

# Determinants of Mothers' Knowledge on Health Aspects of Children Less than Two Years among a Sample of Mothers in Baghdad

Najlaa F Jamil\* (MSc, FICMS\CM) & Yusra MH Ali\*\* (FIBMS\CM)

## Abstract:

**Background:** Children constitute the most important and vulnerable segment of the population; programmes that aim to enhance the health of children require baseline information on what mothers know about and provide for their children.

**Objectives:** To determine the level of knowledge of mothers on certain health aspects of children below two years of age and the factors influencing such knowledge and to address the sources of mothers' information.

**Subjects and method:** A cross sectional study was conducted in seven primary health care centers in Baghdad for the period from the 2<sup>nd</sup> of April, to the end of June, 2013.

Mothers who had children less than five years of age and attended the selected health centers were recruited. Data was collected via direct interview with mothers using a special questionnaire form to assess the knowledge of the mothers regarding different aspects on child health. In addition, the data collected comprised some characteristics of the mother and father as well as mother's source of information on child health.

**Results:** The study demonstrated that 66% of the participants had an overall acceptable level of knowledge on the various aspects of child health with a mean of 23, 4. Current age of the mother, her age at marriage, education and occupation of the mother and father and number of children. All these factors demonstrated a statistical significant association with mother's level of knowledge.

**Conclusion:** Despite the acceptable level of knowledge, the study revealed considerable deficiencies in the knowledge of mothers particularly in regard to immunization, common childhood illnesses and safety practices which mandate the adaption of interventions that can correct the existing gaps in mother's information.

**Key Words:** Determinants, Mothers' Knowledge, Health Aspects, Children, Baghdad.

## Introduction:

Mother is an important primary care provider and therefore her education and access to information will help her children. As children constitute the most important and vulnerable segment of the population, mothers represent the most important health workers as far as child health is concerned. <sup>(1)</sup>

Mother's health information alone appears to be the crucial skill for raising child health. Mothers not equipped with sufficient knowledge about child care and using traditional child care methods may cause harm to their children's health and even cause handicaps in their children. <sup>(2)</sup>

Mothers' knowledge is important because it determines how the children's illnesses are treated and it influences the amount and type of care that is given to children. <sup>(3)</sup>

Clinicians often rely on mothers' beliefs about the health and development of their children for decision making, counseling and referral. <sup>(4)</sup>

Programmes that aim to enhance the health and/or development of children require baseline information on what mothers know about and provide for their children so that the content and intensity of interventions can be individualized. <sup>(5)</sup>

The study was implemented to determine the level of knowledge of mothers on certain aspects of children below two years of age (breastfeeding, immunization, common childhood illnesses and safety practices), to identify the relation of this knowledge with some sociodemographic

characteristics of the mother and father, and to address the sources of mothers' knowledge regarding child health issues.

## Subjects and Method:

A cross-sectional study was carried out in seven primary health care centers from four health districts in Baghdad. The selection of the districts as well as the primary health care centers was on a convenient base. Data were collected during the period from the 2<sup>nd</sup> of April to the end of June, 2013.

Study group comprised a convenient sample of mothers who had at least one child below two years of age, attended the selected primary health care centers during the period of the study and agreed to participate in the study were included. The data was collected via direct interview with each mother depending on special questionnaire form, which contained three parts.

**Part one** included some sociodemographic characteristics of the mother and father.

**Part two** contained 44 statements to assess mother's knowledge about different aspects of child health including:

- Breastfeeding (8 statements)
- Immunization (16 statements)
- Common childhood illnesses (15 statements)
- Safety practices (5 statements).

The mothers were asked to answer by "Yes" or "No" or don't know for each statement. They were scored one point for each knowledge question

answered correctly and zero for incorrect and "do not know" answers.

**Part three**, the mothers were requested to address the sources of their information as well as the best source to get adequate and correct knowledge regarding child health according to their opinion.

Following completing the questionnaires, scoring of the responses was performed. The total knowledge score of the respondent could range from 0 to 44. Scores of less than 22 were considered poor level of knowledge, between 22-33 were considered acceptable, and scores 34 and more were considered good level of knowledge. <sup>(6)</sup>

Scores of each health aspect was also computed and divided into three levels of knowledge;

For breastfeeding, poor level comprised scores less than 4, acceptable level for scores of 4 or 5 and good level if the score was 6 or more. Regarding immunization and common childhood illnesses, scores less than 8 were considered poor level, 8 to 11 as acceptable level and good for scores of 12 or more; while in safety practices, poor level was for scores less than 3, scores of 3 were regarded as acceptable and 4 and more as good level.

