

## An evaluation of strategies to promote health to tackle food restriction in postpartum women in Lao People's Democratic Republic

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### Abstract

**Purpose** : In Lao People's Democratic Republic (Laos), which is located in the South East Asia, mothers are suffering from malnutrition. One of the causes of maternal malnutrition in Laos is the practice of food restriction in the mother's diet during the postpartum period. The community still believes in restricting the mother's diet in the postpartum period. The purpose of this study was to identify effective interventions to change mothers' behaviour relating to adequate diet in order to address maternal malnutrition in Laos.

**Methods** : Three approaches aimed at changing the eating habits of Laotian women in the postpartum period were introduced and evaluated to ascertain whether they are feasible in Laos. These approaches are participatory, health education, and mass media. An option appraisal tool was used to evaluate the technical effectiveness, organisational feasibility, gender-cultural and political feasibility, and financial feasibility and sustainability of the approaches.

**Results** : The results indicated that the participatory approach was effective in improving mothers' habits when there were sufficient human resources in the community to facilitate the discussion. In terms of health education approach, Laotian mothers showed a positive change in their diet behaviour, when at least one village health volunteer was available to disseminate correct information. The mass media approach also effectively changed the mothers' dietary habits when the message broadcasted was consistent with the government policy.

**Conclusions** : The results indicate that health education delivered by trained health workers or village health volunteers could be the best approach to changing maternal eating habits in the postpartum period, except in rural villages with ethnic minorities. Additionally, the health education approach can be significant if it is combined with other interventions using mass media.

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### INTRODUCTION

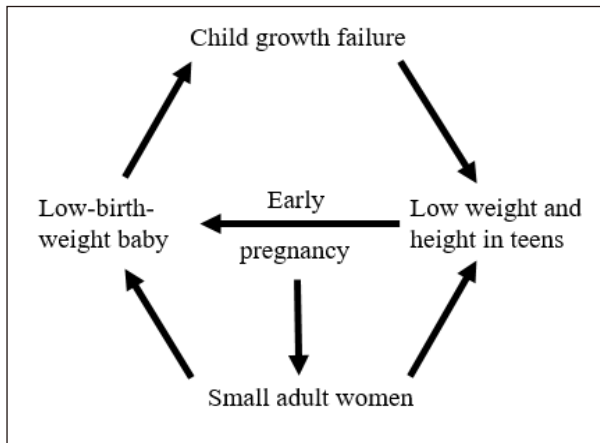
Hunger and inadequate food supply is a global problem with serious implications for health and well-being, particularly for children<sup>1</sup>. Furthermore, it is important to address maternal malnutrition because small or malnourished women are more likely to bear underweight children<sup>2</sup>. The United Nations System Standing Committee on Nutrition introduces 'Intergenerational cycle of growth failure' (Figure 1) which explains how growth failure transmits across generations through the mother<sup>1</sup>. A way to break this cycle is for mothers to maintain a high nutritional

status. Thus, achieving this would aid not only their maternal status but also their child's nutritional status.

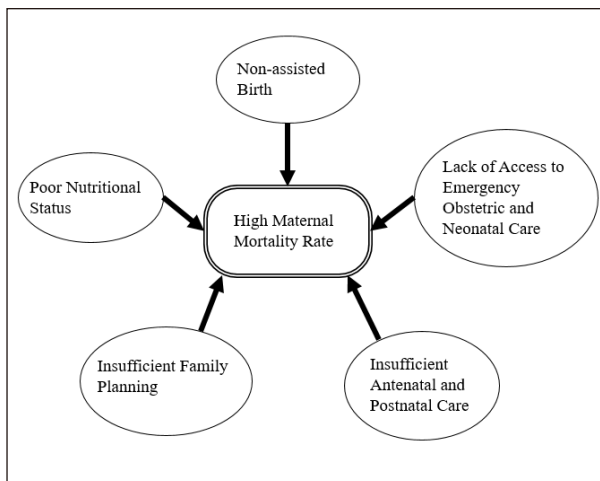
Laos, with a population 6.2 million, is one of the poorest countries in South East Asia<sup>4</sup>. About 67% of the population are Buddhist and 30% consists mostly of ethnic groups following their own religion<sup>5</sup>. The Laotian staple food is rice, particularly glutinous rice, and the diet is often supplemented with other foods, such as fruits, vegetables, fishes, edible insects, or the meat of wild animals<sup>6,7</sup>. Laotians have relied on nature, eating a variety of fish from the Mekong River

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or insects from the mountains due to their high protein content<sup>6</sup>). This situation applies for Laotians, however ethnic minorities tend to follow their own culture and values. The maternal mortality rate (MMR) in Laos is still extremely high compared to neighbouring countries, with an estimated 357 deaths per 100,000 births<sup>4</sup>). There are several issues contributing to the high MMR in Laos<sup>8</sup>) (Figure 2), one of which is maternal malnutrition.



