Introduction

- Globally, infectious diseases cause 15 million deaths/year; malaria causes 6.7 million cases and 4,000 deaths/year1-4.
- Prompt diagnosis and early treatment can reduce transmission rates of infectious diseases, including malaria1-6.
- Challenges persist in seeking immediate treatment after fever onset in malaria endemic countries, influenced by symptom recognition and perceived severity3,7.
- Residents of Western Kenya experience high risks of infection from endemic malaria3. However, self-reported symptoms and the association with treatment-seeking decisions in the lowlands and highlands of Western Kenya has not been studied.

Objective

Evaluate relationship between self-reported symptoms and treatment-seeking behaviors among surveyed participants who reported fever at last illness in lowlands and highlands of Western Kenya.

Methodology

Study Description
- Cross-sectional, individual- and household level surveys
- Sites: Kapkangani (highlands) and Mwani (lowlands), Western Kenya
- 2015, post-rainy season

Inclusion Criteria
- Reporting fever at last illness

Exposure
- Self-reported symptoms (fever only, fever & aches, fever & aches & digestive, fever & aches & respiratory, fever & other symptoms)

Outcomes
- Treatment-seeking at last illness
- Source of treatment – formal (hospital and clinics) vs informal (chemist, herbalist, spiritual healer, etc.)

Statistical Analysis
- Logistic regression models (accounting for household-level clustering) adjusting for one covariate at a time (i.e., sex)
- Performed using STATA 14

Results

- The last illness included fever for 1,402 highlands and 1,072 lowlands participants, of whom 1,329 (94.8%) and 662 (61.8%), respectively, sought some form of treatment (p < 0.001).
- Most participants in the lowlands self-reported fever and aches (n = 372, 34.7%) and most highlands participants self-reported fever, aches, and digestive symptoms (n = 804, 57.4%).
- Formal sources (hospitals/clinics) were significantly more common than informal (chemical, herbalist, spiritual healer, etc.) in both sites (p < 0.001).
- Amongst those participants that sought any treatment, they were more likely to seek formal treatment and self-report fever, aches & digestive symptoms in the highlands, and self-report fever, aches, and respiratory symptoms in the lowlands (Figure 1).
- The number of self-reported symptom categories was associated with likelihood of treatment-seeking in both sites, after adjusting for age (Table 1)
- Adjustments for severity perception of malaria and sex but these did not alter the findings.
- There was not a statistically significant association between the number of self-reported symptom categories and formal treatment-seeking [Data not shown].

Discussion

- Self-reporting multiple categories of symptoms was significantly associated with increase in treatment-seeking in lowlands and highlands of Western Kenya.
- High variability in treatment-seeking practices and symptom distribution even in relatively close geographic areas.
- Relatively few people seek treatment for fever alone in either site.
- Understanding the treatment-seeking behaviors after febrile illness are important to control and treat infectious diseases in the community.

Table 1. Odds ratios of treatment-seeking.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Sought Treatment n (%)</th>
<th>Unadjusted OR (95% CI)</th>
<th>Age-Adjusted OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever + Aches</td>
<td>216 (93.1)</td>
<td>1.0 [Reference]</td>
<td>1.0 [Reference]</td>
</tr>
<tr>
<td>Fever Only</td>
<td>19 (67.9)</td>
<td>0.2 (0.1, 0.5)</td>
<td>0.2 (0.04, 0.8)</td>
</tr>
<tr>
<td>Fever + Aches &amp; Digestive</td>
<td>788 (98.0)</td>
<td>3.6 (1.8, 7.4)</td>
<td>3.7 (1.8, 7.7)</td>
</tr>
<tr>
<td>Fever + Aches &amp; Respiratory</td>
<td>47 (82.5)</td>
<td>0.3 (0.1, 0.9)</td>
<td>0.3 (0.1, 1.0)</td>
</tr>
<tr>
<td>Fever + Other symptoms</td>
<td>259 (89.2)</td>
<td>0.9 (0.5, 1.7)</td>
<td>0.7 (0.4, 1.8)</td>
</tr>
<tr>
<td>Lowlands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fever + Aches</td>
<td>241 (84.4)</td>
<td>1.0 [Reference]</td>
<td>1.0 [Reference]</td>
</tr>
<tr>
<td>Fever Only</td>
<td>67 (26.3)</td>
<td>0.2 (0.1, 0.3)</td>
<td>0.2 (0.1, 0.3)</td>
</tr>
<tr>
<td>Fever + Aches &amp; Digestive</td>
<td>99 (84.6)</td>
<td>3.0 (1.7, 5.4)</td>
<td>2.9 (1.6, 5.2)</td>
</tr>
<tr>
<td>Fever + Aches &amp; Respiratory</td>
<td>99 (82.5)</td>
<td>2.6 (1.5, 4.4)</td>
<td>2.5 (1.4, 4.2)</td>
</tr>
<tr>
<td>Fever + Other symptoms</td>
<td>156 (75.0)</td>
<td>1.6 (1.3, 2.5)</td>
<td>1.5 (1.0, 2.3)</td>
</tr>
</tbody>
</table>

References and Acknowledgements

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References: