness for hospital discharge and associated factors among medical emergency patients in black lion specialized teaching hospital adult emergency department, Addis Ababa, Ethiopia January 2020G.C.. I recommend that it be submitted as fulfilling the thesis requirement.

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As members of the Board of Examiners of EMCCN thesis open defense examination, we certify that we have read and evaluated the thesis prepared by Migbaru Getachew and examined the candidate. We recommend that the thesis be accepted as fulfilling the thesis requirements for the Degree of Master of EMCCN.

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Examiner	Signature	Date

Statement of the author

By my signature below, I declare and affirm that this thesis is my work. I have followed all ethical principles of scholarship in the preparation, data collection, data analysis, and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used in this document. Every serious effort has been made to avoid any plagiarism in the preparation of this thesis.

This thesis is submitted in partial fulfillment of the requirement for a master of emergency medicine and critical care degree to Addis Ababa University, College of Health Science, and department of emergency medicine and critical care. I would like to declare that this thesis has not been submitted to any other institution anywhere for the award of any academic degree, diploma, or certificate.

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Abstract

Introduction: Improving health institution discharge processes, decreasing readmissions and emergency department visits after discharge is on the countrywide issue for health care reform and health facility-based improvement tasks, which are unplanned, adverse, potentially avoidable, and costly outcomes of hospitalization caused by low patient readiness for hospital discharge. A patient's readiness for Hospital Discharge is defined as a patient's assessment of their own preparedness for discharge and their ability to cope with their illness at home. However, a little is known about whether emergency medical patients sufficiently prepared for discharge to home after acute care at intermediate phase of recovery.

Objective: To assess patients' readiness for discharge and associated factors in the emergency department of black lion specialized teaching hospital Addis Ababa Ethiopia from February 17 to July 2020G.C

Method: An institutional-based cross-sectional prospective study was conducted and all patients with a diagnosis of medical conditions, and ready for discharge during the study period were included and the collected data was evaluated with SPSS version 25 software.

Results; the total number of respondents was 159; the mean age of the study subjects is 49 with a standard deviation of ± 16.7 the majority of the patients 106 (66.7%) reported low RHD scores (<7.0), although 53 (33.3%) reported RHD scores (≥7.0). The overall patient-RHD score was 6.89 ± 0.92. Increased age AOR 16.34 (CI 5.4, 49.02) and high Charlson comorbidity index AOR 24.1, (CI 4.1, 44.2) are contributing factors for low patient RHD scores. On the other hand, having a spouse as a primary caregiver was predictive of greater RHD (AOR 0.31, CI 0.002, 0.56).

Conclusions and recommendations; the finding indicate most patients are being discharged without being ready and most are not getting any discharge education. Paying attention to adequate discharge planning, providing appropriate discharge education is essential to improve patient outcome.

Keywords: Emergency department, Readiness, Patient discharge

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Acronyms

AAU = Addis Ababa University

AIDS = Acquired Immune Deficiency Syndrome

AOR= Adjusted Odds Ratio

BSC = Bachelor of Science

CCI = Charlson's Comorbidity Index

CHF = Congestive heart failure

CI = Confidence Interval

CKD = Chronic Kidney Disease

COPD = Chronic Obstructive Pulmonary Disease

COR = Crude Odds Ratio

EC = Ethiopian Calendar

ED = Emergency Department

GC = Gregorian Calendar

RHD = Readiness for Hospital Discharge

SPSS = Statistical Package for the Social Sciences

TASH= Tikur Anbesa specialized hospital

USA = United States of America

CHAPTER 1; Introduction

1.1Background

The emergency department is a short stay department for patients with selected diagnoses to undergo further investigation and get appropriate intervention for a defined time up to 24 hours(1). The emergency department is increasingly used to avoid hospital admission in patient's and other patient's requiring longer-term treatment may be transferred to the appropriate inpatient services for additional care(2)

A patient's readiness for hospital discharge (RHD) is defined as the assessment of patients preparedness for discharge and their ability to cope with their illness at home by patient himself or any other health care professional(3). Patients' readiness attributes include sufficient recovery to allow safe discharge, physical stability, functional ability, competence to manage self-care at home, and coping ability(4). More than 35 million discharges annually from acute care hospitals, 65% are discharged to home inadequacies of discharge preparation are well documented, readmission rates range from 8 to 15% in the 1st 30 days in the USA (5).

Readmission and emergency department (ED) utilization within 30 days following hospitalization represent unplanned, adverse, potentially avoidable, and costly outcomes of hospitalization that may be attributed in part to inadequate pre-discharge preparation, lack of patient's and family readiness, poor discharge transition coordination, and unsuccessful coping with the needs of self-management at home(6).

A study conducted on readiness for discharge has shown that it affects the patient outcomes and resulted in readmission, High-quality discharge education is linked to positive perceptions of readiness for hospital discharge (RHD); however, patients usually feel that they do not receive the necessary information for discharge while receiving much unnecessary information and a low perceived RHD is associated with not coping at home and an adverse post-discharge status, together with an increased rate of hospital readmissions(7).

1.2 Statement of the problem

Improving health institution discharge processes and decreasing readmissions and emergency department (ED) visits in the first 30 days after discharge is on the countrywide issue for health care reform and health facility-based improvement tasks (8). However, patients and their caregivers have different perspectives about readiness for health facility discharge. Patients' perceptions have received limited attention in studies of discharge readiness with discharge readiness usually measured using single-item questions with dichotomous or ordinal responses and also there is a discrepancy between health professionals believing that patients are ready and assessment of readiness for discharge(9).

A study of 163 hospitalized adults in the USA discovered that unresolved discharge barriers were common; 90% of patients were discharged with a minimum of 1 issue that may inhibit a good transition to home. Many of those patients were conjointly discharged home with none support services. additionally, several of the main barriers patients reported pain, lack of understanding around plans, and talent to produce self-care were consistent early admission to discharge, suggesting a lost chance to deal with issues present early during a patient's stay and also their study indicated there are unidentified factors that affect discharge readiness (10)

Persons treated and discharged from emergency departments usually are given complicated self-care directions at the time of discharge. Patients are also expected to manage wounds, follow careful medication regimens, assess for complications, and verify once skilled follow-up is indicated. Home management could embrace caring for endovenous lines, urinary catheters, and orthopedical appliances or maybe a lot of advanced devices like chest tubes, metabolic process instrumentation, or internal organ monitors. Crucial medical aid info should be explained before discharge, even once patients are anxious, exhausted, and uncomfortable, medicated, or have language or psychological feature challenges. Strict adherence to discharge is typically essential for recovery and hindrance of complications furthermore as readmission(11).

There is no research done in our country, according to our knowledge, no study has investigated readiness concerning the factors that affect the patient's discharge readiness. Consequently, this research has a tendency to fill the knowledge gap on what variables affect patients' readiness for hospital discharge as well as recommend appropriate discharge readiness, assessment models.

1.3 Significance of the study

Adding discharge readiness assessment models for assessing patient's readiness for discharge will improve their utility for pre-discharge identification of risky patients. Formalized assessment of discharge readiness, with specific triggers for prevenient interventions before discharge or for post-discharge continuing care or surveillance, will improve patient outcome and satisfaction.

Patient perceptions about pending hospital discharge have only received limited attention and this investigation of this area will identify the factors affecting patient's readiness which will help to address what is expected from the health care professionals to make appropriate discharge instructions. After a short stay in the emergency ward due to acute conditions and being discharged will concern patients about their strength, the return of energy, and abilities for self-care, and this research aimed to identify those and recommend away on appropriate discharge instruction.

This research is believed to support the effectiveness of discharge preparation interventions and offers a clearer understanding of the factors that facilitate or impede discharge preparation and patients' readiness for discharge. Therefore, this study has a tendency to explore the associations between the (socio-demographic, socioeconomic and clinical) factors and patient readiness for hospital discharge in emergency medical patients The finding of this study will provide information to the concerned bodies (Governmental and non-governmental organizations) to plan important interventions to improve the discharge process.

CHAPTER 2

2.1 Literature review

The evaluation of a patient's readiness for hospital discharge has been distinguished as a central component of the discharge planning process and research in the area of hospital discharge has universal relevance, as challenges in connection to hospital discharge are a repeating worldwide topic. Issues such as lessening the cost of health care have resulted in shorter hospital stays which result in numerous cases is that patients are not prepared to go home because there is less time for discharge arrangement(12). Discharge planning is an essential process in the patient's hospital experience during which needs are identified and evaluated, and assistance is provided in anticipation of leaving the facility(13)

Discharge preparation is a primary function of hospital-based nursing in response to concerns for patient safety and quality of care, health care leaders are calling for improvements in care coordination across patient conditions, services, settings and over time(14)

Nurse Managers play an important position in impacting health care offerings. They supply medical care and function as leaders on the unit. Nurse Managers have the function of designing and coordinating all instructed aspects of daily affected person care, providing communication among employees, patients, and patients' families, providing education and motivation to employees. Since these roles build nurse managers to look at the big picture on the unit they will contribute to a decent discharge coming up with(15)

According to a study in Switzerland patients receiving more discharge instruction are more informed and therefore more sensitive to their symptom, home management of their condition and less likely to become readmitted to the hospital(16) Discharge planning by nurses plays an important role in entitling Patients and family members to return home with an adequate understanding of post-ED care(17)

A study in Ireland showed that when the study participants asked do you believe that you are ready to go home as planned? 93.7% of respondents answered 'yes' and they concluded readiness for discharge can be influenced by many factors such as age, sex, socioeconomic status, comorbidity, and income(18). Also, a study done in turkey witnessed that approximately two of five patients (41.3%) were discharged without being ready and patients who were women, single, having a low education level, living alone and not having someone to help at home after discharge higher percentages of being unready for discharge also patients who were not ready for discharge were also older and had higher comorbidity scores indicating percentages of unplanned readmission, death, and negative outcomes were higher for patients who were discharged without being ready(19). Moreover, education level, having someone to help at home after discharge, and one extra day in the length of stay significantly affected readiness for discharge and impact of having someone to help his/her care at home after discharge is much higher than the other variables(19) In a related study done in western hospitals of USA indicates that readiness for hospital discharge is affected particularly by education and income level(20)

In a study conducted in the USA from study participants, 20% reported that they were living alone and this study result shows that living alone were significant predictors of patients' perceptions of readiness for discharge(21). According to a study done in China, the majority of the patients (60%) reported high RHD scores (≥7.0), although 40% (n=73) reported RHD scores <7.0 and factors associated with patient-RHD and found that patients who lived with family members or others were more likely to report a greater RHD, the involvement of immediate family members in the care of patients with chronic conditions is crucial during the initial recovery period after discharge from the EMW(22). A study in turkey on postpartum mothers found that in comparison to mothers who would not receive support, readiness for hospital discharge mean scores were significantly higher in mothers who stated that they would receive the support of family members about their own care and the baby's care (89.4%)(23)

A study in the USA suggests that patient perception is also an important factor in readiness for discharge and it represents the patient's reality(24). A study done in Australia shows 11% of patients stated that they received no discharge letter and 11% no instructions to follow at discharge, Eight-five percent of patients perceived that the discharge planning at separation from the emergency ward was adequate for their needs(25)

Another study in Switzerland concludes 93% of patients were ready for discharge older patients are more likely than younger patients to visit the ED or be admitted to the EMW for observation, results revealed that the older patients were, the more likely they were to be not ready for discharge. They found that the average readiness- for- discharge score of patients aged 80 years and older who were discharged from internal medicine services was lower than it was for patients aged younger than 80 years(16). However, in research conducted in the USA found that readiness for discharge increased with age readiness for discharge was assessed with a single-item dichotomous question and with the RHDS. On the single item, between 0% and 5.8% of patients rated themselves as not ready for discharge. In contrast, using an RHDS cutoff score of less than 7, 13.8% to 24.5% of patients reported their lack of readiness. Overall, older patients rated themselves as slightly more ready to go home than younger patients on the total scale (26)

2.2 Conceptual Framework

- Readiness for hospital discharge can be affected by the socio-demographic and socio-economic variables and also clinical factors such as medical condition Discharge advice, Charlson's comorbidity index, medical diagnosis, Triage category and length of stay in the emergency department.