**Figure1.** Intergenerational cycle of growth failure<sup>3</sup>)



**Figure2.** Causes contributing to high Maternal Mortality Rates in Laos<sup>8</sup>)

Maternal malnutrition is often a result of following a restricted diet in the postpartum period. This is a part of Laotian culture, although most women follow a normal diet during pregnancy without any food restriction<sup>9</sup>). Diet in the postpartum period influences the quality of breast milk and particular dietary practices can help mothers to prevent anaemia or iodine deficiency<sup>10</sup>). According to The United Nations Children's Emergency Fund (UNICEF), 79.8% of the

women in Laos follow a restricted diet in the postpartum period<sup>11</sup>). Laotians believe that women will either die or fall ill if they have an unrestricted diet after delivery<sup>9, 12,13</sup>). Although tabooed foods vary between different villages and ethnic groups, poultry and vegetables are the most common items that are excluded from the diet<sup>9</sup>). Most women return to a normal diet by a period of 3 months to 2 years of postpartum<sup>9</sup>). This practice among women exists because of parental beliefs and cultural practices<sup>7,9,13</sup>). While accessing antenatal, delivery, and postnatal care, women can be informed of the appropriate information from health experts, including information regarding supplements of micronutrients, such as Vitamin A or iron, which are required from pregnancy to postpartum<sup>14</sup>). However, despite the availability of health care services, many women cannot access the health institutions because they are far or lack infrastructure<sup>15</sup>).

Laos has at least 49 ethnic groups: the largest group is Lao (55%), followed by Khmu (11%), and Hmong (8%)<sup>11</sup>). Generally, ethnic minorities who have their own customs and languages live in secluded areas with little or no infrastructure, such as roads, electricity, and water supply<sup>16</sup>). It is difficult for these groups to access health care services. Therefore, it is important to promote community-based health in a country like Laos with a low population density and many different minority groups. The reason that community-based health promotion is vital is that many of the necessary skills and solutions exist within the communities itself, and they have the power to improve their own health<sup>17</sup>). Community participation in planning and implementation would lead to a more cost-effective system and increase service utilisation, which has also been stated in the Alma Ata declaration<sup>18</sup>). From a community-based intervention point of view, Village Health Volunteers (VHVs) have played a vital role in Laos, such as improving villagers' knowledge about health<sup>19</sup>).

Despite the knowledge of this issue and the solution, interventions addressing maternal nutrition at the community level are scarce, particularly those focusing on changing mothers' dietary practices. Many international organisations have designed programs to improve child nutrition and survival worldwide but have not given attention to the problem of maternal malnutrition<sup>1</sup>). The purpose of this study is to identify effective community-based health promotions to change mothers' dietary practices in order to address the issue of maternal malnutrition in Laos.

**METHODS**

In this study, three approaches that could alter eating habits in the postpartum period were evaluated in the context of Laos. All the approaches are recognised interventions in health promotion that focus on the community setting. Health promotion is defined as ‘combined activities to develop health knowledge, skills, and behaviours in individuals and communities’<sup>20</sup>. The community-based approaches we used are participatory approach, health education approach, and mass media approach, which have been already implemented in Laos and other countries. Each approach has a specific aim for changing the mother’s behaviour, namely Self-awareness improvement, Self-knowledge improvement, and Community awareness improvement respectively. These aims are based on the objectives given by Scriven that must be considered while implementing health promotion<sup>21</sup>. Table 1 explains the three approaches.

The aim of the participatory approach is to improve the self-awareness of the individual. This approach was designed by the Save the Children (SC) and the United States Agency for International Development in order to empower women and reduce maternal and neonatal mortality<sup>22</sup>. This approach has five steps: organisation of women’s group, diagnosis of problem in the community, planning together, implementation, and participatory evaluation<sup>23</sup>. Through this procedure, women understand their health problems, share their opinions with community members, and develop self-confidence<sup>22</sup>. Finally, this experience enables women to become more self-efficient.

