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Knowledge of Mothers about Children Nutrition under Five Years in Babylon City, Iraq

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***Abstract*— The study aims to identify mothers' knowledge about children's nutrition under five years in Babylon city. Materials and methods: This study is a cross-sectional study on mothers' knowledge about children's nutrition under five years in primary health care centers in urban and rural of Al-Hilla city. The study period runs from November 1st, 2021, to March 1st, 2022. The data was collected by questionnaire through questions and an interview with mothers after obtaining their approval. Results: shows the total knowledge score of mothers, most of them (54.3%) scored moderate knowledge, followed by (43.9%) scored good knowledge. Conclusion: the study reveals that it did not find a statistically important association between demographic characteristics and total knowledge score, except for age groups, house type, and educational level of mother and father. Aims of the study: To identify mothers' knowledge about children's nutrition under five years in Al-Hilla city, To find an association between total knowledge score and demographic characteristics.**

Keywords— knowledge, Malnutrition, Children, Dietary habits

I. Introduction

Wasting and stunting in children have been identified as essential markers for monitoring the nutritional and health condition of children in a community (Sadler et al., 2022). The necessity to emphasize policies and programmers that increase mothers' capacity to provide optimum care for young children, particularly throughout pregnancy to a child's second birthday, must become more recognized by governments across the world (Haddad *et al*., 2015).

It is possible that various primary factors contribute to the increased incidence of malnutrition in children. These variables include limited access to health care, poor sanitation and insufficient caring and feeding habits (Branca et al., 2015). Complementary foods are considered very necessary in improving the nutritional status of children, according to the World Health Organization (WHO, 2010).

Complementary feeding is a term for feeding infants hard or semi-solid and soft food at the appropriate time in addition to the frequency of meals and the variety of meals (Yonar & Şirin, 2022). Therefore, these complementary foods have been linked to the ideal nutrition for infants because they interfere with their health, growth, and development. They have also been shown to reduce mortality and morbidity in children and increase the chance of survival and protection of children (Benn et al., 2020). Iron deficiency is a global health problem that occurs in most children under the age of five, and women before childbirth, and the increased knowledge of mothers has a role in determining this health problem (Abdulhussein et al., 2021). The quality of health care centers also plays a role in improving the health status of the population, which requires the provision of high-quality services, which is a critical element in improving the health and well-being of the community (Obaid et al., 2021).

II. Research Methodology

A. *Study design and period of Study:*

This study is a descriptive cross-sectional study conducted on 230 mothers in the Babylon governorate. Data were collected during the period starting (November 1st, 2021, to March 1st, 2022).

B. *Setting of the study*

The study was conducted in the city of Al-Hilla, the first and second sectors of Al-Hilla. Of them, ten primary health care centers from both sectors were randomly selected to be the centers designated for the study.

C. *Sample size*

The sample size was estimated by using Kotrlik and Higgins, (2001) formula: n=p*(1-p)*z2/d2. Minimal sample size (n), the prevalence of malnutrition from a previous study (p) was 14, the z-value (c) was set to 1.96 for a 95% confidence level, and the margin of error (d) was 0.05. The sample size adjusted was calculated to be 230.

D. *Data collection method*

The questionnaire is an official assessment tool used by researchers through a set of questions and an interview with mothers after obtaining their approval. This interview

takes a time of (10–15) for each child to learn about children's nutrition under five years.

E. Anthropometric measurement for the children

Anthropometry is the most common method for determining malnutrition. It is assessed as stunting, underweight, and wasting. These states are classified by the World Health Organization (WHO) using standard deviations for child growth standards medians (SD). A height-for-age z-score (HAZ) of less than -2 SD is considered stunting, while wasting is defined as a weight-for-height z-score (WHZ) of less than -2 SD is considered wasting, and underweight is defined as a weight-for-age z-score (WAZ) of less than -2 SD is considered underweight (Gebre et al., 2019).

F. Statistical Analysis

This data was collected using a questionnaire. These data were entered into the personal computer as symbols and analyzed using the SPSS 25 statistical package. The data were presented in simple measures of frequency, mean, percentage, range (minimum and maximum values), and standard deviation values. The Pearson Chi-square test (X2 - test) was used to determine the difference between various percentages (qualitative data). Statistical significance was considered when the P-value was equal to or less than 0.05.

III. RESULTS

A. Demographic Characteristics of Mothers

Table 1: the study shows that the highest percentages (53.9%) of mothers were within the age group (20-29 years), while the mean age was 24.92±6.45. The results found that the highest percentage, 180 (78.3%) of the studied sample, own houses. Regarding the type of family, the study found that 167 (72.6%) of participants belong to large families. The present study demonstrated that the highest percentage of 96 (41.7%) mothers' education was primary. The majority of them, 174 (75.7%), were unemployed. Regarding the husband's education level, the highest percentage, 80 (34.8%), had a primary level of education, and the majority, 124 (53.9%) of them, were not employed.

