PHARMA COLLEGE SCHOOL OF PUBLIC HEALTH

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PREDICTORS AND TIME TO RECOVERY FROM COMPLICATED SEVERE ACUTE MALNUTRITION IN CHILDREN 6-59 MONTHS, CENTRAL ETHIOPIA

MPH THESIS

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HAWASSA, ETHIOPIA

PREDICTORS AND TIME TO RECOVERY FROM COMPLICATED SEVERE ACUTE MALNUTRITION IN CHILDREN 6-59 MONTHS TREATED AT INPATIENT THERAPEUTIC PROGRAM IN CENTRAL REGION, ETHIOPIA 2024

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Declaration

I hereby declare that this MPH thesis is my original work and has not been presented for a degree in any other College or University, and all sources of material used for this thesis have been duly acknowledged.

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This is to certify that the thesis entitled "Predictors and Time to Recovery from Complicated Severe Acute Malnutrition in Children 6-59 Months Treated at Inpatient Therapeutic Program in Central Region, Ethiopia 2024. submitted in partial fulfillment of the requirements for the degree of Master with specialization in Epidemiology the Graduate Program of the Department/School of Public Health and has been carried out Temesgen Kelaye Id. No 474630-15, under my/our supervision. Therefore, I/we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis to the department.

Dejene Hailu  Feb 2, 2025

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Name of co-advisor Signature Date

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Acronyms

AHR	Adjusted Hazard Ration
ANC	Antenatal Care
CI	Confidence Interval
CERHB	Central Ethiopia Region Health Bureau
CHF	Congestive heart failure
CSAM	Complicated Severe Acute Malnutrition
EDHS	Ethiopian Demographic and Health Survey
IQR	with Inter Quartile Range
HR	Hazard Ratio
HIV	Human Immunodeficiency Virus
MAM	Moderate Acute Malnutrition
MUAC	Mid-Upper-Arm Circumference
PHIEOC	Public Health Institute Emergence Operation Center
RR	Relative Risk
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
SC	Stabilization Center
SNNPR	Southern Nation Nationality of people Region
TFP	Therapeutic Feeding Programme
TFU	Therapeutic Feeding Unit (in hospital, health center or other facility
UN	United Nation
UNICEF	United Nations International Children's Emergency Fund
U5	Under Five
WHO	World Health Organization

Abstract

Background: Complicated Severe Acute Malnutrition(SAM) is a major public health challenge in the Central Ethiopia Region(CER) and major killer of children under five years of age. In CER SAM management is facility-based treatment at the Stabilization Centers (SC). However, there is limited evidence regarding time to recovery and its predictors among children affected by SAM in the study area.

Objectives: To assess time to recovery from severe acute malnutrition and predictors among children 6-59 months managed at the inpatient therapeutic program(TFP) in CER, Ethiopia

Methods: A hospital based prospective cohort study was conducted among 482 6- 59 months old children at 13 selected public hospitals in CER from Sept/2024 to Jan 20/2025. A. Structure and pretested questionnaires were used to collect data by KoBoToolbox. The data was analyzed using SPSS version 20. A Kaplan-Meier survival curve, log-rank test and Cox-regression were run. To identify the associations between dependent and independent variables a bivariate analysis was used. Variables with P-value $\leq$ 0.25 at bivariate analysis were included in adjusted cox regression model to identify determinants of time to recovery. Association yielding p- value < 0.05 in multiple cox regression was considered independent predictors. Hazard ratio with 95% CI was interpreted in the result.

Result: The nutritional recovery rate was, 246 (76.4%) recovered with recovery incidence density of 8.1 per 100 person days and a median recovery time of 10 days with Inter Quartile Range (IQR) of 13(9, 35). Overall, a total of 482 the participants contributed a total of 4542 person-days of follow-up. Controlling for other factors; having dermatosis [AHR= 1.4, 95% CI: (1.03; 2.0)] and had severely wasted at admission (MUAC <11.5 cm or WFH<70% or -3 z score [AHR= 1.5, 95% CI: (1.05,2.0)] were significant predictors of time to recovery

Conclusion and Recommendation: Over all the recovery rate and the nutritional recovery time of children with SAM in the study area were within the recommended sphere of national standards. It is advisable to give emphasis to SAM patients having dermatosis at admission and any pitting bilateral edematous with MUAC <11.5 cm or WFH<70% or -3 z score.

Key Words = Complicated severe acute malnutrition; time to recovery; inpatient, Central Ethiopia Region

1. Introduction

Background

Child malnutrition estimates for the indicators stunting, wasting, overweight and underweight describe the magnitude and patterns of malnutrition. Complicated Severe Acute Malnutrition(CSAMC) has become a major public health challenge in developing countries including Ethiopia, especially among the underprivileged population. Children with CSAM are nine times more likely to die than well-nourished children hence the need for appropriate management[1, 2]. CSAM is facility based treatment in a SC. Ethiopia is among the developing countries with the highest burden of acute malnutrition among under-five children .It remains a major killer of children under five years of age and major public health problem in the world[3, 4]. Acute Malnutrition is classified into severe acute malnutrition and Moderate Acute Malnutrition (MAM) according to the degree of wasting and the presence of oedema[5]. CSAM is defined by the presence of Poor appetite, Medical complications, Bilateral pitting oedema (+++) and Severe wasting (MUAC or WFH) with any grade of bilateral pitting oedema bilateral pitting oedema or severe wasting (MUAC< 11.5 cm or a Weight For Height ratio (WFH) of <70% or Z-score of ≤3 standard deviation of the median reference population[3, 6-8]. According to UNICEF's report more than half of all deaths in children are attributed to stunting and wasting[9]

Globally, more than 45.4 million infants and children under 5 years of age experience wasting[10]. In 2022 UNICEF, WHO and World bank group Levels and trends in child malnutrition report shows, 22.3 % (148.1 million) were affected by Stunting, 6.8% (45 million) Wasting and 5.6 % (37 million) Overweight respectively[11]. Majority are affected by Africa and Asia. Stunting lived in Asia 52%, Africa 43%, almost 70% affected by wasting in Asia, and more than one quarter (27%) in Africa and almost half (48%) of all children under 5 affected by overweight lived in Asia and more than one quarter (28%) lived in Africa[11] . Close to 20 million children under the age of under 5 years suffer from SAM globally, and about 1 million of them die each year. more than 12 million children suffering from SAM: 0.6 million in Afghanistan, 0.6 million in Bangladesh, 8.0 million in India, 1.2 million in Indonesia, 1.4 million in Pakistan, and 0.6 million in Yemen[11, 12]

WHO African Region the median stunting prevalence is 31.3%, and ranges from 7.9% in Seychelles to 50.3% in Eritrea and 57.5% in Burundi, Overweight is 4.1%, wasting is 6.3% (and

ranges from 2% in Swaziland to 22.7% in South Sudan[12]. The 2019 Ethiopia Mini Demographic and Health Survey (DHS) showed that the prevalence 37% of children under age 5 are stunted, and 12% are severely stunted. Seven percent are wasted and 1% severely wasted. Twenty- one percent of children are underweight, with 6% severely underweight. Only 2% of children are overweight [13]. Rural areas are more likely than those in urban areas to be stunted (40% versus 26%), underweight (23% versus 15%), and wasted (8% versus 5%) respectively in Ethiopia [13].

Different study was conducted to determine the time to recovery from SAM and its predictors that socio-demographic factors wealth index, food security level and proximate factors means directly or indirectly affect health, Sex of the child, type of malnutrition, pneumonia, anemia, tuberculosis, HIV (Human Immunodeficiency Virus) status and vitamin A supplementation were independent predictors of time to recovery[14]. Median nutritional recovery time was 22 and 29 days for edematous malnourished and severely wasted predictors of nutritional recovery rate were stabilization center, malnutrition status, weight of children, mid- upper arm circumference. inpatient complications[15]

Regarding to Central Ethiopia Region Health Bureau (CERHB) 2024 annual report and Public Health Institute Emergence Operation Center [PHIEOC] Regional report shows that 21,116 SAM (CER-PHI Week, 52 2024). According CER-PHIEOC Epidemiological weak 38 report Shaw's that top 3 zones with high SAM are Hadiya (117), Silite (83) &Halaba (42) have highest SAM within even a death reported[16]. National Guideline for the Management of Acute Malnutrition in Ethiopia aims to improve access to quality services for Severe Acute Malnutrition. It incorporates the latest international and national evidence on acute malnutrition[3].

Ethiopian government launched stabilization centers to treat affected children by SAM. Recovery time to Ethiopian SAM guideline has three phase. In each phases treatment outcome rate was in phase one admitted directly to the TFU the first 24-48 hours (one –two days). In the Transition Phase, a new diet is introduced F100 or RUTF. This phase prepares the patient for Phase 2 treatment either as an in-patient or, preferably, as an out-patient. The Transition Phase should last between 1 and 5 days – usually 2 or 3 days. Phase 2 can be managed in the health facility, using F100 or RUTF until to outcome[3].

In the Region there are limited data on how long children will stay in treatment centers to recover from severe acute malnutrition in public facility. limited information early detection and timely

treatment outcome. There is limited evidence regarding to time to recovery status of children affected by SAM and its predicators in the study area. Therefore, this study to assess time to recovery from complicated severe acute malnutrition and predictors among children 6-59 months managed at the inpatient therapeutic program in central region, Ethiopia

1.1. Statement of problem

Globally, Severe acute malnutrition contributes to 1 million child deaths every year[17]. Complicated Severe Acute Malnutrition can be a direct cause of child death, or it can act as an indirect cause by dramatically increasing the case fatality rate in children suffering from such common childhood illnesses as diarrhea and pneumonia[18]. In 2013, about 17%, or 98 million children under five years of age in developing countries were underweight (low weight-for-age according to the WHO child growth standards)[10]. Despite significant progress in recent years, approximately 2.9 million children accessed treatment in 65 countries in 2013 only about 17 percent of the children needing treatment

African countries like Congo, Democratic Republic 21%, Bangladesh 20%, Senegal 20%, Uganda 12% and Yemen 10% respectively affected by SAM[17]. SAM has declined by only 11% in the past 20 years and remains a major cause of morbidity and mortality in sub-Saharan Africa, and several primary studies have been conducted on the rate and extent of recovery from SAM in children under five years of age[19]. The highest child malnutrition is found in the sub-Saharan Africa countries with the highest rate of stunting in sub-Saharan Africa[20]. Severe forms of malnutrition have drastic effects on childhood morbidity and mortality in sub-Saharan countries, including Ethiopia. In Ethiopia recovery rate was 72.02 %, Oromia regional state 80.29%, SNNPR 68.63%, were reported respectively[21]. In 2020 study conducted in Ethiopia pooled rate of recovery rate was 71.2% [19]. Outcomes of SAM treatment of death, 10.3%, recovery 70.5%, defaulter and transfer out 13.8% and 5.1% non-response rates, respectively[22].

Malnutrition among under-5 year children is a common public health problem and it is one of the main reasons for the death of children in developing countries[23]. It is one of the most important but neglected health problems in the world and the main cause of morbidity and mortality among children under 5 years of age in developing countries[10]. About Nearly half of all deaths in children under 5 are attributable to undernutrition but the face of malnutrition, in all its forms, at greater risk of dying from common infections, increases the frequency and severity of such infections, and delays recovery[24]

Children with SAM are nine times more likely to die than well-nourished children. Children who had no congestive heart failure were 4.88 times more likely to recover than their counterparts[21]. Children who received routine medication, older age, and absence of co-morbidity predicators that were identified [19]. Diarrhea, dehydration and anemia were statistically significant predictors[22]. Most immediate causes are inadequate dietary intake and infectious disease. It include deficits in quantity and/or quality, to total caloric intake and quality to variety, diversity, nutrient content and safety, food insecurity, poor health mediated by poor water and sanitation and inadequate health services, and lack of appropriate care in terms of inadequate breastfeeding, complementary feeding and other maternal and child caring practices[18].

Children suffering from wasting have weakened immunity, are susceptible to long-term developmental delays and face an increased risk of death, particularly when wasting is severe. Children suffering from severe wasting require early detection and timely treatment and care to survive[11].

Ethiopia is prone to recurrent droughts that impact food security and water availability, and contribute to high rates of malnutrition in the country. Over the past decade, the Government has applied a two-pronged approach to address malnutrition. The first aspect of the approach focuses on increasing access and availability to food through improved economic growth, better agricultural production systems along with promotion of good nutrition practices and prevention of malnutrition. The second aspect aims to strengthen early warning systems and timely emergency response, including wide-scale delivery of services for the management of acute malnutrition.[3]

National Guideline for the Management of Acute Malnutrition in Ethiopia aims to improve access to quality services for SAM and MAM[3]. The management of SAM is critical for child survival and is a key cost-effective component of the scaling up nutrition framework for addressing undernutrition. Governments face great challenges in building capacity and providing sufficient resources to prevent and treat acute malnutrition.[9]. Therefore, this study will determine time to recovery from complicated Severe Acute Malnutrition and Predictors among Children 6-59 months managed at the inpatient therapeutic program

1.2. Significance of the study

The Ethiopian government approved the SAM management protocol and established stabilization center to treat and admitted children affected by SMA. CER has also implemented Nutrition Nutritional program guideline according National and WHO standards. There is limited evidence related to recover rate from SAM and its predators. Even if most of the studies were retrospective cohort studies and lacks of important background variables. Therefore, this study may be generating additional information like dietary diversity, wealth index, vaccination status, place of delivery, ANC and PNC, exclusive and breastfeeding practices, family food security status and calculating the RR and comparing the recovery rate between exposed and non-exposed group.

This finding providing scientific evidence on predictors and survival status of SAM and produces input that might help policy makers, decision, monitoring and evolution. Its result might be used as input for planning mitigation strategies, shared as best practice and prioritized finding. So, this finding might be very important for health facility based SAM management and intervention

Finally, it is recommended for scaling up this research finding for Government and Non-government organization use finding for intervention. In addition, it helps as a baseline for other researchers who want to study more on the topic area.

2. Literature Review

2.1 Time to recovery of children affected by SAM

In 2014, there were 28.8 million SAM cases globally among children under age five and that this will decline to 21.7 million cases by 2030, with India accounting for 52% of this reduction, and growth (from 8.1 to 9.0 million cases) in Sub-Saharan Africa[25].

Underweight prevalence is highest in the United Nation (UN) region of Southern Asia (30%), followed by Western Africa (21%), Oceania and Eastern Africa (both 19%) and South-Eastern Asia and Middle Africa (both 16%), and Southern Africa 12%. Prevalence below 10% for 2013 is estimated for the UN regions of Eastern, Central and Western Asia, Northern Africa and Latin America and the Caribbean[26].

