International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2015): 78.96 | Impact Factor (2015): 6.391

Assessment Women's Knowledge about Importance of Folic Acid during Pregnancy

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Abstract: ***The aim; to assess the knowledge of the women about importance of folic acid during early pregnancy. Sample and setting; promontory and convenience sample women. The study was conducted in the antenatal outpatient clinic of El-Shatby Maternity University Hospital. Data collection tool; A structured questionnaire used to collect women knowledge about folic acid. The result about one half has poor knowledge, about one third has fair knowledge and only less than one fifth has good knowledge. Recommendation: The women should be have more and good knowledge about importance of folic acid pre and during the first trimester the nurse should play an important role in advocate women about folic acid, and media should give more knowledge through health programs.***

1. Introduction

Each year among 135 million new births in the world, about 3% are affected with major structural. Birth defects, called congenital abnormalities (CAs). We can estimate more than 4 million each year or 11,376 daily of children born with CAs.

Proper maternal nutrition is important for coping with the extra demands for normal development of a growing fetus. Although a pregnant women is able to compensate for nutrient deficiencies excesses, she cannot provide the essential nutrient for her fetus. [(1)]The most important supplement are vitamins and folic acid. [(2)] Vitamins are essential for normal growth and development of the fetus. If the women have deficiency in one or more vitamins, the fetus may develop ad deficiency disease, even minor deficiencies may lead to permanent damage. [(3, 4)]

Adequate folic acid intake during the preconception period helps against number of congenital malformation, including neural defects.[(4)] The risk significantly reduced when folic acid is taken 400 mg/day before conception and in early pregnancy 400mg/day[(5,6)] folic acid deficiency during pregnancy may increase the risk for preterm delivery, low birth weight and intra-uterine fetal growth retardation also may lead to spontaneous abortion and pregnancy complication such as placenta abruption and preeclampsia.[(7)] Supplementation with folic acid also shows in reducing the risk for congenital heart defects, cleft lip, limb defect and urinary tract anomalies.[(8,9)]

Folic acid is a water-soluble vitamin belonging to the B-complex group of vitamins. These vitamins help the body break down complex carbohydrates into simple sugars to be used for energy. Excess vitamins are excreted from the body rather than stored for later use. This is why sufficient daily intake of folic acid is necessary. As regard sources of folic acid, it is found in leafy green vegetable, Beans, liver, nutritional yeast, tuna, wheat germ, mushrooms, oranges, bananas, strawberries and cantaloupes. [(10)]

Therefore, the nurse should play an important role in advocate women about the importance of folic acid during pregnancy. The main giver for knowledge to the women and there are little research has been conducted in this topic. Therefore we perform thin study to assess the knowledge of the women about importance of folic acid during pregnancy.

2. Aim of the Study

The aim of this study is to assess women's Knowledge about Important of Folic acid during Pregnancy

Research Question

What is women's Knowledge about Important of Folic acid During Pregnancy?

3. Material and Methods

Design:

An exploratory study

Material

Setting:

The study was conducted at the antenatal outpatient clinic of the El-Shatby Maternity University Hospital.

Subjects:

A convenient sample of 100 pregnant women who were chosen from the previously mentioned antenatal clinic. Women whose have no previous medical diseases and willing to participate in the study were selected.

Tool:

Designed structured interview schedule was developed, validated and utilized for data collection:

- **Part 1**

The study subjects' basic data it included pregnant women's socio-demographic obstetrical characteristics and their Socio-demographic characteristics such as age, level of education, occupation, residence, etc. History of pregnancy

such as such as gravidity, parity, number of abortion, trimester of pregnancy

- **Part 11**

Knowledge about Folic acid during pregnancy as well as sources of information

Methods

The study was executed according to the following steps:

1) **Approval:**
Permissions for data collection were obtained from the responsible authorities of the study settings.
2) **Tool:**
Tool was developed by the researcher after extensive review of relevant and recent literature and were tested for content validity by a jury of 10 experts in the field.
3) **Consent:**
An informed oral consent to participate in the study was obtained from each woman and confidentiality of the collected data was ensured.
4) **Pilot study:**
A pilot study was carried out on 10 women, who were excluded from the study subjects to ascertain the relevance of the tool; detect any problem peculiar to the statements and estimate the time needed to complete the tools. Following this pilot study, the tool was reconstructed and made ready for use.
5) **Collection of data:**
Data were collected over a period of 3 months starting from the beginning of February till the end of April 2013.Women of the study group were interviewed and assessed during their attendance in antenatal outpatient clinic .The average time needed to complete the interview schedule ranged between 15 to 20 minutes depending upon the degree of understanding and response of the interviewee.
6) **Statistical analysis:**
Analysis of data was carried out by the researcher. The collected data was categorized, coded, computerized, and tabulated.
7) **Ascoring system for** women's knowledge was adopted. The correct answers were determined according to literature and the questions were coded accordingly. Each Knowledge was given score and total score was obtained. Evaluation of women's Knowledge about Folic acid was categorized according to whether the answer was correct and complete (scored 2), correct but incomplete (scored 1) **wrong** (scored 0.the total score was classified as follow: Good Knowledge (75% or more), satisfactory (50%-74%) and week (less 50%).

Ethical Considerations

The nature and purpose of the study were explained to the subjects participating in the study. All information obtained from the participants was treated with the utmost confidentiality. Clarification of any point in the study was provided to the study subjects if needed. Participants were also informed about their right to withdraw from the study at anytime without giving a reason. An oral consent to participate in the study was obtained.

4. Results

Table (I): Distribution of the study sample according to their socio-demographic characteristics

Characteristics	*N=100*	
	No.	**%**
Age in year		
< 20	8	8
20-	72	72
≥35	20	20
Mean +_SD	22.6+_603	
Education		
- illiterate or just read and write	12	12
- primary ,preparatory or secondary school	36	36
- high education	52	52
Occupation		
- house wife	48	48
- Worker	52	52
Residence		
- urban	72	72
- Rural	28	28
Income of family		
- enough	20	20
- not enough	80	80

Table (I), shows the distribution of the study sample according to their socio-demographic characteristics. It is observed that, nearly to three quarters **(72%)** of the study sample were in their twenties or early thirty five While slightly less than one – fourth **(20%)** of them were 35 years old or more. More than one half **(52%)** of the sample had a high education.. While **36%** and **12%** of them had either a primary/preparatory education or were illiterate, respectively. While nearly to one half **(48%)** of them were housewives, and It is observed that, three quarters **(72%)** of the study sample were from urban residence**.**, More than three quarter of them **(80%)** mentioned felt that their income is not enough .

Table (II): *distribution of the study sample according to their reproductive history*

Reproductive history	*No.=100*	
	No.	**%**
Gravidity		
- one	32	32
- 2	24	24
- 3 or more	44	44
Parity		
non	32	32
- one	24	24
- 2	36	36
- 3 or more	8	8
No. of Abortion		
non	88	88
- one	12	12
- 2	-	-
- 3 or more	-	-
Trimester of pregnancy		
- the first	36	36
- the second	24	24
- the third	40	40

Table (II), shows the reproductive history of the study sample. It is observed that 44**%** of the study sample was pregnant for three times and more, while **32%** of them were primigravida and 24**%** had got pregnant two times. In relation to abortions, only **12%** had a history of one abortions. It is noticed that **24%** of them gave one births, while **36%** of them had two birth and the rest **(8%)** had gave births more than three times.

As regards Trimester of pregnancy**,** it is observed that **40%** of the study sample were in third trimester. More than one third **(36%)** of study sample in first trimester of pregnancy

Table (III): Distribution of the study sample according to their knowledge about Folic acid

Knowledge about Folic acid	*No.=100*	
	No.	*%*
Definition of Folic acid		
- correct and complete answer (it is vit :B9,disolve in water, not storage in the body)	8	8
- Wrong answer or don't know	92	92
Importance of Folic acid		
- Formation of fetus cell in early pregnancy	-	-
- Useful for cell division	4	4
- Renew bloody cell (R.B.C.)	20	20
-Decrease fetal cell malformation	24	24
-Don't know	52	52
Source of Folic acid *		
- vegetables		
- Fruits	40	40
- Plant protein	25	25
-Red meat (liver) ,chicken, liver, yoke of egg	32	32
-Don't know	52	52
Adding dose of Folic acid during pregnancy	20	20
- Yes	52	52
- No	8	8
-Don't know	40	40
Causes of Adding dose of Folic acid during pregnancy *		
- Rapid damage of folic acid in the preparation during food	40	40
- Bad dietary habit	65	65
-Absorption problems	20	20
-Increase absorption from the drug than food	10	10
- Don't know	40	40
Time of taken folic acid		
- Before pregnancy	36	36
- During pregnancy	40	40
-Don't know	24	24
High risk infant *		
- Infant for mother with previous tubal defect infant	35	35
- Infant for diabetic mother	20	20
- Infant for eclamptic mother	42	42
- Don't know	60	60

**** More than one answer***

Table (III), shows the distribution of the study sample according to their knowledge about folic acid during pregnancy. As regards the definition of folic acid, it was found that The majority of the study sample **(92%)** gave incorrect or did not know.
More than half of the study sample **(52%)** did not know Regarding the importance of folic acid during pregnancy .It was observed that only **0.4%** of the study sample answered, Useful for cell division about the importance folic acid, while about one quarter **(24%, 20%)** of the study sample answered as Decrease fetal cell malformation and Renew bloody cell (R.B.C.) respectively.

Regarding the source of folic acid during pregnancy, the table revealed that **40%** of study sample answered vegetables. However**25%** answered Fruits,, more than half **(56%)** of study sample answered Red meat (liver) ,chicken, liver, ,yoke of egg, while **20%** of the study sample did not know,

As regards the adding dose of Folic acid during pregnancy**,** it was found that more than half of the study sample **(52%)** answer yes**,** However**40%** of the study sample did not know

As regards the causes of adding dose of Folic acid during pregnancy, it was noticed that **40%** of study sample answered (Rapid damage of folic acid in the preparation during food), while about two-third of them **(65%)** answered Bad dietary habit, It was found that one-tenth **(10%)** of study sample gave Increase absorption from the drug than food, while the **40%** did not know

In relation to time of taken folic acid, it was found that 36**%** of study sample answered before pregnancy. While **24%** of them did not know

Regarding the High risk infant during pregnancy, the table revealed that **35%** of study sample answered Infant for mother with previous tubal defect infant., It was found that two-tenth **(20%)** of study sample answered Infant for diabetic mother, while the **42%** of study sample answered Infant for eclamptic mother. while about less than two-third of them **(60%)** did not know

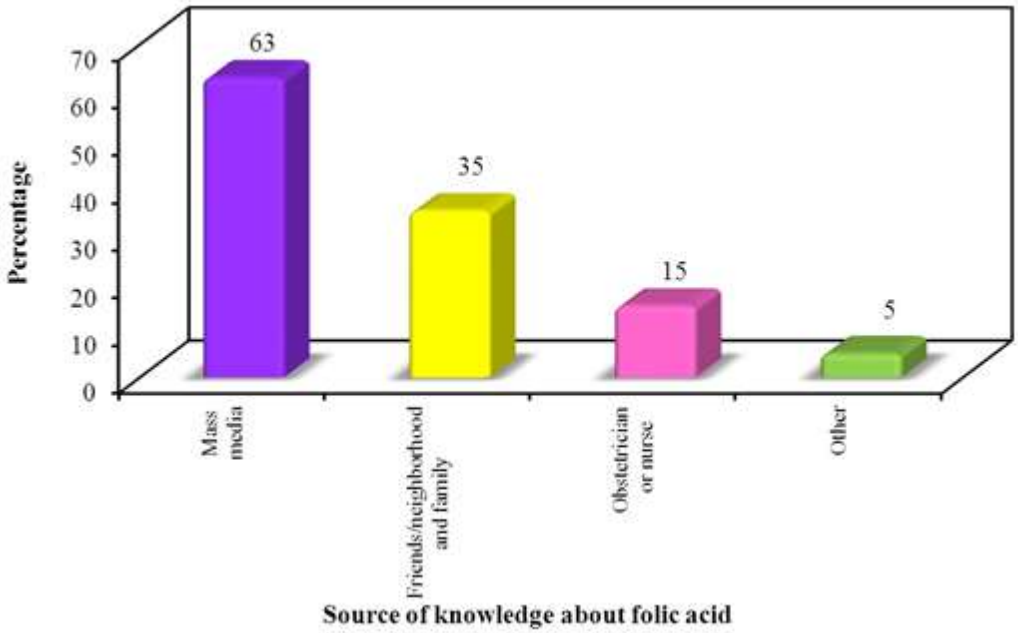

Figure 1: Distribution of the study sample according to their sources of knowledge about folic acid

∗Total is not exclusive, i.e., each subject gave more than one answer

Figure (1) shows the distribution of the study sample according to the sources of knowledge about folic acid. It was observed that, two third of study sample's knowledge **(63%)** were coming from their friends/neighborhood and family. While **15%** of study sample had got their knowledge from either Obstetrician or nurse, and only **5%** of them got it from either

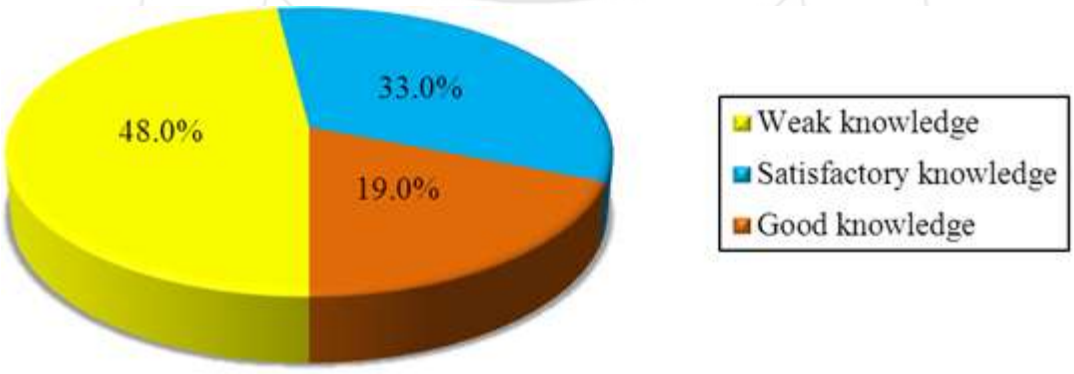

Figure 2: Distribution of the study sample by their total score of knowledge about folic acid

