

Assessment of Stunting, Wasting Rate and Associated Factors among Children 0-59 Months at Jigjiga Town in Somali Regional State, Ethiopia

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Abstract

The objective of this study was to assess the stunting and wasting rate among children less than five years of age and its associated factors in Jigjiga town. A community based cross-sectional study was conducted in Jigjiga site from March to May, 2017. A total of 128 household, mother-child pairs were included in the study. A multivariate logistic analysis was carried out to identify factors associated with stunting and wasting, separately. The prevalence of stunting and wasting among children aged 0-59 were (34.9%) and 50.4% respectively. This result revealed that illiterate mothers were (58.6%) higher than literate mothers 42.4%, in that matter the child whose mother is illiterate are most likely to be stunted or wasted than children whose mother is literate. This might be lack of awareness about the nutritious food to meet physiological status of child and unavailability of latrine. In general, the magnitude of stunting and wasting exists as a severe public health concern. Therefore, improving socio-economic status, latrine and maternal postnatal vitamin-supplementation coverage are essential to mitigate the high burden of stunting.

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Introduction

Wasting and stunting are global public health problems that frequently co-exist. However, they are usually separated in terms of the policy, guidance, programming and financing, though both wasting and stunting are manifestations of under nutrition caused by disease and poor diet, there are critical gaps in our understanding of the physiological relationship between them, and how the interventions for one may affect the other. The aim of this study was to establish research priorities in the relationships between wasting and stunting to guide future research investments [1].

Data on the prevalence of protein energy malnutrition in developing countries (low- and middle income countries) indicate that on average, stunting affects over 40% of fewer than 5 years children, and stunting rates among children are highest in Africa and Asia [1]. Thin and short were used in the past to refer to children with abnormal health and nutritional status [1]. Nowadays; wasting and stunting are believed to insinuate

deviation behind the range of thinness and shortness that might regard as normal in some cases. It soon became apparent that stunting is generally more common than wasting, and in some populations, particularly in Asia, over 50% of children could be classified as stunted [1].

In a study drawn on the experience of developing countries over the 25-years period to identify the determinants of child malnutrition for each developing region, only seven countries have a higher prevalence of child stunting than Bangladesh. While Bangladesh has the highest prevalence of childhood underweight among all countries in the world, except North Korea, the percentage of children aged less than 5 years with stunting decreased from 64.2% in 1992 to 48.3% in 2000 and 42.4% in 2005 [2].

In developing countries, stunting affects about a third of the children below five years of age. The highest levels of stunting are observed in eastern Africa; where on average 48.1% of under five children are stunted. In 1998 a demographic health survey (DHS)

done in Kenya showed that the prevalence of stunting was 22%. Another DHS done in 2003 showed little improvements with the prevalence of stunting dropped to 20%. On the other hand in the central province, lower improvements were observed with the prevalence of stunting reduced to 28%. By the year 2007 some 11% of males and 16% of females were found to be stunted in Kenya [3]. Although, the worldwide prevalence of stunting is declining by about 0.5 percentages point each year, more than half the children in some regions of the developing world, such as Southeast Asia, are severely below the normal height for their age (according to Cornell university nutritionist, 1998). In 1995, of under five children 54 % in South Asia, 39 % in sub-Saharan Africa, 38 % in Southeast Asia, 28 % in Mexico, Central America and the Caribbean, 22 % in the Near East and North Africa, and 13 % in South America where stunted. In 1992, 31 % of under than five children in China were stunted [4].

Globally, stunted growth has declined from 49 % of children under 5 years of age in 1980 to 40 % in 1995. All the regions in the developing world except sub-Saharan Africa made some progress in reducing stunted growth among children under 5 between 1980 and 1995. However, stunted growth in sub-Saharan Africa had gone up by 0.13 percent a year. Of the 25 countries in the sub-Saharan region with data available, however, 13 made substantial progress, but in 12 countries, the rate of stunting got worse [4]. Therefore the objective of this study was to assess the stunting and wasting rate among children less than five years of age and its associated factors in Jigjiga town.

