



KNOWLEDGE PACKAGE ON COMPLIANCE OF FOLIC ACID SUPPLEMENTS

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ABSTRACT

The background of the study is to give IEC package on importance of folic acid supplements on young and unmarried women so that they will have the basic knowledge on the prevention of neural tube defect. The **aim** of the study is to create an awareness about the importance of folic acid supplements during the first trimester of pregnancy in preventing neural tube defect in time. **Methodology:** A quasi experimental one group pre test and post test **design** were adopted. 80 **samples** were selected by using **Simple random sampling technique**. **Tool** used was a self administered structure knowledge questionnaire. **Analysis** was done by using descriptive and inferential statistics. **Results** revealed that the pre test mean knowledge score was 17.15 and post test mean knowledge score was found to be 30.03. The comparison was analyzed by using paired 't' test and the value was 23.32*. It was found to be statistically significant at 0.05 level of degree of freedom. The association revealed that there is a significant association between the knowledge level of degree students with the source of information and group of study at 0.05 level of degree of freedom and no association could be established with other demographic variables. **Conclusion:** Hence the study concluded that the knowledge of degree students regarding importance of folic acid supplements during the first trimester of pregnancy in prevention of neural tube defect was inadequate and was increased after the information, education and communication package, which indicates the program was statistically significant. **Key word:** Folic acid supplements.

INTRODUCTION

“You and Your partner have decided to take the plunge into parenthood. But wait just one second or month a two at least regive yourself the best chance for a healthy pregnancy and healthier baby”. There are a few important things we need to do before we head down the road to conception which will lead to a healthy pregnancy and a healthy baby. It will also help us get our life and body into baby making shape.¹ Even if we do manage to eat a balanced diet it can be difficult to get all the nutrients we need from food alone and there is one in particular we don't want to skimp on at this point. One such is the intake of folic acid during reproductive period.¹

Folic acid is the chemical form of folate. Dietary allowance for a woman of reproductive period is: Non pregnancy 200microgram, Pregnancy 400 microgram, Lactation 400 microgram.⁴ Folic acids are essential in the synthesis of DNA required for all rapidly growing cells in fetal and placental tissues. Since the cells are multiplying considerably during pregnancy, the need for folic acid arises in pregnant women.⁵ The sources of folic acids are green leafy vegetables, Brussels sprouts, broccoli and spinach but is destroyed easily by prolonged boiling or steaming .Other sources include peanuts, chick peas, bananas, citrus fruits, avocado pears, asparagus and mushrooms .⁶

Most congenital anomalies of the central nervous system result from the defects in the neural tube during fetal development. Neural tube defects can occur in any location on the cranium or spinal column. The most severe defects include rachischisis and anencephaly and less severe defects are spina bifida and encephalocele.⁷ Although the cause of neural tube defect is unknown there is a growing evidence that maternal folic acids deficit has a direct bearing on failure of neural tube to close. Therefore in 1993 the American Academy of Pediatrics issued recommendations that folic acid should be administered to women of child bearing age.⁵

THE PROBLEM

“A study to assess the effectiveness of IEC package on knowledge regarding the importance of folic acid supplements during the first trimester of pregnancy in prevention of neural tube defect among degree students in selected arts colleges at Bangalore.”.

OBJECTIVES

1. To assess the pretest knowledge on the importance of consuming folic acid supplements during the first trimester of pregnancy in prevention of neural tube defect among the degree students.
2. To assess the post test knowledge on the importance of consuming folic acid supplements during the first trimester of pregnancy in prevention of neural tube defect among the degree students.
3. To evaluate the effectiveness by comparing between pre and post test knowledge scores on the importance of consuming folic acid supplements during the first trimester of pregnancy in prevention of neural tube defect among the degree students.
4. To associate the pre test knowledge score with demographic variables of the degree students.

