

## **Folic Acid Consumption in Fars Province, Southern Iran**

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### **Abstract**

**Background:** Spina bifida and anencephaly are among serious and fatal anomalies in infants that may lead to a 50-70% of reduction in incidence when folic acid is consumed before conception.

**Methods:** In a cross sectional study, 2997 pregnant women were evaluated to determine the level of their knowledge and practice about using folic acid in Fars Province, southern Iran.

**Results:** Eighty percent of pregnant women were familiar with the name of folic acid, 44.7% had the knowledge of its importance during pregnancy, 31.2% and 8% had the knowledge about its effect in reduction of fatal and neurotic anomalies in fetuses, respectively. 86.6% consumed folic acid and 11% used it before awareness of their pregnancy.

**Conclusion:** Regarding the importance of the starting time of folic acid consumption in prevention of neural tube defects, the women should be trained in relation to starting of its consumption before conception.

**Keywords:** *Neural tube defects, folic acid, pregnancy, knowledge, practice, Iran*

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### **Introduction**

One of the problems which is related to pregnancy and delivery is the undesirable consequences of childbirth with congenital anomalies. One of the important and fatal anomalies is neural tube defects (NTDS). Two common forms of neural tube defects are spina bifida and anencephaly (1-3).

Fifty percent of neural tube anomalies were reported as anencephaly in which a part or the whole portion of the brain was not formed resulting to the death of fetus before or immediately after birth. The remained neural tube anomalies were shown to be spina bifida in which anomalies of spinal column were visible. Most of children suffering from spina bi

fida need to undergo various operations in order to increase the survival of the fetuses while majority of them suffer from paralysis, urine and stool incontinency as well as learning problems (4, 5).

In fact, these anomalies are considered as severe problems in formation of brain and vertebrae which could be fatal or cause severe complications in fetus at early stages. In a study on 8585 deliveries (1991-1997) in Hamedan (North West province of Iran), the prevalence of total NTDS was 50/1000, while anencephaly and spinabifida consisted 15.6% and 6.98% of them, respectively (6). In another study In Tehran, the prevalence of NTDS was reported as 2.4 per 1000 (7).

Neural tube is formed at the early stages of pregnancy or in most cases, when one is not aware of pregnancy and before receiving the

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first pregnancy cares (5). Different studies confirmed that daily use of 0.4 mg of folic acid, before conception would reduce 50-70% of the probable risk of neural tube defects (7, 8).

Use of folic acid before and after conception would reduce the probable risk of other anomalies such as cleft lip and palate, congenital heart diseases added to urinary tract disorders (9-11). Regarding the importance of folic acid usage before and after conception, this study was undertaken to evaluate the level of pregnant knowledge and practice about consumption of folic acid in Fars Province, Southern Iran.

## Materials and Methods

From Jan 2004 to Jan 2005, 2997 pregnant women from 20 towns of Fars Province were randomly entered our study. The population under study consisted of both urban and rural subjects. An official written consent was obtained from each participated patient who was also approved by the Ethic Committee of the university.

Data collection was based on a questionnaire consisting of two sections including questions on demographic information and 26 questions about the knowledge and practice of pregnant women and the beginning time of folic acid consumption. Skilled interviewers were trained for face to face interview of pregnant women in places such as health houses and centers as well as private practice offices of midwives and obstetricians. The collected data were entered in EPI software and were analyzed using descriptive statistical tests.

## Results

Demographic data are shown in Table 1. Table 2 shows the knowledge of pregnant women about folic acid consumption. The results showed that 18% of pregnancies were unwanted, and 86.6% of pregnant women used folic acid during their present pregnancy. The difference in tablet consumption rate among various towns was statistically significant

( $P < 0.000$ ). The lowest was in Shiraz and Farashband (65.1%) and the highest in Darab (96.6%) consumption.

Eleven percent of pregnant women started using folic acid before pregnancy and 75.6% in the first trimester, while others had begun the consumption after the first trimester. The rate of pregnant women using folic acid with high school degree, or higher, in age group of 25-30 yr and employees was significantly higher.

**Table 1:** The Frequency of Gravida in pregnant women in Fars Province, 2004

Gravida	Frequency (percent)
First pregnancy	44.8
Second pregnancy	25.8
Third pregnancy	14.2
Forth pregnancy	6.9
Fifth and more	8.7

**Table 2:** The frequency of knowledge of pregnant women about folic acid consumption in Fars Province, 2004

The knowledge level	Frequency (percent)
Had heard the name of folic acid or had seen its package	85
Had the knowledge of using folic acid importance during pregnancy	44.7
Were aware about the effect of this vitamin to reduce fatal anomalies	31.2
Had knowledge of folic acid effect on neural anomalies reduction	8
Considered the consumption of folic acid	45
Were aware about the correct dose	80

## Discussion

The importance and reason for care during pregnancy is to achieve a healthy infant without any risk to the mother. Training for supplementary drug use in order to promote the mother and fetus health is one of the important

aspects of pregnancy care. One of these supplementaries is folic acid which its use before and after conception can reduce neural tube defects (spina bifida and anencephaly) up to 50-70% (3).

Our results were dissimilar with some studies. The knowledge of American women on using folic acid to prevent fatal anomalies showed an increase from 64% in 1996 to 73% in 1998 (12). Whereas, reports from another study on 18-45 yr old American women showed that only 13% of them had the knowledge about folic acid effect to prevent pregnancy anomalies (13).

In another study, 52% of women were familiar with folic acid and 50% had the knowledge on the effect of vitamins to prevent neural anomalies in fetus (14). Morin et al. reported that 76.3% of pregnant women were aware about the effect of folic acid to prevent some fatal anomalies and 49.4% of them had used it before pregnancy (15), whereas, only 2% of Mexican pregnant women had received folic acid before pregnancy (13). Findings in the present study are almost similar to that of Norwegian and Irish pregnant. In Norway in 1998, 50% of women had received previous information about folic acid, while 32.9% had knowledge about its importance, and 9.5% knew that using folic acid would prevent some neural anomalies in fetus. Ten percent used folic acid before pregnancy and 44% used after awareness about their pregnancy (17). In a study in Ireland in 1997, 76% of pregnant women were familiar with the name of folic acid, but only 16% used it before pregnancy and 51% during pregnancy.

In this study, it was shown that, although most of women had the knowledge about importance of folic acid use during pregnancy, but one third of them knew its effect to reduce anomalies in fetus and also, 45% of them were aware of its need before pregnancy. Only 11% used it before pregnancy, whereas, 86.6% used folic acid during pregnancy. Of course, 18% of pregnancies were unwanted that surely no folic acid was consumed before conception. Regarding the importance of folic acid consump-

tion before conception, 89% of pregnant women lost the chance of its use during this period. In order to overcome this problem, it is suggested to focus on the importance of folic acid at the time of referral of pregnant women to health services.

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