Self-Reported Symptoms of Illness and Treatment-Seeking in Western Kenya

THE UNIVERSITY OF ARIZONA
Mel & Enid Zuckerman College of Public Health

Valerie Madera-Garcia[1], Jenna Coalson[2], Maurice Agawo[3], Stephen Munga[3], Melanie L. Bell[1], and Kacey Ernst[1]

1. The University of Arizona, Tucson, AZ, United States. 2. University of Notre Dame, Notre Dame, IN, United States 3. Kenyan Medical Research Institute, Kisian, Kenya.

Introduction

- Globally, infectious diseases causes 15 million deaths/year; malaria causes 6.7 million cases and 4,000 deaths/year[1-4].
- Prompt diagnosis and early treatment can reduce transmission rates of infectious diseases, including malaria[1-6].
- Challenges persist in seeking immediate treatment after fever onset in malaria endemic countries, influenced by symptom recognition and perceived severity [1, 7].
- Residents of Western Kenya experience high risks of infection from endemic malaria[5]. 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 Miwani (lowlands), Western Kenya
- 2015, post-rainy season

Inclusion Criteria

- Reporting fever at last illness.

Exclusion Criteria

- Unknown treatment-seeking status.
- Research team provided on-site treatment at the time of interview.
- Declined answers/missing values for symptoms and treatment-seeking questions.

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].

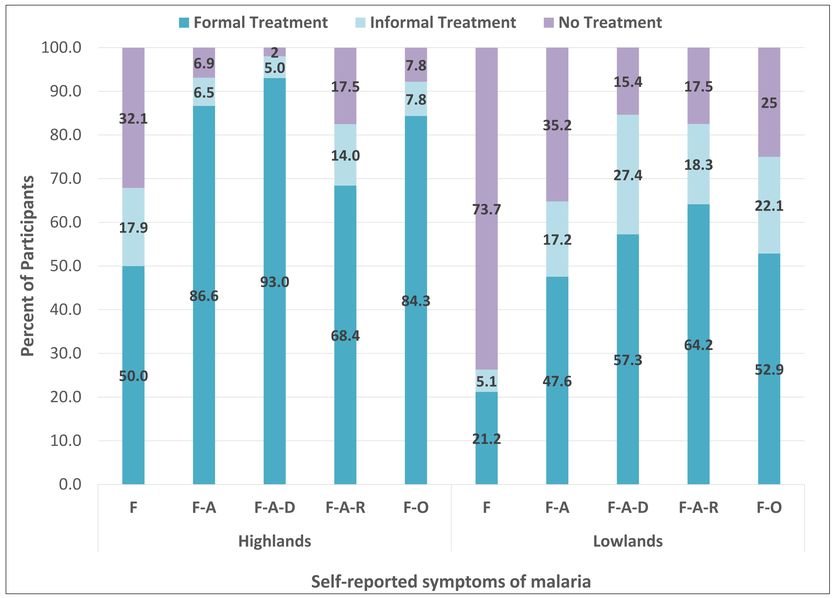

Figure 1. Percentage of reported no treatment-seeking and site-wise source of treatment-seeking by self-reported symptoms of illness.

(F = fever only; F-A = fever + aches; F-A-D = fever + aches + digestive symptoms; F-A-R = fever + aches+ respiratory symptoms; F-O = fever + other symptoms)

Table 1. Odds ratios of treatment-seeking.

Symptoms	Sought Treatment n (%)	Unadjusted OR (95% CI)	Age-Adjusted OR (95% CI)
Highlands			
Fever + Aches[1]	216 (93.1)	1.0 [Reference]	1.0 [Reference]
Fever Only	19 (67.9)	**0.2 (0.1, 0.5)**	**0.2 (0.04, 0.5)**
Fever + Aches + Digestive[2]	788 (98.0)	**3.6 (1.8, 7.4)**	**3.7 (1.8, 7.7)**
Fever + Aches + Respiratory[3]	47 (82.5)	**0.3 (0.1, 0.9)**	0.3 (0.1, 1.0)
Fever + Other symptoms[4]	259 (92.2)	0.9 (0.5, 1.7)	0.8 (0.4, 1.8)
Lowlands			
Fever + Aches[1]	241 (64.8)	1.0 [Reference]	1.0 [Reference]
Fever Only	67 (26.3)	**0.2 (0.1, 0.3)**	**0.2 (0.1, 0.3)**
Fever + Aches + Digestive[2]	99 (84.6)	**3.0 (1.7, 5.4)**	**2.9 (1.6, 5.2)**
Fever + Aches + Respiratory[3]	99 (82.5)	**2.6 (1.5, 4.4)**	**2.5 (1.5, 4.2)**
Fever + Other symptoms[4]	156 (75.0)	**1.6 (1.1, 2.5)**	1.5 (1.0, 2.3)

[1]Aches symptoms include headaches and body aches. Use as reference group due to small number of participants in the fever only category.
[2]Digestive symptoms include inability to feed, diarrhea, and vomiting.
[3]Respiratory symptoms include cough, difficulty breathing, and fast breathing.
[4]Other symptoms include aches, digestive, respiratory, convulsions/loss of consciousness, and rash.

Self-reporting of multiple symptoms was significantly associated with **higher odds of** treatment-seeking in both sites after adjusting for other covariates separately.

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.

References and Acknowledgements

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