# Dietary Intake and Socioeconomic Factors among a Group of Stunted Preschool Children in Cairo

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## ABSTRACT

*The optimal growth and development of infants and young children are fundamental for their future. Stunting is one of the most important public health problems in developing countries. This study explores the socio-economic determinants of stunting among a sample of under-five years children.* ***Subjects & Methods:*** *This study is a cross sectional descriptive one ,for which the study population was recruited from out patients clinic of stunting in National Nutrition Institute (NNI) after taking the ethical agreements of their parents. The study included 50 preschool children (31 boys and 19 girls). Their age ranged from 2-5 year both boys and girls was included. Their parents were interviewed by using special questionnaire for assessment of the socioeconomic factors. Anthropometric measurements were performed. Dietary Assessment was performed using 24H, recall and food frequency of selected food items.* ***Results:*** *Among the sample, the children were 62%.boys and 38% girls. The current data showed inadequate dietary intake, as there was unsafe level of consumption of total calories and carbohydrate, vitamin A, calcium, zinc, unaccepted level of consumption of protein and iron. The most important determinable socioeconomic factors of stunting were educational level, occupation, family size and family income.* ***Conclusion****: This study was successful in identifying priority nutrients for dietary intervention including total caloric intake, macro and some micronutrients This study also determine some of socioeconomic factors of stunting which were educational level, occupation, family size and family income.*

***Key words:*** *stunting – preschool children - socioeconomic factors – nutritional status*

## INTRODUCTION

Child growth is internationally recognized as an important indicator of nutritional status and health in populations. Stunting (low height-for-age) is acknowledged as the best indicator for child growth (**WHO, 2007)**. Stunting refers to a child who is too short for his or her age. Stunting is the failure to grow both physically and cognitively and is the result of chronic or recurrent malnutrition. The devastating effects of stunting can last a lifetime **(UNICEF/WHO, 2017).**

Stunting results from long-term nutritional deprivation, inadequate childcare and poor environmental and sociocultural conditions**.(Black et al., 2008)** Child malnutrition is estimated to be the largest contributor to global burden of disease, killing millions of children in the developing countries **(Black, et al., 2003).** Some children suffer from more than one form of malnutrition – such as stunting and overweight or stunting and wasting **(UNICEF/WHO, 2017)**. Stunting associated with delayed mental development, poor educational achievement and reduced intellectual capacity, it is a strong predictor of human capital and social progress and increased risk of chronic diseases **(Pongou, et al., 2006 and Grantham-McGregor, et al., 2007).** Three our of ten Egyptian children under the age of five are stunted, of these three, at least one is severely stunted.**(Public Health, Human Development, Social Justice, 2012).**

The most significant predictors of stunting low socioeconomic status (SES) include paternal education, family income, paternal occupation and poor access to health services (**Masanja,et al.,2005 ).** Crowded housing and living place. Large family size .Most studies of the SES emphasis the importance of maternal education, *(***Health Policy Plan2005**) and household wealth or income estimated by ownership of consumer durables **(Bollen. et al., 2001)** provision of household

water and sanitation services (,**Pongou, et al., 2006**).

More recent studies needed for the investigation of both social and economic aspects of on stunting, hence the construction of the present study

**Objectives**

1- Assessing dietary intake of the sample of preschool children's.

2- Find the relation between dietary intake and dietary recommendation for preschool children's of stunting among a sample of under-five Years todderlars

3-Explores the socio-economic determinants of a sample of under-five Years todderlars

4- Identify potential areas of high priority for nutrition intervention.

## SUBJECTS and METHODS

Stunted preschool children50 of both sexes of stunted preschool children, their age ranged between 2 and 5 years from stunting out patient clinic of NNI. The study duration were 10 months from, August 2016 till may 2017. The participants were diagnosed as stunted based mainly on WHO standardized methods of assessment of nutritional status 2007(**WHO, 2007**).

***1. Questionnaire of stunting clinic***

All the cases were subjected to interview questionnaire of the stunting clinic.

***2-Anthropometric Measurements***

Weight and height was recorded according to the standardized methods **(WHO, 2007)**. Height for age was used as indicator of stunting it is categorized as: Normal (-2 to +2SD), Short stature <-2SD, and Tall if >+2SD.

***Assessment of Body Mass Index for age:***

For age from 2-5 years old, the Z score body mass index was used for boys and girls. The following categories of weight status were determined according to WHO Z score body mass index growth chart reference for

children (2-5-years old ) released by **WHO in 2007.**

BMI was categorized as: Normal (>-2 to <+1), Over weight (>+1 SD), Obese (>+2SD) and Thinness (<-2 SD)

***3-Dietary assessment:***

Data on nutritional status had been collected using specially designed questionnaires to cover required information on: Food intake (24 hours recall), and Dietary pattern "Food frequency" for selected items.

The energy and nutrient content of the 24 hour was computed through the compiled food composition tables of the **NNI (2006).**

***Dietary adequacy:***

The nutritional value of foods items consumed was compared to the recommended dietary allowances "RDAs" of **FAO/WHO/UNU (2004)**.

Iron estimation was based on its bioavailability according to the daily diet content of heam iron source in grams (meat, poultry and fish) or ascorbic acid (mg) as follows: Low bioavailability:<30gm of heam iron source or<25 mg of ascorbic, Intermediate bioavailability: 30-90 gm of heam iron source or 25-75mgof ascorbic acid and High bioavailability:>90gm of heam iron source or>75mg ascorbic acid (**Sight and life /Newsletter/ 2002)**

***Socioeconomic factors assessment:***

Using according to Elgelany**, et al., (2012**) new socioeconomic assessment status scale for health research in Egypt. The final scale included 7 domains with a total score of 84, with a higher score indicating better SES: Education and cultural, Occupation, Family, Family possessions, Economic, Home sanitation, Health care .Analysis Statistical Package for the Social Sciences (SPSS version 20.0) was used to conduct all the statistical analyses.

***Statistical Analysis***

Estimated energy requirement (EER) was calculated for each individual using their age, sex, height, and weight is according to the Institute of Medicine Dietary Reference In-

take equations. Given anecdotal evidence that suggests that the majority of subjects with stunting participate in limited physical activity outside the home, EER was estimated based on a sedentary lifestyle activity coefficient of 1.0. Percentage of EER was calculated as %EER (kcal/EER).Analyses of continuous variables were summarized as means with standard deviations and categorical variables were summarized as numbers and percentages. All inferences are based on two tailed tests with a threshold of <0.05 for declaring significance. Intake was categorized to < 50%, 50-74%, 75-99% and ≥ 100%.Chi square, Fisher's exact, one sample *t* test, Student's *T* test and one way ANOVA test were used to compare intake between sex, Ht Z score and Wt Z score categories. All analyses were conducted using SPSS version according to **(Zar, 1984).**

## RESULTS:

This study included 50 patients from the outpatient clinic of the NNI, 31 were boys (62. %) and 19 were girls (38%) Their ages range between 2 and 5 years. There was no statistical difference between boys and girls between regarding weight, height (table 1).

Heights of patients were blotted on height for age growth charts. The patient was considered as stunted when <-2 SD below normal matched height. In the current study stunted boys were 62. % where is stunted girl were 38% with statistical difference between boys and girls.

Table (3), (4) Amount of daily macro and micronutrient intake among study groups. Using paired *t-test*, the patients consumption of total calories was significantly less than the caloric requirement of normal children *P*= 0, 00) When compared the amount of different macro nutrients intake by the subjects with the RDA for aged matched subjects, significant statistical differences were found between all food items and the RDA (P < 0.00) regarding micronutrients there was signifi-

cant statistical differences in iron and zinc, Ca and the RDA (P < 0.00)

Dietary adequacy was interpreted according to the following categories: 50% (unsafe level of consumption), >50-75% (unaccepted level of consumption), >75-100% (accepted level of consumption), >100-120% adequate level of consumption and >120% (over consumption). The current data showed that the 46% of children had >50-75% (unaccepted level of consumption of calories and protein, While 56% of children had unsafe level of consumption of carbohydrate. The 48%of studies had adequate level of consumption fat Table (5)

Table (6) RDA**%** distribution from micronutrients according to sex Micronutrients There was unsafe level of consumption of vitamin A and, unaccepted level of consumption of vitamin C unsafe level of consumption of iron , calcium and unaccepted level of consumption of zinc with no statistically difference between male and females.

Regarding the socioeconomic factors results recorded that there were low level in some socioeconomic factors, parental educational culture 36.11%, and economic level in 44.44%. Family possession 50% and family domain 47.22 mean while there were middle level of other socioeconomic factors, level of home sanitation, health care and Family domain 41.66%, 44.44%, 41.66% respectively (table 7).

## DISCUSSION:

Linear growth failure is a major public health problem in developing countries, in children under five (**Black,et al.,2013) (United Nations Children's 2013).** Extensive research has shown intergenerational consequences of stunting **(McDonaldc et al., 2013)**, poorer psychomotor and mental development and school achievement **(Walker et al., 2011)**. With regard to child characteristics, our analysis confirms that, boys are at higher risk than girls these results were recognized in literature it confirms results from sub-Saharan African counties (**Keino 2014).** The key of suc-

cess against stunting is focusing attention on nutritional status (**Picot 2012)**. Assessment of the dietary intake of studied children showed that, the total calories was significantly less than the caloric requirement of normal children, significant statistical differences were found between all food items and the RDA for healthy children Our findings, were in agreement with the observations of **Jesmin et al. (2011)** who found this association. Similar findings were reported by **Kikafunda et al. (1998)**.

Few children in our study met the definition of adequate diet, our result was in line with that **(Amany et al. , 2014) .** The indicators of socioeconomic status, such as parental education, family occupation, and study found that stunting were more prevalent with parents of low educational level and parents employed a domestic worker. Results find wide supportive evidence as **Barbara, et al., 2009; kejno, et al., 2014 and, et al., 2016**. There is widely accepted theory entail that economic welfare boosts nutritional status. The interpretation of that relation can be explained by fact that richer families usually have better access to health care and improved environmental health, therefore pointing to a broader relation between poverty and stunting **(Chiaraetal et al., 2016)**. The present study findings was a supportive of this result as found significant association the poor economic welfare and stunting., Stunting was significantly more prevalent and alarming among low social level, in comparison to higher social class (**Barbara, et al.,** 2009**)**. The present results are consistent with other studies that revealed family size; number of under-five children in the family was one of the detrimental factors of stunting. In this study found that family members were more likely to be stunted than those living in households with two to four family members. This result was in line with **(Teshale et al., 2014)**. Access to improved water source and functioning hand-washing station protects against stunting (**Fewtrell, et al., 2005).** Four tallies there was satisfactory

level of home sanitation, health care which proved some successful Governmental effort in alleviating these problems.

## CONCLUSION:

This study was successful in identifying priority nutrients for dietary intervention including intake. Both macro and micro nutrients was inadequate total calories and carbohydrate protein vitamin A, calcium zinc, and iron. The most important determinately socioeconomic factors of stunting in our result were the educational level, the occupation, and the family income and size. Interventions that increase household wealth, improve educational level and Family planning activities should be implemented to reduce stunting.

## REFERENCES:

**Amany Edward Seedhom, M.D.; Eman Sameh Mohamed, M.D. and Eman Mohamed Mahfouz, M.D.(2014):**

Determinants of stunting among preschool children, Minia, Egypt International Public Health *ForumVol.1 No.2 June.*

**Barbara, A ;Willey,I.; Noel.; Cameron,I.I.;Shane, A.; Norris,I.V.; John, M.; Pettifor,V.; Paula, L. and Griffiths,I.I. I (2009):**

Socio-economic predictors of stunting in preschool children – a population-based study from Johannesburg and Soweto(Med), FCPaed (SA), Mineral Metabolism Research Unit, Department of Paediatrics, University of the Witwatersrand, Johannesburg SAMJ: South Afri. Medi. J. ***SAMJ, S. Afr. med. j. vol.99 n.6 Cape Town Jun.***

**Black, R.; Morris, S. and Bryce, J. (2003):**

Where and why are 10 million children dying every year? *Lancet. 2003; 361:2226–2234*

**Black, R.; Victora, C.G.; Walker, k. (2013):**

Maternal and child under nutrition and overweight in low-income and middle-income countries *Lancet; 382: 427-51*

**Black, R.E.; Allen, L.H. and Bhutta, Z.A. (2008):**

Maternal and child under nutrition: global and regional exposures and health consequences. *Lancet; 371:243–260.*

**Bollen, K.A.; Glanville, J.L. and Stecklov, G.(2001):**

Socioeconomic status and class in studies of fertility and health in developing countries. *Annu. Rev. Sociol. ; 27: 153-185.*

**Chiara Altare ; Tefera Darge Delbiso.; George Mutembei-Mutwiri and Regine Kopplow Debarati Guha-Sapir (2016):**

Factors Associated with Stunting among Pre-school Children in Southern Highlands of Tanzania .*J .Trop. Pediatr. 62 (5): 390-408.*

**El-Gilany 1A; El-Wehady 1 and El-Wasify M (2012):**

Updating and validation of the socioeconomic status scale for health research in Egypt. Mediterranean *Health .J.; Alexandria 18.9 (2012): 962-8.*

**FAO/WHO/UNU (2004):**

Human energy requirements report of a joint FAO/WHO/UNU Expert Consultation. Savige, G.S.; Hsu-Hage, B.H-H.and Wahlqvist, M.L. Food variety as nutritional therapy, *Current Therapeutics 1997: 57-67.*

**Fewtre, L.; Kaufmann, R. and Kay B (2005):**

Water, sanitation, and hygiene interventions to reduce diarrhea in less developed countries: a systematic review and meta-analysis *Lancet Infect. Dis*; 5:42-*52.*

**Grantham-McGregor, S.; Cheung, Y.B.; Cueto, S.; Glewwe , P.; Richter, L.and Strupp, B.(2007) :**

Developmental potential in the first 5 years for children in developing countries. *Lancet. 2007;369:60 –70.*

**Wamani H, Astrom AN, Peterson S, Tumwine JK and Tylleskar T. (2005):**

Health Policy Plan, Predictors of poor anthropometric status among children under 2 years of age in rural Uganda, Public *Health Nutr ; 9(3): 320-326.*

**Jesmin, A.; Yamamoto, S.S.; Malik, A.A. and Haque, M.A. (2011):**

Prevalence and determinants *BMC Pediatr2007.,7:17.*

**Keino,S.;Plasqui,G. and Ettya,G .(2014):**

Determinants of stunting and overweight among young children and adolescents in sub-Saharan Africa, *food .Nutr. Bull ;35 :167-*78.

**Kikafunda, J.K.; Walker, A.F.; Collett, D. and Tumwine, J.K. (1998)**:

Risk factors for early childhood malnutrition in Uganda. *Pediatrics. 102(4):E45.*

**Masaja, H; Schellenberg JA and Savigny D (2005):**

Impact of Integrated Management of Childhood Illness on inequalities in child health in rural Tanzania .published by oxford university press in association with the London school of hygiene and tropical medicine.

**McDonald, C.M.; Manji,K.P and KupkaR(2013):**

Stunting and wasting are associated with poorer psychomotor and mental development in HIV-exposed Tanzanian infants]. *J. Nutr. ;143:204-14.*

**NNI, National Nutrition Institute, (2006):**

Food Composition Table, Cairo, A.R.E., 2006.

