Iron and folic acid supplements for pregnant women

Roghayeh Nasiri Saghayesh

Department of Medical, Ahar Branch, Islamic Azad University, Ahar, Iran

R.Nasiri60@gmail.com

Abstract: Anemia specially Iron deficiency anemia, and Neural tube defects which are preventable with preconceptional folic acid supplementation and iron supplementation during the second and three trimester, are the most common problems in pregnancy. In a cross-sectional study, 300 delivered mothers who were hospitalized in one of the obstetric hospitals in Tabriz, Iran, 1387, were reviewed. The researcher completed the questionnaires and then the data were analyzed in SPSS software. In this study the mean age of the mothers was 27.5 years old, with a range of 15-45 years. The mean of the pregnancy interval was 2.5 years, 23% of mothers had no insurance. In this study, each mother took 170 of different kinds of iron supplements, during a mean of six months, and took 72 of folic acid supplements (tablets) during 2.6 months. 4.3 percent of mothers have received no iron supplementations. 8.9 percent of mothers did not take any folic acid. In this study 8 percent of them started using folic acid supplements before conception. Most of mothers provided the supplement from drugstore and the often offered to complication. The supplementation was not associated with anemia in this study. There was an association between education level, numbers of children and pregnancy grade with supplementation.
[Roghayeh Nasiri Saghayesh. **Iron and folic acid supplements for pregnant women**. *Life Sci* J 2012;9(3):435-439] (ISSN:1097-8135). http://www.lifesciencesite.com. 61

Keywords: Iron supplement; Folic acid supplement; Pregnant women.

1. Introduction

The principal goal of a health system is to improve society members' health and try to maintain this improved health. Health system should use planning and exact studies in order to recognize effective and purchasable interferences and make them available for the users' population. The major function of a health system is rendering services. The presence of sufficient skills in incumbent individuals and health workers in each level of service rendering and also having enough drugs in the country will enhance health throughout the country. On the contrary, if services are rendered undesirably due to incorrect organizations there would be major defects and in some cases although the resources are available and financial supplies and just distributions are carried out, the wrong arrangements will result in defects in rendering those services [1]. In our country, rendering health services to pregnant mothers has started in more than three decades ago and the primary health observations includes a continuum of services, through which family health services (mother and child) are considered to be among the most important ones [2].

In cities the presenters of these services are health houses. Also in governmental sector, they are centers and health bases and in private sector, they are offices, women scholar's clinics and obstetricians rendering the services [3].

Studies carried out in the year 2006, shows that a high percent of pregnant women were covered [1]. Meanwhile, iron and folic acid compliments have been considered to be very important in services for mothers. Because neural tube defect is one of troubles which can be avoided to a great extent, by using iron and folic acid compliments almost three months before pregnancy or immediately after being informed of pregnancy [4]. In a study the preconceptional prescription of iron and folic acid compliments was advised to avoid neural tube defect for some groups of women, but it has been observed that a low percentage of pregnant women consumed acid folic in at least 4 weeks prior to conception in first 3 months of pregnancy [5]. Also a group of Danish pregnant women were advised to receive 400 microgram folic acid besides iron in their preconceptional period to avoid neural tube defect and in this case also, a low percentage of them did so and this led researchers to think about finding new ways to inform women about the importance of this issue [6]. It has been claimed in some studies that some women suffer from shortage of iron and folic acid before pregnancy and need excessive amounts of these compliments when they are pregnant [7]. Although shortage of iron and folic acid compliments results in neural tube defect and anemia, the seriousness of the issue is different in different countries and it is observed more in poor countries. For example, although some reports about neural tube defect have been published as a result of shortage of iron and folic acid compliments in

Philippines, Vietnam and Cambodia, the seriousness of it has been different for each [8].

