

Knowledge and use of folic acid among pregnant women attending antenatal care units :a study from Basra city

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Abstract

The aim of study to estimate knowledge of pregnant women about folic acid and determine the rate of folic acid use among pregnant women. Two hundred pregnant women were interviewed based on a questionnaire developed for the study.

The result of the present study showed that (71.5%) of pregnant women know that folic acid is a vitamin. Only (21%) of them were aware of the importance of folic acid in the prevention of Neural Tube Defects (NTDs). Women with a good level of education and employed women more likely to have significantly more knowledge about folic acid. Physicians were the main source of information as reported by (91%) of the participants. (9.5%) of pregnant women didn't use folic acid, the main reason being the fear of complication reported by 42.1% of them.

Key words: Knowledge, Use, Folic acid, Pregnant, Women

Introduction

Leafy green vegetables, fortified cereals, orange juice and strawberries are just some of the many other foods that contain folic acid which is a form of vitamin B9 (1,2). Folic acid intake of in pregnancy help in anemia and peripheral neuropathy in the mother and possibly pre- term delivery prevention(3). It has an essential role in DNA/RNA production, amino acid transformation, red blood cell synthesis, and body cell formation and maintenance. The need for folic acid increases during periods of growth and division of body cells throughout life (4).

Consuming a low amount of folate during pregnancy leads to the risk for bad pregnancy outcomes, comprising neural tube defects (NTDs) and anencephaly(5,6). Women during pregnancy should take vitamin supplements on the recommendation of their health care providers. Dietary supplements do not replace a healthy diet but are used to ensure that women receive adequate daily nutrients(7).

To assess the information about the preconceptional use of folic acid, study done in Baghdad including pregnant women attending antenatal care units showed that (86%) of women knew about folic acid, 61% of them gained their information from doctors and 44.5% knew its importance in protection from congenital anomalies. Although there was good practice regarding folic acid supplementation during the current pregnancy; only 10% of them used it at the proper time (4).

Other study done in Emirate to investigate information and practice of folic acid during pregnancy among pregnant women attending 2 major primary health center in Abu Dhabi.

(79.1%) of mothers interviewed knew about folic acid. Good knowledge about the role of folate in preventing NTDs was reported by 46.6% of participants(5).

The result of a study that included 66 pregnant women attending Al-Hejrah primary health care center in Makkah Al-Mokarramah showed that (65.2%) of them had adequate information about the significance of folate supplementation during pregnancy, and (81.8%) of participants used folic acid during pregnancy(2).

A study done in Iran including 322 women revealed that 7.8% of them had good knowledge about folic acid supplementation (8).

In Benghazi (Libya) a study was done on 131 women who attended antenatal clinics showed that nearly three quarters of them heard about folic acid, and just over one-third knew its benefit correctly. 12% of women know which food items contained folic acid and 16% were aware of the appropriate time for supplementation during pregnancy (9).

Some results from a study of 603 pregnant women in Croatia showed that only 127 (21.1%) took supplements of folic acid and (47.6%) did not know what is folic acid. (10).

A community-based cross-sectional survey conducted in Dublin to study the knowledge of women about preconceptional folic acid. Approximately two-thirds of the them had information about folic acid. (5.4 %) of them recommended to take folate before pregnancy. Only (2.7 %) of the women in the study taking folic acid supplements currently (11).

A study was conducted in South India to evaluate pregnant women knowledge concerning preconceptional usage of folic acid and to assess factors that influence this knowledge. It was found that (36.6%) of interviewed mothers had information about folic acid and 80% of them thought that it should not be taken until pregnancy was confirmed (12).

A study was conducted in South India to assess the level of knowledge regarding prior use of folic acid and to examine factors affecting knowledge among pregnant women. It was found that (36.6%) of the mothers interviewed had information of folic acid. Among those who had heard of folic acid, 80% that it should not be taken until after pregnancy was confirmed

Objectives

- 1-To estimate knowledge of pregnant women about folic acid.
- 2-Determine the rate of use folic acid among pregnant women

Methodology

1. Study design: A descriptive cross-sectional study.
2. Setting of the study: Antenatal care units in Basra city
3. Study sample: the research sample in this study including (200) pregnant women attending antenatal care unit in primary health care centers in Basra. A structured questionnaire was used for the purpose of the data collection. The questionnaire contained three parts. The first part contains questions related to socio demographic characteristic. Part two contain

questions related to participants knowledge about folic acid and the third part contain questions related to use of folic acid. The data was collected from pregnant women through direct interview.

