Ocular Trauma and Traditional Healers in Nepal
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Abstract
Nepal, a country nestled between India and China and dominated by the Himalayas, faces an intense burden of eye disease. Almost 20 percent of the population is affected by one or more ocular disorders. I was fortunate to undertake an internship at the Himalayan Eye Hospital (HEH) in Pokhara. The HEH is a non-governmental organisation that services Pokhara and the mountainous region surrounding the city. During the placement, it became apparent many patients were presenting with loss of sight due to an ocular trauma injury which occurred years earlier. The commonest modes of ocular trauma were found to be road traffic accidents, physical assault and hammering with stones or nails. The aim of this project was to find out about the epidemiology of ocular trauma and the factors which led to delayed treatment.

Keywords: ocular trauma, traditional healers, treatment

Introduction
During my elective period I wished to further my understanding and knowledge of ophthalmology. I wanted to experience, first hand, the problems that were being faced in developing countries regarding eye care. The World Health Organization (WHO) has estimated that approximately 45 million people in the world are blind. Of the blind population, 90% are from developing countries and it is believed that 80% of blindness is avoidable.

Nepal, although a small country feels the burden of eye disease intensely. In 1981 a survey was undertaken that aimed to identify the epidemiology of blindness in Nepal. In a population of 14 million, a total of 39,887 persons were examined and 6,855 had one or more ocular disorders. The survey found 0.89% of the population were bilaterally blind and 1.70% of the population were blind in one eye. The major causes of blindness were found to be cataracts, trachoma, ocular infections, glaucoma and xerophthalmia. The same data from 1981 is still being used today due a lack of a further nationwide sampling survey evaluating blindness, although regional data has been collected by the VISION 2020 - Right to Sight programme. This is a joint initiative by WHO and International Association for the Prevention of Blindness (IAPB). These results showed that bilateral blindness, defined as visual acuity of 3/60 or less, still affects 0.82% of the population.
My Placement
The Himalayan Eye Hospital (HEH) is a non-governmental organisation that services Pokhara and the mountainous region surrounding the city. The area served by HEH comprises 25 percent of Nepal's total land and has a population of 2.8 million, scattered in remote mountainous villages. A consultation costs 20 Rupees, equivalent to roughly 15 pence.

During my placement I was attached to different departments in the hospital, enabling me to obtain a broad appreciation of the eye care provided. Patients would initially arrive at the hospital and queue to be seen in the screening room by an ophthalmic assistant, who acted to triage the influx of patients. These members of staff were not medically trained but were well practised in taking histories and examining the patients in a time pressured environment. From here, patients went to the refraction room (Figure 1A), before then attending the examination room for a thorough examination with the use of a slit lamp, again performed by the skilled ophthalmic assistants.

Following these initial assessments, patients would be subsequently directed to either minor operating room (Figure 1B), the major operating room or to see an ophthalmologist in clinic.

I would often intentionally follow patients on their journey through the hospital and resultantly I was able to spend time in both the minor and major theatres to build up my experience of ophthalmic procedures. I also had opportunity to develop my basic ophthalmic skills such as fundoscopy and slit-lamp examinations during the assessment process.

To service the more remote rural villages within the hospitals catchment area, screening camps, as well as directed surgical camps, are run. I was fortunate to join one of these screening camps and witness the care provided to these segregated communities.

Certainly, it was encouraging to see the work being done to address the major causes of reversible blindness identified by the 1981 survey. The hospital statistics showed that approximately 150 cataract operations were performed per week. Of these, 67% had a visual acuity of 6/18 or better within four to six weeks.

Ocular Trauma
The eye is a delicate organ. As ocular trauma can lead to blindness, immediate management and regular follow up should be the target of care. A study conducted by the Nepal Eye Hospital over a period of six months surveyed a total of 733 ocular emergencies. Of the emergencies, 75.7% were ocular trauma cases, clearly demonstrating the magnitude of the problem. The commonest modes of ocular trauma were found to be road traffic accidents, physical assault and hammering with stone or nails. The commonest extra ocular foreign bodies were metal pieces from welding, paddy grain among harvesters, glass pieces or stone chips. Corneal

Figure 1 | Patient Assessment. (A) Visual acuity checks in the refraction room (B) Intra ocular pressure assessment in minor operating theatre.
abrasions were frequently due to organic matter such as paddy leaves. The number of ocular injuries across Nepal was found to increase with corresponding harvest and festival seasons. The study showed that immediate treatment of the abrasion with topical antibiotics and padding healed the denuded epithelium within 24 hours. If the treatment was delayed there was an increased rate of ulcer development, as seen in Figure 2.

