

FOLATE STATUS OF FILIPINO WOMEN OF CHILDBEARING AGE: PHILIPPINES 2008

Josefina A. Desnacido, Leah A. Perlas, Revelita L. Cheong,
Juanita M. Marcos, and Joselita Rosario C. Ulanday,

ABSTRACT

Background: Folic acid (FA) is a B-vitamin necessary for proper cell growth and development of the embryo to ward off major birth defects of the brain and spine, known as neural tube defects (NTD's) FA is required for the production of DNA, which is necessary for the rapid cell growth needed in the development of fetal tissues and organs in early pregnancy. The protective role of folic acid taken during the preconception period in reducing the occurrence of NTD's has been well documented by epidemiological evidence randomized controlled trials and intervention studies. The Philippine Health Statistics (PHS) listed congenital anomalies as the 5th leading cause of infant mortality which included NTD's, spina bifida, and hydrocephalus among others. To date, data on folate status among women of childbearing age is still very limited. **Objective:** To assess the folate status among Filipino women of childbearing age **Methods:** A cross-sectional sample of 2119 Filipino women of reproductive age ranging from 15 to 45 years old coming from the 50% of the sampled household of the Biochemical component of the 2008, 7th National Nutrition Survey (NNS) conducted by the Food and Nutrition Research Institute of the Department of Science and Technology (FNRI-DOST) were included in the study. Serum and red cell folate were analyzed using radioimmunoassay (RIA) **Results:** The age of the participants ranged from 15-45 yrs old with a median age of 28.7 yrs. Result showed that based on red cell folate (<175 ng/ml), about 20.9% of participating women were folate deficient while based on serum folate (<3.0 ng/ml), which is a measure of early stage of folate deficiency, the prevalence was 38.7%. Prevalence of serum and red cell folate deficiency were higher among smokers and alcohol drinkers. **Conclusions and recommendations:** The high percentages of subnormal values of serum and red cell folate indicate alarmingly high prevalence of folate deficiencies among Filipino women of childbearing age. Considering the importance of folate in health maintenance it is necessary to emphasize the importance of adequate folic acid intake prior to pregnancy to reduce morbidity and mortality due to NTD's. It is also recommended that women who are planning a pregnancy should be advised to eat a healthy, folate-rich diet and take 400 mcg of folic acid daily at least one month prior to conception. The findings strongly suggest the need for awareness and campaign for all women of childbearing age on the importance of taking folic acid every day.



INTRODUCTION

Folic acid is a B-vitamin necessary for proper cell growth and development of the embryo to ward off major birth defects of the brain and spine, known as neural tube defects (NTD) and is required for the production of DNA, which is necessary for the rapid cell growth needed in the development of fetal tissues and organs early in pregnancy. Adults and children need folic acid to produce healthy red blood cells and to prevent anemia. A deficiency of this nutrient cause macrocytic, hyperchromic anemia, a red-blood-cell condition that causes weakness, fatigue, loss of appetite and confusion. The protective role of folic acid taken during the preconception period in reducing the occurrence of neural tube defects (NTD) has been well documented by epidemiological evidence randomized controlled trials and intervention studies. Congenital anomalies are defined as malformations which are present at birth due to factors which have affected the fetus development. The Philippine Health Statistics (PHS) listed congenital anomalies as the 5th leading cause of infant mortality and it included neural tube defects, spina bifida, and hydrocephalus among others (DOH, 2006). To date, folate status data on women of childbearing age among Filipinos is still very limited. This will serve as baseline data on folate status of Filipino women of childbearing age which will be relevant input for program planners/policy makers in designing/formulating effective intervention strategies to improve the folate nutriture of Filipino women of childbearing age. Hopefully, the results of the study would create awareness and interest not of all women of childbearing age on the importance of adequate folic acid intake prior to pregnancy to reduce infant morbidity and mortality due to neural tube defects.

