Magnitude of stunting and associated feeding practices among underfives in Kasulu District

Joseph Siminzile, BA

Master of Public Health Dissertation
Muhimbili University of Health and Allied Sciences
October, 2019

Muhimbili University of Health and Allied Sciences

School of Public Health and Social Sciences

MAGNITUDE OF STUNTING AND ASSOCIATED FEEDING PRACTICES AMONG UNDERFIVES IN KASULU DISTRICT

By

Joseph Siminzile

A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Public Health of

Muhimbili University of Health and Allied Sciences
October, 2019

CERTIFICATION

The undersigned certifies that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences dissertation entitled: **''Magnitude Of Stunting and associated Feeding Practices among Underfives in Kasulu District, Kigoma Tanzania",** in (partial) fulfillment of the requirement for the degree of master of Public Health of Muhimbili University of Health and Allied Sciences.

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Mlimbila, Jane, PhD

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Siminzile, Joseph**, declare that this **dissertation** is my own original work, and that it has not been presented to any other university for similar or any other degree award.

Signature…… **Date**…….

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ACKNOWLEDGEMENT

First, I would like to cordially express my sincere gratitude's to Almighty God for the love and his abundance blessings of good health and for providing me strength up to the point and for Journey mercies that enabled all people who participated in this work to that far.

Secondly, I would express my thanks to Muhimbili University of Health and Allied Sciences (MUHAS) for granting me admission into this program and being able to sharpen my spear of knowledge.

Thirdly, I would like to Sincerely share my innermost feeling of thanks to Center for Disease Control (CDC) for their helping Hand to finance My studies in Muhimbili University of Health and Allied Sciences, In the nature of scare resources, but they were able to set aside some funds to make sure my studies became of smooth.

Fourthly, I would like to express my sincere thanks to those who contributed a lot for the completion of this work. Specifically, my heartfelt and deepest gratitude's and thanks to my supervisor Mlimbila, Jane (PhD), for his tireless and continued technical and material support from proposal development stage to the completion of this work, without her support, this work would have not been successfully achieved. Also, I'm thankfully for her tireless effort in giving me guidance and constructive comments throughout the preparation and writing of this work. His willingness, wise guidance, logically and constructive comments improved the quality and brought this work into reality.

Fifthly, I would also like to thank all other staff including administrators from School of Public Health and Social Sciences and Directorate of Post Graduate Studies for their kind support and cooperation showed to me from day one to the final stage of this work.

Lastly, but not least, I would like to thank all my Work Supervisors from World Vision Tanzania whom they gave me opportunity to Continue study while working, also IMA World Health for time to prepare myself as well as attending exams, workmate as well as my research assistants and respondents for their kind support that enabled me to successfully compile and prepare this report for my study.

DEDICATION

To my parents, Mama Joseph and Dr. Salli Giyunga and my beautiful and lovely wife Mrs. Flora, and my lovely daughter Joan and sons Jansen and Jayden, who have always felt proud of me, and supported me through-out difficulties and happiness times. May the Almighty God continue bless you always.

ABSTRACT

Background: The existing of stunted children in the community continued to affect primarily children on their current age and **later** on their stages of growth, In developing countries where Tanzania is among them, **S**tunting continues to affect great number of children, where by Poor Feeding practices to children remains to be basic determinant for stunting, Global indicators to measure Stunting gave us the picture of the status in Kigoma, TDHS 2015 rate the region to have 58.7% of children that are Exclusively Breastfed, 25% Children who eat the Minimum Dietary Diversity, while 35.1% of children ate the required quantity of food and in the recommended frequency. All these factors as they have been recoded low, they contribute largely to the status of stunting to be "Severe" of 37.8%.

Methods: Both Qualitative and Quantitative Methods were employed in Study to get the real reason for stunting in Kasulu District Council, In Quantitative Method, the study involved 380 caregivers in households with underfives in Kasulu district, whereby cluster sampling method were used to determine household to be interviewed. Data were analyzed using the Statistical Package for Social Science (SPSS) and ENA for SMART (anthropometric Data). Qualitative analysis took part using the thematic analysis, whereby responses were grouped according to thematic areas. Themes were prepared according to study objectives.

Results: Results from this study revealed that Caregiver who Exclusively breast feed were 43.6%, Minimum Dietary Diversity were 25.3%, Minimum Meal frequency were 36.8%, Caregivers or mothers who perform Complimentary feeding were 59.6%, all these contributes to the prevalence of Stunting in the community to 54.5%. This implies that stunting is of great Magnitude in the Kasulu District Community.

On the Cultural practices results showed that Children and mothers both use local herbs through improper way "on anus" on their convenient time will jeopardize their health and can cause infection. Cultural practices that prohibit mothers and children from consuming foods such as eggs when they are pregnant persist this continue deteriorate health of both mother and child.

Conclusion: From the study the prevalence rate of stunting is higher than the national average, Cultural practices on feeding children and pregnant and lactating mother has a significant contribution in stunting. Proper feeding to children, pregnant and lactating mother will reduce cases of stunting that existing in the community, insisting the use of window of opportunity (1000 days) to a child will significantly reduce stunting cases.

TABLE OF CONTENTS

CERTIFICATION i
DECLARATION AND COPYRIGHT ii
ACKNOWLEDGEMENT iii
DEDICATION iv
ABSTRACT v
TABLE OF CONTENTS vii
LIST OF FIGURES xi
LIST OF TABLES xi
LIST OF ACRONYMS xii
DEFINITIONS OF TERMS xiii
CHAPTER ONE 1
1.0 INTRODUCTION 1
1.1 Problem Statement 4
1.2 Study Rationale 5
1.3 Objectives 6
1.3.1 Main Objective 6
1.3.2. Specific Objectives of the study 6
1.4 Research Questions 6
1.5 Conceptual framework. 6
CHAPTER TWO 8
2.0 LITERATURE REVIEW 8
2.1 Magnitude of the problem 8
2.2 Factors associated with stunting 9
2.3 Feeding Practices to Underfive 10
2.4 Culture on Maternal and Child care practices 11
CHAPTER THREE 13
3.0 METHODOLOGY 13
3.2 Study Design 13

3.3 Area of Study 13
3.4 Study Population 14
3.5 Information Source 14
3.6 Sample Size 14
3.6.1 Quantitative Method 14
3.6.2 Qualitative Method 16
3.7 Sampling and Population distribution of the study 16
3.8 Procedure for Data Collection 18
3.9 Inclusion and Exclusion criteria 19
3.9.1 Inclusion criteria 19
3.9.2 Exclusion criteria 19
3.10 Data Collection Tool (s) 19
3.11 Quality Assurance 20
3.12 Data Processing and Analysis 20
3.12.1 Quantitative Analysis 20
3.12.2 Qualitative Analysis 21
3.13 Ethical Consideration 22
CHAPTER FOUR 23
4.0 RESULTS 23
4.1 Demographic Characteristics of the Respondents In Households reached 23
4.2 Focus Group Demographic Information 26
4.3 Magnitude of Stunting in Kasulu Dc 27
4.4 Feeding Practices that contributes to stunting. 28
4.4.1 Food availability throughout the year. 28
4.4.2 Timing for Child feeding Behaviors. 29
4.4.3 Dietary Diversity 30
4.5. Prevalence of Stunting on the basic household information of respondents. 32
4.5 The bivariate Logistic Regression 34
4.5.1 Bivariate results Logistic Regression on Dietary Diversities 34

4.6 Focus Group Discussion on Cultural Practices that influence maternal and child feeding practices 36
4.6.1. Types of Meal and Age (time) for introduction of Meals to Underfives 36
4.6.2 Food Preparation 36
4.6.3 Feeding style of Underfives, Frequency and Schedule. 37
4.6.4 Feeding Environment of Underfives. 38
4.6.5 Cultural Practices Determines Stunting 38
4.6.5.1 Cultural Practices for a Pregnant Mother is sick, or a child. 39
4.6.5.2 Cultural Practices of a Lactating Mother 39
CHAPTER FIVE 41
5.0 DISCUSSION 41
5.1 Prevalence of stunting among underfives in Kasulu District 41
5.2 Feeding practices that contributes to Stunting of underfives in Kasulu District 42
5.2.1 Food Dietary Diversity 42
5.2.3. Children sharing Food in One Plate with Older Siblings. 42
5.2.4 Feeding children with Left overs food. 43
5.2.5 Meal Frequency (Minimum Meal Frequency) 43
5.3. Cultural practices that influence Maternal and Child feeding Practices 44
5.3.1 Types of Meals and Age that a child is being fed 44
5.3.2 Food Preparation for children 45
5.3.3 Feeding style 46
When a Pregnant Mother is sick, or a child. 47
5.3.3 Lactating Mother/Child 48
CHAPTER SIX 50
6.0 CONCLUSION AND RECOMMENDATIONS 50
6.1 Conclusion 50
6.2 Recommendation 50
REFERENCE 52

APPENDICES 56
Appendix I: English questionnaire 56
Appendix II : Swahili questionnaire 67
Appendix III : Focus Group English Version 79
Appendix IV: Focus Group Discussion Guide: Swahili version 82
Appendix V: Consent Form (English Version) 84
Appendix VI: Fomu Ya Ridhaa 87
Appendix VII: Ethical Clearance 89
Appendix VIII: Letter from VEO 90

LIST OF TABLES

Table 3. 1 Cluster for data Collection....17
Table: 3. 2 Data analysis Plan 21
Table 4. 1 Demographic Characteristics of the Respondents....25
Table 4. 2Prevalence of Stunting....28
Table 4. 3Mechanism to cover food shortage....28
Table4. 4Timing for Child feeding Practices 30
Table4. 5Dietary Diversities....32
Table 4. 6Prevalence of Stunting on the basic information of respondents, and some feeding practices. 33
Table4. 7: Bivariate results Logistic Regression with Dietary Diversities....35
Table4. 8Focus Group Discussion Basic Information....35

LIST OF FIGURES

Figure1. 1 Conceptual Framework 7

Figure3. 1. Sampling Procedure 18

LIST OF ACRONYMS

AU	African Union
CF	Complimentary Feeding
EBF	Exclusive Breast Feeding
ENA for SMART	Emergence Nutritional Assessment
MDD	Minimum Dietary Diversity
MMF	Minimum Meal Frequency
PSU	Primary Sampling Unit
SPSS	Statistical Package for Social Sciences
SRS	Simple Random Sampling
SSU	Secondary Sampling Unit
TDHS	Tanzania Demographic Health Survey
TNNS	Tanzania National Nutritional Survey
UNICEF	United Nations Children's Fund
URT	United Republic of Tanzania
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

DEFINITIONS OF TERMS

Stunting: Is the impaired growth and development that a child experience due to poor Nutrition attention s/he get from caregiver. And a child should be more that 2 standard deviation form WHO mean

Feeding Practices: These are important items that will be used to refer how a caregiver responds to a child when s/he feels hungry. Such as Breastfeeding, Complimentary Feeding the use of Formula foods

Exclusive Breastfeeding: This is the act of giving a child breast's milk from woman for the first six month since s/he was born.

Complimentary Foods: These are foods given to a child after reaching 6 month. They are complimenting after being breastfed.

Food groups: These are Food referred from the five food groups as 1. Cereal, Green Banana and Tubers, 2. Animal Source food and their products and Beans 3. Vegetable 4. Fruits 5. Sugar and Oily. For this study we will be referring five food groups. (NNS 2015)

Anthropometric Measurement: This is the measurement of human body used to assess the nutritional status; especially Children mainly are height, weight and age (Yalew B, *et al* 2014)

Cultural Practices: These are things that are performed on daily basis at the household level and they define the conduct of the respective society, (Mvena *et al* 2016). In this study, cultural Practices will refer to the means and ways of using local available foods to feed children and how the community members participate in raising children hence they attain the nutritional wellbeing.

CHAPTER ONE

1.0 INTRODUCTION

World Health Organization (WHO) defines Stunting as the impaired growth and development that children experience from different angles of sphere of life; some are due to poor nutrition, repeated infection, and inadequate psychosocial stimulation (WH0, 2018).Stunting also be refereed as the "chronic under nutrition occurred during the most critical periods of growth and development in early life" and it is measured on the height for age of the children aged 6 to 59 months; (Unicef 2013).

Stunting is emanating from a combination of factors including maternal malnutrition, which caused by inadequate feeding practices of pregnant, lactating mothers. Inadequate breastfeeding practices of infant and low quality of health care with poor hygiene (URT, 2013). Stunting affects children in their early life. The life of a child that can be diagnosed and confirmed stunted and it cannot be recovered is considered in a thousand days of a child (1000 days); this is from when a mother is pregnancy up to two years of age of a particular child born from a pregnant mother referred, at this age some early stunting warning signs used to appear and are highly observed. Once stunting is left uncontrolled at early stages, it impacted children status when they grow older. Stunting brings about negative impact to children such as poor cognitive ability, low score in school performance, low productivity and, once accompanied by excessive weight gain in childhood, in adulthood there is an increased risk of nutrition-related diseases which are not inherent i.e. diabetic (Unicef, 2013).

Globally, children do suffer from different diseases, and a good number of them suffered from nutritional deficiency caused diseases (Global Nutrition Report 2016) reported that, worldwide, there were 667 million underfive children, out of that, 159 million children were suffering from nutritional deficiency or stunted. Under nutrition has so many problem and mostly were negative ones to children, and it is becoming a great problem to children and families at large (URT 2016).

Stunting is being rated as “severe” in sub-Saharan African countries and Southern Asia comparing to some of the first and second world countries. It is noted that in Africa 32% of children underfive are stunted, means they are above the acceptable threshold (WHO Regional Office for Africa, 2017). This goes in line with the 58.5 Million children are stunted, a huge number of children are suffering and others are susceptible to stunting allied effects on their journey to or when they will be adult.

There is a wide accord that culture and its embedded elements such as , knowledge, Norms and beliefs are considered to be the contributing factor to the stunting, this determined from what we eat in our day to day lives (Solomon *et al* 2017). When, what and how we eat determine much on the nutritional status of our children. Beliefs, norms and traditional practices affect food and nutrition security and health of women of bearing age (mainly pregnant) and children especially underfives. It has been noted that culture connotation that in order for a baby to be health s/he should be fat, therefore taking into consideration that, caregivers aim at feeding their children food so that they can increasing weight and become fat (Ogunjuyigbe, *et al.,* 2005). Foods they ate were the real translation of what their culture allows or prohibit them to consume through food taboos or cultural food preparation. Example ethnic groups in Uganda were known and being differentiated by the traditional food they use and the nutritional value they contain. In central parts of Uganda they prefer eating grasshopper, while that of Baganda eat mostly banana named *Matooke* (Amone, 2014), all these have different types of nutrients that required by human being especially mother and children.

Food taken by both a child and a mother has a nutritional value to both of them, and has an implication on their health status especially a child. Solomon *et al.*, (2017) pointed out that there is a strong connection between cultural practices that determine the ways of living include eating that defines the society letter. Often, the foods that were prohibited were highly nutritious. For instance, in Uganda pregnant women were prohibited from eating most of the organ meat simply they will undergo miscarriage. These were some and few cultures that have been documented with its effects to children mainly nutritious ones hence lead to stunting.

Women of reproductive age and children were particularly vulnerable groups in terms of food and nutrition security, they lack proper feeding during pregnancy hence it reflected after birth. In Bangladesh, early marriage seems to persist more to girls with an average age of 13.5 years. Distance from kin and lack of understanding of religious practice and cultural habits made women to face some difficulties to access maternal and health care services on which they depends on elder's advice rather than the specialized ones, (Reitmanova and Gustafson, 2008). More surprisingly, a very high prevalence of stunting in Tanzania is seen in food surplus regions of the country such as Njombe, Iringa and Mbeya. This suggests that food security at regional level does not necessarily mean nutritional security at individual level. Cultural practices from food preparation up feeding practices have a contribution in making such stunting status. A study conducted in Mbeya, Iringa and Njombe revealed that some cultural practices regarding personal and environmental hygiene contribute to stunting (Chiara, *et al.,* 2016). Practices like hand washing in one bowl starting from elders to younger ones during eating, the use of unsafe sources of water for home consumption, of they which accelerate waterborne diseases such as diarrhea which contributes much to decrease in absorption of nutrients and mineral to children that lead to stunting (Chiara, *et al.*, 2016).