Sub-Saharan Africa and southern Asia, account for more than 80% of the 5 million under-5 deaths in 2020, while they only account for 53% of the global live births due to SAM[23]. Half of all under-5 deaths in 2020 occurred in just 5 countries: Nigeria, India, Pakistan, the Democratic Republic of the Congo and Ethiopia, Nigeria and India alone account for almost a third of all deaths by SAM[23]. Study conducted in n Sofala Province, Mozambique Shaw that 28% lower likelihood of recovery[27]. Study conducted in Uganda, 246 (76.4%) recovered with recovery incidence of 31.3 per 1000 person days and a median recovery time of 27 days (IQR;16-38 days [28]

Childhood malnutrition, including fetal growth restriction, suboptimum breastfeeding, stunting, wasting and Vitamin A and zinc deficiencies, is an underlying cause of death in an estimated 45% of all deaths among children under five years of age[26].Study conducted in n Sofala Province, Mozambique Shaw that a significant factor for nutritional recovery in children with SAM, including age, weight, height, malaria, diarrhea and dehydration. Children under 24 months had a 28% lower likelihood of recovery[27].

Study conducted in Ethiopia in *East Amhara* recovery rate was 6.9 per 100 person-days with a median nutritional recovery time of 11days (an interquartile range of 6) [29], Oromia Region, recovery rate was 42 days (IQR 14) , Felege Hiwot Referral hospital recovery rated was 58.4% with mean recovery time was 18 days [30]. in Dire Dawa recovery rate was 569 (79.8%), 80 (11.2%) defaulted, 27 (3.8%) were non-responders, 4 (0.6%) died and 15 (2.1%) were transferred

[31], in Bahir Dar, in western Harare zone recovery rate was 73% with the median time to recovery of 16 weeks [32], in Asosa general hospital rate was 65.4% with a median recovery time of 15 IQR (11–18) days and the incidence rate of recovery was 5.28 per 100 child days [33], in Southern Ethiopia recovery rate was 3.61 per 100-person day with median nutritional recovery time was 22 and 29 days [34]

Tigray Region recovered was 54 per 1000 person-days and the median time to recovery rate was 16 days [35], in Southwest Ethiopia 68.72% recovered and 4.32% died and its incidence density was 3.35/100-person day[36], In the Afar Regional State 83.2%; 6.3%, 4.9%, 2.8%, and 2.8% cases were cured, defaulters, non-responder, died, and transfer, respectively[37] and in Pawi General Hospital the recovery rate was 5.3 per 100 person-day observations, and the median recovery time was 14 days[38], Addis Ababa, 79% of the subjects recovered from SAM with the median time of 17 days with incidence density rate of recovery was 46 per 1000 child-days[39]

2.2. Factors associated with time to recovery

2.2.1. Socio-demographic and economic factors

Study conducted in Sofia Province, Mozambique Shaw that a significant factor for nutritional recovery in children with SAM, including age, weight, height [27]. Study conducted in North Shewa Zone of Oromia Region, Household food security status, the distance between home and health posts were the significant predictors [40]. Study done in Dire Dawa, Eastern Ethiopia a higher weight at admission, taking deworming and a steady weight gain [31] Study conducted in Amhara Region Bahir Dar Felege Hiwot Referral hospital northwest Ethiopia main predictors was being female [30]. Study conducted in western Harare zone, eastern Ethiopia main predictor were age, household food security status were significant predictors[32].Retrospective cohort Study conducted in Southern Ethiopia weight, mid- upper arm circumference were identified predicators[34].

2.2.2 Health care related factors

Study conducted in East Amhara Hospitals, Northeast Ethiopia the nutritional recovery rate was statically significant were being not able to enter phase 2 on day, using NG tube for therapeutic feeding, and being admitted to referral hospitals [29].Study conducted in North Shewa Zone of Oromia Region, weekly weight measurement per protocol, and HEWs nutrition-related training

status were the significant predictors [40]. Study conducted in Amhara Region Bahir Dar Felege Hiwot Referral hospital northwest Ethiopia fully and partially vaccinated Status, who had better MUAC measurement, who stayed longer in the hospital[30].

Study conducted in western Harare zone, eastern Ethiopia main predictor MUAC at admission, deworming status, time taken to receive the services from the nearby health post were significant predictors of recovery time[32]. In the Afar Regional State, Ethiopia children whose mothers travel less than 2 h to the health institution[37]

2.2.3. Proximal factors

Study done in Uganda Children with SAM who were dewormed during treatment were 33% more likely to recover faster compared to their counterparts who were not dewormed[28]

Study conducted in East Amhara Hospitals, Northeast Ethiopia statically significant factor were determined, using NG tube for therapeutic feeding[29]. Study conducted in North Shewa Zone of Oromia Region, the correct dose of RUTF was significant predictors [40]. Study conducted in Amhara Region Bahir Dar Felege Hiwot Referral hospital northwest Ethiopia children who took routine vitamin-A supplementation, children who had co-morbidity at admission, HIV and TB infection, and who had edema [30]

Study conducted in western Harare zone, eastern Ethiopia main predictor were varieties of nutritious foods used for treatment [32]. A retrospective follows up study was conducted in Asosa general hospital; Northwest Ethiopia Being HIV Negative, Miasmic, miasmic-kwashiorkor[33]

Retrospective cohort Study conducted in Southern Ethiopia for edematous malnourished and severely wasted children respectively with stabilization center, malnutrition status, inpatient complications identified predicators[34].

A prospective cohort study design was conducted in Tigray Region in Ethiopia statically significant factor was feeding plumpynut and failing to gain 5 gr/kg/day for three successive days after feeding freely on F-100 [35]. Study conducted in Southwest Ethiopia, starting complementary feeding at six months, pneumonia at baseline, shortage of amoxicillin and folic acid supplementation were a predicator[36] . In the Afar Regional State, Ethiopia children vitamin A supplementation, received antibiotics determine factors[37]. Low chance of recovery not fully

vaccinated and high chance to recovery was found children who had no anemia and malaria infection[38]. Tuberculosis, pale conjunctiva, IV fluid infusion, feeding F100, Vitamin A Supplementation, bottle feeding were the independent predictors of time to recovery from SAM[39].

2.2.4. Conceptual farm work

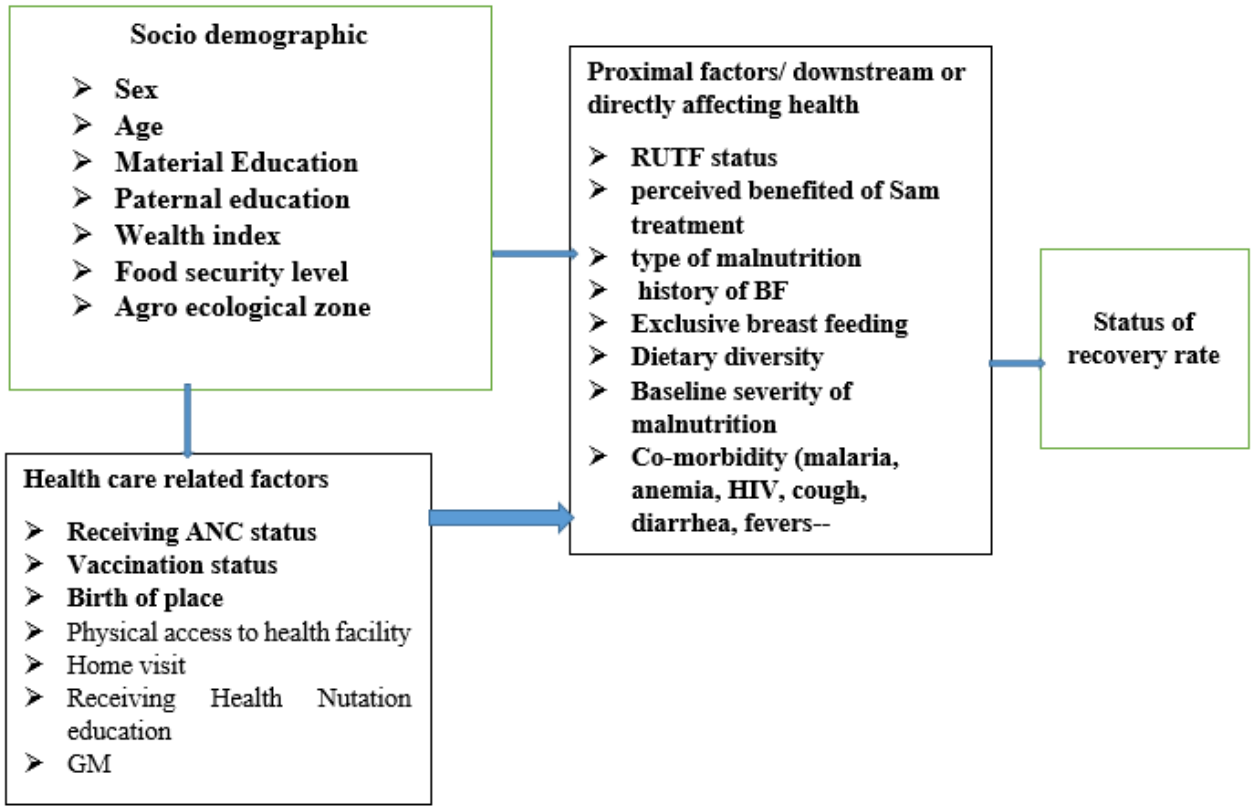

Figure 1 ***Conceptual farm work developed from different literature reviews***

3.Objectives of the Study

3.1. General objective

The general objective of this study was to assess predictors and time to recovery from complicated severe acute malnutrition in children 6-59 months treated at inpatient therapeutic program in the central Ethiopia region, 2024

3.2. Specific objective

- To determine the time to recovery from complicated severe acute malnutrition among 6 to 59 months managed at the inpatient therapeutic program in central Ethiopia region, 2024
- To identify predictors of time to recovery from complicated severe acute malnutrition among 6 to 59 months managed at the inpatient therapeutic program in Central region, Ethiopia.2024

4.Methods and Materials

4.1 Study Area and Study Period

The study was conducted in Central Ethiopia Region in Selected health facility from Sept/2024 to Jan 20/2025. The Central Ethiopia Region is one of the 12 regional states of Ethiopia. It is located in the Southern part of the country and covers an area of 15,156 square kilometers, and it covers 1.38% of the country's total area. Whereas a political and administrative head office is located 232 Km Southwest of National Capital city of Addis Ababa. The region shares borders with four other regions: Oromia in the North, East and West, South Ethiopia in the South, South West Ethiopia the South-West. Central Ethiopia Region has 7 zones, 3 special woreda, 55 Woreda and 27 town administrations. The Region has a total population of 6,598,925, out of which 1,055,828 are under 5 age. It is diverse and complex demography with over 10 different ethnic groups each with their own unique language. According to regional health bureau report, there were 26 hospitals of all types (2 CSH, 4 generals and 20 primary), 230 health centers and 1157 health post in the region (Regional Health Five-year strategic plan}

4.2 Study Design

Institutional based prospective cohort study design was conducted at different public health hospitals.

4.3. population

Source Population: The source population was all age 6 -59 months' children enrolled to a hospital with SAM are included in the study.

Study population: Was all children 6 -59 months' old who are admitted in public hospitals in 8 town

Sample population: Was Children 6–59 Months old who are Admitted with Severe Acute Malnutrition in selected primary, general and referral hospitals

Inclusion and Exclusion criteria

Inclusion **criteria**: All children who are admitted with Severe Acute Malnutrition to the public hospitals Was included in the study

Exclusion criteria: Children 6–59 Months who have congenital problems Was excluded from the study or Children with severe acute malnutrition in the therapeutic feeding units within the study period who were transferred from other health facilities, or if they have any deformity that hinders in taking anthropometric measurements precisely Was excluding from this study

4.4. Sample size and Sampling Technique:

Sample size calculation

For objective 1:

Sample size was estimated by using a single population proportion formula at 95% confidence level. Estimated proportion of recovery rate was 74.5% Study done in the East Amhara Hospitals, Northeast Ethiopia[29] and considering 5% margin error, design effect 1.5 and adding 10% none response rate

$$N = \frac{(Z^2 \cdot p(1-p)}{d^2} \text{ X DE} = \frac{(1.96^2 \text{ X } 0.745)\ \{1-0.745)}{0.05^2} \text{ X } 1.5 = 438$$

Using the above assumptions and adding 10% of none response. total sample size will be 482

For objective 2:

Sample size for objective 2: Sample size calculated for different predictors and time to recovery from Severe acute malnutrition predictive variables from different study result such as Feeding plumpy nut, failing to gain 5 gr/kg/day for three successive days after feeding freely on F-100, Not entering phase 2 on day 10 and being admitted to referral hospitals. The sample size of predictors of predictors and time to recovery from Severe acute malnutrition is calculated based on single population proportion formula by using Epi Info version 7.2.5 software by considering the following assumptions: CI 95%, power 80%, ratio of unexposed to exposed 1:1, proportions, estimated proportion and parameters: P1- expected to exposed and P2- expected to unexposed (Table 1)

Table 1 Sample size determination for different predictor time to recovery from Complicated Severe acute malnutrition

SN	Predictor	CI	AHR	power	R	P1	P2	Sample	Contingen	Finally	Reference
1	Feeding plumpy nut	95%	0.49	80	1:1	75.9	24.1	318	10%	350	[35]
2	Failing to gain 5 gr/kg/day for three successive days after feeding freely on F-100	95%	3.58	80	1:1	75.9	24.1	190	10%	202	[35]
3	Not entering phase 2 on day 10	95%	0.19	80	1:1	74.5	25.5	60	10%	66	[29]
4	Being admitted to referral hospitals	95%	0.52	80	1:1	74.5	25.5	380	10%	418	[29]

From the first objective the 438 sample size was calculated. For the second objective the variable such as Feeding plumpy nut, failing to gain 5 gr/kg/day for three successive days after feeding freely on F-100, Not entering phase 2 on day 10 and being admitted to referral hospitals were assessed, their sample sizes were 350, 202, 66, and 418 respectively. Finally, I have decided to use the first objective total sample size 482 SAM admitted children among 6 months to 59 months

Sampling Technique: Sampling technique was depending on the health facility and based on the SAM ranks in the epidemiological week 46 report in 2024 GC. A 50% of regional Hospital was taken by Simple random technique and case ranking. A hospital with zero Sam case status in a consecutive 2 Epi week was removed from the sample procedure. 13 Hospital was selected all type. All or 100% CSH and General Hospitals were selected. And 35% of Primary Hospitals were selected based on cases. Simple random sampling technique was used to select sampled Hospital. Hospital that meet the inclusion criteria in the study. Sample Hospitals were selected and Finally, sample frame study unit selected based on lottery method. (fig 2 Sampling technique and procedure)

