

Evaluation of an educational nutritional curriculum among adolescent girls in Zambia

Submission date 26/02/2018	Recruitment status No longer recruiting	☐ Prospectively registered
		☐ Protocol
Registration date 04/06/2018	Overall study status Completed	☐ Statistical analysis plan
		☒ Results
Last Edited 13/08/2021	Condition category Nutritional, Metabolic, Endocrine	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Adolescence is a critical period in the lives of young people, and potentially a time to reap lasting benefits from interventions that improve general, nutritional, sexual, reproductive, and maternal and child health. Undernutrition in adolescent girls can have a direct impact on their immune function and susceptibility to infectious diseases, as well as increase mortality risk during childbirth. Micronutrient deficiencies, including iron, Vitamin A, and zinc deficiency, frequently result in lethargy and depression, and are associated with decreased cognitive function and productivity. Anemia is a critical health concern among pregnant adolescents who, if anemic, have an increased risk of death. Data from national surveys in Zambia indicate a high prevalence of deficiencies in both macro and micronutrients. The aim of this study is to assess the impact of an adolescent girls' empowerment program that includes a nutritional educational component on nutritional knowledge, behaviors and health outcomes. A broader objective is to provide evidence for the Zambian national government ministries to set policy priorities and develop strategic plans for scaling up cost-effective programs that address nutritional deficiencies in adolescent girls. The findings will also inform stakeholders and civil society working on nutrition and nutrition-sensitive interventions. A final aim is to inform donors about cost-effective approaches that increase the impact of nutrition interventions. Additionally, the study contributes to the knowledge base of nutritional research and effective methods for addressing anemia and other nutritional deficiencies in adolescent girls and their children.

Who can participate?

Vulnerable, never married adolescent girls aged 10–19, selected among all girls participating in a girls' empowerment program conducted over 2 years in urban and rural areas in four provinces of Zambia. In urban areas girls are selected from high-density housing compounds in the cities of Lusaka, Kabwe, Ndola and Kitwe. In rural areas, girls are selected from multiple adjacent villages or chiefdoms in Central, Copperbelt and Northwestern provinces. The empowerment program identified and targeted the most vulnerable girls living in selected program areas.

What does the study involve?

The program areas are randomly allocated to receive the empowerment program or to not receive the program. Girls participating in the empowerment program's weekly girls' groups are additionally randomly allocated to receive, or not, the educational curriculum guided sessions on

nutrition. All girls selected to participate in the curriculum learn about general topics about food, micro and macro nutrients, and anemia; older adolescents 15–19, receive additional information on nutrition during pregnancy and proper infant and child feeding behaviors. All girls in the empowerment program girls' groups, regardless of whether they additionally receive the nutritional education component, participate in mentor-led sessions on the topics of sexual and reproductive health, life skills and financial education.

What are the possible benefits and risks of participating?

The benefits of participation are information regarding proper nutrition and anemia for themselves and their children, sexual reproductive health, life skills and financial education. Additionally, girls who participate in the research are tested for anemia, counselled on the results and referred to health services if found to be severely anemic. There are very minimal risks to the participant. The risks include any sensitivities to answering questions about themselves and, for those tested for anemia, from infection to the puncture of the finger prick.

Where is the study run from?

The study is community-based with interviews conducted at households within selected urban and rural areas of four provinces of Zambia

When is the study starting and how long is it expected to run for?

November 2012 to July 2018

Who is funding the study?

Department for International Development (UK)

Who is the main contact?

Dr Karen Austrian

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Contact information

Type(s)

Public

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Protocol serial number

Population Council Protocol 581; University of Zambia, Biomedical Research Ethics Committee
protocol 008-11-12

Study information

Scientific Title

Evaluation of the impact a randomized educational nutritional intervention on nutritional knowledge, dietary intake and anthropometric outcomes for girls 10-19 years of age participating in a The Adolescent Girls' Empowerment Program in Zambia

Study objectives

1. The intervention will improve nutritional knowledge among exposed participants compared to unexposed participants
2. The intervention will improve dietary intake among exposed participants and their children compared to unexposed participants and their children
3. The intervention will improve anthropometric outcomes among exposed participants and their children compared to unexposed participants and their children

Ethics approval required

Old ethics approval format

Ethics approval(s)