MATERIALS AND METHODS

A quasi experimental one group pretest post test research design was used in this study to determine the knowledge of the students regarding folic acid supplements during first trimester of pregnancy. The study was conducted in S.J.R. and Maharani Lakshmi Ammani College Degree Colleges, Bangalore (India). Using random sampling technique, 80 students meeting the criteria and willing to participate in the study were selected. Self Structured Questionnaire regarding importance of folic acid supplements during first trimester of pregnancy was used to assess the knowledge of students. Permission was obtained from the respective College Authority and study was conducted from 15/11/2010 to 15/12/2010. The data were analysed by using descriptive and inferential statistics.

MAJOR FINDINGS AND DISCUSSION

Table 1 depicts the frequency and percentage distribution of demographic variables

N=80

Sl No.	Demographic Variables	Category	Frequency(f)	Percent(%)
1.	Age Group (years)	20-21	28	35.0
		22-23	42	52.5
		24-25	10	12.5
2.	Religion	Hindu	48	60.0
		Muslim	17	21.2
		Christian	15	18.8
3.	Type of Family	Nuclear	54	67.5
		Joint	26	32.5
4.	Area of Residence	Urban	53	66.3
		Semi urban	17	21.2
		Rural	10	12.5
5.	Source of Information	Print media	9	11.2
		Electronic media	14	17.5
		Health Professional	42	52.5
		Family members/Relatives	15	18.8
6.	Hear Previously about Importance of Folic acid	Yes	0	0.0
		No	80	100.0
7.	Education of Father	Illiterate	4	5.0
		Primary	13	16.2
		Middle high school	25	31.3
		PUC	20	25.0
		Graduate	18	22.5
8.	Education of Mother	Illiterate	9	11.2
		Primary	24	30.0
		Middle high school	18	22.5
		PUC	18	22.5
		Graduate	11	13.8
9.	Occupation of Father	Government	13	16.2
		Private	18	22.5
		Self employed	16	20.0
		Agriculture	33	41.3
10.	Occupation of Mother	Government	8	10.0
		Private	3	3.8
		Self employed	9	11.2
		Agriculture	4	5.0
		House wife	56	70.0
11.	Monthly Family Income	< Rs.5,000	26	32.5
		Rs.5,000-10,000	33	41.3
		>Rs.10,000	21	26.2
12.	Family History of Neural tube defect	Yes	0	0.0

		No	80	100.0
13.	Dietary Pattern	Vegetarian	20	25.0
		Non vegetarian	60	75.0
	Total		80	100.0

The table depicts that the frequency and percentage distribution of age, religion, type of family, area of residence, source of information, hear previously about importance of folic acid, education of the father, education of the mother, occupation of the father, occupation of the mother, family income, family history of neural tube defect and the dietary pattern.

Table – 2 shows overall pretest knowledge levels among the degree students on Importance of Folic acid supplements during the first trimester of Pregnancy

N= 80

Sl No.	Knowledge Levels	Range of score	Degree students	
			f	%
1.	Inadequate	≤ 50 % Score	52	65.0
2.	Moderate	51-75 % Score	28	35.0
3.	Adequate	> 75 % Score	0	0.0
	Total		80	100.0

The table depicts that the overall knowledge levels of the degree students on importance of folic acid supplements during pregnancy 52 (65%) have inadequate knowledge, 28 (35%) have moderate knowledge and no one have adequate knowledge.

Table -3 shows aspect wise pretest mean knowledge score among degree students on Importance of Folic acid supplements during the first trimester of Pregnancy

N =80

No.	Aspect wise	No. of items	Mean \bar{X}	SD(σ)	Mean(%)
I	General Information on Pregnancy & its Pre requisites	14	5.48	2.1	39.1
II	Information on Folic acid	8	3.20	1.7	40.0
III	Importance of Folic acid for Pregnant mothers & Fetus	16	8.47	2.5	52.9
	Combined	38	17.15	5.2	45.1

This table depicts that the maximum score for knowledge was 38 and .The total mean of was 17.15 with standard deviation of 5.2, mean score percentage of 45.1% and standard deviation of 13.6%. The table depicts that the pre test mean knowledge was found to be higher on knowledge regarding importance of folic acid for pregnant mother and fetus (52.9%), knowledge regarding information of folic acid is (40%) and followed by general information on pregnancy and its pre requisites with (39.1%).

