Household agricultural practices were barriers to an iron-rich diet among adolescents in rural Ghana: grounded theory from a participatory video intervention

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QUEEN ELIZABETH Scholars

- No conflicts to disclose

Adolescent nutrition in Ghana

- Micronutrient deficiencies remain high
  - 27% non-pregnant adolescent girls (15-19 y) were anemic in 2017[1]
- Preferred energy-dense foods high in fat and sugar[2]
- Carbohydrate-rich foods like rice and tubers provide the highest contribution to daily caloric intake[3]
- Low diet diversity
  - 56% of students (14-18y) consumed up to 2 food groups/day[4]

[1]University of Ghana, 2017; [2]Buxton, 2014; [3]Kushitor, 2021; [4]Nti, 2012

Participatory research approach

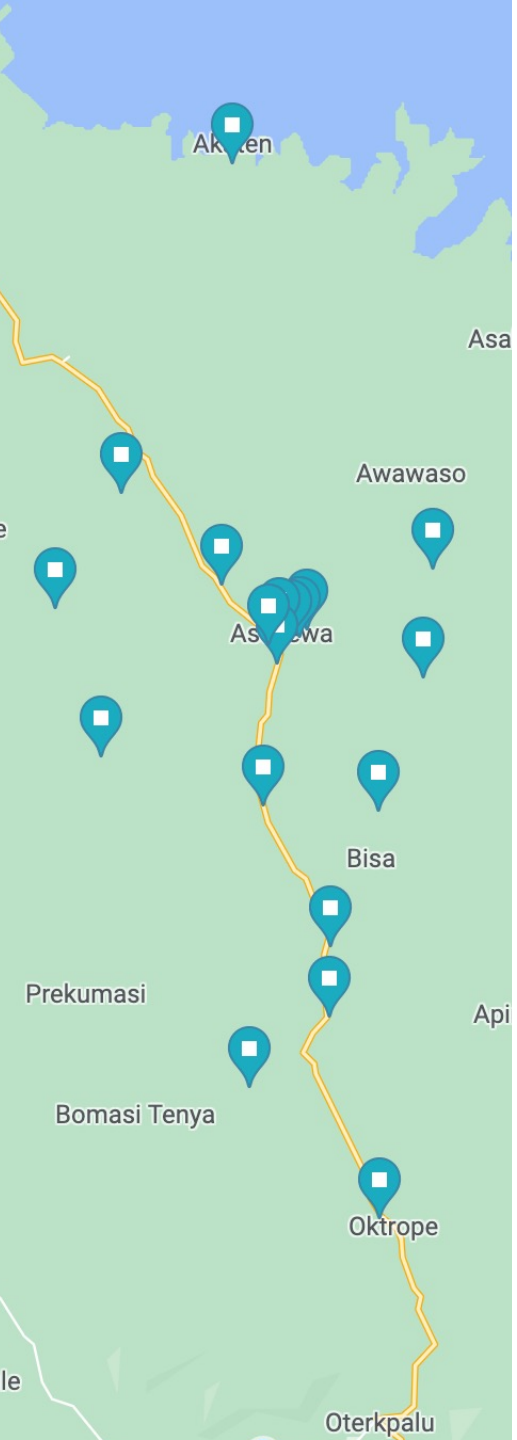
- Work alongside adolescents
  - Aligned with goals of United Nations Youth Strategy[1]

- Participatory video methodology
  - Values community-held knowledge
  - Community-based video-making
  - Framework for dialogue and action
  - Used in community development
    - In research, education, and advocacy

[1]United Nations, 2018

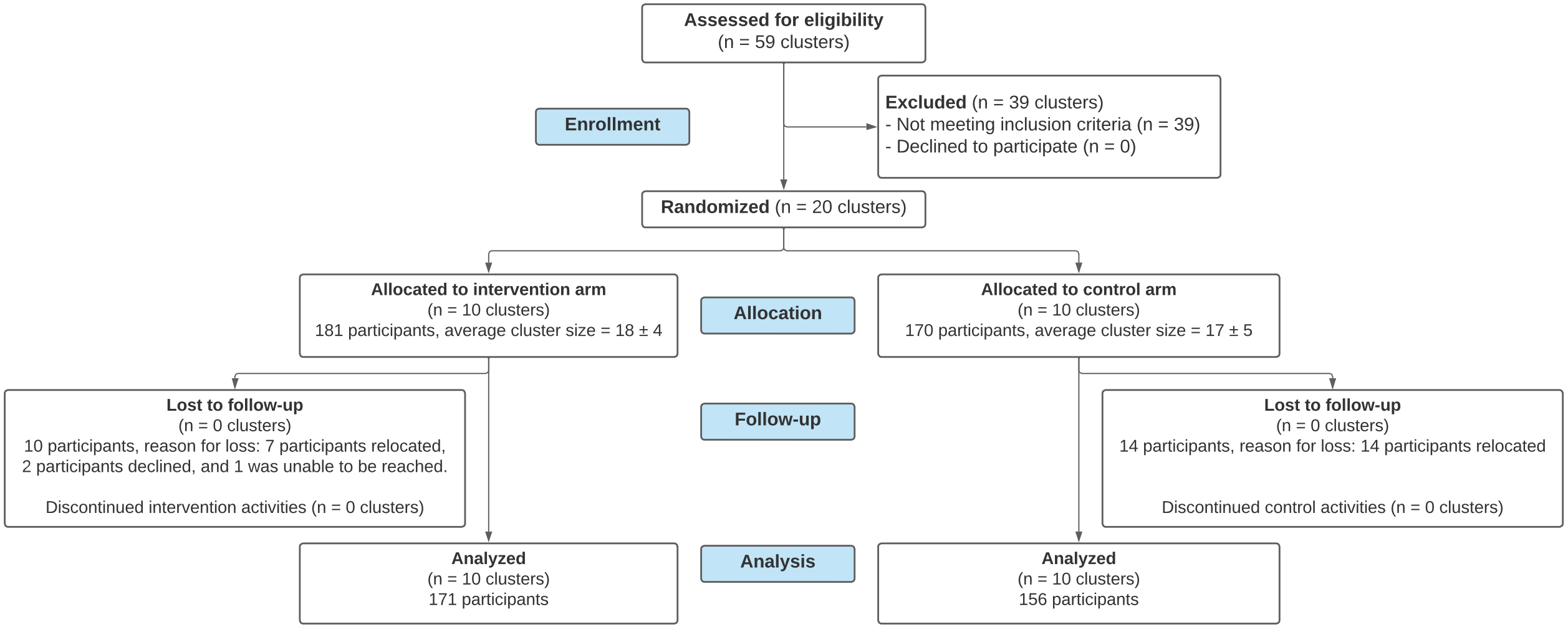
Research aim

To explore the most pressing obstacles adolescent girls faced in getting a balanced and iron-rich diet in rural Ghana



A cluster randomized controlled trial

- Clusters (n=20)
  - Schools where girls' clubs were being implemented in the 2018-2019 school year
  - Schools with junior high school students
  - Within a 30-minute driving radius from the district capital, Asesewa
- Participants
  - Adolescent girls, 13-16 y, who spoke Krobo
  - Participating in existing girls' clubs in primary and junior high schools at the time of recruitment


Assessed for eligibility
(n = 59 clusters)
Enrollment
Excluded (n = 39 clusters)
- Not meeting inclusion criteria (n = 39)
- Declined to participate (n = 0)
Randomized (n = 20 clusters)
Allocated to intervention arm
(n = 10 clusters)
181 participants, average cluster size = 18 ± 4
Allocation
Allocated to control arm
(n = 10 clusters)
170 participants, average cluster size = 17 ± 5
Lost to follow-up
(n = 0 clusters)
10 participants, reason for loss: 7 participants relocated,
2 participants declined, and 1 was unable to be reached.
Discontinued intervention activities (n = 0 clusters)
Follow-up
Lost to follow-up
(n = 0 clusters)
14 participants, reason for loss: 14 participants relocated
Discontinued control activities (n = 0 clusters)
Analyzed
(n = 10 clusters)
171 participants
Analysis
Analyzed
(n = 10 clusters)
156 participants

Research arms

Activity	Intervention group	Control group
Regular weekly girls' club activities with school teacher	✓	✓
Nutrition education curriculum - **Lesson 1** – Adolescent Nutrition - **Lesson 2** – Balanced Diet - **Lesson 3** – Anemia in Adolescent Girls	✓	✓
Two participatory video workshops (~ 9 hours / workshop)	✓	
Trained facilitators to guide workshops	✓	
Activities to identify the most pressing nutrition obstacles	✓	
Film production, screening and discussion	✓	

Intervention activities

- Had reflexive discussions with peers

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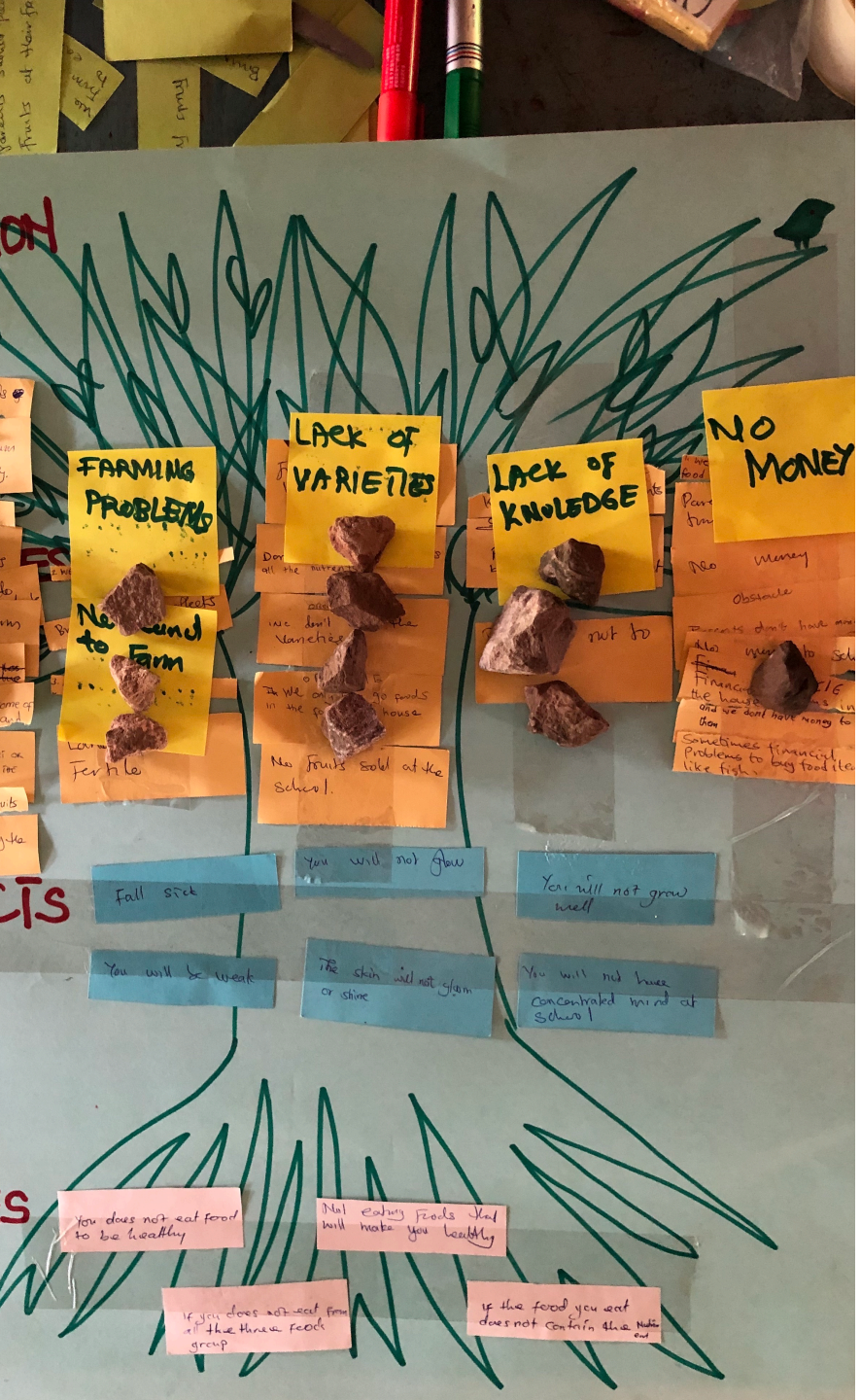
- Individually identified the pressing challenge they faced to getting
  1. balanced diet (video 1)
  2. iron-rich foods (video 2)