OBJECTIVES

- To assess the folate status among Filipino women of childbearing age

METHODS

SAMPLING DESIGN

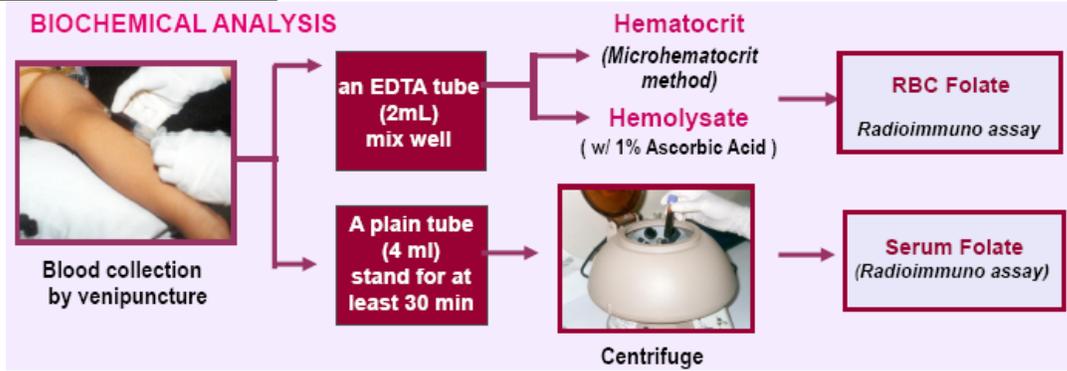
- Cross sectional
- Stratified multistage sampling:
- A 6500 households in 869 EAs for national estimate

PARTICIPANTS

- 2119 women of childbearing age, 13-45 years old
 - 13-19 (537)
 - 20-29 (585)
 - 30-39 (615)
 - 40-45 (382)



BIOCHEMICAL ANALYSIS



ASSESSMENT CRITERIA

Suggested cut-off for folate

Parameter	Cut-off	Reference
Folate		
RBC	175 ng/mL	DPC, 2003
Serum	3.0 ng/mL	

STATISTICAL ANALYSIS

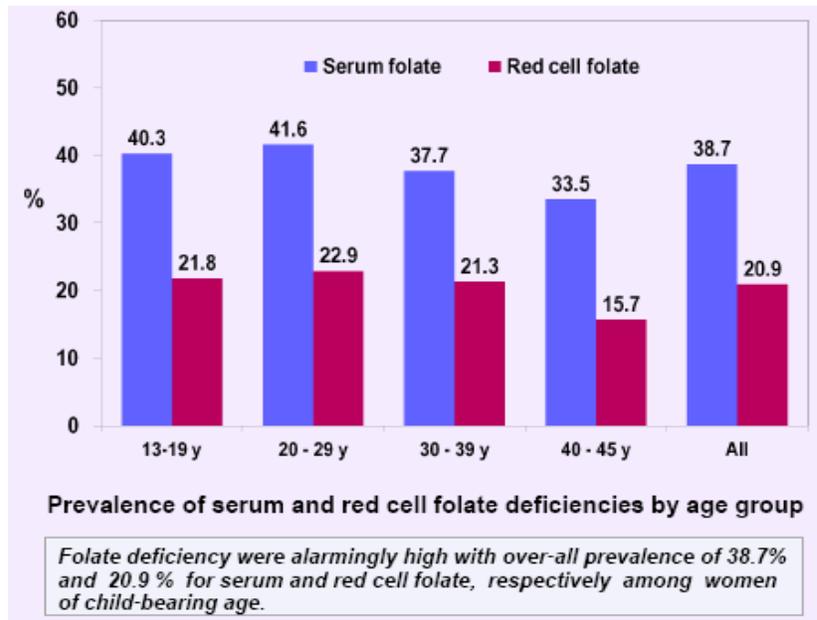
- Means and standard error (SE) of the mean
- Proportion and 95% confidence interval (CI)
- Coefficient of variation (CV)