**Ethical consideration:** A verbal consent was obtained from each mother. It was indicated clearly to the mothers that the participation was voluntary and their non- contribution would have no adverse effect on the quality of care given to them or to their children in the health center.

#### **Data Analysis:**

Data were analyzed using Statistical Packages for Social Sciences (SPSS), version 20. Data presented in forms of frequencies and percentages in tables as well as figures.

Chi-square test was used to evaluate the association between the study variables and the overall knowledge levels (poor, acceptable and good). During chi-square computation, the knowledge levels were regrouped by merging the acceptable and good levels into a single category including all mothers having a score of 22 or more in order to ensure the validity of the results. P value  $\leq 0.05$  was considered statistically significant.

#### **Results:**

The study enrolled 500 mothers, the mean age of them was  $27.6 \pm 6.6$  years (ranging from 16 to 47 years), 72% of them had 1-3 under-five children and 77.8% had at least primary education.

The mean knowledge score of the study group was  $23.4 \pm 4.2$  (out of 44), the minimum score obtained was 10 and the maximum score was 37.

Figure 1 showed that the overall level of knowledge of mothers regarding different child health aspects was acceptable for 66% of mothers, poor level for 32% and only 2% of mothers had good level of knowledge.

The level of knowledge of the mothers regarding breastfeeding was good in 74% of them and acceptable in 24.8% (Figure 2).

Figure 3 revealed that substantial proportion of mothers (89.8%) had poor knowledge regarding immunization.

According to the overall knowledge of mothers regarding common childhood illnesses, 67.4% had acceptable knowledge level while 17.2% had poor level of knowledge as presented in figure 4.

The studied mothers were nearly equally divided into three levels of knowledge regarding safety practices as revealed by figure 5.

Table 1 presented the distribution of mothers according to the levels of knowledge and some mothers' characteristics. It showed that the level of knowledge of mothers generally increased with increasing the age of the mother as well as the age of the mother at marriage. The relation between these two variables and the knowledge level showed statistical significant association ( $P=0.0001$ ).

Education of the mother was found to have a statistical significant relation with the knowledge level ( $P=0.0001$ ). Among the illiterate mothers, 66.7% had poor knowledge in comparison with only 8.6% of mothers with higher educational status.

Only 4% of the employed mothers (all were governmental employee) had poor level of knowledge. On the other hand, poor knowledge was assigned to 34.6% of not working mothers ( $P=0.0001$ ).

Table 2 revealed the relation between some fathers' characteristics and the levels of knowledge of mothers.

The number of children the mother had revealed statistical significant impact on level of knowledge ( $P=0.0003$ ) (Tab 3).

In relation to the sources of mothers' information about child health, the main source was family members and friends as stated by 419 (83.8%) mothers. Other sources of mothers' knowledge were demonstrated in table 4.

Table 5 presented mothers' opinions for the best source of information. Among mothers enrolled in the study, 182 (36.4%) of them assigned school curriculum as the best source for acquiring adequate information on child health.

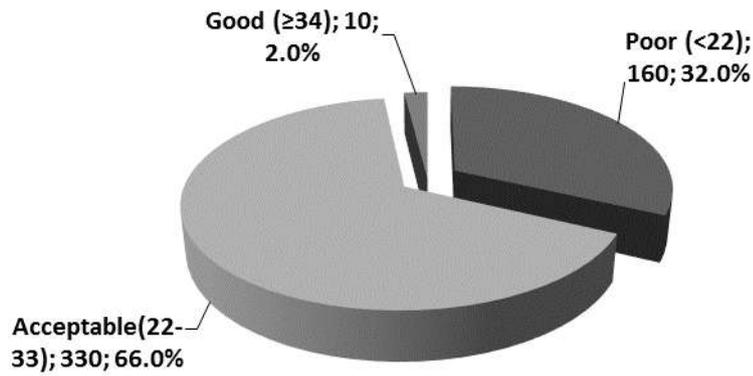


Figure 1: The distribution of mothers according to the levels of knowledge on child health

