Title: Identifying priority double-duty actions to tackle multiple forms of malnutrition in infants and young children in Peru: Assessment and prioritisation of government actions by national experts

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**1. INTRODUCTION**

The double burden of malnutrition (DBM) is defined as the coexistence of malnutrition due to deficiency (i.e., micronutrient deficiencies, underweight, childhood stunting and wasting) and excess (i.e., overweight/obesity and diet-related non-communicable diseases- DR-NCDs), which can affect countries, households, and individuals (Popkin et al. 2020). Both undernutrition and overweight/obesity have, for a long time, been addressed as separate public health problems requiring different sets of solutions. However, the current nutrition reality shows that both coexist and are interconnected and hence require public health and nutrition interventions to be reshaped to address multiple forms of malnutrition simultaneously (Hawkes et al. 2020).

To address the DBM, so called ‘double-duty actions’ (DDAs), i.e., interventions, programmes, and policies with the potential to simultaneously reduce the risk or burden of undernutrition and overnutrition, have been proposed by the World Health Organization (World Health Organization, 2017). These include initiatives to promote or implement: exclusive breastfeeding in the first 6 months and continued breastfeeding up to 2 years; adequate complementary feeding in infants from 6 months; maternal nutrition and prenatal care programmes; school feeding policies and programmes; and marketing regulations. These actions are not necessarily new actions, as they may include those that are already used to address individual forms of malnutrition, but that have the potential to become DDAs that provide integrated strategies for multiple forms of malnutrition (World Health Organization, 2017; Pradeilles et al. 2019; Hawkes et al. 2020).

Globally, the most prevalent forms of malnutrition in children under five are stunting and anaemia (Global Nutrition Report, 2021). It is estimated that nearly a quarter of all children under five are stunted, and overweight and obesity is increasing rapidly in almost all countries, with no sign of slowing down (Global Nutrition Report, 2021). In Peru, the nutrition landscape has evolved over recent years. There has been some positive change. Firstly, the prevalence of stunting in children under five has decreased over the last decade from 23.2% (Instituto Nacional de Estadística e Informática, 2010) to 11.5% (Instituto Nacional de Estadística e Informática, 2020). Secondly, anaemia in children under three has decreased slightly from 43.5% (2015) to 38.8% (2021), but still remains high and is currently considered one of the main public health nutrition problems in Peru (Instituto Nacional de Estadística e Informática, 2021). The prevalence of overweight/obesity in children under five was estimated at 9.6% in 2021 (Instituto Nacional de Estadística e Informática (INEI), 2021). However, overweight/obesity in children aged 5-9 years is considerably higher (37.4% in 2017-2018) (Ministry of Health, 2021) which could indicate that the increase in prevalence occurs from early childhood. At the individual level, the DBM prevalence, defined as a child under five who suffers from overweight/obesity and anaemia, was estimated at 2.5% in 2012 (Irache et al. 2022).

In this context, this study sought to respond to the need for evidence that exists in Peru related to the current implementation of- and priority for- government-level actions to tackle multiple forms of malnutrition in infants and young children (IYC) in Peru.

**2. AIMS**

The objectives of this study were:

1. To collate evidence on double-duty actions and the enabling environment (infrastructure support) in Peru to address the DBM, i.e., iron-deficiency anaemia and overweight/obesity in IYC under 2 years.

2. To assess the level of implementation of the identified double-duty actions (interventions /policies) and infrastructure support components.

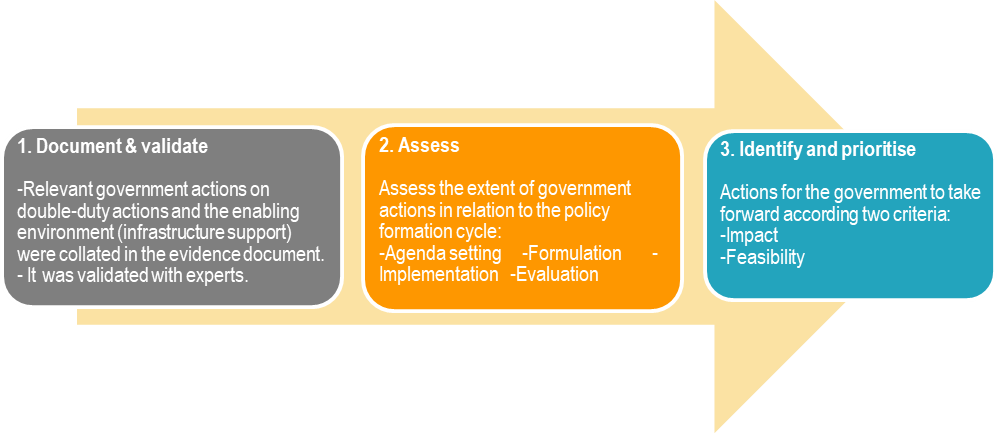
3. To identify and prioritise double-duty actions and infrastructure support components that could be implemented or scaled-up to tackle the DBM in Peru.