4. Data analysis: the statistical package for the social sciences (SPSS) version 23 was used. The results were expressed in (frequency and percentage). The correlation test was used to determine the association between knowledge about folic acid and selected variable.

Results

1. Socio - demographic characteristics of the participants (n=200)

Variable	Category	No.	(%)
Age	15-19	26	13
	20-24	56	28
	25-29	47	23.5
	30+	71	35.5
Duration of present pregnancy in months	1-3	26	13
	4-6	44	22
	7-9	130	65
Number of children	1-3	117	58.5
	4-6	31	15.5
	7+	52	26
Education	Primary school or below	86	43
	Secondary school	74	37
	Institute /college	40	20
Area of the residence	City center	146	73
	Districts	54	27
Occupation	Not Employed	171	85.5
	Employed	29	14.5

Table 1 revealed that (35.5%) of the sample were in the age group of 30 years. (65%) of sample were in 7-9 months of the present pregnancy. (58.5%) of them had (1-3)child. Education level of primary school or below was found in (43%)of the sample , (73%) of them live in the city center. (85.5%) of them were not employed.

Table 2. Knowledge and awareness of participants about folic acid (n=200).

Item	Characteristics	No.	(%)
What is folic acid?	Vitamin	143	71.5
	Don't know	52	26.0

	Mineral	5	2.5
Benefit of taking folic acid	Red Blood cell production	94	47.0
	Don't know	56	28.0
	Formation of neural tube and growth of brain and spinal cord	42	21.0
	Decreases miscarriage and preterm labor	8	4.0
Adverse effects of insufficient folic acid intake	Anemia	84	42.0
	Don't know	82	41.0
	Spinal malformation (Neural tube defect)	24	12.0
	No effect	10	5.0
Time to take folic acid to be an effective	First trimester	121	60.5
	Second trimester	31	15.5
	3month before pregnancy and first trimester	23	11.5
	Don't know	23	11.5
	Third trimester	2	1.0
Good dietary sources of folic acid	Fruits	67	33.5
	Do not know	61	30.5
	Green leafy vegetable	39	19.5
	Poultry	27	13.5
	Legumes	5	2.5
	Whole grains	1	0.5
Sources of information	Physicians	182	91
	Media	11	5.5
	Family	6	3.0
	Nurses	1	0.5

Table (2) showed the knowledge of pregnant women about folic acid. (71.5%) of them said it is one type of vitamins. (47.0%) reported that red blood cell production was one of the benefits of folic acid. (42.0%) of them reported that anemia was adverse effects of inadequate intake of folic acid. Spinal malformation (Neural tube defect) reported only by (12%) of the participants. For the time of take folic acid to be effective (60.5%) reported in the first trimester. The good source of folic acid was fruits as reported by (33.5%) followed by green vegetables (19.5%) and (30.5%) reported they did not know the good sources of folic acid. Physicians were the main source of information as reported by (91%) of the participants.

Table 3. Correlation between knowledge about folic acid and selected variable.

Variables	N	Correlation Coefficient (r)	Sig. (2-tailed) (p)
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Age	200	.114	.107
Duration of present pregnancy in months	200	.131	.065
Number of children	200	.001	.987
Education	200	.429	.000**
Area of residence	200	.005	.941
Occupation	200	.304	.000**

** Correlation is significant at 0.01 level (two tailed).

There was significant positive correlation between levels of knowledge about folic acid with participants' education level. In addition, there was significant positive correlation with occupation (employed participants had a higher level of knowledge than unemployed did) as shown in table 3.

Table 4. Uses of folic acid

Item	Characteristics	No.	(%)
Uses of folic acid	Yes	181	90.5
	No	19	9.5
If(yes) at what time of gestation do you start taking folic acid=(181)	First trimester	148	81.8
	Second trimester	20	11
	3 month before pregnancy and first trimester	7	3.9
	Third trimester	6	3.3
If(No) N=(19)	Fear from complication	8	42.1
	Lack of medical advice on antenatal visit	4	21
	More than one reason	3	15.7
	Lack of social awareness	2	10.5
	Didn't think it was important	2	10.5
	Financial constraint	1	5.2

Table 4. Showed that (90.5%) of pregnant women used folic acid. (81.7%) of them start taking folic acid in the first three months of pregnancy. Only (3.9%) used folic acid before 3 months of pregnancy and in the first trimester. (9.5%) of the pregnant woman did not use folic acid. The main reason for not to use folic acid is the fear of complications (42.1%).