The aim of the health education approach is to improve self-knowledge of the individual. Some programmes in Laos focus on improving knowledge in mothers about diet or behaviour relating to maternal and child health. The SC has been conducting a Primary Health Care programme in collaboration with Sayaboury Provincial

Health Office in Laos since 1991 to strengthen maternal and child health services<sup>24</sup>. Health staff from various areas, the VHVs, and Traditional Birth Attendants (TBAs) in villages received trained as part of this programme. Each district set up a mobile clinic in every remote village bi-annually to provide clinical services and health education<sup>25</sup>. The United Nations World Food Program (WFP) initiated nutrition education projects to improve the knowledge of women of reproductive age and other caregivers in the family on how to use available resources for adequate nutrition<sup>26</sup>. This project was implemented from 2008 in Luangnamtha and Oudomxay provinces in Akha, Hmong, Khamu, and Lanten ethnic villages<sup>26</sup>. The project targets women from the ethnic communities in rural areas because they are usually difficult to approach. The World Bank (WB) also researched maternal and child health in 2004 in three provinces of Northern and Southern Laos where some ethnic groups reside<sup>27</sup>. This research also examines the importance of providing health education to mothers from minority groups.

The aim of the mass media approach is to improve the awareness of the community. It is one of the common ways to disseminate information related to health through the radio, television, internet, and other public communication tools. Mass media is defined as:

‘A means of providing information to large numbers of people, in efforts to change attitudes on health matters, agenda setting and for media advocacy as an element of advocacy campaigns’<sup>20</sup>.

In order to find the most suitable approach to change mothers’ dietary habits in the postpartum period, three different approaches were evaluated in the context of Laos, using the option appraisal tool adapted from Walley and Wright<sup>20</sup>. The evaluation of the approaches used is presented in Table 2.

**Table1.** Explanation of the three approaches

Name of Approach	Aim	Content of the approach
Participatory	Self-awareness improvement	This approach is a participatory strategy, in which women in the community find health problems, plan the way to solve the problems, implement their strategies, and evaluate them. This approach is implemented by the women themselves.
Health Education	Self-knowledge improvement	This approach aims to improve people’s knowledge through health education. Usually, a community with 20 to 30 people is targeted to implement this.
Mass Media	Community awareness improvement	This approach aims to improve the community’s health awareness through mass media.

**Table2.** Evaluation framework for the three approaches

Name of Approach	Technical Effectiveness	Organisational Feasibility	Gender-Cultural and Political Feasibility	Financial Feasibility and Sustainability
Participatory	The degree of effectiveness in implementing the intervention to promote health and improve the dietary practices of postpartum women in Laos will be assessed.	The degree of ease in implementing the intervention based on available expertise, staff, infrastructure capacities, and community resources will be evaluated.	The degree of acceptability of the intervention in the community. How well the intervention is received by different groups or classes based on gender, geographical location, and income, and whether this intervention affects the population equally.	The cost-effectiveness of implementing the intervention, working within a limited budget, and how sustainable it is after the conclusion of the project.
Health Education				
Mass Media				

Source: The author and adapted from Walley and Write<sup>20)</sup>

**RESULTS**

Table 3 presents a summary of the appraised results for the approaches to improve mothers’ dietary practices in Laos.

(1) Participatory Approach

- *Technical Effectiveness*

There are two examples that prove that this approach was effective in improving a mother’s practices in the remote, rural, and ethnic areas of Nepal and Bolivia<sup>22,28)</sup>. Literature in this field emphasises the effectiveness of community empowerment over intervention from external sources<sup>22,28)</sup>. These two cases focused on improving the mothers’ perinatal care and women’s behaviour towards perinatal care changed significantly and showed improvement in birth outcomes in poor, rural areas.

- *Organisational Feasibility*

Many facilitators selected from the community actively participate in this approach and take place to discuss problems in the community<sup>22)</sup>. They also assist in implementing the five steps of participatory approach, which are organisation of women’s group, diagnosis of problem in the community, planning together, implementation, and participatory evaluation<sup>22)</sup>. Therefore, human resources are required in the community to intervene successfully<sup>22)</sup>.

