How do socio-cultural factors influence tropical disease incidence in rural Malawi: a case series

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Abstract

Malawi is a resource-stricken climate that has a continuous battle with providing healthcare to rural communities which are the most in need. Tropical diseases such as malaria, are the main causes of mortality and are preventable. Disease preventing behaviours are related to health beliefs and these are influenced by socio-cultural factors in the community. Understanding these factors may help identify barriers to the use of healthcare services. This may help guide what can be done at a community level to reduce the burden of disease and guide future planning of prevention programmes.

Introduction

Malawi is ranked as having the lowest gross national income (GNI) per capita in the world. It has a population of approximately 17,215,000 people, which is continually increasing due to a fertility rate of 5.7 per woman compared to the global average of 2.5.12,14(Figure 1.)

Figure 1. A graph comparing the gross national income (GNI) per capita for Malawi and neighbouring countries Zambia, Zimbabwe and Tanzania from 1990-2014.14

These figures are the main contributors to the overwhelming pressure of the country to provide for an every-growing population, resulting in conditions of poverty. This causes the burden of disease to be great with an average life expectancy of 57/60 (male/female). The main contributors to mortality in Malawi are malaria, HIV and tuberculosis, with non-communicable diseases such as diabetes and hypertension also rising.12,19,21 Others contributing to morbidity are the neglected tropical diseases (NTD). Although self-limiting, these can lead to long-term physical and psychological disability.8
In the majority, the health-system in Malawi is provided by the government followed by the Christian Health Association of Malawi (CHAM) and some other private providers. However, around 85% of the population reside in rural areas and cannot easily access the government funded tertiary centres situated in the main cities. Thus, charitable or private non-government health services, such as Mulanje Mission Hospital (MMH), are crucial to ensuring healthcare demands are met in the rural communities. This creates a financial burden on patients due to direct (treatments, procedures) and indirect (food, transport to hospital, loss of earnings) costs of illness. Health therefore comes at a cost and acts as a significant barrier to use of health services.

The country has a profound shortage of human health resources in which there is approximately 2 doctors and 38 nurses per 100,000 population. MMH has 3 qualified doctors but, like many hospitals in Africa, employs clinical officers which are alternative healthcare cadres provided to boost the workforce in hospitals. For this reason, the healthcare system is highly dependent on donors. This has relieved the cost burden of conditions such as HIV/AIDS and malaria, which are completely donor funded in Malawi, however this is not indefinite and is not tailored to the demands of each community.

A study by Alok et al. states that socio-cultural determinants such as gender, education and household income are amongst the main factors that contribute to the incidence of disease. For example, gender is important in this climate due to the mainly domestic role of women and subsequent main influence on health-related practices in the household. This may be linked to the low literacy levels evident, especially amongst women, where the incidence of diseases such as malaria decreases the higher educational qualifications attained.

Disease prevention programmes often involve intervention at the behavioural level. The use of insecticide treated nets (ITN) to break the infection cycle for example, reduces the risk of disease transmission and is generally well understood by people living in malaria endemic areas. This behavioural intervention has been successful in reducing malaria by 50% in a variety of settings, but appropriate and consistent use of ITNs is still not apparent.

Morrison et al. concludes that unrealistic optimism may be a strong influence on the perceived risk of disease. The use of the health belief model highlights that perceived susceptibility to disease is linked to preventative behaviour. This model is not as well established in research in the developing world however, but may be useful in understanding the different socio-cultural influences moulding health beliefs in this climate. Targeting changing human behaviour is not simple and can become conflicted when the benefits are distinct from health. This may be perceived as ‘not knowing any better’, but native logic and rationality is related to local circumstances that may not be relatable to the more developed climates.

The shift in attitudes towards the relevance of socio-cultural factors in the incidence of disease, has allowed public health effort to integrate the social science perspective in the planning of prevention programmes, but further focus on this compared to the biological pathogenic perspective is still needed.
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During my placement in a rural hospital in Malawi, I wanted to observe at an individual level, how tropical ‘disease’ (clinical and pathological process) leads to ‘illness’ (patient perception and behaviours) and the influence of the socio-cultural factors in this community.\(^{1}\) I wanted to explore their specific health beliefs and how they are affected by cultural implications such as gender roles, stigma, financial circumstances, social hierarchy, education and attitudes towards health professionals and services. Understanding these barriers to accessing healthcare is important for future targets and reducing the burden of disease in Malawi.