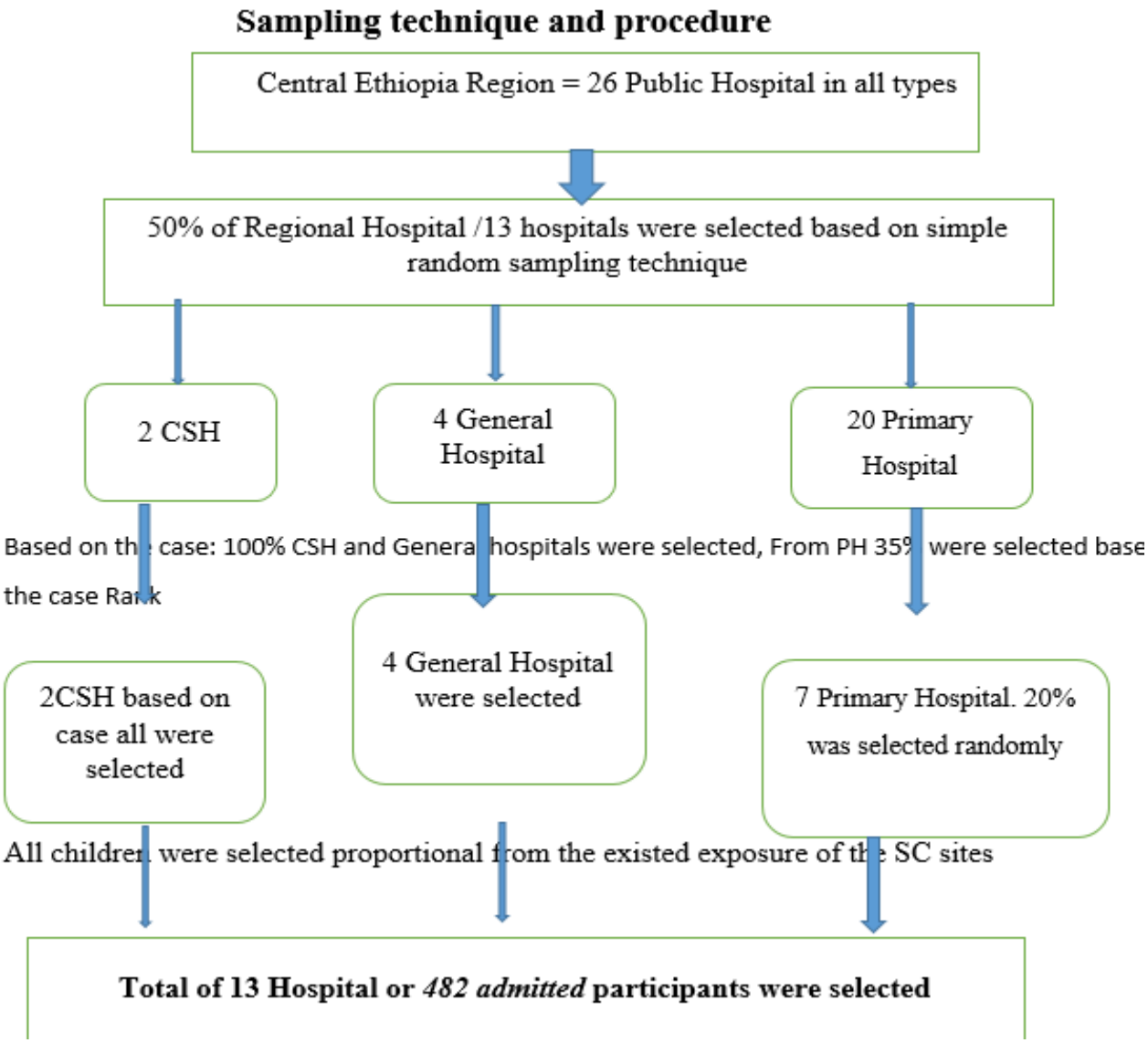

Figure 2 Schematic representation for sampling procedure time to recovery and its predictors for severe acute malnutrition

4.5. Data Collection procedure and instrument

Data were collected by using structured and pre-tested questionnaire. A questionnaires were developed based on a thorough revision of relevant literatures and previous studies. The questionnaires were pre-tested in a similar setting took five percent of the actual sample size (on study subjects). A face-to-face interview and follow up was employed by using structured questionnaire and observational checklist to identify how data and information is generated

A total of 16 BSc data collectors who have experienced SAM management and data collection were participated and every day follow up data collection and 3 supervisors were supervise the overall data collection

4.6. Study Variable

The dependent variable of this study: Time to recovery

The independent variables considered in this study include sociodemographic variables: age and sex of the child, place of residence, age and sex of caretaker, marital status of caretaker, ethnicity, religion, educational status, and occupation; socioeconomic and household food security, routine medications, and complications: amoxicillin, vitamin A, ampicillin/gentamycin, folic acid, Albendazole/ Mebendazole, pneumonia, diarrhea, HIV, TB, anemia, dermatosis, and CHF

4.7. Operational definition:

Treatment outcome data was coded as "recovered", "died", "defaulted" or "non-responder", "Medical Transferee"

Recover rate was categorized 1= recovered and = not recovered {died+ defaulted" or "non-responder+ Medical Transferee

Recovery time is defined as the number of days it will takes from admission until a child is discharged after being claimed recovered from SAM. Recovery is reaching >80% of nutritional median weight for height, Failure to regain appetite within 4 days, Failure to gain at least 5 g/kg bodyweight within 10 days and becoming free of acute infections within two weeks or 10days of treatment

Defaulters were those who were absent for 2 consecutive weighing (2 days

Length of stay referred to number of days that the patient stays in the in-patient program. Weight gain referred to increase in weight of the patient after being admitted in the in-patient program

A patient who could not meet the discharge criteria after two weeks or 10 days of inpatient management is considered as a **no respondent.**

Readmission: readmitted due to relapse or returned defaulter who meets admission criteria

Fast breathing: cut- off point points≥50 breaths/min for children aged 2–12 months, and ≥40 breaths/min for children>12–59 months

Wealth index was calculated by using EDHs toll. Total of Households status were assessed by 26 variables and categorized by 3 rich medium and poor

food insecurity, all food security assessment variables were used and categorize 1 and 0. All variables were added and average mean was calculated and above mean was food secured and blow mean was food insecure

Food dietary diversity*= all 16 food dietary diversity variables were assessed and categorize in to three based on standard {low dietary diversity, medium dietary diversity and high dietary diversity}*

4.8. Follow up of the participants

Clinical status and symptoms for pediatric anthropometric measurement of weight, MUAC, height and weight taken at admission during initial enrollment. And Weight(kg}, Height (cm) W/H%, MUAC (cm} Edema (0, +, ++, +++ were measured every two days morning from 2:30 am medical monitoring was done by data collectors. Repeated measurements are taken during and after taking milk and medication and other treatment. Anthropometric parameters such as weight, MUAC, height and weight are measured. And the level of edemas as well as appetite test are observing

4.9. Data Quality Control

The questionnaire was initially prepared in English, and then it was translated to study subjects' in Amharic language for the field work purpose by a language expert. Then the translated version will be again translated back to English language by a different language expert to check for any inconsistencies or distortion in the meaning of words or concepts of the data collection tool and the tool was pretested.

One-day training was given to all data collectors and supervisors to have a common understanding on the data collection tools and process.

The supervisors were overseeing the data collectors on a daily basis for completeness and consistency of the filled questionnaires.

Every day after data collection, questionnaires were reviewed and checked for completeness by the supervisors and principal investigators and the necessary feedback was given to data collectors immediately. The data was cleaned and coded before entering into the computer

4.10. Data processing and Analysis

KoBoToolbox was used for data collection and translate in to SPSS version 25. SPSS data was downloaded from KoBoToolbox, and then the data was exported to STATA version 16 for further analysis. Before analysis, data was cleaned, edited by using simple frequencies and cross tabulation. Days were used as time scale to calculate median time to recovery from SAM. Descriptive non-parametric survival analysis such as Kaplan-Meier survival estimator and log-rank tests was used to estimate median recovery time during the treatment period and to compare time to recovery between grouped variables. A cox proportional hazards regression model was used to determine factors associated with time to recovery. Factors associated with outcome variable at p-value < 0.25 in bi variable cox regression was selecting for multivariable cox regression analysis. Adjusted Hazard Ratios (AHR) with 95% confidence intervals were computing and statistical significance were declared when it is significant at 5% level (p-value < 0.05). The multivariable hazard ratio is the probability that an individual under observation experiences the event in a period centered on that point in time. Cox–proportional hazard assumption was checked by graphically (log-log plot) & statistically (Global goodness of fit test). Finally, Cox Snell residual test was used for checking finals model

4.11. Ethical Consideration

Ethical clearance was obtained from Pharma College Institutional Research Ethical Review Committee (PC- IRERC) and official letter was taken from Central Ethiopia regionally health bureau. Support and Official letters was taken from zonally health departments, Woreda health offices and head of Hospital and health centres. The study participants were informed about the purpose of the study and informed verbal consent was taken. All participants' right to self-determination were respected. The confidentiality and the privacy of the respondents was maintained

4.12. Dissemination of the research findings

A copy of findings will be submitting and presented to Pharma College School of Graduate Studies. A copy of findings will be submitting Central Ethiopian Regional Health Bureau and the findings of the study will be broadcasted through the publication: local or international journals. The results of the study will be also communicated to zonal health departments, Woreda health offices, Hospital managers and management body and Health center department. It will be also presented to different conferences to governmental and non-governmental organization so that they can use the findings for planning, decision making and as a baseline for further Monitoring and Evaluation purpose.

5. **Result**

5.1. Socioeconomic and demographic characteristics for mothers and the children

A total of 482 study subjects admitted to hospitals were assessed yielding, 100% response rate. Of the total of, 482 admitted to hospitals, 271 (56.2%) children were males while 36.3 % of children were in the age group of 6–11 months with a median age of 21.3 months with IQR of 13(9, 35). Regarding to admission characteristics most of the children, 430(89.2%) were new admissions. Most of parents responded to the interview, 356 (73.9%) were females and 309 (64.1%) were in the age group of 30- 49 years with a mean (±SD) age of 32.6 (± 7.73) years. About three fourth, 346(71.8%) were rural residence and, 422 (87.6%) were married. Regarding to educational status more than half, 299(62%) of them were unable to read and write (Table 2]

Table 2: Socioeconomic and demographic characteristics for mother's/care giver's, Central Ethiopia,2024

Characteristics	Category	Frequency	Percent (%)
Sex of child's	Female	211	43.8
	Male	271	56.2
Child age	6-11	175	36.3
	12-23	127	26.3
	>= 24	180	37.3
Admission status	New	430	89.2
	Re admission	52	10.8
Care giver's age group(years)	18 -29	155	32.2
	30- 49	309	64.1
	≥50	18	3.7
Sex of caregivers	Female	356	73.9
	Male	126	26.1
Residence of respondent	Rural	346	71.8
	Urban	136	28.2
Ethnicity of respondents	Gurage	7	1.5
	Hadiya	162	33.6
	Halaba	57	11.8

	Kembata	24	5.0
	Others	43	8.9
Religion	Catholic	16	3.3
	Muslim	254	52.7
	Orthodox	48	10.0
	Others	7	1.5
Marital status	Divorced	21	4.4
	Married	422	87.6
	Separated	8	1.7
	Single	24	5.0
	Widowed	7	1.5
Family size in number	<=5	228	47.3
	>=6	254	52.7
Wealth index	Poor	172	35.7
	Medium	149	30.9
	Rich	161	33.4
Educational status	Able to read and write	98	20.3
	College and above	11	2.3
	Primary education	63	13.1
	Secondary education	11	2.3
	Unable to read and write	299	62.0
Occupation	Employments/labors	25	5.2
	Farmer	56	11.6
	House wife	366	75.9
	Merchant	26	5.4
	Other	9	1.9
Child birth interval	1-2	249	51.7
	3-4	215	44.6
	>5	18	3.7
	No	410	85.1

Substance users	Yes	72	14.9
Age at first marriage	<19	219	45.4
	>20	263	54.6
Type of Hospital	CSH	132	27.4
	General	67	13.9
	Primary	283	58.7
Referred by who to this hospital	Health workers	113	23.4
	Heath extension	82	17.0
	Self –referred	287	59.5

Out of 482 study subject, the majority of the participants were form Silte and Hadiya zones while less than 5% were from Gurage zone (fig 3)

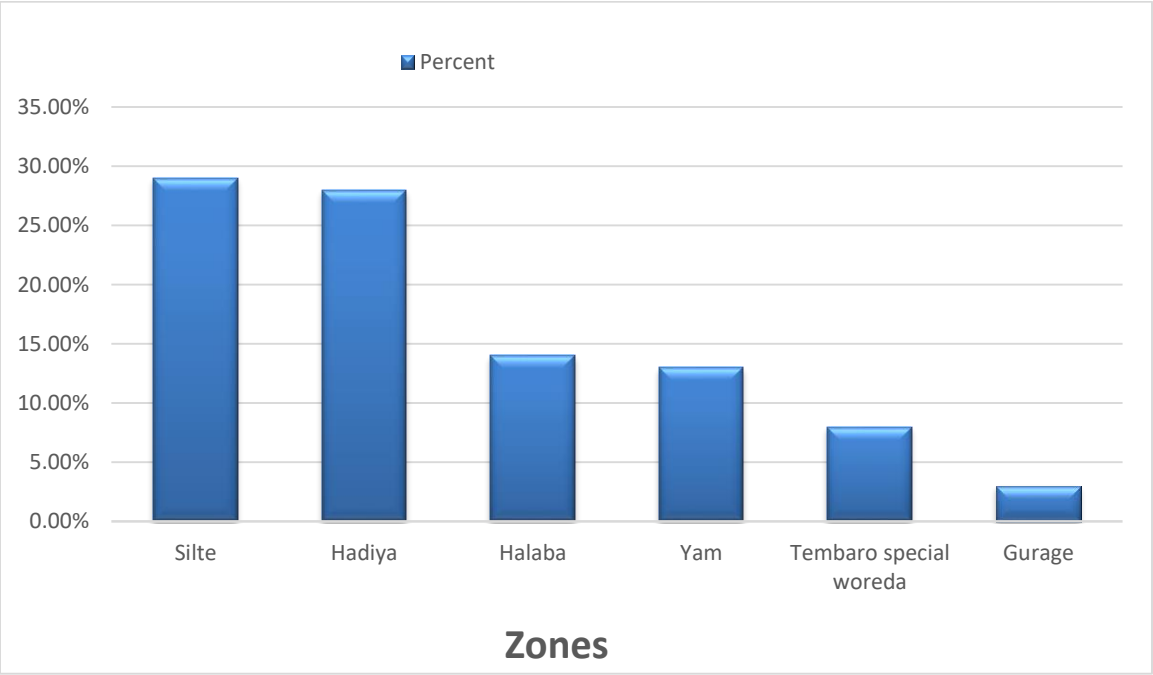

*Figure 3**: Zones from which child with SAM were admitted to selected the hospitals of Central Ethiopia Region, 2024***

5.2: Household Food Security Status

Regarding the household food security status of the families, 175 (36.9%) were food secure while the rest were food insecure. One hundred eighty-nine (39.1%), 173(35.9%) and 120(24.9%) of the households had low, medium and high dietary diversity, respectively

5.3. Health care service related factors

From the total of 482 study subject, 334(69.3%) were born at health facilities. More than three-fourth of mothers, 369(76.9%) had ANC follow ups, 279(57.9%) got PNC service, 279 (57.9%) of mothers practiced exclusive breast feeding for the index child. Regarding history of using family planning methods, 221(45.9%) used family planning service. Three hundred nineteen (66.2%) families were visited by the health extension workers in the past three months. Three hundred twenty-eight (68%) of the children did not get growth monitoring service (Table 3)