Also the studies carried out in our country shows different statistics for different areas. This can depend on different variables and the only way to be informed about it is to do similar studies in different regions of the country to find the extent and real cause of this problem [3, 9]. A study carried out in the year 2004 among pregnant women referred to health centers in south of Tehran showed that %36 of pregnant women were suffering from anemia in their latest pregnancy, %3 didn't consume iron pills at all and using period among %37.6 has been less than 6 months and the using period of folic acid has been complete only for %13.4. The commonest reasons for not using are: digestive symptoms (%42.9), forgetfulness (%25.7) and not presenting by health and treatment centers (%25.7) [10]. Another study about iron shortage anemia among Kashmar high school girl students in the year 2003 showed that anemia amount based on hemoglobin and hematocrete criteria equals 24.32 and 21.62, respectively [11]. A study carried out by Jabbari & et al. in Tabriz and Zanjan indicated that the average time period of using iron and folic acid among pregnant women were 3.9 month and 1.2 month, respectively [1]. Additionally the spread of unwanted pregnancies in our country has been estimated to be %32 in our province and %18 in Fars province, respectively [12, 13]. Low level of using folic acid among pregnant women and the receipt of %85 iron needed in food patterns of households in our province [14], and the novelty of iron helping programs in our country [15], and increasing the congenital abnormalities such as neural tube defect which includes %40 of abnormalities in Iran [16], shows the importance of more studies about this issue.

Regarding thousands of papers throughout the world about the improvement of the quality of rendering health services especially for pregnant mothers presented to avoid death and realization of congenital abnormalities and the emphasis of global and local organizations about the importance of using complements during pregnancy periods and although complements are accessible and inexpensive, unfortunately we observe that there are a percent of pregnant mothers who do not pay attention to this issue and do not consume any type of complements during the critical periods of pregnancy or they do not consume them completely and in time. Meanwhile, World Health Organization (WHO) has obliged all countries in the world since many years ago to present primary health cares about all members of societies especially pregnant women and children in order to enhance and maintain consistent health. Now it is observed that these cares in all countries of the world are implemented in any possible way. But negligence of pregnant mothers towards the importance of this issue has resulted in lots of babies and mothers' death, light weighted and anemic children are born, babies are born with different abnormalities especially neural abnormalities, early child born and …, all of which could be avoided and controlled.

Thus, a study was designed in Tabriz in order to recognize the present issues and problems about how health services should be rendered in governmental and private sectors in Iran to study a number of women who have born babies in city hospitals and analyze the different dimensions of this fundamental issue and present probable practical strategies to improve and maintain and develop consistent health especially among pregnant mothers by knowing service qualities.

2. Procedure

In this paper, a discrete point descriptive-analytical study of pregnant women in Tabriz has been carried out for the year 2011. Our statistical society included pregnant mothers who were accepted in women's hospitals in Tabriz. Our study sample involved 300 mothers born babies and accepted in university and non-university hospital in Tabriz who have been selected randomly and investigated.

2-1- Research environment:

Our research environment and data collection included Alzahra, Taleghani, 29th of Bahman, Zakaria, Shafa and Shams hospitals.

2-2- Data collection method:

Data collection in this research has been carried out in the form of live interviews and filling out the questionnaires by the researchers in 8 to 10 days and 2 hours in each day in each one of the hospitals mentioned above. It should be noted that the questionnaire developed included two parts of demographic and general data related to the previous pregnancies, main information about the present childbirth, service receipt location, type of prescriptions and using complements and also primary data related to the babies that have been documented with the profiles of the pregnant mother giving childbirth.

2-3- Data Analysis method:

The variables investigated in this research included: mother's age, education, occupation, previous pregnancy and previous childbirths, abortion cases, insurance type, childbirth location, desired or unwanted present pregnancy, health care receipt location, health care reception time span, the amount of hemoglobin before and after childbirth, the time period of using iron and folic acid complements

and the amount of using complements, term or psedo-term of the baby, congenital abnormalities and first minute weight of the baby.

It should be noted that recording the amount of hemoglobin before and after childbirth was carried out by studying the profiles of mothers in hospitals. The desired or unwanted pregnancy, which was not very clear for most women, was extracted easily by referring to information related to family schemes filled by families in the questionnaires. Also the data about abortion which was not mentioned by most women could be easily accessed regarding the pregnancy grade and the number of living children. Also the data related to the babies were recorded in their baby profiles. The data collected were entered into SPSS software and analyzed. In the following parts we will investigate the results found in this research.

3- Results:

This part includes findings resulted from statistical analysis of data gained from 300 women after childbirth in women's hospitals of Tabriz in the year 2011 by using the advanced SPSS software. These findings were classified in two parts of demographic and specific findings.

3-1- Demographic Findings:

3-1-1- studying age distribution of mother under investigation showed that the average age is μ=26.60+_ 5.76. In this sample, 21 mothers, i.e. %7.3 have had pregnancy under 18 years old and 21 mothers, i.e. %7.3 have had pregnancy over 35 years old. The other %85 fell in the age range of 18 to 35 years old.

3-1-2- studying the pregnancy order of mothers showed that 149 mothers (%49.67) were first time pregnant, 83 mothers (%27.67) were in second pregnancy and the others were ranked in third or higher orders (Figure 1).

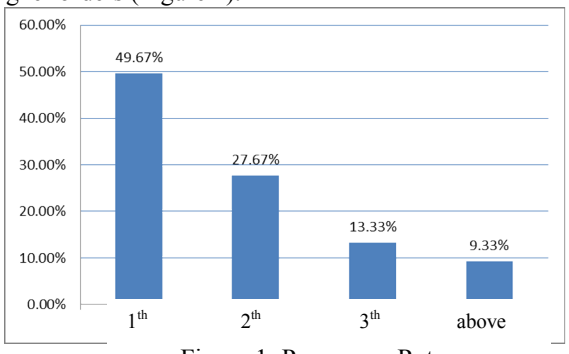

Figure 1: Pregnancy Rate

3-1-3- in this study the time span between childbirths showed that the time period between the previous pregnancy had been 1 to 3 years among 33 mothers, among 37 ones it had been 3 to 5 years, and among 63 ones it had been 5 to 10 years and among other 19 ones it had been more than 10 years. (Figure 2).

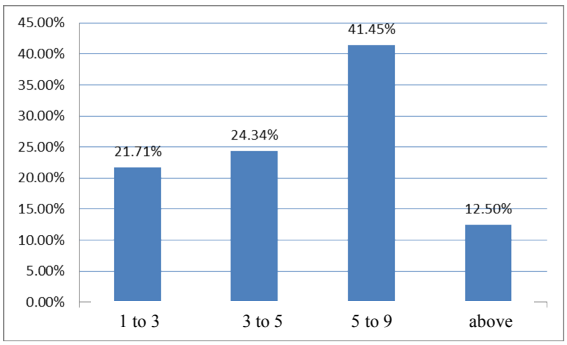

Figure 2: Distance to next pregnancy

3-1-4- Babies' maturity:

- 68 cases (%89.3) of babies, term
- 26 cases (%8.7) of babies, psedo-term
- 1 case (%0.3) of babies, post-term
- 4 cases (%1.3) of babies, dead

3-1-5- Babies' weight:

- %7.5 of babies (22 cases) was born with less than 2500 grams of weight.
- %1.9 of babies (6 cases) was born with more than 4000 grams of weight.
- Others have had the ideal weight between 2500 and 4000 grams.
- The average weight of babies was μ = 3074.9 +- 508.7

3-1-6- Upgrade in first minutes:

- In this study 261 cases (%87) of babies were born with upgrade 0.9.
- 16 cases (%5.4) with upgrade of 0.8.

3-1-7- Congenital Abnormalities:

- %97.7 of babies investigate (293 cases) didn't have any abnormalities.
- %2 of babies (7 cases) was born with congenital abnormalities which were chromosome abnormalities, microcline and harelip.