**Method**

During my placement I attended outpatient clinics, inpatient ward rounds and community visits to gain exposure to a variety of different patients and select appropriate cases for reflection. I also attended tropical disease teaching by the doctors at MMH and used the literature provided at the hospital to increase my knowledge base.

I selected cases suffering with different conditions:

i.) Malaria
ii.) Cryptococcal meningitis (secondary to HIV)
iii.) Cervical cancer

I collected the following information from the patient in order to follow their journey:

- Clerking history and examination findings
- Investigations
- Management
- Social circumstances

I then used Gibbs reflective model in order to reflect on each case that I selected (Figure 2.).

![The Reflective Cycle](image)

*Figure 2. Gibb’s reflective cycle\(^{6}\)[2]*
Case summaries and reflections

Case - Malaria

A 7-month-old patient was admitted with a cough and fever and tested positive on MRDT (malaria rapid diagnostic test). At MMH, an MRDT is undertaken on every patient admitted for opportunistic testing. The patient was subsequently diagnosed with severe malaria and started on the appropriate treatment protocol (intravenous artesunate). His full blood count revealed a haemoglobin of 4.5g/dl. Anaemia is a complication of malaria and he was therefore transfused a unit of blood.22 He was treated with paracetamol to control the fever and antibiotics to treat any infections. After five days of IV treatment, the patient had a repeat blood film to assess for disease improvement and then given LA (Lumefantrine/artemether), which is given to treat uncomplicated malaria. The patient continued to improve and was discharged. The patient’s mother died at birth so he lives with his grandmother who was the main caregiver (known as the patient’s guardian). The use of mosquito nets was not discussed with the patient’s guardian.

On reflection....

I learnt from this case that malaria can present non-specifically and is a crucial diagnosis to pick up early to prevent uncomplicated malaria developing to severe. This is especially crucial in vulnerable patients such as the under-five year-olds and pregnant women.22 Malaria is one of the main reasons for illness in this community. This was evident in the efficiency of staff when dealing with diagnosis and management of this condition. I felt impressed and pleased that the appropriate resources were available and utilised (opportunistic MRDT, medication). I also however, felt aggrieved that educating the guardian about the use of a net as a health behaviour was not done. Subsequent discussions with staff and patients reported most did have nets and claimed to use them. However others reported to only use them occasionally or inappropriately, such as for fishing nets. This is in keeping with the literature and would be more consistent with the high rates of malaria seen in this community.10 The suggestion of nets being used for fishing instead supports the ‘unrealistic optimism’ affecting health behaviour demonstrated in the previously discussed study. In this case, the use of a net was not discussed at all, which was frustrating. It is established that patient education is an opportunistic disease prevention tactic and clinical staff should therefore be doing this for every patient, especially the under-five year-old ‘at risk’ group.

It may be useful to incorporate a prompt on clerking sheets for patients with the heading ‘Patient education’. Here the clinical staff member could list the relevant health-related behaviours the patient was educated on, for example, the use of nets, condoms etc.

MMH is a non-government funded hospital, causing socio-economic factors to be evident in these patient cases. I therefore undertook cost analysis. This patient as an example (see Table 1) resulted in an overall admission cost of approximately 5.44USD. Due to malaria being one of the government-funded conditions, associated healthcare costs in this case were free (Table 1.)

Table 1: Price list of drugs and services at MMH15
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<table>
<thead>
<tr>
<th></th>
<th>Cost (MK)</th>
<th>Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hb</td>
<td>500</td>
<td>0.69</td>
</tr>
<tr>
<td>Transfusion</td>
<td>500</td>
<td>0.69</td>
</tr>
<tr>
<td>Cross match</td>
<td>300</td>
<td>0.41</td>
</tr>
<tr>
<td>Paracetemol</td>
<td>22.5</td>
<td>0.03</td>
</tr>
<tr>
<td>XPen</td>
<td>775</td>
<td>1.07</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>1100</td>
<td>1.52</td>
</tr>
<tr>
<td>LA</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Artesonate</td>
<td>Free</td>
<td>Free</td>
</tr>
<tr>
<td>Bed stay</td>
<td>450</td>
<td>0.62</td>
</tr>
<tr>
<td>Blood film</td>
<td>300</td>
<td>0.41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3947.5</strong></td>
<td><strong>5.44</strong></td>
</tr>
</tbody>
</table>

This is a typical example of the many cases of malaria observed during my time at MMH. Uncomplicated or severe malaria were the most common causes of admission during my placement. The GNI per capita is 340USD according to the World Bank’s latest report. This averages at around 6USD per week per person. If this case were not a government-funded disease, the cost would have been equivalent to just under one week income for the average person in this community. This demonstrates why patients may be reluctant towards using health services, as the affect on quality of life of patient and family due to the direct and indirect costs would be profound. Cost was the most often reported concern addressed by patients and guardians. This subsequently dictated management choices and length of a patient stay, which may not have always been in the best interests of the patient. This finding is consistent with previous literature, which highlights cost to be a main barrier to use of health services. It also highlighted how donor contribution and government funding can alleviate illness burden at the patient level; however also emphasised those patients that cannot benefit from this funding thus contributing to the vicious cycle of poverty and disease.