Intervention activities

- Had reflexive discussions with peers
- Individually identified the pressing challenge they faced to getting
  1. balanced diet (video 1)
  2. iron-rich foods (video 2)
- Collectively mapped out major challenges



Intervention activities – cont'd

- Voted on the most pressing challenges they faced
- Devised realistic solutions

Intervention activities – cont’d

- Reflected on lived experience and planned a storyboard

Intervention activities – cont'd

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- Acted and filmed short dramatization

Intervention activities – cont'd

- Reflected on lived experience and planned a storyboard
- Acted and filmed short dramatization
- Held screening with classmates
- Participated in group reflection

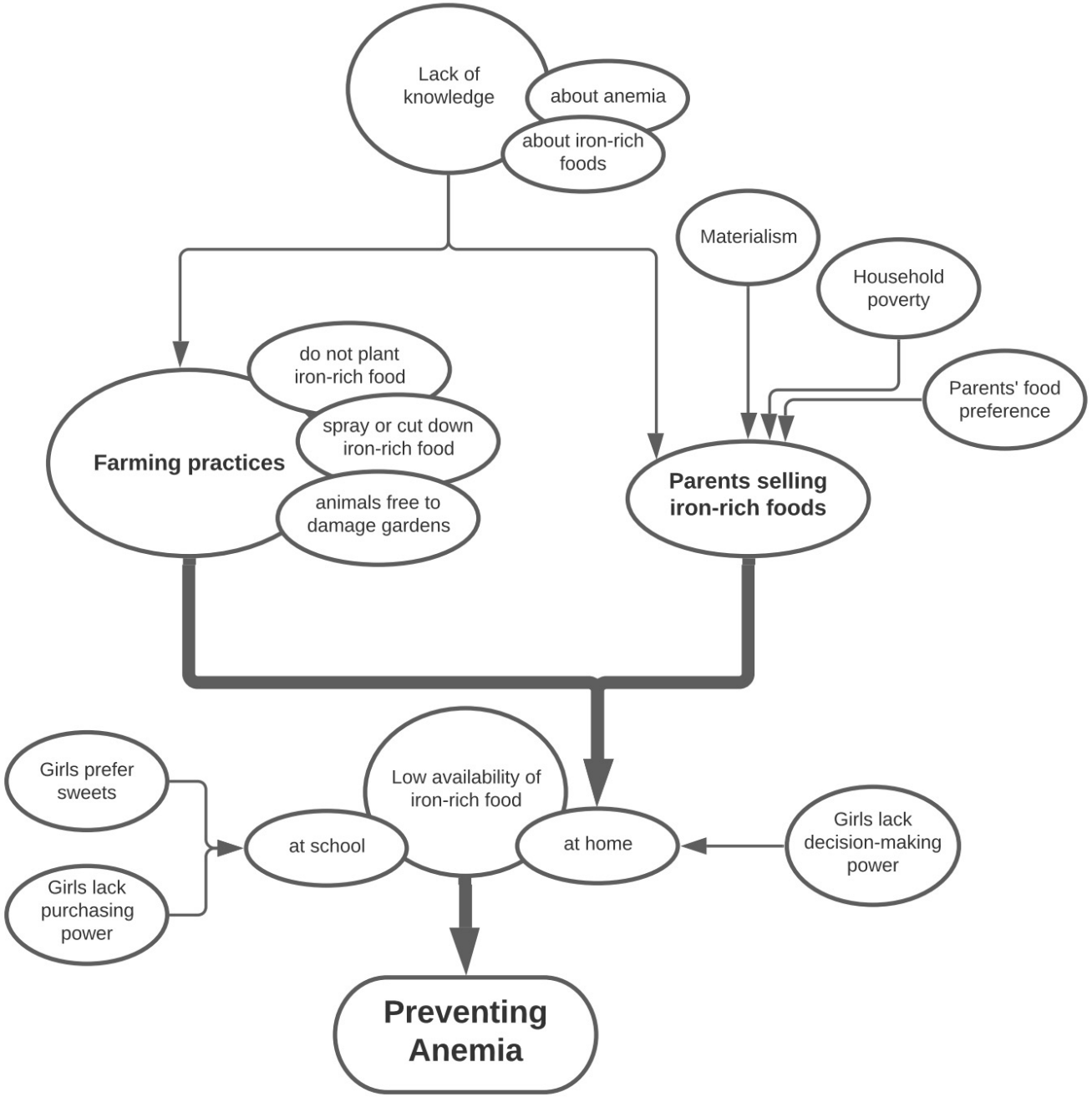
To explore the most pressing obstacles adolescent girls in UMKD face in getting a balanced and iron-rich diet

- Participatory research activities embedded into the intervention
  - Activity output:
    - 20 cognitive maps on the range of challenges faced
    - 20 videos exploring the most pressing challenges
- Inductive thematic analysis of the cognitive maps and videos using MaxQDA2020 software

Here is a glimpse of one of the videos created.

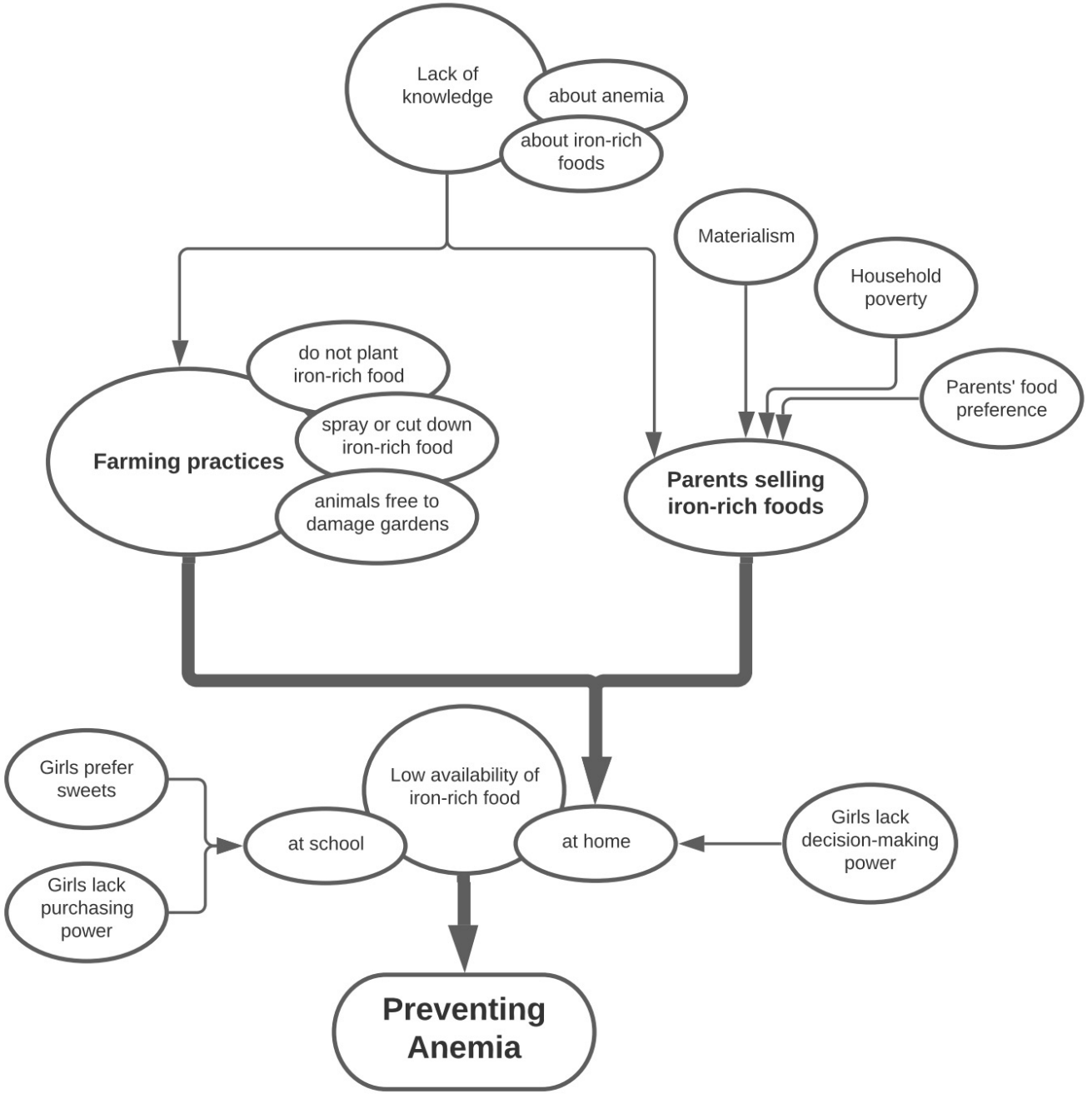
What challenges did the adolescent girls face to acquire an iron-rich diet?