**Picot, J.(2012):**

The Effectiveness of Interventions to Treat Severe Acute Malnutrition in Young Children: A Systematic Review." Health Technol. *Assess 16.19: 1-316.*

**Pongou, R.; Ezzati, M. and Salomon, J.A. (2006):**

Household and community socioeconomic and environmental determinants of child nutritional status in Cameroon. *BMC Public Health* .

**Sight and Life, (2002):**

Newsletter 3/2002. 2nd Editorial, Contents. Vitmin A and its relatives: marvellous molecules in key life processes, Page 3. Incorporating the xerophthalmia club bulletin, Prof. Donald S. McLaren, 12 Offington Avenue, Worthing, West Sussex BN14 9 PE, UK

**Tshale Fikadu.;Sahilu Assegid and Lamessa Dube (2014):**

Factors associated with stunting among children of age 24 to 59 months in Meskan district, Gurage Zone, South Ethiopia: a case-control study*BMC Public Health*, ***14:800***.

**UNICEF/WHO (2017):**

World Bank Group - Joint Child Malnutrition Estimates 2017 edition.

**UNICEF-WHO-WB (2013):**

United Nations Children's Fund, World Health Organization, World Bank Joint child malnutrition estimates

**Walker SP; Wachs TD and Grantham-McGregor (2011):**

Inequality in early childhood: risk and protective factors for early child development, *Lancet 2011*; 378:1325-38

**WHO, 2007:**

Onis ,M.;Onyango, A.W.; Borghi ,E.; Siyam A.; Nishda, C. and Siekmann J (2007): Development of a WHO growth reference for school–age children.

**Zar JH (1984):**

Bio-statistical analysis, Prentice Hall, Englewood, N.J., pp. 718.

**Table (1): Percent distribution of Individual according to sex, age groups weight and height for age Z score**

| groups | **boys** | | **girls** | | **Total** | |
|---|---|---|---|---|---|---|
| | **No** | **%** | **No** | **%** | **No** | **%** |
| stunted | 31 | 62.0 | 19 | 38 | 50 | 100.0 |

**Table (2): The means and standard deviations of Anthropometric measures and clinical data according to sex**

| Groups / Parame-ters | **Boys(31)** | | **Girls (19)** | | **Total (50)** | | **T test** | ***P* value** |
|---|---|---|---|---|---|---|---|---|
| | **Mean ± SD** | **Min - Max** | **Mean ± SD** | **Min - Max** | **Mean ± SD** | **Min - Max** | | |
| **Weight (k)** | 13.1 ± 1.8 | 10.0 – 17.0 | 12.3 ± 2.0 | 10.0 – 17.0 | 12.8 ± 1.9 | 10.0 – 17.0 | 1.52 | 0.135 |
| **Height (cm)** | 93.2 ± 7.1 | 77.0 – 115.0 | 90.7 ± 7.2 | 75.0 – 105.0 | 92.2 ± 7.1 | 75.0 – 115.0 | 1.17 | 0.247 |
| **BMI** | 15.3 ± 2.4 | 9.1 – 21.9 | 15.0 ± 2.0 | 12.1 – 18.7 | 15.2 ± 2.3 | 9.1 – 21.9 | 0.45 | 0.668 |

**Table (3): The means and standard deviations of daily macronutrients intake**

| parameters | No | Mean ± SD | Min - Max | P value |
|---|---|---|---|---|
| Energy (kcal) | 50 | 643.3 ± 182.0 | 381.8 – 1046.5 | 0.000 |
| Total Protein (gm) | 50 | 20.9 ± 6.2 | 9.8 – 36.4 | 0.000 |
| Total Fat (gm) | 50 | 19.0 ± 9.6 | 6.9 – 45.9 | 0.001 |
| Carbohydrates (gm) | 50 | 97.2 ± 28.3 | 48.4 – 162.9 | 0.000 |