Materials and Methods

Description of study area

The study was carried out in Jigjiga town. The Jigjiga town is the administrative city of the Somali regional state located at a distance of 636 KM away from Addis-Ababa, eastern part of Ethiopia. The town is also an administrative city of Jigjiga zone of the Somali region, lies between 90°2'0" N to 90° 42'0" N and 42°29'00" E to 42°13'00" The mean monthly minimum temperature varies from 5.8°C in November to 14°C from July to September and the mean monthly maximum temperature varies from 25°C in July to 29°C from March to April.

The area experiences a bimodal type of rainfall classified as a short rainy season from July to September and a main rainy season from March to April, The topography of Jigjiga has a range of lowland to midland agro-ecologies. Based on figures from the Central Statistical Agency in 2005, Jigjiga has an estimated total population of 98,076 of whom 50,355 are men and 47,721 are women. The dominant ethnic group living in the town was Somali (99.0%), the next 3 largest group were the Amhara (0.25%), the Oromo (0.44%), and the Gurage (0.30%); all other ethnic group made up 0.08% of the population [5].

Study designs

A community based quantitative cross-sectional survey design was conducted to assess the prevalence of stunting, wasting and its associated factors among children 0-59 months of aged at

Jigjiga town in Somali regional state, eastern Ethiopia. In addition, the data designed to in well-structured way and anthropometry measurement has been taken. By conducting survey, the magnitude of child under nutrition and other nutritional status related condition was identified. A community based cross-sectional quantitative study was conducted on stunted and wasted children in Jigjiga town.

Population

The Study populations were children 0-59 months of age who lived with their mothers in the sampled three kebeles of Jigjiga town administration.

Sample size determination

The sample size required for the study was calculated using the formula to get correction factor. Total Source population of mothers in each household was 206. The sample size was determined based on the Ethiopian Demographic Health Survey on stunting and wasting of 34% (EDHS, 2015) and the level precision at 95% level of confidence and then the finally total correct sample size of each household was calculated as 128 [6].

Sampling techniques and procedures

In this study multi-stage sampling method was used in Jigjiga town, which consist of 20 kebeles, three kebeles were selected from these 20 kebeles by simple random sampling, then the calculated sample size was proportionally allocated according to average number of client prior to the study period in respective kebeles. They were comprised of a total of 128 households. The samples at households were taken by using systematic sampling techniques with expected population size of each mother in each kebeles which is 206. Then corrected sample size was calculated.

Results and Discussions

Socio demographic characteristics

Age of child: Result revealed that wasting and stunting increase with increasing of age of child. Here from age 0-10 months amount of wasting was 30.5%, 11-21 months was 34.4% and from age of 22-59 months was 35.2%. The reason of that situation is due to increasing of eating practice of children for their growth and metabolism. Evidently along with study conducted in Peru indicated that the level of stunting increases with increasing age of child 0-10 months, 11-21 months and 22-59 months (20.02%, 20.14% and 20.27%) respectively [7].

Sex of child: The report has shown that sex of child has much contribution in stunting and wasting development. In this result, male children have (66.4%) has strong feeling and desire for food to eat more than female (33.6%) due to better muscular development and utilizing of deferent fat stored foods by female than male child. Therefore, in area where there is no enough food on table for children, male children are more susceptible to stunting than female children. The same Evident with A cross sectional study in Gojam investigated that, male children were 1.5 times more likely to be stunted as female children [8].

Education status of mother: In this result revealed that illiterate mothers were 58.6% higher than literate mothers 42.4%, in that matter the child whose mother is illiterate are most likely to be stunted or wasted than children whose mother is literate. This might be lack of awareness about the nutritious food for child to meet physiological status of child. The same thing to the EDHS 2012 survey, said that children of mothers with more than secondary education are the least likely to be stunted (19 percent), while children whose mothers have no education are the most likely to be stunted (47 percent) [8].