*Case – HIV related disease*

Cryptococcal meningitis is most commonly only seen in patients with HIV/AIDS. It is rare in the developed world and in people with healthy immune systems. HIV prevalence in Malawi is one of the highest in the world affecting 10.6% of the adult population and more so in women (12.8%) then men (8.2%).\(^3\) Women are more likely to bear domestic roles and have lower literacy levels in rural locations such as Mulanje. Gender inequality contributes through unequal partnership environments where it is culturally acceptable for men to be polygamous. This coupled with low rates of contraceptive use (35%) leads to increased risk of spread of disease.\(^3\) The higher incidence of HIV leads to a bigger pool of untreated patients causing increased risk of HIV related disease such as cryptococcal meningitis. Patients have a CD4 count of <100, so often have severely progressive HIV disease.\(^5\) In this resource limited environment, this
condition is treated with lifelong antifungals, but with the appropriate dose patients can lead normal lives.
A patient I saw admitted with this condition was suffering from convulsions and headaches. The patient had a negative MRDT and the diagnostic lumbar puncture came back positive. She was a known cryptococcal patient that had shown to have a fluctuant response to the fluconazole treatment despite dosage adjustment. This may have been due to treatment type, compliance, resistance, side effects, a co-infection or comorbidities.
Her husband appeared aware of her condition and the importance of the medication and acted as her main social support. He reported her to have bad days when the fluconazole dose is low or when she had ran out. Due to the travel distance required to access the treatment, fear of her condition deteriorating quickly due to the aggressive nature, was evident in the patient and guardian.

On reflection...
This condition can require lifelong antifungals thus requiring patients to be able to understand the condition, afford the treatment, be compliant to taking it and have easy access to acquiring it. All of these factors are hurdles in the Malawian climate. Understanding of the disease was apparent in this case. Other choices of treatment known to be effective, such as Amphotericin B were not available at MMH and thus may contribute to the disease incidence. This was frustrating as this is not the patients fault. Another issue was the ability to continue the course of treatment due to distance required to travel to receive it. It was reported patients can often live >20km away and not be able to afford bicycle taxis to the hospital or health centre to receive treatment. Outreach programmes cannot be facilitated to every village surrounding the hospital due to lack of staff and resources. I felt aggrieved by this case as like many others witnessed on my placement and reported in the literature, it is the distance, drug availability and logistical issues leading to failure of compliance rather than patient understanding.

Image 1. Myself on primary care week, doing a community outreach clinic with the orphan children at the Malawi/Mozambique border
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Word: 3207

Case – Palliative Cervical cancer

Malawi has the highest cervical cancer incidence and mortality in the world. The incidence is related to lack of early screening uptake and inadequate treatment services. It is sexually transmitted via human papilloma virus and associations with HIV and promiscuity have lead to stigmatisation. This case was a 67-year-old female, referred to the palliative team when diagnosed to optimise her pain and symptom control. She consulted 5 months earlier complaining of vaginal bleeding and abdominal pain. She is widowed and lives at home where she is cared for by her daughter. She has 5 biological children and 4 non-biological children (taken on from her late sister). Her children are her main source of income and she is concerned that she is a burden to them. This patient was part of my week on primary care which involved home visits out in the rural community. She had stated in her notes that she is happy for the palliative team to conduct home visits but does not want her family to know she is suffering from cervical cancer. She is fearful of judgement around how this condition was established. The patient believes her family will assume she has been prostituting and no longer care for her. The team have offered to educate the family regarding the condition but the patient refused.

On reflection...