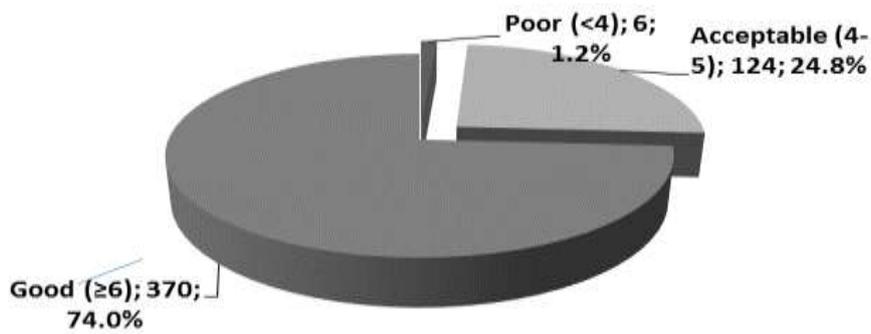


Figure 2: The mothers' levels of knowledge on breastfeeding

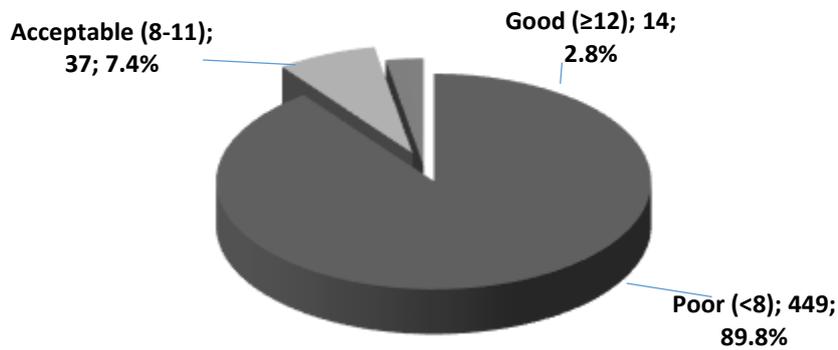


Figure 3: The mothers' levels of knowledge on immunization

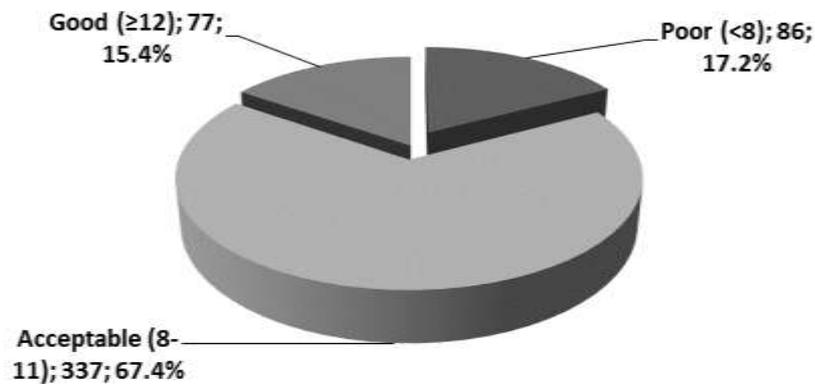


Figure 4: The mothers' levels of knowledge on common childhood illnesses

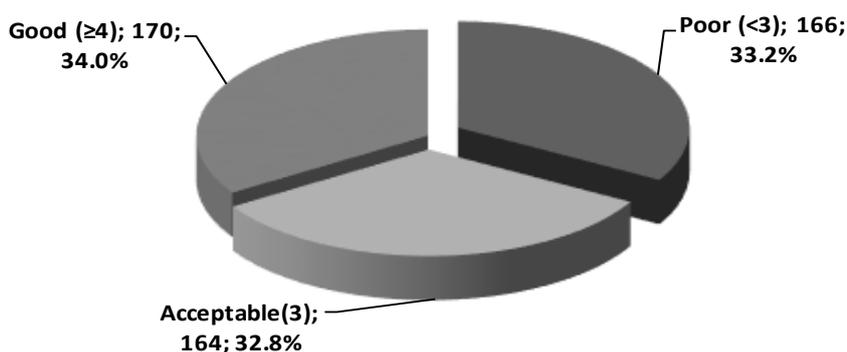


Figure 5: The mothers' levels of knowledge on safety practices

Table 1: The distribution of the study group according to level of knowledge and some mothers' characteristics

Mother characteristics		Knowledge levels				$\chi^2$ ;d.f.; P value
		Poor (<22)		Acceptable & Good (>=22)		
		No	%	No	%	
Age (years)	<20	19	54.3	16	45.7	34.537;5; 0.0001*
	20--24	67	44.4	84	55.6	
	25--29	38	28.8	94	71.2	
	30--34	23	24.5	71	75.5	
	35--39	11	17.7	51	82.3	
	=>40	2	7.7	24	92.3	
Age at marriage (years)	<15	21	52.5	19	47.5	20.873;5; 0.0001*
	15--19	84	37.8	138	62.2	
	20--24	33	23.7	106	76.3	
	25--29	18	25.0	54	75.0	
	30--34	3	15.8	16	84.2	
	=>35	1	12.5	7	87.5	
Mother's education	Illiterate	16	66.7	8	33.3	55.67;5; 0.0001*
	Read & Write	45	51.7	42	48.3	
	Primary	63	35.6	114	64.4	
	Intermediate	22	22.9	74	77.1	
	Secondary	8	17.4	38	82.6	
	College & Higher	6	8.6	64	91.4	
Mother's occupation	Not working	158	34.6	298	65.4	16.71;1; 0.0001*
	Employed	2	4.5	42	95.5	

\*Significant using Pearson Chi-square test at 0.05 level.

Table 2: The distribution of the study group according to level of knowledge and some fathers' characteristics

Fathers' characteristics		Knowledge levels				$\chi^2$ ;d.f.; P value
		Poor (<22)		Acceptable & Good (>=22)		
		No	%	No	%	
Father's education	Illiterate	24	61.5	15	38.5	48.036;5; 0.0001*
	Read & Write	20	52.6	18	47.4	
	Primary	50	35.7	90	64.3	
	Intermediate & Secondary	49	26.9	133	73.1	
	College & Higher	17	16.8	84	83.2	
Father's occupation	Govern. employee	45	24.7	137	75.3	8.957;3; 0.030*
	Self-employee	106	35.3	194	64.7	
	Others	3	60.0	2	40.0	
	Not working	6	46.2	7	53.8	

\*Significant using Pearson Chi-square test at 0.05 level.

**Table 3:** The distribution of the study group according to the levels of knowledge and number of children

Number of children	Knowledge levels			
	Poor (<22)		Acceptable & Good (>=22)	
	No	%	No	%
<b>One</b>	48	43.2	63	56.8
<b>Two</b>	41	35.3	75	64.7
<b>Three</b>	35	26.3	98	73.7
<b>Four</b>	26	33.3	52	66.7
<b>Five &amp; more</b>	10	16.1	52	83.9

$\chi^2$ ;d.f.;P value=16.260;4;0.003 (Significant using Pearson Chi-square test at 0.05 level)

**Table 4:** The mothers' sources of information regarding child health

Source of information*	No	%
<b>Family members and friends</b>	419	83.8
<b>TV</b>	74	14.8
<b>School curriculum</b>	64	12.8
<b>Doctors and health workers</b>	38	7.6
<b>Books</b>	14	2.8
<b>Others (internet, brochures)</b>	4	0.8

\*Some mothers gave more than one response.

**Table 5:** The mothers' opinions about the best source of information regarding child health

Suggested best source of information	No.	%
<b>School curriculum</b>	182	36.4
<b>TV</b>	150	30.0
<b>Doctors</b>	107	21.4
<b>Family members and friends</b>	29	5.8
<b>Books</b>	22	4.4
<b>Others (internet, brochures, magazines)</b>	10	2.0

### Discussion:

The results obtained from the present study revealed that the mothers had an acceptable level of knowledge about child health. This finding was similar to what was found in a study carried out in Baghdad<sup>(7)</sup> and a study conducted in Saudi Arabia<sup>(8)</sup>.

Mothers' knowledge on breastfeeding was good, and this can be attributed to the cultural and religious factors which are in favour breastfeeding. This result was in accordance with previous studies from Iraq<sup>(9, 10)</sup>, Egypt<sup>(11)</sup> and Kuwait<sup>(12)</sup> which reported that the mothers had good knowledge about breastfeeding.

Poor knowledge level regarding immunization was found by the majority of the studied mothers. Inadequate knowledge about childhood vaccination was also publicized by previous studies conducted in Libya<sup>(13)</sup>, India<sup>(14)</sup> and Pakistan<sup>(15)</sup>.

The level of knowledge of mothers on common childhood illnesses was found to be acceptable. This outcome was also reported by a study conducted in Nigeria<sup>(16)</sup> as most mothers showed enough knowledge on the common childhood.

The mothers enrolled in the study were approximately equally divided into the three levels of knowledge about safety practices.

Different levels of knowledge on this aspect were revealed in other previous studies such as that conducted in Egypt<sup>(17)</sup> which found that 74.7% of mother's did not know the causes of home accidents in children while a study carried out in Iran<sup>(18)</sup> showed that 75% of mothers had good knowledge regarding their adoption of the preventive measures for home injuries.

The mothers' age showed significant impact on the level of knowledge of the mother and it appeared to increase with increasing mother's age and age at marriage. This relation was observed by many studies conducted to evaluate mothers' knowledge about different child health issues.<sup>(7, 19, 20, 21)</sup>

Education can alter women's beliefs about disease causation and thus influences both childcare practices and the use of modern healthcare services. The education of the mother showed a significant influence on the knowledge level with the later tended to increase with increasing level of education. This result was consistent with the findings concealed by several studies from Iraq<sup>(9)</sup>, United Arab Emirates<sup>(22)</sup>, Egypt<sup>(23)</sup>, Bangladesh<sup>(24)</sup>, India<sup>(25)</sup> and Ghana<sup>(26)</sup>.

Mother's employment was one of the factors determining her level of knowledge; better knowledge was belonged to the employed mothers.

This finding was supported by the result of previous studies carried out in Iraq<sup>(27)</sup> and Iran<sup>(28)</sup>.

The current study pointed out that father's education might influence the level of mother's knowledge with those mothers with the higher level of education of their husbands had better knowledge. This coincides with the finding of a study conducted in Baghdad<sup>(7)</sup>. Another factor that was found to have an impact on mother's knowledge was the occupation of the father; better level of knowledge was for mothers whose husbands were governmental employee. This was also reported by a study conducted in Baghdad which revealed that the child health modernity for mothers with governmental worker fathers was higher than that for mothers with private worker fathers.<sup>(7)</sup>

The number of children had a significant and positive effect on the knowledge of mothers, the more children, the better the level of knowledge of the mother. This finding was accordance with findings from previous studies from Iraq<sup>(29)</sup> and elsewhere<sup>(26,30)</sup>.

A minority of the studied mothers mentioned school curriculum as their source of information on child health; while it was the most preferred source of health information recommended by the respondents. It can be said that the little role currently played by school to enrich mothers' health knowledge and the suggestion of mothers of the ability of school to greatly share to their knowledge may emphasize the need to enhance the contribution of formal education in improving the knowledge basis of girls who are the future mothers.

#### References:

- 1-Selvakumari S. Knowledge of optional vaccines among mothers of "under five children". Journal of Management and Science. 2011; 1(1): 30-35.
- 2-Glewwe P. Why does mother's schooling raise child health in developing countries? Evidence from Morocco. The Journal of Human Resources. 1999; 34(1):34-37.
- 3-Kamau-Thuita F, Omwega AM, Muita JW. Child care practices and nutritional status of children aged 0-2 years in Thika, Kenya. East Afr Med J. 2002; 79: 524-29.
- 4-Glascoe FP, Dworkin PH. The role of parents in the detection of developmental and behavioral problems. Pediatrics. 1995; 95(6): 829-36.
- 5-Ertem IO, Atay G, Dogan DG, *et al.* Mothers' knowledge of young child development in a developing country. Journal compilation. 2007, 33(6): 728-37.
- 6-Ghasemi AA, Talebian A, MasoudiAlavi N, Mousavi GA. Knowledge of mothers in management of diarrhea in under-five children, in Kashan, Iran. Nurs Midwifery Stud. 2013; 1(3):158-62.
- 7-Mousa N. Child health modernity in the city of Baghdad; factors influencing upon it, and its influence on child's health. PhD thesis. College of Medicine, Al-Nahrain University; 2009. [Unpublished].
- 8-AL-Ayed I. Mothers' knowledge of child health matters: Are we doing enough? Journal of Family & Community Medicine. 2010; 17(1): 22-28
- 9-Abdul Ameer A, Al-Hadi AH, Abdulla M. Knowledge, attitudes and practices of Iraqi mothers and family child-caring women regarding breastfeeding. Eastern Mediterranean Health Journal. 2008; 14(5): 1003-13.
- 10-Al Hilfy T, Essa A. Mothers' knowledge and attitude regarding childhood survival. Middle East Journal of Family Medicine. 2007; 5(1): 9-26.
- 11-Kotb A, Mohamed A, Mohamed E, Abdel Khalek E. Knowledge and practices of working mother about breastfeeding and weaning in Assiut city, Egypt. Life Science Journal. 2012; 9(1): 803-08.
- 12-Ebrahim B, AL-Enezi H, AL-Turki M, *et al.* Knowledge, misconceptions, and future intentions towards breastfeeding among female university students in Kuwait. Journal of Human Lactation. 2011; 27(4): 358-66.
- 13-Bofarraj M. Knowledge, attitude and practices of mothers regarding immunization of infants and preschool children at Al-Beida city, Libya 2008. Egypt Journal of Pediatrics Allergy & Immunology. 2011; 9 (1): 29-34.
- 14-Hamid S, Andrabi SAH, Fazli A, Jabeen R. Immunization of children in a rural area of North Kashmir, India: a KAP study. Online J Health Allied Scs. 2012; 11(1):10.
- 15-Siddiqi N, Siddiqi A, Nisar N, Khan A. Mothers' knowledge about EPI and its relation with age-appropriate vaccination of infants in peri-urban Karachi. Journal of Pakistan medical association. 2010; 60(11): 940-44.
- 16-Omole M, Owodunni K. Mothers' knowledge of immunization programme and factors influencing their compliance at a children hospital in South West Nigeria. Journal of Pharmaceutical and Biomedical Sciences. 2012; 21(18).23-26.
- 17-Hossein Y. Effect of mother's education in relation to home accident prevention among preschool children in rural area in El-Minia governorate. El-Minia medical bulletin. 2009; 20(2): 33-56.
- 18-Hatamabadi HR, Mahfoozpour S, Alimohammadi H, Younesian S. Evaluation of factors influencing knowledge and attitudes of mothers with preschool children regarding their adoption of preventive measures for home injuries referred to academic emergency centers, Tehran, Iran. International Journal of Injury Control and Safety Promotion. 2013. doi: 10.1080/17457300.2013.816325.
- 19-Ghasemi AA, Talebian A, Masoudi AN, Mousavi GA. Knowledge of mothers in management of

