Chapter Nine

Eye infections

Introduction
Eye infections, also called red eye disease and trachoma by children, were intermittent epidemics in Gulu. In September and December 2004, and August 2005, the red eye epidemic in particular struck children in displaced primary schools and one night commuters’ shelter. The objective of this chapter is to present empirical findings about eye infections and its management by children, which included using eye drops (for example Gentamycin, which could be easily accessed over the counter without prior consultation with a professional healthcare giver), and herbal medicines. I first present quantitative data, which will then be followed by qualitative data regarding children’s and key informants’ perspectives about the prevalence, treatment, and severity of eye infections.

9. Findings

9.1. Quantitative data: Prevalence and management of eye infections

Table 9.1: Prevalence of eye infections within a one month recall (N=165)

<table>
<thead>
<tr>
<th>Illness</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
<th>P-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trachoma</td>
<td>17</td>
<td>12</td>
<td>29</td>
<td>0.53</td>
</tr>
<tr>
<td>Lit wang (red eye)</td>
<td>15</td>
<td>23</td>
<td>38</td>
<td>0.05</td>
</tr>
<tr>
<td>Eye infections</td>
<td>32</td>
<td>35</td>
<td>67</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Eye infections were one of the least shared illness experiences within a one month recall, despite the fact that at the time of the survey, the children could have readily remembered whether they had been affected by red eye disease or trachoma in the past month. Was this low level of reporting because there was a much greater focus among the children on more severe illnesses?
Table 9.2: Coded prevalence of eye infections within a one month recall (N=165)

<table>
<thead>
<tr>
<th>Illness</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye infection</td>
<td>32</td>
<td>35</td>
<td>67</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Of the sixty-seven cases (8.0%) of children who mentioned having had eye infections within a one month recall, thirty-two (7.4%) were boys and a slightly higher number, thirty-five (8.8%), were girls. There was no statistically significant difference (P=0.24) between boys’ and girls’ experiences with eye infections within a month’s recall. Nevertheless, prior to coding the category for eye infections (see Table 9.1 above), data suggests a weak statistically significant difference (P=0.05) between boys’ and girls’ experience with red eye disease, with more girls talking about their recent experience with this infection. This could be because more girls were affected with the disease, but it could also be that girls as opposed to boys more readily shared their experiences with it, for by observation, when the two displaced primary schools where this study was conducted were affected by the epidemic of red eye disease, boys and girls were equally affected.

Table 9.3: Medicines used in management of eye infections within a one month recall (N=165)

<table>
<thead>
<tr>
<th>Medicines</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyedrops (Gentamycin)</td>
<td>55</td>
<td>43</td>
<td>98</td>
<td>0.39</td>
</tr>
</tbody>
</table>

About the same number of boys and girls shared their experience with using eye drops within a one month recall, thus there was no statistically significant difference (P=0.38) between boys’ and girls’ use of medicines for eye infections. At the time of this study, the most commonly accessed eye drops at drug shops and state aided health centres was Gentamycin. A small bottle of the medicine was sold for 1500 Shillings (0.65 Euro).

9.2. Qualitative data: Prevalence, symptoms, and management of eye infections from children’s perspectives

In this section, I will first give exemplary children’s narratives of experiences with eye infections within a one month recall, and then provide general excerpts of data obtained through other qualitative data collection techniques.
9.2.1. An exemplary narrative about an experience with eye infections

Unlike malaria, diarrhoea, or acute respiratory infections, fewer children (about one hundred) wrote or told me about their experience with eye infections. During the epidemic of red eye disease observed at the two displaced primary schools hosted by Gulu Prisons Primary School in August 2004, some children instead chose to narrate their experiences with malaria, even if they had red eye disease at the time of the interview. Perhaps this is due to the fact that eye infections were less severe compared to other illnesses which the children had to confront.

