Advancing Evidence for the Global Implementation of SPATIAL REPELLENTS

AEGIS Kenya Social Science: *Rationale, Methods, Interim results and Implications*

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Research Objective

- Investigating behavioural, market, and practical factors affecting potential of household spatial repellent use
- Complimentary to a randomized-controlled trial testing the efficacy of a spatial repellent intervention class for malaria control

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Rationale and Methods

- No strategy will be successful if the affected population does not perceive benefit, believe in it and adopt it
  - Retail audit to identify malaria prevention tools available in the local market
  - Free-listing and ranking of mosquito control products
  - Observations of night time activities and sleeping patterns
  - Trials of improved practices (TIPs) to better understand participant experiences with and perceptions of SRs
  - In-depth interviews
  - Key informant interviews (KIIs)

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Retail Audit: photos

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TIPs: photos

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Night-time observations: photos

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Results: Retail Audit & Free listing

- Retail outlets commonly stocked mosquito coils (73.0%), topical repellents (38.1%), aerosol insecticide sprays (23.8%) and ITNs (14.3%)
- Others included insecticide incense sticks, electric mosquito strikers, insecticide soaps, electrically heated insecticide mats, and electric insecticide emanators
- Free lists: Elicited 317 tools, coded into 47 categories
- Participants often mentioned ITNs, mosquito coils, draining stagnant water, creating smoke and clearing the compound
- Others included spraying insecticide and closing doors/windows early, applying mosquito repellent and clearing the compound of garbage

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Results: Baseline HLC & Night-time Observations

- *Anopheles gambiae s.l.* species complex and *An. funestus* comprised the majority of anophelines collected
- Indoor biting rates were 59% and 71%, respectively
- However, when accounting for overlayed indoor and outdoor resident location, an estimated 97% of bites occurred indoors
- Using an ITN while sleeping was estimated to prevent 80% of bites for *An. gambiae s.l.* and 83% of bites for *An. funestus*

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Results: TIPs R1 (1 week) & R2 (2 months)

- R1: Most participants mentioned a perception that the product was effective, reporting fewer mosquitos
- As a result, some households reported stopping use of other mosquito control tools
- R2: Some reported mosquitoes had started to return
- Participants had positive views of the intervention; benefits of protection outside of sleeping hours when nets provide protection, and not requiring daily action
- Most liked the product appearance and some suggested increasing what they perceived as an active ingredient to make it last longer

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Implications

- The wide range of tools within the study area suggests the need and demand for tools, in addition to ITNs, that are affordable, easy to use and effective
- Differences between unadjusted anopheline vector collection rates and human behaviour-adjusted indicators highlight the importance of integrating entomological and human behavioural data for a comprehensive understanding of malaria risk
- This research will provide important data for comparing perceptions of SR product feasibility, effectiveness, and acceptability following trial unblinding
- Results will be considered for designing and large-scale distribution of the spatial repellent

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