Title registration for a review proposal: A systematic review of nutrition-specific and nutrition-sensitive risk factors of linear growth among children and adolescents (0 to 19 years) in low-and middle-income countries,


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TITLE OF THE REVIEW

A systematic review of nutrition-specific and nutrition-sensitive risk factors of linear growth among children and adolescents (0 to 19 years) in low-and middle-income countries

BACKGROUND AND OBJECTIVES

Briefly describe the problem, the relevance to policy and practice, and the objective(s) of the review. The objective(s) should be listed as questions which the review will aim to answer.

Linear growth faltering, or stunting, is an indicator of chronic malnutrition, and is estimated to affect 26% of children less than 5 years of age globally, with the highest prevalence in east and west Africa and south central Asia (42%, 36%, and 36%, respectively) [1]. A stunted child is at higher risk of mortality from 1 to 59 months of age [2], and stunting in early life is a well-known risk factor for poor cognitive and motor development during childhood, as well as low educational gains in later childhood and adolescence.

The cause of growth faltering among children and adolescents is multi-faceted, and likely due to a combination of nutrition-specific and -sensitive factors [3]. Nutrition-specific factors pertain to the immediate determinants of foetal and child nutrition and development, while nutrition-sensitive factors are associated with underlying determinants of foetal and child nutrition and development [3]. The effects of nutrition-sensitive and -specific factors are not independent, as nutrition-sensitive interventions can work through biologically plausible pathways, as well as care practices.
Despite substantial evidence, the strongest nutrition-related factors of linear growth faltering have yet to be systematically defined. We believe that our proposed systematic risk factors review will provide a unique contribution to the literature by aiming to answer the following question: What are the nutrition-specific and nutrition-sensitive factors that affect (positively or negatively) linear growth outcomes among children (0 to <10 years of age) and adolescents (10-14.5 and 15-19 years of age) in low- and middle-income countries?

EXISTING REVIEWS

List any existing systematic reviews on the topic, and justify the need for this review if existing reviews exist or are in progress.

To the applicant’s knowledge, no other systematic reviews on this specific topic have been conducted or are in progress. Related systematic reviews or meta-analyses that have been published in the peer-reviewed literature either focus exclusively on one type of nutritional intervention (e.g. zinc supplementation [4]), or do not focus exclusively on linear growth in young children as a primary outcome [5]. The findings from this review will allow us to form an evidence-based position regarding the aetiology of linear growth faltering, as well as guide future work with respect to conducting a systematic review of interventions, and the design and implementation of programmes with the largest potential impact on linear growth outcomes in high burden countries.

DEFINE THE POPULATION

Specify the types of populations to be included and excluded, with thought given to aspects such as demographic factors or their setting.

Male and female children (0 to <10 years of age) and/or adolescents (10 to 19 years of age) from low and middle income countries, as defined by the World Bank [6], will be included. Age at exposure to a nutrition-sensitive or nutrition-specific factor (e.g. prenatal maternal supplementation) will not determine study eligibility.

DEFINE THE INTERVENTION

Describe the intervention(s) and the comparison clearly in plain language. What is given, by whom, to whom, and for how long? What are the comparison conditions (what is usually provided to control/comparison groups who don’t receive the intervention)?

Types of exposures

- Nutrition-specific factors: immediate determinants of foetal, child and adolescent nutrition and development, including adequate food and nutrition intake, feeding, caregiving and parental practices, and a low burden of infectious disease [3].
- Nutrition-sensitive factors: underlying determinants of foetal and child nutrition and development, including food security, adequate caregiving resources at the
maternal, household, and community levels, and a safe and hygienic
environment [3].

The conceptual framework (Figure 1) broadly summarizes nutrition-sensitive and
nutrition-specific exposures that may be associated with linear growth. Other factors
not specifically outlined in the conceptual framework, which may affect linear
growth (such as genetic disorders), will also be included. There are no a priori
criteria for study exclusion based on types of exposures.
OUTCOMES

List the primary and secondary outcomes for the review including all outcomes important to those who will be affected by and those who will make decisions about the intervention(s). Give thought to the inclusion of adverse and unintended effects, resource use and outcomes along the causal chain.

Primary: linear growth, defined as attained length (in children <2 years of age) or height (in children and adolescents aged 2-19 years of age) disaggregated by age and gender (where possible).

Secondary: age- and sex- adjusted length/height for children or adolescents using standardized growth charts (e.g. World Health Organization Growth Standards); the incidence and/or prevalence of stunting; or the standardized mean difference in linear growth; raw lengths/heights of children or adolescents (provided that estimates are disaggregated by age and sex).

STUDY DESIGNS

List the types of studies to be included and excluded (please describe eligible study designs). It is desirable to specify at least three studies which you believe will be eligible for inclusion in the proposed review. Where the review aims to include quantitative and qualitative evidence, specify which of the review questions noted in section 2 will be addressed using each type of evidence.

Because we are interested in identifying determinants of linear growth faltering, we plan to focus on observational epidemiologic study designs that report on linear growth among children and/or adolescents. Experimental studies, including randomized trials, cluster-randomized, and quasi-randomized study designs will be included in a separate (subsequent) review of interventions.
Inclusion criteria: longitudinal cohorts, cross-sectional surveys (single or repeat), case-control studies, and ecological studies.

Exclusion criteria: Animal research, reviews, commentaries, and methodological papers, experimental studies.

**AUTHOR(S) REVIEW TEAM**

List names of those who will be cited as authors on the final publication.

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ROLES AND RESPONSIBILITIES

Please give brief description of content and methodological expertise within the review team. It is recommended to have at least one person on the review team who has content expertise, at least one person who has methodological expertise and at least one person who has statistical expertise. It is also recommended to have one person with information retrieval expertise. Please note that this is the recommended optimal review team composition.

- Content: SZ, ZB, and AAP have content expertise in the area of global child health and nutrition.
- Systematic review methods: KW and ZB have expertise and experience in conducting systematic reviews and meta-analyses.
- Statistical analysis: AAP and NP have expertise in statistical methods, particularly those methods used in clinical research and epidemiology.
- Information retrieval: AAP, JB, NP, and KW have expertise and experience in retrieving and abstracting information from the literature using systematic methods.

POTENTIAL CONFLICTS OF INTEREST

For example, have any of the authors been involved in the development of relevant interventions, primary research, or prior published reviews on the topic?

No conflicts of interest to declare

SUPPORT

Do you need support in any of these areas: methodology and causal inference, systematic searches, coding, statistical analysis (meta-analysis)?
Statistical support may be required if analytical methods to be applied are highly complex.

**FUNDING**

Do you receive any financial support, and if so, from where? What are your deliverable deadlines for the review? If not, are you planning to apply for funding, and if so, from where?

Partial internal funding: Centre for Global Child Health

**PRELIMINARY TIMEFRAME**

Note, if the protocol or review are not submitted within 6 months and 18 months of title registration, respectively, the review area is opened up for other reviewers.

- Date you plan to submit a draft protocol: by end of June 2014
- Date you plan to submit a draft review: by end of May 2015

**DECLARATION**

**Authors’ responsibilities**

By completing this form, you accept responsibility for preparing, maintaining and updating the review in accordance with Campbell Collaboration policy. The Campbell International Development Group will provide as much support as possible to assist with the preparation of the review.

A draft protocol must be submitted to the Group within six months. If drafts are not submitted before the agreed deadlines, or if we are unable to contact you for an extended period, the Group has the right to de-register the title or transfer the title to alternative authors. The Group also has the right to de-register or transfer the title if it does not meet the standards of the Group and/or the Campbell Collaboration.

You accept responsibility for maintaining the review in light of new evidence, comments and criticisms, and other developments, and updating the review at least once every three years, or, if requested, transferring responsibility for maintaining the review to others as agreed with the Group.

**Publication in the Campbell Library**

The support of the International Development Group in preparing your review is conditional upon your agreement to publish the protocol, finished review and subsequent updates in the Campbell Library. Concurrent publication in other journals is encouraged. However, a Campbell systematic review should be published either before, or at the same time as, its publication in other journals. Authors should not publish Campbell reviews in journals before they are ready for publication in CL. Authors should remember to include the statement: “This is a version of a Campbell review, which is available in The Campbell Library”.
I understand the commitment required to undertake a Campbell review, and agree to publish in the Campbell Library. Signed on behalf of the authors:

Form completed by: ASHLEY AIMONE PHILLIPS  
Date: 15 JANUARY 2014

References