Introduction of Fortified Rice into the Canteen for Cambodian Female Worker

Biography

Dr. Yukiko Nakanishi is Consultant of ILSI Japan Center for Health Promotion who helps international projects to improve the workplace nutrition in South East Asian countries. Before working as a consultant of ILSI Japan CHP, Dr. Nakanishi worked as a Professor of Nutrition at University of Human Arts and Sciences, Koshien University, and Showa Women’s University. Since 1998, she has closely collaborated with National Institute of Nutrition, Vietnam, to develop and implement iron-fortified fish sauce and micronutrient-fortified rice. At present, she has been coping with the multi-micronutrient fortified rice through workplaces in Cambodia with collaboration with RACHA (Reproductive and child health alliance) Cambodia.

Abstract

Although the prevalence of anemia was as high as 43.6% (Cambodia health Survey 2014), the contribution rate due to dietary iron deficiency was low, suggesting the contribution of folic acid deficiency and zinc deficiency. The folic acid deficiency (<10 nmol / L) was 17.8%, and the zinc deficiency was 26.3% in the case of <7.65 µmol / L. Whitfield et.al, reported that women with thiamine deficiency (TDP ≤ 90 nmol / L) were 39% in urban areas and 59% in rural areas. In this study, we evaluated the effect of improving nutrition by introducing multi-micronutrients-fortified rice (MMFR) in the cafeteria, for female employees of reproductive age who work at factories, in Cambodia. Fortification levels were set based on WHO-WFP-DSM recommendation as followings. Micronutrient fortification levels were 0.169 mg/100g of folic acid, 6.0 mg/100g of Zinc, and 0.65 mg/100g of VB1 when the premix is mixed with the ordinary rice as 1:200. Study subjects were recruited from reproductive-aged women working for Japanese-Cambodian electronic parts factory. One hundred and eighty female workers were randomly selected and divided into two groups as a control group with 90 subjects and a fortified group with 90 subjects. The double-blinded intervention study was conducted for 12 weeks from November 2018 to February 2019. Questionnaire for Subjective health and health complaints, and blood analysis were examined. By introducing fortified rice into the canteen, serum folate concentration increased in proportion to the frequency of intake of fortified rice in the intervention group and significantly improved. In addition, the loss due to the decline in absolute presenteeism was improved. Conclusion: The possibilities of reducing the risk of neural tube closure failure in neonates and the loss of productivity due to the decline in presenteeism were shown.