“If the distributors are strangers there will be resistance”

Perspectives on community-wide mass drug administration for soil-transmitted helminths in Kwale County, Kenya

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Study rationale

Effects, equity, and cost of school-based and community-wide treatment strategies for soil-transmitted helminths in Kenya: a cluster-randomised controlled trial


Summary

Background School-based deworming programmes can reduce morbidity attributable to soil-transmitted helminths in children but do not interrupt transmission in the wider community. We assessed the effects of alternative mass treatment strategies on community soil-transmitted helminth infection.

Methods In this cluster-randomised controlled trial, 120 community units (clusters) serving 150,000 households in Kenya were randomly assigned (1:1) to receive albendazole through annual school-based treatment targeting 2-14 year olds or annual or biannual community-wide treatment targeting all ages. The primary outcome was community hookworm prevalence, assessed at 12 and 24 months through repeat cross-sectional surveys. Secondary outcomes were Ascaris lumbricoides and Trichuris trichiura prevalence, infection intensity of each soil-transmitted helminth species, and treatment coverage and costs. Analysis was by intention to treat. This trial is registered with ClinicalTrials.gov, number NCT02197772.

Findings After 24 months, prevalence of hookworm changed from 18%–6% (95% CI 13%–9%–23%–2) to 13%–8% (10%–5–17–9) in the annual school-based treatment group, and 17%–9% (13%–7–22–1) to 8%–9% (9%–6–10–3) in the annual community-wide treatment group, and 20%–6% (15%–8–23–5) to 6%–2% (4%–9–7–5) in the biannual community-wide treatment group. Relative to annual school-based treatment, the risk ratio for annual community-wide treatment was 0.59 (95% CI 0.42–0.83; p=0.003) and for biannual community-wide treatment was 0.46 (0.33–0.63; p<0.001). More modest reductions in risk were observed after 12 months. Risk ratios were similar across demographic and socioeconomic subgroups after 24 months. No adverse events related to albendazole were reported.

Interpretation Community-wide treatment was more effective in reducing hookworm prevalence and intensity than school-based treatment, with little additional benefit of treating every 6 months, and was shown to be remarkably equitable in coverage and effects.

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Study background
Study methodology

**Focus group discussions**

- Community members × 32
  *(Participants grouped by age and sex)*

**In-depth interviews**

- Opinion leaders × 32
  *(e.g. Religious and community leaders)*

- Community health assistants (CHAs) × 8
  *(supervisors of drug distributors)*

- Community health volunteers (CVHs) × 32
  *(Drug distributors)*
Conceptual framework

- **Context of MDA**
  - **Implementation of MDA**
    - **Project inputs**
      - Supplies
      - Transport
      - Training
      - Workload
    - **Engagement activities**
    - **Recipient awareness**
      - Recipient trust
      - Recipient demand
    - **Implementer motivation & capacity**
    - **Perceived safety & rumours**
  - **Reach**
  - **Uptake**

**Key**
- Inputs and activities
- Intermediate outcomes
- Contextual factors
- Final outcome
Domains of reach & uptake

**Reach – Key domains**

1. adaptable implementation strategy and efficient supply chain
2. community availability
3. Implementer training and motivation

**Uptake – Key domains**

1. perceived safety, rumours and beliefs
2. perceived effectiveness and need
3. community engagement activities, community awareness and knowledge
“I can say these days are not enough… Every time they ask why these villages are not always covered I told them I was doing it alone and it’s a big village, so it’s either they increase the number of days or they increase the CHVs” (CHV)
Domains of reach & uptake

Reach – Key domains
1. adaptable implementation strategy and efficient supply chain
2. community availability
3. Implementer training and motivation

Uptake – Key domains
1. perceived safety, rumours and beliefs
2. perceived effectiveness and need
3. community engagement activities, community awareness and knowledge
“If only one person and the guide were to distribute to all houses maybe they arrive at around noon when most women go to the shamba (garden) and the children have gone to play so it was difficult.”
(Community member, youth male FGD)

“You can revisit even three times but you won’t find them. Because in our area if a man is not employed he goes to [the] quarry and mine stones.”
(CHV)
Reach – Key domains

1. adaptable implementation strategy and efficient supply chain
2. community availability
3. Implementer training and motivation

Uptake – Key domains

1. perceived safety, rumours and beliefs
2. perceived effectiveness and need
3. community engagement activities, community awareness and knowledge
“I thought [the MDA] was good because good health is needed by everyone ... good health brings happiness. Another reason is moving in the community helps the community know you.”

(CHV)
Domains of reach & uptake

Reach – Key domains
1. adaptable implementation strategy and efficient supply chain
2. community availability
3. Implementer training and motivation

Uptake – Key domains
1. perceived safety, rumours and beliefs
2. perceived effectiveness and need
3. community engagement activities, community awareness and knowledge
“Some swallowed the tablets some didn’t. Those who did not some said they heard rumours that the drugs are meant for family planning and they can cause strokes and elephantiasis”

(Community member, youth female FGD)

“When one is given the drugs they just take the drug to end the conversation [with CHVs] and then later they throw it, because the drug may be illuminati wanting to take their blood.”

(Community member, youth male FGD)
Domains of reach & uptake

Reach – Key domains
1. adaptable implementation strategy and efficient supply chain
2. community availability
3. Implementer training and motivation

Uptake – Key domains
1. perceived safety, rumours and beliefs
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3. community engagement activities, community awareness and knowledge
“I think it was fine because many people have less problems since we had children with worms and after taking the drugs and slept at night, the worms were getting out and now the problems have ceased. So the drugs have helped people a lot.”

(Opinion Leader)

“But the drugs were given to everybody, how did they know each and every one has worms? The process was not perfect at all. Maybe I am being treated for an illness I don’t have!”

(Community member, youth male FGD)
Domains of reach & uptake

Reach – Key domains
1. adaptable implementation strategy and efficient supply chain
2. community availability
3. Implementer training and motivation

Uptake – Key domains
1. perceived safety, rumours and beliefs
2. perceived effectiveness and need
3. community engagement activities, community awareness and knowledge
“They [the drugs] were left behind for me, and when I came back my wife gave them back to me. I asked who had left them and I was told, it’s [CVH name]. I remembered that the chairman had told me about it, I didn’t hesitate or throw them away.”

(Community member, youth male FGD)

“In my village, those who did not take the drugs are there but later they used them, they refused because the [CHV] did not have knowledge to explain to them clearly on the importance and use the drugs so that they can understand better.”

(Community member, youth male FGD)
## Recommendations (1)

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<tr>
<th>Theme</th>
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<tr>
<td>1. Development of an efficient and reasonable workload</td>
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<td>2. Motivated and appropriately selected drug distributors</td>
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<td>2. Motivated and appropriately selected drug distributors</td>
<td>• Plan distribution strategies so as to maximize the availability of target communities</td>
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<td>• Develop adaptable implementation strategies that respond to feedback from/needs of implementers and recipients</td>
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• Ensure sufficiency of: number of drug distributors and supervisors + provision of transport

• Plan distribution strategies so as to maximize the availability of target communities

• Develop adaptable implementation strategies that respond to feedback from/needs of implementers and recipients
## Recommendations (2)

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<td>1. Development of an efficient and reasonable workload</td>
<td>• Develop an effective recruitment strategy and accompanying incentive structure (both intrinsic and financial/material)</td>
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<td>2. Motivated and appropriately selected drug distributors</td>
<td>• Use of drug distributors that live and work in the area that they are from so to engender trust</td>
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<td>Development of an efficient and reasonable workload</td>
<td>• Develop capacity building activities that avoid repetition of material, have sufficient time, consider varying degrees of experience, and are scheduled to avoid overlap with ongoing responsibilities</td>
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<td>1. Development of an efficient and reasonable workload</td>
<td>• Consider community experiences with past MDAs, address common rumors and fears surrounding MDA</td>
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<td>2. Motivated and appropriately selected drug distributors</td>
<td>• Use existing community structures, ensure sufficient duration and spacing of messages, &amp; utilize multiple communications channels</td>
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Conclusion

• Key strategies that STH programmes transitioning to CW MDA can use to maximise coverage include:
  • Development of an efficient and reasonable workload
  • Appropriately recruited and motivated drug distributors
  • Locally adapted and appropriately scheduled training
  • Contextually-relevant community engagement strategies

• Challenges and solutions identified in this study similar to many found in wider literature for other PC NTDs

• Suggests greater collaboration and shared learning between PC NTD programmes could be very beneficial
Acknowledgements

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