

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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Prevalence of Malnutrition Among Children Under Five Years Old in River Nile State 2018

A research submitted for partial fulfillment the degree of Nursing B.Sc.

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الآية

قال تعالى :

﴿فَنَبِّذْنَاهُ بِالْعَرَاءِ وَهُوَ سَقِيمٌ * وَأَنْبَتْنَا عَلَيْهِ شَجَرَةً مِّنْ يَّقْطِينٍ﴾

[سورة الصافات: (145-146)]

Dedication

To our mothers and our fathers

All ways doing the best for us...

For everyone who teaching us a letter...

For everyone helped us in this research...

Appreciation

To the light, our God, who guided us through the way

To Dr. Alwathig Yahia

For his great efforts of supervising and leading us, to accomplish this fine work.. To our friends and families

They were a great source of support and encouragement, we thank them all and wish them all the best in their lives

To those who has been with us step by step

To Eng. Ibrahim Mohammed.

To every person gave us something to light our pathway, we thank them for believing in us..

Abstract

Background: malnutrition in children under five of age is high priority public health problems especially in middle and low income states include river Nile state , it is associated with high morbidity and mortality among infants .

Objective: To identify prevalence of malnutrition under five in river Nile state.

Methodology: Across-sectional study design was conducted To collect information from 384 children attending four localities randomly from each locality we will select from community base randomly in river Nile state during the period April, May and June 2018 ,scientific questionnaire ,anthropometric measurement (MUAC) was used to assess nutritional status of the child

Result: The study revealed that the prevalence of malnutrition 6% due to diarrhea, feeding practice, poor sanitation and health insurance.

Conclusion: The study concluded that malnutrition in river Nile state is still a concern that need timely intervention by governmental and nongovernmental organization .

Key word: underweight , children under five, river Nile state.

الخلاصة

خلفية البحث: سوء التغذية لدى الأطفال دون الخامسة من العمر هي مشاكل صحية عامة ذات أولوية عالية خاصة في المناطق ذات الدخل المتوسط والمنخفض وتشمل ولاية نهر النيل ، وهي ترتبط بارتفاع معدلات المراضة والوفيات بين الرضع.

الهدف: تحديد معدل انتشار سوء التغذية تحت سن الخامسة في ولاية النيل.

المنهجية: تم إجراء دراسة على قطاع الدراسة من أجل جمع المعلومات من 384 طفلاً في 4 ولايات عشوائية ، من كل منطقة تم اختيار من قاعدة المجتمع عشوائياً في ولاية نهر النيل خلال الفترة أبريل ، مايو ويونيو 2018 ، وتم استخدام الاستبيان العلمي وقياس متوسط محيط اليد لتقييم الحالة التغذوية للطفل.

النتيجة: كشفت الدراسة أن انتشار سوء التغذية 6% وذلك نتيجة للإسهالات ، الممارسات التغذوية، سوء الصرف الصحي و التأمين الصحي.

الخلاصة: خلصت الدراسة إلى أن سوء التغذية في ولاية نهر النيل لا يزال مصدر قلق تحتاج إلى تدخل في الوقت المناسب من قبل المنظمات الحكومية وغير الحكومية.

الكلمات المفتاحية: تحت الوزن ، الأطفال دون سن الخامسة ، ولاية نهر النيل

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Chapter One

Introduction

Introduction

1.1 Introduction:

Malnutrition is one of the most important underlying causes of child mortality in developing countries, particularly during the first 5 years of life. Malnutrition can arise from primary or secondary causes, resulting from inadequate or poor-quality food intake and the latter from diseases that alter food intake or nutrient requirements, metabolism, or absorption. Primary malnutrition occurs mainly in developing countries and under conditions of political unrest, war, or famine. Secondary malnutrition, when it was appreciated that persons with adequate food supplies can become malnourished as a result of acute or chronic diseases that alter nutrient intake or metabolism, particularly diseases that cause acute or chronic inflammation.⁽¹⁾

Malnutrition in children under five years is common globally and results in both short and long term irreversible negative health outcomes including stunted growth which may also be linked to cognitive development deficits, underweight and wasting.⁽²⁾

The World Health Organization estimates that malnutrition accounts for 54 percent of child mortality worldwide, about 1 million children in 2013. Another estimate also by WHO states that childhood underweight is the cause for about 35% of all deaths of children under the age of five years worldwide.⁽³⁾

In eastern Africa the highest level of stunting is 48.1% of preschool children were affected in the year 2000, in this part of the world stunting is increasing at 0,08%. The prevalence of wasting was 18% and sever wasting 9%. The prevalence of underweight was 29% and sever underweight in 2016. In south Ethiopia the prevalence of stunting, underweight and wasting

among study participants were 47.6% 29.1% and 13.4% respectively. prevalence of severe stunting , underweight and wasting among the children were 20,2% 6% and 3,9% respectively. In Ghana the prevalence 28% ,13% and 8% of children were moderately (stunted) , moderately (underweight) and moderately (wasted) respectively .In Kenya, several surveys have reported the prevalence of stunting among children under five years to be 30% ,37%⁽⁴⁾

In Sudan United National International Children Emergency Fund (UNICEF) reported that the rate of malnutrition was 16% among children under five years of age. Sudan is the one of countries with high prevalence of malnutrition. UNICEF reported approximately 2 million undernourished. Estimated about 550,000 of them have critical malnourishment. In Khartoum state the prevalence of malnutrition among children under five years old was 11.8% for moderate, acute malnutrition and 7.3% for severe wasted.⁽⁵⁾

1.2 Research problem :

In River Nile State is one of most important mortality in child under five year. This area have shortage of information about presently and prevalence of malnutrition .In 2018 the prevalence unknown.

1.3 Justification :

This study will attempt to determine the prevalence and main causes of malnutrition for children under 5 years in river Nile state, and to gather necessary information of the causes of malnutrition in river Nile state , this information will reveal the nutrition status of children under 5 years old the improvement of general health status through improved nutrition by nutrition program , health system need data about malnutrition in children under five years in River Nile State 2018.

1.4 Objectives:

General objective:

To determine prevalence of malnutrition among children under five years old in River Nile state 2018 .

Specific objectives:

- 1-To determine prevalence of malnutrition in River Nile State 2018.
- 2-To determine main risk factor of malnutrition (MUAC measurement, mother's level of education, health insurance, breast feeding and child weight at birth) in River Nile State 2018.
- 3-To determine common affective age and gender in River Nile State 2018.

Chapter Two
Literature Review

Literature Review

2.1 Definition:

Malnutrition is the condition that develops when the body does not get the right amount of the vitamins, minerals, and other nutrients it needs to maintain healthy tissues and organ function. ⁽⁶⁾

American nursing association wrote that the malnutrition is a condition in which an individual has insufficient energy to maintain their body's essential functions, including growth, maintenance and movement. ⁽⁷⁾

The world health organization cites malnutrition as the greatest single threat to the world's public health. ⁽⁸⁾

2.2 Types:

2.2.1 Protein energy malnutrition: Is range of pathological conditions arising from coincident lack of protein and calories in varying proportions most frequent in infants and young children and commonly associated with infection.

2.2.1.1 Kwashiorkor: Is severe form of PEM occurring principally in the weaning and post weaning periods when the diet is persistently deficient in essential proteins.

Etiology:

Dietary inadequacy: When there is a rapid transition from the balance diet supplied by the breast milk to an unbalanced inadequate diet, very low in protein and consisting mainly of carbohydrate. This occurs usually during period of weaning and post weaning. the poverty, ignorance and lack of basic health education and nutritional knowledge are important factors in this mistake.

Participating factors: Acute infections like acute infantile diarrhea and measles can participate the appearance of kwashiorkor in borderline.

Malaria and severe helminthes infestation may be play a role in the development of kwashiorkor in some regions of the world.

Clinical manifestations of kwashiorkor:

The clinical manifestations of kwashiorkor are divided into 3 groups: Constant or cardinal manifestations, usual manifestations and occasional manifestations.

Constant "cardinal" manifestations:

Edema, growth retardation, muscle wasting with some retention of subcutaneous fat and psychic changes.

There are also 2 constant biochemical changes in case of Kwashiorkor:

Hypoproteinemia, fatty infiltration of the liver, usual manifestations, hair changes, associated infections and diarrhea

Occasional manifestations:

Skin changes, anemia and associated vitamin and mineral deficiency

Complication of kwashiorkor:

Complication of diarrhea: dehydration, electrolyte and acid base disturbance, infection and septicemia, severe hypoglycemia, hypothermia and heart failure.⁽⁹⁾

2.2.1.2 Marasmus :

Is form of PEM that may occur at any age particularly in early infancy and is characterized by severe wasting, loss of subcutaneous fat, gross muscle wasting and absence of edema.

Etiology:

Nutritional marasmus :

Most cause of nutritional marasmus is loss of balance diet or deficient in both protein and calories such as failure of breastfeeding, inadequate

amount of milk formula, starvation therapy for diarrhea, feeding difficulties and prematurity

Secondary marasmus :

caused by:

Chronic severe infection as tuberculosis, urinary tract infection, bronchiectasis, and chronic osteomyelitis, chronic diarrhea and vomiting, malabsorption syndrome, congenital malformations, metabolic disorders as galactosemia, endocrinal disease hyperthyroidism, psychological disorders, malignance as neuroblastoma.

Clinical manifestations:

Growth failure, weight less than 60% of expected for age and sex, loss of subcutaneous fat especially from abdominal wall and limbs and loss skin elasticity, marked wasting of muscle, the limbs appears stick like, psychic changes the child look anxious, irritable, excessively cry and sleep little, chronic diarrhea with or without vomiting, intercurrent infection like otitis media, hypothermia due to loss of subcutaneous fat and associated deficiency of iron and vitamin A.

Complication of marasmus:

Infections like thrush stomatitis, bronchopneumonia, urinary tract infection and TB, purpura and bleeding diathesis, hypoglycemia, hypothermia, early prolonged malnutrition may lead to mental subnormality. ⁽¹⁰⁾

2.2.1.3 Marasmic kwashiorkor:

Is form of PEM in which clinical findings of both kwashiorkor and marasmus are evident the child has edema severe wasting and stunted growth.

Marasmus is characterized by general wasting and atrophy of the body tissue, especially of subcutaneous fat.

The child appears to be very old with flabby and wrinkled skin, unlike the child with kwashiorkor who appears more rounded from the edema fat metabolism is less impaired than kwashiorkor so that deficiency of fat soluble vitamin is usually minimal or absent.

The child is fretful, apathetic, withdrawal and so lethargic that prostration frequently occurs, intercurrent infection with debilitating disease such as tuberculosis parasitosis, and dysentery are common.

2.2.2 Vitamins deficiencies:

Vitamin D deficiency rickets is a disease affecting the growth and calcification of bones is caused by lack of vitamin D" the absorption of calcium and phosphorus is diminished because of lack of vitamin D, which is needed to regulate the use of these minerals early manifestation include craniotables and delayed closure of the fontanel's.

Vitamin C deficiency scurvy is caused by inadequate dietary intake of vitamin C "ascorbic acid". Early inclusion of vitamin C in the diet in the form of orange or vitamin preparation prevents increase the need for vitamin C.

2.2.3 Mineral deficiencies:

Iron deficiency result in anemia this condition is the most common cause of nutritional deficiency in children older than 4 to 6 months of age whose diets lack of iron rich foods; anemia is often found in poor children younger than 5years

Calcium is necessary for bone and tooth formation and is also needed for proper nerve and muscle function; hypocalcaemia causes neurologic damage including mental retardation; rich source of calcium include milk and milk products; children with milk allergies are at increased risk for hypocalcaemia
There are a number of causes of malnutrition. It may result from:

Inadequate or unbalanced diet, problems with digestion or absorption, certain medical conditions.

Malnutrition can occur if the individual do not eat enough food. Starvation is a form of malnutrition.

In some cases, malnutrition is very mild and causes no symptoms. However, sometimes it can be so severe that the damage done to the body is permanent, even though you survive. ⁽¹¹⁾

In poor developing nations malnutrition is commonly caused by:

Food shortages (in poorer developing nations food shortages are mainly caused by a lack of technology needed for higher yields found in modern agriculture example such as nitrogen fertilizers, pesticides and irrigation. Food shortages are a significant cause of malnutrition in many parts of the world.)

Food prices and food distribution (it is ironic that approximately 80% of malnourished children live in developing nations they actually produce food surpluses (Food and Agriculture Organization). Some leading economists say that famine is closely linked to high food prices and problems with food distribution.

Lack of breastfeeding (experts say that lack of breastfeeding, especially in the developing world, leads to malnutrition in infants and children. In some parts of the world mothers still believe that bottle feeding is better for the child. Another reason for lack of breastfeeding, mainly in the developing world, is that mothers abandon it because they do not know how to get their baby to latch on properly, or suffer pain and discomfort

2.3 Assessment of nutritional status by anthropometric measurements:

The most commonly used measurements are body weight, height or length mid upper arm circumference and fat fold at triceps .

2.3.1 Weight for age :

Weight for age is robust parameter most widely used and practical method to monitor growth and assess the nutritional status of young children . It is most sensitive and simple measurement which indicate improvement or deterioration of nutritional status . weight for age measures current as well as past nutritional status . single measurement is not sufficient to decide the nutritional status ,it is much better to have serial weights at an interval of one month during first 3 years of life and thereafter once in 3 months. It is the direction of growth which matters most .Weighing children and putting it on growth charts makes the invisible malnutrient visible much before the clinical signs of malnutrient become visible .

2.3.2 Height for age (HFA):

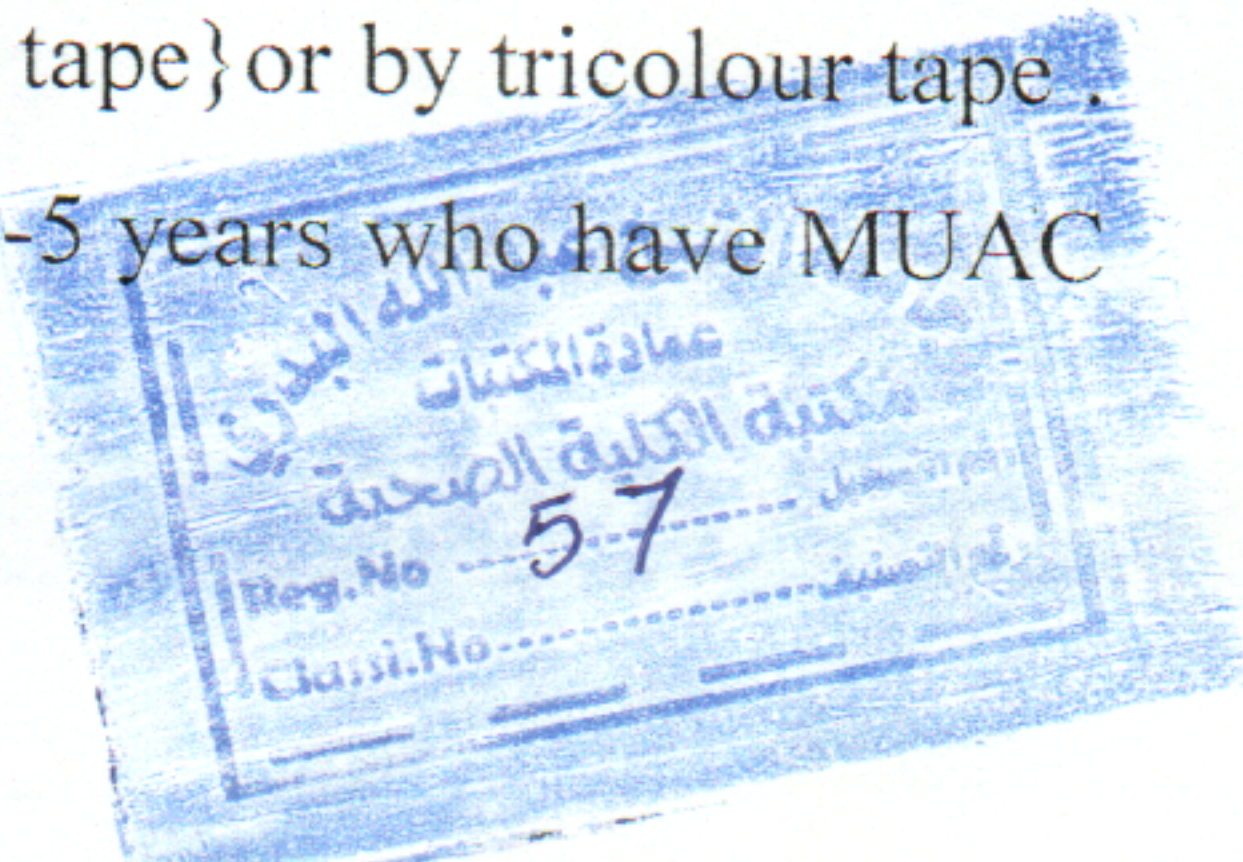
Height of individual is determined by genetics and environmental factors {adequate diet and infections}. Height once gained is not lost. Height for age measures chronic malnutrition{stunting} or long standing malnutrition. If the height for age is low the child is called stunted.

2.3.3 Weight for height:

This measurement is useful to assess current nutritional status or wasting. This is age independent measurement.

2.3.4 Mid arm circumference (MAUC):

MUAC is age independent measurement to assess the nutritional status. The mid arm circumference does not vary much between ages one and five. It is simple , does not require any sophisticated equipment and is acceptable . MUAC can be measured by simple tape {fibre glass tape} or by tricolour tape . the cut-off level is 13.5 cm. children in age group 1-5 years who have MUAC



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of 13.5 cm or above are considered as normal. Children having MUAC between 12.5 and 13.5 are classified as moderately malnourished while those below 12.5 cm are classified as severely malnourished. Recently, it has been suggested that MUAC of 11cm should be used to pick up severely malnourished children, however this need to be validated. MUAC is used to screen malnutrition or nutritional status rapidly by paramedical workers, AWWs and even by mothers. MUAC correlates well with weight and weight for height measurement. QUAC stick { arm circumference and height } can also be assess nutritional status.

2.4 Forms of malnutritent

2.4.1 Underweight {WHO Ref .POP} Means children aged 0-59 month who are below minus two standard deviation from median weight for age of WHO child growth standards-2006.

2.4.2 Stunting: children aged 0-59 months who are below minus two standard deviations from median height for age of WHO reference population are called stunted and those who are below minus three standard deviations from median height for age are called severely stunted.

2.4.3 Wasting: Children aged 0..59 months who are below minus two standard deviations feom median weight for height of the WHO reference population are called wasted and those who are below three standard deviations from median weight for height are called severely wasted children.

(12)

Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, et al conduct study in 2008 by title which is they define, Malnutrition is major public health issue. Not only does malnutrition bring with it illness and development issues for the children who suffer it but ,along with poor sanitation and diseases such as malaria ,it is an important cause of childhood mortality .Globally about 30% of deaths among under five children are

attributable to malnutrition,⁽¹³⁾ childhood malnutrition is the result of multiple factors. Environmental conditions, socio-economic circumstances and feeding practices are all important factors. By cross-sectional study design. As that time at that study the authors found that the prevalence 588(28%) 276,(13%),176(8%), of the children were moderately stunted, moderately underweight and moderately wasted respectively. Policies and intervention strategies by policymakers that are aimed at improving nutrition and health of children should address the risk factor identified in this study. There is also a need to identify as-yet unidentified risk factors that might account for the unexplained household-level variation in childhood nutritional outcomes.⁽¹⁴⁾

Black R, Morris S, Jennifer B, conduct study in 2010 by title which is define, Malnutrition prevents children from reaching their full physical and mental potential and mental potential. Health and physical consequences of prolonged states of malnourishment among children are delay in their physical growth and motor development lower intellectual quotient(IQ), greater behavioral problems and deficient social skills, susceptibility to contracting diseases. As that time at that study the authors found that the prevalence of the overall sample of 8.992 children, 41% of the sample children had measurement on their height and weight to ascertain their nutritional status. Of those 50.8% was female and over all prevalence of malnutrition (stunting) was 43.9%. Childhood malnutrition is spatially structured and rates remain very high in the provinces that rely on the mining industry and comparable to the level seen in Eastern provinces under conflicts. Even in provinces such as Bas-Congo that produce foods, childhood malnutrition is higher probably because of the economic decision to sell more than the population consumes. Improving maternal and child nutritional status is a prerequisite for achieving MDG 4, to reduce child mortality rate in the DRC.⁽¹⁵⁾