Yalew *et al.,* (2014), recommended that cultural practices should be taken into account in the planning and delivery of services in order to effectively encourage service up takers, so as to bring an important part is dealing with maternal and newborn whom they greatly at a risk of being Stunted. The aim of this study was therefore to understand the magnitude of stunting and feeding practices among under-fives in Kasulu district.

1.1 Problem Statement

Nutritional status is the result of complex interactions between food consumption and its embedded means of amount and composition of food taken or fed to a child. Numerous means of feeding influence nutritional status of women and children also contribute to well appearance (Physically) and accepted health of children (Yalew *et al.*, 2014). Appropriate and adequate feeding is a pre-requisite to a good nutritional status in any given society; inadequate consumption of nutritional balanced diet leads to malnutrition once undealt leads to stunting. (Muhimbula, 2010).

World Health Organization in African region, in its nutritional survey to 47 countries found that the average prevalence of stunting is 31.3%, and it ranges from 7.9% in Seychelles to 57.5% in Burundi. Tanzania is among the 15 countries with a high prevalence of 30%–39%, (WHO, Africa 2017). These observations prove that there is still high level of stunting in Tanzania which is not acceptable. Therefore, deliberate efforts are required to retardate the status (United Republic of Tanzania, 2016).

Despite numerous nutritional interventions such as Joint Nutritional Support Program and Health Environmental Sanitation and Water, that have been taking place in Tanzania, the country still experiences a high rate of child stunting. Tanzania Demographic Health Survey (TDHS) from 1991-1996 showed that stunting stood at 50%, in 1999, and has since declined to 34.7% in 2015 (TDHS, 2015). Progress within and between regions Tanzania has great variations in improvements/decline. For example in Kigoma stunting was 44% in 2005 and dropped to 37.8%, exclusive breastfeeding stands at 58.7%, and for children started Complimentary feeding where by the Minimum Dietary Diversity were only 25% and the frequency for Feeding the required Quantity is only 35.1%, (TDHS2015). Studies reveal that, despite the decline the country is attaining in fighting against Malnutrition, the magnitude of stunting in the district and regions remains higher, it is even above the National average. Kigoma region is categorized under “severe” and the rate of stunting is classified as very high according to WHO standards. Such categorization of “Severe” foster for more studies to be

done so as to identify some root cause and contributing factors, prevalence of stunting and their feeding practices that influence stunting in Kasulu district.

1.2 Study Rationale

The study determined the Magnitude of stunting and its associated feeding practices in the community, Remarkable results have been identified according to the theme or objectives of the study, the study provide a good number of information concerning, stunting status in the district, and feeding practices that are useful tool in informing the community, designing, any intervention that is based on fight against the cultural practices that contributed to poor feeding and raising the stunting status.

Understanding factors associated with stunting among children living in Kasulu District in Kigoma region, this helped to disclose the existing f feeding practices and cultural practices that affect children. Also the study gave the picture on the current picture and how the effect of stunting in the community (magnitude) has reached. The knowledge grasped and information from this study helped to inform District Management, Civil Society Organization and NGOs in the District on the key factors to consider and prioritize towards improving quality of feeding practices to mother and children in Kasulu District. This study also is of useful to stakeholders that are based on implementing issues in the community and hospital as well that will be focusing on interventions focused on stunting reduction interventions as well as cultural malpractices that affect nutritional status of children and pregnant mothers in the community.

1.3 Objectives

1.3.1 Main Objective

The Main objective of the study was to determine the magnitude of stunting and associated feeding practices among underfives in Kasulu Districts.

1.3.2. Specific Objectives of the study

The study had achieved the following specific objectives:

1. To determine the prevalence of stunting among underfives in Kasulu District.
2. To determine feeding practices associated with stunting of under-fives in Kasulu District
3. To explore cultural practices influencing maternal and child feeding practices

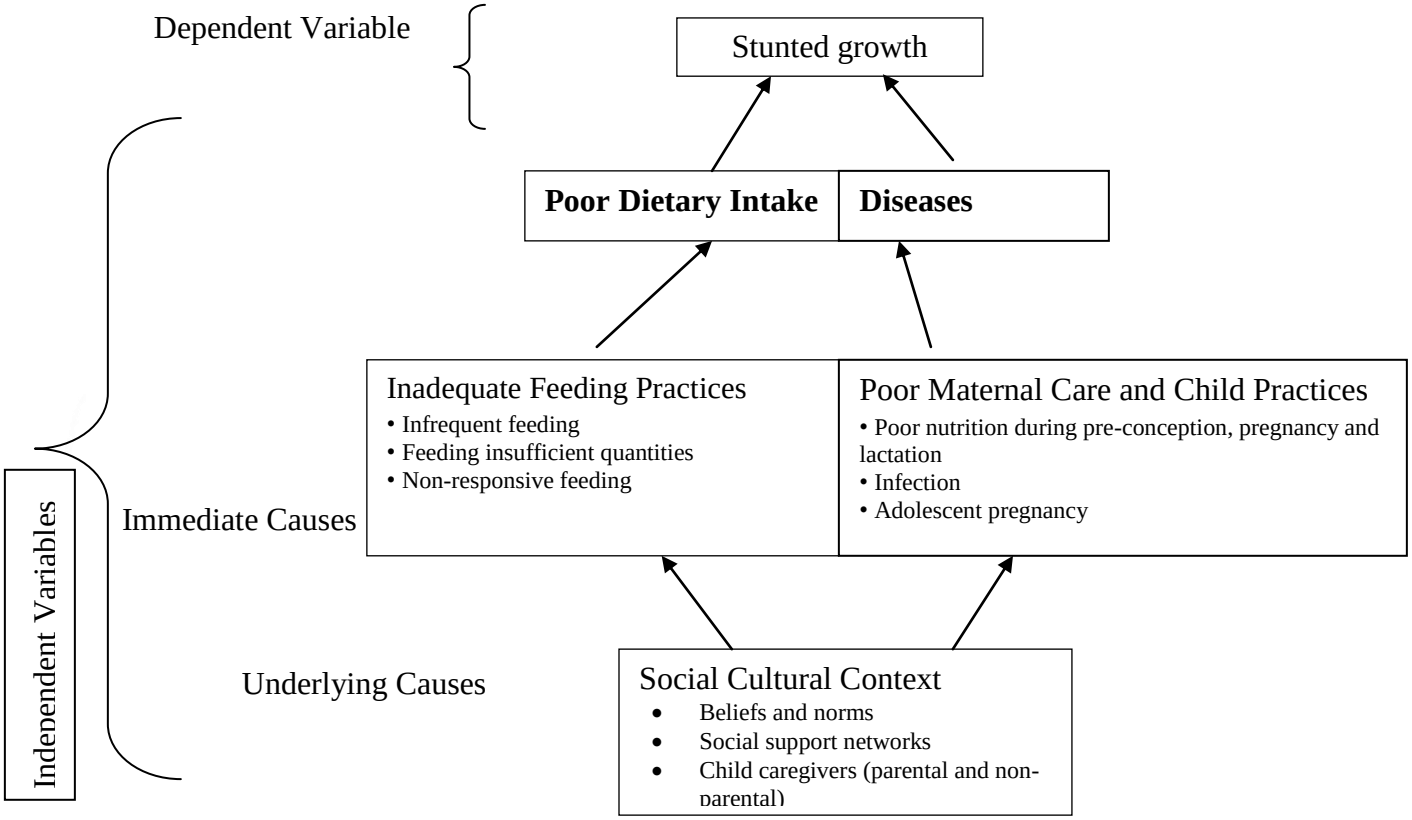
1.4 Research Questions

1. What was the magnitude of stunting to children in Kasulu District?
2. What were the feeding practices of underfive which lead to stunting?
3. What were the cultural practices that influence maternal and child feeding practices?

1.5 Conceptual framework.

The research uses the 2015 UNICEF conceptual framework to achieve the best update for the Status or magnitude of the problem in the community, the study assessed and understand the reasons for stunting that were influenced with feeding behaviors, as causative agent to child stunting which were largely influenced by their ways of living of which feeding was among the reasons. The underlying causes of child stunting under feeding practices were embedded in the household and community level where they base their day to day activities.

Figure1. 1 Conceptual Framework



Adopted from United Nations Children's Fund (UNICEF) June 2015

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Magnitude of the problem

Undernutrition is one among the most severe problems to children and its effects were more seen from childhood to adulthood but it is least addressed among health problems worldwide. The general food consumption with nutritional value at family level is limited, while the adequate nutrition is essential for children's health and development since pregnancy, (Lancet, 2008). We are missing the required nutrition at the required time hence we witness to receive stunted children.

Globally stunting affects directly or indirectly, at least 35% of underfive's deaths in the world that occurs in a year are caused by stunting related complications (Yalew, Amsalu and Bikes 2014). These records are high, it is over two-thirds of these deaths are often associated with inappropriate feeding practices, that occurs due to early initiation if complimentary food and specifically during the first year, (Addis Continental Institute, 2009). Under nutrition that lead to stunting is also major causes of impairment and preventing children from survive and reaching their full development potential. Stunting interacts with repeated attacks of infectious diseases causing huge number of Maternal and infant death that in long run reduce its national productivity and affect negatively the economic growth.

Different studies that we are referred, helps us to picture the level of stunting in the world, the study done in Vietnam discovered that stunting in one region is 44.3% (Heinz *et al*, 2008), while in Asia region 25.1%, Oceans regions except Australia and New Zealand has 38.1% (Unicef 2015). This state is reported to be contributed by inappropriate feeding behavior by families at large that are culturally bound. In Africa studies revealed that there is an average prevalence of stunting in the regions of 31.3%, and it ranges from 7.9% in Seychelles to 57.5% in Burundi. Other countries found in East Africa still have high prevalence of stunting (30%–39%), (WHO, Africa 2017)., Such a huge variation in stunting level reflect also the different reasons that contribute to such variations and making a need to intervene.

In Tanzania many studies have been done to gauge the status of stunting, and results shows stunting is in an unacceptable rate (severe). TDHS 2015, TNNS 2014 reported an average of 34% and 34.7% prevalence of stunting respectively in the country, while with huge variations among regions, *i.e*. it ranges from 15% in Dares Salaam to 56 % in Rukwa, and the rate increases as you are going in margin regions, this implies that areas that still uphold their culture in feeding practices are prone to malnutrition rather than those people with a mixed type of culture. In Kigoma stunting stands at 48.6%, (TNNS 2014) while 38.7%, (TDHS 2015), All these rates are higher than the acceptable average by WHO of 30%. Different Culture still contributes highly the level of stunting that a different region poses.

2.2 Factors associated with stunting

Stunting to Underfives is basically divided in two windows, that of 1000 days, meaning from pregnancy up to delivery and from Delivery to two years, this account for 1000 days, Under this window of 1000 days human life is said to be very critical for influencing growth and development of a child, and once stunted under the window of 1000 days it is reversible in this window (Poindexter *et al* 2006). There are a number of reasons for such status to happen.

Unsatisfactory food intake to both mother during pregnancy and a child after exclusive breastfeeding period in terms of quantity or amount of food taken and requirement of a child and a mother (Hussein 2005). Poor timing of starting complimentary feeding, (Muhimbula, *et al* 2010) starting early complementary food in less than six months or letter leads a child to have inadequate food needed by the body to grow.

Frequent illness to children caused by the weakened immune system as a result of poor nutrition may lead to stunting, a child need different food to build its immune system. Frequent diarrhea discharge minerals and nutrients in large quantities that are meant for building body immune and growth (Muhimbula 2010). Lack of sanitation and hygiene practices contribute to high susceptibility of feeding underfives with fecal contaminated foods, poor feeding practices, poor and inadequate maternal and infant health practices in the community (Redmond *et al 2014).* Some of the causes of stunting as we have seen from the above different studies are influenced by the cultures of the respective places, the need to

identify Kasulu culture on feeding practices that has all elements of malpractices on feeding that contribute to stunting is of paramount so as to start reducing the fate.

2.3 Feeding Practices to Underfive

Montanari (2006) explores the innovative aspects to food, for instance, its capture, gathering, cultivation, preparation, and consumption, representing a cultural practice. Even the choices made by indigenous who are hunters or gatherers determined by a culture of food economics (availability) and medicine (digestibility and nutritional content) that led to the development of specific social structures and traditions that is cultures.

Several Feeding practices that are culturally based, posing a challenges to children especially underfive and deteriorate their health against smooth growth. Mother's attitude towards breastfeeding is having a basis or an origin from their parent's attitude, how they were raised, or how they grew and find elders doing the same (Abubakari *et al* 2012). Most mother believe that breastfeeding the colostrum milk immediately after delivering is feeding a child bad milk and it a curse (Yalew *et al* 2014), while this is different to Maasai community, cow's colostrum milk is considered as very nutritious with rich in nutrients (Saitoti, 2010).

Abubakari (2014) studied the Chagga ethnic group who lives in the northern and southern parts of Mount Kilimanjaro (Marangu Village) revealed that, The Chagga plant a variety of food crops, including bananas, millet, maize, beans, and cassava, but their staple food is Banana. Being considered that other types of foods are consumed but in low quantity, hence minimize the chance for body to get other vitamin and nutrients from other food groups., While an umbilical stump is still attached, mother is not allowed to eat meat; her meal depends with other food groups; such a taboo and others like this one lead a mother to miss some of the important nutrients hence may contribute to stunting. TNNS (2014) reports Chagga community to have 29% of stunting which is also high.

Food in-access happens due to limited access in consumption (Redmond *et al* 2014), this means foods are available but the access to collect and use accordingly is limited to some groups in the society. For example, for Sukuma in order to use animal sources food there must be permission from a household head (Male elders) as they prioritize selling and get income

instead of home consumption. (Craig Hadley, 2005).This affect the nutritional eminence of the household especially children and mother as they don't consume what they are required according to their status, this is because the authority on what to consume is left on the hands of head of household to decode so.

Each food type has a particular meaning and symbolism attached to it, that its consumption affects the community either negatively or positively (Perez *et al* 2013), these cultural attachments that brand things as food or non-food consequently affect food and nutrition of the community or society at large. Redmond *et al*. (2014) reported significant variations in food rich in minerals that compose bones *i.e* Calcium and Phosphorus levels are high through a number of heterogeneous ethnic meal groups. Such differences were attributed to by differences in lifestyle (ways of eat and drinking) of which they have a strong link to culture and ethnicity.

The Maasai in eastern Africa add local herbs to their main foods stuffs which is meat, blood, soup and milk these provide a room for a fast growth to children as they consume more milk and meat and being far from stunting. However, this practice brings about other food stuffs to be consumed in low quantity and possibility for being stunting also appears, (Saitoti, 2010). There is a need to explore more on other culture to learn more on their contribution to stunting. Culture attaches a number of unwanted meanings behind food consumption. The study will unveil any cultural meanings to food attached to community of Kasulu.

2.4 Culture on Maternal and Child care practices

Culture is a multifaceted phenomenon which includes a number of aspects that reflect human interaction on knowledge, belief, art, morals, law, custom, and any other habits acquired by a societal member. (Avruch1998). Culture is proposed having three scopes that need to be looked into it, first is knowledge; this comprise of the shared ideologies that community hold, beliefs that community have in, values thy give to each item, norms and meanings of individuals. Second is practice, this is exercising all the group of individuals sharing and deploying cultural knowledge and change; third is constantly evolving culture through

dynamic relationship between and among cultural knowledge and the practice, (Asad and Kay, 2015).

