Social Factors Contributing to Stunting for Children under Five Years. A case of Iringa District Council, Tanzania

ABSTRACT

This study presented the findings on the factors contributing to stunting for children under five years in Iringa District Council. This study involved four wards and two villages from each ward. The target population for this study included parents with stunted children under five years and 26 key informants. The study employed mixed approaches which involve both qualitative and quantitative research approaches, Cross-sectional research design was used. Simple random and purposive sampling techniques were used to get parents with stunted children and key respondents. The study used both primary and secondary data to acquire intended information. Questionnaires, interview and Document review was used by a researcher. The high prevalence of stunting was revealed by this study to be influenced by social factors such as lack of nutritional knowledge, large size of household members, child characteristics, inadequate dietary intake, lack of knowledge on purse of athousand days, poor child care practice, excessive use of alcohol, poor breastfeeding and complementary feeding of early milk were found as the key factors influencing stunting. Government could come up with innovative strategies to educate parents about the importance of exclusive breastfeeding until six months, feeding practices, purse of thousand days, and the strategies of addressing excessive use of alcohol should be implemented. The researcher suggests further research to be conducted to analyse a bigger area, also future researchers have a duty to focus on the additional indicators of stunting prevalence that could not be included owing to time and resource constraints.

Key words: Child, Parents, stunting,

1.0 INTRODUCTION

“Stunting is the most common form of undernutrition and is a major public health concern, Stunting is a result of chronic undernutrition, usually associated with income level, nutrition knowledge, frequent illness, inappropriate feeding and care during early life” (Prendergast and Humphrey, 2014). “This is common especially during the first 1000 days from conception to the age of two. Stunting results from a complex interaction of social, economic and cultural influences that are described in the World Health Organization (WHO) Conceptual Framework on Childhood Stunting”(Suhardin, *et al*2020).

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According to UNICEF-WHO-WB Joint Child Malnutrition Estimates inter-agency group, about 22.3% of all children under five years old age were stunted globally, it was estimated that 148.1 million children under five years of age were too short for their age (stunting) globally in 2020. UNICEF, WHO, World Bank global and regional child malnutrition estimates (2019) reveal that we are still far from a world without malnutrition due to insufficient progress to reach the World Health Assembly targets set for 2025 and the Sustainable Development Goals set for 2030.

According to theGlobal Nutrition Report (2022), “the prevalence of stunting in Africa is estimated to be30.7%, which is higher than the global average of 22.3%. Since 2000, progress in stunting reduction has been slower in Africa than in other regions”. In 2016, over 40% of children were stunted in Africa of which 159 million stunted children globally stayed in Africa. Africa still experiences a stunting burden among children aged under 5 years, (UNICEF, WHO, and World Bank, 2016).

“According to Tanzania Demographic and Health Survey (TDHS, 2022), the current condition of prevalence of stunting in Tanzania is estimated to be30%. More than 2.7 million Tanzanian children under 5 years of age were estimated to be stunted” (UNICEF 2016). However, the prevalence of stunting in theIringa Region increased from 47% in 2018 to 56.9% in 2022, making Iringa the leading Region with arecord of stunted children in Tanzania (TDHS-MIS, 2022).

1.1 Objectives of the Study

This study assess social factors influencing stunting among children under five years in Iringa District Council. Specifically, nutritional knowledge, size of household, child caring practices, excessive use of alcohol, child characteristics.

2.0 LITERATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 Social Ecological theory

The socio-ecological theory was created by psychologist UrieBronfenbrenner in the late 1970s to acknowledge how people are impacted by a variety of social and nested environmental interactions. The theory considers a variety of variables that might have an impact on health and conceptualizes health broadly. According to Bronfenbrenner, U. and Morris, P. (2006) a person's health are influenced by interactions between person, their community and social

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settings. Socio ecological theory makes it possible to identify all factors that contributes to poor health like stunting and to develop a comprehensive plan for dealing with health problems that includes steps taken at various scales to bring about and sustain change.