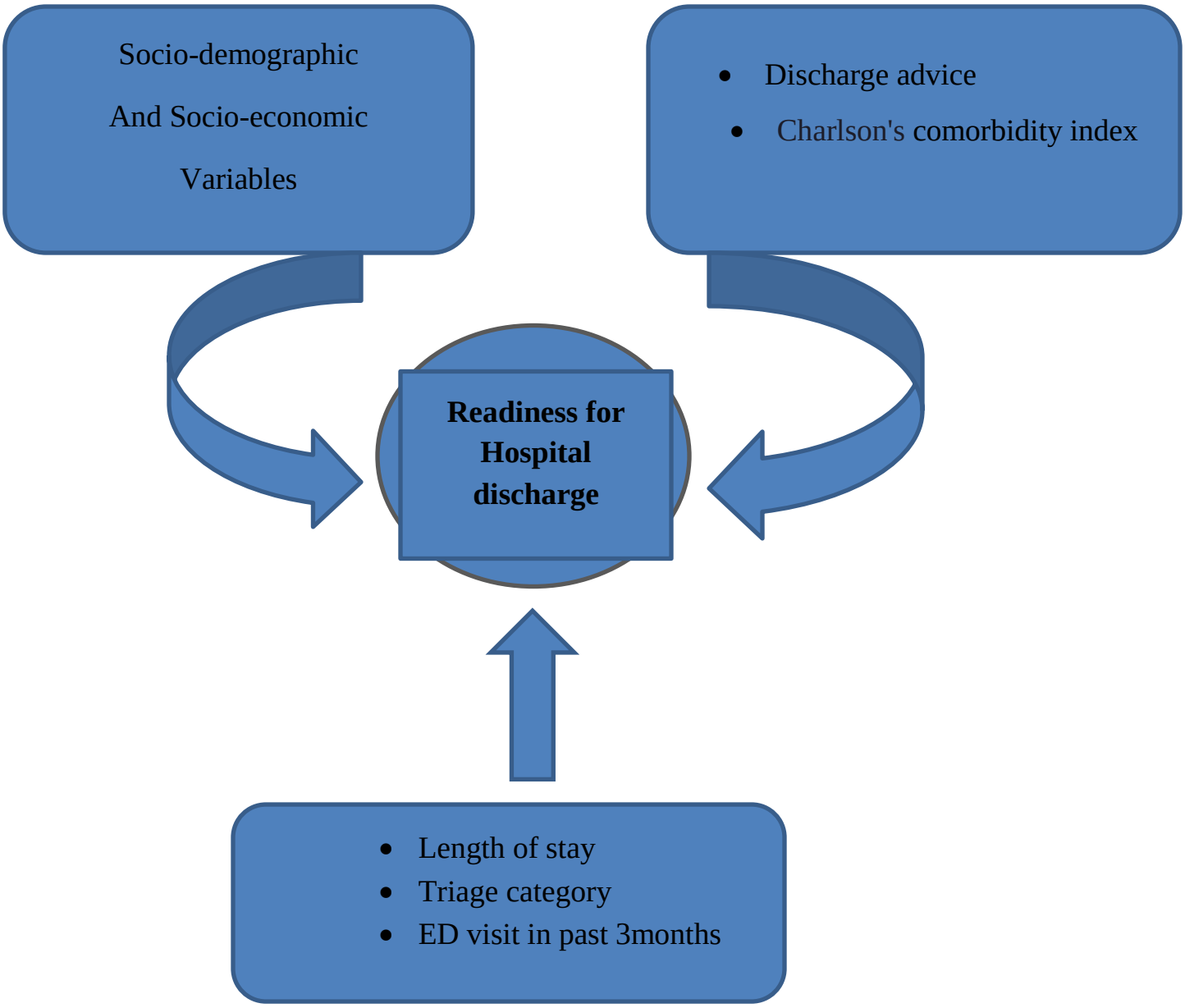

Figure 1 conceptual framework

CHAPTER 3 OBJECTIVES

3.1 General objectives

- To assess patients' readiness for discharge and associated factors in the emergency department of black lion specialized teaching hospital Addis Ababa Ethiopia from February 17 to July 2020G.C.

3.2 Specific objectives

- To assess the patient's readiness for hospital discharge in the emergency department.

CHAPTER 4 METHODOLOGY

4.1 Study area and study period

4.1.1 Study area

The study was conducted in the Black Lion Specialized Hospital emergency department, Addis Ababa Ethiopia. It is a very large referral hospital and sees approximately 370,000 to 400,000 patients a year. The hospital has 800 beds and eight major operating rooms. The emergency department provides emergency care for 80,000 patients a year. This department has more than 56 beds, 62 Nurses, and about 6 emergency Physicians working permanently.

Black Lion Specialized Hospital is affiliated with Addis Ababa University School of medicine and health science serving as a training center for undergraduate and postgraduate medical students, dentists, nurses, midwives, pharmacists, medical laboratory technologists, and radiology technologists. The emergency department has 70 beds and sees 80,000 patients a year.

4.1.2 Study period

The study was conducted from February 17 –March 3, 2020.

4.1.3 Study design

The institutional-based cross-sectional prospective study design was conducted.

4.2 Population

4.2.1 Source population

The source population of the study was all patients admitting and being discharged from the emergency department of Black Lion Specialized Hospital.

4.2.2 Study population

The study populations were all patients diagnosed with medical emergencies admitting and being discharged from the emergency department of Black Lion Specialized Hospital during the study period.

4.2.3 Study unit

The study units were all patients selected from the study population using the sampling technique during the study period.

4.2.4 Sample size determination and sampling technique

A consecutive sampling technique was used and all adult patients with a diagnosis of medical conditions, who were medically managed and ready for discharge during the study period were included.

The following formula was used to determine the minimum sample size required for multiple logistic regressions to identify the association between the independent and outcome variable: $n \geq 50 + 8 \times$ number of independent variables. A sample size of at least 146 was required to identify the statistical significance. Considering 15% would refuse to involve in the study and we approached more than 180 eligible patients and from those 159 agreed to participate and completed the study.

4.3 Eligibility criteria

4.3.1 Inclusion criteria

- Had a diagnosis of at least one chronic condition (e.g., cardiovascular-related disease, chronic obstructive pulmonary disease, cancer, or diabetes).

4.3.2 Exclusion criteria

- Critically ill patients who unable to provide voluntary informed consent

4.4 Variables

4.4.1 Dependent variable:

- Readiness for hospital discharge (RHD)

4.4.2 Independent variables:

Socio-demographic and socio-economic

- Age
- Sex
- Income
- Educational status
- Caregiver after discharge

Clinical factors

- Discharge advice
- Charlson's comorbidity index
- ED length of stay
- Triage category

4.4.3 Operational definition

Readiness for hospital discharges (RHD); comprises four subscales: personal status, knowledge, coping ability, and expected support. Each item is assessed using a 10 point scale. "Personal status" refers to the patient's physical and emotional state at the time of discharge. "Knowledge" refers to the extent of a patient's understanding of information related to the management of their condition at home. "Coping ability" refers to the patient's perception of their ability to manage their own personal and healthcare needs after discharge. "Expected support" refers to the patient's perception of the availability of tangible and emotional assistance after discharge than by calculating the overall patient-RHD score by averaging all subscale scores. The total scores ranged from 0 to 10, with higher scores indicating greater patient-RHD. A dichotomized patient-RHD was obtained using a cut-off point of ≥7 to indicate a greater RHD, under previous studies(9)

Charlson Comorbidity Index (CCI); is used to evaluate the burden of comorbid diseases with respect to mortality risk, Based on the age-adjusted CCI scores, we will stratify patients into low-risk (score: 0–5), borderline (score: 6–7), and high-risk groups (score≥8)(27)

4.5 Data collection procedure

Data were collected using a structured interview. The questionnaires were adapted from the RHD scale which was originally developed by Weiss and Piacentine in 2006G.C(9). It was translated to Amharic and administered by data collectors using face- to- face interviews with patients on the day of discharge, In the first phase the socio-demographics secondly the clinical factors, and patients RHS. Charlson's comorbidity index was calculated from the patient’s chart. Three data collectors and two supervisors who have BSC in nursing and above were trained for the procedure and involved in data collection.

4.6 Data quality assurance and control mechanism

To assure the quality of the data, a properly designed data collection instrument was adopted. The reliability of data collection tools was checked prior to data collection by taking a sample of 30 patients and good internal consistency for both the overall scale (Cronbach’s alpha=0.854) and the four subscales (Cronbach’s alpha=0.837–0.874) was identified. The training was given for data collectors and supervisors. Daily the data were checked for completeness, accuracy,

clarity, and consistency by the supervisors and the principal investigator. Anything unclear or ambiguous was corrected the next day.

4.7 Data analysis and presentation

Data were checked, sorted, categorized, and coded. After coding the data were entered into the computer to make it ready for processing and analysis. It was analyzed by using the SPSS version 25 software. Participants' characteristics were examined using frequency, percentage distribution, mean, standard deviation, and median values. The bi-variable analysis was employed to infer associations and predictions. To assess the level of association and statistical significance, multiple logistic regressions with adjusted Odds ratio with 95% confidence interval was computed.

4.8 Ethical consideration

Permission to carry out the research was sought from the Addis Ababa University College of health science department of emergency medicine. The research purpose, its benefits, and the procedures were explained for each potential respondent. The respondents then signed an informed written and oral consent and any respondent seeking further clarification was assisted. The information that the respondents provide during the study is kept confidential.

4.9 Dissemination of findings

The findings of this study were submitted to Addis Ababa University College of medicine department of emergency medicine and it will be submitted to concerned bodies such as service providers, policymakers, and other concerned stakeholders. Besides, the publication of the study findings on local /international journals will be considered.

CHAPTER 5; RESULTS

5.1 Socio-demographic and clinical characteristics of the respondents

Patients with medical emergencies admitted to the ED approached on the day of discharge and a total of 159 patients agreed to participate in the study and the overall response rate of the study was 100%. The mean age of the study subjects is 49 with a standard deviation of ± 16.7. Of those 159 participants, females accounted 73 (45.9%) and males 86 (54.1%). The result of marital status distribution shows that most of the participants were married 101 (63.5%). The finding concerning educational status distribution points that the greater part 47 (29.6%) have secondary education and followed by primary education 44 (27.7%). Out of the total of 159 respondents the majority 69 (43.4%), had a monthly income of 1000 to 5000 Ethiopian birr. The living arrangement of the study participants shows that most of the respondents live with spouses or children 60 (37.7%). The primary caregivers for most of the patients were their spouses 70 (44%).

Regarding ED visit 59 (37.1%) has visited ED in the past 3 months and while 100 (62.9%) didn't. Majority of the study participants answered no when asked if they received discharge advice 82 (51.6%) while the rest 77 (48.45) received discharge advice. Triage assessment of respondents shows that most of the patients 120 (75.5%) are triaged as semi-urgent cases and the rest 39 (24.5%) respondents were triaged as urgent. Regarding the length of stay around 140 (88.1 %) of the respondents have prolonged > 24 hours of stay in the ED and while 19 (11.9%) stayed less than 24 hours with mean 3.36 days and standard deviation of ± 1.7 days. According to the age-adjusted Charlson comorbidity index (CCI), the score of the majority of respondents was 95 (59.7%) low risk, whereas moderate risk and high-risk accounted 37 (23.3%) and 27 (17%) respectively.

Table 5.1 Socio-demographic and clinical characteristics of the respondents

		Frequency	Percentage
Age	< 50 years	71	44.7%
	≥ 50 years	88	55.3%
	Total	159	100%
Sex	Male	73	45.9 %
	Female	86	54.1 %
	Total	159	100 %
Marital status	Single	35	22%
	Married	101	63.5%
	Divorced	4	2.5%
	Widowed	19	11.9%
	Total	159	100%
Educational status	None	31	19.5%
	Primary	44	27.7%
	Secondary	47	29.6%
	Territory	37	23.3%
	Total	159	100%
Monthly income	<500	35	22%
	500 – 1000	26	16.4%
	1000-5000	69	43.4%
	>5000	29	18.2%
	Total	159	100%
Living arrangement	Alone	19	11.9%
	Spouse or children	60	37.7%
	Spouse and children	43	27%
	Others	37	23.3%
	Total	159	100%
Primary caregiver	No caregiver	25	15.7%
	Spouse	70	44%
	Domestic helper	30	18.9%
	Children	34	21.4
	Total	159	100%
Discharge advice	Yes	77	48.4%
	No	82	51.6%
	Total	159	100%
ED visit past 3 month	Yes	59	37.1%
	No	100	62.9%
	Total	159	100%
ED length of stay	Prolonged	140	88.1%
	Not prolonged	19	11.9%
	Total	159	100%
Charlsons comorbidity index	High risk	27	17%
	Borderline	37	23.3%
	Low risk	95	59.7%
	Total	159	100%

5.2 Readiness assessment results

Overall, 126 (79.2%) of patients reported being not ready to go home on a single-item yes/no format question. The majority of the patients 106 (66.7%) reported low RHD scores (<7.0), although 53 (33.3%) reported RHD scores (≥7.0). The overall patient-RHD score was 6.89 ± 0.92. Regarding the RHD subscales, the respondents reported high scores on knowledge (7.17 ± 0.8) and expected support (7.14 ± 0.99), low scores on coping ability (6.72 ± 1.28) and personal status (6.52 ± 1.28).