1. Population Council, Institutional Review Board, 24/10/2013, ref: 581
2. University of Zambia, Biomedical Research Ethics Committee, ref: 008-11-12

Primary study design

Interventional

Study design

Two-arm randomized cluster evaluation

Study type(s)

Prevention

Health condition(s) or problem(s) studied

Insufficient dietary intake, stunting, thinness, underweight, overweight, obesity, anemia

Interventions

Participants in this study included vulnerable, never married adolescent girls aged 10–19. The girls were selected among all girls participating in a girls' empowerment program conducted over two-years and implemented urban and rural areas in four provinces of Zambia. In urban areas girls were selected from high-density housing compounds in the cities of Lusaka, Kabwe, Ndola and Kitwe. In rural areas, girls were selected from multiple adjacent villages or chiefdoms in Central, Copperbelt and Northwestern provinces. The empowerment program identified and targeted the most vulnerable girls living in selected program areas. A random selection process determined whether girls in the pre-selected programs areas would be invited to participate in the empowerment program or would be assigned to non-program areas (control).

The Adolescent Girls Empowerment Program targeted adolescent girls drawn from lower-income backgrounds and invited them to participate in mentor-led weekly girls group meetings over the course of two years. Three curricula guided the meetings, including health and life skills, financial education and nutrition for adolescent girls. Half of the weekly girls' groups (mentors) were randomly assigned to an arm that included the nutritional curriculum, while half of the girls' groups (mentors) were randomly assigned to an arm that did not implement the nutritional curriculum.

All girls selected to participate in the nutritional curriculum learned about general topics about food, micro and macro nutrients, and anemia; older adolescents 15–19, received additional information on nutrition during pregnancy and proper infant and child feeding behaviors.

All girls in the empowerment program girls' groups, regardless of whether they additionally received the nutritional education component, participated in mentor-led sessions on the topics of sexual and reproductive health, life skills and financial education.

Intervention Type

Behavioural

Primary outcome(s)

Survey data was collected annually, with Round 1 starting in 2013:

1. Nutritional knowledge: health/unhealthy foods; causes and signs and symptoms of anemia; proper infant and child feeding practices measured through survey interviews annually (Round 3-Round 5)
2. Nutritional behavior: dietary diversity, eating of nutrient rich foods, infant and child feeding practices measured through survey interviews annually (Round 1-Round 5)

Key secondary outcome(s)

1. Nutritional outcomes (stunting, thinness, underweight, overweight, obesity) using anthropometric measurements (Round 1-Round 5)
2. Anemia measured using point-of-care anemia testing (Round 3-Round 5)

Completion date

30/07/2018

Eligibility

Key inclusion criteria

1. Residing in areas covered by the intervention program
2. Aged 10-19 at baseline
3. Assigned to a program girls group (mentor)
4. Sampled for the AGEF program evaluation

Participant type(s)

Other

Healthy volunteers allowed

No

Age group

Mixed

Sex

Female

Total final enrolment

2660

Key exclusion criteria

1. Currently or formerly married at baseline

Date of first enrolment

07/01/2013

Date of final enrolment

30/11/2017

Locations**Countries of recruitment**

Zambia

Study participating centre

Lusaka Province, Zambia

Zambia

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Sponsor information**Organisation**

Population Council

ROR

<https://ror.org/03zjj0p70>

Funder(s)

Funder type

Government

Funder Name

Department for International Development, UK Government

Alternative Name(s)

DFID

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Paul C. Hewett (phewett@popcouncil.org); Karen Austrian (kaustrian@popcouncil.org). Type of data: individual level survey data, biomarker data, anthropometric data. Availability of data: currently available, no end date of availability. Criteria: user must complete a data use agreement form to access the data and obtain approval for use; there are generally no restrictions on the data use for program or research purposes, an exception is when there is a conflicts with other researchers and/or investigators who planned to publish on certain topics; these are evaluated on a case-by-case basis. Mechanism: the data and instruments are downloadable. Written informed consent (adults) or parental/guardian consent and minor assent (aged < 18 years) was obtained for all aspects of study participation and data collection. The data publicly available has been de-identified to protect the confidentiality of study participants. The data can be used only for non-commercial purposes.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		22/07/2020	13/08/2021	Yes	No

Funder report results		01/01/2018	13/08/2021	No	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes