Assessment of Nutritional Status among Children less than 5 years old in Hilla City

[*] Ismael Hasan Jawad, [**] Dr. Kahtan H. Hussein Al Jebory, [***]Dr. Hassan . A. Baey

[*]Community Health Nursing Specialist, MScN, Babylon Health Directorate, primary health care center.
[**] Assistant Professor, Phd and Academic Advisor, Community Health Nursing Department, University of Babylon/College of Nursing.
[***] Professor, Family and Community Medicine, University of Babylon/College of Nursing.

Abstract- A descriptive / Cross-sectional study is conducted throughout the period of October 1st 2015 to Jolly 20th 2016. The **studyaims** to assess nutritional status for children less than 5 years old in Hilla City in terms of (weight and height for age) through anthropometric measurements.

Methodology: A non-probability convenience sample of (1000) children with their mothers visiting the primary health care centers. This sample is distributed throughout two primary health care sectors according to Babylon Health Department, which include Hilla First Primary Health Care Sector and Hilla Second Primary Health Care Sector. A total of (6) primary health care centers is selected for the purpose of the study. A pilot study and validity are achieved through a panel of (16) experts. And the overall study instrument which include two parts. First part concerning with questionnaire and interview technique with children and their mothers. Second part concerning with anthropometrics measurements which include (weight for age, height for age, and weight for height). Data are analyzed through the application of descriptive statistical data analysis approach that includes, frequencies and percentages.

Results and Conclusion:The study results of the study and concluded indicate that the most of children are underweight in assessed nutritional status by weight for age indicators, as well as, nutritional status indicate normal by assessed through height for age and weight for height nutritional indicators. And also, most socio-demographic characteristics of children and their parents have been influenced their children nutritional status.

Recommendation:The study recommends that the nutritional status should be counseling and education to the mothers is an important component on health services which would help to decrease the effect of ignorance and faulty cooking or dietary practices. As well as proper breast feeding, home health care, food preparation, and hygiene. Also, the study recommends that further studies should be conduct to involve a national standard to assessing the factors that affect child nutritional status; socio demographic characteristic for child and parents.

Index Terms- Assessment, Nutritional Status, Children less than 5 years.

I. INTRODUCTION

A good nutrition is an essential component of good health. Malnutrition is known contributing factors to diseases and death. In the developing world, malnutrition affects approximately 800 million peoples, greater than 340 million whom are children under the age of five years. Over six million of those children die every year from malnutrition [(1)]. Childhood malnutrition is characterized by growth failure. Malnutrition is a problems in a biggest manner in worldwide currently faces and has significant with (41%) or more cases of deaths that occurs annually in children aged (6 to 24) months in developed countries which is total approximately (2.3) million [(2)].Iraq it have several studies that is conducted in regarding assessed nutritional status in different children aged groups and different geographical areas, results reveals that nutritional status may affected the children health [(3)].Malnutrition conceded one of the major problems in public health challenges in developed countries. Usually refer to a silence emergency cases, it has devastation effects on children especially under five years, society and future human-kind. It is some of the factors that might explain the cause of such widely spread mal-nutrition in children low birth weight, insufficient supplies of nutrients, prevalence of infectious diseases, lack of breastfeeding, and improper child care [(4)]. In children, protein energy malnutrition (PEM) dietary deficient results in under-weight, wasting and body lowered resistance to infectious diseases, stunted growth and development, impaired cognitive development and learning abilities [(5)].Assessed of nutritional status for under five years old children are monitored by the use of anthropometric measurements, specifically height and weight (BMI), which in combination with the age of the child forms the anthropometric indices . These are further classified as weight-age, length or height-age, weight-length or height and body mass index-age [(6)].Anthropometric measurement that refers to a comparative measurement of the human body the anthropometric measurement commonly used as indicators to monitoring growth and development. Typically, growth that is evaluated by the comparing individuals measurements to global standers reference, represented by percentiles curves and a chart indices for growth [(7)] [(8)].

Study Objective:

To assess the domains of nutritional status in term of (weight and height for age) through anthropometric measurements.

II. METHADOLOGY

Study Design: In order to achieve the objectives of the study. A descriptive / Cross-sectional study, using assessment approach, is carried out the present study.

Setting of the Study: The study conducted in Hilla City at six primary health care centers (urban and rural), that include children who visiting primary health care centers for the purpose of receiving health care services.

Study Sample : A non-probability convenience sample of (1000) children with their mothers visiting the primary health care centers are collected from (6) PHCs out of (43) centers (22) centers at Rural areas and (21) centers at urban areas from (2) PHCs districts project are selected randomly using lottery method. All centers names from urban were written on a bit of paper, blind folded and placed in a container and from this container (3) centers were picked up for the study to avoid selection bias. And all centers names from rural were written on a bit of paper, blind folded and placed in a container and from this container (3) centers were picked up for the study to avoid selection bias. The study sample is selected according to the following criteria includes:

1. The sample consisted of both genders (males and females)
2. Children who are vesting (PHCs).
3. The children, without any chronic disease, or handicap.
4. Mothers of children have desire to participate in the study.

Method of Data Collection: Through interview technique with children and mothers at primary health care center. The data collection was adopted by the researcher and two persons in a same specialist and well trained to collect the databy the anthropometric measurement which includes (weight for age, height for age, weigh for height) indicators; and child demographic data

Statistical Data Analysis Approach: The data of the present study are analyzed through the use of Statistical Package of Social Sciences (SPSS-XX).Descriptive data statistical approach which include frequencies and percentages.

III. RESULTS

Table (1): Distribution of the Study Sample by their Demographic Data for Children

Child Demographic Data	F N=1000	%	Cumulative Percent
Residential Area			
Rural	**250**	**25**	**25**
Urban	**750**	**75**	**100**
Gender			
Male	**730**	**73**	**73**
Female	**270**	**27**	**100**
Age (months)			
0- 10	**82**	**8.2**	**8.2**
11 – 22	**122**	**12.2**	**20.4**
23 – 34	**530**	**53**	**73.4**
35 – 46	**180**	**18**	**91.4**
47+	**86**	**8.6**	**100**
Types of Delivery			
Cesarean section	**294**	**29.4**	**29.4**
Normal	**702**	**70.2**	**99.6**
Others	**4**	**0.4**	**100**
Term of Delivery of Babies			
Pre-term	**198**	**19.8**	**19.8**
Full term	**582**	**58.2**	**78**
Post-term	**220**	**22**	**100**
Vaccination Status			

Yes	**950**	**95**	**95**
No	**50**	**5**	**100**
Types of Feeding			
Breast feeding	**448**	**44.8**	**44.8**
Mixed feeding	**538**	**53.8**	**98.6**
Bottle feeding	**14**	**1.4**	**100**
Age of Weaning (Months)			
o-4	**12**	**1.2**	**1.2**
5 – 7	**780**	**78**	**79.2**
8 – 11	**74**	**7.4**	**86.6**
12+	**134**	**13.4**	**100**
Number of Children in the Family			
1- 5	**928**	**92.8**	**92.8**
6 – 10	**68**	**6.8**	**99.6**
11-15	**4**	**0.4**	**100**
Order of Child			
1	**298**	**29.8**	**29.8**
2	**288**	**28.8**	**58.6**
3	**270**	**27**	**85.6**
4	**114**	**11.4**	**97**
5	**30**	**3**	**100**

Results reveals that the percentages children from rural and urban primary health care centers is (25%) and(75%). Regarding gender, results indicate that the highest number of the study sample is male (73%).Children age in the present study ranged from 0- <10 month to 47 months and above. The higher percentage of the sample is among age group (23- 34) which constitutes(53%). .Concerning type of delivery, the highest percentage of the children locate normally delivered which account (70.2%) and born within the term. In addition, most of the children are taken the vaccines according to Iraqi vaccination schedule which account (95%) out of the total number .This table indicates that the (53.8%) of children are mixed feeders. The highest age group (13-18) which weaning account (64.2%) out of the total number. Regarding number of children, most of the families has less than five children which account (92.8%) of the study sample. Finally in this table, results indicate that the highest percentage of the sample among the first order child which accounts (29.8%).

Table (2): Summery Distribution of Study Sample by their Nutrition Status through Anthropometric Measures (WAZ, HAZ, and WHZ)

Nutrition Status Domain	F N=1000	%	Cumulative Percent
WAZ			
Normal	**340**	**34**	**34**
Overweight	**120**	**12**	**46**
Obesity	**40**	**4**	**50**
Underweight	**500**	**50**	**100**
HAZ			
Normal	**558**	**55.8**	**35.8**
Tall	**136**	**13.6**	**49.4**
Stunting	**306**	**30.6**	**100**
WHZ			
Normal	**800**	**80**	**26**

Overweight	**114**	**11.4**	**37.4**
Obesity	**20**	**2**	**39.4**
Wasting	**66**	**6.60**	**100**

*** In assessing nutritional status by (WAZ) :weight for age z scores, (HAZ) : height for age z scores, and (WHZ) :weight for height z scores.F= Frequency, %= Percentage**

The findings of the analysis revealed the distributions of the study sample according to the nutritional status indicators in term of WHZ, HAZ, and WAZ. Nutritional status is classified into three levels (underweight, normal, overweight and obesity) that concerning weight for age, (normal, tall and stunting) that concerning height for age. In concerning weight for height, the level includes (normal, overweight, obesity and wasting). In general, the proportion of underweight recorded a higher percentage in first nutritional indicator (50%) that assessing the weight for age. In assessing nutritional status by height for age the normal account (30.6%). Regarding assessing nutritional status by weight for height indicators the table reveals that account (6.6%).