Discussion

The effect of folic acid in the prevention of NTDs is significantly determined via multiple studies, provided it is administered in the right route, dosage and time (1).

Regarding to the sociodemographic data the study showed that age of participant greater than 30 years was 35.5% this higher than the study was done in ALdiwaniya 8%(15) but lower than the study done in Libya 36% (9).

Regarding to the educational level of the participants 43% graduated from primary schools or below ,less proportions for those graduated from institute or college and secondary school 20% and 37% respectively. The same trend was found in a study done in Iraq -Bagdad (4) . Our study showed that pregnant mothers which had a good level of education were more likely to be aware of and receive folic acid, which is similar to the results of other studies (1,2,3, 11,12,13,14,15).

The rate of working women in this study was lower than not working women. Which was similar trend to what found in other studies done in Al-Diwaniya-Iraq (15), and in Korea (14). Our study showed that working women were more informed about folic acid, the same result was found in a study done in Saudi (2).

Our study showed that 71.5% of pregnant women were aware of folic acid as a vitamin supplement higher than studies done in Queen hospital 69%(13) , in Nigeria 64.6%(3), in Tabuk 31.7%(7), and lower than study done in Libya(9).

Our results showed that a low percentage of pregnant women (21%) knew the significance of folic acid in prevention of NTDs, while a higher percentage reported from many studies done in Saudi 71.2% (2), in Korea more than 70%(14) , in Emirate 66.7% (5), in Nigeria 41.6% (3).

In this study, participants asked when to take folic acid to be effective , (11.5%) answered 3 months before pregnancy and in the first trimester. This percentage was lower than what reported in various studies done in Saudi 72.2% (2), in Tabuk 48.5% (7), in Korea 26.4% (14) , in Nigeria 36.5% (3), in Khartoum status 52.8% (16.), in England 44.6% (13) .

Regarding the awareness of participants about the food source of folate. Some pregnant women knew that folic acid present in vegetables and fruit (19.5% ,30.5% respectively). This result is higher than the result of a study conducted in Tabuk (15.8% and 3% respectively)(7), and lower than the study done in Bagdad (45% and 48% respectively) (4), in ALkartum (49.1% and 16.7% respectively)(16), while 0.5% of them knew that folic acid present in the whole grain, which is lower than the study conducted in Iraq Bagdad 16% (4).

Physicians played an essential role in increasing women's awareness about the role of folate during pregnancy as reported by (91%) of the participants, this result similar to the result of other studies done in Emirate(5), in Bagdad (4), in Malesia (1), in Tabuk (7).

Regarding to the usage of folic acid, 90.5% of women had taken it in their current pregnancy higher than studies done in AL Diwaniya province 50.5% (15), in Queen hospital 88% (13), in Malesia 71.5%(1), in Emirate 69.7% (5), in Bagdad 69.7%(4), in Libya 73%(9).

Present study showed that 9.5% of participants did not take folic acid in their current pregnancy, which was lower than the result mentioned by studies done in Bagdad 14% (4), in AL Diwaniya province 34%(15), in Labia 27%(9), in Emirate 30.3%(5), in Khartoum status 25%(16).

The reason for not taking folic acid was the fear of complication 4% while in other study done in Pakistan the reason was lack of medical advice on antenatal visit 49.53% (17)

Conclusion

1. Although our study indicates that the employed and educated pregnant women showed a significantly good knowledge about folic acid, the majority of pregnant women presented with low general knowledge and awareness regarding the proper use of folic acid, the food source of folic acid, and adverse effects of insufficient intake of folic acid.
2. Even though the rate of folic acid use during pregnancy is high, the study revealed that a low rate of participants start taking folic acid in the appropriate time before pregnancy.

Recommendations

1. Health education of newly married and women of child bearing age about the preconception usage of folic acid may lead to improve knowledge and increase the usage of folic acid in order to prevent neural tube defects.
2. Educational program need to be developed for pregnant women to increase their awareness about folic acid and it's important.

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