Culture treats pregnant mothers in an exceptional ways, as their ways of living; this depends with their society of origin. The Maasai community has been reported to have several distribution of duties according to their culture, resources are owned by men, women has no say over it, they consider cattle as a source and sign of wealth, women has no say over it such as what to consume, but women including pregnant ones are responsible for household chores and deciding all matters that have a direct health impact to women and children. (Peter *et al* 2015). This also happen in other communities where by women are treated regardless of their status such as pregnancy or just given birth. This study will explore all the cultural aspects that are taken to in taking care of pregnant mothers as well as those with children, the look will be form pregnancy to given birth. Some of the practices affect negatively women, like their participation in agriculture activities and heavy works such as tilling land this has a contribution define culture while impeach women and children in their growth, hence stunting.

Child care practices has a great link with child's health and growth, exclusive breastfeeding as one of the practices to children, once done properly has a positive impact to children and the vice versa bring about troubles to children. Yalew, *et al* 2014 in his study revealed that children breastfeed exclusively in the first four months have higher chances (approximately 3 times) of falling under nutritional related problems letter including stunting.

Among other practices that parents might undertake to make sure their children are not falling under the trap of stunting is vaccine or deworming process, those who got deworming tablets were about 2 times better off not being stunted compared to those without. These are among the few practices that were observed in the community on how to raise children. This study will look on the number of options on the practices that

CHAPTER THREE

3.0 METHODOLOGY

3.2 Study Design

This Study design was a cross-sectional descriptive study that describes the current prevalence of stunting, feeding practices and possible causes of stunting to underfive living in Kasulu District. The study used both quantitative as the main part and qualitative research method to collect some of the information on objectives set. Quantitative research approach was considered to be suitable for measuring the nutritional status of Under-fives and assessing the feeding practices related that contributes to stunting, while the qualitative method will be employed to assess the cultural aspects on maternal and child care practices in Kasulu district.

3.3 Area of Study

Kasulu District is one amongst the eight districts of Kigoma region. It is situated in northwestern Tanzania. It is located approximately 98 kilometers, by road, northeast of Kigoma region headquarters, The coordinates of the town of Kasulu are:4° 34' 48.00"S, 30° 6' 0.00"E (Latitude:4.5800; Longitude:30.1000). Kasulu District is primarily occupied by the "Waha" as the indigenous group. As per United Republic of Tanzania, 2012 Census Report states Kasulu District population was 425,794 (207,421 Males, 218,373 Females) with an average family size of 5.7; it comprises 62 villages in 26 wards. Main economic activities meant for their living are farming, small and medium scale businesses activities especially in the town of Kasulu. Also there are little "Sukuma" as part of Kasulu community, mainly this group are pastoralists; they normally come into the district with their flocks of cattle in search of pastures. Their ways of living bring about mixture kind of culture, whereby they feed their children with the available milk they have, this bring about an improvement on children's nutritional status, In most of the places they occupy, they have tend to influence their culture to dominate over the indigenous., such feeding behaviors and pregnant mothers care.

3.4 Study Population

Polit and Hungler (1999) refer population as a total number of objects that can be studied, those individuals possess specific characteristics. In this case, study population refers to all caregivers at preferably Mothers found at the households.

3.5 Information Source

The researcher used primary source in data collection, where by household were used as a place to collect raw information via questionnaire as well as the Focus Group Discussions (FGD) to compliment exploration of cultural practices. During discussion Secondary source of information were referred in course of discuss to triangulate the results obtain during report writing.

3.6 Sample Size

3.6.1 Quantitative Method

The sample size was designed to allow the generalization of the results to the population under investigation. The sample size were determined using quantitative sample estimation equation from Kirkwood et al, the prevailing status of stunted children in the region was noted to be at 38% (TDHS 2015) and this will be used for the calculation. This provides a room to use Kirkwood formula for estimating sample size using the following formula.

$$N = \frac{z^2 P (1 - P)}{\varepsilon^2}$$

Whereby

N = Estimated Sample Size

Z = standard normal deviate of 1.96 on using 95% CI.

P = proportion of stunting in other studies

ε= Margin of Error

Therefore

N= Estimated sample size for the study

Z= Standard Deviation of 95% C.I is I.96

P= Proportion of stunting in the previous study 38.7% (TDHS 2015) = 0.387

ε= Margin error = 0.05

$$N = \frac{1.962 \times 0.387 \times (1 - 0.387)}{0.05^2}$$

$$N = 364$$

Adjusting for Non Response

The study sample will be adjusted by 4% into cover the non-response. This 4% is taken from previous studies (TNNS 2014)

Therefore

n'= n x100/(100%- r)

Where n' = adjusted sample size

n = calculated sample size using the formulae described above

r = the non-response rate.

n' = 364 x 100/(100%-r)

n'= 364 x 100/(100%-4%)

= 364 x 100/96

364 x 1.04 = 379 ≈380

The minimum Sample size for the study will be 380 Households.

3.6.2 Qualitative Method

Sampling in Qualitative method depends with the nature of the study, under this study the selected wards for Quantitative method were also used in the qualitative method. The aim of using both in one place was also to capture individual or group thoughts, capturing the in-depth information regarding feeding practices that affect maternal and child care in Kasulu district. The study successful arranged for 4 (four) Focus Groups Discussion in the 5 (Five) cluster selected for study, these villages were Nyakitonto, Chekenya, Kitagata and Rungwe Mpya. Ten Mothers were recruited per each FGD in each Village; each village hosted one meeting, information on criteria to choose mothers were shared by the researcher to the community leaders, sharing invitation from community members and arranging a meeting place.

3.7 Sampling and Population distribution of the study

Multi Stage sampling methods were employed to select a sample of 5 wards out of 19 wards found in Kasulu District, this helped us to narrow the coverage but to give us a clear picture on the magnitude of the problem as resources are meager as well as to serve time. First, Simple random Sampling without replacement were employed, where by piece of paper with names of wards folded and picking five of them (Rotary Method), the following were the wards and villages selected

Table 3. 1Cluster for data Collection

Wards	Village
Nyakitonto	Nyakitonto
	Mkesha
Kurugongo	Chekenya
	Nyenge
Nyachenda	Kitagata
	Kasasa
Rungwe Mpya	Rungwe Mpya
	Kaguruka
Muzye	Mutala
	Muzyze

Five wards were selected from a pull of 19 wards, Nyakitonto, Kurugongo, Nyachenda, Rungwe Mpya and Muzye, these were the first stage of sampling, the second stage sampling were to get ten villages out of 13 villages available in the 5 selected wards in the first stage, the same procedure of simple random sampling were employed, all 13 names were written in the peace of papers, then folded, tossed and then 10 papers were picked, the following villages were chosen Nyakitonto, Mkesha, Chekenya, Nyenge, Kitagata, Kasasa, Rungwe Mpya, Kaguruka, Muzye and Mutala. Forming 10 clusters, where each village was regarded as cluster for the sake of this study. Therefore each cluster collected 38 Households, making a total of 380 households. Whereby in each household reached has to have one underfive child.

In other Studies that use more than one Method, such as Quantitative and Qualitative, a number of Focus Group Discussions suggested to be administered should be at least three groups to validate the information gathered. Under this study as Qualitative method used to compliment the study, mainly in one objective that explore the cultural practices that contributes to stunting, Four Focus Group Discussion were prepared across the identified area of study to capture the Cultural practices. All tools for conducting interviews were prepared,

such as Interview guiding checklist, tools for taking notes for the secretaries while conducting interview Guide will be developed to guide the moderator.

Figure 3. 1. Sampling Procedure



3.8 Procedure for Data Collection

In this study, the height and age of a child were measured, taking sex into consideration. Caregivers of underfives were primarily interviewed once; the quantitative research where by variables that provides information were collected by using structured questionnaire. Research assistant were hired to help the researcher with data collection. These research assistant were trained on the data collection tools and procedure prior to the exercise. Trial before the actual exercise were part of the exercise where by some question were rectified to fetch the intended

meaning in the community, while other question were twisted during asking without altering the meaning, it as the art of the research assistant after the discussion of each question.

3.9 Inclusion and Exclusion criteria

3.9.1 Inclusion criteria

The population in this study included all mothers or caregivers of all children of six month to less than five years of age living in Kasulu district during the study. All household with more than one child with the same characteristics such as age and or sex, only one child was considered in taking anthropometric.

3.9.2 Exclusion criteria

Caregivers with six month old children who have not spent at least 6 months in the village were excluded., also mothers/caregivers participated in the Household Survey were also excluded in the focus group discussion, this were made so to reduce duplication of ideas as some questions in caregiver survey related with in the FGD.

3.10 Data Collection Tool (s)

The questionnaire used to gather data which had different parts such as demographic information, Key questions to measure knowledge on food given to a pregnant, lactating mother and children, and other aspects related to nutrition that were arranged according to the objectives of the study. Anthropometric tools also were hired from District/health Facilities and handled over to Enumerators, together with Stunting growth monitoring card. There were two different tools that were used to gather information

1. Household/Caregiver/Mother Questionnaire
2. Focus Group Discussion guide

3.11 Quality Assurance

The Data collection tool (s) were translated to Kiswahili language which was common to Enumerators who administer questionnaires to Caregiver's, then translated back to English to ensure consistency without altering the intended meaning. All the tools were piloted in Rusesa village where the actual exercise did not take place in, but it is in the same district, this was meant to maintain homogeneity of the area. Errors were rectified, omission, re-translations, twisting of questions without altering the intended meaning happened. This helped a lot to give feedback on the tools and all errors noted before going to the actual exercise were dealt properly. On site monitoring during data collection were a work done by principle researcher to continue assuring data is being collected through a right procedure.

3.12 Data Processing and Analysis

3.12.1 Quantitative Analysis

Data analysis started by data coding, sorting, entering and cleaning. In this study, data were entered in the computer using a computer program for analysis, Statistical Package for Social Sciences (SPSS) v. 25, Microsoft Excel used in arranging tables imported from SPSS to align them well for presentation. Data summarized were presented inform of frequent tables to communicate what was the score in particular variable.

ENA for SMART 2011 with WHO 2006 standards software were used to enter anthropometric measurement collected, where by age (birthdate), sex, height (in cm) and weight were collected from respondents, entered in the system then Cleaned for analysis, in order to untangle the unknown stunting Status.

Binary Logistic regression model was carried out to determine and explain the relationship between the predictor variables which were significantly associated with the outcome variable Feeding practices were which are predictor (explanatory) were tested at $p\text{-}value \leq 0.05$ was considered as statistical significant with 95% C.I.

Table 3.2: Data analysis Plan

Research objective	**Data Analysis Technique**
1. Objective 1. To determine the prevalence of stunting among underfives in Kasulu District**.** 2. Objective 2. To determine feeding practices that contributes to stunting of under-fives in Kasulu District **3.** Objective 3. To explore cultural practices influencing maternal and child feeding practices	Mean - Frequency and percentage Binary Logistic regression Qualitative method (Thematic Analysis)

3.12.2 Qualitative Analysis

For this study the Qualitative part used to explore the cultural practices that influence maternal and child feeding practices that contribute to stunting in Kasulu Dc. The analysis part of the Qualitative information includes the thematic grouping of responses that affect the responses were revisited and grouped them in a proper way that helped a researcher to refer them according to topics asked. Focus group Discussions took part; the Study arranged and reached Four Focus Group Discussions that took place in Nyakitonto, Chekenya Kitagata and Rungwe Mpya all these four groups comprised of 10 Members in each group. Geographical distribution foster to divide groups of people who run the discussion concurrently, PI only visited one route, but quality of the meetings were assured. Two thematic areas were identified under the course of discussion and analysis, Cultural practices to maternal and Children and feeding practices. All contributions given during discussion were analyzed and grouped according to those five themes.

i. Types of Meal and Age of Introduction of Meal Underfives,
ii. Food Preparation of Underfives, Pregnant and Lactating Mothers (How)
iii. Feeding Environment of Underfives, Pregnant Mother and Lactating Mothers (Where)
iv. Feeding Frequency Schedule and Style Underfives, Pregnant Mother and Lactating Mothers (when)
v. Cultural Determinants

3.13 Ethical Consideration

Principle Investigator sought an ethical clearance from the committee of Muhimbili University of Health and Allied Sciences and he was granted, in the Councils Management, they were informed in person through Kasulu District Medical Officer and the permission were cascaded to the lower level official available in the field such as WEO and VEO in the respective wards and villages.

CHAPTER FOUR

4.0 RESULTS

In this chapter, the results of this study are presented. The results are structured according to the specific objectives of the study. The demographic information of the study respondents, determine the prevalence of stunting in the community and determine the feeding practices that contributes to stunting of underfives, whereby the bivariate logistic analysis, chi-square test and Cross Tabulation were employed to arrive into conclusion. While Focus Group Discussions were employed to explore the cultural practices that influence maternal and child feeding practices in the community.

4.1 Demographic Characteristics of the Respondents In Households reached

This study targeted a total of 380 households with underfives were included in the study, all targeted household in the study showed up in the study giving the response rate of 100% as per estimated sample size.

From the Study conducted in Kasulu Dc, it was revealed that 60.3% of the respondents were household heads, and the remaining 39.7% were caregivers and or members of the household found in the day of the study while the household head were away for other duties. Among the household heads/caregiver found at home during the study 80.4% Female and 19.6% were male.

Age of respondents were also distributed as follows, bellow the age of 19 were 10.8%, 19-35 were 57.3%, 36-50 were 28.5% and above 51 are 3.4%, from the study it was revealed that the large number of caregivers are within the age range from 19 – 35 years of age. The mean age was 32.95years.

With regard to marital status of the respondents, the findings show that 88.7% of the respondents are married, while co-habiting was 3.7%, divorced were 3.9 and widows were 2.1%, and the respondents who were never married were 1.6%.

During the study 380 households visited were categorised into three groups during analysis, small sized households (at least 3 Members) with 15.5%, Medium Family size (from4-6 people) were 36% and large size (more than 6 people) family were only 46.3%

In the study conducted it was revealed that out of the 380 household visited 42.7% had not more than one underfive while 57.3% had more than one underfive.

The educational level of the Household Head or Caregiver responded to attain ware as follows 66.3% completed primary school, followed by the group that never attended school or any formal schooling means to 28.9%, and those with Secondary school level (Form 1- 4) were 4.2% while those with , advanced school and vocational training were only 0.6%.

Table 4. 1: Social Demographic Characteristics of the Respondents at household

Variable	Description	Frequency (N = 380)	Percentage%
Household Head	Yes	231	60.8
	No	149	39.2
Sex	Male	306	80.5
	Female	74	19.5
Age	Below 19	41	10.8
	19-35	217	57.1
	36 - 50	108	28.4
	51 and above	14	3.7
Marital Status	Married	337	88.7
	Never married	6	1.6
	Divorced/separated	15	3.9
	Widowed	8	2.1
	Co-habiting	14	3.7
	Small Size	59	15.5
	Medium Size	145	38.2
	Large Size	176	46.3
Family Size			
	Not more than One	163	43.7
Under-fives in a HH	More than One	217	56.3
	Never Attended	110	28.9
	Primary school	252	66.3
	Ordinary Level	16	4.2
Educational Level	Advanced	2	0.6

4.2 Focus Group Demographic Information

Age of FGD members were distributed as follows, mother bellow 19 were 27.5%, age of 19-35 were 52.5%, age 36 – 50 were 20%, also it was observed that a large group of women about 80% participated in the study had less than 36 years.

Majority 50% of the respondents in the study went up to primary school level only, followed by those who never attended school with 42.5%, while 7.5% reached Secondary school, and there were no member went to tertiary level

Occupation of the mother in the group, this meant for a work that keeps a mother busy, 57.5% are housewives, while 40% are farmers and only 2.5% is employed

A good number of mother reaching 65% confirm to have 2 to 3 children, while 27.5% have at least 4 children and 7.5% have one child.

Table 4. 2: Social Demographic Information of Focus Group Discussion.

