PROSPERO Guidance for registering human studies

Review title	Dietary quality and iron deficiency in female adolescents: a scoping review
Anticipated or actual start date	August 2023
Anticipated completion date	September 2023
Stage of review at the time of this submission	We are working on preliminary searches and piloting the study selection process
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Funding sources/sponsors	None
Conflicts of interest	None
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Review question	1. What are dietary quality indicators being used in female adolescents? 2. Is there an association between dietary quality and iron deficiency in female adolescents?
Searches	• We will perform a database search from PubMed, CINAHL, EMBASE, and Web of Science to collect articles related to review questions. • The search strategy will include keywords related to dietary quality and iron deficiency anemia. • We will extract articles published from 2013 to 2023. This review period is selected due to the nutrition transition in many low- and middle-income countries resulting from demographic change, urbanization, and shifts in the food system. This transition is associated with malnutrition in all forms, including micronutrient deficiencies. • We will also screen the reference list including in the reviewed articles.
Condition or domain being studied	Female adolescents
Participants/population	Inclusion: • ~~Low- and middle-income countries based on the 2022 World Bank classification.~~ • Female adolescents aged 15-19 years old Exclusion: • Female adolescents who have any health issue that require them to follow a certain diet

Intervention(s)/exposures(s)	Inclusion: • Dietary quality, which covers a broad definition of dietary pattern or an indicator of variety across key food groups. Some definitions use nutrient intakes, while some others use the frequency of food group consumption. Thus, high quality diet is meeting optimal nutrient intake profiles (Dalwood *et al*, 2020). Exclusion: • Any diet is given in clinical settings or for a specific purpose in treating a disease or malnutrition.
Comparator(s)/control	NA
Types of study to be included	Inclusion: • Quantitative studies, including observational studies, RCT and other community trials. Exclusion: • Qualitative studies • Animal studies • Review studies
Context	NA
Main outcome (s)	Iron deficiency
Secondary outcome (s)	Iron deficiency anemia
Data extraction (selection and coding)	The first screening will confirm the titles and abstracts. The second screening will confirm full-text articles based on the criteria of the risk of bias. 1. Data extraction table from a systematic review is designed.

	2. Two reviewers (BAP, SDP) extract study data independently, with findings compared and agreed upon. Checking for human error/consistency and getting a consensus of the extraction by multiple reviewers using a subset of eligible studies. 3. Data extraction for the first screening: a) Studies published in English. b) Study design: quantitative studies (e.g., observational studies, RCT, community trials) c) Settings: Studies were conducted in the communities and not at hospitals, clinics, schools, and other specific institutions. d) Study sample: Female adolescents aged 15-19 years e) Sample size: >200 female adolescents f) Methods of recruitment: Community-based recruitment g) Primary outcome: Iron deficiency h) Other outcomes: Iron deficiency anemia i) Exposure: Dietary quality, including high-quality diets high in iron, protein and animal-source food or low-quality diets, such as plant-based diets. Dietary quality also includes diets which can be measured by certain indicators/tools, such as Dietary Quality Index for Adolescents, Healthy Eating Index, Global Diet Quality Score, Dietary Diversity Score, and other indicators. Dietary quality does not include those within a certain diet for disease or malnutrition treatment.
Risk of bias (quality) assessment	JBI: an assessment of methodological limitations or risk of bias of the evidence included within a scoping review is generally not performed.
Strategy for data synthesis	We will extract the studies and describe them using the following categories:

	• Settings: administrative divisions (e.g., urban/rural village, district, country) • Dietary quality: high-quality diets (e.g., high iron, high protein, animal-source food), low-quality diets (e.g., plant-based diets), diets measured by a certain indicator (e.g., Healthy Eating Index, Dietary Diversity Score) • Outcome: iron deficiency, iron deficiency anemia • Results: - Association between dietary quality and iron deficiency - Association between dietary quality and iron deficiency anemia
Analysis of subgroups or subsets	None planned
Type and method of review	Scoping review
Language	English
Country	Indonesia
Other registration details	N/A
Reference and/or URL for published protocol	N/A
Dissemination plans	N/A