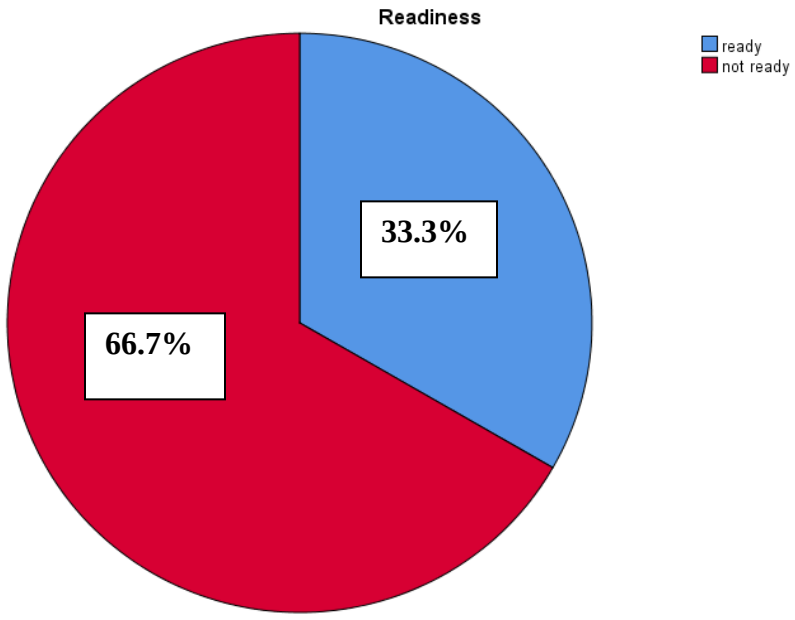

Figure 2 percentage of high and low RHD scores

Each response of socio-demographic variables was compared concerning high RHD and low RHD scores, showing most of the respondents with age > 50 years, living alone and without caregiver had low RHD scores than high RHD scores.

Table5. 2 Socio-demographic characteristics of study participants concerning RHD score

	All	**Low patient-RHD (<7)**	**High patient-RHD (≥7)**
Age (>50)	88 (55.3%)	76 (47.8%)	12 (7.5%)
Sex (Female)	86 (54.1%)	29 (33.7%)	57 (66.3%)
Marital status (Married)	101 (63.3%)	69 (68.3%)	32 (31.7%)
Educational status			
None	31 (19.5%)	26 (83.9%)	5 (16.1%)
Primary	44 (27.7%)	31 (70.5%)	13 (29.5 %)
Secondary	47 (29.6%)	32 (68.1%)	15 (31.9%)
Tertiary	37 (23.3%)	17 (45.9%)	20 (54.1%)
Monthly income <500	35 (22%)	24 (68.6%)	11 (31.4 %)
500-1000	26 (16.4%)	20 (76.9%)	6 (23.1%)
1000- 5000	69 (43.4%)	47 (68.1%)	22 (31.9 %)
>5000	29 (18.2%)	15 (51.7%)	14 (48.3%)
Living arrangement			
Alone	19 (11.9%)	16 (84.2%)	3 (15.1%)
Spouse or children	60 (37.7%)	40 (66.7%)	20 (33.3 %)
Spouse and children	43 (27%)	32 (74.4%)	11 (25.6%)
Others	37 (23.3%)	18 (48.6%)	19 (51.4%)
Primary caregiver (none)	25 (15.7%)	23 (92%)	2 (8%)
Spouse	70 (44%)	43 (61.4%)	27 (38.6%)
Domestic helper	30 (18.9%)	23 (76.7%)	7 (23.3%)
Children and others	34 (21.4%)	17 (50%)	17 (50%)

Note: ED=emergency department, RHD=readiness for hospital discharge.

5.3 Factors associated with patient's readiness

Variables considered in the bivariate analysis were sex, age, marital status, educational status, monthly income, Living arrangement, Primary caregiver, discharge advice, ED length of stay, and CCI. Variables with p-value ≤ 0.2 were included in the multiple logistic regressions. Multiple logistic regressions were performed to ascertain the effect of variables like age, living arrangement, primary caregiver, and CCI (which have p-value ≤ 0.2 on bivariate analyses) on patient's readiness for hospital discharge. The logistic regression model explained 45.5% of the variance in low patient RHD (Nagelkerke R^2) and correctly classified 80.5% of cases. At last age, the primary caregiver and Charlson comorbidity index (CCI) remained to be significantly associated with patient's readiness for hospital discharge.

According to the result of the multivariate analysis, respondents with age greater than 50 years were 16.34 times more likely to be not ready than the respondents with age less than 50 years, patients having a spouse as a primary caregiver were 3.22 times more ready for discharge than the patients having no any caregiver (AOR 0.31, CI 0.002, 0.56). Individual Charlson comorbidity index (CCI) calculated as high-risk groups (score≥8) were 24 times more likely to be not ready for discharge than those classified as low-risk AOR 24.1, (CI 4.1, 44.2).

Table 5.3 Logistic regression output showing the impact of selected variables on RHD.

	P-value	COR (95% CI)	p-value	AOR (95% CI)
Age (ref. <50 yrs.)	0.00	8.54* (3.9, 18.4)	0.00**	16.34 (5.4, 49.02)
Female	0.910	0.963 (0.497, 1.86)		
Marital status (ref. single)				
Married	0.039	2.283* (1.042, 5.02)	0.760	
Divorced	0.337	3.176 (0.34, 33.67)		
Widowed	0.763	9.358 (1.802, 44.9)		
Educational status (ref. none)				
Primary	0.186	0.456* (0.144, 1.456)	0.403	
Secondary	0.124	0.410* (0.132, 1.279)	0.439	
Tertiary	0.02	0.163* (0.051, 0.519)	0.222	
Monthly income (ref. <500)				
500-1000	0.473	1.528 (0.48, 4.865)		
1000- 5000	0.962	0.979 (0.408, 2.349)		
>5000	0.372	0.491 (0.177, 1.361)		
Living arrangement (ref. alone)				
Spouse or children	0.153	0.375* (0.098, 1.439)	0.984	
Spouse and children	0.400	0.545 (0.133, 2.236)	0.919	
Others	0.015	0.178* (0.044, 0.714)	0.594	
Primary caregiver (ref. none)				
Spouse	0.011	0.138* (0.03, 0.64)	0.019**	0.31(.002, 0.5)
Domestic helper	0.143	0.286* (0.054, 1.524)	0.25	
Children and others	0.03	0.087* (0.018, 0.428)	0.10	
CCI ref. low risk (high-risk)	0.008	7.627* (1.704, 34.139)	0.001**	24.1(4.1, 44.2)
ED length of stay	0.508	0.730 (0.440, 3.229)		

Note: CI=confidence interval, AOR= adjusted odds ratio, COR = crude odds ratio, ED=emergency department, ref=reference, RHD=readiness for hospital discharge. P = p-value.