Variable		n	Percentage %
Distribution of respondents by Village	Nyakitonto	10	25
	Chekenya	10	25
	Kitagata	10	25
	Rungwe Mpya	10	25
	Total	40	100
Age of Respondents	Below 19	11	27.5
	19-35	21	52.5
	36 - 50	8	20
	51 and Above	0	0
	Total	40	100
Educational Level	Never	17	42.5
	Primary	20	50
	Secondary	3	7.5

4.3 Magnitude of Stunting in Kasulu Dc

A total of 380 (204 Boys 176Girls) children participated in the study, the prevalence of stunting in Kasulu district were 54.5% (n=207) with 48.3-60.6 95% C.I, stunting was noted to have a slight difference among boys and girls; boys had 55.9%, while girls had 52.8%. This rate kept on increases as the age of child increases from 6 month to 59 Months. And in this study reveals that children with the age range from 7 – 23 are highly affected with stunting.

Table 4. 3: Prevalence of Stunting

Variable	Description	N	n	%	95% C.I
Stunting	All	380	207	54.50%	48.3-60.6
	Boys	204	114	55.90%	25.2-82.6
	Girls	176	93	52.80%	28.1-76.3

4.4 Feeding Practices that contributes to stunting.

4.4.1 Food availability throughout the year.

A number of questions were asked to respondents so as to understand their feeding practices in their communities. The study looked the availability of food at their households throughout the year whereby 50.8% (42.9 – 57) at 95% C.I had food throughout the year and 49.2% (41.8 – 56.1) at 95% C.I had food to suffice for home consumption in less than a year. The study revealed a slight difference among the two groups.

In such a deficit, Households were also asked on the mechanism used to regulate or employ when they fall under shortage of food. Skipping of meals was the major means with 79.1% (73.2 – 84.6 at 95% C.I) that household used to cope and make food last for the year, followed by borrowing from a friend or neighbor which has 20.9% (14.2 – 25.7 at 95%C.I).

Table 4.4: Mechanism to cover food shortage

Variable	Description	Frequency	Percent	95% C.I
Mechanism to cover food shortage	Borrowing	40	20.1	14.2 – 25.7
	Skipping Meal	147	79.1	73.2 – 84.6
	Sleeping without Eating	0	0	
	Fasting	0	0	
		187	100	

4.4.2 Timing for Child feeding Behaviors.

Caregivers were asked if they are practicing early initiation, this is the situation where by children are breastfed their mother's milk within one hour after birth. From the study 57% (50.3- 63.6 at 95%C.I) of mother breastfed their children within one hour after birth, while 43% (35.4 – 50.5 at 95% C.I) reported to not doing the early initiate breastfeeding,

Caregiver or mothers were also asked on the important aspect of exclusive breast feeding, this is the situation where by caregivers/mothers breastfeed mothers milk for the first six month of a child's age without giving any other thing. In this study it was revealed that only 43.6% (n=380) (36.0 – 51.1 at 95% C.I) perform exclusive breast feeding while 56.4% (n=380) (49.7 – 63.0 at 95% C.I) does not do so.

Respondents were asked on a time they started giving child something to eat or drink, this aimed at looking on the age of child starts to be given food or drinks before the recommended time, amongst the caregiver who does not perform exclusive breastfeeding they start giving their children something to eat or drink as follows 26.6% (n=214) (14.6-37.3 95% C.I) starts to give their children something to eat or drink when they reach 3 months, 28.5% (n-214) (17.1 – 39.8 95% C.I) starts at 4 to 5 month and 44.9% (n= 214) (34.9 – 54.8 95%C.I) starts at 6 months.

Complementary feeding: this also was among the practice that determines stunting. This is the situation where by a child aged 6months should be given extra food to suffice nutrients for its growth, child growth at that particular moment require more nutrients and it comes from more than one source rather than what a mother's milk only. 59.6% (53.2 – 65.9 at 95%C.I) performs a proper complimentary feeding, while 40.4% (34.3 – 46.4 at 95% C.I) does not perform a proper complimentary feeding.

Table 4. 5: Timing for Child feeding Practices

Variable	Description	Frequency	Percent	95% C.I
Early Initiation	Yes	216	57%	50.3 – 63.6
	No	164	43%	35.4 – 50.5
Exclusive Breastfeeding	Yes	166	43.6%	36.0 – 51.1
	No	214	56.4%	49.7 – 63.0
Child starts to be given something to Eat or Drink	From 3 months	57	26.6%	14.6 – 37.3
	From 4 Months	61	28.5%	17.1 – 39.8
	From 5 months	96	44.9%	34.9 – 54.8
Complimentary Feeding	Yes	226	59.6%	53.2 – 65.9
	No	154	40.4%	34.3 – 46.4

4.4.3 Dietary Diversity

The dietary diversity is a situation where by a child consume food recommended food groups, and at least a child should use four food groups, for first months and kept on increasing as child grows, this question was asked in form of food groups so as to measure a child consumption according to food groups, 25.3% (16.3 – 33.6 at 95% C.I) reported to give their children foods from at least three groups while 74.7% (69.6 - 79.7 at 95%C.I) approximately three quarter doesn't feed their children by looking on the appropriate food groups, they usually consume without proper guidelines.

Meal Frequency, children are required to eat a good number of meals according to their age, from the study it was revealed that there no proportional between number of meals and the age of a child, that lead to stunting, 36.8% (28 – 43.9 at 95% C.I) confirm giving children meals

more than three times, this implies three Main meals with snacks in between meals, 63.2% parents give their children meals less than the required frequency.

Types of meals given to children were also a factor looked on during household visits, there were two means to look on the matter, preparing food and consume immediately after prepare, or using the left overs to feed children especially morning hours, the study revealed that 62.3% (56.1 – 68.4 at 95% C.I) mothers/caregivers feed their children leftovers that are at high risk of being contaminated, leaving 37.7% (29.7 – 45.6 at 95% C.I) of caregiver or mothers at the household level feed their children fresh cooked foods.

Another eating behavior that were into consideration that has an effect was eating habit, this goes in line with the number of children at the household level, it was observed that from study, 42.1% (34.4 – 49.7 at 95% C.I) of caregiver give their children meals by considering the differences in their age, but a large number of mother or caregivers reaching 57.9% (51.3 – 64.4 at 95% C.I) does not consider age difference hence they are serve children under one place which gives the older siblings opportunity of eat more than the young ones.

Table 4. 6: Dietary Diversities

Variable	Description	Frequency	Percentage	95% C.I
Dietary Diversity from at least Four food groups	No	284	74.7%	69.6 - 79.7
	Yes	96	25.3%	16.3 – 33.6
Meal frequency	One	46	12.1%	2.6 – 21.5
	Two	80	21.1%	12.0 – 29.9
	Three	114	30.0%	21.5 – 38.4
	More than Three	140	36.8%	28.0 – 43.9
Type of food Given	Fresh cooked	144	37.7%	29.7 – 45.6
	Left Overs	236	62.3%	56.1 – 68.4
Eating from their own plate	Yes	160	42.1%	34.4 – 49.7
	No	220	57.9%	51.3 – 64.4

4.5. Prevalence of Stunting on the basic household information of respondents.

From the household characteristics gathered and some feeding practices analyzed, some were not picked as they didn't have a, from the analysis it was revealed that stunting was higher 57.9% in families with large Size compared to those with small and medium ones and it has been statistically proved be significant at *p=0.006**. Stunting was higher among caregiver who never attend school 65.4 compared with those who attended at *p=0.000** *at df of 6.* Mother or caregivers who does not perform complimentary feeding to their children were found to highly affected by stunting at 77.8% compared to those who performs complementary feeding at *p=0.000**. Age category of a respondents being a caregiver or a mother, it was revealed that stunting was high among caregiver with high age from 51 and above (84.4%) and prove to be significant at *p=0.002*. this mainly caused by the ways of living and most of them are grandparents taking care of their grandsons and daughters. Food security, number of meals per day and exclusive breast feeding were proven to be significant at *p=0.000** due to stunting being found high in household with no food security through the year compared to ones with, stunting was high in Mothers who does not perform exclusive breastfeeding for the first six month compared than others.

Table 4. 2: Prevalence of Stunting by comparing with basic information of respondents

Variables	Description	N=380	n (%)	Chi Square	df	P-Value
Family size	Small Size	59	9(64.3)			
	Medium Size	145	72 (55.0)			
	Large Size	176	136 (57.9)	14.297	4	.006*
Education level	Never Attended	110	72 (65.4)	102.658	6	.000*
	Primary education	252	163 (64.6)			
	Secondary Education	16	2 (12.5)			
	Tertiary education	2	0 (0)			
Complimentary feeding	Yes	226	176 (26.6)			
	No	154	41 (77.8)	41.207	2	.000*
Age category of caregivers	Below 19	41	34 (60.7)			
	19-35	217	71 (51.1)			
	36 - 50	108	74 (52.9)	31.971	6	.002*
	51 and above	14	38 (84.4)			
Food Security	Less than 12 Months	187	65 (78.8)	80.362	2	.000*
	12 Months or More	193	152 (34.8)			
Eating from their own plate	Yes	160	124 (42.3)			
	No	220	93 (77.5)	52.427	2	.173
Meals per Day	One	80	26 (32.5)			
	Two	46	19 (41.3)			
	Three	114	62 (54.4)			
	More than Three	140	110 (78.6)	122.475	6	.000*
Exclusively Breast Feeding	Yes	166	78 (48.1)	78.360	2	.000*
	No	214	117 (45.6)			

4.5 The bivariate Logistic Regression

Logistic regression bivariate analysis was used to describe the data and to determine the relationship or association between the independent variables and stunting. Odd ratio was used determined associations between stunting and respondents characteristics and Feeding practices at 95% Confidence interval. P-values of < 0.05 were considered statistically significant.

4.5.1 Bivariate results Logistic Regression on Dietary Diversities.

Binary results show that the odds of Food from at least four food groups were less affected with stunting compared to household whose caregiver does not feed their children food from four food groups while considering their age also, (COR = 3.401, 95%C.I=1.245 – 10.371 at *p= 0.026*.)*

Eating from One plate with older Siblings, Once a child is mixed up with older siblings the study revealed that, children of that caliber found to have high rake of stunting of (COR= 2.512, at 95%CI = 2.770 – 4.250, at p=0.034).

Left Overs still lead to affect children with stunting, as in the study the bivariate analysis shows that, (COR=0.085, at 95%CI at 0.051 – 0.236, *p=0.001**), this habit of feeding children left overs affect their health hence stunting appears high to them rather that those who feed fresh cooked foods.

Consuming food from less than four food groups, Eating from One plate with older Siblings and the use of feeding Left over to children have proved to have a statistical significant at p=0.026, *p=0.034* and p=*0.001* respectively.

Table 4. 3: Bivariate results Logistic Regression on Dietary Diversities.

Variable	Description	N=380	%	COR	95% CI	P value
Dietary diversity (≤ 4food groups)	No	112	38.8	**3.401**	**1.245 – 10.371**	**0.026***
	Yes	49	25.0	.583	0.742 – 4.036	0.364
Eating from One plate:	No	220	22.1	**2.512**	**2.770 – 4.250**	**0.034***
	Yes	160	57.9	*ref		
Family size	Small Size	59	64.3	1.338	0.642 – 2.786	0.437
	Medium Size	145	55.0	0.939	0.302 – 1.167	0.177
	Large Size	176	57.9	*ref		
Types of food given to children	Left Overs	236	62.3	**0.085**	**0.051 – 0.236**	**0.001***
	Fresh cooked	144	37.7	0.385	0.137 – 1.081	0.070
Meal Frequency	One	46	12.1	0.305	0.030 – 3.082	0.345
	Two	80	21.1	0.201	0.043 – 2.307	0.289
	Three	114	30.0	*ref		
	More than Three	140	36	*ref		

Note: *COR = Crude Odds Ratio. * = Statistically significant at 95% level of confidence ($p < 0.05$)

4.6 Focus Group Discussion on Cultural Practices that influence maternal and child feeding practices

This objective presents the results of Focus Group Discussions that were administered in the sampled area. Distributions of members were 10 in each Village where by in each village we had one FGD, and it was successfully done. Each village expected members of FGD as per plan attended making a 100% attendance.

4.6.1. Types of Meal and Age (time) for introduction of Meals to Underfives

During Discussions Mothers in the group pointed out that, feeding children always depends with the nature, time and health status of both mother and a child. Many claimed that they feed their children in response to what they respond eating once they reach three Months old,

Mothers in FDG said, *"Feeding children has no formula, rather we have kept on trying and see what a child eats well"*, a mother state by giving example, normally we started by giving them water, at early time, and keeping on till the child becomes familiar with the food we give. There are different types of foods that mothers confirm to start give their children at early time. Form of Foods, foods that we give them are also depending with the age, example children who starts to be fed, mothers prepare Porridge made of cassava flour then sieved to get light, and milky like kind of porridge for feeding a child. That particular porridge changes the content as a child grew up, as well as the viscosity. One mother said "*Porridge should be light so as to help a child to defecate easily*". They believe that stiff the porridge the difficult the child will be to defecate and hence poor growth. Therefore mothers are flexible according to the child's environment.

4.6.2 Food Preparation

Focus Group Discussion Participants pointed out that, they normally prepare food for children in as they prepare food for family, Mother used to cook food and put aside little amount for children. Mother admit that they don't need any unique preparation in terms what to cook but there is a kind of preparation on how to cook especially for infant being fed by their caregivers. Food preparation insists also even the choice of what to cook. "*When we cook for*

family is the time also we cook for children, for infant we secure thermos where e store children's food and feed children letter on or at a time of need" One mother said in the Group Discussion. In that aspect more mothers confirm to use Porridge, they differ in source of particular flour, 76% of mother in the FDG use cassava flour and 22% use Maize flour, while 2% use others flour such ass Millet or sorghum. In the course of preparation mostly they don't put other ingredients rather that sugar, "*we don't use Lemon to children as to elders as they dry up blood"*. Several women responded in the FDG.

4.6.3 Feeding style of Underfives, Frequency and Schedule.

Once a woman in our community gave birth "she will not do anything till and a child is allowed to come out, when reaches 40days, the event is prepared and named to getting a child out. This is where many caregivers started to be given food in liquid form through mother's or caregiver finger, such as soup, water or smashed ugali with soup. Three Feeding styles were observed from the study as it was introduced by Birch and Fisher (1995), that in any community that is determined by cultural practices three feeding styles were observed, thus of Responsive, Controlling and Leisure-faire feeding. In this study responsive Feeding, only 11.5% parents in the FGD responded to observed and were strictly with a close follow up on child feeding behavior "*We are making a close follow-ups in feeding a child as some refuses when they are forced, or ill.".* Also it is a prestige for a mother whose child is copying with the feeding trials that caregivers are making.

Control Feeding Style, in this type of Feeding, 15.4% of parents, mothers or caregivers of Children performs controlled feeding, they depends much on time, their age and capacity of their intakes. *We feed children by giving food on the bowl, when s/he accept and finish the given food e assume, the food was not enough for a child then we add another until a child refuses to eat we force, if continue to avoid we conclude s/he is satisfied"*. Mothers did not have a specific measure to assess the satisfaction of a child rather than using till a child refuses. So when a child refuses for the food not being palatable hence a parent will come out that a child is satisfied. Some of parents or caregivers feed their children by force "force

feeding" when they are also taking their meal, few of them who store porridge in thermos they tent to increase their frequency of feeding.

Laissez-Faire, 73.1% of mothers in the FDG accepted to use laissez-Faire type of feeding their children, Parents in this kind of feeding there are little priority given by the caregivers, mainly they rely to people who were meant for help in taking care of a child at home, mostly are their mothers or mothers in laws. They also have their own means to raise children; most of them they tend to frequently feed children especially those who have started eating. And for those who have not they participated in carrying them on their back when their mothers are caught up with some household chores. On the aspect of feeding schedule a good number of them don't have such a habit. They look on what they have and feed a child.

4.6.4 Feeding Environment of Underfives.

Mothers is group discussion confirmed that feeding environment depends with the situation where a mother or a caregiver has, such as parental education level, Family income and number of family members a household has. Some of daily and most time consuming activities that mothers or caregiver's engage are agriculture and petty business. In Kasulu district they have confirmed that some parents, mothers or caregivers went to farm with their children and together they carry food with them and feed their children, "*I used to carry food from home and go with it to farm, I feed my child when s/he feels so and when s/he cries, it's a sign that the child is hungry you go feed or breastfeed."* These are some of means that mothers or caregivers admitted to use to determine and feed their children at a time.

