

Can Behavioural Change Interventions Improve Nutrition at Scale? Challenges and Opportunities in Sri Lanka

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சுகாதார மேம்பாட்டுப் பணியகம்
Health Promotion Bureau





Introduction

- Sri Lanka faces a triple burden of malnutrition: undernutrition, overnutrition, and micronutrient deficiencies ¹.
- The economic crisis and the pandemic have exacerbated nutrition-related challenges ².
- Behavioral change interventions are recognized globally as effective strategies to address these issues ³.

1. Family Health Bureau SL Ministry of Health. National Nutrition Month Summary Report 2024 [Internet]. 2024. Available from: <https://fhh.health.gov.lk/wp-content/uploads/2024/10/National-Nutrition-Month-Summary-Report-2024.pdf>

2. Wijesinghe MSD. Strengthening social capital in the Sri Lankan population: A qualitative exploration of factors driving the mothers' support groups initiative during economic crisis. 2023;13(4).

3. Samdal GB, Eide GE, Barth T, Williams G, Meland E. Effective behaviour change techniques for physical activity and healthy eating in overweight and obese adults; systematic review and meta-regression analyses. Int J Behav Nutr Phys Act. 2017 Dec;14(1):42.

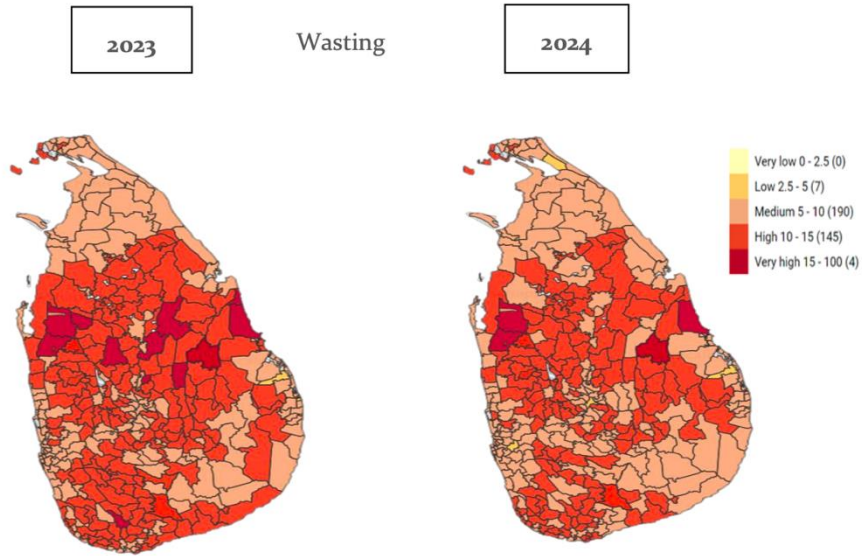


Current Nutrition Landscape in Sri Lanka ¹

- Stunting among children under five: 10.5% in 2024, an increase from 10.3% in 2023.
- Wasting among children under five: 9.3% in 2024, a decrease from 10% in 2023.
- Underweight among children under five: 17%, remaining unchanged from 2023.
- Overweight and obesity among children under five: 0.49%, up from 0.43% in 2023.

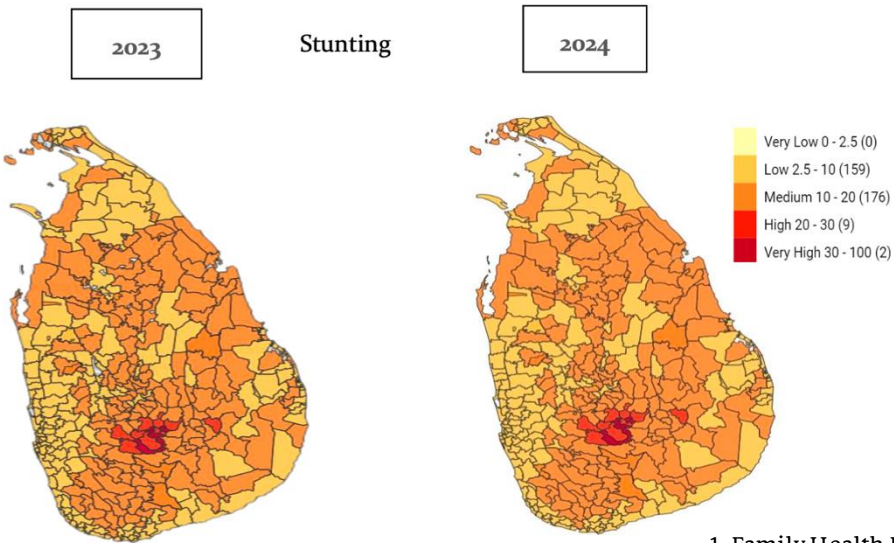
1. Family Health Bureau SL Ministry of Health. National Nutrition Month Summary Report 2024 [Internet]. 2024. Available from: <https://fhh.health.gov.lk/wp-content/uploads/2024/10/National-Nutrition-Month-Summary-Report-2024.pdf>

3.1.10 Comparison of stunting and wasting 2023 and 2024 by MOH Areas



Source: eRHMS 2024

Figure 16: Comparison of wasting among children under 5 years 2023 & 2024 by MOH area



Source: eRHMS 2024

1. Family Health Bureau SL Ministry of Health. National Nutrition Month Summary Report 2024 [Internet]. 2024. Available from: <https://fhh.health.gov.lk/wp-content/uploads/2024/10/National-Nutrition-Month-Summary-Report-2024.pdf>

Role of Behavioral Change Interventions



“Behavioural interventions are actions designed to influence individual and population behaviors to improve health outcomes. They focus on modifying determinants of health-related behaviors, such as knowledge, attitudes, beliefs, and environmental factors, through a structured and evidence-based approach.”⁴

⁴ Kelly MP, Arora A, Banerjee A, Birch JM, Ekeke N, Kuhn I et al. The contribution of behavioural science to addressing the social and wider determinants of health: evidence review. Geneva: World Health Organization; 2023. Licence: [CC BY-NC-SA 3.0 IGO](https://creativecommons.org/licenses/by-nc-sa/3.0/).



Core Components:

1. Education and Awareness:

*Conducting **mass media campaigns** to promote awareness of nutrition and health-related practices (e.g., balanced diets, portion control, and hydration).*

*Introducing **school-based programs** that teach children the importance of healthy eating early.*

Simplifying complex health messages for broader reach among diverse populations.

2. Technology Integration:

***Mobile Health Apps (mHealth):** Apps designed for tracking food intake, providing nutritional advice, and setting personalized dietary goals.*

***Text Messaging Campaigns (SMS):** Using SMS to disseminate health reminders and promote dietary tips.*

***Social Media Campaigns:** Leveraging platforms like Facebook and Instagram to create engaging content about healthy eating.*



3. Community Engagement:

Encouraging peer-to-peer learning and shared experiences in promoting healthy cooking and eating practices within households.

*Empowering local leaders and influencers to **champion healthy behaviours** in their communities.*

*Organizing **community events and cooking demonstrations** to showcase affordable, nutritious meals.*

4. Policy and Advocacy:

*Integrating behaviour change interventions into **national health policies** and aligning them with broader public health goals.*











*Advocating for the **regulation of junk food advertising** targeting children.*

Evidence from Sri Lanka

1. Mobile-Based Interventions:

- **Example 1:** mHealth programs for pregnant and nursing mothers improved knowledge and dietary diversity ⁵.
- **Results:** Increased breastfeeding practices and adherence to dietary guidelines.

Figure 1. Examples of the social media messages shared. Refer to Table 2 for English translation.

Message 2		
Message 4		
Message 11		
Message 16		
Message 18		

“We have changed our cash management patterns. Now we are more focused on buying nutritious food items, vegetables, and fruits, and we have also changed the food-intake patterns.”

“After receiving these messages, I have been influenced to think about how to save money and what essential things should be bought. Usually, I am very concerned about nutritious foods. Although I had restricted to low sugar intake, I did not practice it for salt. After receiving these messages, I now avoid adding salt to the rice and have a restricted salt intake. It would be good for our health.”

“As I shared these messages with my husband, especially gender-based messages, his support for me to do household activities and child-caring has significantly increased. It was very beneficial to me.”

⁵ Peiris DR, Wijesinghe MSD, Gunawardana BMI, Weerasinghe WMPC, Rajapaksha RMNU, Rathnayake KM, et al. Mobile Phone-Based Nutrition Education Targeting Pregnant and Nursing Mothers in Sri Lanka. IJERPH. 2023 Jan 28;20(3):2324.

Evidence from Sri Lanka

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- Knowledge/awareness ($t = -18.70, p < 0.01$) and attitudes ($t = -2.00, p < 0.05$) increased when exposed to the intervention. Favourable improvements in the practices were also observed. Mothers' practices related to breastfeeding and 24-h dietary diversity showed a statistically significant improvement.
- This method can be used on a larger scale to raise nutritional awareness in the community. In addition, these interventions could be alternative or complementary approaches in situations such as pandemic-related lockdowns where there is difficulty in delivering in-person behaviour change programs.



GDR score

Total Rural Urban Female Male

- **Example 2:** mHealth programs for pregnant and nursing mothers improved knowledge and dietary diversity ⁶.

Food insecurity decreased significantly from 89.3% ($n = 681$) in the pre-test to 76.9% ($n = 533$) in the post-test, with a 12.4% reduction (95% CI, 8.57 to 16.24, $p < 0.05$). The Minimum Dietary Diversity for Women improved from 44.5 to 67.8% [23.3% increase (95% CI, 15.89 to 30.63; $p < 0.05$)]. The mean NCD-Protect and GDR scores increased significantly, indicating a higher adherence to global dietary recommendations, whereas the NCD-risk scores remained unchanged.

⁶ Wijesinghe MSD, Karawita UG, Nissanka NAKAI, Gunawardana BMI, Weerasinghe WMPC, Supun YA, Peiris DR, Bandara RD, Batuwanthudawe R. Improving dietary diversity and food security among low-income families during financial crisis using cash transfers and mHealth: experience from two selected districts in Sri Lanka. BMC Nutr. 2024 Nov 13;10(1):150. doi: 10.1186/s40795-024-00958-3. PMID: 39538345; PMCID: PMC11562560.

2. Community Engagement:

- Mothers' Support Groups promoted home gardening and minimized food waste during crises⁷.

“Six major themes were identified (that social capital had been strengthened to promote nutrition): awareness creation of nutrition, home gardening promotion, promoting livestock farming, minimizing food waste, improving the home economy, and psychosocial health promotion. The most common forms of social capital encountered in these themes were bonding, bridging, and linking.

Furthermore, strengthening **structural social capital** is more prominent than strengthening **cognitive social capital.**”

⁷Wijesinghe MSD et al.. Strengthening social capital in the Sri Lankan population: A qualitative exploration of factors driving the mothers' support groups initiative during economic crisis. 2023;13(4).



3. Digital Self-Monitoring Tools:

- Mobile applications encouraged healthier food choices among office workers.



The mobile application was introduced to a selected group of office workers who were in preparation, action, and maintenance stages of the Trans Theoretical Model (TTM) and a paper-based intervention was used as the comparator. Participants were followed up for three months for adherence. The effectiveness of interventions was assessed at the end of three months by comparing the progressive change in the stage of change and the change from unhealthy to healthy dietary intake between two groups as primary and secondary outcomes respectively⁸.

“Mobile application-based interventions are better accepted among the young age group and further studies are recommended to explore their applicability.”

⁸ Godevithana J, Wijesinghe CJ, Wijesinghe MSD. Paper-based and mobile application-based self-monitoring tool for healthy dietary intake, development and applicability: a non-randomized trial. BMC Digit Health. 2024 Aug 19;2(1):53.

Challenges in Scaling Up

Key Barriers:

- Infrastructure gaps in rural areas for mHealth interventions.
- Limited funding for large-scale implementation of behaviour change programs.
- Resistance to adopting new behaviours due to cultural norms and habits.



Opportunities for Improvement

Technology:

Expand mobile apps and SMS-based nutrition education to underserved populations.

Build partnerships with telecom providers for outreach.

Community Empowerment:

Strengthen Mothers' Support Groups by providing training and resources.

Use community leaders as behavior change champions.

Policy and Funding:

Allocate dedicated budgets for nutrition-sensitive interventions.

Develop multi-sectoral action plans integrating health, education, and agriculture.



Recommendations

Immediate Actions:

- Leverage successful pilot programs (e.g., mHealth projects) for national implementation.
- Focus on capacity building for health workers and community volunteers.

Strategic Vision:

- Integrate behavioral change communication into national nutrition policies.
- Foster collaboration between the health sector and private sector partners.



A close-up photograph of a woman's hands, adorned with multiple gold bangles, holding a mango and three bananas. The hands are positioned in the center-left of the frame, with the fruit resting in the palms. The background is a soft, out-of-focus yellow fabric. The overall lighting is warm and natural.

Conclusion

Behavioral change interventions are effective and feasible in addressing malnutrition.

Scaling these interventions requires a combination of technology, community engagement, and policy support.

Call to Action: Collaborate across sectors to achieve nutrition goals at scale.

Thank you