Health care factors

Duration of breastfeeding: Concerned about the time of breast feed the child per day, about 87(68.0%) mothers were breast feed the child three times a day, in other hand about 40(31.2%) were given breast feed four times a day. Infant needs frequent breast feed a day so that it can feel comfortable and be ease from crying. Furthermore, child who breast feed enough during his/her infancy would not be easily stunted because of previous enough proteins intake. Study conducted in Gojam Ethiopia indicated that there was less chance of stunting and wasting for child who frequently breast feeds than child who breast feed two to three times breast feed a day [8].

Child's weight and size at birth: The result showing that the respondents mothers in Jigjiga, about 41(32.0%) had gave a birth to low weight babies <2.5 kg due to either neonatal infection or under nutrition of mother during pregnancy time period. About 70 (54.7%) mothers gave a birth to average child weight between 2.5_4 kg they were safety fitting their physiological and state of wellbeing in their diets and around 17 (13.3%) tend to give a birth with abnormal over weight child with body weight of greater than average standard health status of child due to diabetic or obesity of mother during entire pregnancy average birth weight in babies whose mother have well nutritional status range between 2 to 5 kg. There have been numerous studies that have attempted with varying degrees of success to show link between birth weight and latter life condition, including diabetes, obesity, tobacco smoking and intelligence. Low birth weight associated with neonatal infection. Evidently to the study conducted in Ghana indicated that, children who were very small at birth had a higher probability to be stunted than children with normal size [9].

Colostrums feeding: Most of mothers in area used to breast feed their children immediately after delivered and some of them did not, they wait after some hours. Among the mothers about 83(64.8%) were found to breast feed the children followed the birth while 45(35.2%) were found having a system of breast feed after some hours of birth. In fact first milk/colostrums are possible for child because they have more protein comparable

to hind milk; it is better for child to receive first milk to enhance protein for future growth and repaired. Similarly to Study in India indicated that stunting among children who were fed colostrums (42.1%) was significantly less chance than that among those who were not fed colostrums (59.0%) [10].

Method use for feeding the child: Methods of feeding child in which mother prepared to feed her child were differences, they differ some of them used their hands to feed babies about 20(15.6%), for those who feed by spoon were 65(50.8%), those who used the cups were 42(32.8%) and those who have been found to use bottle were found to be 1(0.8%). For well protection system and safe technical feeding method of child, cup and spoon should be good to use rather than hands or bottle because there may be hazardous which is easily be contacted with hand during cleaning or others household activity if it is not washed well. Hand wash care is hardly be practiced traditionally if some training is not carry out in area there for cup is possible to use. Unless and otherwise the child becomes ill or may have diarrhea immediately after feeding [11]. Study conducted in Gojam showed that, there was significantly more stunting among children who were bottle fed (49.8%) than that used the cups.

Introduction of solid, semi-solid and soft food: Giving a complementary food varied with times from mothers to mothers based on talent of individual of each mother. In Jigjiga 100 (78.7%) mothers were found that they introduced complementary foods to their children before six month of age. In other hand, 28 (21.3%) were use complementary after six month following of weaning period when child stopped breast feed. In that matter, complementary food is significantly important for child within six month of age to engulf macro and micro nutrients from fortify and others modified foods for growth and metabolic activity [12,13]. The study conducted by Desha et al showed that, infant young and child feeding practices related to complementary feeding were positively and significantly associated with under nutrition indicators, particularly HAZ.

Conclusion

The prevalence of stunting and wasting for children is high in Jigjiga town. This is because of limited household wealth status, latrine unavailability, and the presence of more illiterate mothers, shortage of family food and sanitary water. Therefore, improving of the above factors is essential to mitigate the high burden of stunting and wasting. It is also crucial to strengthen the implementation of vaccination focusing on reducing the occurrence of childhood diarrheal morbidity as well as early diagnosis and management of the problem.

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