3-2- Specific Findings:

Findings about the amount of using iron and folic acid complements by pregnant women in Tabriz show that pregnant women should have started using iron pills in the 4th month of pregnancy as quoted in the Act 2526 dated 18th. April, 2005, and in this study it was observed that the average time of using iron pills by mothers has been μ = 3.47 +- 1.59, and that each mother had consumed μ = 169.68 +- 56.55 iron pills (table 1). Among mothers being

studied, 3 persons (%1) consumed 2 iron pills daily and others had consumed 1 pill every day.

Table 1:Iiron consumption amount

The number of iron tablets		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	14	4.7	4.7	4.7
	30	4	1.3	1.3	6.0
	45	2	.7	.7	6.7
	60	3	1.0	1.0	7.7
	75	2	.7	.7	8.4
	80	1	.3	.3	8.7
	90	9	3.0	3.0	11.7
	100	1	.3	.3	12.0
	105	2	.7	.7	12.7
	120	5	1.7	1.7	14.4
	135	1	.3	.3	14.7
	150	18	6.0	6.0	20.7
	180	176	58.7	58.9	79.6
	200	1	.3	.3	79.9
	210	38	12.7	12.7	92.6
	225	1	.3	.3	93.0
	240	6	2.0	2.0	95.0
	255	1	.3	.3	95.3
	270	14	4.7	4.7	100.0
	Total	299	99.7	100.0	
Missing	System	1	.3		
Total		300	100.0		

Regarding folic acid, pregnant women should have started using folic acid 3 months prior than pregnancy as quoted in the Act 2526 dated 18th. April, 2005, and in this study it was observed that the average time of using folic acid by mothers has been $\mu = 1.15 +- 1.44$, and that each mother had consumed $\mu = 71.72 +- 42.32$ folic acid pills (table 2). Among mothers being studied, only 2 persons (%1) consumed 2 folic acid pills daily.

The statistical analysis of time period of iron and folic acid complements' consumption by pregnant women in Tabriz showed that %4.3 of pregnant mothers didn't consume iron pills at all, %63.5 consumed for 6 months (according to Act 2526), %23 consumed for more than 6 months and the rest (%9) consumed iron pills less than what was needed (table 3). In our study, each pregnant mother had consumed iron pills for an average amount of $\mu = 5.98 +- 1.63$.

Regarding folic acid, %8.9 (26 cases) of pregnant women didn't consume any pills at all. %59.2 (173 cases) consumed it for 3 months, %5.5 (16 cases) consumed for 6 months and the rest (%23.9) had consumed folic acid for less than 3 months (table 4). Each pregnant mother had consumed folic acid pills for an average amount of $\mu = 2.60 +- 1.34$ months. Among 300 mothers under investigation, only 24 mothers (%8) had started folic acid consumption before pregnancy.

Table 2: Folic acid consumption amount

The number of Folic acid tablets		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	34	11.3	11.4	11.4
	15	3	1.0	1.0	12.4
	20	1	.3	.3	12.7
	30	36	12.0	12.0	24.7
	45	12	4.0	4.0	28.8
	55	1	.3	.3	29.1
	60	37	12.3	12.4	41.5
	70	1	.3	.3	41.8
	75	3	1.0	1.0	42.8
	90	147	49.0	49.2	92.0
	120	3	1.0	1.0	93.0
	135	2	.7	.7	93.6
	150	3	1.0	1.0	94.6
	180	16	5.3	5.4	100.0
	Total	299	99.7	100.0	
Missing	System	1	.3		
Total		300	100.0		

Table 3: Iron consumption time period

Iron intake duration (months)		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	13	4.3	4.3	4.3
	1.00	1	.3	.3	4.7
	2.00	1	.3	.3	5.0
	3.00	2	.7	.7	5.7
	4.00	2	.7	.7	6.4
	5.00	21	7.0	7.0	13.4
	6.00	190	63.3	63.5	76.9
	7.00	43	14.3	14.4	91.3
	8.00	8	2.7	2.7	94.0
	9.00	18	6.0	6.0	100.0
	Total	299	99.7	100.0	
Missing	System	1	.3		
Total		300	100.0		

