



Relationship between mother's knowledge and nutritional status among preschool children.

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Abstract:

Background: Nutrition has be a major problem of health in several countries, if in developed countries or in developing countries likewise. The occurrence of nutritional problems to children can really be prevented if mother has a well knowledge grade on how to select and prepares diet of children with healthy nutrition.

Objectives: To assess mothers' nutritional knowledge of preschool children, To assess nutritional status of preschool children, To find out relationship between mothers' knowledge of nutrition and nutritional status of preschool children.

Material and methods: A descriptive a cross-sectional designed study has been carried out in Twelve kindergarten in AL –Najaf city, from November 21th, 2019 until August , 20th, 2020.

A non-probability sampling technique, purposive sampling has been used and total of samples were (150) mothers and their children aged(3-5)years were selected from (12) kindergartens distributed in Northern and southern Districts of AL –Najaf AL-Ashraf city these kindergarten which selected from both high, moderate and low socio economic classes in AL –Najaf city.

The data has been collected through the use of semi-constructed questionnaire. It includes three parts: The first part is the socio demographic data of mothers. The second part consist of two section (demographic data of child & anthropometric measures of child).The third part: is mothers` knowledge about nutrition of preschool children .

The data were described statistical and analyzed through the use of the descriptive and inferential statistical analysis procedure .

Results: the results of current study indicated assessment for mothers' knowledge about pre-school children nutrition is moderate. So, The majority of children lie within the normal weight according to BMI categories

Conclusion and Recommendation : the study concludes that there is a high significant relationship between mothers' knowledge of nutrition and nutritional status of their preschool children. The study recommends that enhancing educational program for women become mothers and mothers to increase their knowledge about child nutrition (especially micronutrient),As well their education should be frequently renewed.

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Introduction

Nutrition is a dynamic process involving feed values, feed processing, digestion and absorption of feed for feeding the body. nourishment is regarded as a prominent factor for child growth and mortality¹, A proper nutrition is important for the growth and evolution and healthy body and prevent disease and other health problems of children. The mother should be provided with knowledge about nutrition and nutritional requirement of their children. The child must be given diet that contains various nutrients include: carbohydrate, protein, fats, vitamins, minerals, water and fiber in sufficient amount to maintain health²

The mothers are crucial to the early acts of taking care of children; however, this care varies in accordance with the educational level of mothers and nutritional information they have. Highly educational moms can raise healthy and strong children³.

Nutritional diversity affected public health positively as nutritional good knowledge that moms could offer might produce well-established healthy generation in which the younger member can grow and prosper⁴.

Healthy habits of eating play a crucial role in providing protection against delay of growth and acute nutrition of children as well as protecting them long-term issues and diseases, including: obesity, cardiovascular problem, type two diabetes, cancer, and osteoporosis. Parents are supposed to be responsible for the children nutritional habits, as they take some significant parts in shaping their children's eating behaviors and preferences. Particularly, mothers are the role models of their children about eating behaviors. Therefore, it is essential to assess mother's eating habits to support healthy nutrition of both child and mother. Nutritional behaviors of the mother are influenced by many factors such as socioeconomic status, educational status, age, working status, and level of nutritional knowledge of mother. It is assumed that knowledge of the mother about feeding could be influence on eating behaviors of their children⁵.

Nutritional status is the balancing the intake of nutrients and expending them in growth process, reproduction and maintaining health. These represent a critical determinant of nurturing and developing children. The globe population is largely influenced by poverty and insufficiency food that can result in severe consequences on health and well-being⁶.

Nutritional state of children particularly in the preschool age category is of major significance, since the foundation of lifetime health, power and mental vitality is put through that time. different studies across the world have shown that there is a very high incidence of anemia among the malnourished, and correction of anemia has a very major impact on treating malnutrition. Keeping this in mind, a study would be valid searching for the proportion of anemia among the malnourished⁷.

Child malnutrition is a wide spread common health issue in many countries in the world with consequences anywhere because good nutrition is an primary determinant for their well-being, Well-nourished children lead socially and economically active lives, while malnutrition adversely affects health, and leads to increased occurrence in the incidence of sickness among children⁷.

Generally, the different prevalence of under-nutrition in different communities in the world ranged from about 5% to 40% with the various danger factors classified as: socio-demographic characteristic of child and family, healthcare, and prevalent infectious illnesses⁸. Iraqi studies have confirmed the existence of both of obesity along with underweight issue. The studies between 2011 and 2013 revealed 61% of the death cases of under five kids result from malnutrition⁹.

Methodology:

A descriptive cross-sectional designed study has been carried out from November 21th, 2019 until August, 20th, 2020 to find out relationship between mothers' knowledge of nutrition and nutritional status of preschool children.

Official approval was obtained from the Ministry of Planning/Central Council for Statistics Organization in order to carry out the study questionnaire. In addition, approval was obtained from Directorate education/ Kindergartens in AL-Najaf City, for conducted interview of samples.

A non-probability sampling technique, purposive sampling has been used and total of samples were (150) mothers and their children aged(3-5)years were selected from (12) kindergartens distributed in Northern and southern Districts of AL –Najaf city these kindergarten which selected from both high and low socio economic classes in AL –Najaf city.

Interviews were conducted with the managers of kindergartens to clarify the importance, objectives of the study; also, interview was conducted with all participants' mothers in the study, which attended of kindergartens.

Data collection through interview process and structure organized questionnaire. Questionnaire contain three parts. First part include Socio-demographic data for mother Second part include Demographic data of child and anthropometric measures of child .Part three includes (20) items to determine mother's nutritional knowledge of preschool children

height and weight measured for children, weight was measured using electronic scale machine (Camry).Using electronic scale to take the weight of each child after take –off his shoes and with minimum possible clothing , height was measured for children utilizing measuring Tape to take the height of each child after take-off his shoes.

Additionally, BMI for age calculated and compared with specific BMI for age and gender percentile charts (United stated centers of control disease and prevention ,2002) to assess nutritional status of children.

Limitation of the study: Most of mothers refuse to participate in process interview because they haven't sufficient time due to occupation or family commitments.

Data of study sample were entered and analyzed using the statistical package for social sciences (SPSS) version 25. Descriptive statistics presented as mean, standard deviation, frequencies and percentages. Chi-square test was used to compare frequencies of qualitative variables. Level of significance of ≤ 0.05 was considered in the significant difference.

The assessment of knowledge is based on the statistical scoring system that indicated total score between (0-0.33) as poor knowledge; moderate is between (0.34-0.66) ; while good knowledge is above (0.67) . The incorrect response was given (0), while the correct response was given (1). Mean of scores for overall assessment was calculate by measuring the average mean of scores for all questions.

Results:

Table (1): Descriptive statistics (frequency and percentage) for demographic data of mothers

Items	Sub-groups	Study group Total = 150	
		Frequency	Percentage
Age / Years	< 20	9	6.0
	21-25	24	16.0
	26-30	40	26.7
	31-35	39	26.0
	> 35	38	25.3
Occupation	Employee	42	28.0
	Free Job	3	2.0
	House wife	105	70.0
Husband's Occupation	Employee	54	36.0
	Free Job	90	60.0
	Unemployed	6	4.0
Levels of Education	Illiterate	5	3.3
	Primary School	39	26.0
	Secondary School	43	28.7
	Institute/College	56	37.3
	Postgraduate	7	4.7
Types of Dwelling	Owner	36	24.0
	Renter	114	76.0
Monthly Income	Sufficient	37	24.7
	Sufficient to some extent	80	53.3
	Insufficient	33	22.0
Type of Family	Nuclear	81	54.0
	Extended	67	44.7

Marital Status	Married	146	97.3
	Separated	2	1.3
	Divorced	2	1.3
	Widowed	0	0.0
No. of Family Member	1-4	65	43.3
	5-8	83	55.3
	9-12	2	1.3

Table (1) show descriptive statistics for mothers, it explains that the majority of the mothers subgroup are: mothers with ages between (26-30) years old (26.7 %), house wife mothers (70%), those whose their husbands work in free jobs (60%), mothers graduated from institute or colleges (37.3%), those who live in rented houses (76%), those with monthly income sufficient to some extent (53.3%), those live in nuclear families (54%), married mothers (97.3%), those with (5-8) members of family (55.3%).