This study aimed to use the concepts of Bronfenbrenner's social ecological system theory to identifying factors at different ecological levels that may potentially be useful for guiding the determinants associated with stunting in Iringa District Council by describing how socio factors in children's environments affect child's growth by determining factors relating to nutritional knowledge, size of household, child caring practices, excessive use of alcohol, child characteristics in early life. According to Hoffman, *el at* (2011) this theory is significant because it offers a comprehensive view of the variables influencing particular health.

2.2 Empirical literature Review

2.2.1 Nutritional Knowledge

De Onis, *et al* (2016) did “a survey in Moshi urban district on awareness on nutritional knowledge, she came up with the results that high numbers of infants and child mortality were associated with women with lower knowledge particularly in nutrition, that they don’t know kind of food that can provides nutrients to their children, the time table and for how long to breastfeed them”. Rahman (2015) found out that “as the mother’s level of awareness rose, infant and child mortality declined as awareness increased the knowledge on how to take care of themselves during pregnancy and their children in terms of diet and medical care. Stunted children were found to be more likely to have parents who lack knowledge of methods of prevention of child malnutrition as compared to well-nourished children”.

2.2.2 Size of Household

Mulugeta*et al* (2017) reported that “family size was one of the important determinants of stunting, as children born in a family with six children or more were likely to be stunted”. Rana and Goli (2017) indicated that “children of birth order four and above were of greater risk of stunting than children of a lower birth order. Children nutritional status can be affected by increase in family size due to decrease in per capita income. That means that increase in the number of children in a household decreases the food allocated to each child which consequently affects children nutritional status. Increase in household size also facilitates fertility decision between couples”. “In such situations, large family size may adversely affect the

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nutritional status of children and household members thereby promoting poor dietary practices especially in poorer households" (Chaudhury, 2013).

2.2.3 Child Characteristics

It has been noted that characteristics such as age, sex and health status are significant predictors of stunting in children under five years. Woodruff *et al* (2018) noted that "the risk of stunting increases with age". "Other studies have shown that children aged between 24 months and 59 months have a higher risk of being stunted than the younger age groups" (Ntenda and Chuang, 2018; Woodruff *et al,*(2018). While, Abeway*et al* (2018) found that "more girls were stunted than boys, most studies indicate that boys are more at risk of being stunted than girls" (Alemayehu*et al,* 2015; Akram*et al*, 2018). The size at birth matters as Ntendo and Chuang (2016) reported that "the risk of stunting was higher in children with small birth size compared with children born larger than the average size". Woodruff *et al,* (2018) reported that "birth size was significantly associated with stunting. Another child characteristic that was implicated in childhood stunting was the health status of the child". "There is a reciprocal relationship between the health status of the child and stunting condition, poor health status due to infections leads to stunting and stunting leads to impaired immunity which makes the children vulnerable to 33 infections. Infections such as diarrhoea, acute respiratory infections and malaria have been found to be associated with stunting in children under age of 5" (Akram*et al*, 2018; Batiro*et al*, 2017) as there is a vicious cycle of infection, impaired nutrition due to illness and lowered immunity. The children expend energy which should be used for growth in fighting recurrent infections.

2.2.4 Child caring Practices

Child caring practices are very important in early childhood development. According to Martorell (2018), the first 1,000 days influence whether the child will survive, thrive and grow, and have long term impact on adult health and human capital. Exclusive breastfeeding during the first 6 months of life and provision of nutritious complementary foods as the baby grows in a safe environment contributes to the well-being of thechild. Initiation of breastfeeding within 1 hour of delivery and breastfeeding exclusively for 6 months promotes optimal child growth and development as the colostrum is rich in nutrients that are protective. It has been found that those who are breastfed within one hour of birth and exclusively for six months are at low risk of stunting (Alemayehu*et al,* 2015). Children who continued breastfeeding until 24 months while getting nutritious complementary food were at low risk of ill health and death (UNICEF, 2017).

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WHO (2019) recommended that complementary feeding should be timely, adequate, safe, and appropriate if it was going to be beneficial to the child. Some studies have shown that children under the age of 5 are not adequately breastfed nor receiving adequate and appropriate complementary feeding (Tadele*et al*, 2016). The quality of the complementary foods given to children have an impact on their health status, the diet must be diversified within the seven recommended food items by WHO (Frempong and Annim, 2017), also Frempong and Annim (2017) reported that 25% of the children who ate at least four of recommended food items were stunted. Pratim (2019) found full immunization to be protective against stunting, and Shukla, *et al* (2018) reported that incomplete immunization was a risk factor to stunting.

2.2.5 Excessive use of alcohol

According to Batiro, *et al* (2017) stunted growth is manifested by reduced growth rate in human development. It is a primary manifestation of malnutrition in early childhood, including malnutrition during foetal development as a result of malnourished mothers. Maternal malnutrition is contributed by abusive use of alcohol during pregnancy. Alcohol consumption during pregnancy and lack of sufficient information about the adverse health effect during breastfeeding may deprive newborns of insufficient nutrients through breast milk. Researchers have reported that alcohol use during the period of breastfeeding significantly compromises child development (Modjadji and Pitso 2021).

3.0 METHODOLOGY

This study involved four wards and two villages from each ward. The target population for this study included parents with stunted children under five years in Iringa District Council in which nine respondents were selected from each village resulting 72 respondents as a sample size. The study also included 26 key informants who were District Nutritional Officer, Ward and village Executive Officers, Community Development Officers, Community Health Workers. The study employed mixed approaches which involve both qualitative and quantitative researches approach, Cross-sectional research design were used. Simple random and purposive sampling techniques were used to get parents with stunted children and key respondents.

The study used both primary and secondary data to acquire intended information. Questionnaires, interview and Document review was used by a researcher. The study, used the Statistical Product for the Social Solution (SPSS) Version 20.0 software for data analysis Data analysis involved cleaning of data, detecting errors, omitting and correcting them to make sure that data are accurate, consistent with respect to questions, uniform, complete and well

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arranged for analysis. Qualitative data was analysed using content analysis techniques. Results were interpreted and organised into different themes based on the conceptual description of ideas which was expressed by respondents during discussions.

4.0 RESULTS AND DISCUSSIONS

This chapter focused on discussing the results concerning social factors contributing to stunting among children aged five years in Iringa District Council.

4.1 Social factors contributing to stunting for children under five years of age

The researcher was interested to know the social factors contributing to stunting for children under five years of age covered in this research include nutritional knowledge, size of household, child caring practices, excessive use of alcohol and children characteristics.

4.1.1 Nutritional knowledge of respondents

4.1.1.1 Understand about stunting.

The study intended to find out whether respondents understand about stunting. The findings indicate that 79.2% of the respondents didn't understand about stunting while 20.8% of respondents understand about stunting

Table 1

Understanding about stunting

Answers	Frequency (n=72)	Percent%
Understand	15	20.8
Do not understand	57	79.2
Total	**72**	**100.0**

Source: Field Data 2023

According to the findings from this study, themajority of respondents lacked the knowledge on stunting that would have enabled them to understand the risk factors influencing stunting and how stunting can affect children under the age of five years. De Onis, *et al* (2016) found that, as awareness of parents and caregivers improved, so did their understanding of how to care for themselves during pregnancy and their children in terms of diet and medical treatment are consistent. Food Agriculture Organization (FAO) reported on the need for professional Training in Nutrition Education and Communication 2018 that there is a need to develop curriculum or

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course contents for school children as they can be good for disseminating what they learn in school and are the ones who are mostly affected by nutrition related problems.

4.1.1.2Understanding about a purse of athousand days on addressing future nutrition status of children under five years of age

The researcher was interested to know if respondents understand about a purse of a thousand days. The results presented in Table 6 indicate that, all respondents do not understand about a purse of thousand days on addressing future nutrition status of children under five years of age.

Table 2

Understanding about a purse of a thousand days on addressing future nutrition status of children under five years of age

Answers	Frequency (n=72)	Percent%
Understand	00	00.0
Do not understand	72	100.0
Total	**72**	**100.0**

Source: Field Data 2023

A purse of a thousand days are first 1000 days of life from conception to the age of two years, The results from this study indicate that, all respondents do not understand about a purse of athousand days on addressing future nutrition status of children under five years of age, also the findings concur with the study by Martorell, (2018) that the knowledge on purse of thousand days for parents is associated with growth of children while unaware of the purse of a thousand days may lead to a lack of nutritional information that may have contributed to stunting. Linear growth in the first thousand days of life is essential for children's growth and development, unaware that the purse of a thousand days can affect the children's development in the future. During the interview with Community Health Worker from Negabihi Village described that;

> The tool known as Purse of a Thousand Days provides extensive information about the crucial first 1000 days of a child's life, from conception to age two. The roots of a child's health and growth in physical, cognitive, emotional, and behavioral development are formed during this period of increased sensitivity, and a trajectory is established. For instance, it is much more likely that a baby who develops later than average during the first year of life will continue to lag behind than to catch up to those who had a better start. (Key informant, Iringa District Council 15, July 2023)

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4.1.2 Size of Households

The researcher wanted to find out if the size of households who sleep and eat can be factor associated with stunting, this was determined by participant's responses regarding the number of household members. The findings show that, 34.7% of respondents live with 1 up to 5 household members, 54.2% of respondent live with 6 up to 10 household members while 11.2% of respondents live with 11 up to 15 respondents.

Table 3

People currently live in the household

Household size	**Frequency (n=72)**	**Percent %**
1-5	25	34.7
6-10	39	54.2
11- 15	4	11.2
Total	**72**	**100.0**

Source: Field Data 2023

The results of this study indicate that, majority of the respondents lived in households with 6–10 members. The results of this study support those of earlier research found that children with a large household are more likely to experience stunting.Mulugeta*et al* (2017) reported that family size was one of the important determinants of stunting, as children born in a family with six children or more were likely to be stunted. Large family size may adversely affect the nutritional status of children and household members thereby promoting poor dietary practices especially in poorer households (Chaudhury, 2013).During interview, Village Executive Officer from Ikuvilo Village narrated that;

> It is common to find stunted children in large families in this village, which makes it challenging for parents to pay for the costs associated with rearing their children, particularly regular feedings. One mother, for example, had seven children when her husband died and she was unemployed, which made life incredibly tough for her and led to the eventual stunting of her two children.(Key informant, Iringa District Council 24, July 2023)

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4.1.3 Child caring practices

4.1.3.1 Understanding on best feeding practices

During the study, respondents were asked if they had understanding on best feeding practices for children under five years of age, the study indicate that 51% of parents who were contacted for this study, agreed that they understand the best feeding practices for children under five years while 29.2 % of those respondents disagree that they don't understand best feeding practices for children under five years.

Table 4

Understanding on best feeding practices

Answers	Frequency (n=72)	Percent%
Understand	51	70.8
Do not understand	21	29.2
Total	**72**	**100.0**

Source: Field Data 2023

The study revealed that 29.2% of all respondents do not have knowledge on feeding practices from nutritional experts which may lead to a lack of nutrition knowledge that might have an impact on the infant and early child's growth. Ersino*, et al* (2016) observed that inappropriate maternal nutritional knowledge was related to stunting for children, nutritional education is a very important factor for parents to ensure optimal child growth. According to WHO (2019), when breast milk is no longer enough to meet the nutritional needs of the infant, complementary foods should be introduced. The transition from exclusive breastfeeding to family foods is referred to as complementary feeding, typically covers the period from 6 to 18-24 months of age, and is a very vulnerable period. It is the time when malnutrition starts in many infants, contributing significantly to the high prevalence of malnutrition in children under five years of age world-wide. Modern infant feeding practices recommend initiation of complementary feeding by about six months after birth. Complementary foods should be frequency, a mount, density, use of food and active feeding. During interview Executive Officer from Sadan Village stated that;

> The poor feeding practices usually is significantly related to stunting for children under five years, the practice of providing nutrition to children in this village is unique, parents make their choices based on their beliefs or habits and some of them have a habit of choosing foods based on affordability, their preferred foods, or the foods that are considered to be suitable for certain stages of life. Parents in

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> certain places give their children unsafe water mixed with sugar especially in summer to beat the heat. (Key informant, Iringa District Council 23, July 2023)

During interview with District Nutrition Officer on feeding practices among parents in Iringa District Council, revealed that;

> The period from birth to two years of age is a critical window of opportunity for the promotion of optimal growth, health and behavioral development of children. Poor child feeding patterns can lead to stunting which is a major public health problem in Iringa Region. (Respondent, Iringa District Council 20, July 2023)

4.1.3.2 Breastfeeding practices among parents

The study sought to find out if the respondents give their children addition food before age of six months and the researcher found that 76.4% of the total respondents provided addition food other than breast milk for their children before the age of six months and 23.6% of respondents didn't give their children addition food other than breast milk before the age of six month.

Table 5

Feeding children in additional to breast milk before the age of six months

Answers	**Frequency (n=72)**	**Percent%**
Yes	55	76.4
No	11	23.6
Total	72	100.0
Identified reasons for giving child addition food before six months		
Child not satisfied with breast	19	34.5
Mothers don't have enough milk	11	20
Cases of crying baby	4	7.2
Get used to complementary feeding	9	16.3
Demand for mothers to resume their work	12	21.3

Source: Field Data 2023

The results from this study show that, majority of respondents didn't followed the WHO recommendations of timely introduction of complementary feeding at six months of age so majority of the respondents fed their children additional food other than breast milk before the age of six months. It has been found that giving child anything else in addition to breastfeeding before the age of six month increases the risk of stunting in children, while those who don't give their child anything else in addition to breast milk before the age of six month and exclusively

breastfeeding for six months are at low risk of stunting (Alemayehu*et al,* 2015). According to the findings, 55 respondents out of 72 total respondent agreed that their infants were introduced to complementary foods before the age of six months. Factors associated with early introduction of complementary food included; parent's own perception that their infants were not satisfied with breast milk, mothers felt that they did not have enough milk, cases of crying baby, demand for mothers to resume their work, and some mothers wanted their infants to get used to complementary feeding before recommended age. The interview with Nurse from Ipamba Hospital supported this statement by revealed that;

> Mother's milk particularly that of the first days from delivery is important for the child. This is because the first liquid to come from the breast known as colostrum, is produced in the first few days after delivery and provides natural immunity to the infant. In order to maintain a good health of the child it is recommended to breastfeed the child for six months exclusively and continue with breastfeeding and supplementary foods which varies with age until the child reach the age of 24 months as it is good for the health of the child and the mother as well because they are directly responsible for child bearing and this means that a mother who is malnourished is likely to bear a malnourished child as well. (Key informant, Iringa District Council 22, July 2023)

4.1.3.3 Dietary intake during the previous week

The researcher wanted to know from the respondents, if their children had a complete meal in the last three days. According to the study, just 26.4% of respondents stated their children had a complete meal in previous week, and 73.6% of respondents said their children hadn't eaten a full meal during previous week.

Table 6

Dietary intake during the previous week

Answers	**Frequency (n=72)**	**Percent%**
Taken	19	26.4
No taken	53	73.6
Total	**72**	**100.0**

Source: Field Data 2023

According to the study, majority of respondents said their children hadn't eaten a full meal during previous week, it was found that children who consumed less diet were associated with the prevalence of stunting. This results indicates that a one of the contributing factors to stunting can be insufficient nutritional intake, during interview the interview with key informants, District Nutritional Officer state that;

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> The timing of the first introduction of solid food to infants is a crucial aspect of pediatric health care. When the food offered satisfies the infant's nutritional demands, child feeding practices are successful. Stunting in these infants may result from late introduction of food, which is a likely cause. It exposed these children to the inadequate energy and nutrients they needed, which increased their risk of stunting and caused them to stop growing or grow very slowly. Consequently, these children experience stunting. Children who experience a lack of dietary intake are more likely to suffer from stunting than children who have enough energy intake. (Key informant, Iringa District Council 20, July 2023)

4.1.3.4 Feeding frequency

The researcher intended to understand how many times did children used to have a meal, during the day or night, it was reported that 8 children have a meal once, 17 children twice per day, 31 children thrice per day, 11 children four times per day, 5 children five times per day

Table 7

Feeding frequency

Times	**Frequency (n=72)**	**Percent%**
Once	8	23.6
Twice	17	43.1
Thrice	31	15.3
Four times	11	11.1
Five times	5	6.9
Total	**72**	**100.0**

Source: Field Data 2023

The finding indicates that only 6.9% children were given food five times per day which is a required times of getting meal for children under five years, The period from 6 to 24 months of age is a very vulnerable period, it is the time when malnutrition starts in many children, contributing significantly to the high prevalence of stunting in children under five years of age world-wide (WHO, 2017). Majority of respondents give to their children less than five times in a day. Malnourished children were found to be more likely to have a small number of daily meals as compared to well- nourished children. This revealed information is supported by Turyashemererwa*et al* (2013) who reported that the number of meals a child takes has an effect on his or her nutritional status, since it is related to nutrient intake. The greater the frequency of feeding, the higher the chances of meeting the recommended daily nutrient intake. The researcher relied on figures for the number of daily meals taken by the child to make inferences about the adequacy of nutrient intake. One of the respondents from Tanangozi Villagesaid that;

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> It was difficult for me to care for my child because I had other responsibilities to attend to while away from home. These responsibilities included petty business and agriculture activities as well as being responsible for fetching water, cooking, washing clothes, and caring for children when I returned home (Respondent, Iringa District Council 16, July 2023)

During the interview with key informants, the Iringa District Council's Nutrition Officer stated that;

> Every two to three hours, or around five or six times a day, children must eat or drink, this will provide a child with roughly three meals and two to three snacks each day. For children aged 6 to 24 months, breast milk still provides the majority of their nutrients, but as time goes on, solid meals begin to supplement breast milk as their main source of nutrition. When parents first start feeding children, they have to understand that children who eat less frequently than three times a day are more likely to be stunted. (Key informant, Iringa District Council 20, July 2023)

4.1.4 Excessive use of alcohol

4.1.4.1 Excessive use of alcohol during previous pregnancy

The study intended to analyse the uptake of alcohol by mother during pregnancy. The findings indicated that 51.4% of the women had consistently consumed alcohol during their previous pregnancy with the youngest child and 48.6% said they didn't consume alcohol during their pregnancy.

Table 8

Excessive use alcohol during previous pregnancy

Answers	**Frequency (n=72)**	**Percent %**
Consumed	37	51.4
Not consumed	35	48.6
Total	**72**	**100.0**

Source: Field Data 2023

The results from this study imply that most women consistently consumed alcohol during their previous pregnancy which has a negative impact on their children's health and can result instunting. These results are in agreement with the findings by Modjadji, P., and Pitso, M. (2021) who noted that effects of prenatal alcohol exposure were noted on weight, length and head circumference at birth. Alcohol abuse which was assessed by asking the parent to describe his

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or her typical occasional, daily and weekly alcohol drinking habits. The study was found to be associated with children stunting through the excessive use of alcohol for parents for children under five years of age in Iringa District Council. The explanation could be that due to parents spending most of their time drinking rather than taking care of their children, respondentfrom Ndiwili Village indicated that. *"I started drinking alcohol when I was 16 years old, and when I was 19 years old, I got married. Because my husband drank alcohol often in his everyday life, I didn't stop drinking when I got married, and I continued to do so when I was pregnant"(Respondent, Iringa District Council 16, July 2023).*

The finding from key informants during interview, Executive Officer of Tagamenda Village revealed that;

> The majority of villagers in this village start drinking alcohol in the morning, which means that many pregnant women often overlook the value of nutrition for their unborn children. Even worse, some parents give their children alcohol so they will not have to worry about them when they get drunk, which may lead or contribute to stunting for children in our district. (Key informant, Iringa District Council 24, July 2023)

4.1.4.2 Understanding on the side effects of alcohol to health and child's growth

According to the revealed information in figure above 31.9% of respondents said they understand the side effects of alcohol to their health and their child's growth and 68.1% of the respondents don't understand the side effects of alcohol to their health and their child's growth.

Table 9

Understanding on the side effects of alcohol to their health and child's growth

Answers	Frequency (n=72)	Percent%

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Understanding of the side effect of alcohol to their health and child's growth		
Yes	23	31.9
No	49	68.1
Total	72	100.0
Identified side effect of alcohol to their health and child's growth		
Compromise children development	11	47.8
Miscarriage	3	13.0
Stillbirth	5	21.7
Prematurity	3	13.0
Suicidal thoughts and attempts	1	4.3

Source: Field Data 2023

The results obtained from this study revealed that 68.2% of respondents don't understand the side effects of alcohol to their health and child's growth. Modjadji and Pitso (2021) have reported that maternal malnutrition is contributed by abusive use of alcohol during pregnancy, Alcohol consumption during pregnancy with implications on having partners who consume alcohol and lack of sufficient information about the adverse health effect may lead to prevalence of stunting. Use of alcohol during breastfeeding may deprive newborns of insufficient nutrients through breast milk. Alcohol use during the period of breastfeeding significantly compromises child development. Children whose mothers consumed alcohol during their pregnancy are more likely to be stunted. In their study on the effect of moderate alcohol consumption during pregnancy on foetal growth and morphogenesis, Akombi, *et al* (2017) noted that alcohol uptake during early stages of pregnancy may interfere with foetal growth and thus malnutrition after birth. Executive Officer from Ruhota Ward asserted that;

> Most parents and caregivers drink excessive amounts of alcohol on a regular basis and also give their children alcohol to avoid the problems that arise from their children's frequent cries so that they can work and drink without discomfort and their babies' crying will stop. However, most of them don't care about the negative effects of alcohol that put their child at risk of stunting. (Key informant, Iringa District Council 24, July 2023)

During the interview, the District Nutritional Officer explained on the side effect of alcohol to mother's health and their child's growth, she said that;

> It is recommended not to drink any alcohol during pregnancy. Alcohol crosses the placenta easily and reaches the developing baby. Differences in genetics and metabolism of alcohol by both the person who is pregnant and the developing baby can lead to a wide range of risks including stunting. Children exposed to alcohol through breast milk may eat less, have changes in their sleeping patterns, issues such as learning and behavioural problems

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are more likely to be identified as your child gets older. (Key informant, Iringa District Council 20, July 2023)

4.1.5 Child characteristics

4.1.5.1 Children suffering from repeated illnesses after birth

The researcher wanted to know from the respondents if their stunted children suffered from repeated illnesses. The study found that 36.1% of respondents agreed that their children experienced repeated illnesses after delivery, while 63.9% of respondents said that their children were healthy after delivery

Table 10

Children suffering from repeated illnesses after birth

Answers	**Frequency (n=72)**	**Percent%**
Agreed	26	36.1
Disagreed	46	63.9
Total	72	100.0
Identified repeated illness		
Diarrhoea	13	50.0
Acute respiratory infections	7	26.9
Malaria	6	23.0

Source: Field Data 2023

The results of the analysis in this study indicate that 36.1% of total respondents agreed that they are children were suffering from repeated illness after birth, this findings were supported by Prendergast and Humphrey (2014) who revealed that, there is a link between infectious diseases with stunting in child infection which can interfere with linear growth by first affecting the nutritional status of children under five. This happens because infectious diseases can decrease food intake, interfere with nutrient absorption, lead to direct loss of nutrients and increase metabolic demand (Prendergast and Humphrey 2014)). The World Health Organization (2017) stated that breastfeeding confers antibodies to the children that prevent them from infections such as diarrhoea which are associated with malnutrition in under five children. Turyashemererwa*et al* (2013) found in their study that child repeated illnesses were significantly associated with child stunting. They explain that the relationship between stunting

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and child illness is twofold. Malnutrition makes a child vulnerable to disease and in turn the child loses appetite because of illness, which can lead to insufficient dietary and can results into child stunting.

Infections such as diarrhoea, acute respiratory infections and malaria have been found to be associated with stunting in children under age of 5 (Gari*et al,* 2018; Sinha*et al,* 2018) as there is a vicious cycle of infection, impaired nutrition due to illness and lowered immunity.Community Health Worker from Sadan Village elaborated that; *"The significant risk of stunting during the first two years of life is largely due to frequent infections, and poor diets throughout pregnancy, infancy, and the early years of childhood cause insufficient nutrient intake, which can result in stunting"(Respondent, Iringa District Council 19, July 2023).* When parents asked if their children suffered from repeated illnesses after birth, one of the respondents from Tagamenda replied that; *"My stunted child is currently experiencing diarrhoeal infections after experiencing multiple illnesses just days after birth"(Respondents, Iringa District Council 24, July 2023).*

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

The study aimed to assess the factors that contribute to stunting for children under the age of five in Iringa District Council. The findings show that, social factors contributing to stunting for children under five years included poor breastfeeding practices which has revealed to influence stunting in children under five years and it can be influenced by how well their parents feed them and take care of them. Size of household from 6 members up to 15 members were revealed to influence the stunting, on the other hand excessive use of alcohol during pregnancy and two years after delivery affects foetal growth and development as well as health outcomes of the child in the first two years after delivery. Most parents for stunted children have been revealed to have a very low or no level of education and this may lead to poor care practices and low socio-economic status. From this finding it is concluded that parents with nutrition knowledge are more likely to give more nutritious food than parents without nutrition knowledge. Late initiation of breastfeeding after delivery was indicated as a factor contributing to stunting. Early initiation of additional foods before the recommended age was identified as a key factor contributing to stunting in children under five years of age, the reason of initiating complementary food was cried frequently, mothers did not have enough milk, others parents said they get used to feeding their children so as to be able to start eating additional food after six months.

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5.2 Recommendation

Iringa is leading Region for stunted children under five years of age in Tanzania, appropriate and early intervention should be designed to provide nutrition education on complementary feeding. Local government should come up with innovative strategies to educate parents about the importance of exclusive breastfeeding until six months and advice parents on perceptions of insufficient breast milk and other breastfeeding problems that may impede this practice. Also, health professionals should be responsible for providing education for parents on dietary intake. Awareness should be created for parents to feed their children five times per day which is a required time of getting meals for children under five years. Also awareness on a purse of thousand days which helps to address future nutrition status of children under five years of age should be encouraged. The strategies of addressing excessive use of alcohol especially for pregnant women and children should be identified and implemented. There is also a need for interventions to promote health care and the treatment of childhood infections.

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