Table 4: Folic acid consumption time period

Folic acid intake duration (months)		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	26	8.7	8.9	8.9
	1.00	29	9.7	9.9	18.8
	2.00	41	13.7	14.0	32.9
	3.00	173	57.7	59.2	92.1
	4.00	2	.7	.7	92.8
	5.00	4	1.3	1.4	94.2
	6.00	16	5.3	5.5	99.7
	7.00	1	.3	.3	100.0
	Total	292	97.3	100.0	
Missing	System	8	2.7		
Total		300	100.0		

4. Discussions

However the results of this paper shows better condition in supplementary serving, it has main difference in level of mothers Hb, supplementary usage, percentry of seeing public hospitals and seeing public health centers according to others studies researches done in this area.

Corresponding Author:
Dr. Roghayeh Nasiri Saghayesh
Department of Medical, Ahar Branch, Islamic Azad University, Ahar, Iran
E-mail: R.Nasiri60@gmail.com

References

1. Jabbari H., Vahidi R. Final report on the effectiveness of maternal and child health care in the health system in Iran rom 1373 to 1381.
2. Jabbari H., Bakhshian F, and Vahidi R. Health care of children under 5 years in East Azarbaijan and Zanjan provinces of the country's health system in 1374 to 1382 years. Journal of Medical Sciences of Azad University. Volume 7, Number 1, Spring 1386, Pages 17 to 25.
3. Safavi M., SheikholEslam R., Taghavi M, Abdollahi Z. and Mohammadian S. Micronutrient status in Iranian pregnant women. Abstracts of 9th Iranian Nutrition Congress. In 1385. Pp 422.
4. Shin JH, Shiota K. Folic acid supplementation of pregnant mice suppresses heat-induced neural tube defects in the offspring. J Nutr. 1999 Nov;129(11):2070-3.
5. Potzsch S, Hoyer-Schuschke J, Seelig M, Steinbicker V. Knowledge among young people about folic acid and its importance during pregnancy: a survey in the Federal State of Saxony-Anhalt(Germany). J Appl Genet. 2006;72(2):187-90.
6. Knudsen VK, Orozova-Bekkevold I, Rasmussen LB, Mikkelsen TB, Michaelsen KF, Olsen SF. Low compliance with recommendations on folic acid use in relation to pregnancy: is there a need for fortification? Public Health Nutr. 2004 Oct;7(7):843-50.
7. Viteri FE, Berger J. Importance of pre-pregnancy and pregnancy iron status: can long-term weekly preventive iron and folic acid supplementation achieve desirable and safe status? Nutr Rev. 2005 Dec;63(12 Pt 2):S65-76. Review.
8. Cavalli-Sforza T. Effectiveness of weekly iron-folic acid supplementation to prevent and control anemia among women of reproductive age in three Asian countries: development of the master protocol and implementation plan. Nutr Rev. 2005 Dec;63(12 Pt 2): S77-80. Review.
9. Moradi F., Shenavar R. Mohammad S. Iron supplementation in pregnant women in Fars Province. Abstracts of 9th Iranian Nutrition Congress. In 1385. pp 375.
10. Khaladi N., Johari Z., Supplemental nutritional status during pregnancy by referring to health centers in south of Tehran in 1383. Abstracts of 9th Iranian Nutrition Congress. In 1385. pp 440.
11. Zolfaghari F., Seyedi S., Iron deficiency anemia among high school girls in the city of Kashmar, in the year 1381-1382.
12. Moradi F, Masoumi SJ, Shenarar B. Folic acid consumption in Fars province, southern Iran.J.Res Health Sci. 2005;5(2):11-14.
13. Initial reports of IMCH in country. Department of Tabriz University of Medical Sciences.
14. Department of Health and Medical Education. National report of the master plan study of food consumption patterns and nutritional status of household. 1379-81.
15. Scientific committee to help iron - Office of Health Department of Community Nutrition. Program at risk for iron deficiency anemia, iron-help groups. 1382.
16. Dastgiri S, et al. Congenital anomalies in Iran: a cross-Sectional study. Child Health and Development. In Press.

1/26/2012