Results – *What obstacles do you face in preventing anemia?*



"We have kontomire around us and we fill our baskets to sell [it] for just two cedis. Then we use that money to buy ice cream, toffee and chips, and eat. Meanwhile we do not get any nutrients from these things."
Mother talking to husband and friend V1-S18

"[My wife planted] this cocoyam to spoil the land. And you are telling me not to spray it? […] I will spray (with weedicide) and use the land for cassava so that I can make money."
Father talking to a community member V2-S18



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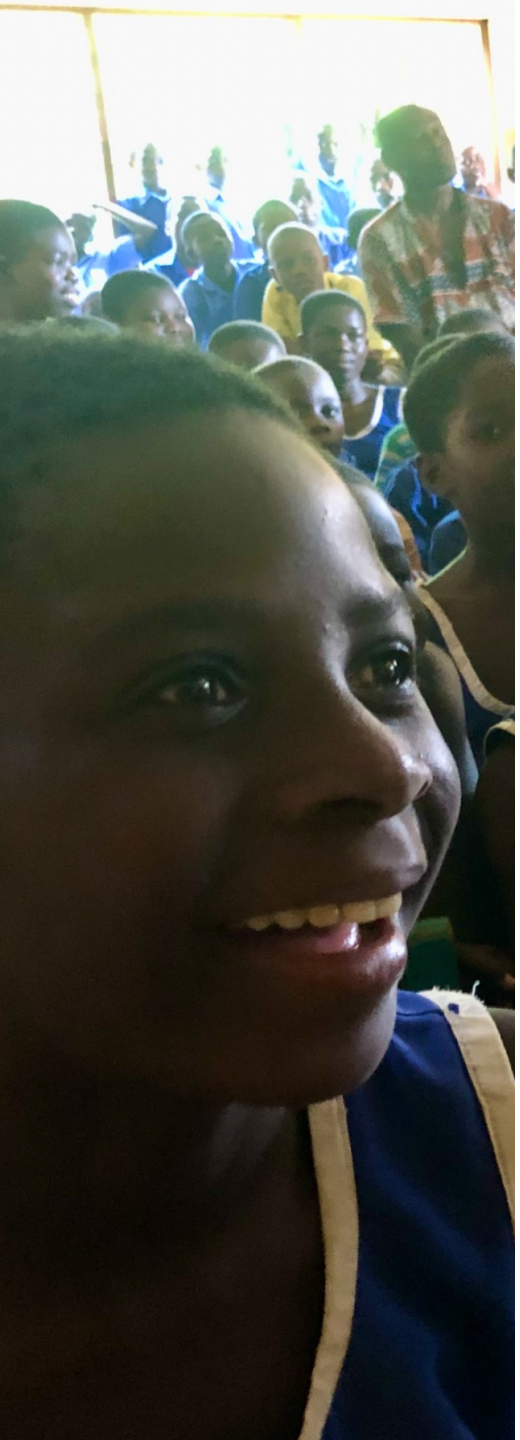
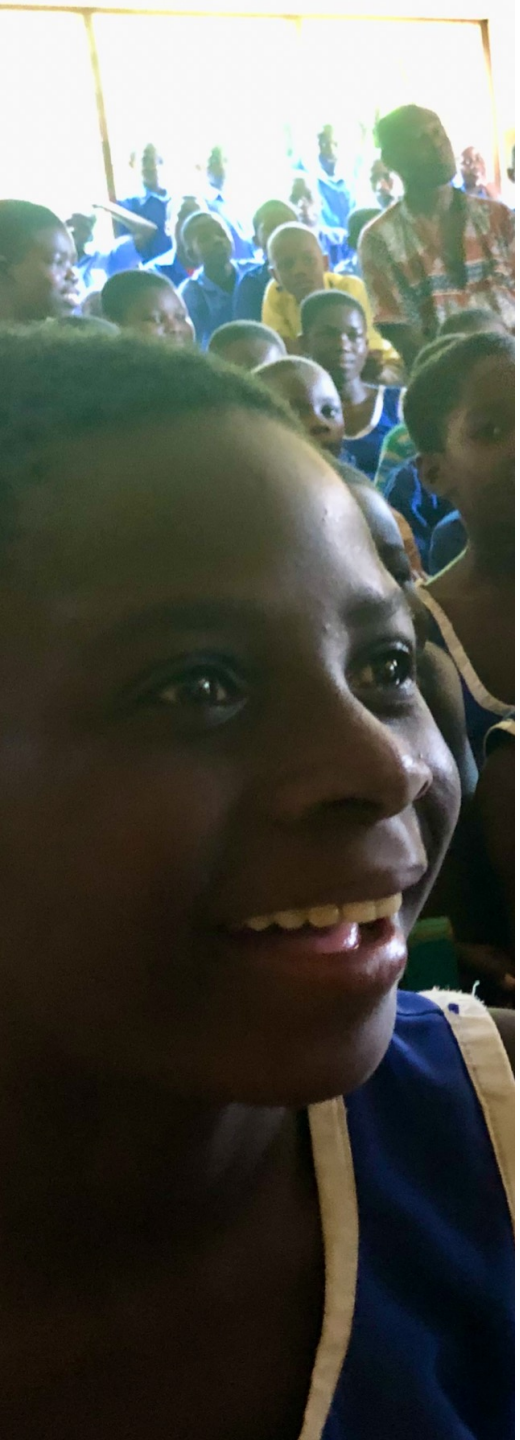
- Barriers in knowledge, access, availability, and agency
- Diet in the home
  - influenced by family knowledge and household agricultural practices and market behaviours
- Diet in the school environment
  - influenced by girls' knowledge, preferences, and purchasing power
  - Influenced by canteen staff knowledge and entrepreneurial activities



- Include parents and school staff
  - key influencers of adolescent health and nutrition in the home and school food environments
- Consider participatory video research methodology
  - framework for adolescents to actively reflect about their environments and communicate issues they deem urgent
- Support adolescents' involvement in shaping their health and nutrition environments.



Limitations

- Adolescents perceived obstacles
  - Limited by the experience of our demographic
  - May not reflect the full spectrum of challenges
- Analysis of dramatized videos
  - Videos were not documentaries

Ethical Clearance

- University of Ghana Ethics Committee for the Humanities
- McGill University Institutional Review Board III

- The project is registered with ClinicalTrials.gov
  ID NCT03704649

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