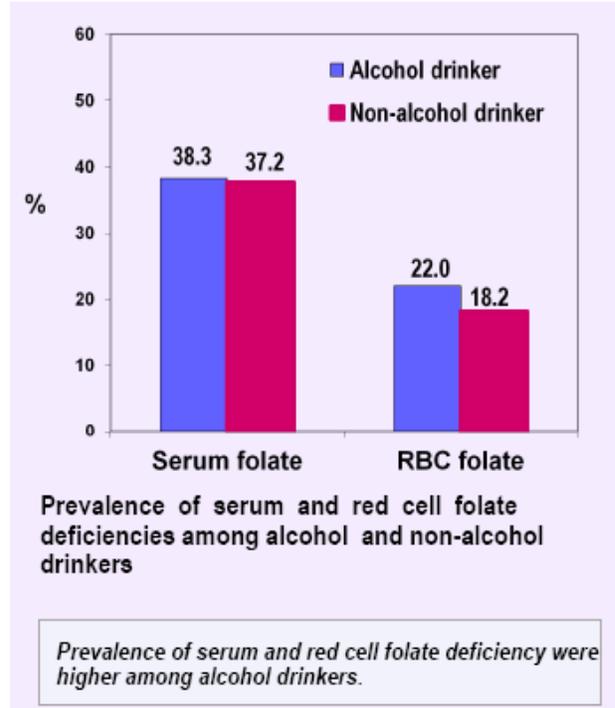
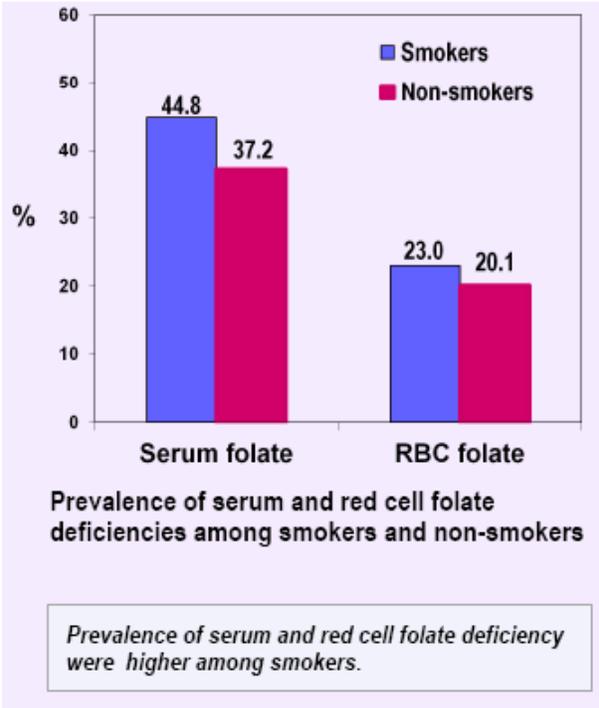
RESULTS

Profile of women of childbearing age, 7th NNS

Characteristics	
Weight (kg)	Mean ± SE 51.4 ± 0.59
Height (cm)	151.9 ± 0.30
BMI (kg/m ²)	21.9 ± 0.25
BMI Category:	n (%)
Underweight	356 (17.4)
Normal	1279 (60.3)
Overweight	363 (17.5)
Obese	100 (4.7)
Anemic (%)	411 (19.9)
Supplement users	322 (16.1)

This table shows the anthropometric profile of Filipino women of child-bearing age. Prevalence of anemia was 19.9%, while the proportion taking supplements was 16.1%.





CONCLUSIONS

- Prevalence of folate deficiency was 38.7% based on serum folate and 20.9% based red cell folate
- Folate status of women of childbearing age was generally public health concern.
- Serum and RBC folate deficiency are higher among smokers and alcohol drinkers.

RECOMMENDATIONS

- Assessment of folate status in the conduct of National Nutrition Surveys should be continued.
- Conducts awareness and outreach campaign to educate all women of childbearing age on the importance of adequate folic acid intake p prior to pregnancy to reduce morbidity and mortality due to neural tube defects.