***Table 3:* Health care service related factors of children 6–59 months admitted with SAM**

Characteristics	Category	Frequency	Percent (%)
Birth place	Health facility	334	69.3
	Home	148	30.7
Had ANC follow ups	No	113	23.4
	Yes	369	76.6
Got PNC service	No	203	42.1
	Yes	279	57.9
Exclusive breastfeeding	Yes	279	57.9
	No	203	42.1
Duration of breastfeeding (months)	>24	272	56.4
	12-23	126	26.1
	<11.	84	17.4
History of using family planning methods	No	261	54.1
	Yes	221	45.9
Health extension workers/health professional visited the home	No	163	33.8
	Yes	319	66.2
Received health nutation education	No	154	32.0
	Yes	328	68.0
Received regular Growth monitoring service	No	328	68.0
	Yes	154	32.0
Vaccination status of child	Full vaccinated	194	40.2
	Not full vaccinated	251	52.1
	Not vaccinated	37	7.7
Get OTP service at community level	No	194	40.2
	Yes	288	59.8

5.4: Proximal factors/ downstream or directly affecting health

Of the total 482, four hundred nineteen (86.9%) of the children used ready-to-use therapeutic food, 463 (96.1%) perceived that they benefited from SAM treatment (Table.4)

Table 4: Proximal factors / downstream or directly affecting health

Characteristics	Category	Frequency	Percent (%)
Ready-to-Use Therapeutic Food	No	63	13.1
	Yes	419	86.9
Perceived benefited of SAM treatment	No	19	3.9
	Yes	463	96.1
Type of malnutrition	over nutrition.	18	3.7
	undernutrition	464	96.3
Under nutrition (N= 464)	Stunted	93	20
	Underweight	49	10.6
	Wasted	322	69.4
Baseline severity of malnutrition	no	54	11.2
	Yes	428	88.8
Status of SAM at admission	Kwashiorkor	88	18.3
	Marasmus	304	63.1
	Marasmus-Kwashiorkor	36	7.5
Any grade of bilateral pitting oedema combined with severe wasting (MUAC <11.5/WFH & -3 z score at admission	No	273	56.6
	Yes	209	43.4
Severe wasting (MUAC <11.5 cm or WFH &lt, -3 z score) at admission	No	108	22.4
	Yes	374	77.6

5.5. Type of complications admitted with SAM, to Central Ethiopia Region, 2024

Of the 482 admitted study subject, 407(84.8%) of them had medical complications out of which,223(47.75%) had poor appetite, 156(33.4%) had lower respiratory tract infection, 129 (27.62%) had dehydration, 119(25.48 %) had High fever (axillary temperature >39 ¬C), 107 (22.91 %) had intractable vomiting, 79(16.92 %) had persistent diarrhoea,77(16.5%) had severe anemia,62(13.3%) had lethargy (not alert) (figure 5)

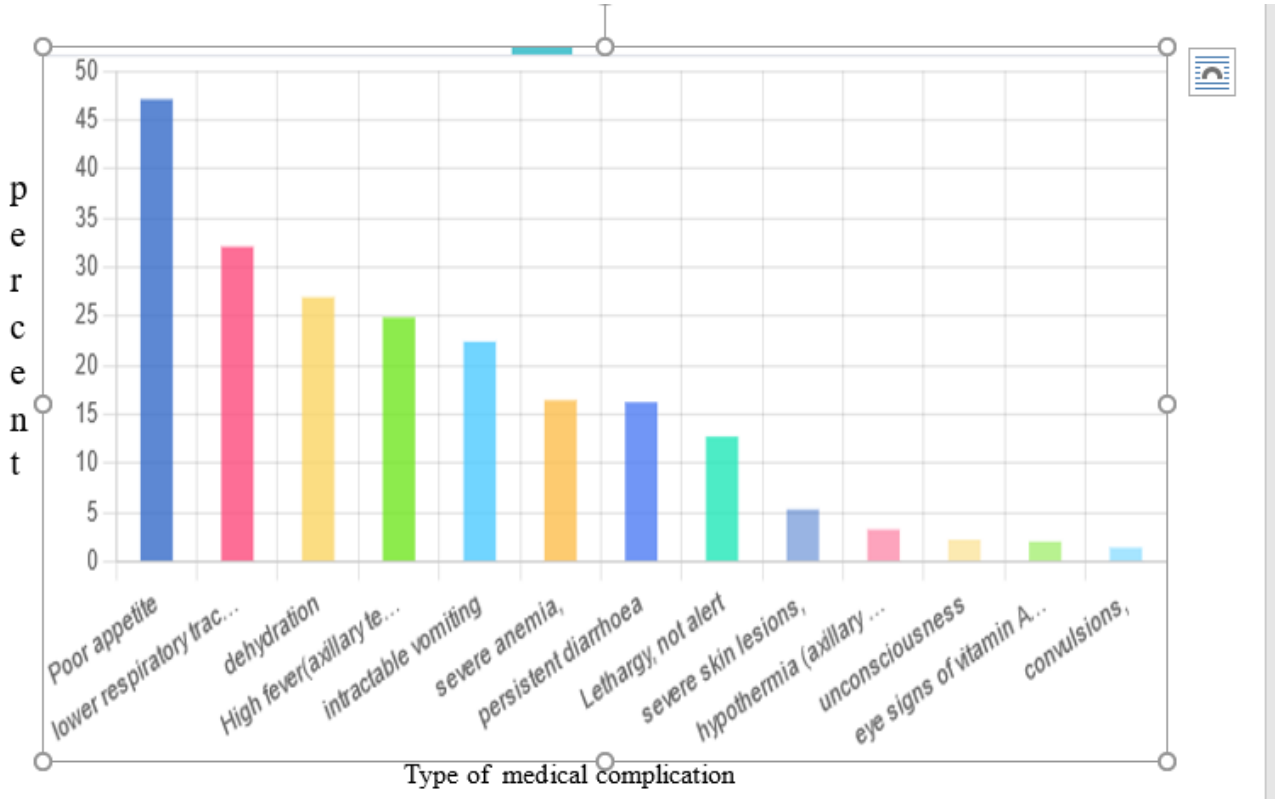

Figure 4 ***Type of medical complications among admitted SAM children 6-59 months***

5.6. Comorbidities/infections and routine medication

Malaria and dermatosis were the comorbidities with a prevalence of, 35.1% and 23.7% followed by CHF, (4.8%) TB, (1.9%) and HIV/AIDs, (1.2%). From routine medications, 461(99.35%) had taken ampicillin/gentamycin, 172 (37.1%) had taken amoxicillin, 119 (49.2%) had taken deworming, 124(26.7%) had taken Albendazole/ Mebendazole. Regarding to therapeutic milk about, 459(95.2%) used F75 in the initial phase, 254 (52.7%) used F100 in phase two (Table.5)

***Table 5*: Comorbidities/infections and routine medications**

Characteristics	Category	Frequency	Percent (%)
HIV status	No	356	73.9
	Unknown	120	24.9
	Yes	6	1.2
TB	No	473	98.1
	Yes	9	1.9
Anemia	No	368	76.3
	Yes	114	23.7
Dermatosis	No	421	87.3
	Yes	61	12.7
Malaria	No	313	64.9
	Yes	169	35.1
CHF	No	459	95.2
	Yes	23	4.8
Routine medication	No	18	3.7
	Yes	464	96.3
Amoxicillin (N=464)	No	292	62.9
	Yes	172	37.1
Provided de-worming (N= 242)	No	123	50.83
	Yes	119	49.2
Ampicillin/Gentamycin (N=464)	No	3	0.65
	Yes	461	99.35
Albendazole/ Mebendazole (N=464)	No	340	73.3
	Yes	124	26.7
Measles Vaccine (N=337)	No	261	77.4
	Yes	76	22.5
IV antibiotics (N=464)	No	4	0.86
	Yes	460	99.14
Folic acid during the treatment	Yes	54	11.2

	No	428	88.8
F75 feeding	No	23	4.8
	Yes	459	95.2
F100 feeding	No	228	47.3
	Yes	254	52.7

5.7: Treatment Outcomes of Children with Severe Acute Malnutrition.

From the total study participants, 368(76.3%) of them were recovered from SAM while 71(14.5%) transferred out, 20(4.1%) medical Transferee, 13(2.7%) defaulter and 10(2.1%) of them were died (figure 5)

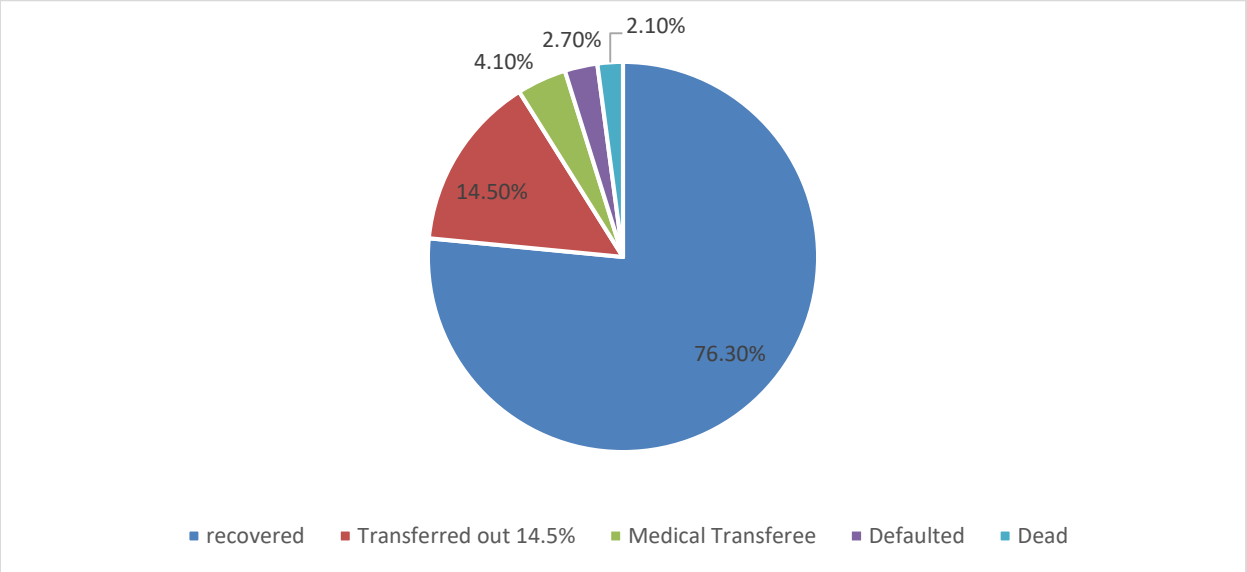

Figure 5 ***Treatment Outcomes of Children with Severe Acute Malnutrition***

5.8: Follow-Up Characteristics of Children with Severe Acute Malnutrition

At the admission 139 children had bilateral pitting oedema (+++). Out of 139, 47 (9.1%) were failure to start to lose oedema within 4 days, with in this day at the follow up, 97(20.1%) had bilateral pitting oedema (+++). Only, 124(25.7%) were regained appetite lost within 4 days. A total of 139 bilateral pitting oedema (+++), edema was present on day 10 in 36 (7.5%). Regarding to severe wasting or a Weight for Height ratio (WFH) measurement status at the admission, 65(13.5%) was <70% while, 37(7.7%) of children had not improved WFH at the follow up. About, 99 (20.5%)

children had refused therapeutic feeding end of follow up. From any non-edematous children's, 399 (82.8%) gain average weight 6.2 g/kg/day at the end of follow ups.

5.9. Incidence of recovery rate of children with Severe Acute Malnutrition.

The children were followed for a total of 40 follow-up days with for a minimum of 2 and a maximum of 37 days and a median 10 days, 95% CI [9.54, 10.26] with IQR of 13 (9, 35). Overall, a total of 482 the participants contributed a total of 4542 person-days of follow-up. The nutritional recovery rate was, 246 (76.4%) recovered with nutritional incidence density was 8.1 per 100 person-days of observation. The incidence rate was found to be 1.02 (95% CI: (0.85, 1.2)] and 0.98 (95% CI: (0.77–1.24)] per 100 person-days in males and females, respectively. The death rate of children with SAM in this study was 2.2 per 1000 person days of observation

5.10. Comparison of time to recovery among the different groups (the KM survival curve)

The KM survival estimate was used to compare survival probability across predictor groups. In addition, the log-rank test was used to assess the significance of the difference in survival probability between predictors. As a result, survival time estimates for several factors such as, Severe wasting (MUAC <11.5 cm or WFH < -3 z score, early engaged phase to transition phase, at admission status presence of oedema (+++,) dermatosis, malaria, therapeutic feeding refusal, Wealth index, were substantially significant at 95% CI

Kaplan Meier curve figure shows that 40% to 60% of SAM patients who received treatment were likely recover within a median of 10 days

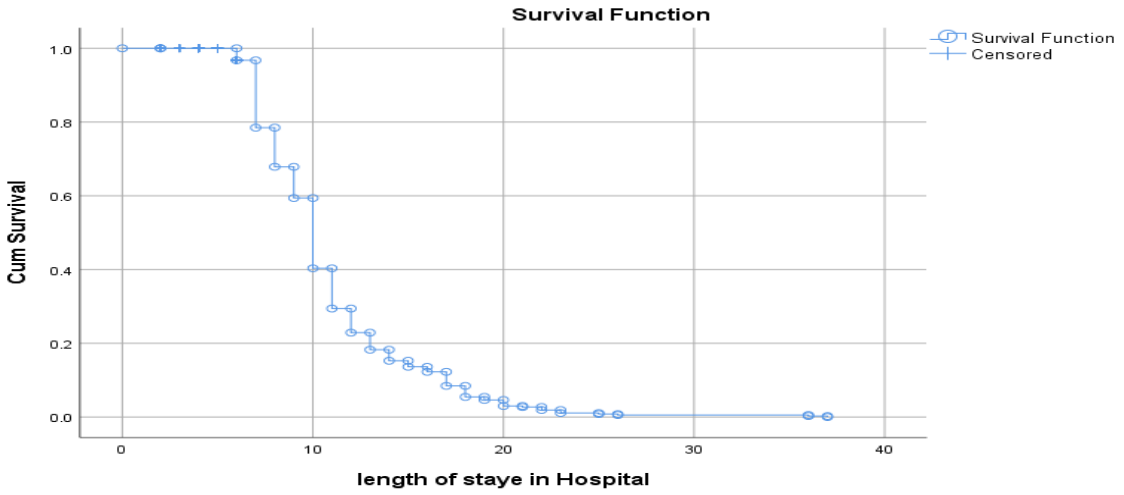

Figure 6 ***overall Kaplan Meier curve of estimate for time to recovery and its predictors***

Log-rank test =6.6, p < 0.001} had statically significant difference among the group. The KM survival curve shows that children who were used F100 milks estimates that a better cure rates with short median length of stay as compare to children who did not used F100 milks. Recover rate was used to F100, 204 (42%) and not used F100 was, 164(34%) and median length of stay for used F100 children were 11[10.3, 11.7] and not used 12 [11.3, 12.7] days respectively (Figure 6)]