4.6.5 Cultural Practices Determines Stunting

Under cultural practices the study meant to trace on the ability of mothers or caregivers to provide or satisfy needs of their children. Under several conditions a child might be in need of mother's or caregiver's attention but due to several cultural practices. Mother fails to recognize a need of child early hence affect a child negatively.

4.6.5.1 Cultural Practices for a Pregnant Mother is sick, or a child.

When a Pregnant Mother is sick and her sickness is related to pregnancy there are different levels of assistance that relatives or siblings will offer for her. In case of normal pain or pregnancy related pains, we prepare "Mkoyoyo's root remove the bark, grind and then boil, warm mkoyoyo water will be put into container like a cup and put into pregnant mother' womb through anus through a pipe." Such process is popular called "*KUMWINIKA*" this happens to both mother and a child for a child it helps to reduce stomach cramp and cries.

4.6.5.2 Cultural Practices of a Lactating Mother

In this study mother admitted that, they breastfeed their children immediately after birth, even the colostrum some of them gave their children. Only few like 2% admitted to give birth at home and they are likely to not breastfed their children immediate after birth, (*Breastfeeding is done at home but after removing the yellowish milk and it is not in a proper like what the health facility workers used to advice*). Some parent, caregivers practice poor breastfeeding as well as feeding depending with whom they meet at home.

During the study it was found that homestead TBA has a great influence on what parents or caregivers can implement the means and how of taking care their children. It was observed that giving children water in normal times and during bath is not something to be amazed at. "*a mother once wash a child in a basin, first they take a child and make it sit on the water in the basin, a mother will fetch little water on her hand and drink a child, then continue bathing*" this act make a child to drink contaminated water that will affect child's health. This happened even in Gambia where traditionally and culturally mothers admitted to give their children liquids in early time signifying that they will be strong and health, ending up with high rate of Malnutrition which are highly linked up with their cultural practices (Njai and Dixey 2011).

Also a mother pointed out this, a child used to be breastfed mainly during the first three month, but even during the first month, there are welcome things to be done for a childlike, giving male goat soup, or sardines soup to cure stomach cramps. Also others used to feed a child using bottle foods like milk even before 6 month. Mother responded that there is no exact amount of food a child should be given, till they say they are satisfied is where you also stop. And mainly children are fed, very thin Cassava flour porridge, and those who are able to eat they are given "Ugali and Maharage", that are very common. And they are being fed only the main three meals.

Lactating Mother in the community are treated in a manner that a child can be put through to so as to sanctify his or her existence. "*We used to embed local herbs on mother breast and child suck milk together with herbs and they become clean"*, these are few practices among many that women declared to perform for their children when they are born. Some fails because they gave birth at health facility, but letter on they manage to do so when they are free at their homes.

For boys they used to cry lot, as a sign of communicating pain in their stomach (stomach cramp), women declared to go bush and find some medication, "*we have to go to the bush and collect some leaves and roots, we boil and give a child the worm water through rectum by using a small pipe, after such event a child will defecate, an becomes well-off; (Healthy) in no time a child stops the cries"*. These are among several methods that parents or caregivers used to heal their children.

CHAPTER FIVE

5.0 DISCUSSION

This chapter presents a discussion of the main findings with regards to the specific objectives of the study and various literature reviews. The overall prevalence of stunting in Kasulu district was 54.5% and the factors associated with stunting attributed by feeding practices of underfives, and the cultural aspects influencing maternal and child feeding practices. Feeding behaviors, Educational level, household size, dietary diversity and breastfeeding are considered as main factors for stunting.

5.1 Prevalence of stunting among underfives in Kasulu District.

The study was able to determine the prevalence of Stunting among underfives in Kasulu District; the study revealed that 54.5% of children reached by the study in Kasulu district were stunted. Such overall attainment of 54.5% it is recorded as "Severe" need an immediate attention, similar studies were done in sub-Saharan African regions. In Ethiopia, the EDHS of 2016, reported to have a National rate of 38% stunting, with 52% in Ahmara area, which is close to that of Kasulu as revealed with this study, 56% in Burundi, (BDHS 2016/17). Though in Kasulu District, the average prevalence was higher than the regional rate of 48.6%, but close to Kagera, Iringa and Njombe with 51.9%, 51.3% and 51.5% respectively (TNSS, 2014).

The three Region's has an average rate of stunting close to one another, revealed by the study, this shows that such rate is attainable and can be worked on and be reduced as shown in some East and Central African countries like Burundi and Ethiopia.

However it should be noted that the difference revealed in this study compared with other studies were contributed by a number of factors includes, Methodology used, i.e Demographic health surveys (DHS), Multiple indicator Cluster survey (MICS) or Standardized Monitoring of assessment and relief transitions (SMART) and variation in sampling. This suffices to give a different rate depending from which method ere used.

Tanzania Demographic health Survey of 2015 revealed stunting to be 37.8% (TDHS, 2015) in Kigoma while the TNNS 2014 used SMART method gave us a stunting rate of 48.6%. (TNNS2014). The variations in the results could be highly triggered by the method used and time from one survey to another.

5.2 Feeding practices that contributes to Stunting of underfives in Kasulu District

5.2.1 Food Dietary Diversity

The study was able to identify different feeding practices that contribute to stunting in Kasulu District. The results of the study showed that the odds of Food from at least four food groups were less affected with stunting which were 25% compared to household whose caregiver does not feed their children food from at least three food groups which was 38.8%. Also the feeding should consider the age of a child.

The findings in this study are similar to numerous finding done by different studies, TNNS 2014, pointed out the dietary diversity for Kigoma region was 25% and 24.5% at National level, In Rwanda, RDHS 2010, revealed to have 23% of dietary diversity, while in Burundi only 16% of Minimum Dietary Diversity was reported (BDHS, 2010). This is close to Ethiopia which stands at 14% (EDHS 2016)

Comparison with other studies as pointed out shows that there is a close uniformity in Tanzania and Burundi and their stunting status, but variation in Burundi as their rate is low, reaching to 16% as minimum dietary Diversity, and their stunting rate also is still high as a nation.

5.2.3. Children sharing Food in One Plate with Older Siblings.

Also the study reveals a feeding practice of sharing food in one plate of a child with older siblings has been noted to contribute to stunting whereby among children who were left to eat with older siblings rather than controlling them, 57.9% were stunted. This brings an opportunity to look into ways of helping children, as older siblings does not consider the amount required to be taken by their younger ones, they kept focus on their own body needs.

Numerous t studies were done test the results of sharing food to children of different ages, such study were done in Nepal where children were assessed on the consumption of Food in sharing manner affect food consumption with Vitamin A, it was revealed that contrary to what was reported in this study, food sharing improved the feeding of a child but affects the nutritional intake as it depends with the food shared, i.e., children likes much animal sourced food and their products, especially meat and Milk, Hen and Eggs. (Shankar et al, 1998), giving them in sharing manner will lead to those who are powerful or older to benefit more leaving those who are younger starving.

5.2.4 Feeding children with Left overs food.

In this study it was revealed, parents sometimes get difficulties in preparing food for their children, it depends with a number of commitments a parent has. Especially during farming season, caregivers used to wake up early leaving children still asleep, once children they wake up, they meet with a caretaker who is younger, the means only used is to give children what food was left yesterday. Such tendency affects children hence during the study it was revealed that 62.3% of children are affected with stunting.

One study done in Canada revealed that Leftovers food can contribute highly to food poisoning, once left uncovered and leave bacteria to enter, and can be consumed without being re-heated, such scenario cause contribute highly to children illness such as diarrhoeal (Canada MOH, 2015) which deplete nutrient's in child's body and lead to stunting.

5.2.5 Meal Frequency (Minimum Meal Frequency)

Meal Frequency in among the unit for Minimum dietary diversity, feeding a child depends with the age of child under program, breastfeeding child should sticky in one mother's breast until satisfied. Gradual additional of amount with frequency is required in order to maintain body's requirement, Prolonged or improper Minimum Meal frequency to children will lead to nutritional deficiency hence Stunting (EDHS 2016)

From the study it was revealed that children who eat the minimum meal frequency for underfives which are three main meals with two snacks (making it five meals) were only 36.8% leaving 63.2% consuming less than the recommended meal frequency which putting children highly susceptible to nutritional related deficiency diseases of stunting is among them.

5.3. Cultural practices that influence Maternal and Child feeding Practices

In this study, this section highlighted some cultural practices that were noted to affect Maternal and child feeding practices.

5.3.1 Types of Meals and Age that a child is being fed

Mothers or caregivers in the study revealed that they accept the ideas of doing exclusively breastfeeding, but in the actual implementation tend to start by giving children foods and drinks at early stages before the six month, that are recommended, 44..1% of mothers, caregivers in Kasulu District starts giving their children something to eat or drink when reaches between 4-5 months old. This affects child's growth though they can't see their implication at the moment. Meals that were prepared for children were the staple foods that are available in the community with less cost, but with less nutritive value, and even the less nutrition available were depleted during preparation, resulted by being overcooked, therefore when reached to the feeding point becomes of no additional value to children.

In Kasulu District it has been shown that mothers and or caregivers mainly gives low priority in making sure that, children eats what is right for their age, instead they follow what community members directed them to feed their children, and Mostly they depend from elders influence hence gives children food either before recommended age. Kasulu Community culturally uses cassava flour to make Porridge and the notion behind is to make it as light as possible for a child to swallow easily. Such a behavior happens not only to infants but cut across to any child in the community.

Different Studies like this happened in Tanzania, Nigeria and Hong Kong revealed that 32%, 34.5% and 44% mother, caregivers respectively gave their children something to eat and drink early, some when they are only six weeks (Ibe et al 2017 and Mabila 2003). When doing breastfeeding at the same time they are been given something as food or drinks, In Nigeria they are given pounded yams and collanuts, these are the main staple food for the Ibo and Yoruba people. These foods given to children are believed to cleans and give children a taste of home.

Different Studies reported that, common foods that children are fed when they are still infant, and in early time of their life, 34.5% of mothers and caregivers in India feeds children with cultural foods that are honey, jiggery and Ghutti (this is a powdered mixture containing herbs), in the first six weeks, this happened in India. In Kenya, mother and or Caregivers (especially Grandparents) gives water and juice as light food to quench thirsty to children and when they cries much, such cries translate that they are in need of something such as food. In Peru infants were given foods and drinks very early, when reaches the third month of birth. (Patil *et al* 2009).

5.3.2 Food Preparation for children

Food preparation is an integral part that were considered during the study, when children reaches the required age to be fed, there should be food which have been prepared well and still hold the nutritive value. Food for children has is being prepared normally when they prepare normal meals for the household. Foods for the household have been prepared without considering the level viscosity, palatability and taste.

In the course of Preparation mothers or caregiver don't consider preparation of ingredients to the main meal that mothers are preparing, time consumed in the process of preparing the intended food and storing of such food after being cooked. These are some of the concern those were observed to contribute to quality food cooked. But it was attained very low.

Similar observations were observed in different studies; Klazine van der Horst *et al* 2014, observed that time consumed in food preparation affect the appetite of children in consuming such food. Also Muhimbula, 2010 noted that most of caregivers or parents prepare foods for their children and store in container so as to feed them letter, such containers are just for storing and not even maintain the hygienic status of the stored food. Other feed their children cold foods or left overs without worming, this triggers feeding children with food that can cause stomach problem to children.

5.3.3 Feeding style

From the study, it was revealed that. Feeding styles contributes much to the health status of a child. The three feeding options that were looked on under this study give a clear picture on how community managed feeding their children. Responsive feeding under the study only 11.5% of caregivers in the study admitted to practice such close follow-ups in feeding their children, and positive results have been observed. In some cases responsive feeding increases more when the child is sick or unable to eat well due to illness conditions such as diarrhea. Different studies on the aspect of insisting on the close follow-up of feeding children shows that, 20.1% of parents in Nigeria practice, responsive feeding to children aged older that six month, Ibe S.N.O *et al*, 2017. Also

Control Feeding, in this study few parents said to abide to the roles of feeding their children under their close supervision. Study revealed that not all procedure under the control feeding parents follow. Only 15.4% of parents interviewed in FGD's admitted to practice a partial control feeding, where by some of the key area of determine and feeding practices were left out, example parents still depends a child to cry as a sign a child is hungry and once a child left out food when s/he eating is a sign that a child is satisfied and not taking into consideration child's appetite (Rollins *et al* 2014), therefore such notions are wrong because we have seen some practices are not correct. Some may leave food not because they are satisfied but they lost appetite in the course of eating. But few (the said 15.4%) who accepted to use control in feeding believed that their children were somehow doing better that those who don't.

Studies done in Control Feeding as one of the aspects in feeding style showed that, control in feeding for both restriction and pressure to eat were positively correlated with one to the other, (Wehrly *et al* 2014), this happens when restriction happened to a certain food type it has a positive or negative implication on the nutritional status of a child. Once uncontrolled feeding happens negative outcome is inevitable like change in weight specifically low weight.

Leisure faire feeding style is the most dominating feeding style observed in Kasulu District during the study, with 73.1% of mothers, caregivers admitted to use this type of feeding. Some of them practice this by knowingly while others unknowingly. This went far up to using children who takes care of the fellow children, reaching up to feeding the leftovers without proper preparation. This has been also witnessed in studies done in Peru and Guatemala showed that mother or caregiver gave less priority in feeding children where by 70% of caregivers fall under leisure fare feeding, and they practice this when children are at early stage of feeding themselves (at 12 months).

Feeding Environment

This is the art where by parents creates in order to influence proper feeding and letter transform into better growth. Feeding environment prepare a child mentally on an event that will take place. Foods are available from their local areas, as approximately 90% of Kasulu community, depend food from their farms. Preparation that means from cooking in the kitchen a number of nutrients have been lost due to over or under cooking. But once food is ready feeding environment contributes much to how much a child can take, Mothers, caregivers in study admitted to feed their children's while they are in farm activities, (*Once a child feel hungry you can notice from a cries, and bring more disturbances and discomforts)* Little attention is being given to children during feeding as parents or caregivers are engaged with other business.

When a Pregnant Mother is sick, or a child.

When a Pregnant Mother is sick and her sickness is related to pregnancy there are different levels of assistance culturally were offered. For Normal pain regarded as pregnancy related pains, we prepare "Mkoyoyo's root remove the bulky, grind and then boil, warm mkoyoyo

water will be put into container like a cup and put into pregnant mother' womb through anus through a pipe." Such process is popular called "KUMWINIKA" this happens to both mother and a child for a child it helps to reduce stomach cramp and cries.

Such processes were done to relief a pregnant mother from stomach pain as well as prepare her for a well delivery, it is believed that once a mother taken through such process she undergo diarrhoeal, and such act believed to prepare a way for safe delivery. Taking medicine, which not known on the measurement, (what amount will cure such a problem), route that will be used to get medicine in patients body, (here they pass through anus) this also troubles a pregnant mother and may cause other problems. Other even if they are at the hospital they used to mix with their local herbs in times where they see, expected delivery date has passed and she has not yet given birth.

Different studies done and revealed that 85% of Sub-Saharan African countries pregnant mothers depends on local herbs to cure pregnant related complications (Muhammad *et al*, 2017), recommended good health of a mother and to be born child is to be determined by a kind of maternal healthcare both at pre and post-delivery. The use of traditional herbs contributes to torn the uterus muscles, induce labor and management of postpartum bleeding, all these contributes largely to maternal death (Attah, *et al*, 2012).

5.3.3 Lactating Mother/Child

Once a mother gave birth in the Hospital, there are some local process that require a child to be taken through, when you gave birth at health facility a number of things delays to be performed and other might that require a child to be performed will not work as long as nurses will watching over.

