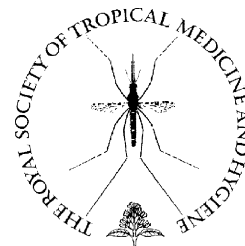




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Risk factors for active trachoma in children and trichiasis in adults: a household survey in Amhara Regional State, Ethiopia

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Summary Identification of risk factors is essential for planning and implementing effective trachoma control programmes. We aimed to investigate risk factors for active trachoma and trichiasis in Amhara Regional State, Ethiopia. A survey was undertaken and eligible participants (children aged 1–9 years and adults aged 15 years and above) examined for trachoma. Risk factors were assessed through interviews and observations. Using ordinal logistic regression, associations between signs of active trachoma in children and potential risk factors were explored. Associations between trichiasis in adults and potential risk factors were investigated using conventional logistic regression. A total of 5427 children from 2845 households and 9098 adults from 4039 households were included in the analysis. Ocular discharge [odds ratio (OR) = 5.9; 95% CI 4.8–7.2], nasal discharge (OR = 1.6; 95% CI 1.3–1.9), thatch roof in household (OR = 1.3; 95% CI 1.0–1.5), no electricity in household (OR = 2.4; 95% CI 1.3–4.3) and increasing altitude ($P_{trend} < 0.001$) were independently associated with severity of active trachoma. Trichiasis was associated with increasing age (OR_{per 5 year increase} = 1.5; 95% CI 1.4–1.7), female gender (OR = 4.5; 95% CI 3.5–5.8), increasing prevalence of active trachoma in children ($P_{trend} = 0.003$) and increasing altitude ($P_{trend} = 0.015$).

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1. Introduction

Trachoma is associated with individual and environmental risk factors: facial cleanliness; eye-seeking flies; crowding; water access and water use; face washing; pit latrines; cattle ownership/cohabitation; garbage disposal and socio-economic status (Emerson et al., 2000a; Pruss and Mariotti, 2000). The environmental risk factors may vary between settings, hence the need for risk factor studies to identify factors relevant to specific environments. Understanding risk factors is essential in designing appropriate interventions for the 'F' and 'E' components of the SAFE strategy (Surgery, Antibiotics, Facial cleanliness and Environmental improvements). Numerous trachoma risk factor studies have been conducted in Ethiopia: Gurage zone (Alemayehu et al., 2005; Melese et al., 2004; Taye et al., 2007); Jimma zone (Zerihun, 1997); Wolayita Sodo (Regassa and Teshome, 2004); North Gondar zone (Alene and Abebe, 2000); Gurage, Oromia and South Welo zones (Cumberland et al., 2005); Hiran, Shewa and Sidamo regions (De Sole, 1987); Sidamo region (Sahlu and Larson, 1992); Kambata Tembaro zone (Haileselassie and Bayu, 2007); and Dalocha district (Bejiga and Alemayehu, 2001). However, these previous risk factor studies were limited to small geographic areas and therefore it is difficult to generalise their findings.

A recent national survey of blindness in Ethiopia revealed that Amhara region had the highest prevalence of both active trachoma in children aged 1–9 years (62.6%) and trichiasis in adults aged 15 years and above (5.2%) (Berhane et al., 2006). Despite trachoma being such a serious public health problem in Amhara, only limited risk factor studies have been conducted previously (Alene and Abebe, 2000). In December 2006 and January 2007 we conducted a state-wide trachoma prevalence survey to facilitate planning of trachoma control interventions in the entire Amhara Regional State (Emerson et al., 2008). We also aimed to investigate

potential risk factors associated with trachoma in order to tailor delivery of the SAFE strategy in Amhara. The specific objectives for this risk factor study were to explore the associations between potential risk factors and active trachoma in children aged 1–9 years and associations between potential risk factors and trichiasis in adults.

2. Methods

2.1. The study population

The sampling plan and trachoma grading have been described elsewhere (Emerson et al., 2008). A population-based cross-sectional survey was conducted between December 2006 and January 2007 in each of the ten zones that comprise Amhara region, located in north-western Ethiopia. A multistage cluster random sampling design was used to select 160 clusters, each of 25 households, to give a sample of 4000 households. Clusters were defined as kebeles. All eligible participants in the selected households were examined for trachoma. In accordance with the WHO trachoma prevalence indicators (Solomon et al., 2006), only children aged 1–9 years were included in the analysis of risk factors for active trachoma while adults aged 15 years and above were included in analysis of risk factors for trichiasis (Figure 1). In total, there were 5427 eligible children aged 1–9 years from 2845 households and 9098 adults aged 15 years and above from 4039 households included in the analysis. There were no children aged 1–9 years living in 1194 of the surveyed households.

2.2. Trachoma examination

Eligible participants were examined for trachoma signs by integrated eye care workers (IECW) using the WHO simplified

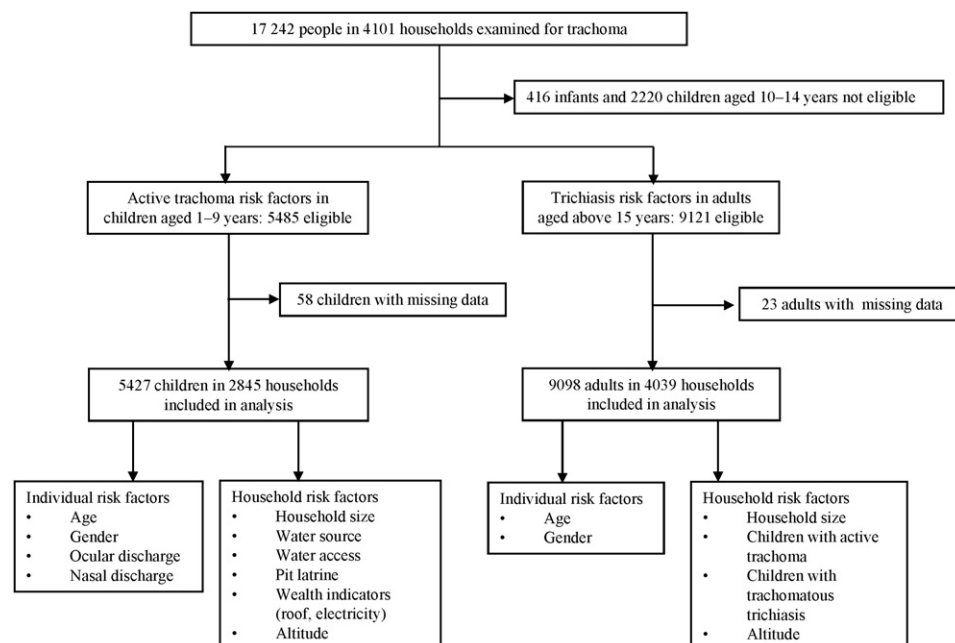


Figure 1 Profile of the sample population.

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