The objective of this review is to assess the impact of nutrition-specific and nutrition-sensitive interventions on hemoglobin concentrations and anemia in populations in the age range of 6 months to 49 years.

A systematic review of reviews collates information from multiple systematic reviews to allow policy and other decision-makers to view results from a suite of interventions (i.e., both nutrition-specific and nutrition-sensitive) addressing anemia.

The objective of this review is to assess the impact of nutrition-specific and nutrition-sensitive interventions on hemoglobin concentrations and anemia in populations in the age range of 6 months to 49 years.

**METHODS**

**PICOD: POPULATION, INTERVENTION AND COMPARATOR, OUTCOME, DESIGN**

**Population:** Healthy children and adult men and women, in the age range of 6 months to the 49 years

**Interventions and Comparator:** Nutrition-specific and -sensitive interventions compared to a control or between themselves

**Outcome:** Hemoglobin concentration or anemia, as defined in the studies

**Design:** All systematic reviews, with or without meta-analysis, that include randomized or non-randomized controlled studies and/or observational designs

**NUTRITION-SPECIFIC INTERVENTIONS:**

1. Malaria prevention, diagnosis, and treatment
2. Helminth prevention and control
3. Promotion of dietary diversity
4. Infant and young child feeding (IFCY) activities
   - a. promotion of exclusive and optimum breastfeeding
   - b. appropriate complementary feeding and responsive feeding practices and stimulation
5. Micronutrient supplementation and fortification
   - a. iron-folic acid (IFA) supplementation
   - b. vitamin A supplementation
   - c. home fortification with micronutrient powders (MNP)
   - d. industrial food fortification
6. Delayed cord clamping

**NUTRITION-SENSITIVE INTERVENTIONS:**

1. Agriculture and food security
2. Social safety nets
3. Early child development
4. Maternal mental health
5. Women’s empowerment
6. Child protection
7. Education - nutrition
8. Water and sanitation
9. Health and family planning services
10. Biofortification

**SEARCH STRATEGY**

- Databases: Medline, EMBASE, Cochrane, CINAHL, Global Health, Scopus from 1946 through December 2015
- Double independent abstract and full text screening followed by data extraction

**DATA SYNTHESIS**

- Qualitative Synthesis: Narrative synthesis approach
- Quantitative Synthesis: Pooling with random effects model
- Assessment of Methodological Quality: AMSTAR criteria

**RESULTS**

- Of 13,140 abstracts, 325 selected for full text testing (Figure 1)
- 128 articles included – 123 (96%) on nutrition-specific and 2 (2%) on nutrition-sensitive interventions; 3 studies (2%) reviewed both nutrition-specific and -sensitive interventions
- The reviews looked at interventions in both women (pregnant and non-pregnant) and in children of different ages
- Most (100%) of the reviews were on supplementation studies; 20 % dealt with malaria prevention and treatment, 7 % on helminth control and treatment; 13 % on delayed cord clamping; there were three reviews on IFPC and dietary diversity, three on fortification, and two on family planning
- Significant overlap in reviews – the newer reviews included and added new evidence to the older reviews
- Representative result from MأKa of the effect of helminth treatment in women and children on anemia is presented (Figure 2)
- Other effective interventions – iron and folic acid supplementation, malarial prophylaxis, and delayed cord clamping
- Results from all interventions will be published separately in an original article
- Quality (Figure 3)

**CONCLUSIONS**

- Management of helminth infections, prevention and treatment of malaria, iron and folate acid supplementation, and delayed cord clamping have shown to be effective in increasing hemoglobin and reducing anemia on both women and children.
- There is a paucity of evidence on the impact of nutrition-sensitive interventions on anemia.
- Results from this review of reviews can be used as an effective policy advisory tool to:
  - demonstrate evidence for effective interventions
  - highlight the gaps in evidence, e.g. nutrition-sensitive interventions
  - help publish health practitioners identify appropriate interventions to prevent and control anemia

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**WEB SITE INFORMATION**

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