Figure (2), Reveals the general knowledge score of the study sample. It is noticed that around one half **(48%)** of them had weak knowledge score, while only **18.3%** had good knowledge, and **33.7** had satisfactory knowledge.

Table (1V): Relation between socio – demographic characteristic and the total scoring of the subject's knowledge

Characteristic	*Total scoring of the subject's knowledge*						χ^2	p
	Good (n=19)		*Satisfactory (n=33)*		*Week (n=48)*			
	No.	*%*	*No.*	*%*	*No.*	*%*		
Age (years)								
<20	3	3.0	2	2.0	3	3.0	8.350	$^{MC}p=0.064$
20 -	10	10.0	22	22.0	40	40.0		
>35	6	6.0	9	9.0	5	5.0		
Women education								
Illiterate	0	0.0	3	3.0	9	9.0	19.865*	$^{MC}p=0.001^{*}$
Primary – pipes	2	2.0	10	10.0	24	24.0		
Secondary university	17	17.0	20	20.0	15	15.0		
Women job worker								
Worker	15	15.0	23	23.0	14	14.0	19.694*	<0.001*

House wife	4	4.0	10	10.0	34	34.0		
Resident								
Urban	16	16.0	14	14.0	42	42.0	21.444*	<0.001*
Rural	3	3.0	19	19.0	6	6.0		
Income								
Enough	7	7.0	5	5.0	8	8.0	4.187	0.123
Not enough	12	12.0	28	28.0	40	40.0		

χ^2, p: χ^2 and p values for **Chi square test**
^{MC}p: p value for **Monte Carlo** for Chi square test
*: Statistically significant at $p \leq 0.05$

The table shows significance difference between the total score of knowledge and women education, women job and resident.

5. Discussion

The perconceptional use of folic acid-containing supplements reduce the first occurrence, as well as the recurrence of neural tube defects, folate intake may need to be sustained after complete closure of the neural tube to decrease the risk of other poor pregnancy outcomes such as preterm delivery, low birth weight, fetal growth retardation, habitual spontaneous abortion, placenta abruption and preeclampsia. [9]

This study revealed general lack of knowledge about folic acid, about half of the subjects has poor knowledge about the definition of folic acid also one third of the study subject has fair knowledge while only one fifth has good knowledge. This on line with some researches in Qatar mentioned 53.7% had heard of folic acid and of these half knew that folic acid is important.[11] While in our study one half accept about importance of folic acid. This result is less than one study in kingdom of Saudi Arabia, which revealed that the majority of the subject knew about folic acid, most (92.1%) knew it was important and 74% had taken previously.[12] Regarding causes of its importance only one quarter of our study has good answers. This result is less than the study of United Arab Emirates, which reported that only 35% have heard of folic acid. [13] The main source of knowledge to our subject was internet this is in contrasts with Almadina Elmonawra study which reported Doctors as main source of knowledge to their subject. [12] In general the present study revealed the total score of knowledge were, one half of the study subject has poor; nearly to one third has fair and only less than one fifth has good score of knowledge. This may be due to the lack of nurses and student nurses knowledge about the university acknowledge of the inverse relationship between preconceptual folic acid intake and neural tube defects. [14, 15] Accordingly, many countries require fortification of foodstuffs with folic acid and encourage the nurses to educate women about important of taking recommended amount of this vitamin (400mg/day) before and during pregnancy. [16-18]

There are numerous studies of the nurse who should play important role in educating the women and knew that the importance of folic acid have been published from both developed and developing countries, [19-21] but little information is available for Arab women regarding essential micronutrient

6. Conclusion

The perconceptional use of folic acid – containing supplements reduce the first occurrence, as well as the recurrence of neural tube defects. This study revealed general lack of knowledge about folic acid; about half of the subjects has poor knowledge about folic acid instead numerous studies of the nurse who should play important role in educating the women. The main source of knowledge to our subject was internet and other source was doctor, mother, and books.

7. Recommendation

1) Should be realistic about the strengths and weaknesses of the ward.
2) Classification of patient care should be applicable by head nurse or (the person will divided the cases) as in polices.
3) The size of nurses' room should be appropriate to the number of staff.

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