

Awareness of Pregnant Women about Folic Acid Supplementation in Iran

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Abstract

Objective: The purpose of this study was to determine the level of knowledge of folic acid supplementation amongst Iranian pregnant women.

Materials and methods: We selected 322 women through simple randomized method in a cross section study. Data was gathered on the base of questionnaire and interview. Statistical analysis was performed using SPSS software. The value of $p < 0.05$ was considered as significant level.

Results: The obtained information revealed that 7.8% with high level of knowledge, 43.8% with intermediate level, 30.4% with low level knowledge, and 18% with no knowledge. Hospitals and health centers are two major sources for promoting popular awareness about folic acid. There is a significant relationship between the knowledge, education, employment, time of prenatal care beginning, age, gravidity, and sources of health information. The number of women with high level of knowledge was more among those with lower parity, higher level of education, employment, young age and looking for health information.

Conclusion: Awareness of folic acid is low among Iranian women. The different strategies are required to elevate the knowledge about folic acid among the women in reproductive age and provide them with some information about the benefits of this supplement.

Keywords: Folic Acid, Knowledge, Pregnancy

Introduction

Nowadays, folic acid deficiency is one of the most common vitamin deficiencies among women. Women who consume a low level of folic acid during

pregnancy are at risk for poor pregnancy outcomes, such as neural tube defects (NTD) (1). The different NTD types, including spine bifida, anencephaly and encephalocele lead to lifelong disability and premature death. Neural tube defects are caused by the failure of the open neural tube to close by the 29th day post-conception (2). In order to prevent these defects, a daily supplement of 400 microgram folic acid is recommended from a month before conception to the end of first trimester (3). The mother with a previous NTD offspring should consume

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4000 microgram of folic acid per day (4).

Each year, approximately 4000 pregnancies result in spin bifida or anencephaly (5, 6). Folic acid supplementation can reduce the annual number of NTDs affected pregnancies by 50 to 70%. Despite this fact, most women are not aware that folic acid prevents neural tube defects and its supplementation rates have yet remained low (7). Morin et al. has reported that 14% of women in their study used preconception multivitamin supplements. In the United States, the recommended amount of folic acid has not yet known by 75-80% of the women in reproductive age (8).

The literature shows that understanding of folic acid consumption has not been well studied (2), particularly in the developing countries, like Iran. There is not any complete research about women's awareness in this subject, so we conducted this study to determine the knowledge of pregnant women about folic acid in Iran.

Materials and methods

This was a cross-sectional study which was designed in order to determine the knowledge of the pregnant women regarding folic acid supplementation. This study was supported by Hamadan University of Medical Sciences with ethics committee No 90362. All mothers were informed about the study and the signed consent forms were obtained from all participants, then those willing to participate were interviewed. We conducted the study at the Fatemeh hospital which is the only maternal center related to the Hamadan medical university in Hamadan city, Iran. A total number of 322 pregnant women who had come to the Fatemeh Hospital for delivery (vaginal delivery or caesarian section), termination of pregnancy for any reason (i.e. still birth), or preterm labor was selected as our sample group through simple randomized method. The data gathering was on the basis of questionnaire. All of participants were over 20 weeks of gestational age.

The questionnaire included the questions assessing demographic characteristics, reproductive history (previous abortion, preterm labor, fetal death, neonatal death and previous children with neural tube defects), knowledge of folic acid, and information sources.

The criteria for classification of the women's knowledge was on the basis of their awareness score which they got from the knowledge questions we

prepared as follows: ≤ 3 = lack of knowledge, 4-5= low level knowledge, 6-7= intermediate knowledge and 8-9= high level knowledge.

The SPSS statistical package was used for the statistical analysis. Chi square analysis was performed to test the differences between variables. The p value less than 0.05 was considered as significant level.

Results

We interviewed 322 women aged between 20-24 years old (32.9%) and 40-44 years old (0.9%). Among them, 79.2% were 36-40 weeks of gestation. The majority of individuals (42.9%) had elementary education, and only 5.3% of them had a university degree. Most of respondents (95.7%) were housewives, and 4.3% were employed. Also, 79.8% of the women had a planed pregnancy and 98.4% of them received prenatal care. Almost, 44.7% of the individuals experienced their first pregnancy. The knowledge of most respondents (43.8%) was in the intermediate level, and only a few of them (7.8%) had the high level of knowledge (Diagram 1). The awareness of women about the different aspects of folic acid consumption is shown in table 1. Although 73.6% of them had high level of the knowledge about folic acid, only 18.9% knew about folic acid benefits and 29.8% knew what folic acid is. Diagram 2 shows the information rate about folic acid consumption. The most common information sources were governmental hospitals and health centers, but mass media had the lowest role in public health education.