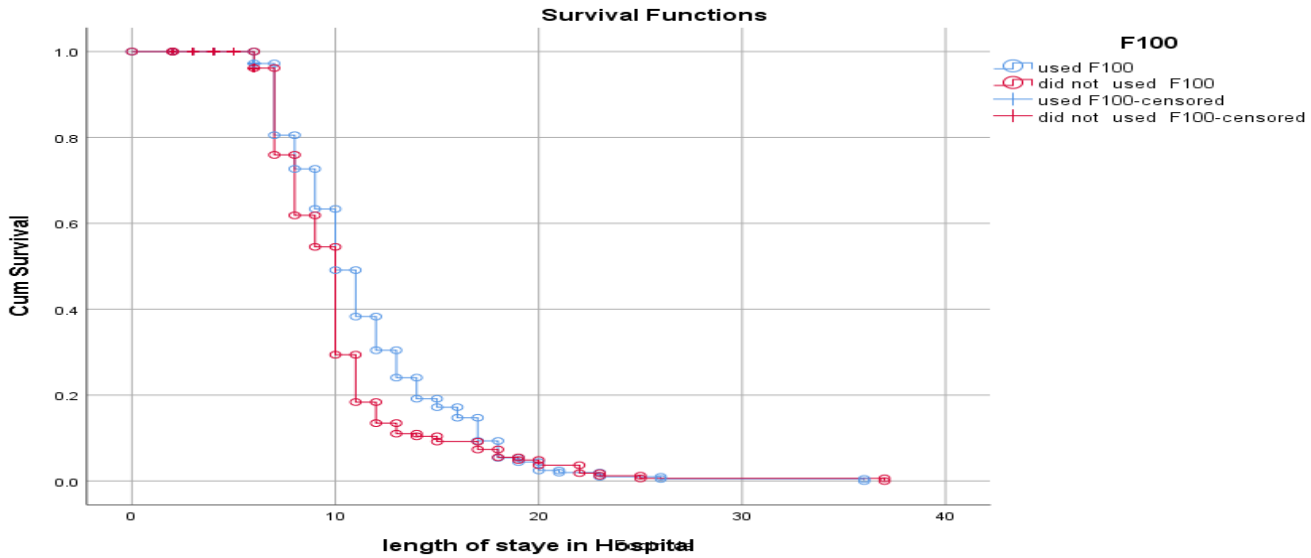

Figure 7 **Kaplan-Meier survival estimate for time to recovery and its predictors of time to recovery**

The KM survival curve shows children had no dermatosis better cure rates with short median length of stay. Recover rate for non-dermatosis was, 314 (65%) with median length of stay 10, 95%CI [9.7, 12.8] and dermatoses children's recovery rate, 54(11%) and median time for length of stay 11[9.2, 26] days respectively. [(log-rank test = 7.2, $p < 0.005$} among the categorical group had statically significant difference (figure 7)

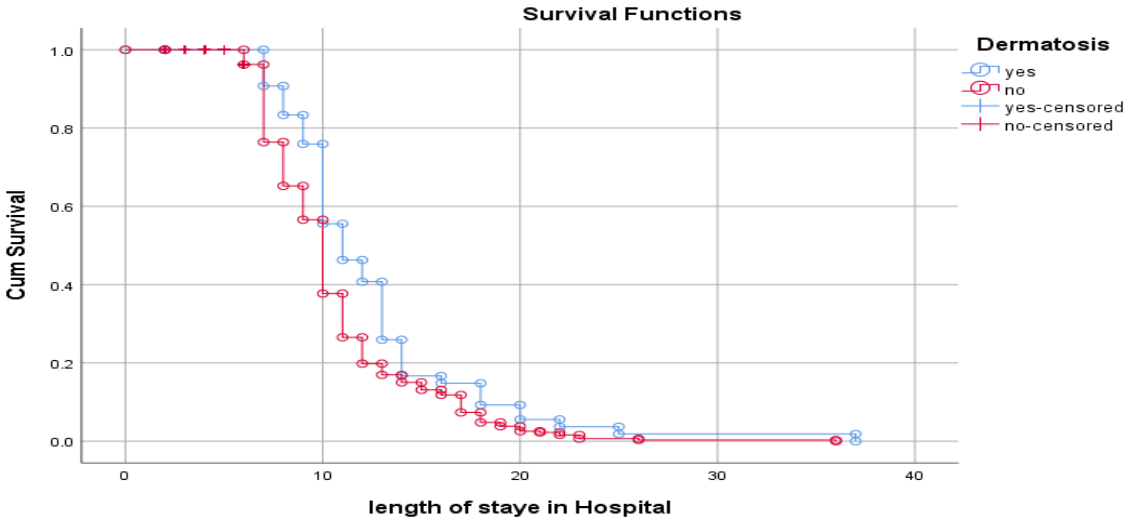

Figure 8 **Kaplan-Meier survival curves and Log- rank test estimate for time to recovery**

A Log- rank test was 8.2, $p < 0.05$). A sub categorically groups of severe wasted (MUAC < 11.5 cm or WFH or -3 z score of severe wasted or not wasted have statistical significant difference among group $p< 0.05$ (figure 8)

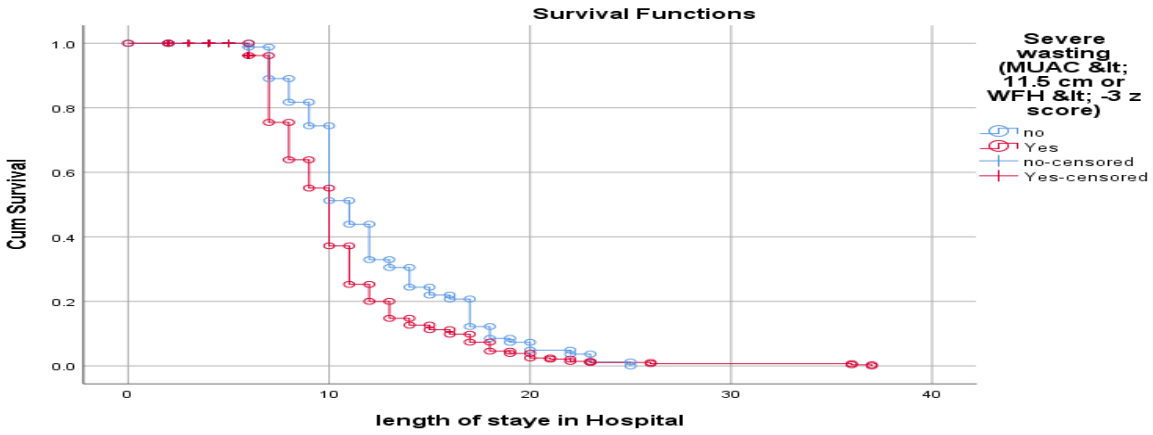

Figure 9 **Kaplan-Meier survival curves and Log- rank test estimate for time to recovery**

5.11. predictors of time to recovery from complicated SAM

Data were checked the proportional hazard assumption before fitting the covariates into the regression model. Hence, all of the predictor variables did not violate the proportional hazards' assumptions ($p > 0.05$), making the data suitable for the Cox proportional regression analysis. Through crude analysis, several factors were found to be significant predictors of the recovery rate from SAM. After adjustment, in multivariable Cox regression analysis having dermatosis [AHR=1.4, 95% CI: (1.03; 2.0)] and severely wasted (MUAC <11.5 cm or WFH<70% or -3 z score [AHR=1.5, 95% CI: (1.05,2.0)] were found to be independent predictors (Table:6)

Table 6 Predictors of nutritional recovery time among children 6–59 months with SAM

Variables	Categories	No Recovered	Recovered	CHR (95% CI)	AHR (95% CI)
Wealth index	Poor	47	125	1.0	1.0
	Rich	67	243	1.4 (0.9, 2.1}	1.1(0.9, 1.4)*
Family members	<=4	68	160	1.0	1.0
	>=5	46	208	1.9(1.3, 3.0)	0.9(0.7, 1.1}*
At admission presence of Oedema (+++)	Yes	27	112	1.0	1.0
	No	87	256	0.7(0.4,1.2)	0.94 (0.7,1.3) *
Early engaged phase to transition	Yes	94	280	1.0	1.0
	No	20	88	1.5(0.9, 2.5}	0.8 (0.6, 1.03) *
Therapeutic feeding refusal	Yes	13	86	1.0	1.0
	No	101	282	0.4(0.2, 0.8]	1.3 (0.97, 1.7) *
Malaria	positive	51	164	1.0	1.0
	Negative	63	204	1.01{0.7, 1.5)	1.1{0.9, 1.4}*
Dermatosis	yes	7	54	1.0	1.0
	no	107	314	0.4 (0.2. 0.9)	1.4 (1.03; 2.0) **
F100	Yes	50	204	1.0	1.0
	NO	64	164	0.6(0.4, 0.96)	1.2 (0.96; 1.5) *
Severe wasting (MUAC <11.5 cm / WFH<70%	no	26	82	1.0	1.0
	Yes	88	286	1.1 (0.6, 1.7]	1.5 (1.05,2.0) **

*Shaw's Statically significant predators in CHR and ** Statically significant predator's in AHR

6. Discussion

This study tried to assess time to recovery and its associated predicator's among children 6–59 months with complicated severe acute malnutrition admitted in public hospitals in Central Ethiopia Region. Children of 6-59 months with complicated SAM had 246(76.4%) incidence of recovery rate. And with the total incidence density of 8.1 per 100 person days was observed. Median time of recoveries were, 10 (95% CI: 9.7,10.3) days with Inter Quartile Range (IQR) of 13(9, 35). Overall, a total of 482 the participants contributed a total of 4542 person-days of follow-up. In this finding, 368(76.3%) of them were recovered from SAM while, 71(14.5%) Transferred out, 20(4.1%) medical Transferee, 13(2.7%) Defaulted and, 10(2.1%) of them were died. The independent predictors like having dermatosis [AHR= 1.4, 95% CI: (1.03; 2.0)] and had severely wasted at admission (MUAC <11.5 cm or WFH<70% or -3 z score [AHR= 1.5, 95% CI: (1.05,2.0)] were significant predictors of time to recovery.

The finding of this study, about 76.3% of children with SAM were recovered during follow-up period. This study is in line with study was done in Uganda, 76.4% [28]) and with the SPHERE project's international standard criteria, which is set at >75% recovery[41]. And comparable with studies conducted in East Amhara Hospitals, Northeast Ethiopia, 74.49% [29], Tigray region, 75.9% [35]. Possible reasons due to similarity might be due to administration structure for SAM management, comparable SAM problems may exist in those regions, where SAM management protocols might be used in accordance with national and WHO guidelines. In addition, those regions can focus on child care services in the context of SAM management strategies/child mortality reduction policies. Might be a result of short and long duration health care professional standardized SAM management training.

The finding of this study was higher than studies that were conducted in Sofala Province, Mozambique, 28% [27], Felege Hiwot Referral hospital 58.4% [30], Bahir Dar city, Northwest Ethiopia, 51.9%[42], Asosa general hospital, 65.4% [33], Ethiopia, 71.2% [19] and North Gondar zone, Northwest Ethiopia, 65.3% [43] and Bahir Dar western Harare zone, 73% [32]. Possible reasons due to difference might be period of data collection, nature of health facility, the quality services they deliver or availability of supplies used for the all types of cares

But, the finding of this study was lower than studies that were conducted in Dire Dawa, 79.8% [31], Afar Regional State, 83.2% [37], Addis Ababa, 79% [39], and SNNPR, 80.29%, [21] and Injibara, Ethiopia, 78.27% [44], Oromia, Ethiopia, 79.6%[45]. Possible justifications due to, nature of health facility, due to the difference might be in severity of cases they admitted, also it might be less quality services they deliver limitation of of supplies

The median recovery time of children from SAM in this study was 10 days. The finding of this study was comparable with the studies conducted in East Amhara Hospitals, Northeast Ethiopia [29]. But, lower than in Tigray Region [35], North Gondar zone, Northwest Ethiopia [43], Uganda [28], Bahir Dar [32], Asosa general hospital [33] and Southern Ethiopia [34], Addis Ababa [39], Pawi General Hospital, Northwest Ethiopia[46] and Bahir Dar city, Northwest Ethiopia, [42]. But, higher than study conducted in Injibara in Ethiopia[44] . The variation in median time to recovery among these study settings might be due to the difference in severity of cases they admitted, the quality services they deliver or availability of supplies used for the all types of cares.

Children who had no dermatosis at admission were 1.4 times [AHR = 1.4 (1.03; 2.0] more likely to recover earlier than compared to those who had dermatosis at admission. This finding is supported by other studies conducted in Aria LGA, Nigeria[47], Eastern Ethiopia (AHR = 1.4, 95% CI:[1.04, 1.9][48] and Northwest Ethiopia (AHR =1.48(95% CI: [1.01, 2.16)][49]. Possible justifications might be because of complicated nature of the dermatosis since it can be caused SAM itself or other infection and might delays recovery time among children with SAM.

Children without severe wasting during at admission (MUAC <11.5 cm or WFH<70% or -3 z score 1.45 (AHR=1.45 (95% CI: (1.05 2.0)] more likely to recover earlier than compared to encounter part. The possible reason might be those children who were severely affected might be in a critical level because of their nutritional concern and other infection before coming to the health facility and they may seek more attention and treatment. These reasons might lead to long period of treatment than the others in this study. And might develop infection and metabolic complications, and edematous with more skin lesion which in turn lead to more complications and would take longer time to cure

Strengths and Limitations of the Study.

Strengths of the Study.

Since it is a prospective cohort study, About, 50% regional hospital was included in the study. KoBoToolbox was used for data collection and it is important to ensure data quality and generate insights with flexible table views and quality of data features, Also, it has tried to address many important variables, including the sociodemographic and socioeconomic aspects of the family's wealth index, Dietary Diversity food and the health facility related factors. Each datum was collected before the outcome is known which enhances reducing bias and establishing stronger temporal relationships since the outcome is recovery. Even though this is a prospective cohort study, it has failed to assess the perception of caregivers on SAM.

Limitations of the study

As the design was a prospective cohort, it was difficult to know the outcomes of all children admitted mostly due to defaults and early transfer to community health Extension service and medical Transfers. In addition, on my study limitation of resources

7. Conclusion and Recommendation

7.1. Conclusion

The nutritional recovery rate was, 246 (76.4%) recovered with recovery incidence density of 8.1 per 100 person days and a median recovery time of 10 days with Inter Quartile Range (IQR) of 13(9, 35). Overall, a total of 482 the participants contributed a total of 4542 person-days of follow up. Predicators for time to recovery from SAM among children were presence of dermatosis and any bilateral pitting edematous with MUAC <11.5 cm or WFH<70% or -3 z score. Intervention focuses on presence of dermatosis and any bilateral pitting edematous with MUAC <11.5 cm or WFH<70% or -3 z score

7.2. Recommendations

For Minster of Health, Zonal and Regional Health department: The presence of dermatosis and any bilateral pitting edematous with MUAC <11.5 cm or WFH<70% or -3 z score at admission were important determinants of time to recovery during severe acute malnutrition treatment. Thus emphasis given to children with dermatosis and any bilateral pitting edematous with MUAC <11.5 cm or WFH<70% or -3 z score.

Further recommended Minster of Health, the Regional Health Bureau, Zonal Health Department and Non-governmental organization must strengthen and follow closely the routine activities of malnutrition, which can assist in early diagnosis and management of children with SAM

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Appendix

Approval/Declaration Sheet

Annex

ANNEX I - English Version Questionnaire

Questionnaire for data collection on time to recovery and its predictors for complicated severe acute malnutrition among 6 to 59 months' children managed at the inpatient therapeutic program in Central region, Ethiopia

Identification

Name of Facility----------zone_____ Woreda_____ Kebele----------HAD----------Code Nu. _____

Verbal consent form before conducting interview

Greeting:

Hello, my name is _____. I am conducting in the research team Pharma college and Central Ethiopia Region Health Bureau. I would like to interview you and follow up time to recovery and its predictors for severe acute malnutrition among 6 to 59 children managed at the inpatient therapeutic program in Central region, Ethiopia. The objective of this study is assessment of time to recovery and its predictors for uncomplicated severe acute malnutrition among 6 to 59 children managed at the inpatient therapeutic program in Central region, Ethiopia. which is important to improve the malnutrition status. Your cooperation and willingness for the interview is helpful in identifying problems related to the subject matter. Your name will not be written in this form. All information that you give was kept strictly confidential. Your participation is voluntary and you are not obligated to answer any question you do not wish to answer. If you are not still discomfort with the interview, please feel free to drop it any time you want. Do I have your permission to continue?

1. If yes, continue to the next page
2. If no, ask the reason and skip to the next respondent. ----------

Date of interview _____ Time started_____ Time finished_____

Supervisors name _____signature _____

Part one- Socio-demographic variable

No	Question Mother/caregiver	Response options	Code	Skip
101	**zone**	----------		
102	Date of admission	DY/MM/YYYY/ / / ----------/		
103	Type of hospital	1 primary 2.General 3 CSH		
104	Age	years----------		
105	Residence of respondent	1.Urban 2.Rural		
106	Sex	1.Male 2.Female		
107	Ethnicity of respondents	1.Hadiya 2. Gurage 3. Kembata 4. Halaba .5.Site 6.Yam 7.Tambaro 8.Mareqo 9.Qabena Others----------		
108	What is your Religion?	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Others(specify)_____		
109	What is your marital status?	1. Single 2. Married 3. Divorced 4. Separated 5. Widowed		
110	Family members	Number----------		
112	What is your Educational status?	1. Unable to read and write 2. Able to read and write 3. Primary education 4. Secondary education 5. College and above		
113	Occupation	1. House wife 2. Farmer		

		3. Merchant 4. Employments/labors 5. Other (specify) ----------		
114	If your choose for q110 is 4	Monthly income----------		
115	Child birth interval	-------		
116	Care giver	1.mother 2. father 3. sister/brothers 4. others----------		
117	Do you have use mother/father us Substance	1 Yes 2. no		
118	if yes q117	1.alchole 2.kate/chat chewing 3. Cigarette smoking ----------		
119	Age at first marriage	----------age		
Health care related factors				
201	**Birth of place**	1. Home 2.Health facility		
202	Do you have contact ANC follow up	1.yes 2. no		
203	**If yes how many contact**	How many time----------		
204	**Do you have gate PNC service**			
205	Exclusive breast-feeding	----------month		
206	Duration of breast-feeding	---------- month		
207	history of using family planning methods	1.yes 2. no		
209	Health extension/health professional are visit to your Home	1.yes 2. no		
210	Do you have Received Health Nutation education	1.yes 2. no		

211	Regular GM	1 yes 2.no		
212	Vaccination status	1.Full vaccinated 2. Not full vaccinated 3. Not vaccinated		
213	Have you get OTP service	1.Yes 2.No		
214	Referred by who	1. Self –referred 2. Heath extension 3. Health workers		
Part 1.1. Child socio –demographic status				
301	sex	1. male 2. Female		
302	Age of child in month	----------		
303	Admission status	1 **አዲስ** 2. **እንደገና መግባት**		
304	When you start complementary feeding started	----------months		
305	**history of BF**	---------- months		
	anthropometry measurement			
306	During admission anthropometry at admission	Weight ---------- MUAC---------- Height---------- Weight for to height---------- Oedema (+++,) -------- MUAC(CM)----------		
307	During follow up anthropometry	Weight ---------- Height---------- Weight for height---------- Oedema (+++,) --------		

		MUAC(CM)----------		
308	Discharge time anthropometry	Weight ---------- Height---------- Weight for height %---------- BMI---------- Oedema (+++,) ----- MUAC(CM)----------		
309	Minimum weight for non-edematous children recovered	Minimum weight (kg)---------- Date of Minimum weight---------- -		
310	Bilateral pitting oedema (+++)	Yes 2. No		
311	Severe wasting (MUAC or WFH) with any grade of bilateral pitting oedema	Yes 2. No		
312	Therapeutic feeding refusal	1.Yes 2. No		
Part 4. **Proximal factors/ downstream or directly affecting health**				
401	Does your child use Ready-to-Use Therapeutic Food	Yes 2. No		
402	Do you have perceived benefited of Sam treatment	Yes 2. No		
403	Does baseline severity of malnutrition assessed	Yes 2. No		
405	If yes what is Status of SAM diagnosis at admission	1. Marasmus 2. Kwashiorkor 3. Marasmus- Kwashiorkor		
406	**type of malnutrition**	1. undernutrition 2. . over nutrition.		

407	**If under nutrition**	1.Wasting 2. stunting 3.Underweight 4.other ----------		
410	Severe wasting (MUAC <11.5 cm or WFH < -3 z score)	Yes 2. No		
411	Medical complications	1.Yes 2. No	If complicated	
412	Poor appetite	1.Pass 2. Failed		
413	intractable vomiting	Yes 2. No		
414	convulsions,	Yes 2. No		
415	Lethargy, not alert	Yes 2. No		
416	unconsciousness,	Yes 2. No		
417	High fever(axillary temperature >39 C),	Yes 2. No		
418	lower respiratory tract infection	Yes 2. No		
419	dehydration,	Yes 2. No		
420	persistent diarrhoea,	Yes 2. No		
421	severe anemia,	Yes 2. No		
422	hypoglycemia,	Yes 2. No		
423	hypothermia (axillary temp. < 35	Yes 2. No		
424	severe skin lesions,	Yes 2. No		
425	eye signs of vitamin A deficiency	Yes 2. No		
426	Ear	1.Discharge 2.Normal		
427	provided de-worming	1.Yes 2. No		
428	HIV status	1.Yes 2. No 3. Unknown		

429	TB	1.Yes 2. No		
420	Anemia	1.Yes 2. No		
421	Dermatosis	1.Yes 2. No		
422	Malaria	1. Yes 2. No		
423	CHF	1. Yes 2. No		
424	Other disease	List ---------- ---------- ---		

Part 5- Routine medications and complications of children 6–59 months admitted with SAM

SN			
501	Have given Routine medication	Yes 2. No	If yes go to next
502	Amoxicillin	Yes 2. No	
503	Vitamin A	Yes 2. No	
505	Ampicillin/Gentamycin	Yes 2. No	
506	Albendazole/ Mebendazole	Yes 2. No	
507	MEASLES VACCINE	Yes 2. No	
509	Deworming	Yes 2. No	
510	IV antibiotics	Yes 2. No	
511	folic acid during the treatment	1. given 2. not given	
512	Others	List out ----------	
513	Special medication	Yes 2. No	If yes
514	If yes what type of Special medication	1.Antibiotics 2. Zink 3. Vitamin-D 4. others ----------	
515	F75	1.Yes 2. No	
516	F100	Yes 2. No	
517	Failure to regain appetite within 4 day	Yes 2. No	

518	Failure to start to lose oedema within 4 day	Yes 2. No	
519	Oedema still present within 10 day	Yes 2. No	
520	How many Failure to gain g/kg bodyweight within 10 day		at least 5 g/kg after how many day
521	If yes feeding freely on F-100 gain the weight after feeding how many day	---------- day	
522	Fed Plumy nut	Yes 2. No	
523	Treatment outcome	1.Recovered 2. Died 3. Medical Transferee 4. Defaulted 5. Transferred out	
524	Date of Treatment outcome	------/--------/----------	DD/MM/YYYY

Part 6- Standard DHS questionnaires for wealth index

No	questionnaires	Yes= 1	No=0
1	Type of Flooring		
2	Type of Roofing		
3	Wall material		
4	Water Supply		
5	Sanitation Facilities		
6	Electricity		
7	Radio		
8	Television		

9	Refrigerator		
10	Watch		
11	Type of Vehicle		
12	Table		
13	Chair		
14	Sofa		
15	Bed		
16	Armoire		
17	Cabinet		
18	Persons per sleeping room		
19	Ownership of agricultural land and size		
20	Ownership of farm animals by type and number		
21	Domestic servant		
22	Telephone (fixed and mobile)		
23	Cooking fuel		
24	Bank account		
25	Windows	---- With shutters – With glass – With screens – With curtains	

Part 7- food insecurity-related conditions

No	Question Response	Options	CODE
1	In the past four weeks, did you worry that your household would not have enough food?	0 = No (skip to Q2) 1=Yes	
1.1	How often did this happen?	Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) ….|___| 3 = Often (more than ten times in the past four weeks	
2	in the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0 = No (skip to Q3) 1=Ye	
2.1	How often did this happen?	1= Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past fourweeks) 3 = Often (more than ten times in the past four weeks	
2.2	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks)	

		3 = Often (more than ten times in the past four weeks)	
3	in the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	0 = No (skip to Q6) 1 = Yes	
3.1	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks)	
4	in the past four weeks, did you or any other household member have to eat fewer meals in a day because there was not enough food?	0 = No (skip to Q7) 1 = Yes	
4.1	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks	
5	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0 = No (skip to Q8) 1 = Yes	

5.1	how often did this happen?	Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks	
6.	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0 = No (skip to Q9) 1 = Yes	
6.1	How often did this happen?	Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks	
7	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0 = No (questionnaire is finished) 1 = Yes	
7.1	How often did this happen?	1 = Rarely (once or twice in the past four weeks) 2 = Sometimes (three to ten times in the past four weeks) 3 = Often (more than ten times in the past four weeks	

Part 8: DIETARY DIVERSITY QUESTIONNAIRE

Please describe the foods (meals and snacks) that your child ate yesterday during the day and night, whether at home or outside the home. Start with the first food eaten in the morning,

Question number	Food group	Examples	YES=1 NO=0
1	CEREALS	bread, noodles, biscuits, cookies or any other foods made from millet, sorghum, maize, rice, wheat + *insert local foods e.g. ugali, nshima, porridge or pastes or other locally available grains*	
2	VITAMIN A RICH VEGETABLES AND TUBERS	pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside + *other locally available vitamin-A rich vegetables*	
3	WHITE TUBERS AND ROOTS	white potatoes, white yams, cassava, or foods made from roots.	
4	DARK GREEN LEAFY VEGETABLES	sweet pepper, dark green/leafy vegetables, including wild ones + *locally available vitamin-A rich leaves such as cassava leaves etc.*	
5	OTHER VEGETABLES	other vegetables, including wild vegetables	
6	VITAMIN A RICH FRUITS	ripe mangoes, papayas + *other locally available vitamin Arich fruits*	
7	OTHER FRUITS	other fruits, including wild fruits	
8	ORGAN MEAT (IRON-RICH)	liver, kidney, heart or other organ meats or blood-based foods	
9	FLESH MEATS	beef, pork, lamb, goat, rabbit, wild game, chicken, duck, or other birds	
10	EGGS		
11	FISH	fresh or dried fish or shellfish	

12	LEGUMES, NUTS AND SEEDS	beans, peas, lentils, nuts, seeds or foods made from these	
13	MILK AND MILK PRODUCTS	milk, cheese, yogurt or other milk products	
14	OILS AND FATS	oil, fats or butter added to food or used for cooking	
15	SWEETS	sugar, honey, sweetened soda or sugary foods such as chocolates, sweets or candies	
16	COFFEE/TEA	tea (black, green, herbal) or coffee	
			YES=1 NO=0
B.	Did you eat anything (meal or snack) outside of the home yesterday?		

ANNEX IV. Consent and Agreement Paper

Title of The Research Project: Time to Recovery from Severe Acute Malnutrition And Predictors Among Children 6-59 Months Managed At The Inpatient Therapeutic Program In Central Region, Ethiopia.

Name of Principal Investigator: **Temesgen Kelaye**

Name of the organization: **Pharma Health Science College**

Name of the sponsor: **principal investigator**

Introduction: -this information sheet is prepared for CER listed hospital. The aim of the form is to make the above concerned offices clear about the purpose of the research work, data collection procedure and get permission to undertake the research.

Purpose of the research project: -To assess Time to Recovery from Severe Acute Malnutrition and Predictors Among Children 6-59 Months Managed at The Inpatient Therapeutic Program Central Region, Ethiopia

Procedures: -In order to achieve the above objective, will be reviewed by using check list and follow up end to outcome.

Risk and discomfort: -By participating in this research project, there is no risk that comes to the admitted patients follow up and the client whose record will be review. Whereas the review is of great important to the research project which is in turn important for overall planning of program.

Benefit: -The research has no direct benefit to those who have participated in this project. But the indirect benefit of the research for the participant and all other clients in the program is great. As identifying area of improvement and taking appropriate decision helps to improve the service, increase access and overall effectiveness of the program and reduce incidence of mortality attributed to SAM patients.

Confidentiality: -To keep the confidentiality the name of client will not be mentioned rather code number will be used and no unauthorized access to the information is allowed

Right to Refusal or Withdraw: -in behalf of the clients the center has all the right to refuse to participate in this study and shall have stopping the process at any steps of the data collection process.

Person to contact: -This research project will be reviewed and approved by the institutional review department of public health, post graduate program, Pharma College.

If at any case you want to know more information about the research and its undertakings, you can contact the committee through the address of advisor and /or principal investigator.

Doctor Dejen Hailu (BSc, MPH, PhD and Associated professor) Department of public health, post graduate program, Hawassa University

Advisor, Tel: +251916829271e -mail: dejenkassa@yahoo.com

Principal investigator Mr. Temesgen Kelaye (BSc, MPH), department of public health, post graduate program, Pharma College. Tel: +251917199604 e-mail: temesgenkelaye@yahoo.com

Permission: Finally, we respectfully autonomies request you to give permission

Name: _____ signature: _____ Responsibility: _____

አባሪ የአማራኛ ቬርሽን

ማጽደቅ/መግለጫ ወረቃት

አባሪ አባሪ I

አባሪ I - የእንግሊዝኛ ሥሪት መጠይቅ

በማዕከላዊ ኢትዮጵያ ክልል በተላያዩ ሆስፒታሎች ተኝተዉ ህክምና አገልግሎት የሚያገኙ ከ6 እስከ 59 ወራት ያሉ ህፃነት ያልተመጣጠነ ምግብ እጥራት ጋር ተያይዞና በማገገም ላይ የሚሰባሰብ የመረጃ ማሰባሰብያ መጠይቅ

የሆስፒታሉ ስም ---------ዞን_____ ወረዳ_____ ቀበሌ----------ኮድ ቁጥር----------.