In one displaced primary school, in an exercise administered to children aged thirteen to sixteen years, two boys narrated their experiences with eye infections. Fourteen year old Okot wrote:

I am very glad to write this composition in my life. These are the diseases which I suffered from. I suffered from trachoma. This eye disease which can be caused by virus [bacteria] transferred by houseflies. I started suffering in the morning and till noon, but it takes a long hour before I start seeing again. My eyes swell and there was a discharge of water. That is the sign by the time I went to the hospital. The doctor told me that I go back so that I can prevent the disease through good hygiene. I treated it with eye drops.

Meanwhile, another fourteen year old boy, Opio, shared his experience below:

Some time ago I had an eye problem. Sometimes I cannot see well, but I did not go to hospital. I did not use any medicine to prevent it. That eye problem is still there. I am suffering from it since every time there are yellow things coming out of my eye.

I gave this boy money to buy medications for his eye infection, and he reported the next day that he had obtained eye drops at the drug shop in Olailong trading centre. He was instructed by the drug shop owner to apply them as many times as possible, and showed a remarkable improvement after three days.

9.2.2. Prevalence, treatment, and severity of eye infections

Through various qualitative data collection approaches, children identified eye infections as a common disease, in particular red eye disease, which they treated with eye drops. Eye infections presented like a severe bruise to the eyes and a substantial proportion of children I observed frequently had tears flowing constantly and uncontrollably. In August 2005, at the two visited displaced primary schools, the first aid box had a stock of Gentamycin eye drops, and all children who were affected were instructed to report regularly to the headmaster’s office so that a staff member could apply the eye drops to their infected eyes. Children showed a commitment to the treatment sessions, and by
observation a substantial proportion of children even reported more frequently than once an hour. One child, when I asked about her persistence in reporting for treatment, stated that she had a greater likelihood of a faster recovery from the red eye disease if more eye drops were applied to it.

In naming and ranking common illnesses, there was a general ambivalence about the importance of eye infections, and there were diverse views among the children at Noah’s Ark night commuters’ shelter. Although eye infections were mentioned as one of the illnesses which frequently attacked children, and red eye infection reached epidemic proportions in August 2005 – more than 50% of 760 children were affected at one displaced primary school – children placed hardly any emphasis on this infection. On the whole, children still attended school, and some carried Gentamycin eye drops with them which they frequently applied to their eyes.

In one workshop in December 2005, aimed at discussing the medicines children commonly used at home, twenty-three out of fifty (46%) of the participants brought a wide range of herbal remedies for eye infections. For example, thirteen year old Okello brought acaka caka with large leaves, which was identified at the Botany department as Eurphorbiaceae (Euphorbia heterophylla L), and acaka caka with small leaves, identified as Euphorbiaceae (Euphorbia hirta L). The two types of acaka caka produced a milky sap when pricked, which was used medicinally. All children who brought acaka caka to this workshop indicated that they applied it to their infected eyes, and they also indicated that they recovered after using it. Two girls also brought Labika, commonly known as Black Jack (Compositeae-Bidens pilosa). Fourteen year old Acan indicated using the rough edges of the Labika fruit to scratch both her siblings’ and her own eyes to relieve itchiness and pain.

9.3. Eye infections disease aetiologies

Children rarely paid much attention to issues of disease aetiologies. In focus group discussions and in interviews inquiring about the causes of eye infections, the immediate responses were pe angeyo – ‘I do not really know’. Eye infections are introduced as a subject in science from Primary Three, when children are about eight years of age, and children were taught about the Four Fs – food, fingers, faeces, and (house) flies. It is therefore not surprising that Okot, in his composition above, explicitly stated that his trachoma had been transmitted by houseflies.
9.4. Key informants’ perspectives about the severity of eye infections

Apart from the two head teachers at the displaced primary schools where eye infections reached epidemic proportions, who indicated that they “were easy to manage by using communal eye drops”, eye infection epidemics did not receive as much attention as the scabies and cholera epidemics. There were negligible messages heard over the radio or in other sensitisation seminars about the dangers of red eye disease or how to avoid infection. Red eye disease itself is self-limiting, relatively speaking is not severe, and is not life threatening, which may account for why there was no particular attention paid to this epidemic by healthcare intervention institutions in Gulu. It could also be due to the fact that this was simply yet another infectious epidemic that this wartime community had to bear.