Table (2): Frequency and percentage of mother's subgroups according to their knowledge assessment about pre-school children nutrition.

mothers' subgroups	Poor	Moderate	Good
Frequency	3	36	111
Percentage	2	24	74

Table (2) show overall knowledge of mothers about pre-school children nutrition, it shows that about (74%) of the mothers have good knowledge, while (24%) of them have moderate knowledge and (2%) for poor knowledge.

Table (3): Overall assessment for mothers' knowledge about pre-school children nutrition.

Questions No. = 20	Mean of Score	SD	RS	Assessment
Total Score	0.66	0.37	65.97	Moderate

Table (3) illustrates that the overall assessment for mothers' knowledge is (moderate) with a mean of score (0.66).

Figure (1): Bar charts for descriptive statistics (frequency &percentage) for nutritional status according to BMI categories of children

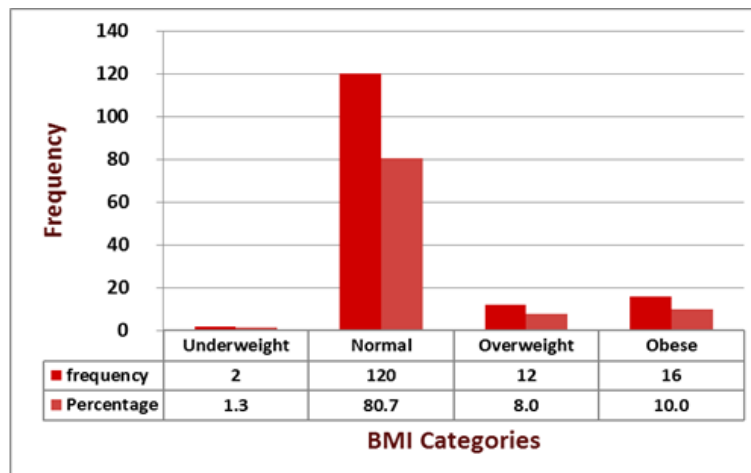


Figure (1): reveal descriptive statistics (frequency &percentage) for nutritional status according to BMI categories of children. The majority of children (percentage=80.7%) lie within the normal BMI categories.

Table (4): Relationship between overall knowledge of mothers and nutritional status according to BMI categories of their preschool children.

Preschool children subgroups		Overall Knowledge		
		Poor	Moderate	Good
BMI Categories	Underweight	0	0	2
	Normal	0	26	94
	Overweight	0	1	11
	Obese	2	8	6
Chi Square	27.16			
P value	(0.0001)			

Table (4) explain Relationship between the overall knowledge of mothers about pre-school children nutrition and nutritional status according to BMI categories of their preschool children, it shows that there is a high significant (p value = 0.0001) relationship between overall knowledge of mothers and nutritional status according to BMI categories of their preschool children.

Discussion:

According to (Table 1) shows that, the majority of the mothers of the study sample are within age category (26-30) years old. This result is approve with the previous study done by (AL-Abedi ,2016)¹⁰, this study also reported most of participants within age category (26-30) years old for the study sample .So, other study conducted by (Demilew,2017) stated high percentage of mothers within age category (25_29)years old ,this result compatible with current study¹¹.

In related to mother's occupation, the highest percentage of mothers is housewife(70%). This result is approving with (Al-Anazi, et al., 2013; Ghazi, et al,2013)^{12,13},they mention that the most of study participants are housewives. Concerning the husband's occupation ,the majority of them work free jobs (60%)

.This result compatible with (Ouchi, *et al.*, 2013), stated that the great percentage of husband's occupation is non-professional work¹⁴.