Especially for boys they used to cry lot, this is a sign of communicating pain in their stomach, we have to go to the bush and collect some leaves and roots, we boil, filter and give a child, worm water through rectum by using a small pipe, after such event a child will defecate, an becomes well-off; (Healthy) in no time a child stops the cries.

Nowadays we used to breastfed our children immediately after birth, even the colostrum we used to give to a child; few of them who gave birth at home are likely to not breastfed their children immediate after birth. But once they reach home others change and start follow what Homestead TBA says. Like giving, water during bath. “a mother once wash a child in a basin, first they take a child and make it sit on the water in the basin, a mother will fetch little water on her hand and drink a child, then continue bathing” this act make a child to drink contaminated water that will affect child’s health.

Also a mother pointed out this, a child used to be breastfed mainly during the first three month, but even during the first month, there are welcome things to be done for a childlike, giving male goat soup, or sardines soup to cure stomach cramps. Also others used to feed a child using bottle foods like milk even before 6 month. Mother responded that there is no exact amount of food a child should be given, till they say they are satisfied is where you also stop. And mainly children are fed, very thin Cassava flour porridge, and those who are able to eat they are given “Ugali and Maharage”, that are very common. And they are being fed only the main three meals.

From other studies done reveled the same similar information among other thing that children are affected by cultural modality, Chege *et al*, 2015 pointed out that as cultural background children were being fed with three meals instead of five as per standard, instead of being fed food from at least four food groups, they were fed only thin or stiff porridge made form cereal such as Maize flour, rice or beans.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study's results explore the prevalence of stunting in Kasulu District among underfives is still high 54.5%, compared to the national average.

The Analysis done for the study revealed some key determinants of feeding practices that contributes to stunting such as Dietary Diversity, Meal frequency, food Security, exclusive breastfeeding and complimentary feeding. For the community to reduce the effects of stunting there should be deliberate efforts needed to operationalize mentioned determinants so as to reduce and control the rate.

Cultural practices in the community still exists and they affect largely the community, removing such practices the bad side is we have not given the due weight to fight against so as to minimize its effects, such as the use of "*Kumwinika*" as a medicine which uses a wrong route and leaving a high chance of not curing a disease a child might be suffering, or else causing another disease.

6.2 Recommendation

- The study explore the prevalence of stunting in the society, every individual should take part to understand and fight against stunting by bearing in mind the effects might not be seen today when a child is young but even letter when they grow.

- The study explore a good weapon to fight against determinants of stunting through inclusive approaches, formation of village gathering whereby a good number of community members will participate and raise their awareness of factors that are locally identified as due to lack of awareness

- In the advantage of having different stakeholders in the community such opportunity can be taken into consideration to air messages that can be of useful to community while waiting for a comprehensive plan.
- Also making the use of Community Health workers that were found in the community to be a pivotal change agent, while using also Traditional Birth Attendance and Adult Mothers as they are the most lessened in the community in caring children.

REFERENCE

1. Abubakar A, Uriyo J, Msuya SE, (2012). *Prevalence and risk factors for poor nutritional status among children in the Kilimanjaro, Tanzania*. International Journal Environment Res Public Health, Multidisciplinary Digital Publishing Institute.
2. Addis Continental Institute of Public Health (2009) *Community-Based Sub-Component of Ethiopian National Nutrition Program Baseline Survey Report*.
3. Agatha Croteau, (2016) *Impact of the Overall Workload on pregnancy*.
4. Amone, C.(20014) "We are strong because of our millet bread: staple foods and the growth of ethnic identities in Uganda.," *Journal of the Humanities and Social Sciences,*
5. Ally Z. Lyana & Nlooto Manimbulu (2014) *Culture and Food Habits in Tanzania and Democratic Republic of Congo,* Journal of Human Ecology, 48:1, 9-21,
6. Asad AL and Kay T. (2015). *Toward a multidimensional understanding of culture for health interventions Social Science & Medicine 144:79-87.*
7. Attah, O'Brien, Koehbach, Sonibare, Moody, Smith, and Gruber, (2012) *Uterine contractility of plants used to facilitate childbirth in Nigerian ethno medicine*. Journal of ethno pharmacology 143(1): p. 377-382.
8. Avruch, K. (1998) *Culture and Conflict Resolution*. Washington DC: United States Institute of Peace Press.
9. Chiara A, Tefera D,George M, Regine K, Debarati G, (2016) *Factors Associated with Stunting among Pre-school Children in Southern Highlands of Tanzania. Journal of Tropical Pediatrics,* 2016, 62, 390–408 doi: 10.1093/tropej/fmw024 Advance Access Publication Date: 27 April 2016.
10. Chiege.P.M, Judith O.K and Zipporah W.N, (2015) *Influenc*e *of Cultural on dietary practices of Children Underfive years among Maasai pastrolalists in Kaijado, Kenya.*
11. Craig Hadley, (2005) *Ethnic Expansions and Between-Group Differences in Children's Health: A Case Study From the Rukwa Valley,Tanzania.* AMERICAN JOURNAL OF PHYSICAL ANTHROPOLOGY 128:682–692

12. Democratic Republic of Burundi (2010) *Demographic Health Survey*
13. Federal Democratic Republic Of Ethiopia, (2016) *Demographic Health Survey*
14. Hienz NN1, Kam S (2008) *Nutritional status and the characteristics related to malnutrition in children under five years of age in Nghean, Vietnam*. J Prev Med Public Health 41: 232-240.
15. Hussein, AK (2005), *Breastfeeding and Complementary Feeding Practices in Tanzania:*
    East African Journal of Public Health, Vol. 2, No. 1, 2005, pp. 27-31.
16. International Food Policy Research Institute. (2016). *Global Nutrition Report 2016: From Promise to Impact: Ending Malnutrition by 2030*. Washington, DC.
17. Ministry of Health Canada (2015) *Safe food handling for children ages 5 and under*
18. Montanari M, (2006) *Food Is Culture,* translated from the Italian by Albert Sonnenfeld.
19. M'soka, N, Mabuza, L, Pretorius, D, (2015) *Cultural and health beliefs of pregnant women in Zambia regarding pregnancy and child birth*
    3810.4102/curationis.v38i1.1232- Curationis
20. Muhammad M, M Hassan M, M Priscilla B J, Shuaibu B.S, (2017) *Medicinal Plants used in Traditional Maternal Health Care Delivery in Five Selected Villages of Zango Kataf Local Government Area of Kaduna State*, Nigeria.
21. Muhimbula Happiness S, Abdulsudi Issa-Zacharia (2010) *Persistent child malnutrition in Tanzania: Risks associated with traditional complementary foods (A review)* African Journal of Food Science Vol. 4(11), pp. 679 - 692, November 2010.
22. Mvena S.K Z, Mwaseba, D.J. B. Randi Kaarhus (2016*) Food culture and child-feeding practices in Njombe and Mvomero districts, Tanzania.* Journal of East African Studies 10:2, 325-342.

23. Ogunjuyigbe, P, Ojofetimi O., Oni, G., Odewale, O.,Bamigboye, A.. Faborode, T., Esmai, A.O, Owolabi (2005), *The effects of maternal nutrition of pregnancy outcomes in Osun State Nigeria:* Africa Journal of Nursing and Midwifery, Volume 8, Issue 2, Jan 2006, p. 25 – 34.
24. Pérez, G. M., and García, A. P. (2013), "*Nutritional Taboos among the Fullas in Upper River Region, the Gambia."* Journal of Anthropology.
25. Redmond, J., Jarjou, L. M. A., and Zhou B., Prentice, A., and Schoenmakers, I., (2014) "*Ethnic differences in calcium, phosphate and bone metabolism"* Proceedings of the Nutrition Society,
26. Reitmanova S and Gustafson DL (2008). "*They Can't Understand It": Maternity health care needs of immigrant Muslim women in St. John's, Newfoundland*. Maternal Child Health Journal, 12, 101-111.
27. Republic of Rwanda (2016) *Demographic and Health Survey*
28. Rollins, B. Y, Loken, E., Savage J.S, and Birch LL (2014). Maternal Controlling Feeding Practices and Girls inhibitory control Interact to Predict changes in BMI and Eating in the absence of Hunger from 5-7 yrs. Am.J.Clin.Nutr. 99,249–257. doi:10.3945/ajcn.113.063545
29. Saitoti, A., (2010) "*People and Their Food Cultures'*: The MaasaiNairobi: East African Publishing House.
30. Shankar A. V, Gittelsohn J, West K. P, Jr. Stallings R, Gnywali T, Faruque F, (1998) *Consumption in Vitamin A–Deficient Nepali Children .The Journal of Nutrition*, Volume 128, Issue 7, July, Pages 1127–1133
31. Solomon O, Ipolto O, Gaston A. Tumuhimbise, D, Duncan O (2017), "*The Relationship between Cultural Norms and Food Security in the Karamoja Sub-Region of Uganda*."Journal of Food and Nutrition Research, vol. 5, no. 6 (2017): 427-435. doi: 10.12691/jfnr-5-6-10.
32. Ugal, David B, AwahIrenemary, Ushie Boniface, Ushie Michael and Igwu Justine. (2013)*Socio Cultural Factors in Maternal Health in Rural Areas of Northern Cross River State, Nigeria*

33. UNICEF (2015) *Levels and trends in child malnutrition, UNICEF – WHO – World Bank Group joint child malnutrition estimates key findings of the 2015 edition.*
34. United Republic Of Tanzania (2012) *Population and Housing Census Report*. Population Distribution by Administrative Areas
35. United Nations Children's Fund (2013), *Improving Child Nutritional, The achievable imperative for global progress.*
36. United Republic Of Tanzania, (2013) Nutrition Country Paper (Draft), CAADP Agriculture Nutrition Capacity Development Workshops. February 2013.
37. United Republic of Tanzania (2016): *National Multisectoral Nutrition Action Plan (NMNAP) for the period July 2016 – June 2021;* Dar es Salaam Oct, 2016.
38. United Republic of Tanzania, (2014), National Nutritional Survey, Tanzania Food and Nutritional Center, Final Report
39. United Republic of Tanzania (2015*) Demographic and Health Survey and Malaria Indicators*, key Findings
40. World Health Organization, (2018) Stunting in a Nutshell http://www.who.int/nutrition/healthygrowthproj_stunted_videos/en/ accessed on 26th Oct, 2018; 17:08Hrs.
41. World Health Organization; (2017), *Nutrition in the WHO African Region*. Licence: CC BY-NC-SA 3.0 IGO.
42. Yalew BM, Amsalu F, Bikes D (2014) Prevalence and Factors Associated with Stunting, Underweight and Wasting: A Community Based Cross Sectional Study among Children Age 6-59 Months at Lalibela Town, Northern Ethiopia. J Nutrition Disorders The 4: 147.
43. Lancet 2008. Scaling up Nutrition a Framework for Action, the Lancet, and "Maternal and Child Under nutrition," Special Series.

APPENDICES

Appendix I: English questionnaire

Basic information			A
A1 Date of survey: _____/_____/_____ (DD/MM/YYYY)	A2 Village Name _____	A3 Cluster #: _____	A4; HH #: _____

Household Basic Information		**B**
B0 1	Are you the household head? 1. = Yes 2. = No	☐
B0 2	How old are You? (*the age of a Household Head or caregiver*)	……Years
B03	What is the marital status of the household head/caregiver? 1. = Married 2. = Never married 3. = Divorced/Separated 4. = Widowed 5. = Co-habiting 6. = Other, Specify_____	☐
B04	How many People are living in this household?	☐
B05	How many children are below 5 years?	☐

B06	What is the highest level of schooling you have completed? ***(HOUSEHOLD HEAD/CAREGIVER)*** **0** = Never Attended; **1** = Preschool; **2** = Lower Primary 1-4; **3** = Upper Primary 5 - 7; **4** = O-Level- Form 4; **5** =A-Level form 5-6; **6**= Vocational Training **7** =College & University; **8** =Don't know	
B07	What is the relationship between a child under study and the caregiver 1. = Biological caregiver (mother) 2. = Relative (Grandmother 3. = Adopted One 4. = Others……..	
B08	Occupation of the household head. 1=Employed in Government institutions. 2=A farmer 3=Housewife 4=Other occupation……..	

Magnitude of stunting

C01	Date of Birth of a child we are referring (In form of Date/Month /Year) Confirm the date on the child's clinic card. ……/……/……	
C02	Child Sex 1. Male 2. Female	

C03	Height of child in reference should be Cm. …….	
C04	Weight for a child under reference. ……..	

Feeding practices		**D**			
D01	In the past 12 months, place one in the box if the respondent identifies that month as one in which the household had the main staple food in store for family use. DO NOT READ THE LIST OF MONTHS. (For enumerator only) Working backwards from the current month, which were the months in which the household have staple food remained in the household and which one did not have (Fill in the box; as 1 for Yes and 2 for No food				
	January		May		September
	February		June		October
	March		July		November
	April		August		December
D02	What mechanism do you Use when you fall under shortage of food 1. = Borrowing from friend 2. = Skipping meals 3. = Fasting 4. = Sleeping without eating				

D03	When you are at home, who do you consult for advice on how to feed the baby 1= Grandmother 2= Mother 3=Sister 4= Any elder who is at home. 5= Others (mention)……..	
D04	In your tradition are babies used to be fed at birth? 1= Yes 2= No.	
D05	Is there any special food given to children at first weeks after birth. 1.= Yes 2. = No	
D06	If Yes on The Question no. E05 above What Kinds of food that a child is being fed? ……	
D07	Normally a child of which age do you start give them something to eat, or drink? (*For enumerators do not read the options, let the caregiver answer by him/herself then put the answer to the right option*) 1. = 1-2 Month 2. = 2-3 Month 3. = 4-5 Months 4. = 6-and Above	
D08	In which form does that "something" you started giving your child is. 1. = Soft 2. = Fluid (light like milk) 3. = Semi Solid (stiff liquid) 4. = Solid (like Ugali)	

D09	How many meals (including porridge or bread) a child of 0-6months ate yesterday in your household? 1. = Once 2. = Twice 3. = Three or more times 4. = More than Three (Respondent should clearly outline the actual meals)	
D10	How many meals (including porridge or bread) a child of 6-12 months ate yesterday in your household? 1. = Once 2. = Twice 3. = Three or more times 4. = More than Three (Respondent should clearly outline the actual meals)	
D11	How many meals (including porridge or bread) a child of 13-24 Months ate yesterday in your household? 1. = Once 2. = Twice 3. = Three or more times 4. = More than Three (Respondent should clearly outline the actual meals)	
D12	Now I would like to ask you about the type of foods that children of 0-6 months in your household ate yesterday during the day and the night. (Pick a child from the household whom we are refer to)	
	Morning (Breakfast)	
	Afternoon (lunch)	
	Night (Dinner)	

D13	Now I would like to ask you about the type of foods that children of 6-12 months in your household ate yesterday during the day and the night. (Pick a child from the household whom we are refer to)	
	Morning (Breakfast)	
	Afternoon (lunch)	
	Night (Dinner)	
D14	Now I would like to ask you about the type of foods that children of 13-24 months in your household ate yesterday during the day and the night. (Pick a child from the household whom we are refer to)	
	Morning (Breakfast)	
	Afternoon (lunch)	
	Night (Dinner)	
D15	Is the child given an added Snack between the normal meals they eat? 1. = Yes 2. = No	☐
D16	If child is sick what measures you used to take 1. = Look for Medication from relatives neighbors 2. = Seek medication from Hospital 3. = Seek medication from local Pharmacy 4. = Others Mentions……..	☐

D17	Do you keep chickens, duke and other related birds? 1. = Yes 2. = No	☐
D18	Who decides on the consumption of those animal reared at home or their products to family. 1. = Father 2. = Mather 3. = Grandfather 4. = Others……..	☐
D19	Do you participate in agriculture activities? (caregiver) 3. = Yes 4. = No	☐
D20	If you go farm, where do you left your child. 1. = At Home with the other sibling's. 2. = At the Neighboring house. 3. = Am going with him/her	☐
D21	How old are the siblings that are remaining with a child at home?	……..
D22	If a child remains at home do you leave with ready cooked foods? 1. = yes 2. = No	☐
D23	If No. for the question above, what kinds of food do they left with at home 1. = Yesterday's left overs 2. = Access food from neighbors 3. = They cook for themselves	☐

D24	Does children allowed eating Meat? And all other parts of the organs of animal at home. 1. = YES 2. = No	☐
D25	If YES Skip, If No why …… ……. …… …….	
D26	Is the baby eats from his/her own plate 1. = Yes 2. = No	☐
D27	If YES in the question above what quantity does a child took (compare and fill the amount by looking on the ¼ a Littre cup) ….....	
D28	If No in question D26 above, what age does he/she share with plate 1.=0-5 months 2.= 6-12 Months 3. =13-24 Months 4.= 25-59 Months 5= 5 years and above.	☐
D29	How many meals do you take when you are pregnant in a day? 1. = One meal 2. = Two meals 3. = Three meals 4. = More than three meals	☐

D30	Does Pregnant mother consume snacks between the recommended meals? 1. = Yes 2. = No	
D31	Is there any food types that pregnant mothers are not allowed to consume? 3. = Yes 4. = No	
D32	If Yes in the question above, what are the foods and the reasons 1……Reason…… 2…….Reason…… 3……Reason……	
D33	When you were pregnant what kinds of Foods that you used to eat from morning to evening. 1. Breakfast …… 2. Lunch…… 3. Dinner…… …	
D34	What kinds of food that you were suggested to eat by mother or any other relative at your household when your pregnancy had one to three Month that are traditionally recommended. Breakfast ……. Lunch……. Dinner…….	