- *Gender-Cultural and Political Feasibility*

The community-based programme seems egalitarian wherein the needs and opinions of the members are considered while strategising<sup>22)</sup>. Moreover, illiterate members can participate using images to address the gap between problems and strategies<sup>22)</sup>. Even the facilitators are selected from the community so other

**Table3.** Results of the evaluation for three approaches

Name of Approach	Technical Effectiveness	Organisational Feasibility	Gender-Cultural and Political Feasibility	Financial Feasibility and Sustainability
Participatory	Works effectively in improving mothers’ behaviour, even in rural areas.	Needs talented human resources to facilitate this programme.	Seems like an acceptable option for the locals as the programme focuses on the problem faced by their community.	Cost-effective and sustainable
Health Education	Works effectively in improving the mothers’ behaviour, even in minority groups.	Easy to organise if each village has a VHV/TBA who can distribute information about health. However, level of literacy and languages needs to be considered.	Seems like a viable option for the locals if the village leader agrees and a health educator knows the local language.	Highly cost-effective and sustainable, if the correct information is disseminated and regularly updated.
Mass Media	Works effectively in changing the mothers’ behaviour as long as they have access to the radio or television.	Not difficult if the message being distributed is congruent with the government policy.	Works for those who do not have access to health care as well as for illiterate women.	Cheap and sustainable if the correct information is disseminated.

Source: The author and adapted from Walley and Write<sup>20)</sup>

members are more willing to participate.

- *Financial Feasibility and Sustainability*

Research has shown that this intervention is cost-effective since it uses local resources<sup>22,28</sup>. For instance, female facilitators are employed from the community and paid a slightly higher salary than the government equivalent<sup>22</sup>. Utilising local resources empowers the community and ensures a sustainable model, even after the donor leaves<sup>23</sup>.

## (2) Health Education Approach

- *Technical Effectiveness*

In one example demonstrating the change in behaviour, the SC successfully increased the number of women who breastfed their babies until they were six months old, instead of giving them supplementary food<sup>25</sup>. The SC recognises the importance of solving the problem of malnutrition at the community level through a combination of health worker training and community nutrition education<sup>9</sup>.

The WFP also gave training to the provincial, district governmental staff, and International Non Government Organisation staff in order to provide health education to villagers about the dangers of malnutrition, utilisation of local resources from forests, gardens, or markets<sup>29</sup>. They delivered this health education in local languages through colourful visual materials, role-playing, nutrition games, and cooking sessions<sup>26</sup>. The WFP highlighted the effectiveness of this project by showing that villagers could change an individual's cooking and eating behaviour<sup>29</sup>.

Additionally, in the WB's research, many mothers in ethnic groups conveyed that they wanted to receive new information and were happy to change their feeding practices, even though they were related to their beliefs<sup>27</sup>. This result proves the effectiveness of educating mothers to change their dietary practices.

- *Organisational Feasibility*

It is better to have human resources, such as a VHV/TBA, in each village since they can assist in the dissemination of correct health information. In Laos there is at least one VHV/TBA working in each village<sup>19</sup>. They are useful in bridging the communication gap between the villagers and professionals who are unaware of the local languages. In their absence, translation of the health education materials should be considered.

- *Gender-Cultural and Political Feasibility*

This approach works well with government policy, which prioritises issues of maternal and child

malnutrition and provides nutrition education at the community level<sup>30,31</sup>. The health staff strongly recommends educating not only women, but also men and grandmothers in nutrition counselling<sup>9</sup> as it is difficult for women to change their behaviour without the support of their families.

- *Financial Feasibility and Sustainability*

This programme is cost-effective<sup>25</sup> and these interventions only cost US\$ 1.00 per person annually<sup>24</sup>. In order to ensure retention of knowledge, the WFP provided refresher training, which aims to reinforce the information provided during training<sup>26</sup>.

## (3) Mass Media Approach

- *Technical Effectiveness*

The effectiveness of using mass media to change the breastfeeding behaviour of women was demonstrated in Jordan<sup>32</sup>. The timely initiation of breastfeeding among urban mothers increased from 39% to 48% because of television and radio campaigns between 1988 and 1990. Furthermore, for mothers living outside cities, this increased from 43% to 68%<sup>32</sup>. One study showed that radio and other mass media were able to reinforce face-to-face communication through community workers, which may be the most effective channel for propagating education<sup>33</sup>.