The examined records from Laliya and Laroo health centres indicated that diagnoses of trachoma were made in some children, and they were written prescriptions of Gentamycin. However, one medical doctor based in Kampala saw it slightly differently; in management of the red eye epidemic – which he described as an acute haemorrhagic viral conjunctivitis – he suggested that maintaining general hygiene through “frequent washing of the infected eyes with clean water and soap, and application of Tetracycline eye ointment, would constitute the best way of managing the epidemic”. The doctor’s viewpoint is directly linked to the Global Elimination of Blinding Trachoma by 2020 (GET 2020), and the World Health Organisation set strategy in dealing with trachoma when they recommend Surgery, antibiotics for active disease, facial cleanliness and environmental change to reduce transmission (SAFE). This is especially important if trachoma is viewed as a chronic conjunctivitis, with different manifestations depending on the number, severity and longevity of bouts of infection experienced (West 2003: 18). I will come back to this shortly.

9.5. Discussion

Trachoma remains the most common cause of infectious blindness worldwide (Mabey et al. 2003:224; Resnikoff et al. 2004:844), and it is caused by *Chlamydia trachomatis*. Occurrence and transmission is favoured in communities in poor countries where there is overcrowding, and access to clean water, sanitation, and healthcare is inadequate (Mabey et al. 2003:223; Kumaresan 2005:20). Ensuring hygiene is therefore crucial in preventing transmission of the disease. Bailey et al. (1999:137) suggest that the initial infection with
ocular (eyes) *Chlamydia trachomatis* results in a self-limiting conjunctivitis that typically heals without permanent sequelae. In medically underserved, poor rural regions where blinding trachoma most often occurs, eye infection with *Chlamydia trachomatis* is spread by close personal contact, or by flies that carry infective ocular discharge from the eye of one child to those of another (Mabey et al. 2002:224; Kumaresan 2005:21; Gambhir et al. 2007:424). Signs of active disease are seen mainly in young children, but also occur in older children and some adults. Conjunctiva follicles at the upper limbal margin of the cornea leave a characteristic shallow depression, known as Herbert’s Pit, after they resolve. After years of reinfection, resulting in chronic inflammation, fibrosis leading to scarring appears in the conjunctiva. As the scarring progresses, generally over many years, there is a distortion of the lid margin, causing the lashes to turn inwards and rub against the cornea. Constant trauma to the cornea, as well as being painful, leads eventually to corneal opacity and blindness. Although the signs of follicular and inflammatory trachoma, and the process of conjunctival scarring, are caused by *Chlamydia trachomatis*, secondary infection of the traumatised cornea with other bacteria or fungi may also contribute to its opacification (Mabey et al. 2002:224).

In 1998, WHO established the Alliance for the Global Elimination of Blinding Trachoma (Gambhir et al. 2007:420). The World Health Assembly of 1998 recommended SAFE strategy encompassing Surgery, use of Antibiotics, Facial washing and Environment change for the control of trachoma. The four procedures are relevant at various stages of infection including surgery for the turned lashes, and use of the Antibiotic Azithromycin for active disease, which is as effective as six weeks of topical Tetracyclines, represents an important advance in trachoma control. Facial cleanliness and Environmental change have been documented to reduce eye infection with *Chlamydia trachomatis*. By means of the SAFE strategy, WHO and partners aim to eliminate trachoma as a public health problem by the year 2020 (Kumaresan 2005:19; Mabey 2003:223). In current public health programmes for treating active trachoma, antibiotic ointment is applied to the eyes of all children in communities where trachoma is endemic (Schachter & Dawson 1979). Mass treatment requires more antibiotics, but may be a more effective (Holm et al. 2001:194-200; Mabey et al. 2002) and cost effective (Frick et al. 2001:201-207) approach for communities with moderate or high frequency of active disease. If transmission of *Chlamydia trachomatis* is to be stopped or significantly reduced, the age groups at most
risk – of infection and of infecting others – must be adequately treated with antibiotics (Mabey et al. 2003:228). However, although Gambhir et al. (2007:421) report that “a major component of SAFE strategy as mass administration of macrolide antibiotic azithromycin as a comprehensive strategy”, this study proposes that a major component in the control of trachoma must focus on the wider social-political factors. Consistent with this thesis’ proposition is what Mabey et al. (2002) discuss as “trachoma disappeared from Europe and North America not as a result of antibiotics or surgical treatments, but as a result of improved living conditions” (Mabey et al. 2002:224, 2003:228).