IV. DSCUSSION

Part I: Discussion Demographic characteristics for child

The study results reveals that the percentages children from rural and urban primary health care centers is (25%) and (75%). This result come because the urban primary health care centers are more distributed than the rural due to more population residents in urban areas than rural areas. These importance consideration as being rural areas having less health facility than compares as urban. As example, a study has assessed nutritional status of children in AL-Hilla City. Their findings indicate a significant difference in resident between the study groups at p-value=0.004, with high prevalence of underweight in rural area and obesity in urban area (67%, 65%) respectively[9].

Regarding gender, results indicate that the highest number of the study sample is male (73%). These results agree with the results obtained by (NRI, MH and UNICEF, 2003) who have studied Nutritional status survey of under five children In Baghdad-Iraq. Their findings indicate that the (51.4%) of the study sample are male[10].

Regarding children age in the present study ranged from 0 - <10 month to 47 months and above. The higher percentage of the sample is among age group (23- 34) which constitutes(53%). These results come along with results of Bahara (2011) who has assessed nutritional status of children attending nurseries and kindergartens in Sulaimani city. Their results indicate that the (37.6%) of the total sample are within age of (48) months [11].

Concerning type of delivery, the highest percentage of the children locate normally delivered which account (70.2%) and born within the term, due to mothers as being healthy and married within terms. Most of the studies indicate that the woman married within age (less than 18 years old) due to caesarian section delivery.

In addition, most of the children are taken the vaccines according to Iraqi vaccination schedule which account (95%) out of the total number due to intensive monitoring, evaluated, and available vaccination by government policy, also mothers have cognitive towards child care to complete their vaccinations. According to feeding (53.8%) of children are mixed feeders as being mothers are employed. Concerning extra feeding, the highest percentage of the sample is among age group (4-7) months which account (78%) of the study group. The highest age group (13-18) which weaning account (64.2%) out of the total number. Regarding number of children, most of the families has less than five children which account (92.8%) of the study sample. Concerning child order, results indicate that the highest percentage of the sample among the first order child which accounts (29.8%). These findings indicated that recently family size becomes small and smaller when life becomes more complex and changing in life style, which allow families to spend more money on their few children instead of spending their limited income on great number of children. Indirectly this will lead to increase the standard of living and improve nutritional status of all family's members mainly the preschool children.

II.

Part II: Discussion of the Study Sample According to Nutritional Status

The findings of the analysis revealed the distributions of the study sample according to the nutritional status indicators in term of WHZ, HAZ, and WAZ. Nutritional status is classified into three levels (underweight, normal, overweight and obesity) that concerning weight for age, (normal, tall and stunting) that concerning height for age. In concerning weight for height, the level includes (normal, overweight, obesity and wasting). In general, the proportion of underweight recorded a higher percentage in first nutritional indicator (50%) that assessing the weight for age. In assessing nutritional status by height for age the normal account (30.6%). Regarding assessing nutritional status by weight for height indicators reveals that account (6.6%). In a study of Bahara (2011) who has assessed nutritional status of children attending nurseries and kindergartens in Sulaimani city. Their findings indicate that the all score (WAZ, HAZ and WHZ) are within normal indicators weight for age are normal indicators (90.6%); height for age are normal indicator (90.5%); and weight for height are normal indicator (89.8%)[11]. Furthermore, in a study of Ghanshyam and others (2014) who have studied nutritional status of pre-school children (3-5 yrs) residing in the Catchment Area of Ram Nagar Urban Health Center, Belgaum. A cross sectional study design conducted on (392) participant. Their findings indicate that the (70.9%) of children are normal nutrition by assessing nutritional status through (WAZ), (70. 5%) of children are normal nutrition by assessing nutritional status through (HAZ), and in assessing nutritional status by (WHZ) results indicate (71.6%) of children within normal nutritional status[12].

V. CONCLUSION

1. The majority of study sample recorded normal nutritional status according to all three nutritional indicators; weight for height (WHZ), and height for age (HAZ), except weight for age, there is a underweight.
2. Proportion of obesity and tall recorded the lowest percentages, through three nutritional indicators; weight for height (WHZ), height for age (HAZ) and weight for age (WAZ).

VI. RECOMMENDATION

1. Nutrition counseling and education to the mothers is an important component on health services which would help to decrease the effect of ignorance and faulty cooking or dietary practices. As well as proper feeding, home health care, food preparation, hygiene.
2. Encourage breast feeding at least during first six months of life, as well as starting with complementary food in appropriate age.
3. Further studies should be conduct on regular basis in order to assessment the prevalence of malnutrition among under five years children.

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AUTHORS

First Author – Ismael Hasan Jawad, Community Health Nursing Specialist, MScN, Babylon Health Directorate, primary health care center.
Second Author – Dr. Kahtan H. Hussein Al Jebory, Assistant Professor, Phd and Academic Advisor, Community Health Nursing Department, University of Babylon/College of Nursing.
Third Author - Dr. Hassan . A. Baey, Professor, Family and Community Medicine, University of Babylon/College of Nursing.