The epidemiology of corneal ulceration was examined by a team at Tribhuvan University Teaching Hospital in Kathmandu. They surveyed 405 patients with corneal ulcers and results showed that the commonest predisposing cause was trauma. A further study in 2004 produced data to show that the lag between injury occurrence and care seeking was associated with a worse visual outcome. This is an important finding as corneal ulceration is the second commonest cause of monocular blindness after cataract in Nepal, particularly affecting rural areas. A typical example is highlighted in the case study below.

Case Study
A 46 year old agricultural worker presented with a painful right eye and a foreign body sensation. His visual acuity showed 6/6 in his left eye and 6/9 in his right. A corneal abrasion and slight lid swelling was noted in the right eye on examination. The patient reported working in the field five days previously when a maize leaf had injured his eye. He had not been able to attend the hospital since the accident. This was due to political strikes that had stopped the transport necessary to bring him in. No other ocular services were available in his village. The doctor prescribed Ciprofloxacin, an antihistamine for the lid swelling and an analgesic for the pain. He made a good recovery.

Figure 2 | Corneal opacity due to ulcer secondary to a corneal abrasion.

Why the delay in Treatment?
During my time in Nepal, it became apparent patients frequently presented to hospital only when their sight had become seriously affected, often at a stage when little could be done. This was often due to immense difficulty encountered in traversing the road network in Nepal. I was able to experience the fragility of the roads myself after enduring a 10 hour bus journey that only covered a total of 110 kilometres. This had significant impact on the inhabitants of villages scattered throughout seemingly inhospitable areas. However, due to the mountainous terrain in much of the country the building of roads is not an easy task and districts therefore remain separated by several days hard walking, all the more difficult for those with poor vision.

Another factor causing delayed treatment is that the available eye care is not sufficient to meet the demands of the ever growing population. Following the 1981 report the number of eye care professionals trained in western medicine has increased. However there is still a lack of facilities and aid. In 2000 it was found that Nepal had only one ophthalmologist per 250,000 individuals. Yet, even with efforts to increase specialist and primary eye care centres in Nepal, health service utilization can often still remain very poor. This may be related to a lack of education and understanding. On speaking to the doctors at the hospital they believed that few patients understood
the risks associated with ocular trauma. Individuals were often nervous and fearful of coming to hospital and of the treatment they were offered.

Nepal has a wealth of ethnic, religious and cultural diversities and amongst this eclectic mix exists a variety of different forms of traditional healthcare, with medically unqualified ‘healers’ often delaying the search for medical help. Traditional healers are frequently the first form of healthcare visited by the Nepalese, and they provide a considerable amount of medical advice and treatment, especially in more rural areas. The National Planning Commission in 1998 showed that only 12% of households used government health services and 25% of households used non-government health services.8

One can divide traditional forms of healthcare into those providing alternative medicines and those regarded as faith healers. A popular branch of traditional medicine that is widely practiced in Nepal is ayurvedic medicine. According to the National Centre of Complementary and Alternative Medicine, ayurveda uses a variety of products and techniques to cleanse the body and restore balance to the body, mind and spirit.9 By definition the term ayurveda means the science of life and can be traced back to around 5000BC. The practitioners use elixirs, metal solutions and herbal remedies to treat illness.10

Other forms of traditional healing include Tibetan medicine and faith healers. Tibetan medicine teaches that the physical world, including our body and health, is a result of individual perception. In this way one can ‘direct’ the body towards sickness or health. Tibetan medical practitioners are called Amchis and are commonly found in the upper mountainous regions.11 The faith healers or Dhami-Jhankri are priests that act as mediators between the spirit world and the material world of day to day life. Different spirits are believed to cause illness in Nepal. To relieve sickness the Dhami must use their knowledge to diagnose the type of spirit. They either make an offering and placate the spirit or suck the offending spirit from the patient’s body using a spirit bone, usually the human femur.12

A study linking the health care seeking behaviour and health policy in rural Nepal found that individuals prefer to visit traditional healers before visiting other health care workers. This is because the traditional healers are very accessible, they are inexpensive and are believed to be accurate diagnosticians. The study found that the aid of a doctor was only sought as a second line and only if deemed necessary.13