**Table (4): The means and standard deviations of daily micronutrient intake**

| parameters | No | Mean ± SD | Min - Max | *P* value |
|---|---|---|---|---|
| - Calcium (mg) | 50 | 151.6 ± 56.6 | 44.8 – 290.3 | 0.061 |
| - iron (mg) | 50 | 10.0 ± 1.8 | 7.2 – 13.5 | 0.001 |
| - Phosphorus | 50 | 167.6 ± 107.5 | 5.0 – 459.8 | 0.474 |
| - zinc (µg) | 50 | 2.9 ± 0.9 | 1.4 – 5.1 | 0.000 |
| - Magnesium (mg) | 50 | 54.1 ± 18.2 | 28.3 – 124.4 | 0.001 |
| - Potassium | 50 | 699.0 ± 239.5 | 288.5 – 1194.2 | 0.000 |
| - Fiber (gm) | 50 | 2.5 ± 0.9 | 0.6 – 4.9 | 0.056 |
| - Selenium (µg) | 50 | 3.2 ± 1.9 | 0.5 – 7.7 | 0.233 |
| - Vitamin A (µg) | 50 | 102.4 ± 88.0 | 6.7 – 339.3 | 0.474 |
| - Vitamin C (µg) | 50 | 15.1 ± 8.6 | 1.2 – 42.2 | 0.163 |
| - Vitamin B1 (µg) | 50 | 0.4 ± 0.1 | 0.2 – 0.6 | 0.002 |
| - Vitamin B2 (µg) | 50 | 0.3 ± 0.1 | 0.1 – 0.5 | 0.045 |

## Table (5): RDA% distribution from macronutrients according to sex

| Macro nutrients | Boys | | Girls | | Total | | $\chi 2$ | *P* value |
|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | | |
| **Calories (kcal)** | | | | | | | | |
| **Unsafe < 50%** | 7 | 22.6 | 10 | 22.6 | 17 | 34.0 | 16.301 | 0.000 |
| **Unacceptable≥ 50-75%** | 21 | 67.7 | 2 | 10.6 | 23 | 46.0 | | |
| **Acceptable ≥ 75-100%** | 3 | 9.7 | 7 | 36.8 | 10 | 20.0 | | |
| **Protein (gm)** | | | | | | | | |
| **Unsafe < 50%** | 10 | 32.3 | 10 | 52.6 | 20 | 40.0 | 6.394 | 0.011 |
| **Unacceptable≥ 50-75%** | 18 | 58.0 | 5 | 26.3 | 23 | 46.0 | | |
| **Acceptable ≥ 75-100%** | 3 | 9.7 | 4 | 21.1 | 7 | 14.0 | | |
| **Carbohydrate (gm)** | | | | | | | | |
| **Unsafe< 50%** | 18 | 58.1 | 10 | 52.6 | 28 | 56.0 | 0.976 | 0.001 |
| **Unacceptable≥ 50-75%** | 13 | 41.9 | 9 | 47.4 | 22 | 44.0 | | |
| **Acceptable ≥ 75-100%** | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Fat (gm)** | | | | | | | | |
| **Unsafe< 50%** | 0 | 0.0 | 1 | 5.3 | 1 | 2.0 | 0.113 | 0.737 |
| **Unacceptable≥ 50-75%** | 5 | 16.1 | 4 | 21.1 | 9 | 18.0 | | |
| **Acceptable ≥ 75-100%** | 6 | 19.4 | 10 | 52.5 | 16 | 32.0 | | |
| **Adequate≥ 100-120%** | 20 | 64.5 | 4 | 21.1 | 24 | 48.0 | | |

