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Original Research

Folate supplementation to prevent birth abnormalities: evaluating a community-based participatory action plan for refugees and migrant workers on the Thailand-Myanmar border



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ABSTRACT

Objectives: Preconception folic acid (PFA) taken at least 3 months before conception can decrease the incidence of neural tube defects (NTDs) by approximately 46%. NTDs contribute significantly to neonatal morbidity and mortality in migrant and refugee populations on the Thailand-Myanmar border (incidence 1.57/1000 live births). This audit aimed to assess uptake of PFA among migrant and refugee women, evaluate knowledge about PFA among local healthcare workers and implement a participatory community intervention to increase PFA uptake and decrease NTD incidence in this population.

Study design: A mixed-methods baseline evaluation was followed by an intervention involving health worker education and a community outreach program. A follow-up audit was performed 18 months post-intervention.

Methods: Data were gathered via surveys, short interviews and focus group discussions. The intervention program included community-based workshops, production and distribution of printed flyers and posters, and outreach to various local organisations.

Results: Uptake of PFA was <2% both before and after the intervention. Despite a substantial increase in local healthcare worker knowledge of PFA, no significant improvement in PFA uptake after the intervention was detected. Most pregnancies in this local community sample were reported to be unplanned.

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Conclusions: High rates of NTDs with low PFA uptake remains a major public health challenge in this transient population. Results indicate that improved health worker knowledge alone is not sufficient to enhance PFA uptake in this population. Integration of PFA education within expanded family planning programs and broad-based food fortification may be more effective.

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Introduction

Preconception folic acid (PFA) taken at least 3 months before conception can prevent a significant proportion of congenital birth abnormalities caused by neural tube defects (NTDs)¹ and cleft palate.² PFA is safe and is recommended for all women of child-bearing age,³ either through fortification of food supply or supplements.

NTDs encompass a range of congenital abnormalities, from severe fatal defects to mild defects that nonetheless carry risk for severe disability.⁴ In low- and middle-income countries (LMICs), where surgical and rehabilitation services are often not available and educational and employment opportunities for those with disabilities are limited, even mild NTDs may have a profound impact on individuals, families and communities.⁵

High-income countries have seen an increase in PFA uptake as a result of awareness campaigns, with increases from baseline 2.4%–25.1% to post-campaign levels of 8.3%–53.5% in Norway, the Netherlands, the UK, Israel and Australia.⁶ Although awareness of PFA improved significantly, less than half of eligible women in most countries took PFA, and about half of those who did take it reported taking it incorrectly. Low rates of pregnancy planning have hampered the effectiveness of public awareness campaigns.⁷ To overcome these challenges, many countries have introduced population-based food fortification,⁸ which has been associated with a 46% decrease in NTDs.⁴

In LMICs, progress has been further impeded by poor health literacy and lack of resources.^{4,9} One exception has been China, a country with anomalously high rates of pregnancy planning, where recommendations for PFA supplementation have shown marked population-level decreases in NTDs.¹⁰ However, even within the successful Chinese framework, being a migrant or moving between provinces was associated with poor PFA uptake.¹¹

The need for PFA is particularly acute among refugee and migrant communities along the Thailand-Myanmar border. Health services for these communities are limited, as migrant and refugee populations lack access to either Thailand or Myanmar health systems. Health education campaigns targeting PFA are uncommon, and there is little food fortification other than targeted distribution of fortified rice flour in the refugee camps.¹²

Knowledge and uptake of PFA remains very low among Thai women of reproductive age,¹³ for whom deficiency has

been demonstrated in both dietary intake and serum folate levels.¹⁴ Although refugee and migrant populations on the Thailand-Myanmar Border have NTD incidence of 1.57/1000 births, more than twice the rate in other areas in Thailand,^{15,16} published reports of NTD prevalence or folic acid uptake in this region are lacking.

This study comprised a mixed-methods approach to develop and evaluate the impact of a community-based participatory action plan to enhance PFA uptake in these marginalised communities.

Methods

Setting

The Thailand-Myanmar border region is home to a culturally and economically diverse population including Thai, Karen, and Burmese. A large proportion of people who live and work along both sides of the border are migrants.

The Shoklo Malaria Research Unit (SMRU) has provided antenatal care and delivery services to the refugee population on the Thailand-Myanmar border since the mid-1980s and to the migrant population since 1998. At the start of the study, SMRU operated three clinics with a focus on maternal and child health: at Maela, WangPha and MawkerThai. Maela is the largest refugee camp in Thailand with an estimated population of 45,000 people who have fled an uncertain political and security situation in Myanmar. Antenatal care in Maela was transferred from SMRU to other humanitarian organisations (first the American Refugee Committee and then the International Rescue Committee) between the baseline and follow-up audits. WangPha and MawkerThai clinics serve migrant communities living along the Thailand-Myanmar border who face legal, financial and linguistic barriers to accessing health services in Thailand. Health facilities in Myanmar are prohibitive in cost and have variable standards of care, though positive changes are occurring.¹⁷ Maternal and child healthcare services provided at SMRU's clinics focus on free provision of early antenatal care, skilled attendance at birth, neonatal care and follow-up in infancy.¹⁸

Study design, participant recruitment and data collection

The audit cycle included five components: setting standards for good quality practice, audit of current practice, feedback of

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