- diarrhea in under-five children, in Kashan, Iran. *Nurs Midwifery Stud.* 2013; 1(3):158-62.
- 20-Wang YY, Wang Y, Zhang JX, Kang CY, Duan P. Status of mother's KAP on child immunization in minority areas, Guizhou Province. *Beijing Da XueXueBao.*2007; 39: 136-39.
- 21-Eldosoky R. Home-related injuries among children: knowledge, attitudes and practice about first aid among rural mothers. *Eastern Mediterranean Health Journal.* 2012; 18(10): 1021-27.
- 22-Bernsen R, Al-Zahmi F, Al-Ali N, *et al.* Knowledge, attitude and practice towards immunizations among mothers in a traditional city in the United Arab Emirates. *Journal of Medical Sciences.* 2011; 4(3): 114-21.
- 23-Abd El-Aty N, Moftah F, Ibrahim H, Hassanen R. Assessment of knowledge and practice of mothers toward home accidents among children under six years in rural areas in Assiut governorate. *Ass. Univ. Bull. Environ. Res.* 2005; 8(2): 11-29.
- 24-Afrose L, Banu B, Ahmed K, Khanom K. Factors associated with knowledge on breastfeeding among female garment workers in Dhaka city. *WHO South-East Asia Journal of Public Health.* 2012; 1(3): 249-55.
- 25-Mallik S, Dasgupta U, Naskar S, *et al.* Knowledge of breastfeeding and timely initiation of it amongst post-natal mothers: an experience from a baby friendly teaching hospital of a Metropolitan city. *IOSR Journal of Dental and Medical Sciences.* 2013; (1): 25-30.
- 26-Andrzejewski C, Reed H, White M. Does where you live influence what you know? Community effects on health knowledge in Ghana. *Health Place.* 2009; 15(1): 228-38.
- 27-Shaker N, Hussein K, AL-Azzawi S. Knowledge, attitude and practices (KAP) of mothers toward infant and young child feeding in primary health care (PHC) centers, Erbil city. *Kufa Journal for Nursing sciences.* 2012; 2(2): 118-26.
- 28-Khalili M, Mirshahi M, Zarghami A, *et al.* Maternal knowledge and practice regarding childhood diarrhea and diet in Zahedan, Iran. *Health Scope.* 2013; 2(1): 19-24.
- 29 -Al-Hially Y. Assessment of mothers' knowledge about breastfeeding and determining predictors. *Tikrit Medical Journal.* 2010; 16(2): 77-83.
- 30-Varughese A. A comparative study between primiparous and multiparous mothers to assess knowledge and practice regarding postnatal care in a selected hospital at Mangalore. PhD thesis. Rajiv Gandhi University of Health Sciences; 2006.

---

*\*Family and Com Med Dept, Coll of Med, AL-Mustansiriyah Univ*

*\*\*MOH*