On the base of data analysis, there was a significant relationship between knowledge, education ($p < 0.001$), employment ($p < 0.001$), time of receiving prenatal care ($p = 0.018$), age ($p = 0.04$), gravidity ($p < 0.001$), time of receiving information ($p < 0.001$) and sources of information ($p < 0.001$). The number of women with high level of knowledge was more among those with lower parity, higher level of education, employment, young age and looking for health information.

Regarding of the reproductive history, none of participants except those experienced the previous newborn with NTD had a significant relationship with their level of knowledge ($p = 0.027$).

No association was found between level of knowledge, planned pregnancy and receiving prenatal care.

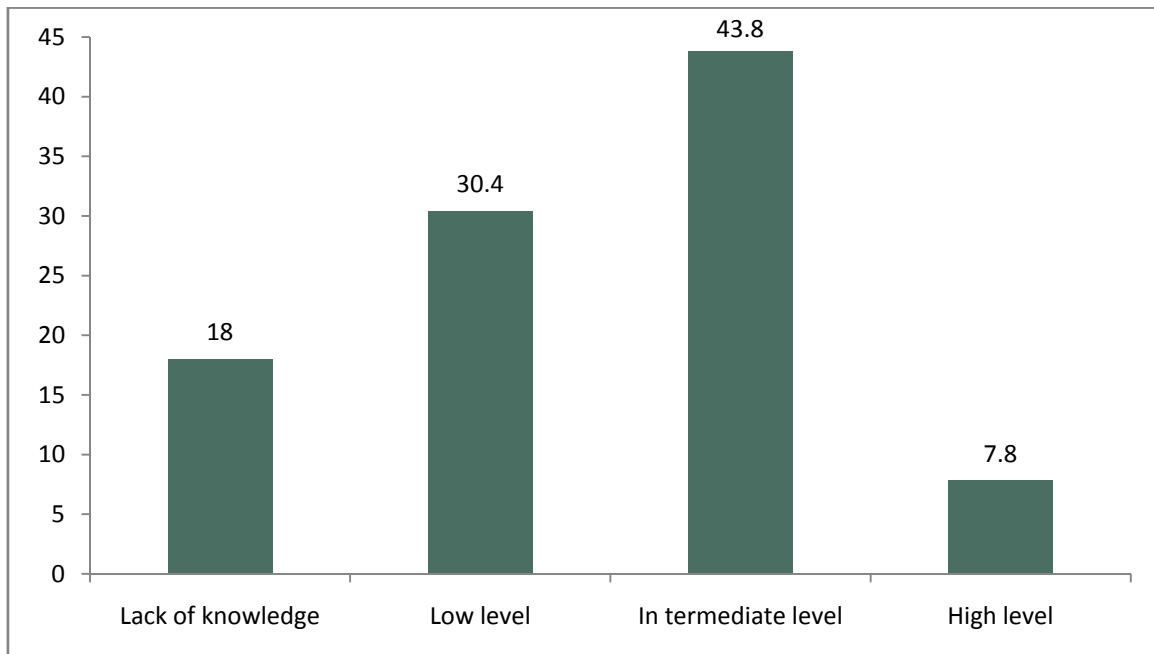


Diagram 1: The classification of pregnant women's knowledge about folic acid

Table 1: The asked questions and the responses of the participants (in the form of number and percentage) about folic acid

Awareness	yes		No	
	No.	%	No.	%
Ever heard of folic acid	237	73.6	85	26.4
What is folic acid	96	29.8	226	70.2
Awareness of Folic acid benefits	61	18.9	261	81.8
Awareness of neural tube defects	4	1.2	318	98.8
Awareness of women who need folic acid supplement	114	35.4	208	64.6
Awareness of correct time to take folic acid	71	22	251	78
Awareness of correct dose of folic acid	223	69.2	99	30.8
Awareness of folic acid sources	75	23.4	247	76.6
Awareness of folic acid safety	203	63	119	37

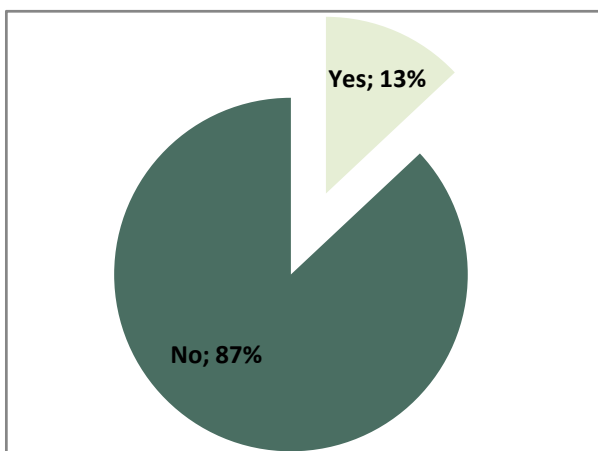


Diagram 2: The received information about folic acid through the different sources by the pregnant women.

Discussion

High level of knowledge was only found in a few numbers of participants (7.8%), but most of them revealed the intermediate knowledge. Gjergja et al. has reported that 71.70% of the study group was aware of the folic acid role in pregnancy (9). In our study, 18.9% were aware of folic acid benefits compared with 72% and 17.6% in the studies of Gjergja et al. and Coll et al. in Spain, respectively.

10. were aware of neural tube defects, which is much more from current study 5. In Texas and Northeast of the USA, the awareness level of folic acid was 78% and 50%, respectively (10). In our study, 73.6% of the respondents admitted they never heard of folic acid as compared to 46% and 53.7% of

studies done in UAE 9 and Qatar, respectively (1). Canadian researchers have reported that 95% of Canadian?? women heard of folic acid, but only 25% knew that it could prevent birth defects, and the same percentage had good knowledge about folic acid rich foods (11). In a Turkish study, 22% of subjects had heard or read about folic acid and 13% of them indicated knowledge of the direct link between folic acid supplementation and neural tube defect prevention (12). The same study by Japanese researcher has revealed less than 15% (13).

On the base of our findings, there was a relationship between knowledge and age. Most of women over 35 years old had low level or no knowledge of folic acid. The high level of knowledge was found in the group of 20-24 years old. In the study of Unusan, the knowledge was greatest among 26 to 35 years old (12). Other studies have also found an effect of age on knowledge (2, 12). Younger women may be more receptive to information about folic acid because they want to become pregnant in the near future.

The women with high educational level had intermediate and high level knowledge. Low level of knowledge was found in the women with elementary education. As mentioned in our study, increasing in educational level has direct relationship with improving of awareness about folic acid consumption which is in accordance with the results of other studies (1, 5, 8, 14, 15).

Employment has an important effect on knowledge, as well. None of the employed women were in the lack of knowledge group. Most of individuals in the low level knowledge and lack of knowledge groups were housewives. Although, Carmichael et al. has showed that employed women do not have enough knowledge about folic acid intake (16).

Most women in the lack of knowledge or low level knowledge groups had started their prenatal care at 4th month of pregnancy; whereas, it is recommended that all expected mothers should receive prenatal care before and during pregnancy to know all necessary information to keep mother and child healthy.

Parity was found to have significant influence on the awareness of folic acid. We found that awareness of folic acid was less among the women with three or more children. A similar finding has been reported in the study of Abdulrazzaq et al. (8).

Also, 87.3 % of our respondents had not received

any information about folic acid. In the study of Coll, most of the referred women (85.7%) did not have any information about the folic acid or NTDs; although, approximately half of the women (50.6%) had the knowledge. The media and the gynecologist were the most frequent sources of information in Coll's study (4). Croatian women get information from the media; health professionals; and friends; although, 63.77% of them received this information too late to prevent NTD (9). In Arabian Qatari, the most common source for the expected women was physicians (1). In our study, the most frequent source was governmental hospital or health care centers; although, the most women in high level knowledge group obtained the information by their individual studies. So, the role of health education in our society is questionable since it is not able to supply sufficient information or attention.

We also found that there was a relation between previous offspring with NTDs and folic acid knowledge. In other studies, the knowledge was high among mothers with previous complicated pregnancies resulting offsprings with NTDs (17).

Despite of this fact that 79.8% of pregnancies were planned and 98.4% of participants had prenatal care, there is no relation between these two variables and the knowledge. In other studies, despite of 75.5% of planned pregnancies, only 14.4% of all women took folic acid, appropriately (9). Other researchers have showed that folic acid awareness was higher among the women with planed pregnancy. Unplanned pregnancy was the highest risk factor for inadequate folic acid intake as shown in the study of Timmermans et al. (18).

Despite the non-cost availability of folic acid and its routine prescription during pregnancy, in Iran, awareness of the benefits of folic acid is less than expected. So, it seems that the different strategies are required to educate the women in reproductive age about the benefits of folic acid supplement to prevent NTDs.

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