***** *P* value is significant <0.05

< 50% unsafe level of consumption

≥ 50-75% unacceptable level of consumption

≥ 75-100% acceptable level of consumption

≥ 100-120% adequate level of consumption

≥ 120 over consumption

**Table (6): RDA% distribution from micronutrients according to sex**

| micronutrients | boys | | Girl | | Total | | $\chi^2$ | *P* value |
|---|---|---|---|---|---|---|---|---|
| | No | % | No | % | No | % | | |
| **Iron** (mg) | | | | | | | | |
| **Unsafe < 50%** | 11 | 35.5 | 10 | 52.6 | 21 | 42.0 | 5.659 | 0.017 |
| **Unacceptable≥ 50-75%** | 17 | 54.8 | 3 | 15.8 | 20 | 40.0 | | |
| **Acceptable ≥ 75-100%** | 3 | 9.7 | 6 | 31.6 | 9 | 18.0 | | |
| **Calcium** (mg) | | | | | | | | |
| **Unsafe < 50%** | 31 | 100.0 | 17 | 89.5 | 48 | 96.0 | 0.999 | 0.318 |
| **Unacceptable≥ 50-75%** | 0 | 0.0 | 2 | 10.5 | 2 | 4.0 | | |
| **Zinc** (μg) | | | | | | | | |
| **Unsafe < 50%** | 6 | 19.4 | 10 | 22.6 | 16 | 32.0 | 5.194 | 0.023 |
| **Unacceptable≥ 50-75%** | 18 | 58.0 | 5 | 26.3 | 23 | 46.0 | | |
| **Acceptable ≥ 75-100%** | 7 | 22.6 | 4 | 21.1 | 11 | 22.0 | | |
| **Vitamin A** (μg) | | | | | | | | |
| **Unsafe < 50%** | 23 | 74.2 | 7 | 36.8 | 30 | 60.0 | 5.791 | 0.016 |
| **Unacceptable≥ 50-75%** | 3 | 9.7 | 8 | 42.1 | 11 | 22.0 | | |
| **Acceptable ≥ 75-100%** | 5 | 16.1 | 4 | 21.1 | 9 | 18.0 | | |
| **Vitamin C** (μg) | | | | | | | | |
| **Unsafe < 50%** | 10 | 32.3 | 3 | 15.8 | 13 | 26.0 | 0.137 | 0.712 |
| **Unacceptable≥ 50-75%** | 8 | 25.8 | 10 | 52.6 | 18 | 36.0 | | |
| **Acceptable ≥ 75-100%** | 9 | 29.0 | 6 | 31.6 | 15 | 30.0 | | |
| **Adequate≥ 100-120%** | 4 | 12.9 | 0 | 0.0 | 4 | 8.0 | | |

***** *P* value is significant <0.05 < 50% unsafe level of consumption

≥ 50-75% unacceptable level of consumption ≥ 75-100% acceptable level of consumption

