Folic acid awareness among female college students. *Neural tube defect prevention*

To the Editor

I read with interest the article by Kari JA et al [1] on folic acid awareness among female college students: neural tube defects prevention. Neural tube defects (NTDs) are one of the most common and devastating congenital malformations of human structure that are associated with serious morbidity and mortality. They can be effectively prevented as proved nowadays by maternal periconceptional folic acid supplementation.[2-7] Despite the decline in NTDs incidence in the last decade from 1.9/1000 live births (1997-2000) to 0.76/1000 live births (2001-2005) after initiation of flour fortification with folic acid in Saudi Arabia,[8] recent studies still show breeding cases of NTDs. The NTDs were detected in 19% of patients younger than 15 years of age with congenital central nervous system (CNS) malformation studied by MRI.[9] In a more recent study, lethal congenital CNS malformations including NTDs were detected in 17.4% of perinatal deaths.[10] The Kari JA, et al study clearly highlighted the effectiveness of educational programs in increasing awareness of women particularly those within child bearing age on the importance of periconceptional folic acid supplementation in the prevention of NTDs. However, this would be most effective if it is incorporated within the context of a national campaign aimed at providing various educational, statistical, preventive, diagnostic, and therapeutic measures. This requires collaborative efforts tailored by related personnel to successfully combat NTDs.

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Reply from the Author

We agree with the comments of Prof. Al-Mendalawi. A national, public health campaign promoting the use of folic acid in women of child bearing age would be most effective in preventing neural tube defects (NTDs). It is carried out in many countries with a good success rate.[11-13] The Dutch Ministry of Health aimed to obtain 70% of Dutch women wanting to become pregnant to use folic acid supplements within 10 years of folic acid campaign in the advised period by 2010.[11] They almost achieved their target among the more highly educated women (63%). However, they reported the need for more effort, money, and creativity to achieve the necessary increase from the current level of 31% among women with a lower educational background. Similarly, in China after a national campaign on the importance of folic acid, there was a reduction in NTDs of 85% in the northern region, and 40% in the southern region. There was also a reduction in non-syndromic orofacial clefts. In the United States of America, national campaigns resulted in creative new approaches to increase multivitamin consumption among women of childbearing age.[13] No similar experiences from Arab countries were reported. However, there are many activities to promote the use of folic acid by married young ladies who are not using contraceptive bills. Gulf Kids is a charity organization, founded by Dr. Abdulla Soby. It supplies books, leaflets, and websites (www.gulfkids.com/) on NTDs. Nevertheless, they are not as effective as national campaigns promoting the use of folic acid, which we need to organize on a regular basis.

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References

1. Kari JA, Bardisi ES, Baitalmal RM, Ageely GA. Folic acid awareness among female college students: neural tube defects prevention. ***Saudi Med J*** 2008; 29: 1749-1751.
2. Kondo A, Shimosuga Y, Oguchi H, Shibata K, Kurauchi O, Ichiko S, et al. Folic acid reduces the risk of neural tube defects: awareness and folate intake among pregnant women in 2006. ***Hinyokika Kiyo*** 2008; 54: 537-542.
3. Chan AC, van Essen P, Scott H, Haan EA, Sage L, Scott J, et al. Folate awareness and the prevalence of neural tube defects in South Australia. ***Med J Aust*** 2008; 189: 566-569.
4. Oakley GP Jr. Elimination of folic acid-preventable neural tube defects. ***Am J Prev Med*** 2008; 35: 606-607.
5. Mosley BS, Cleves MA, Siega-Riz AM, Shaw GM, Canfield MA, Waller DK, et al. Neural tube defects and maternal folate intake among pregnancies conceived after folic acid fortification in the United States. ***Am J Epidemiol*** 2009; 169: 9-17.
6. Kondo A, Kamihira O, Ozawa H Kondo A, Kamihira O, Ozawa H. Neural tube defects: prevalence, etiology and prevention. ***Int J Urol*** 2009; 16: 49-57.
7. Bell KN, Oakley GP Jr. Update on prevention of folic acid-preventable spina bifida and anencephaly. ***Birth Defects Res A Clin Mol Teratol*** 2009; 85: 102-107.
8. Safdar OY, Al-Dabbagh AA, Abuelieneen WA, Kari JA. Decline in the incidence of neural tube defects after the national fortification of flour (1997-2005). ***Saudi Med J*** 2007; 28: 1227-1229.
9. Alorainy IA. Pattern of congenital brain malformations at a referral hospital in Saudi Arabia: an MRI study. ***Ann Saudi Med*** 2006; 26: 28-37.

10. Majeed-Saidan MA, Kashlan FT, Al-Zahrani AA, Ezzedeen FY, Ammari AN. Pattern of neonatal and postneonatal deaths over a decade (1995-2004) at a Military Hospital in Saudi Arabia. ***Saudi Med J*** 2008; 29: 879-883.
11. de Walle HE, de Jong-van den Berg LT. Ten years after the Dutch public health campaign on folic acid: the continuing challenge. ***Eur J Clin Pharmacol*** 2008; 64: 539-543.
12. Zhu L, Ling H. National Neural Tube Defects Prevention Program in China. ***Food Nutr Bull*** 2008; 29: 196-204.
13. Lindsey LL, Hamner HC, Prue CE, Flores AL, Valencia D, Correa-Sierra E, et al. Understanding optimal nutrition among women of childbearing age in the United States and Puerto Rico: employing formative research to lay the foundation for national birth defects prevention campaigns. ***J Health Commun*** 2007; 12: 733-757.

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Baran OP, Kervancioglu P, Akkus M, Nergiz Y. Ultrastructural investigation of the protective role of folic acid and vitamin E against toxic effects of valproic acid on maternal liver tissue during period of gestation. ***Saudi Med J*** 2006; 27: 407-409.

Masri AT. Role of maternal factors in the etiology of neural tube defects in Jordan. ***Saudi Med J*** 2005; 26: 2000-2001.