I recognise that it is only for emphasis of cross-cutting explanations for the high prevalence of infectious diseases that I discuss issues arising from empirical data about eye infections. Perhaps the only new point about the eye infection epidemic is that it is not a life threatening one, and presents with mild symptoms. What is more, there were efficacious remedies for it, including eye drops and herbal remedies, which made it easy for affected people to manage their self-diagnosed trachoma or eye infections.

**9.5.1. Prevalence of eye infections**

As empirical evidence suggests, it appears that wartime children had various experiences with eye infection epidemics, and the most commonly affected were those in displaced primary schools and night commuters’ shelters. Although Kumaresan (2005:1067) suggests that trachoma disproportionately affects women and children below five years of age, in Gulu Municipality trachoma affected mainly children of primary school age who attended displaced primary schools and spent nights at night commuters’ shelters. If trachoma is spread by hands, clothing, or flies that have come in contact with discharge from the eyes or nose of an infected person, then these overcrowded conditions provided the perfect opportunistic conditions.

It is my viewpoint that eye infections, like any other type of contagious infection, are directly linked to poor and fetid living conditions, lack of basic shelter or clean water, and congestion. Such factors were a common occurrence for children at the time of this study, especially those living in child headed households. Further, in a situation of armed conflict, even more opportunistic conditions existed for the rapid spread of such epidemics. Within the contexts in which wartime children lived, it is likely that WHO’s recommended SAFE strategy, with its emphasis on surgery and antibiotic administration for trachoma control, may encounter obstacles and therefore yield limited success due to
the high likelihood of reinfections, because trachoma is a disease associated with poverty, low income, poor hygiene, overcrowding, and lack of access to clean water, all of which are implicated in its prevalence (Kumaresan 2005:1073; Mabey et al. 1999:1261).

In primary schools in Uganda, from an early age, children are taught the role of hygiene, dirt, and vectors such as houseflies in the transmission of diseases – the Four Fs. It is therefore not exactly correct to presume that epidemics of an infectious nature attack displaced persons because they do not have information concerning causative agents and means of transmission. I suggest that it could be due to the presence of wider opportunistic conditions, including dire socio-economic contexts in wartime, which contribute significantly to the transmission of such disease causing pathogens.

9.5.2. Treatment of eye infections

For eye infections children indicated using eye drops, and the most observed type which was administered was Gentamycin. My intuition is that if there were no such effective remedies on the market, then perhaps there would be so many people experiencing such unmanageable suffering that key NGOs and healthcare institutions’ attention would be drawn to it.

Children also indicated having used herbal remedies and subsequently recovering from eye infections. However, the use of the rough edges of labika for itching eyes could instead aggravate the children’s condition by causing trauma to the infected areas, and perhaps bruising the delicate eye membranes in the process of alleviating suffering.

Conclusion

In general children showed that eye infections were not an acute or severe illness, yet they recognised its high frequency in occurrence and its ability to attack large numbers of people at once – either the whole school or all people staying in night commuters’ shelters. Perhaps such suffering was considered less important because it could be readily alleviated by easy to access remedies, including Gentamycin eye drops. Eye infection epidemics rarely attracted the attention of key healthcare institutions, including the Gulu-DDHS, the print and audio media, or NGOs. This could be because its symptomatic presentation is not severe, or it could be because there were a wide range of eye drops, especially Gentamycin, on the market which meant that people could readily deal with
eye infections. Furthermore, it could be that because epidemics of eye infections were such a common but non-life threatening occurrence, the limited resources available to deal with health problems in poor communities were therefore directed to the more major, life threatening types such as cholera, HIV/AIDS, and tuberculosis.