D35	What kinds of food that you were suggested to eat by mother or any other relative at your household when your pregnancy had four to Six Month that are traditionally recommended. Breakfast ……. Lunch……. Dinner…….	
D36	What kinds of food that you were suggested to eat by mother or any other relative at your household when your pregnancy had Seven to Nine Month that are traditionally recommended. Breakfast …… Lunch…… … Dinner…… …	
D37	Once you gave birth, who is the first to be breastfed? 1= Baby 2= Animals (Cleansing Purpose) 3=Other……..	☐
D38	How long did you take before you breastfed a child for the first time after birth?	……

D39	If it was more than 30Minutes was the reason for not doing at the right time? 1. = No milk. 2. = A child was sick 3. = Inability to suck milk form mother 4. = There were coming bad milk that a child is not supposed to be breastfed 5. = Maternal complication	
D40	Who consumes colostrum's milk in the first days? 1= Baby 2= Animals (Cleansing Purpose) 3=Discarded 4 = Other……..	
D41	Is there anything we embed things that we put for child to suck with for the first time? 1. = Yes 2. = No	
D42	Is the baby given other milk than breast milk? 1. = Yes 2. = No	
D43	Is baby given water or anything light in the first six month? 1=Yes 2= No	
D44	Who assists you at home when you gave birth 1. = Mother 2. = Sister 3. = Mother In Law 4. = Others……	

Appendix II : Swahili questionnaire

Maelezo ya Awali		**A**	
A1 Tarehe ya utafiti: _____ / _____ / _____ (siku/ Mwezi /Mwaka)	A2 Jina la Kijiji _____	A3: Fungu #: _____	A4; HH #: _____

Maelezo ya Msingi ya kaya		**B**
B01.	Je! Wewe ni Mkuu wa kaya? 1. = Ndiyo 2. = Hapana	☐
B02	Una miaka mingapi? (*umri wa mkuu wa kaya au mlezi*)	……Miaka
B 03	Hali ya ndoa ya Mkuu / mlezi wa kaya ni nini? 1. = Ndoa 2. = Hajawahi kuolewa/kuoa 3. = Talaka / Kutenganishwa 4. = Mjane 5. = Kuishi kinyumba pasina kuona 6. = Nyingine, Taja _____	☐
B04	Watu wangapi wanaishi katika kaya hii?	☐
B05	Ni watoto wangapi wana umri chini ya miaka 5 katika kaya hii.	☐

B06	Je! Ni kiwango gani cha juu cha shule ulizokamilisha? ***(MKUU / MLEZI WA KAYA)*** **0** = Hajawahi Kuhudhuria ; **1** = shule ya kwanza ; **2** = chini ya darasa la 1-4 Shule ya Msingi; **3** = Shule ya Msingi 5-7 ; **4** = Kidato cha 4; **5** = Kidato cha 5-6; **6** = Mafunzo ya Ufundi **7** = chuo na chuo kikuu; **8** = Sijui	
B07	Kuna Uhusiano gani kati ya mtoto tumdodosae na juu ya kujifunza na mlezi 1. = Uhusiano wa kibiolojia (mama) 2. = Jamaa (bibi 3. = Aliyeasiliwa 4. = Wengine	
B08	Kazi ya Mkuu wa kaya. 1 = Wafanyakazi katika taasisi za Serikali. 2 = mkulima 3 = mama wa nyumbani	

	4 = kazi nyingine Taja.....	

Kiwango cha Udumavu	**C**	
C01	Tarehe ya kuzaliwa kwa mtoto tunayotafuta (Katika tarehe ya Tarehe / Mwezi / Mwaka) Thibitisha tarehe kwenye kadi ya kliniki ya mtoto. ..... / ..... /	
C02	Jinsia ya Mtoto 1. Kiume 2. Kike	
C03	Urefu wa mtoto katika kumbukumbu inapaswa kuwa Cm.	
C04	Uzito kwa mtoto anayeelekezwa.	

Tabia za Ulishaji	**D**	
D01	Katika kipindi cha miezi 12 iliyopita, jaza moja katika sanduku ikiwa mhojiwa anafafanua mwezi huo kama moja ambayo kaya ilikuwa na chakula kikuu kikubwa cha kuhifadhi kwa matumizi ya familia. Usisome habari ya mwezi. (Kwa mwandishi tu) Kufanya kazi nyuma kutoka mwezi uliopo, ambao ulikuwa miezi ambayo kaya ina chakula kikuu kilichobakia ndani ya kaya na ambacho hakuwa na (Kujaza sanduku, kama 1 ya Ndiyo na 2 kwa Chakula	

Januari		Mei		Septemba	
Februari		Juni		Oktoba	
Machi		Julai		Novemba	
Aprili		Agosti		Desemba	
D02	Unatumia utaratibu gani unapokuwa na uhaba wa chakula 1. = Kukopa kutoka kwa rafiki 2. = Kutokula chakula 3. = Kufunga 4. = Kulala bila kula				
D03	Unapokua nyumbani, nani unamfuata kwaajili ya kukupa ushauri kuhusu namna ya kumlisha mtoto? 1. = Bibi 2. = Mama 3. = Dada 4. = Mzee yeyote ambaye yupo nyumbani 5. = Wengine (taja)…….				
D04	Kwa mila yenu mtoto huwa anapewa chakula mara tu anapozaliwa? 1. = Ndiyo 2. = Hapana				
D05	Je Kuna Chakula Maalumu ambacho hupewa mtoto katika juma la awali anapozaliwa				

	1= Ndiyo 2= Hapana	
D06	Kwa kawaida mtoto wa umri gani anaanza kupewa kitu cha kula, au kunywa? (Kwa wasomaji hawajasoma chaguo, basi mlezi atoe jibu kwa yeye mwenyewe) 1. = Mwezi wa 1-2 2. = Mwezi wa 2-3 3. = Miezi 4-5 4. = 6-na zaidi	
D07	Ni aina gani katika "kitu" ulichoanza kumpa mtoto wako. 1. = chakula Laini 2. = Cha majimaji mepesi kama maziwa (mwanga kama maziwa) 3. = Majimaji Mazito 4. = Vigumu kama Ugali	
D08	Milo ngapi (ikiwa ni pamoja na uji au mkate) mtoto 0-6 alikula jana nyumbani kwako? 1. = Mara moja 2. = Mara mbili 3. = Mara tatu au zaidi 4. = Zaidi ya Tatu (Mhojiwa anapaswa kufafanua wazi chakula)	

D09	Milo ngapi (ikiwa ni pamoja na uji au mkate) mtoto 6-13 alikula jana nyumbani kwako? 1. = Mara moja 2. = Mara mbili 3. = Mara tatu au zaidi 4. = Zaidi ya Tatu (Mhojiwa anapaswa kufafanua wazi chakula)jana	
D10	Milo ngapi (ikiwa ni pamoja na uji au mkate) mtoto 13-24 alikula jana nyumbani kwako? 1. = Mara moja 2. = Mara mbili 3. = Mara tatu au zaidi 4. = Zaidi ya Tatu (Mhojiwa anapaswa kufafanua wazi chakula)jana	
D11	Sasa Naomba Kukuliza kuhusu chakula alichokula mtoto wa miezi 0-6 tangu jana kutwa.	
	Kifungua kinywa cha Asubuhi…….....	
	Chakula cha Mchana……	
	Chakula cha Jioni……	
D12	Sasa Naomba Kukuliza kuhusu chakula alichokula mtoto wa miezi 6-12 tangu jana kutwa.	

	Kifungua kinywa cha Asubuhi…….....	
	Chakula cha Mchana……	
	Chakula cha Jioni……	
D13	Sasa Naomba Kukuliza kuhusu chakula alichokula mtoto wa miezi 13-24 tangu jana kutwa.	
	Kifungua kinywa cha Asubuhi…….....	
	Chakula cha Mchana……	
	Chakula cha Jioni……	
D14	Je mtoto hupewa Asusa katikati ya Milo mikuu anayopatiwa? 1. = Ndiyo 2. 1= Hapana	
D15	Ikiwa mtoto ni mgonjwa ni hatua gani ulizotumia 1. = Kutafuta dawa kutoka kwa jamaa na majirani 2. = Kutafuta dawa kutoka Hospitali 3. = Tafuta dawa kutoka kwa duka la dawa 4. = Wengine	
D16	Je, unafuga kuku, bata na Mifugo wa aina hiyo? 3. = Ndiyo 4. = Hapana	

D17	Ni nani anayeamua juu ya matumizi ya wanyama hao waliokua nyumbani au mazao yatokanayo na mifugo hiyo zao kwa familia. 1. = Baba 2. = Mama 3. = Babu 4. = Wengine	
D18	Je! Unahusika katika shughuli za kilimo? (mlezi) 1. = Ndiyo 2. = Hapana	
D19	Ikiwa unaenda shamba, umemwacha mtoto wako wapi. 1. = Nyumbani na ndugu mwingine. 2. = Katika nyumba ya jirani . 3. = Anakwenda pamoja naye	
D20	Hao ndugu wanaoishi na watoto nyumbani wana umri gani?	…… …… …….
D21	Ikiwa mtoto anabakia nyumbani huacha vyakula tayari vilivyo pikwa? 1. = ndiyo 2. = Hapana	
D22	Ikiwa Hapana kwa swali hapo juu, ni aina gani ya chakula unachokiacha nyumbani 1. = Hula kiporo 2. = Pata chakula kutoka kwa majirani 3. = Wanajipika wenyewe	

D23	Je, watoto wanaruhusiwa kula nyama? Na sehemu nyingine zote za viungo vya wanyama hao. 1. = NDIYO 2. = Hapana	
D24	Ikiwa Ndio Ruka, Ikiwa Hapana kwanini	
D25	Je! Mtoto wako mdogo chini ya miaka 5 anajumuika pamoja na watoto wakubwa wenye umri zaidi ya miaka 5 katika kula? 1. = Ndiyo 2. = Hapana	
D26	Kama Ndiyo kenye swali la juu je chakula kiasi gani mtoto hula (linganisha kwa wingi wa kikombe kidogo cha robo lita kwa idadi)	
D27	Kama hapana, ni muda gani mototo anaanza kujumuika pamoja na wakubwa wakati wa kula? 1. = Miezi 1-5 2. = Miezi 6-12 3. = Miezi 13-24 4. = Miezi 25-59 5. = Miaka 5 na kuendelea	
D27	Je! Unakula chakula mara ngapi kwa siku wakati wa ujauzito? 1. = Mlo mmoja 2. = Milo miwili	

	3. = Milo mitatu 4. = Zaidi ya Milo mitatu	
D28	Je katikati ya mlo na mlo kwa mama mjamzito je hua unakula asusa 1= Ndio 2= Hapana	
D29	Je kuna vyakula vyovyote ambavyo mama mjamzito haruhusiwi kula? 1.= Ndio 2.= Hapana	
D30	Kama ndio kwenye Swali CO7, je ni Vyakula vipi hivyo 1…….. Sababu……. 2……..Sababu…… 3……..Sababu……	
D31	Wakati wa Ujauzito ni vyakula vya aina gani ulivyokua unakula tangu asubuh hadi jioni 1. Chakula cha Asubuhi…….. 2. Chakula cha Mchana…….. 3. Chakula cha Jioni……	
D32	Ni aina gani ya vyakula ulishauriwa kula na mama au ndugu yeyote katika kaya yako kipindi ujauzito wako ulipokuwa na miezi 1-3 ambavyo vinaruhusiwa kwa mira yenu? 1. Kifungua kinywa……. 2. Chakula cha mchana……..……..	

	3. Chakula cha usiku…….	
D33	Ni aina gani ya vyakula ulishauriwa kula na mama au ndugu yeyote katika kaya yako kipindi ujauzito wako ulipokuwa na miezi 4-6 ambavyo vinaruhusiwa kwa mira yenu? 1. Kifungua kinywa……. 2. Chakula cha mchana…….. 3. Chakula cha usiku…….	
D34	Ni aina gani ya vyakula ulishauriwa kula na mama au ndugu yeyote katika kaya yako kipindi ujauzito wako ulipokuwa na miezi 7-9 ambavyo vinaruhusiwa kwa mira yenu? 1. Kifungua kinywa……. 2. Chakula cha mchana…….. 3. Chakula cha usiku …….	
D35	Ulipojifungua Nani alikua ni wa kawanza Kunyonya 1=Mtoto 2=Mwanyama (kusafisha yale maziwa machafu) 3= Wengine (Taja)……..	
D36	Ulimnyonyesha mtoto kwa muda gani mara baada ya kujifunga?	.....
D37	Ikiwa ilikuwa ni zaidi ya dakika 30, ni sababu ipi ya kutofanya kwa wakati mzuri? 1. = Hakuna maziwa 2. = Mtoto alikuwa mgonjwa 3. = Hakuwa na uwezo wa kunyonya maziwa kwa mama 4. = Kulikuwa na maziwa mabaya ambayo mtoto hawapaswi kunyonyesha 5. = Matatizo ya uzazi	

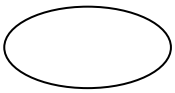
D38	Nani hua ananyonya Maziwa yale ya Kwanza ya mama (maziwa ya njano) 1=Mtoto 2=Wanyama 3=Humwagwa 4=Mengine	
D39	Je! kuna chochote ambacho hua mnaweka kwa mtoto kunyonya kwa mara ya kwanza 1. = Ndiyo 2. = Hapana	
D40	Ikiwa umemuwekea kitu wakati wa kunyonyesha, ni nini? 1. = Dawa ya " michango " 2. = Dawa za asili kumlinda na maadui 3. = Maelezo ya kukaribisha 4. = Nyingine	
D41	Kwa muda gani umemnyonyesha mtoto bila kumpa kitu chochote.	
D42	Je! mtoto alipewa maziwa mengine tofauti na maziwa ya mama? 1. = Ndio 2. = Hapana	
D43	Je! mtoto alipewa maji au kitu chochote katika miezi sita ya kwanza? 1. = Ndio 2. = Hapana	
D44	Je! nani Alikusaidia nyumbani wakati ulipokwenda kujifungua 1. = Mama mzazi 2. = Dada 3. = Mama Mkwe 4. = Wengine	

Appendix III : Focus Group English Version

DEMOGRAPHIC DETAILS QUESTIONNAIRE FOR FGD MEMBERS

Please answer the following questions in the spaces provided, circle or tick the most appropriate options.