ቃለ መጠይቅ ከማድረግዎ በፊት የቃል ስምምነት ቅጽ

ሰላምታ፡ ሃይ ስሜ _____። በምርምር ቡድን ፋርማ ኮሌጅ እና በማዕከላዊ ኢትዮጵያ ክልል ጤና ቢሮ ተመሪ የሆኑት አቶ ተመስገን ከለዬ ጋር በመሆን እየሰራሁ ነው።

ቃለ መጠይቅ ላደርግልህ እና የማገገሚያ ጊዜውን በመከታተል እና በማዕከላዊ ኢትዮጵያ ክልል ውስጥ በታካሚ ህክምና መርሃ ግብር ውስጥ የሚተዳደሩ ከ6 እስከ 59 የሚደርሱ ህጻናት ላይ ለከባድ አጣዳፊ የምግብ እጦት ትንበያዎች ክትትል ማድረግ እፈልጋለሁ። የዚህ ጥናት ዓላማ ለማገገም ጊዜን መገምገም እና ያልተወሳሰበ ከባድ የተመጣጠነ ምግብ እጥረት በማዕከላዊ ኢትዮጵያ ክልል ውስጥ በታካሚ ህሙማን ቴራፒዩቲካል መርሃ ግብር የሚተዳደሩ ከ6 እስከ 59 ህጻናት ላይ ነው።

የተመጣጠነ ምግብ እጥረት ሁኔታን ለማሻሻል አስፈላጊ ነው. የእርስዎ ትብብር እና ለቃለ መጠይቁ ፈቃደኛነት ከርዕሰ-ጉዳዩ ጋር የተያያዙ ችግሮችን ለመለየት ይረዳል. ስምህ በዚህ ቅጽ አይጻፍም። የሰጡት ሁሉም መረጃዎች በጥብቅ ሚስጥራዊ በሆነ ሁኔታ የሚያዝ ይሆናል፡ ፡ የእርስዎ ተሳትፎ በፈቃደኝነት ነው እና እርስዎ ለመመለስ የማይፈልጉትን ማንኛውንም ጥያቄ ለመመለስ አይገደዱም. በቃለ መጠይቁ አሁንም ካልተመቸዎት፣ እባክዎን በፈለጉት ጊዜ ለመልቀቅ ነፃነት ይሰማዎ። ለመቀጠል ፍቃደኛ ኖት?

. አዎ ከሆነ፣ ወደሚቀጥለው ገጽ ይቀጥሉ 2. አይደለም ከሆነ ምክንያቱን ይጠይቁ እና ወደሚቀጥለው ምላሽ ሰጪ ይሂዱ። ---------- የቃለ መጠይቁ ቀን _____ ሰዓቱ የጀመረው_____ ሰዓቱ አልቋል_____ የተቆጣጣሪዎች ስም _____ ፊርማ _____

ክፍል አንድ- ሶሺዮ-ስነ-ሕዝብ መጠየቅ

ተ.ቁ	መጠየቅ	ምላሽ	ኮድ	ዝለል
101	ዞን	----------		
102	ተካሚ የገባበት ቀን	----------		
103	የሆስፒታል ዓይነት	1 የመጀመሪያ ደረጃ 2. አጠቃላይ 3. CSH		
104	እድሜ	----------		
105	ምላሽ ሰጪ የመኖሪያ አከባቢ	1ከተማ 2.ገጠር		
106	ፆታ	1. ወንድ 2. ሴት		
107	የምላሽ ሰጪዎች ብሔር	1.ሀዲያ 2. ጉራጌ 3. ከምባታ 4. ሀላባ .5.ስልጤ 6.ያም 7.ተምባሮ 8.ማረቆ 9.ቃቤና ሌሎችም---------		
108	ሃይማኖትህ ?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌሎች (ይግለጹ)_____		
109	የጋብቻ ሁኔታዎ	1. ነጠላ 2. ያገባ 3. የተፋታ 4. ተለያይቷል 5. መበለት		
110	የቤተሰብ አባላት ቁጥር	----------		
111	የትምህርት ደረጃ	1.ማንበብ እና መጻፍ አለመቻል 2. ማንበብ እና መጻፍ የሚችል 3.		

		የመጀመሪያ ደረጃ ትምህርት 4. የሁለተኛ ደረጃ ትምህርት 5. ኮሌጅ እና ከዚያ በላይ		
112	ሥራ	የቤት እማቤት 2. ገበሬ 3. ነጋዴ 4. ስራዎች / ስራዎች 5. ሌላ (ይግለ		
113	ለq112 የመረጡት 4 ከሆነ	የወር ገቢ መጠን----------		
114	የልጅ መወለድ የነበረ ዐመት ልዩነት	----------		
115	ተንከባካቢ	1.እናት 2. አባት 3. እህት/ወንድሞች 4. ሌሎች ---		
116	እናት/አባት መጠጥ ይጠጣሉ	1 አዎ 2. አይደለም		
117	አዎ ከሆነ q-117	.አልኮል 2.ቻት ማኘክ 3. ሲጋራ ማጨስ		
118	በመጀመሪያ ጋብቻ ዕድሜ	----------		

2. ከጤና አጠባበቅ ጋር የተያያዙ ምክንያቶች

ተ.ቁ	መጠየቅ	ምላሽ	ኮድ	ዝለል
201	የት ነበረሽ የወላደሽሁ	1. ቤት 2.የጤና ተቋም		
202	ከረገዘሽ በኃላ በጤና ተቋማት ክትትል አደውወገሻል ወይ(ANC follow-up}	1.አዎ 2. አይ		
203	203 አዎን ከሆኔ ስንት ጊዜ	----------		
204	ከወለደሽ ቧኃ PNC አገኝተሸል	1.አዎ 2. አይ		
205	ጡት ብቻ ምን ያህል ወር አጠበሽዉ	----------		
207	ጡት ምን ያህል ጊዜ አጠብተሸል	----------		
208	ቤተሰብ ምጣኔ ዘዴዎችን የመጠቀም ታሪክ አለት	1.አዎ 2. አይ		
209	የጤና ኤክስቴንሽን/የጤና ባለሙያ ወደ ቤትዎ እየጎበኘ ነው	1.አዎ 2. አይ		
210	የምግብ የጤና አጠባበቅ ትምህርት አግኝተዋል?	1.አዎ 2. አይ		

211	**እድገት ክትትል ይደረገል**	1.**አዎ** 2. **አይ**		
212	**የክትባት ሁኔታ**	**ሙሉ ክትባት** 2. **ሙሉ ያልተከተቡ** 3. **ያልተከተቡ**		
2013	**የኦቲፒ አገልግሎት አግኝተዋል**	1.**አዎ** 2. **አይ**		
2014	**ማን ነዉ ወደዚህ ተቋም እንዲትመጠ የደረገ**	1 **ራስን - የተጠቀሰው** 2. **ሄዝ ማራዘሚያ** 3. **የጤና ሰራተኞች**		

ተ.ቁ	መጠየቅ	ምላሽ	ኮድ	ዝለል
301	ዖታ	1. ወንድ 2 ሴት		
302	የልጁ/ጇ ዕድሜ በወር	----------ወር		
303	የመግቢያ ሁኔታ	----------		
304	ከስንት ወር ጀምሮ ነዉ ምግብ መስጠት የጀመረሽሁ	----------		
305	አንትሮፖሜትሪ መለኪያ ጥያቅዎች			
207	በመግቢያው ላይ አንትሮፖሜትሪ መለኪያዎች መጠን	ክብደት ---------- MUAC---------- ቁመት ---------- ክብደት እስከ ቁመት ---------- -- ኤድማ (+++,) ---------- MUAC(CM)----------		
208	በክትትል ወቅት አንትሮፖሜትሪ	ክብደት ---------- MUAC---------- ቁመት ---------- ክብደት እስከ ቁመት ---------- -- ኤድማ (+++,) ---------- MUAC(CM)----------		
209	አገልግሎት ጨርሶ/አቋርጦ በሚወጣበት ጊዜ አንትሮፖሜትሪ	ክብደት ---------- MUAC---------- ቁመት ---------- ክብደት እስከ ቁመት ---------- -- ኤድማ (+++,) ---------- MUAC(CM)----------		
210	እብጠት ላልሆኑ ህፃናት ዝቅተኛ ክብደት ተመልሷል	ዝቅተኛ ክብደት (ኪግ) ------- ----------		

		ዝቅተኛ ክብደት ቀን ---		
211	**እብጠት እብጠት** (+++)	1.**አዎ** 2. **አይ**		
212		**ሙሉ ክትባት** 2. **ሙሉ ያልተከተቡ** 3. **ያልተከተቡ**		
2013	**ከባድ መቀንጨር (ሕፃኑ በጣም ቀጭን ነው እና ዝቅተኛ ክብደት-ለ-ቁመት አለው)** (MUAC **ወይም** WFH) **ከየትኛውም የሁለትዮሽ ፒት እብጠት ጋር**	1.**አዎ** 2. **አይ**		
2014	**ቴራፒዩቲክ አመጋገብ አለመቀበል**	1.**አዎ** 2. **አይ**		

ክፍል 4. **የአቅራቢያ ምክንያቶች/ የታችኛው ወይም በቀጥታ ጤናን የሚነኩ**

ተ.ቁ	**መጠየቅ**	**ምላሽ**	**ኮድ**	**ዝለል**
401	**ልጅዎ ለአጠቃቀም ዝግጁ የሆነ ቴራፒዩቲክ ምግብ ይጠቀማል**?	1.**አዎ** 2. **አይደለም**		
402	**ሳም ህክምና አገልግሎት አገኝተዋል**	.**አዎ** 2. **አይደለም**		
403	**የተመጣጠነ ምግብ እጥረት ሁኔታ ታላይተዋል**	.**አዎ** 2. **አይደለም**		
404	**ጥያቄ** 203 **አዎ ከሆነ በመግቢያው ላይ የ**SAM **ምርመራ ሁኔታ ምንድ ነው**?	**ማራስመስ** 2. **ክዋሺርኮር** 3. **ማራስመስ-ክዋሺርኮር**		
405	**የተመጣጠነ ምግብ እጥረት አይነት**	1. **ምግብ እጥረት** 1. **አመጋገብ በላይ**		
406	**ምግብ እጥረት ከሆነ**	1.**መቀንጫር** 2.**ስታንቲንግ** 3.**ከክብደት በታች** . 4.**ሌላ**-------		
407	**ከፍተኛ መቀንጫር(ማክ** 11.5< **ሆኖዋል**	1.**አዎ** 2. **አይደለም**		
408	**የክምና ዉስብስብነት/ የሕክምና ችግሮች**	**አለ የሌም**		**የሌም ከሌ**
409	**ደከማ የምግብ ፍላጎት**	.**አዎ** 2. **አይደለም**		
410	**የማይበገር ትውከት**	.**አዎ** 2. **አይደለም**		
	መንቀጥቀጥ፣	.**አዎ** 2. **አይደለም**		

	ግዴለሽነት, ንቁ አይደለም	**.አዎ 2. አይደለም**		
	ንቃተ ህሊና ማጣት፣	**.አዎ 2. አይደለም**		
	ከፍተኛ ትኩሳት (አክሲላሪ ሙቀት> 39 ¬C),	**.አዎ 2. አይደለም**		
	የታችኛው የመተንፈሻ አካላት ኢንፌክሽን	**.አዎ 2. አይደለም**		
	ድርቀት፣	**.አዎ 2. አይደለም**		
	የማያቋርጥ ተቅማጥ ፣	**.አዎ 2. አይደለም**		
	ከባድ የደም ማነስ,	**.አዎ 2. አይደለም**		
	ሀይፖግለሴማ	**.አዎ 2. አይደለም**		
	ሃይፖሰርሚያ (**አክሲላሪ ሙቀት**. <35	**.አዎ 2. አይደለም**		
	ከባድ የቆዳ ቁስሎች	**.አዎ 2. አይደለም**		
	የቫይታሚን ኤ እጥረት ምልክቶች	**.አዎ 2. አይደለም**		
	ጆሮ	***መ***ፍሰስ 2.***መ***ደበኛ		
	ድወርም ቀረበል	**.አዎ 2. አይደለም**		
	የኤችአይቪ ሁኔታ	1.**አዎ** 2. **አይ** 3. ***ያ***ልታወቀ		
	ቲቢ	**.አዎ 2. አይደለም**		
	የደም ማነስ	**.አዎ 2. አይደለም**		
	የቆዳ በሽታ	**.አዎ 2. አይደለም**		
	ወባ	**.አዎ 2. አይደለም**		
	ሰቸፈ/CHF	**.አዎ 2. አይደለም**		
	ሌላ በሽታ	----------		

ክፍል 5- ***መ***ደበኛ መድሃኒቶች እና ከ6-59 **ወራት**

ተ.ቁ	**መጠየቅ**	**ምላሽ**	**ኮድ**	**ዝለል**
501	**መደበኛ መድሃኒት ተሰጥተዋል**	1.**አዎ** 2. **አይደለም**		
502	**አሞዘስልን**	**.አዎ 2. አይደለም**		
503	**ቫይታሚን ኤ**	**.አዎ 2. አይደለም**		
504	**አምፒሲሊን/ጄንታሚሲን**	**.አዎ 2. አይደለም**		
505	**አልቤንዳዞል / ሜበንዳዞል**	**.አዎ 2. አይደለም**		

506	**የኩፍኝ ክትባት**	**.አዎ 2. አይደለም**		
507	**አንጀት ትላትል**	1.**አዎ 2. አይደለም**		
508	IV **አንቲባዮቲኮች**	**አለ የሌም**		**የሌም ከሌ**
509	**በሕክምናው ወቅት ፎሊክ አሲድ**	**.አዎ 2. አይደለም**		
510	**ሌሎች**	----------		
511	**ልዩ መድሃኒት**	**.አዎ 2. አይደለም**		
512	**አዎ ከሆነ ምን አይነት ልዩ መድሃኒት**	**አንቲባዮቲክስ** 2. ዚንክ 3. ቫይታሚን-ዲ 4. **ሌሎች** -------		
513	F75	**.አዎ 2. አይደለም**		
514	F100	**.አዎ 2. አይደለም**		
515	**በ** 4 **ቀናት ውስጥ የምግብ ፍላጎት መመለስ ችሎዋል**	**.አዎ 2. አይደለም**		
516	**በ** 4 **ቀናት ውስጥ እብጠትን ማጣት መጀመር አለመቻል**	**.አዎ 2. አይደለም**		
517	**ኤድማ አሁንም በ**10 **ቀናት ውስጥ ይታያል**	**.አዎ 2. አይደለም**		
518	**በ**10 **ቀን ውስጥ** g/kg **የሰውነት ክብደት ጨምሮዋል**	----------		
519	**አዎ ከሆነ በ**F-100 **ላይ በነፃነት መመገብ ስንት ቀን ከተመገባችሁ በኋላ ክብደት ይጨምሩ**	----------		
520	**ፕሉሚ ነት**	**.አዎ 2. አይደለም**		
521	**የሕክምና ውጤት**	**ድኗል** 2. **ሞተ** 3. **የህክምና አስተላላፊ** 4 **አቋርጧዋል** 5. **አቲፕ ተላልፏል**		
522	**የሕክምናው ውጤት ቀን**	**ቀን/ወር/ዓመት**		