Table – 4 depicts overall post test knowledge levels among degree students on Importance of Folic acid supplements during the first trimester of Pregnancy

Sl No	Knowledge Level	Range of score	Frequency(f)	Percent(%)
1.	Inadequate	≤ 50 % Score	0	0.0
2.	Moderate	51-75 % Score	31	38.7
3.	Adequate	> 75 % Score	49	61.3
	Total		80	100.0

The table depicts that the overall knowledge score of respondent on importance of folic acid supplements during pregnancy 49 (61.3%) have adequate knowledge, 31 (38.7%) have moderate knowledge and no one have inadequate knowledge.

Table -5 shows aspect wise post test mean knowledge score among degree students on Importance of Folic acid supplements during the first trimester of Pregnancy

N=80

No.	Aspect wise knowledge	No. of items	Mean \bar{X}	SD(σ)	Mean(%)
I	General Information on Pregnancy & its Pre requisites	14	10.72	2.4	76.6
II	Information on Folic acid	8	6.12	1.5	36.5
III	Importance of Folic acid for Pregnant mothers & Fetus	16	13.19	1.7	82.4
	Combined	38	30.03	4.5	79.0

This table depicts that the total mean of 30.03% with standard deviation of 4.5 and mean score percentage of 79% . The table depicts that the post test mean knowledge was found to be higher on knowledge regarding importance of folic acid for pregnant mother and fetus (82.4%), general information on pregnancy and its pre requisites with (76.6%) and followed by knowledge regarding information of folic acid is (36.5%).

Table – 6 depicts comparison between overall pre and post test mean knowledge score on importance of folic acid supplements during the first trimester of pregnancy among the degree students.

N =80

Aspects	Max score	Knowledge of the degree students				Paired 't' test
		Mean \bar{X}	SD(σ)	Mean (%)	SD (%)	
Pre test	38	17.15	5.2	45.1	13.6	23.32*
Post test	38	30.03	4.5	79.0	11.9	
Enhancement	38	12.88	4.9	33.9	13.0	

* Significant at 5% level, $t(0.05, 79 \text{ df}) = 1.96$

This table depicts that the maximum score for knowledge was 38. In the pre test, the total mean is 17.15 with standard deviation of 5.2; mean score percentage of 45.1% and standard deviation of 13.6%. In the post test the total mean is 30.03 with standard deviation of 4.5, mean score percentage of 79.0% and standard deviation of 11.9%. The paired 't' test was 23.32*

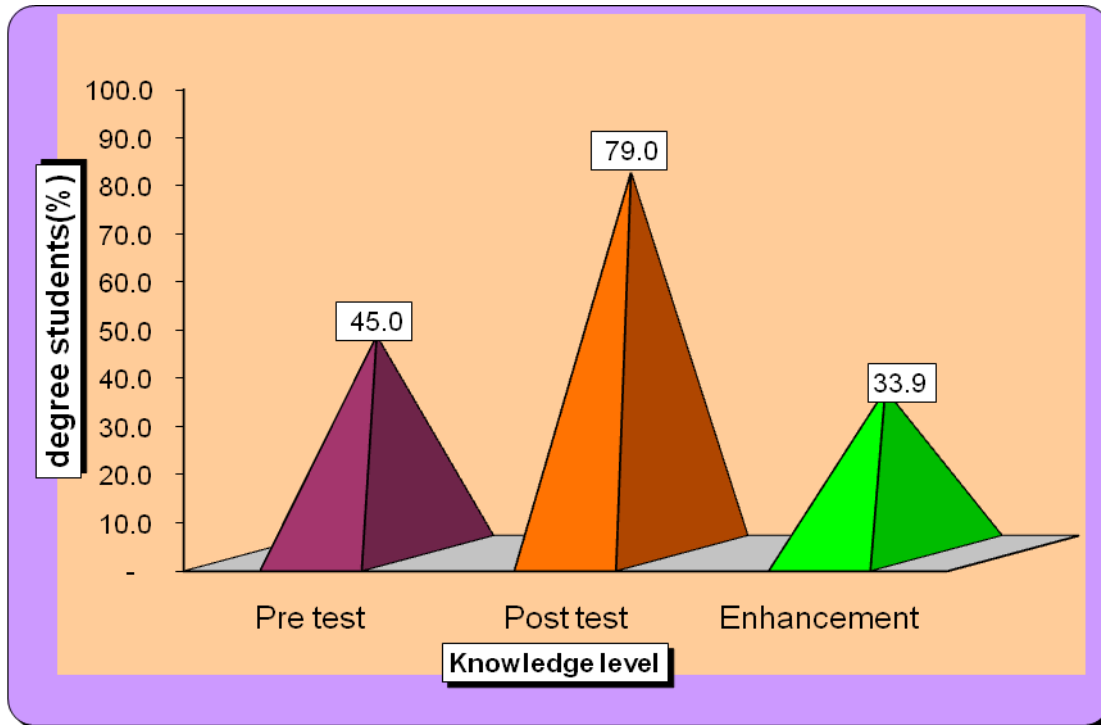


Figure3: Overall Pre and Post test knowledge levels on Importance of Folic acid supplements during Pregnancy

Table – 7 depicts aspect wise mean pre and post test knowledge score of degree students on Importance of Folic acid supplements during the first trimester of pregnancy.

N = 80

No.	Aspect wise	Knowledge level of the participants (%)						Paired 't' Test
		Pre test		Post test		Enhancement		
		Mean \bar{X}	SD(σ)	Mean	SD(σ)	Mean	SD(σ)	
I	General Information on Pregnancy & its Pre requisites	39.1	15.0	76.6	17.1	37.4	18.6	17.98*
II	Information on Folic acid	40.0	20.7	36.5	18.6	36.5	18.6	17.55*
III	Importance of Folic acid for Pregnant mothers & Fetus	52.9	15.7	82.4	10.9	29.5	15.9	16.59*
	Over all knowledge	45.1	13.6	79.0	11.9	33.9	13.0	23.32*

* Significant at 5%level, $t(0.05,79df) = 1.96$

This table depicts that in the pre test, the total mean is 45.1 with standard deviation of 13.6 and in the post test, the total mean is 79.0 with standard deviation of 11.9. The enhanced mean is 33.9 and standard deviation is 13.

The paired 't' test was 23.32*

Table 8 depicts association of pretest knowledge level with selected socio demographic variables of the degree students on Importance of Folic acid supplements during the first trimester of Pregnancy