Burke TK , conduct study in 2013 by title which is define, Malnutrition is leading cause of childhood deaths in low- and middle-income countries and has permanent consequences for cognitive, physical and metabolic development. By cross sectional study design. As that time at that study the author found that the prevalence of wasting, stunting and low mid-upper arm circumference in children in aged 6_59 months was 21%, 31% and 36%, respectively. The prevalence of global and severe acute malnutrition using Z-score is 9.7% and 4.4% respectively while that of stunting is 9.9% with a male preponderance. ⁽¹⁶⁾

World Health Organization conduct study in 2014 by title which is define, Malnutrition is a state of nutrition where the weigh for age, height for age and weight for height indices are below 2 Z score of the NCHS reference. This is across sectional study. As that time at that study WHO found the prevalence from total 616 children 364(59.6% were male while 249 (40.4% were female. 9.7% of children had acute malnutrition based on WHZ score. Moderate acute malnutrition (MAM was 5.3% while 4.4% had severe acute malnutrition. The prevalence of global and severe acute malnutrition using z score is 9.7% and 4.4% respectively while that of stunting is 9.9% with a male preponderance. ⁽¹⁷⁾

Glewwe P, Black RE, conduct study in 2015 by title which is define, Under nutrition among children is a major public health in developing countries including Ethiopia. By cross sectional study design. Globally, children with moderate and severe acute under nutrition are approximately 60 million and 13 million respectively. Between 8 to 11 million under five children die each year globally. More than 35% of these deaths are mostly preventable through economic development and public health measures. As that time at that study the author found the prevalence among study participants, 47.6%, 29.2% and 13.4% were stunted, underweight, and wasted

respectively. Under nutrition is a very common in under five children of Blue Hora district. Factors associated to nutritional status of children in agro pastoralist are agrarian community diarrheal morbidity was associated with all forms with protein energy malnutrition. Family planning utilization decreases the risk the risk and stunting and underweight.

feeding practices (pre lacteal feeding and complementary feeding practice were also related to under nutrition. Thus, nutritional intervention program in Blue Hora district in Ethiopia should focus these factors. ⁽¹⁸⁾

Pelletier DL, Frongillo EA jr, Schroeder DG, Habicht JP conduct study in 2004 by title which is define, Malnutrition is one of the most important underlying causes of children mortality in developing countries, particularly during the first 5 years of life. By cross sectional survey, which consist of both questionnaire and anthropometric components, was conducted in all three villages over the course of 2 weeks. As that time at that study the author found the prevalence of underweight, stunting, and wasting were determined 30%, 47%, 7%. Child growth is good indicator of the nutritional and health status of both the individual and the community. The aim of this study was to obtain baseline assessment of rural kenyan community's health and nutritional status, in order to estimate the prevalence and predictors of under nutrition and, ultimately, to reduce the morbidity and mortality due to under nutrition among children in the survey area. Based on the results from this survey, adopted children and children in their second year of life are at increased risk of under nutrition and should be targeted early to prevent malnourishment. There is also a great need for nutritional education to target mothers breast feeding and weaning practice, improving sanitation to help reduce exposure to pathogen, and complete and current immunizations. Existing vaccination programmes should be expanded to reach the children routinely in remote areas. Community based nutrition interventions, which promote agriculture

skills, increase food production on limited fertile land, nutritional training, leadership development and health education, are welcome public health tools and promising candidates in the search for practical, inexpensive, and sustainable approach to protecting young children against malnutrition.⁽¹⁹⁾

Mussaa T conduct study in 2014 by title which is define, malnutrition is the most common disorder in the developing countries and it remains one of the most common causes of morbidity and mortality among children worldwide.⁽²⁰⁾ The cause of under nutrition are diverse but in most cases include limited quality or quantity of food, suboptimal feeding practices, and high rates of infectious disease. As that time at that study the author found that the prevalence of underweight, stunting, and wasting were 7.6%, 20.6%, and 6.6% respectively. The study concluded that chronic malnutrition in the study area is still a concern that needs timely intervention by governmental and non-governmental organizations. We conclude that improvements in child feeding, and better maternal education are needed to maintain the children's nutritional status.⁽²¹⁾