Concerning the mother's education, the most of study sample are institute or colleges graduates(37.3%). This result is in approve with other studies done by each of the (Mohammad ,*et al*, 2018;Edet, *et al.*, 2020) they reported that the majority of the study sample are tertiary education graduates.^{15,16}

In related to the types of Dwelling, majority of study participant their live in rented houses (76%).This study is agree with (Qasim ,2017) stated that the most study sample their live in rented houses.¹⁷

Regarding to monthly income , the most of the study sample are with monthly income sufficient to some extent(53.3%) .This result agree with other studies conducted by (AL-Muhana,2018 ;Abulhossain *et al*,2014),they reported majority of study participants with monthly income sufficient to some extent.^{18,19} Concerning the type of family, the highest percentage of participants were from nuclear families(54%). This outcome is agree with (Özdoğan, *et al*,2012) mentioned the nuclear family structure was predominant (79.6%) among the families included in the study.³ Regarding to Martial status, most of study participants are married (97.3%).this result approving with (Saaka ,2014; AL-Dakheel ,2012) they mentioned majority of study sample were married .^{20,21}

Regarding number of family members, majority of study sample with(5-8)members of family (55.3%).In the same context, Previous study conducted by (Al-Shookri ,*et al*, 2011) stated majority of study sample from families have 5 or more members.²²

concerning to overall knowledge of mothers about pre-school children nutrition Table (2) , shows that about (74%) of the mothers have good knowledge, while (24%) of them have moderate knowledge and(2%) for poor knowledge . In same context ,study conducted by (Siagian and Halisitijayani,2014) stated that about (97%)of the mothers have good knowledge ,while (2%) of the mothers have moderate knowledge and (1%) for poor knowledge.²³ Other study carried out by (Abulhossain *et al* ,2014) stated majority of participant (94%)had good knowledge about balance diet and (6%) had poor knowledge this results compatible with current study.¹⁹

Regarding to overall assessment of mother's knowledge about preschool children nutrition(Table 3), indicate that the mothers have moderate knowledge about preschool children nutrition. The current study out comes is supported by a study carried out(Rajan, *et al*, 2015) mothers had an average knowledge on nutritional deficiency disorders in children²³. other study conducted by (Edet, *et al*, 2020)stated mothers had adequate knowledge of child survival strategies.¹⁶

concerning to nutritional status of preschool children ,current study revealed majority of children in study sample were normal weight (frequency 120,percentage 80.7%) according to BMI for age percentile (figure1). This result approval with other study carried out by (Abdulla,2016) stated high percentage of study sample were within normal level of BMI categories (78.2%)⁹ ,other study conducted by (Pelemis *et al*, 2018)showed most of study sample within normal weight of BMI categories(54.70%) ,study carried out by (Poyekar et al ,2016) stated prevalence of malnutrition was (32.80%) for BMI categories.^{24,25}

In regards outcomes (Table 4) reveals there is a high significant (p value = 0.0001) relationship between overall knowledge of mothers and nutritonal status

according to BMI categories of their preschool children. In the same context ,previous study done by (Yabancı& Karakuş ,2014) Majority of the mothers who have good nutritional knowledge level and their children have normal body weight according BMI categories.⁵ In the same context, other studies(Sukandar *et al.*, 2016; Hadju *et al.*, 2016; Masthalina & Agustina,2017; Ahmad *et al.*, 2018).They stated there is high significant association between mother's feeding knowledge and nutritional status of their children ,this studies agree with present study.^{4,26,27,28}

Conclusion :

On the basis of the results and findings that are reached in the present work .the study conclude the following: Majority of the mothers in study have good knowledge about pre-school children nutrition (74 %), assessment for mothers' knowledge about pre-school children nutrition is moderate, The majority of children lie within the normal weight according to BMI categories, There is a high significant (p value 0.0001) relationship between overall knowledge of mothers and nutritional status of their preschool children according to BMI categories.

Recommendation :

Based on findings of the study, it is recommended that:

- 1- Education should be given important in all stages life. However, educational program for women become mothers and mothers to increase their knowledge and interest about importance of child nutrition (especially micronutrient) and accordingly , their education should be frequently renewed .
- 2-Nutritional specialized nurses or nutritionists carry out regular visits of kindergarten to produce advice for mothers and teaching staff about proper nutrition and emphasis on importance of three meals particularly breakfast and important of physical activities (particularly for overweight and obese) of children . this is accomplished through combined cooperation between ministry of health and ministry of education.

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