N=80

Socio demographic Variables	Category	n	Level of Knowledge				χ^2 value	χ^2 table Value
			Inadequate		Moderate			
			(f)	%	(f)	%		
Age Group (years)	20-21	28	16	57.1	12	42.9	1.63 NS	5.991 (2)
	22-23	42	30	71.4	12	28.6		
	24-25	10	6	60.0	4	40.0		
Religion	Hindu	48	27	56.2	21	43.8	6.91*	5.991 (2)
	Muslim	17	11	64.7	6	35.3		
	Christian	15	14	93.3	6	6.7		
Type of Family	Nuclear	54	35	64.8	19	35.2	0.01 NS	(3.841) (1)
	Joint	26	17	65.4	9	34.6		
Area of Residence	Urban	53	29	54.7	24	45.3	7.49*	5.991 (2)
	Semi urban	17	15	88.2	2	11.8		
	Rural	10	8	80.0	2	20.0		
Source of Information	Print media	9	5	55.6	4	44.4	13.70*	7.815 (3)
	Electronic media	14	6	42.9	8	57.1		
	Health Professional	42	35	83.3	7	16.7		
	Family members	15	6	40.0	9	60.0		
Education of Father	Illiterate	4	3	75.0	1	25.0	1.38 NS	9.125 (4)
	Primary	13	10	76.9	3	23.1		
	Middle high school	25	15	60.0	10	40.0		
	PUC	20	13	65.0	7	35.0		
	Graduate	18	11	61.1	7	38.9		
Education of Mother	Illiterate	9	6	66.7	3	33.3	2.08 NS	9.125 (4)
	Primary	24	15	62.5	9	37.5		
	Middle high school	18	14	77.8	4	22.2		
	PUC	18	10	55.6	8	44.4		
	Graduate	11	7	63.6	4	36.4		
Occupation of Father	Government	13	6	46.1	7	53.9	2.96 NS	7.815 (3)
	Private	18	12	66.7	6	33.3		
	Self employed	16	10	62.5	6	37.5		
	Agriculture	33	24	72.7	9	27.3		
Occupation of Mother	Government	8	6	75.0	2	25.0	3.83NS	9.125 (4)
	Private	3	3	100	0	0.0		
	Self employed	9	4	44.4	5	55.6		
	Agriculture	4	3	75.0	1	25.0		

	House wife	56	36	64.3	20	35.7		
Monthly Family Income	< Rs.5,000	26	21	80.8	5	19.2	7.41*	5.991 (2)
	Rs.5,000-10,000	33	22	66.7	11	33.3		
	>Rs.10,000	21	9	42.9	12	57.1		
Dietary Pattern	Vegetarian	20	9	45.0	11	55.0	4.69*	3.841 (1)
	Non vegetarian	60	43	71.7	17	28.3		
Overall		80	52	65.0	28	35.0		

* Significant at 5% Level,

NS: Non-significant

Major Findings:

Chi-square test was done to find the association between the knowledge of the degree students with selected socio demographic variables. From the table, it was found that there was an association between the religion ($\chi^2 = 6.91^*$), area of residence ($\chi^2 = 7.49^*$), source of information ($\chi^2 = 13.70^*$), monthly family income ($\chi^2 = 7.41^*$) and dietary pattern ($\chi^2 = 4.69^*$) in the pre test knowledge.

The knowledge of the degree students regarding importance of folic acid supplements in prevention of neural tube defect was inadequate before the administration of IEC package as out of 80 students, 52(65%) had inadequate knowledge, 28(35%) had moderate knowledge and no one had adequate knowledge. But after the IEC package out of 80 degree students 49(61.3%) were having adequate knowledge and 31(38.7%) were having moderately adequate knowledge. The statistical evidence with significant difference between pre test and post test level score with 't' test value 23.32 at 0.05 level of significance shows that the IEC package was effective in all knowledge aspects of the degree regarding the importance of folic acid supplements. Hence **RH₁** - "There is a significant difference between pre and post test knowledge of the degree students regarding the importance of consuming folic acid supplements during the first trimester of pregnancy in prevention of neural tube defect" was accepted.

Also there was a significant association of pre test knowledge with selected demographic variables such as religion ($\chi^2 = 6.91^*$), area of residence ($\chi^2 = 7.49^*$), source of information ($\chi^2 = 13.70^*$), monthly family income ($\chi^2 = 7.41^*$) and dietary pattern ($\chi^2 = 4.69^*$). The remaining variables such as age, type of family, education of father, education of mother, occupation of father, occupation of mother were found to be not significant. This statistical evidence shows that **“RH₂- There is a significant association in pre test knowledge level of the degree students with their selected demographic variables” is accepted.**

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