Park JE, conduct study in 2011 by title which is define, Protein energy malnutrition is the one of the major health and nutritional problems in Iran. Is the one of the most important public health problems in Iran. This was a population based, multicenter case control study. 76 children with malnutrition and 76 without malnutrition were randomly recruited for case and control group. As that time at that study the author found that the prevalence 15.4% have nutritional status stunting. 10.9% are underweight, 4.9% have wasting. The result of this study indicate four main factors poverty, small maternal height, female gender, and absence of hygienic latrines in the home as underlying factors in malnutrition in children under five years of age.⁽²²⁾

Nakhshab M, Nasiri H conduct this study in 2012 by which title is define, Malnutrition is a clinical syndrome which the infant or child deviates

from the main pattern of growth, the growth curve is downward and constantly locates under the curve of 3% of the height and weight. It recognized that 60% of deaths among children under five years in these countries are associated with malnutrition. By across sectional descriptive study. The sample consist of 700 children less than 5 years old were randomly selected by cluster and quota method among health center. As that time at that study the author found that the prevalence of stunting height for age was 11.1% , disorder of growth 7.7%, severe malnutrition 3.4% , underweight weight for age was 9.8% disorder of growth 7%. Although prevalence of malnutrition in this study was lower than WHO statistic report, 30% but this is locally important and health staff and parents must be adequate on nutritional values. Malnutrition is the major problem which is reason for suppressed immune system, causing the increase of infectious diseases and infant mortality.⁽²³⁾

Nandy S, Irving M, Gordon D, conduct study in 2011 by which title is define, Under nutrition is one of the important reasons for ill health and child mortality.⁽²⁴⁾ Globally under nutrition is an underlying cause in at least half of all child hood deaths. By a community based cross sectional study. A total of 14,587 children under five years old were covered for nutritional assessment. As that time at that study the author found that the prevalence of underweight was about 49%, of which 19% were severely underweight. The extent if overall stunting was about 51%, and of them, about 24% were severely stunted. A bout 22% of children had wasting, of which 7% had severe wasting. Under nutrition is significant health problem among tribal children and is associated with literacy status of mothers, household wealth index and morbidities. Therefore implementation of appropriate nutritional intervention strategies and improvement in households food security through public distribution systems, food intakes, socioeconomic condition, literacy of

parents and personal hygiene may help in improving the nutritional status of tribal children. ⁽²⁵⁾

UNICEF conduct study in 2017 by which title is define, Malnutrition is a universal problem that effects of million people especially children. ⁽²⁶⁾ Child malnutrition is one of the measures of health status that the WHO recommends for equity in health. ⁽²⁷⁾ The term malnutrition generally refers to both under nutrition and over nutrition. More than 150 million children of under five years age in the world are underweight and 200 million are stunted. By cross sectional study design. A total number of 96 children were systematically selected from a list of house hold in the ward. The prevalence of stunted and wasted children were 8.3% and 53.1% respectively. A few of the children had 6.2% had a MUAC less than 15 cm while 23.5% had between 12.5% cm and 15% had acute malnutrition. And 70.4% had MUAC above 125 cm. result show that the prevalence of malnutrition of majority of children was moderate acute malnutrition and chronic malnutrition (stunting). Furthermore result from survey shows that more than half of children included in the study were found to have sever acute malnutrition and fewer had severe stunting. This prevalence rate of malnutrition for under five children in the study area are connected to various factors which are mostly caused by mothers and these factor are such as marital status, age at onset complementary feed of children, and pre natal and post natal clinic attending of mother. Other factor are traditional belief and patriarchal system among the households. Also poor participation in the effort taken by the government to compact prevalence of malnutrition such as health promotion campaign, MCH seminars, and health community training that led increase the prevalence of malnutrition due to lack of knowledge of nutrition status among the parents or mothers. Though not proved beyond doubt the existing of differences in expectation among stakeholders affected the efforts made by the government. ⁽²⁸⁾

Muller o, Krawinkel. M, conducted study in 2014 by which title id defined, malnutrition is the most common nutritional disorder in developing countries and it one of the most common causes of morbidity and mortality among children worldwide. By the cross sectional community based. ⁽²⁹⁾

In Khartoum state the prevalence of malnutrition among children under five years old was 11.8% for moderate, acute malnutrition and 7.3% for severe wasted. We conclude that improvement in child feeding , and better maternal education are needed to maintain the children nutritional status. ⁽³⁰⁾