ክፍል 6- **ለሀብት መረጃ ጠቋሚ የ**DHS **መደበኛ መጠይቆች**

ተ.ቁ	**መጠየቅ**	**ምላሽ**	**ኮድ**	**ዝለል**
601	**የቤቱ የወለል ንጣፍ ዓይነት ያለዉ ነዉ**	1.**አዎ 2. አይደለም**		
602	**የቤት የጣሪያ ዓይነት አለዉ**	**.አዎ 2. አይደለም**		
603	**የግድግዳ ቁሳቁስ በእንጫት ነዉ**	**.አዎ 2. አይደለም**		
604	**የውሃ አቅርቦት**	**.አዎ 2. አይደለም**		

605	የንፅህና አጠባበቅ ተቋማት	.አዎ 2. አይደለም		
606	ኤሌክትሪክ	.አዎ 2. አይደለም		
607	ሬዲዮ	1.አዎ 2. አይደለም		
608	ቴሌቪዥን	አለ የሌም		የሌም ከሌ
609	ማቀዝቀዣ	.አዎ 2. አይደለም		
610	የግድግዳ ሰዓት	1.አዎ 2. አይደለም		
611	የተሽከርካሪ አይነት	1.አዎ 2. አይደለም		
612	ጠረጴዛ	1.አዎ 2. አይደለም		
613	ወንበር	1.አዎ 2. አይደለም		
614	ሶፋ	1.አዎ 2. አይደለም		
615	አልጋ	1.አዎ 2. አይደለም		
616	አርሞር	1.አዎ 2. አይደለም		
617	ካቢኔ	1.አዎ 2. አይደለም		
618	ሰዎች በእያንዳንዱ መኝታ ክፍል	1.አዎ 2. አይደለም		
619	የግብርና መሬት እና መጠን ባለቤትነት	1.አዎ 2. አይደለም		
620	የእርሻ እንስሳት በአይነት እና በቁጥር ባለቤትነት	1.አዎ 2. አይደለም		
621	የቤት ውስጥ ሠረተኛ	1.አዎ 2. አይደለም		
622	ስልክ (ቋሚ እና ሞባይል)	1.አዎ 2. አይደለም		
623	ነዳጅ ማብሰል	1.አዎ 2. አይደለም		
624	የባንክ ሂሳብ	1.አዎ 2. አይደለም		
625	ዊንዶውስ	1ከመዝጊያዎች ጋር - 2.ከመስታወት ጋር - ከስክሪኖች ጋር - ከመጋረጃዎች ጋር		

ክፍል 7- **ከምግብ እጦት ጋር የተያያዙ ሁኔታዎች**

ተ.ቁ	መጠየቅ	ምላሽ	ኮድ	ዝለል
701	ባለፉት አራት ሳምንታት ውስጥ የእርስዎ ቤተሰብ በቂ ምግብ የለም ብለሽ ተጨንቀሽ ነበር?	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
702	ጥያቄ 701 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ)		

		2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		
703	ባለፉት አራት ሳምንታት ውስጥ ነበሩ እርስዎ ወይም ማንኛውም የቤተሰብ አባል ዓይነቶችን መብላት አይችሉም በምክንያት የመረጥካቸው ምግቦች የሀብት እጥረት	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
704	ጥያቄ 703 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ) 2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		
705	ባለፉት አራት ሳምንታት ውስጥ, እርስዎ ወይም ማንኛውም የቤተሰብ አባል ያለው ከእርስዎ ትንሽ ምግብ ለመብላት እንደፈለግክ ተሰማኝ ምክንያቱም እዚያ አለ በቂ ምግብ አልነበረም	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
706	ጥያቄ 704 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ) 2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		
707	ባለፉት አራት ሳምንታት ውስጥ, እርስዎ ወይም ሌላ ማንኛውም ቤተሰብ አባላት ትንሽ መብላት አለባቸው በቀን ውስጥ ምግቦች ምክንያቱም እዚያ በቂ ምግብ አልነበረም?	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
708	ጥያቄ 707 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ) 2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		
709	ባለፉት አራት ሳምንታት ውስጥ, ነበር አንድም የሚበላ ምግብ በጭራሽ የለም። በቤትዎ ውስጥ ደግነት ምክንያቱም ለማግኘት የሃብት እጥረት ምግብ?	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
710	ጥያቄ 709 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ) 2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		

711	ባለፉት አራት ሳምንታት ውስጥ, እርስዎ ወይም ማንኛውም የቤተሰብ አባል ይሄዳል በረሃብ ለመተኛት ምክንያቱም በቂ አልነበረም ምግብ?	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
712	ጥያቄ 711 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ) 2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		
713	ባለፉት አራት ሳምንታት ውስጥ, እርስዎ ወይም ማንኛውም የቤተሰብ አባል ወደ ሀ ሙሉ ቀን እና ሌሊት ያለ እዚያ ስለሆነ ማንኛውንም ነገር መብላት በቂ ምግብ አልነበረም?	0 = አይ (ወደ Q2 ዝለል) 1=አዎ		
	ጥያቄ 713 አዎን ይህ ምን ያህል ጊዜ ተከሰተ?	1.አልፎ አልፎ (ባለፉት አራት ሳምንታት ውስጥ አንድ ወይም ሁለት ጊዜ) 2 = አንዳንድ ጊዜ (ባለፉት አራት ጊዜያት ከሶስት እስከ አስር ጊዜ ሳምንታት) 3 = ብዙ ጊዜ (ባለፉት አራት ሳምንታት ውስጥ ከአስር ጊዜ በላይ		

ክፍል 8፡ አመጋገብ ብዝሃነት ጥያቄ

ተ.ቁ	የምግብ ቡድን	ለምሳሌ	አዎ=1 አይ=0
1	ጥራጥሬዎች	ዳቦ፣ ኑድል፣ ብስኩቶች፣ ኩኪዎች ወይም ሌሎች ከማንኛውም ማሽላ፣ ማሽላ፣ በቆሎ፣ ሩዝ፣ ስንዴ የተሰሩ ምግቦች + የሀገር ውስጥ ምግቦችን ያስገቡ ለምሳሌ ኡጋሊ፣ ኒሺማ፣ ገንፎ ወይም ፓስታ ወይም ሌሎች በአካባቢው የሚገኙ እህሎች	አዎ=1 አይ=0
2	ቫይታሚን ኤ ሀብታም አትክልቶች እና ቲዩበርስ	ዱባ፣ ካሮት፣ ስኳሽ ወይም ስኳር ድንች በውስጣቸው ቢጫ ወይም ብርቱካንማ + ሌሎች በአካባቢው የሚገኙ ቪታሚን-ኤ የበለጸጉ አትክልቶች	አዎ=1 አይ=0
3	ነጭ ቱቦዎች እና ሥሮች	ነጭ ድንች፣ ነጭ ያምስ፣ ካሳቫ፣ ወይም ከሥሩ የተሠሩ ምግቦች።	አዎ=1 አይ=0

4	ጥቁር አረንጓዴ ቅጠል አትክልቶች	ጣፋጭ በርበሬ ፣ ጥቁር አረንጓዴ/ቅጠላማ አትክልቶች ፣ የዱር እንስሳትን ጨምሮ + በአካባቢው የሚገኙ ቪታሚን-ኤ የበለፀጉ ቅጠሎች እንደ የካሳቫ ቅጠል ፣ ወዘተ	አዎ=1 አይ=0
5	ሌላ አትክልቶች	የዱር አትክልቶችን ጨምሮ ሌሎች አትክልቶች	አዎ=1 አይ=0
6	ይታሚን የበለጸጉ ፍራፍሬዎች	የበሰለ ማንጎ፣ ፓፓያ + ሌሎች በአካባቢው የሚገኙ ቪታሚን አሪች ፍራፍሬዎች	አዎ=1 አይ=0
7	ሌሎች ፍራፍሬዎች	የዱር ፍሬዎችን ጨምሮ ሌሎች ፍራፍሬዎች	አዎ=1 አይ=0
8	ኦርጋን ስጋ (ብረት-ሀብታም	ጉበት፣ ኩላሊት፣ ልብ ወይም ሌሎች የአካል ክፍሎች ስጋ ወይም ደም ላይ የተመሰረቱ ምግቦች	አዎ=1 አይ=0
9	የስጋ ስጋዎች	የበሬ ሥጋ፣ የአሳማ ሥጋ፣ በግ፣ ፍየል፣ ጥንቸል፣ የዱር ጨዋታ፣ ዶሮ፣ ዳክዬ ወይም ሌሎች ወፎችዘ	አዎ=1 አይ=0
10	እንቁላል		አዎ=1 አይ=0
11	ዓሳ		አዎ=1 አይ=0
12	ጥራጥሬዎች፣ ለውዝ እና ዘሮች	ባቄላ፣ አተር፣ ምስር፣ ለውዝ፣ ዘር ወይም ከእነዚህ የተዘጋጁ ምግቦች	አዎ=1 አይ=0
13	ወተት እና ወተት ምርቶች	ወተት, አይብ, እርጎ ወይም ሌላ የወተት ተዋጽኦዎች	አዎ=1 አይ=0
14	ዘይቶች እና ቅባቶች	ዘይት, ስብ ወይም ቅቤ ወደ ምግብ የተጨመረ ወይም ለማብሰያ ይጠቅማል	አዎ=1 አይ=0
15	ጣፋጮች	ስኳር, ማር, ጣፋጭ ሶዳ ወይም እንደ ቸኮሌት, ጣፋጮች ወይም ከረሜላ የመሳሰሉ ጣፋጭ ምግቦች	አዎ=1 አይ=0
16	ቡና/ሻይ	ሻይ (ጥቁር, አረንጓዴ, ዕፅዋት) ወይም ቡና	አዎ=1 አይ=0

17	ትናንት ከቤት ውጭ የሆነ ነገር (ምግብ ወይም መክሰስ) በልተሃል?		አዎ=1 አይ=0

አባሪ IV.

የስምምነት እና የስምምነት ወረቀት የምርምር ፕሮጀክቱ ርዕስ፡ ከከባድ የተመጣጠነ ምግብ እጥረት ለማገገም ጊዜ እና በልጆች መካከል ከ6-59 ወራት የሚተዳደረው የታካሚ ቴራፒዩቲክ ፕሮግራም በማዕከላዊ ክልል፣ ኢትዮጵያ። የዋና ተመርማሪው ስም፡- ተመስገን ከላዬ

የድርጅቱ ስም፡ ፋርማ ጤና ሳይንስ ኮሌጅ የስፖንሰሩ ስም፡ ዋና ተመርማሪ

መግቢያ፡- ይህ የመረጃ ወረቀት የተዘጋጀው ለ CER ለተዘረዘረው ሆስፒታል ነው። የቅጹ ዓላማ ከላይ የተጠቀሱትን ጽ/ቤቶች የምርምር ሥራውን ዓላማ፣ የመረጃ አሰባሰብ ሒደቱን ግልጽ ማድረግ እና ጥናቱን ለማካሄድ ፈቃድ ማግኘት ነው። የምርምር ፕሮጀክቱ ዓላማ፡- ከ6-59 ወራት የሚደርሱ ሕፃናትን ከ6-59 ወራት የሚተዳደረው ከአስከፊ የተመጣጠነ ምግብ እጥረት ለማገገም ጊዜን ለመገምገም በማዕከላዊ ክልል፣ ኢትዮጵያ የሕሙማን ቴራፒዩቲክ ፕሮግራም የአሠራር ሂደቶች፡ - ከላይ የተጠቀሰውን ዓላማ ለማሳካት በቼክ ዝርዝር እና እስከ መጨረሻው ድረስ በመከታተል ይገመገማል። ስጋት እና ምቾት: - በዚህ የምርምር ፕሮጀክት ውስጥ በመሳተፍ, የተቀበሉት ታካሚዎች ክትትል እና መዝገብ የሚገመገመው ደንበኛ ላይ ምንም አይነት አደጋ አይኖርም. ግምገማው ለምርምር ፕሮጀክቱ ትልቅ ጠቀሜታ ያለው ሲሆን ይህም በተራው ደግሞ ለአጠቃላይ የፕሮግራም እቅድ አስፈላጊ ነው። ጥቅማ ጥቅሞች፡ - ጥናቱ በዚህ ፕሮጀክት ለተሳተፉት ቀጥተኛ ጥቅም የለውም። ነገር ግን ለተሳታፊው እና በፕሮግራሙ ውስጥ ላሉት ሌሎች ደንበኞች ሁሉ የጥናቱ ቀጥተኛ ያልሆነ ጥቅም ትልቅ ነው። የማሻሻያ ቦታን በመለየት ተገቢውን ውሳኔ መውሰድ አገልግሎቱን ለማሻሻል፣ የፕሮግራሙን ተደራሽነት እና አጠቃላይ ውጤታማነት ለመጨመር እና ለሳም ታማሚዎች የሞት አደጋን ለመቀነስ ይረዳል። ምስጢራዊነት፡ - ምስጢራዊነቱን ለመጠበቅ የደንበኛ ስም አይጠቀስም ይልቁንም ኮድ ቁጥር ጥቅም ላይ ይውላል እና ያልተፈቀደ መረጃ ማግኘት አይፈቀድም እምቢ የማለት ወይም የመውጣት መብት፡ - ደንበኞቹን በመወከል ማዕከሉ በዚህ ጥናት ላይ ላለመሳተፍ ሙሉ መብት አለው እና በማንኛውም የመረጃ አሰባሰብ ሂደት ሂደቱን ማቆም

አለበት። የሚያነጋግረው ሰው፡- ይህ የምርምር ፕሮጀክት በተቋማዊ ግምገማ የህዝብ ጤና፣ የድህረ ምረቃ ፕሮግራም፣ ፋርማ ኮሌጅ ታይቶ ይፀድቃል።

በማንኛዉም ሁኔታ ስለምርምሩ እና ስለተግባሮቹ የበለጠ መረጃ ማወቅ ከፈለጉ ኮሚቴውን በአማካሪ እና/ወይም በዋና መርማሪ አድራሻ ማግኘት ይችላሉ።

ዶክተር ደጀን ኃይሉ (ቢኤስሲ፣ MPH፣ ፒኤችዲ እና አሶሺየትድ ፕሮፌሰር) የሀዋሳ ዩኒቨርሲቲ የህዝብ ጤና ትምህርት ክፍል፣ የድህረ ምረቃ ፕሮግራም አማካሪ፣ ስልክ፡ +251916829271e -mail፡ dejenkassa@yahoo.com

ዋና ተመርማሪ አቶ ተመስገን ከላዬ (ቢኤስሲ፣ኤምፒኤች)፣ የህዝብ ጤና ክፍል፣ የድህረ ምረቃ ፕሮግራም፣ ፋርማ ኮሌጅ። ስልክ፡ +251917199604 **ኢሜል፡** temesgenkelaye@yahoo.com **ፍቃድ፡ በመጨረሻም፣**

ፍቃድ እንድትሰጡን በአክብሮት እንጠይቃለን። ስም፡ _____ **ፊርማ፡** _____ **ኃላፊነት፡** _____