≥ 100-120% adequate level of consumption ≥ 120 over consumption

**Table (7): Socioeconomic factors among a sample**

| Educational cultural level both husband and wife | | | | | | | |
|---|---|---|---|---|---|---|---|
| Level | Gender | | | | Total | | P value |
| | Boys | | girls | | no | % | |
| | no | % | No | % | | | |
| Very low | 7 | 30.43 | 5 | 38.46 | 12 | 33.33 | 0.843 |
| Low | 9 | 39.13 | 4 | 30.76 | 13 | 36.11 | |
| middle | 5 | 21.73 | 2 | 15.38 | 7 | 19.44 | |
| high | 2 | 8.69 | 2 | 15.38 | 4 | 11.11 | |
| total | 23 | 100 | 13 | 100 | 36 | 100 | |
| Family domain | | | | | | | |
| Very low | 1 | 4.34 | 2 | 15.38 | 3 | 8.33 | 0.063 |
| Low | 5 | 21.73 | 4 | 30.76 | 9 | 25 | |
| middle | 8 | 34.78 | 7 | 53.84 | 15 | 41.66 | |
| high | 9 | 39.13 | 0 | 0.00 | 9 | 25 | |
| total | 23 | 100 | 13 | 100 | 36 | 100 | |
| Economic domain | | | | | | | |
| Very low | 6 | 26.08 | 5 | 38.46 | 11 | 30.55 | 0.543 |
| Low | 10 | 43.47 | 6 | 46.15 | 16 | 44.44 | |
| middle | 4 | 17.39 | 2 | 15.38 | 6 | 16.66 | |
| high | 3 | 13.04 | 0 | 0.00 | 3 | 8.33 | |
| total | 23 | 100 | 13 | 100 | 36 | 100 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Occupation domain both husband and wife** | | | | | | | |
| Very low | 7 | 30.43 | 4 | 30.76 | 11 | 30.55 | 0.963 |
| Low | 11 | 47.82 | 7 | 53.84 | 18 | 50 | |
| middle | 3 | 13.04 | 1 | 7.69 | 4 | 11.11 | |
| high | 2 | 8.69 | 1 | 7.69 | 3 | 8.33 | |
| total | 23 | 100 | 13 | 100 | 36 | 100 | |
| Family possessions domain | | | | | | | |
| Very low | 7 | 30.43 | 4 | 30.76 | 11 | 30.55 | 0.997 |
| Low | 11 | 47.82 | 6 | 46.15 | 17 | 47.22 | |
| middle | 3 | 13.04 | 2 | 15.38 | 5 | 13.88 | |
| high | 2 | 8.69 | 1 | 7.69 | 3 | 8.33 | |
| total | 23 | 100 | 13 | 100 | 26 | 100 | |
| Home sanitation domain | | | | | | | |
| Very low | 2 | 8.69 | 0 | 0.00 | 2 | 5.55 | 0.646 |
| Low | 7 | 30.43 | 3 | 23.07 | 10 | 27.77 | |
| middle | 9 | 39.13 | 6 | 46.15 | 15 | 41.66 | |
| high | 5 | 21.73 | 4 | 30.76 | 9 | 25 | |
| total | 23 | 100 | 13 | 100 | 36 | 100 | |
| Health care domain | | | | | | | |
| Very low | 3 | 13.04 | 1 | 7.69 | 4 | 11.11 | 0.958 |
| Low | 6 | 26.08 | 4 | 30.76 | 10 | 27.77 | |
| middle | 10 | 43.47 | 6 | 46.15 | 16 | 44.44 | |
| high | 4 | 17.39 | 2 | 30.76 | 6 | 16.66 | |
| total | 23 | 100 | 13 | 100 | 36 | 100 | |

# العوامل الاجتماعية والاقتصادية والمتناول الغذائي بين مجموعة من الأطفال قصيري القامة قبل السن المدرسي في القاهرة

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## الملخص العربي:

تعتبر مشكلة قصرا القامة من أهم المشاكل انتشار في البلاد خاصة في الأطفال الصغار. **الهدف من الدراسة** : تهدف هذه الدراسة إلى دراسة تأثير الحالة الاجتماعية والتغذوية على الأطفال تحت سن خمس سنوات. **تشمل هذه الدراسة** على عدد 50 من الأطفال بنين وبنات في عمر من 2- 5 سنوات وقد تم اخذ العينة من العيادات الخارجية للمعهد القومي للتغذية .وتم تقيم الحالة الاجتماعية للعينة وذلك من خلال عدد من الأسئلة الخاصة بالحالة الاجتماعية وكذلك الحالة التغذوية من خلال استرجاع 24 ساعة والتكرار الغذائي وتقيم المقاييس الجسمية. **كانت أهم النتائج ما يلي:**تمثل نسبة البنين في العينة 62% والبنات 38%.أوضحت هذه الدراسة انخفاض في المتناول من السعرات والكربوهيدرات والبروتين وكذلك الكالسيوم – الحديد – الزنك – فيتامين أ بالمقارنة بالاحتياجات الغذائية. أهمية الحالة الاجتماعية ومنها مستوى تعليم للأب وإلام- دخل الآسرة- حجم الأسرة – وظيفة الأب وإلام في الإصابة بقصر القامة . **الخلاصة:** لقد نجحت هذه الدراسة في تحديد أهمية العناصر الغذائية في الغذاء المتناول وكذلك دور الحالة الاجتماعية ومنها مستوى تعليم للأب والأم- دخل الأسرة- حجم الأسرة – وظيفة الأب والأم في التأثير على الإصابة بقصر القامة عند الأطفال.

**الكلمات المفتاحية**: قصر القامة – اطفال قبل المدرسة – الحالة الاجتماعية – الحالة الغذائية