Table (1) Distribution of the studied sample according to Demographic Characteristics

		No.	Percent (%)
Age groups per years	<20 years	48	20.9
	20-29 years	**124**	**53.9**
	30-39 years	47	20.4
	>= 40 years	11	4.8
	Mean ± SD (Range)	**24.92±6.45 (17-44)**	
House type	Owns	**180**	**78.3**
	Rented	28	12.2
	Other	22	9.6
Type of family	Small family	63	27.4
	Large family	**167**	**72.6**
Education level of Mother	Illiterate	31	13.5
	Primary school	**96**	**41.7**
	High school	43	18.7
	Graduate	60	26.1
Occupation of the mother	Not employed	**174**	**75.7**
	Employed	56	24.3
Education level of husband	Illiterate	21	9.1
	Primary school	**80**	**34.8**
	High school	65	28.3
	Graduate	64	27.8
Occupation of husband	Not employed	124	53.9
	Employed	106	46.1

Table 2 shows that 80.9 % of the mothers were satisfied with exclusive breastfeeding for the first six months of life. The study indicated that 59.1% of the mothers responded that breastfeeding should not be continued for two years and beyond. The study found that 84.8% of the mothers answered that complementary feeding should be introduced at six months. The study also indicated that 100% of the mothers were satisfied that their hands should be washed before preparing children's food. The study found that 58.7 percent of the participating women had prior knowledge of child malnutrition. At the same time, all participants knew that water for preparing food and drinks for children should be treated.

Table (2) Distribution of mother answers according to Knowledge about the feeling of Children

Knowledge of mother		No.	%
Infants exclusively breastfeed for the first 6 months of life	Yes	186	80.9
	I do not know	3	1.3
	No	41	17.8
Continue breastfeeding for 2 years and beyond	Yes	90	39.1
	I do not know	4	1.7
	No	136	59.1
Complementary feeding should be introduced at 6 months	Yes	195	84.8
	I do not know	3	1.3
	No	32	13.9
Feed a breastfed 12 months child two times a day	Yes	152	66.1
	I do not know	6	2.6
	No	72	31.3
Children should eat from the family pot from 1 year	Yes	208	90.4
	I do not know	2	.9
	No	20	8.7
Hands should be washed before preparing children's food	Yes	230	100.0
	I do not know	-	-
	No	-	-
Water for preparing food and drinks for children should be treated	Yes	230	100.0
	I do not know	-	-
	No	-	-
During illness not feeding sick/recovering child on dilute porridge/fruit juices	Yes	209	90.9
	I do not know	-	-
	No	21	9.1
Do you hear by malnutrition	Yes	135	58.7
	I do not know	4	1.7
	No	91	39.6

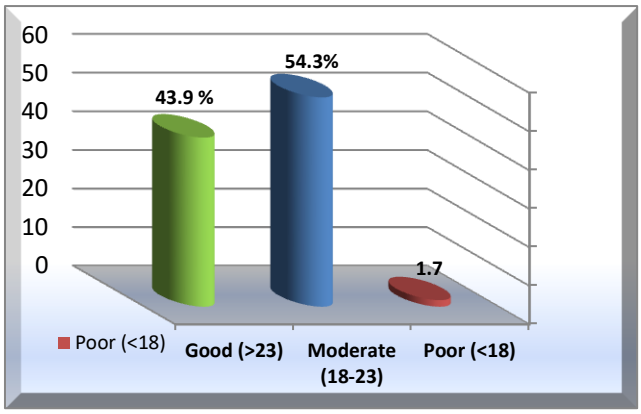

Figure 1: Total knowledge score of Mothers

Figure 1: shows the total knowledge score of mothers. Most of them (54.3%) scored moderate knowledge, followed by (43.9%) scored good knowledge and (1.7%) of participation of people has poor knowledge.

Table 3 reveals that did not find a statistically significant association between demographic characteristics and total knowledge score of mother p-value > 0.05, except for house type, and educational level of mother and father, which P. value <0.05.

Table (3) Association between the total knowledge score of mothers and demographic characteristics