What is being be done?
The national society for comprehensive eye care (Nepal Netra Jyoti Sangh) was established in 1978 to improve eye care and one pilot implementation involved training traditional healers. This decision was made for several reasons: patients visiting the hospital had often previously consulted local traditional healers, patients presented in a very late stage of their condition due to their visits to traditional healers and thirdly, communication between traditional healers and healthcare providers was extremely poor.13 A major goals is to increase collaboration between traditional and western practitioners. One such method employed is by training traditional healers in western medicine. These trained healers were subsequently shown to be more informed about common eye related problems, often ceased using certain traditional eye medicines and they referred more patients to the district primary eye care centres or to eye hospitals.

Conclusion
My time spent studying eye care in Nepal has been fascinating. I have been able to broaden my understanding of a topic that interests me and at the same time learn practical skills that I believe will aid me in my future career. I have learnt more about the problems that are faced when working in a country with limited infrastructure and methods to overcome these hurdles. Although considerable advancements been made in Nepal over the last 30 years, the problem of providing eye care particularly in an acute setting to all areas remains a challenge due to the geographical and economic status of the country.
Most ocular injuries are both preventable and treatable. As incidences have been found to peak with harvest and festival periods, mass education via television and radio should be emphasized. By increasing the public awareness to the reality and danger of ocular trauma and the need to use safety equipment, it is hoped that the rates of monocular blindness may begin to fall. Governmental strategies will need to use direct advertising and educational campaigns to even the most rural areas to drive home this message.

I have learnt that many of the population find a great solace from the use of traditional healers. Rather than renounce their role in society it has been shown that it is important to work and collaborate with the healers. With this, morbidity rates can be decreased and an increased referral rate to higher centres may be achieved. They are an important resource and it is vital to think of them not as a problem but rather as part of the solution to a better quality of care. I hope to revisit this hospital following my foundation medical years to see how the care continues to develop and to further my knowledge in Ophthalmology.

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References
THE HIMALAYAN EYE HOSPITAL AT A GLANCE

Placement location
The Himalayan Eye Hospital is situated in the city of Pokhara, Nepal. Pokhara is a bustling city located on the banks of the Phewa Lake that has become famous with trekkers due to its proximity to the Annapurna mountain range. The hospital was set up in 1993 with the objective to provide a comprehensive eye care service to people living within the mountainous regions of Gandaki, Dhaulagiri and Karnali in Nepal. Due to very limited eye care services in the remote hilly regions eye disease was very prevalent. The hospital provides services through its base hospital, community projects, surgical camps and training courses. The Himalayan Eye Hospital has a catchment area comprised of almost three million people, accounting for almost ten percent of the country’s population and roughly a quarter of its land mass.

Visa and Travel Costs
Flights: Approximately £500–700 depending on time of year and booking in advance Visa: Can be bought on arrival. 15 days=$25, 30 days = $40, 90 days = $100 Exchange rate: 1.00 GBP = 147 NPR at time of writing
Vaccinations Confirm primary courses and boosters are up to date as recommended for life in Britain - including vaccines required for occupational risk of exposure, lifestyle risks and underlying medical conditions. Courses or boosters usually advised: hepatitis A; typhoid; diphtheria; tetanus; poliomyelitis. Other vaccines to consider: hepatitis B; rabies; Japanese encephalitis (for eastern and low lying areas); cholera. Yellow fever vaccination certificate required from travellers coming from areas with risk of yellow fever transmission.

Climate
As Pokhara is quite low lying it can get very hot in the months from April to September with temperatures up to 30oC. This also is the wettest time of year. The dry period is November through to March when the weather is also milder ranging between 10 to 20oC. Cuisine
The most common dish is Dhal Bhatt which is a combination of lentils, rice and vegetable curries. It is very filling and often reasonably priced at around 200-300 NPR or about £2. As Pokhara is a popular tourist destination you can find a variety of foods from around the world.

Tourist Activities
Pokhara is a hub of activities for adventure lovers. You can go trekking in the Himalayas, paraglide over the city, white water raft down nearby rivers, rent mopeds or cycle round the surrounding valley. If you want to relax there are spas, 5* hotels with infinity pools and plenty of Buddhist temples to visit.

National Language
The official language of Nepal is Nepali although the 2011 census recorded 123 languages spoken in the country depending on the heritage of the individual. In the Himalayan Eye Hospital all the staff speak good English and are keen to teach.

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