* = P value < 0.02 on COR, ** = P value < 0.05 on AOR

CHAPTER 6

6.1 Discussion

Ensuring sufficient recovery to allow safe discharge, physical stability, functional ability, competence to manage self-care at home, and coping ability are components of patient's readiness that are challenging for developed countries as well as developing countries. Low-level patient's readiness is one of the most common reasons for readmission and poor patient outcome after discharge(3).

When asked simply 'Are you ready for discharge?' most respondents in our study, answered no. According to our study through RHD score around 66.7% are being discharged without being ready which is very high compared to a study in turkey 41.3 %, and china 40%(19,22). On the other hand study on patients being discharged from hospital show 7% in the USA and 23% in Canada using the same measurement tool(21,28) and most of the patients answered yes for the simple 'Are you ready for discharge?' question. This discrepancy is possibly due to lack of organized discharge planning, poor discharge education, lack of social support services, and the difference in the quality of care in the study settings.

In this study, age ≥ 50 years is significantly associated with patient's readiness for hospital discharge. Accordingly, patients increased age is discharged without being ready than younger patients. This is in line with research is done in Ireland (18) and the USA(29) showing a lower perception of readiness had a significant relationship with older age. The possible justification for this is that older patients rely on their younger caregivers; a gradual decrease in physical and mental capacity and a growing risk of disease affect their self-care physical and mental competence.

The primary caregiver was another variable that was found to be significantly associated with the patient's readiness for hospital discharge in this study. Our analysis revealed that living with a spouse was a significant predictor of greater patient-RHD. This finding is in line with the study done in China(22), USA (9). The possible justification for this is that the role of a spouse after immediate care is very crucial and it will be easy to get comfort, support, companionship, advice, care, and love which makes patient perceives that their spouse will meet the necessary needs they have.

Our study found that the Charlson comorbidity index is significantly associated with patient's readiness for hospital discharge. Patients with high comorbidity index are more likely to have a low RHD score. Whereas, compared to similar published researches in China and the USA show that the high Charlson comorbidity index is not associated with having low RHD scores(22,28). The possible justification for this discrepancy is that our study area black lion hospital is the biggest tertiary hospital in the country where most of the patients who are being referred have seriously complicated cases resulting in high CCI and further affecting patients' readiness.

Due to shorter lengths of stay (< 24 hours according to the standard) in the ED some patients may be discharged in a state of incomplete recovery, considering that our study found that shorter ED length of stay is not associated with low RHD score. The similar result was reported in a study in the USA (21)

CHAPTER 7

7.1 Conclusion and Recommendation

The overall patient's readiness for hospital discharge was very low and most of the patients are not even getting discharge advice. In order to tackle this appropriate discharge education should be given for every patient (or caregiver) being discharged from the emergency by discharging nurse and also implementing discharge readiness assessment as a standard nursing practice for hospital discharge through appropriate training for nurses is good for improved discharge outcomes.

This study has found that having spouse primary caregiver is significantly associated with high patient readiness for hospital discharge, showing that having close caregiver plays key role in patient perceived readiness for hospital discharge. The hospital should look for social support services or community support services especially for patients living alone and without caregivers.

Having high-risk morbidity and increased age are significantly associated with low patient readiness for hospital discharge scores and targeting only these high-risk populations and giving appropriate discharge education may be a more feasible option for our country. Our study revealed and more should be done to improve the discharge process.

In addition to most patients being discharged without being ready, most of the patients have prolonged length of stay and number of the patients who had visited the emergency department wasn't small. This highly contributes for overcrowding and inappropriate resource utilization. Improving the discharge process by developing discharge planning strategies considering the workload of nurses is essential. Interventions that are developed should be tested for their effectiveness.

7.2 Limitations

- The generalizability of results is limited, as data were collected from a convenience sample at one hospital site, and the minimum sample size estimated by power analysis provided sufficient power to enable multiple logistic regression analysis meaning the study may not be generalizable to other populations.
- Post-discharge outcomes like ED readmissions at 24 and 48h and 30days post-discharge were not studied because the hospital lacks administrative discharge database system and readmission registration system.

References

1. Federal Democratic Republic of Ethiopia Ministry of Health (FMOH). Ethiopian hospital services transformation guidelines. Addis Ababa: FMOH; 2016.

2. Boyle A, Abel G, Raut P, Austin R, Dhakshinamoorthy V, Ayyamuthu R, et al. Comparison of the International Crowding Measure in Emergency Departments (ICMED) and the National Emergency Department Overcrowding Score (NEDOCS) to measure emergency department crowding: a pilot study. Emerg Med J [Internet]. 2016 May [cited 2019 Nov 20];33(5):307–12. Available from: http://emj.bmj.com/lookup/doi/10.1136/emermed-2014-203616

3. Du Plessis M, McGaffin CR, Molepo T, Oelofse R, Van Zyl S, Mascola MK. Perceived readiness for hospital discharge: Patients with spinal cord injury versus physiotherapists. S Afr j physiotherapy [Internet]. 2018 Jul 3 [cited 2019 Nov 20];74(1). Available from: https://sajp.co.za/index.php/sajp/article/view/437

4. Smith MJ, Liehr PR, editors. Middle range theory for nursing. 3rd ed. New York: Springer; 2014. 458 p.

5. Bobby K. Assessing Discharge Readiness as a Nurse Sensitive Indicator. Geriatric Nursing. 2018 May;1:48.

6. El-Rafie MR, Galal YS. Effect of RED (Re-Engineering Discharge) Program on Nurses' Knowledge Towards Readmission Problem in Internal Medicine Departments in Cairo University Hospitals. medicaljournalofcairouniversity [Internet]. 85:8. Available from: www.medicaljournalofcairouniversity.net