			Total Knowledge score			P. value
			Poor (<18)	Moderate (18-23)	Good (>23)	
Age groups per years	<20 years	No	0	27	21	0.117
		%	0.0%	56.3%	43.8%	
	20-29 years	No	4	70	50	
		%	3.2%	56.5%	40.3%	
	30-39 years	No	0	26	21	
		%	0.0%	55.3%	44.7%	
	>= 40 years	No	0	2	9	
		%	0.0%	18.2%	81.8%	
House type	Owns	No	2	103	75	**0.034***
		%	1.1%	57.2%	41.7%	
	Rented	No	0	14	14	
		%	0.0%	50.0%	50.0%	
	Other	No	2	8	12	
		%	9.1%	36.4%	54.5%	
Type of family	Small family	No	0	35	28	0.464
		%	0.0%	55.6%	44.4%	
	Large family	No	4	90	73	
		%	2.4%	53.9%	43.7%	
Education level of Mother	Illiterate	No	2	21	8	**0.030***
		%	6.5%	67.7%	25.8%	
	Primary school	No	1	54	41	
		%	1.0%	56.3%	42.7%	
	High school	No	0	26	17	
		%	0.0%	60.5%	39.5%	
	Graduate	No	1	24	35	
		%	1.7%	40.0%	58.3%	
Occupation of the mother	Not employed	No	2	101	71	0.091
		%	1.1%	58.0%	40.8%	
	Employed	No	2	24	30	
		%	3.6%	42.9%	53.6%	
Education level of husband	Illiterate	No	2	13	6	**0.003***
		%	9.5%	61.9%	28.6%	
	Primary school	No	0	51	29	
		%	0.0%	63.8%	36.3%	
	High school	No	0	36	29	
		%	0.0%	55.4%	44.6%	
	Graduate	No	2	25	37	
		%	3.1%	39.1%	57.8%	
Occupation of the husband	Not employed	No	2	69	53	0.908
		%	1.6%	55.6%	42.7%	
	Employed	No	2	56	48	
		%	1.9%	52.8%	45.3%	

IV . Discussion

The present study demonstrated that the highest percentage of 96 (41.7%) mothers' education was primary. The majority of them, 174 (75.7%), were unemployed. This finding was consistent with a prior study conducted in Uganda (Mawa, 2018), in which the majority (59.89%) of mother education was with primary education. However, the results of a cross-sectional study that was done in Pakistan disagree with the results of this study, in which a total of 3964 children under five years, the majority (87.9%) of mothers education where no formal education (Khan *et al*., 2016). The explanation for this difference may be due to free education and compulsory education in Iraq.

Regarding the husband's education level, the highest percentage, 80 (34.8%), had a primary level of education, and the majority, 124 (53.9%) of them, were not employed. The same findings were observed in a cross-sectional study in Iraq among 220 children by Ghazi *et al*., (2013) who found that the father's educational level was low.

The results showed that 80.9 % of the mothers were satisfied with exclusive breastfeeding for the first six months of life. This result agreed with a study among 400 children in Indonesia (Tasnim *et al*., 2018), which showed that 84.6 % of the mothers were satisfied with exclusive breastfeeding for the first six months of life.

The study indicated that 59.1% of the mothers responded that breastfeeding should not be continued for two years and beyond. These results were consistent with those observed in an earlier Iraqi study that was done in Najaf city (Al-abedi and Al-Asadi, 2016), which found that 77% of the mothers were satisfied that the breastfeeding should be continued for two years and beyond .

The study found that 84.8% of the mothers answered that complementary feeding should be introduced at six months. These results disagreed with a cross-sectional study done in Saudi Arabia (Aljohani and Aljohani, 2020), which showed that 37.5% of the mothers correctly answered that complementary feeding should be introduced at six months. The explanation for this difference is due to the increased awareness of mothers about breastfeeding in our study.

The study shows the total knowledge score of mothers; most of them (54.3%) scored moderate knowledge, followed by (43.9%) scored good knowledge. These findings agreed with the results of studies done in Nigeria (Raji *et al*., 2020) , in which the results revealed that most mothers had scored good and moderate knowledge. Similar results were reported by a cross-sectional study in Nigeria, in which the majority of participants (54.1%) scored fair knowledge about malnutrition among under-fives (Olatona *et al*., 2017). Different results were shown in the findings. A cross-sectional study in Nigeria by (Raji et al., 2020)among 347 mothers of under-five children reported that Mother's education was not associated with a total knowledge score p-value > 0.05. Similar results were shown with findings of A cross-sectional study in Saudi Arabia by (A. Aljohani & Aljohani, 2020), which reported that a Mother's education was associated with a total knowledge score of p-value < 0.05.

Education level and working status of the mother, in this study were significantly associated with the total knowledge score (p-value <0.05), while no significant association between the employment status of the mother and knowledge score (p-value >0.05). A higher proportion of mothers with formal education were more likely to have good knowledge of factors contributing to malnutrition. These results agree with previous cross-sectional studies in Saudi Arabia that revealed an association between educational level and knowledge score, but not with the mother's working status(Aljohani and Aljohani, 2020). These results were also supported by a previous study in Oman that showed that mothers' educational status was associated with nutritional knowledge (Al-Shookri *et al*., 2011).

These results agree with a study conducted in Nigeria (Raji et al., 2020), which stated no relationship between the husband's work and the mother's total knowledge. In contrast, these results are different from the results of our study regarding the husband's educational level and the mother's total knowledge.

V. Conclusions and Recommendations:

The study reveals most of the mothers have moderate knowledge scores. Also, it reveals that we did not find a statistically significant association between demographic characteristics and total knowledge score, except for house type and educational level of mother and father. The current study suggested that health education campaigns should target mothers to improve their knowledge about children's nutrition under five years.

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