- *Organisational Feasibility*

According to Scriven, preparation is paramount before conducting a programme through mass media<sup>21</sup>. In Brazil, the campaign via mass media faced challenges as manufacturers and the government started encouraging mothers to use artificial milk at some point<sup>34</sup>. Additionally, the promotion of formula milk in Thailand's media negatively influenced breastfeeding mothers in Laos, although the Lao government recommended exclusive breastfeeding<sup>35</sup>. Contradictory information from the mass media and the government is confusing for mothers. Additionally, possessing the resources to use the radio or television for campaigning is a big challenge.

- *Gender-Cultural and Political Feasibility*

In Jordan, mass media helped in disseminating information to women who live in remote areas and cannot access information about nutrition through an institution-based programme<sup>32</sup>. Moreover, mediums that avoid written communication, such as radio or television, seem to be more useful in educating women who are illiterate<sup>36</sup>.

- *Financial Feasibility and Sustainability*

Mass media education programs cost US\$ 0.2-2.0 per

person annually. However, when compared to other education programmes, they are inexpensive<sup>37)</sup>.

## DISCUSSION

Laos has many minority groups with local languages and customs<sup>16)</sup>. The participatory approach is usually used in villages and local communities, thus it works effectively in the social context of Laos. However, in terms of feasibility, this approach requires human resources. It is difficult to find the VHV/TBA or people from the community who can read, write, and calculate in rural, tribal communities in Laos<sup>19)</sup>. Therefore, it is difficult to intervene using this approach in rural villages with ethnic minorities. The participatory approach has not used in Laos so far. However, the urban villages would be a good site to implement this approach because of the availability of educated human resources.

Regarding the effectiveness of improving knowledge, studies conducted by the SC, WFP, and WB proved that health education is effective and can change mothers' dietary practices. It is easy to provide health education to mothers at the village level since there is at least one VHV in each village in Laos<sup>19)</sup>. However, the VHV/TBA find it difficult to operate in rural areas with ethnic minorities because of their low literacy rate and unfamiliarity with the languages, so the SC recently identified that this approach needs to be developed further to be able to serve isolated ethnic groups in rural areas<sup>9)</sup>. This problem can be solved by using the method given by the WFP of using the government and international nongovernment staff to provide health education instead of the VHV/TBA. Additionally, the target population to receive health education should include women of reproductive age and their parents and community. This is especially required in Laos because the ideas related to food restriction during the postpartum period come from either parents or men<sup>9)</sup>, and women face difficulty in changing these habits without their support. Therefore, healthcare staff focuses on including their parents and husbands in the health education which is provided for women of reproductive age in order to inform them about the dangers of food restriction in the postpartum period<sup>9)</sup>. In terms of sustainability, the project by the SC showed positive results over a span of ten years<sup>25)</sup>. It takes a long time to change people's behaviour, so the technique of monitoring and evaluation as well as providing refresher training after the programme, as per the WFP instruction, could be useful<sup>26)</sup>. This

procedure helps sustaining the programme and consequently leads to changes in the attitude and behaviours of the mothers. This approach is likely to be effective in the context of Laos and could help women change their dietary practices.

Furthermore, knowledge improvement will be significantly better if it is combined with another intervention using mass media. More than 95% of the Laos' total area is covered with radio broadcasting stations<sup>38)</sup>, thus it seems easy to disseminate correct information to people living in rural areas, while considering the language problem. The government is encouraging the translation of information presented via mass media in different ethnic languages and increasing television broadcasts to share information in remote areas<sup>38)</sup>. It is important that the content of the message delivered to people is in line with government policy. The National Nutrition Strategy and Plan of Action admitted it is harmful for women in the postpartum period to follow diet restrictions, and cited that women of reproductive age should consume diverse foods<sup>30)</sup>. It might be difficult to change the behaviour of women using the only the approach to improve knowledge, however, better results can be achieved if the message regarding food restriction is disseminated via mass media, and face-to-face interventions simultaneously.

In this research, we have not covered the aim of social change. Further studies should address this and potentially enable change at the social level, so that women will be able to alter their habits more easily. Furthermore, it is worthwhile to improve the quality of the VHV/TBA, as they can help in providing better health education. If the VHV/TBA could qualify as medical staff, they would have the confidence to improve their performance. Combining the social and individual approach will definitely help in changing the mothers' dietary practices. Consequently, this would raise the quality of maternal nutrition and finally decrease the maternal and infant mortality rate in the future.

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