7. Maloney LR, Weiss ME. Patients' Perceptions of Hospital Discharge Informational Content. Clin Nurs Res [Internet]. 2008 Aug [cited 2019 Nov 20];17(3):200–19. Available from: http://journals.sagepub.com/doi/10.1177/1054773808320406

8. Wadhera RK, Joynt Maddox KE, Kazi DS, Shen C, Yeh RW. Hospital revisits within 30 days after discharge for medical conditions targeted by the Hospital Readmissions Reduction Program in the United States: a national retrospective analysis. BMJ [Internet]. 2019 Aug 12 [cited 2019 Nov 26];l4563. Available from: http://www.bmj.com/lookup/doi/10.1136/bmj.l4563

9. Weiss ME, Piacentine LB. Psychometric Properties of the Readiness for Hospital Discharge Scale. J Nurs Meas [Internet]. 2006 Dec [cited 2019 Nov 20];14(3):163–80. Available from: http://connect.springerpub.com/lookup/doi/10.1891/jnm-v14i3a002

10. Harrison JD, Greysen RS, Jacolbia R, Nguyen A, Auerbach AD. Not ready, not set…discharge: Patient-reported barriers to discharge readiness at an academic medical center: Patient-Reported Barriers to Discharge. J Hosp Med [Internet]. 2016 Sep [cited 2019 Nov 28];11(9):610–4. Available from: http://www.journalofhospitalmedicine.com/jhospmed/article/128216/patient-reported-barriers-discharge

11. Sheikh H, Brezar A, Dzwonek A, Yau L, Calder LA. Patient understanding of discharge instructions in the emergency department: do different patients need different approaches? Int J Emerg Med [Internet]. 2018 Dec [cited 2019 Nov 20];11(1):5. Available from: https://intjem.biomedcentral.com/articles/10.1186/s12245-018-0164-0

12. Galvin EC, Wills T, Coffey A. Readiness for hospital discharge: A concept analysis. J Adv Nurs [Internet]. 2017 Nov [cited 2019 Dec 21];73(11):2547–57. Available from: http://doi.wiley.com/10.1111/jan.13324

13. Walker C, Hogstel MO, Curry LC. Hospital Discharge of Older Adults: How nurses can ease the transition. AJN The American Journal of Nursing [Internet]. 2007 Jun [cited 2019 Nov 23];107(6):60. Available from: https://journals.lww.com/ajnonline/Abstract/2007/06000/Hospital_Discharge_of_Older_Adults__How_nurses_can.26.aspx

14. Nosbusch JM, Weiss ME, Bobay KL. An integrated review of the literature on challenges confronting the acute care staff nurse in discharge planning. Journal of Clinical Nursing [Internet]. 2011 [cited 2019 Nov 20];20(5–6):754–74. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2702.2010.03257.x

15. The Role of the Nurse Manager [Internet]. [cited 2019 Nov 23]. Available from: http://www.ahrq.gov/hai/cusp/modules/nursing/index.html

16. Mabire C, Büla C, Morin D, Goulet C. Nursing discharge planning for older medical inpatients in Switzerland: A cross-sectional study. Geriatric Nursing [Internet]. 2015 Nov [cited 2019 Nov 20];36(6):451–7. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0197457215002360

17. Palonen M, Kaunonen M, Helminen M, Åstedt-Kurki P. Discharge education for older people and family members in the emergency department: A cross-sectional study. International Emergency Nursing [Internet]. 2015 Oct [cited 2019 Nov 20];23(4):306–11. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1755599X15000129

18. Coffey A, McCarthy GM. Older people's perception of their readiness for discharge and postdischarge use of community support and services: *Older people's readiness for discharge and community support*. International Journal of Older People Nursing [Internet]. 2013 May [cited 2019 Nov 20];8(2):104–15. Available from: http://doi.wiley.com/10.1111/j.1748-3743.2012.00316.x

19. Kaya S, Sain Guven G, Aydan S, Kar A, Teleş M, Yıldız A, et al. Patients' readiness for discharge: Predictors and effects on unplanned readmissions, emergency department visits and death. J Nurs Manag [Internet]. 2018 Sep [cited 2019 Nov 20];26(6):707–16. Available from: http://doi.wiley.com/10.1111/jonm.12605

20. Malagon-Maldonado G, Connelly CD, Bush RA. Predictors of Readiness for Hospital Discharge After Birth: Building Evidence for Practice: Predictors of Readiness for Hospital Discharge After Birth. Worldviews on Evidence-Based Nursing [Internet]. 2017 Apr [cited 2019 Nov 30];14(2):118–27. Available from: http://doi.wiley.com/10.1111/wvn.12208

21. Weiss ME, Piacentini LB, Lokken L, Ancona J, Archer J, Gresser S, et al. Perceived Readiness for Hospital Discharge in Adult Medical-Surgical Patients: Clinical Nurse Specialist [Internet]. 2007 Jan [cited 2019 Nov 23];21(1):31–42. Available from: https://insights.ovid.com/crossref?an=00002800-200701000-00008

22. Siow E, Lo SM, Yeung KL, Yeung RSD, Choi KC, Chair SY. Factors and post-discharge outcomes associated with patients' readiness for discharge from the emergency medicine ward: A prospective study. International Emergency Nursing [Internet]. 2019 Sep [cited 2019 Nov 20];46:100773. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1755599X19300412

23. Şenol DK, Özkan SA, Şahin NH. An investigation of postpartum mothers' readiness for hospital discharge and the affecting factors. Journal of Human Sciences [Internet]. 2017 Apr 25 [cited 2019 Nov 30];14(2):1484–91. Available from: https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/4586

24. Weiss ME, Ryan P, Lokken L. Validity and Reliability of the Perceived Readiness for Discharge After Birth Scale. Journal of Obstetric, Gynecologic, & Neonatal Nursing [Internet]. 2006 [cited 2019 Nov 23];35(1):34–45. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1552-6909.2006.00020.x

25. Arendts G, MacKenzie J, Lee JK. Discharge planning and patient satisfaction in an emergency short-stay unit. Emerg Med Australas [Internet]. 2006 Feb [cited 2019 Nov 20];18(1):7–14. Available from: http://doi.wiley.com/10.1111/j.1742-6723.2006.00798.x