**Aim of the evidence document**

This document aims to identify and compile all double-duty action policies implemented in Peru in the last five years including those implemented previously but still enforced during this period. The search period was from February to September 2020.

**3. METHODS**

The methodological process of the research was divided into three main stages, which are summarised in **Figure 1** and described below.

**Figure 1. Process for assessing the implementation and prioritisation of double-duty actions in Peru**

**Step 1. Document and validate**

**Step 1a: Identify double-duty actions and indicators for good practice that were used as a benchmark.**

All five WHO double-duty actions were selected with the school setting adapted to the pre-school setting. A tool to assess these five policies and elements of infrastructure support was designed (Figure 2). We used the same steps as in the Healthy Food Environment Policy Index (Food-EPI), which was developed to measure the extent of implementation of healthy food environment policies for preventing DR-NCDs, but adapted it for double-duty actions (INFORMAS 2020; Vandevijvre et al. 2015). We have used some of the same indicators from the Food-EPI tool that are relevant for our outcome (anaemia and overweight/obesity in children). We included 27 indicators for the policy component and 20 indicators for the infrastructure support component (Table 1).

**Step 1b:** **Document and verify the extent of policy implementation in Peru**

A review of the evidence for current policy activity was conducted to assess the implementation of the selected double-duty actions. It was collated into an evidence document that was shared with the stakeholder group for their revision. The group of 16 experts made up of professionals with extensive experience in public health nutrition from government institutions (n=11), NGOs (n=3) and international cooperation agencies (n=2) validated the evidence document, rated the degree of progress in the implementation of the policies and prioritised the current/implemented policies in Peru that have the potential to become double-duty actions to reduce the double burden of malnutrition in infants and young children.

**Figure 2. Components and indicators of the double-duty policy tool used**

Interfaz de usuario gráfica

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**Step 2: Assess the extent of government action**

The stakeholders rated the extent of government implementation in relation to the four phases of the policy implementation cycle: Agenda setting; Formulation; Implementation; Evaluation. This evaluation process took place between October and December 2020.

**Step 3: Identify and prioritise**

Step 3 was carried out through consultation with the 16 experts. They were asked to prioritise on a scale of 1 to 5 (where 1=very low, 2=low, 3=medium, 4=high and 5=very high) each of the indicators for double-duty policy actions and infrastructure support. For this prioritisation exercise, two criteria were used: impact (i.e., the extent of the expected impact of the action, including the likely effectiveness in reducing the DBM in IYC and other benefits) and feasibility (i.e., the ease with which the action can be carried out, accounting for political, budgetary and social realities). This stage was carried out between March and June 2021.

**4. RESULTS - EVIDENCE SUMMARY DOCUMENT**

This summary evidence document synthesises all the evidence found for the implementation of government actions for each of the 47 indicators set out in the constructed tool **(Table 1)**. Overall, 164 documents providing evidence were included, which also captured documents that were launched more than five years ago but were still in force. This summary evidence document was validated by the 16 experts outlined in step 1 above. The validation process was conducted between November 2020 and January 2021. This summary evidence contains the changes suggested by the experts during the validation process to 22 policy indicators and seven infrastructure support indicators. The suggestions received focused on identifying additional evidence, adding further detail about some of the evidence provided, as well as removing some evidence that was not considered relevant.

**Table 1. Total number of documents by indicator for each policy domain /infrastructure support domains**

|  |  |  |
| --- | --- | --- |
| **POLICIES / INFRASTRUCTURE SUPPORT** | **NUMBER OF INDICATORS** | **NUMBER OF DOCUMENTS** |
| Exclusive breastfeeding | 6 | 26 |
| Complementary feeding | 6 | 36 |
| Marketing regulations | 6 | 22 |
| Maternal/ antenatal nutrition | 6 | 20 |
| Preschool food | 3 | 8 |
| **TOTAL POLICIES** | **27** | **112** |
| Leadership | 4 | 20 |
| Governance | 3 | 16 |
| Monitoring and evaluation | 5 | 23 |
| Funding and resources | 3 | 12 |
| Platforms for interaction | 3 | 20 |
| Health in all policies | 2 | 10 |
| **TOTAL INFRASTRUCTURE SUPPORT** | **20** | **101** |
| **TOTAL INDICATORS** | 47 | **213(\*)** |

(\*) Some documents served as evidence for various indicators

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