1. What is your age…….
2. What is the highest level of schooling you have completed?
    a. = Never Attended;
    b. = Preschool;
    c. = Lower Primary 1-4;
    d. = Upper Primary 5 -7;
    e. 5 = O-Level- Form 4;
    f. =A- Level form 5-6;
    g. = Vocational Training
    h. =College & University
    i. Others _____



2. What is your Occupation?

a) =Employed (Government or Private Institutions.)
b) =A farmer
c) =Housewife
d) = Others (specify)_____



4. How Many children do you have? _____

5. For how long have kept helping Pregnant and Lactating mother? (optional):

a) <1 Year
b) 1-2 Years
c) 2-5 Years
d) 5-10 Years
e) >10 Years



Themes and guiding Questions

1. **Types of Meal and Age of Introduction of Meal Underfives,**
   i. What type(s) or Component that forms a certain meal for child
   ii. When you gave birth what are child is normally being fed or given to drink?
2. **Food Preparation of Underfives, Pregnant and Lactating Mothers (How)**
   i. How do you prepare food for children, Pregnant and Lactating Mother
   ii. Is there any cultural Observation that you are required to take when preparing child's food.
3. **Feeding style, Frequency and Schedule Underfives, Pregnant Mother and Lactating Mothers (when)**
   i. How many meals a child, pregnant or lactating mother used to take.
   ii. At what times does a such meal given to a child, pregnant or Lactating Mother
   iii. What amount specifically to child was given?
4. **Feeding Environment Underfives, Pregnant Mother and Lactating Mothers (Where)**
   i. Where does a child being fed,
   ii. Does such means used to feed a child supports proper child growth

5. **Cultural Determinants**
    i. Is there any ritual associated with child feeding
    ii. What kinds of food that are allowable and not allowable culturally to children
    iii. What Food Taboos beliefs that speaks of negatives effects once children or pregnant mothers consume a certain food type.

Concluding question

- Of all the things we've discussed today, what would you say are the most important issues you would like to comment or highlight that touches your presence.

Conclusion

- Closing remark, Thank you for participating. This has been a very successful discussion
- Your opinions will be a valuable asset to the study
- We hope you have found the discussion interesting
- If there is anything you are unhappy with or wish to complain about, please contact the local PI or speak to me later
- Before you leave, please hand in your completed personal details questionnaire

Appendix IV: Focus Group Discussion Guide: Swahili version

MAJADILIANO KATIKA VIKUNDI

TAARIFA ZA AWALI ZA WADODOSWAJI KWENYE VITUNDI

Tafadhali jibu maswali yafuatayo kwenye viduara ulivyowekewa hapo kwa kuandika herufi/namba sahihi ya chaguo lako

3. Una Miaka Mingapi …….

4. Unakiwango gani cha juu cha elimu?

j. = Sijasoma;

k. = Shule ya Awali;

l. = Shule msingi darasa la 1-4;

m. = Shule ya Msingi Darasa la 5 -7;

n. = Kidato cha nne ;

o. = Kidato cha 6

p. = Chuo cha Ufundi

q. =Vyuo / elimu ya Juu

r. Vingine _____

2. Umeajiriwa?

e) =Nimeajiriwa (Serikalini au Mashirika Binafsi.)

f) =Mkulima

g) =Mama wa Nyumbani

h) = Vingine (Taja)_____

4. Una watoto wangapi? _____

5. Ni kwa Muda gani sasa umekua ukiwasaidia akina mama Wajawazito na Wanaonyonyesha?

f) Chini ya Mwaka Mmoja
g) Miaka 1-2
h) Miaka 2-5
i) Miaka 5-10
j) >Zaidi ya Miaka 10

Asante sana kwa Kushiriki

Swali la Hitimisho

- Katika mambo yote tuliojadili leo, ni mambo gani ya msingi ambayo ungependa kutoa hitimisho lake kama mambo muhimu sana yaligusa mjadala wetu wa leo.

Hitimisho

- Asanteni sana kwa kushiriki mjadala huu, naamini ulikuamzuri na wenye manufaa sana kwetu.
- Mawazo yenu yatakua ni hazina katika utafiti huu, na Ninaamini hata nyie mmekua na wakati mzuri wa kufurahia mambo mbalimbali tulijadili.
- Kama kutakua kitu amabocho hukukifurahia na unadhani ungekiwakilisha moja kwa moja kwa matafiti mkuu au sisi hapa , unaweza fanya hivyo,
- Kabla hujaondoka tafdhali kumbuka kuturejeshe ila karatsi ya juu uliojaza.

Appendix V: Consent Form (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS
INFORMED CONSENT FORM

ID-NO ☐☐☐

Consent to participate in interview

Hellow Brethren

Am Siminzile, Joseph. I am a student from Muhimbili University of Health and Allied Sciences Pursuing Master degree of Public Health. I'm requesting your permission to collect data that, will initiate successfully completion of my study titled : "Magnitude of stunting and associated feeding practices among underfives in Kasulu District"

Purpose of the Study

This study is intended to collect information on Magnitude of Stunting in the district and the associated feeding practices. The information collected will help the principal investigator to write a dissertation which is a partial fulfillment of the requirement for the master Public Health of Muhimbili University of Health and Allied Sciences.

What Participation Involves

If you agree to participate in this study, you will be required to answer questions by providing necessary information regarding feeding practices that contribute to and the magnitude of stunting in Kasulu District.

Confidentiality

Privacy and confidentiality will be highly maintained by avoiding unauthorized persons from accessing study information. Anonymity will be maintained using questionnaire unique Identifier (IDs). No name will be recorded in the questionnaire.

Risks

We do not expect any harm to happen in this interview, as there will be no invasive procedure to be employed in this study.

Precautions

As we will be using Height boards which are new children they might be scared by the tools we ask parents help us in calming down a child

Rights to Withdraw and Alternatives

Participation in this study is completely voluntarily .You can stop participating in this study at any time, even if you have already given your consent. You have also got right to refuse to participate or withdrawal from the study and there will be no penalty or loss of any benefits to which you are otherwise entitled.

Benefits

The information provided will be helpful in addressing the knowledge gap on the current status of stunting at the district level,

In Case of Injury

We do not anticipate any harm to occur, however if any physical injury occurs during data collection, we will provide necessary medical treatment.

Whom to Contact

In case of any questions about this study please don't hesitate to contact **Principle Investigator**

Siminzile **of** Muhimbili University of Health and Allied Sciences (MUHAS), P.O. Box 65001, Dar es Salaam (Tel. No. +255 754511 819). And any questions about right to conduct this study, you may call **Chairman of University Research and Publication Committee, Dr**

Joyce Masalu P.O .Box 65001, Dar es Salaam Tel, 2150302-6, **and Dr. Mlimbila J.** who is the supervisor of this study (Tel. No. +255 713 210 174).

Signature:…….

Do you agree?

Participant agrees…… Participant does not agree ……

I _____have read/listened the contents in this form.

My questions have been answered. I agree to participate in this study.

Signature of participant _____

Signature of research assistant _____

Date of signed consent _____

Appendix VI: Fomu Ya Ridhaa

CHUO CHA SAYANSI ZA TIBA MUHIMBILI KURUGENZI YA UTAFITI NA MACHAPISHO

NAMBARI YA SIRI YA FOMU: ☐☐☐

RIDHAA YA USHIRIKI KATIKA UTAFITI

Habari! Ndugu

Jina langu ni: **Siminzile Joseph,** ni mwanafunzi wa shahada ya pili ya uzamili katika Chuo Kikuu cha Sayansi za Afya Muhimbili. Ninafanya utafiti kama sehemu ya masomo yangu, kuhusu **" Kiwango cha Udumavu, na tabia za ulishahji zinazochangia kiwango hicho cha Udumavu kwa watoto waliochini ya Miaka Mitano kitika Wilaya ya**

Umuhimu wa utafiti huu

Utafiti huu unalenga kukusanya taarifa juu ya Kiwango chan Udumavu katika jamii, tabia sababishi za Ulishaji kwa watoto waliochini ya Umri wa Miaka mitano. Taarifa hizi zitamsaidia mtafiti wa Msingi kuandaa ripoti itakayo muwezesha kukamilisha masomo yake ya Shahada ya Uzamili ya Afya ya Jamii katika Chuo kikuu cha Afya na tiba cha Muhimbili.

Ushiriki unahusisha nini

Ushiriki unahusisha kukubali kujiunga na utafiti huu kwa hiari na kujibu maswali kama yalivyo katika dodoso la utafiti huu ili kuwezesha utafiti huu kufanyika

Usiri

Taarifa zote utakazo jaza katika dodoso hili ni siri, na wala jina lako halitaingizwa katika kompyuta isipokua nambari pekee ya dodoso tu.

Uwezekano wa kutokea jambo la hatari

Sitarajii kama kuna jambo lolote baya linaweza kutokea kwa kushiriki katika utafiti huu.

Tahadhari

Ni muhimu kuchukua tahadhari kwa wakati wa zoezi sababu tutatumia vifaa vya kupimia urefu amabvyo huenda ni vigeni machoni pa watoto na wanaweza kukataa, kulia, tunaomba ushiriki wa mzazi katika hili ili kumpunguzi mtoto Hofu.

Haki ya kujitoa na mambo mbadala

Ushiriki wako katika utafiti huu ni wa hiari. Hivyo unayo haki ya kujibu au kutojibu swali lolote katika dodoso. Kukataa kujibu swali lolote hakuna adhabu yoyote wala haupotezi haki zako kama mshiriki na katika kupata huduma za kishule kama wanafunzi wengine.

Faida kwa Mshiriki

Taarifa zitakazo tolewa zitasidia kutatua changamoto ya uelewa wa kwanini hali ya lishe inaonekana namna ilivyo kwa sasa katika wilaya ya Kasulu.

Mawasiliano

Endapo utakuwa na swali lolote kuhusu utafiti huu tafadhali wasiliana na mtafiti mkuu Siminzile, Joseph kwa Simu namba +255 754 511 819 au msimamizi wa utafiti huu **Dr. Mlimbila J.** (Tel. No. +255 713 210 174). au **Chuo Kikuu Kishiriki cha Sayansi za Afya, P.O.Box 65015, Dar es Salaam.**

Endapo una swali lolote kuhusu haki zako kama mshiriki katika utafiti huu, wasiliana na **Mwenyekiti wa Utafiti na Machapish, Dr Joyce Masalu, SLB 65001, Dar es Salaam. Simu: 2150302-6.**

Sahihi.....

Je unakubali kushiriki? Ninakubali kushiriki ☐ Sikubali kushiriki ☐

Mimi _____ nimesoma/nimesomewa na kuyaelewa vyema maelezo yaliyomo katika fomu hii. Maswali yangu yamejibiwa. Ninakubali kushiriki katika utafiti huu.

Sahihi ya Mshiriki _____

Sahihi ya Mtafiti _____

Tarehe ya kusaini _____

Appendix VII: Ethical Clearance

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz

Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. DA.287/298/01A/

4th March, 2019

Mr. Siminzile Joseph
MPH-Distance Learning
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: "MAGNITUDE OF STUNING AND ASSOCIATED FEEDING PRACTICES AMONG UNDER FIVES IN KASULU DISTRICT"

Reference is made to the above heading.

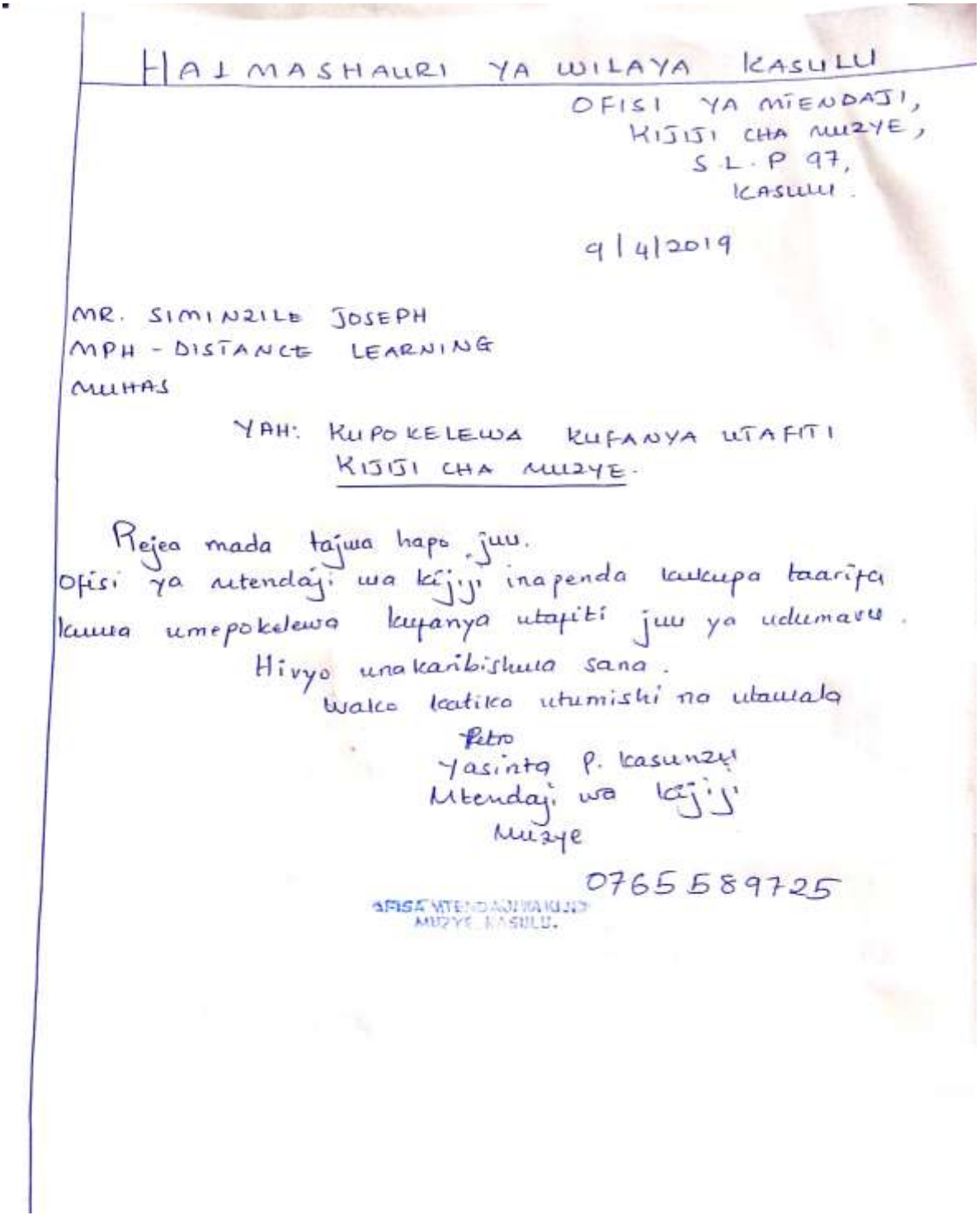
I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from **28th March, 2019 to 27th March, 2020.** In case you do not complete data analysis and dissertation report writing by **27th March, 2020,** you will have to apply for renewal of ethical clearance prior to the expiry date.

Dr. Emmanuel Balandya
ACTING: DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Public Health and Social Sciences, MUHAS

Appendix VIII: Letter from VEO



HALMASHAURI YA WILAYA KASULU

OFISI YA MTENDAJI,
KIJIJI CHA MUZYE,
S.L.P 97,
KASULU.

9/4/2019

MR. SIMINZILE JOSEPH
MPH - DISTANCE LEARNING
MUHAS

YAH: KUPOKELEWA KUFANYA UTAFITI KIJIJI CHA MUZYE.

Rejea mada tajwa hapo juu.
Ofisi ya mtendaji wa kijiji inapenda kukupa taarifa kuwa umepokelewa kufanya utafiti juu ya udumavu.
Hivyo unakaribishwa sana.
Wako katika utumishi na ubavuala

Peter
Yasinta P. Kasunzi
Mtendaji wa Kijiji
Muzye

0765589725

OFISI MTENDAJI KIJIJI
MUZYE - KASULU.