26. Bobay KL, Jerofke TA, Weiss ME, Yakusheva O. Age-Related Differences in Perception of Quality of Discharge Teaching and Readiness for Hospital Discharge. Geriatric Nursing [Internet]. 2010 May [cited 2019 Nov 20];31(3):178–87. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0197457210002016

27. Department of Orthopaedics and Traumatology, The University of Hong Kong, Queen Mary Hospital, Pokfulam, Hong Kong, Lau T, Fang C, Leung F. Assessment of postoperative short-term and long-term mortality risk in Chinese geriatric patients for hip fracture using the Charlson comorbidity score. Hong Kong Med J [Internet]. 2015 Dec 8 [cited 2019 Nov 20]; Available from: http://www.hkmj.org/abstracts/v22n1/16.htm

28. Lau D, Padwal RS, Majumdar SR, Pederson JL, Belga S, Kahlon S, et al. Patient-Reported Discharge Readiness and 30-Day Risk of Readmission or Death: A Prospective Cohort Study. The American Journal of Medicine [Internet]. 2016 Jan 1 [cited 2019 Nov 23];129(1):89–95. Available from: http://www.sciencedirect.com/science/article/pii/S0002934315008244

29. Weiss M, Yakusheva O, Bobay K. Nurse and Patient Perceptions of Discharge Readiness in Relation to Postdischarge Utilization: Medical Care [Internet]. 2010 May [cited 2019 Nov 20];48(5):482–6. Available from: https://insights.ovid.com/crossref?an=00005650-201005000-00014

Annexes

Annex I: English version Information sheet

Identifying the readiness of adult medical patients admitting in the emergency medical ward is important. You are cordially invited to participate in the study entitled "Assessment of patient's readiness for discharge and associated factors among medical emergency patients in black lion specialized teaching hospital emergency department, Addis Ababa, Ethiopia". The study attempts to assess factors associated with patients' readiness for discharge. The research will help us understand the factors associated with patient's readiness for discharge

Title; "Assessment of patients' readiness for discharge and associated factors among medical emergency patients in black lion specialized teaching hospital emergency ward, Addis Ababa, Ethiopia".

Purpose of the study: This study is planned to generate information on factors associated with patients' readiness for discharge in medical emergency patients admitting emergency ward of black lion hospital that can be used to design effective health intervention programs.

Procedure: patients who are admitted to the emergency department and prepared for discharge are enrolled in the study and questionnaires will be administered by data collectors using face-to- face interviews with patients on the day of discharge. The completion time is about 5 to 10 minutes.

Risks and benefits of the study: By participating in this study, and answering our questions, you will not receive any direct benefit. However, you will help to increase our understanding of the needs of the patients admitted to the emergency medical ward. We hope that the results of the study will improve and make more acceptable the services currently available to you. Your participation in this study will not involve any risks to you.

Rights: Your participation in this study is voluntary and you have the right to refuse to participate or to answer any questions that you feel uncomfortable with. If you change your mind about participating during the study, you have the right to withdraw at any time. The decision not to participate or to withdraw will not affect any aspects of your social life, any future medical care you should require, or any other benefits to which you would be entitled. If there is anything that is unclear or you need further information, we shall be delighted to provide it.

Confidentiality: Your name will not be written and provide as sincere answers as you possibly could. The information that you provide during the study will be kept confidential. Only the researchers will have access to the questionnaires and the information that you provide. If you have any questions during filling the questioner you can ask.

Annex II. Informed consent form

I have got sufficient information thorough description of the study entitled "Assessment of patients' readiness for discharge and associated factors among medical emergency patients in black lion specialized teaching hospital emergency ward, Addis Ababa, Ethiopia" by reading the information sheet. I know that I can refuse to participate in the study without penalty or loss of benefit to which I would have been otherwise entitled. I have the right to withdraw from this study any time I want, without any negative impact on me. Hereby, I voluntarily participate in this study.

Signature: _____ Date: _____

Annex III. Structured interview guide

Table 1 socio-demographic and socioeconomic variable

Number	Question	Coding category	Coding
Q 101	Age		
Q 102	Sex	Male Female	1 2
Q 103	Marital status	Single Married Divorced Widowed	1 2 3 4
Q 104	Educational status	None Primary Secondary Tertiary	1 2 3 4
Q 105	Monthly income	<500 500-1000 1000- 5000 >5000	1 2 3 4
Q 106	Living arrangement	Alone Spouse or children Spouse and children Others	1 2 3 4
Q 107	Primary caregiver after discharge	No caregiver Spouse Domestic helper Children, relatives, and others	1 2 3 4 5

Table 2 clinical factors

Number	Question	Category	Coding
Q108	Did you receive a discharge letter?	Yes No	1 2
Q109	Did you receive discharge advice?	Yes No	1 2
Q110	Did you perceive the discharge instruction adequate?	Yes No	1 2
Q 111	Charlson comorbidity index calculate from table5		
Q 112	ED visit past 3months	Yes No	1 2
Q 113	Triage assessment	Urgent Semi-urgent	1 2
Q 114	EMW length of stay in the days		

Annex IV Carlson's comorbidity index

Table 3 Age-adjusted Charlson's comorbidity index

Comorbid condition		Score
Age	13-49 years	0
	50-59 years	2
	60-69 years	2
	70-79 years	3
	≥80 years	4
Myocardial infarction		1
Congestive heart failure (CHF)		1
Peripheral vascular disease		1
Cerebrovascular disease		1
COPD		1
Connective tissue disease		1
Peptic ulcer disease		1
Liver disease	None	0
	Mild	1
	Moderate to severe	3
Diabetes mellitus	None or diet controlled	0
	Uncomplicated	1
	End organ damage	2
Hemiplegia		2
Moderate to severe CKD		2
Solid tumor	None	0
	Localized	2
	Metastatic	6
Leukemia		2
Lymphoma		2
AIDS		6

Annex V Patient RHD scale

Q112, Are you ready for discharge? Yes

No

Table 4 RHD scale

Item in RHD	Variable	Score
Personal status	Physical readiness Pain or discomfort Strength Energy Emotional readiness Physical self-care Stress	
Knowledge of	Self-care Medical needs Complications When to call for problems Restriction Follow up Services and general information	
Coping ability	Handle demands at home Performing personal care Perform Medical treatment	
Expected support	Emotional support Help with personal care Household activities Help with medical care	

Rate on scale 0 to 10

0	1	2	3	4	5	6	7	8	9	10

Not at all totally