I included this case as it made me feel sad for the patient that she would feel fear of judgement from her family. Staff stated that many families have this opinion regarding this condition and this was consistent with the literature. Her social support and subsequent care would be compromised if the family were to learn of her diagnosis. The palliative service appeared to be efficient with well-trained staff and a particular focus on psychosocial wellbeing. This extra time for a comprehensive assessment may be due to private donor funding or variability in staff experience. This made me feel conflicted, as patients under palliative care appeared to receive a more holistic service than others in hospital. This case is a good example of how gaining a social history from a patient is important for addressing ideas, concerns, and expectations. The palliative team were effective at gaining this information compared to other departments. This may be due to a specific form, which prompts the health professional to ask these questions, which does not feature in the standard wards. It also highlights potential educational needs of the community regarding stigmatised conditions such as cervical cancer and the impact this has on the patient. The action in response to this case would be to ensure all clinicians were asking social history by either global use of this form as a prompt, or staff training around this topic.

Other reflections

A main aim during my placement was to increase my knowledge of the tropical diseases present in this climate. The cases represent a small sample of this and were chosen due to the interesting psychosocial and cultural factors involved.
Other cases acted as useful learning opportunities introducing me to other conditions that I would not see in the UK. Malnutrition is still a prevalent condition in Malawi and is life threatening in the vulnerable groups. Higher rates occur in rural over urban areas, associating social determinants such as household income and parental education rather than biological factors, as causal. Kwashiorkor (associated oedema) severe acute malnutrition (SAM) cases were commonly in the <5 year olds. I found these cases extremely sad to witness as treatment with feeding regimes can be successful, but the source of this condition is mostly related to poverty and is therefore difficult to prevent and likely to reoccur.

**Personal placement reflection**

My time at MMH was fulfilling and enabled me to accomplish my objectives. The staff were extremely welcoming and encouraged my involvement in the daily activities at the hospital. The placement was well organised by the medical director who ensured we had airport pick up, transport to the hospital and exposure to a variety of specialities during our time there. The doctors created good learning environments and teaching slots were scheduled each week. I particularly enjoyed my primary care week which involved community outreach visits to patients at home, a visit to the local prison, which was eye-opening and palliative care in the hospital. The variability in competence between the clinical officers meant that some bedside teaching and ward experience was more useful than others however, but overall I learnt a lot from the staff there. The accommodation is on site (approximately 100 yards from the hospital) and was shared between 4 medical students. The apartment was spacious, clean and well equipped. There was also a housekeeper included and this was highly appreciated as she undertook the washing, cleaning and general tidying. Overall, I would highly recommend a placement at this hospital.

*Image 2. Myself doing some work on the accommodation porch at MMH.*

**Challenges**

It was challenging to observe the poor health in the community due to preventable disease and frustrating due to the limitation of available resources. I also found the contrast in cultural differences apparent in the healthcare
environment difficult. I felt the service was more paternalistic than practice in the UK. Male patients, the elderly and patients with non-curative diseases were often given less time during ward rounds. The variability between clinicians lead to physical examination often not being done and history taking could be seconds with limited guardian involvement. In these cases the psychosocial wellbeing was not established at all. This variability in staff attitudes towards patients has been observed in other studies where antagonistic and discriminatory behaviour from staff contributed to the population that are classed as non-users of healthcare services. Practice and training in the UK prioritises a non-bias, holistic service with an importance in addressing patient ideas, concerns and expectations. I therefore found this contrast challenging. Other challenges related to my project were mainly the language barrier as this lead to difficulty in communicating and obtaining a comprehensive history. Translation by nurses was available when there was time, however this limits the ability to create a rapport with patients, which is important when addressing psychosocial concerns. This placement will contribute towards my own practice in the UK as I have gained confidence in my own clinical judgement. I have learnt a lot about tropical disease, but also the magnitude of how socio-cultural determinants influence their existence in this climate. I will bear this in mind during future consultations around health-seeking behaviours.

**Conclusions and Recommendations**

The socio-cultural factors in a resource stricken community such as Mulanje, have a profound influence on the health-behaviours of individuals. These behaviours may act as barriers to patients using health services appropriately. The cervical cancer patient case may highlight the need for prompts to ensure a thorough social history is taken, including psychosocial impact of illness and patient concerns. This encourages a good inclusive patient-clinician relationship and highlights any potential issues that may contribute to patient cooperation. To address the variability between clinical practice of doctors and clinical offers, refresher sessions on the basic topics such as ‘a good history’ and ‘examination skills’ may be beneficial. Most cases seen during placement highlighted the need for opportunistic patient and guardian education to be more consistent across staff members. Addressing barriers to health service use on a large scale remains an on-going challenge, but in a microclimate it may be possible to implement small changes that support the involvement of these socio-cultural factors. These changes may ensure all staff are aware of what is best practice and contribute to an efficient, safe and user-friendly healthcare environment for all.
References


