

Trachoma in an Omani Village – A Health Care Study

Anthony F. Cole, MRCP, Anjali Saha, MD

Department of Family & Community Medicine, College of Medicine, Sultan Qaboos University, Muscat, Oman

هذا الملخص يشمل نتائج الدراسة التي اجريت على ٢٨٩ عائلة في المنطقة النائية من عمان لمعرفة مدى المام الناس بمرض التراخوما وكيفية انتقال المرض ومدى استوطنانه. ومدى افادة التنظيف الصحي الذي قدم من قبل طلبة كلية الطب. قد اتضح من الدراسة أن هناك ٣ عوامل تعتبر الأساسية في نقل المرض وهي : انتشار الجهالة. كثرة عدد أفراد العائلة الواحدة وتزاحم الأفراد. وقد وجد أن عدداً من العائلات لا تملك المعرفة بأسباب حدوث المرض وكيفية انتقاله والوقاية منه مما يؤدي الي ممارسات قد تزيد من انتشار المرض. وقد اتضح من خلال الدراسة أن التعليم الصحي الذي قدمه طلبة كلية الطب والذي كان على فترات متقطعة لم يترك أثراً مفيداً. علماً بأن هناك اختلافاً واضحاً بين العائلات التي حصلت على التوعية الصحية والتي لم تحصل على هذه التوعية فيما يتعلق بمعرفتهم بالأمراض والممارسات غير الصحية. ونتائج هذه الدراسة من حيث وجود نقص في معرفة الناس بمرض التراخوما وأسبابه سوف تأخذ في عين الاعتبار عند تخطيط برامج التوعية الصحية المستقبلية للقريبة. الكلمات المرجعية: معرفة , مواقف , ممارسة , ترخوما, مجتمع , توعية صحية , الدول النامية.

This paper reports the findings of a study carried out on 289 families in rural Oman, to assess the knowledge of trachoma in a defined community, identify the determinants of continued transmission and endemicity of the disease, and to assess the effect of health education provided by medical students.

The study identified the prevalence of illiteracy, large family size and overcrowding as potential risk factors. Lack of knowledge in a significant number of families about causes, prevention and transmission of trachoma led to practices that promoted the spread of the disease.

We found that episodic health education by medical students did not have any lasting impact on the community. Between families who had received such health education and those who had not, there were few significant differences regarding misconceptions about the disease and undesirable practices.

The findings of this study concerning deficiency in knowledge, misconceptions and incorrect practices about trachoma are being utilised to plan a subsequent health education programme for the villagers.

Key Words: Knowledge, Attitude, Practice, Trachoma, Community, Health Education, Developing Country

Correspondence to:

Dr. Anthony F. Cole, P.O. Box 35, AlKhod 123, Sultanate of Oman

INTRODUCTION

Trachoma continues to be a leading cause of blindness, and it is endemic in Africa, the Indian subcontinent, Australia, Central and South America, and the Middle East – including the Sultanate of Oman¹. It is endemic particularly in the rural areas of this country, where it is estimated that 20-22 percent of the population suffers from trachoma of varying degrees of severity². Oman has launched an Eye Health Care Programme (EHC) whose important component is Prevention of Blindness. Since those in need of care do not voluntarily seek medical help, EHC emphasises the outreach approach.

The effective control and eradication of trachoma needs a clear understanding of the epidemiological factors that are favourable for its transmission. Besides, since behaviour modifications and the better utilisation of health facilities are needed for eradication of trachoma, epidemiological studies of personal and family factors are essential for the identification of risk factors in order to institute effective intervention programmes.

THE PRESENT STUDY

A number of factors brought about the decision by the Department of Family and Community Health (FAMCO) at Sultan Qaboos University (SQU) to undertake the study to be described. On entering the College of Medicine each class "adopts" a village in which it carries out yearly village health care studies. These field studies have clinical components which are need-oriented for Oman. Every class is involved with trachoma in their second field study, in which they provide some health education on the prevention and control of trachoma. A preliminary survey carried out by the Ophthalmology Department showed that trachoma was still significantly endemic in Bowshar, a village where the students had carried out a study in 1988 (personal communication). The team for Prevention of Blindness had also been active in this village. Consequently, the FAMCO Department decided to carry out an epidemiological study to

(1) assess the community's knowledge, attitudes and practice (KAP) (2) identify the determinants of continued transmission and endemicity, and (3) to assess the effect of health education carried out by the students in 1988.

METHODOLOGY

This study was carried out in Bowshar, a village about 30 km from Muscat, the Omani capital. The same medical students who performed the study in 1988 named Prevention of Blindness, which included health education about trachoma, revisited Bowshar after a gap of two years. The students had been given an intensive practical course in eye examination and the clinical diagnosis of trachoma. This was run by the University's Ophthalmology department, the key personnel being staff who had had in-depth experience of the disease in Oman. In addition to this training, each student group was supervised in the field and each student diagnosis was verified by a member of the Ophthalmology department. It is appropriate to comment on the treatment: all verified active cases were treated with tetracycline (carried by the groups for this purpose) and an appropriate follow-up scheduled. Results at follow-up showed that treatment was, by and large, effective but that reinfection was common. Information was obtained through interviews in the homes, using a pretested questionnaire. Systematic sampling was used to select 50 percent of the families in the village.

RESULTS

The study was carried out on 289 out of approximately 489 families (59.1% coverage). Of these, 222 had been visited two years before by the medical students.

There were 1323 children and 1062 adults in the study. The prevalence of active trachoma was 13.2% (175/1323) in children and 22.2% (236/1062) in adults, giving an overall prevalence of 17.2%.

Household risk factors:

Heads of 127 out of 289 households (43.9%) were illiterate. The average family size

was 8.2, and the average number of persons per bedroom was 3.8. In 57% (163/286) of the households garbage was kept in open cans or open buckets. Ninety percent used insecticides when flies invaded the house.

Lack of knowledge and misconceptions:

Of the 289 households 44.6% did not know about any factor(s) that influenced the prevalence of trachoma; 36.7% (106/289) said trachoma was a natural part of aging. Table 1 shows the responses of 160 families who did specify one or more "cause" of trachoma.

Table 1
Factors Affecting the Prevalence of Trachoma
(N = 160)

Specified factor*	No.	%
Dust	76	47.5
Lack of personal hygiene	76	47.5
Flies	32	20.0
Sand	30	18.2
Communal bathing towels	11	6.9
Mother's carelessness	10	6.2
Using common applicators for applying "kohl" to the eyes	6	3.7

* Multiple response

More than a third (35.3%) said trachoma cannot be transmitted. However, the two-thirds who acknowledged interpersonal transmission as a cause of the spread of the disease identified in Table 2:

Table 2
Methods of Transmission
(N = 187)

Method*	No.	%
Sharing towels	83	44.4
Sharing "kohl" applicators	44	23.5
Sharing of medicine	25	13.4
Flies	24	12.8
Sharing beds	11	5.9
"Other methods"	45	24.1
Do not know	40	21.4

* Multiple response

Although the larger number identified sharing of towels as a mode of transmission, this was stated by only 44.5% of the respondents. Only

23.5% said using common applicators for applying "kohl" to the eyes was conducive to transmission of trachoma, ("kohl" is a black powder similar to eye pencil, in common use here, particularly in female children). Flies as a method of transmission rated low (12.8%). It is also relevant that 24.1% mentioned "other methods" including the use of same cup/glass, cold weather, hand-shaking belonging to same blood group, mosquitos, etc. 21.4% said trachoma can be transmitted, but did not know how.

When asked if trachoma can be prevented, 13.0% (37/284) said it cannot be prevented.

Table 3 lists the methods of prevention cited by those respondents who said the disease could be prevented. Nearly 17% identified "other methods" which included not keeping animals in the house, not sharing medicine, washing hands after eating, taking care of eyes, staying away from areas of high prevalence, having education, etc. 25.5% said trachoma can be prevented but did not know any methods of prevention.

Table 3
Methods of Prevention
(N = 247)

Method*	No.	%
Medicine	66	26.7
Not sharing towels/applicators	47	19.0
Washing face with soap	44	17.8
Not playing in dust	25	10.1
Killing flies	22	8.9
"Other methods"	43	17.4
Do not know	63	25.5

* Multiple response

Non response: 5

43.9% (127/289) of the families do not take any special precautions against infection when there is trachoma in the family. 72.0% said they had not been told how to prevent trachoma.

Practices conducive to transmission:

Table 4 shows that between one-third and two-thirds of the families have habits which favour the transmission of trachoma.

Trachoma was considered a serious disease by 72.0% (208/286) of the respondents, and

Table 4
Current Practices Favourable for Transmission

Practice	No.	%
Children use common towels	(N=289) 90	31.1
Adults use common towels	(N=289) 76	26.3
Children use common "kohl" applicators	(N=216)* 100	46.3
Re-use ointment	(N=289) 176	60.9
Child with eye problem		
Shares bed	(N=289) 119	41.2

* 59 did not apply "kohl", 14 missing observations

60.8% stated that blindness was a complication of trachoma. However, 19.7% did not think trachoma had any complications.

Comparison:

Most of the families in this study had been given health education on trachoma by medical students who had visited them two years previously. One of our aims was to assess significant differences if any, (concerning misconceptions and harmful practices pertaining to trachoma) between the group previously visited and the others. In our sample of 289 families, 222 had received health education earlier from the medical students.

Table 5 shows that there were insignificant differences, either in the general knowledge about trachoma or in the practices which are conducive to the spread of the disease, between

the families previously visited by medical students and those seen for the first time in this study. The only exception to this concerned the use of separate towels. Significantly more "visited" families used separate towels for hygienic reasons. As expected, a significantly higher proportion of the families previously visited had been told how to prevent trachoma.

DISCUSSION

For many years, people have tried to identify the factors responsible for the prevalence of trachoma. In 1962, a WHO Expert Committee listed multiple factors with variable effects³. However, each community was responsible for identifying its own peculiar risk factors and the cultural determinants which influence the practices in the community.

It can be argued that the overall prevalence of 17.2% in Bowshar is not alarming. However, it must be stated here that this probably is an underestimation for two reasons: (1) diagnoses were made by medical students and that in spite of supervision they could have missed cases of trachoma; (2) Although efforts were made to improve the coverage by evening visits to some families, some children were not examined, being in school at the time of the family visits.

Low socio-economic conditions determine the prevalence and intensity of trachoma.

Table 5
Comparison of Knowledge and Practice Between Families Visited and not Visited

Knowledge & practice	Visited before	Not visited before	p-value
Do not know cause	102	27	0.50
Cannot be transmitted	82	22	0.29
Cannot be prevented	78	23	0.50
Do not know how it is transmitted	30	10	0.93
Trachoma is natural part of aging	85	21	0.37
Children use common towels	64	26	0.16
Adult use common towels	54	22	0.22
Use of common "kohl" applicators	76	24	0.36
No special precautions when trachoma in family	100	27	0.59
Re-use ointment child with eye problem	137	39	0.71
Shares bed	97	22	0.15
Told how to prevent	71	10	0.01*
Separate towels hygienic	137	29	0.01*

* significant

Overcrowding as a result of living in large extended families has been identified as a significant factor⁴. Studies in Africa have indicated that pre-school children living in families with more than nine members in a household are four times more likely to be affected than those with less than four members.⁵ In our study, the average family size was also high (8.2). This study has highlighted illiteracy, large family size and overcrowding as characteristics of Bowshar. Together with the misconceptions and practices (discussed later), these could become potential risk factors for transmission and increased prevalence of trachoma.

In order to modify the behaviour of a community, it is essential to identify the existing knowledge and practices needing modifications. Trachoma control and eradication programmes usually rely heavily on chemotherapeutic interventions. This has also been true in Bowshar. The team for the Prevention of Blindness has been very active in the area. However, it is evident that there is a significant number of families who have little knowledge about the causation, prevention and transmission of trachoma, and as a result indulge in practices conducive to spread of the disease. This is important and significant because, given the environmental conditions, Bowshar has the potential of escalating the spread of the disease.

Comparison between families who had been visited by medical students, and received some health education, and those not visited, underscores the necessity of a well-organised and coordinated health education programme for the area. "One-shot" episodic health education had no lasting effect, as shown by the lack of significant differences between these two groups of families regarding misconceptions and undesirable practices.

Programmes similar to trachoma eradication have failed because the directors of the programme had not taken into account the families' cultural characteristics and aspirations. These programmes failed because they neither

interested the target population nor were they understood⁶.

Today, in spite of a general increase in living standards, and improvements in the environment and health care, there are still many rural communities where trachoma is endemic and is a major public health problem. Any serious attempt at controlling it must take into account, not only the pool of the infective agent, but also the known factors in the community conducive to spread of infection.

As a result of this study, the Department of Family and Community Health at SQU has involved medical students in organising a health education programme in the schools and community of Bowshar. This programme seeks to fill the gaps in knowledge, correct misconceptions and incorrect practices, identified through this study through the initiative of community leaders. We are also hoping to discuss these findings with the team for the Prevention of Blindness in order to plan and implement a large-scale health education programme with the Ministry of Health.

This study has shown that there can be no assumptions with regard to the efficacy of health education given to a community as part of a medical student field study. However, a follow-up in the same community can identify on-going needs and lead to improved methods of community education.

REFERENCES:

- ¹Dawson CE, Jones BR, Tarizzo MT Guide to trachoma control. World Health Organization, Geneva. 1991
- ²Directorate-General of Planning. Annual Statistical Report. Ministry of Health, Sultanate of Oman. 1990
- ³Trachoma: third report of an Expert Committee. WHO Technical Report, No.234. 1962
- ⁴Treharne JD. The community epidemiology of trachoma. *Reviews of Infectious Diseases* 1985;7:760-4
- ⁵Ballard RC, Fehler HG, Fotheringham P, Trachoma in South Africa. *Soc Sci Med* 1983;17:1755-65
- ⁶Hollows FC. Community-based Action for the Control of Trachoma. *Reviews of Infectious Diseases* 1985;7:777-82