

**Rumours and riots: Local responses to
mass drug administration for the treatment of
neglected tropical diseases among school-aged
children in Morogoro Region, Tanzania**

A thesis submitted for the degree of
Doctor of Philosophy

by

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Abstract

In August 2008, a biomedical intervention providing free drugs to school aged children to treat two endemic diseases - schistosomiasis *haematobium* and soil-transmitted helminths - in Morogoro region, Tanzania, was suspended after violent riots erupted. Parents and guardians rushed to schools to prevent their children taking the drugs when they heard reports of children dying in Morogoro town after receiving treatment. When pupils heard these reports, many of those who had swallowed the pills began to complain of dizziness and fainted. In Morogoro town hundreds of pupils were rushed to the Regional Hospital by their parents and other onlookers. News of these apparent fatalities spread throughout the region, including to Doma village where I was conducting fieldwork. Here, protesting villagers accused me of bringing the medicine into the village with which to “poison” the children and it was necessary for me to leave the village immediately under the protection of the Tanzanian police.

This thesis, based on eleven months fieldwork between 2007 and 2010 in Doma village and parts of Morogoro town, asks why was this biomedical intervention so vehemently rejected? By analysing local understandings and responses to the mass distribution of drugs in relation to the specific historical, social, political, and economic context in which it occurred, it shows that there was a considerable disjuncture between biomedical understandings of these diseases, including the epidemiological rationale for the provision of preventive chemotherapy, and local perspectives. Such a disjuncture, fuelled by the reports of fatalities and the pupil’s fainting episodes brought about considerable conjecture both locally and nationally, that the drugs had been faulty, counterfeit, or hitherto untested on humans. Among many of the poorer inhabitants of Morogoro town, there was suspicion that this had been a covert sterilization campaign. From an official perspective, such conjecture was dismissed as mere rumour, proliferated by “ignorant” people. However, from an anthropological perspective, these ‘rumours’ reveal profound local anxieties including a pervasive fear that poor Africans are being targeted for covert eugenics projects by governments in the industrialized world.

The thesis also shows that many of the assumptions embedded in global policies seeking to control neglected tropical diseases are mistaken. Indeed, it is suggested that it is unlikely that schistosomiasis *haematobium* and soil-transmitted helminths will be controlled so long as policy makers persist with the idea that one policy, designed by staff working for the World Health Organisation - with minor modifications added in Dar es Salaam - can be rolled out uniformly, irrespective of the political, social and economic context in which the programme occurs.

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*Though that her jesses were my dear heartstrings,
I'd whistle her off, and let her down the wind
To prey at fortune*

*Othello Act III Scene iii
William Shakespeare*

Thank you Gubbin!

Map 1 Tanzania, East Africa



(Source, Info please maps)¹

¹ <http://www.google.co.uk/imgres>

Map 2 Regional map of Tanzania



(Source Info please maps)²

² <http://www.google.co.uk/imgres>

Map 3 Showing the location of Doma village, Morogoro Region



(Source worldandcitymaps.com)³

³ From <http://www.worldandcitymaps.com/africa/tanzania/morogoro-region/doma>

Selected Kiswahili glossary and phrases

Adhabu ya viboko: corporal punishment

Adhabu: punishment/discipline

Afya: health

Akili: rationality/intelligence

Bahati mbaya: misfortune (lit. bad luck)

Balozi: ten cell leader

Baridi: cold

Bustani: garden

Bwawa: dam (sing.) *Mabwawa* (pl.)

Chakula: food

Chanjo: immunisation, vaccination, also the practice of cutting the skin for protection performed by local healers

Chizi/mchizi: crazy

Choo: latrine

Chuki: hatred

Chungu: bitter

Daktari: doctor (also *mganga* sing.)

Damu: blood

Dawa ya kuzuia mimba: birth control pills

Dawa: medicine (this can include any type of medicine, for example for cattle, humans or plants.)

Death: wafwa

Dimbwi/ bwawa: puddle/pond

Dini: religion

Dondakoo: diphtheria

Elimu ya afya: health education

Elimu: education

Eneo la waingiliaji ardhi/ wavamiaji wa nyuma: squatter area

Habari: news

Hati miliki: land deed

Hedhi / hali ya mwezi: menstruation

Hirizi: amulet

Hofu: fear

Homa ya manjamo / manjano: yellow fever

Homa ya uti wa mgongo: meningitis

Homa: fever (*Homa kali*: high fever/ *Homa kali kali* dangerous fever)

Hospitali ya serikali: public (government) hospital

Hospitali: hospital

Jamii: community, public, society, community (*Jumuia*: society)

Jini/maruhani/ makata/ maimuna: spirits

Kabila: tribe

Kali: powerful/strong, mean, vicious (negative connotation dangerous)

Kamati ya Afya ya Kijiji: Village Health Committee

Kamati ya Afya ya Mtaa: Street Health Committee

Kata: ward

Kazi: work

Kichafu: dirty (as in dirty water: *kichafu maji*, dirty food: *chakula kichafu*)

Kichefuchefu: nausea

Kichocho: schistosomiasis

Kichomi/nimonia: pneumonia

Kidusa: thread worn around a child's neck, or waist to protect against illness caused by spirits (*Kiluguru*)

Kifaduro: whooping cough

Kifafa: epilepsy: (lit. When someone is out of their mind)

kiibu/kutibu: cure

Kinga: protection/prevention/immunity

Kitabu cha wageni: Visitors' Book (that one has to sign when visiting government officials)

Kituo cha afya: health centre

Kizunguzungu: dizzy

Kuto elimishwa/kutoelimishwa: to not be educated in something

Koki: tap (water tap)

Konokono: fresh water snails

Kuanguka: falling down

kuchanja: cutting

Kugangiwa: what was done by the *mganga* in order to heal a person (*kupona*)

Kukojoa: urinate

Kulinda: protect

Kulogwa / uchawi: to be bewitched

Kumeza: swallow (as in swallow/swallowed medicine)

Kuponya: to cure

Kutapika: to vomit

Kuteseka: suffering

Kutibu/ tibu: to treat

Kutokuwa na kazi: unemployed (lit. to be without work)

Kutokuwa na matumaini: hopelessness

Kutokuwa na uelewa/ujinga: ignorant

Kutolewa: to not understand

Kuwa na afya: to be healthy

Kuwa na mashaka/wasiwasi: to have doubts or anxiety/fears

Kuzimia: to faint (*kuzimika*: fainted)

Kuzuia mimba or mama asipate mtoto: to prevent a child being born

Kuzuia mimba: to prevent reproduction

Kuzuia: to prevent (*uzuio*: prevention)

Luhoma: devil or misfortune (*Kiluguru*)

Machinga: street vendors

Maendeleo: modernity/ progress/development, (also, *usasa or kuwa wa kisasa*)

Msikiti: mosque

Maeneo ya ovyo ovyo, mtaa wa ovyo, kibanda cha ovyo ovyo: slum (sometimes people used the word *geto*)

Magonjwa ya zinaa: sexually transmitted infections

Magonjwa: a disease: (a specific type)

Maisha magumu: life is tough / it is a hard life

Maji ya bwawa: dam/pond water

Maji yanayosimama: standing water (*yanayotoka taratibu*: slow moving water)

Majini, mashitani, mapepo, lbilisi: spirits/ demons/devil

Maradhi: disease (general)

Maskini: poor (person) *umasikini or wasio na uwezo kifedha*, not having money

Maumivu wakatiwa wa kukoja/ maumivu wakati wa kukojoa / maumivu una pukojoa: pain on urination

Maumivu ya kichwa / maumivu kichwani or kichwa kuuma: headache

Maumivu ya tumbo / tumbo linauma: stomach ache

Maumivu: pain

Mazingira: the environment

Mbaya: bad

Mbiashara ndogo ndogo: petty trader / *mbiashara zisizo rasmi*: Informal economy (lit. very small)

Mchawi: witch, sorcerer, wizard, witchdoctor

Mganga wa jadi: healer (physical realm) (*waganga* pl.)

Mganga wa kinyeji: healer (spiritual realm)

Mganga wa miti shamba/miti shamba: herbalist/herbs

Mganga: healer (sing.) *Waganga* (pl.) includes local healers and biomedical doctors. However, it was usual for people to use *mganga/waganga* when speaking about non-medical doctors.

Mgonjwa: an ill person

Mhenga: ancestor (sing.) *wahenga* (pl.)
Minyoo: intestinal worms (this includes *safura*, hookworm)
Mji: town
Mkojo mwekundu: red urine
Mkojo wenye damu: blood in urine
Mkristo: Christian
Mkulima: farmer
Mpango wa uzazi: family planning
Mtaa: street
Mtendaji wa Kata: Ward Executive Officer
Mto: river
Mtoto mchanga: infant
Mtumishi wa afya: health worker (servant)
Muaji / mwuaji: murderer
Mungu, Mwenyezi Mungu: God
Muuguzi: nurse
Mwalimu mkuu: headmaster
Mweka sumu: poisoner
Mwenyekiti wa mtaa: Street Chairperson/Chairman
Mwislam: Muslim
Mwizi: thief
Mzungu: white person, *wazungu* pl.
Ngumu: difficult (difficult people: *Wagumu, watu wagumu*)
Nguvu: strong
Pepopunda: tetanus toxoid
Mabwawa/madimbwi: ponds
Hospitali ya mtu binafsi: private hospital
Mbakagi mbakaji: rapist

Mporaji/majambazi: robbers

Rohani jinni/roho mwema: good spirit

Uzushi: rumour (lit. something that goes around)

Safi: clean (adjective)

Safura: hookworm

Schule/shule: school

Serikali kuu: central government

Serikali ya kijiji: village government

Serikali ya mitaa: local government

Shagalabagala: untidy/random

Shaka: suspicion

Shamba: farm (*Washamba*: a person from the farm or village. Often used pejoratively by people in the town to denote rural dwellers)

Sindano: needle (*Kupinga sindano* is lit. to hit the needle, i.e. to give an injection)

Sumu: poison

Surua: measles

Taifodi: typhoid (commonly used, but officially *homa ya matumbo*)

Taobu kukojoa/kutoweza kukojoa: difficulty urinating

Mwalimu: teacher (pl. *walimu*)

Uchawi: withcraft

Ugonjwa /magonjwa /maradhi: illness/sickness

Ugonjwa wa kupooza: polio

Ugumba: infertility/sterility

Uji wa mchele: rice porridge

Ujirani: neighbourhood

Ulinzi: defence, detain, security, surveillance,

Umaskini: poverty

Umbeya / uzushi: gossip

Uoga: fear

Uovu: evil

Ushirikina: superstitious

Usubi: onchocerciasis (river blindness)

Uvumi: myth

Uzazi wa mpango: family planning

Uzazi wa mpango: birth control (literally planned birth)

Vidonge: pills/tablets

Wachawi: witches

Wadudu tumboni: worms/insects in the stomach

Wadudu: insects

Wanafunzi: pupils

Wasiosomi : uneducated (those who have not studied)

Watoto bila nguvu / watoto wadhaifu: weak children

Watoto wa shule/wanafunzi wa shule: school children

Watoto wadogo: small children

Wivu: jealousy

Ya kisasa: modern

Yenye nguvu: powerful

Zahanati: dispensary

Abbreviations and acronyms

CCM *Chama Cha Mapinduzi* (Party of the Revolution)

MCH Maternal and Child Health

MDA Mass Drug Administration

MOHSW Ministry of Health and Social Welfare

NSSTHCP National Schistosomiasis and Soil Transmitted Helminth Control Programme

SCI Schistosomiasis Control Initiative

STH Soil Transmitted Helminths

TANU Tanganyikan African National Union

TFDA Tanzania Food and Drug Administration

UN United Nations

UNICEF United Nations Children's Fund

VVD Village Drug Distributor

WEO Ward Executive Officer

WHO The World Health Organisation

Chapter One

Introduction

On the 29th August 2008 the first ever mass drug administration (MDA) to treat urinary schistosomiasis (more commonly known as bilharzia) and soil-transmitted helminths (intestinal worms) was delivered to school-aged children in six endemic regions in mainland Tanzania: Arusha; Kilimanjaro; Manyara; Singida; Rukwa; and Morogoro (see maps 1 & 2). It was estimated that two million primary-school aged children were eligible for treatment. The administration of the drugs praziquantel and albendazole by primary school teachers to their pupils was organized by the National Schistosomiasis and Soil-Transmitted Helminth Control Programme (NSSTHCP), a collaborative project between the Tanzanian Ministry of Health and Social Welfare (MOHSW) and the Schistosomiasis Control Initiative (SCI) based at Imperial College, London.

In most regions the administration of the anti-helminthic drugs (hereafter referred to as the deworming programme/exercise) occurred without incident, but in Morogoro town, the regional capital, treatment ended abruptly when anxious parents and guardians descended on schools to physically prevent their children being treated. They were responding to stories circulating in the town which said that children had died after receiving the drugs. Aided by mobile telephones, the rumours of child fatalities spread quickly, not only throughout the town but also to villages in the surrounding districts and to other regions (most notably Rukwa)⁴ These reports varied in terms of the schools involved and the number of ‘fatalities’, but most commonly stated that between four and six children had died at one or more primary schools in Morogoro town after swallowing the drugs. Exactly which school these fatalities had occurred in varied depending on who was recounting the story, but notably and perhaps

⁴ There were also newspaper reports of children experiencing dizziness and fainting after taking the drugs in Arusha and Kilimanjaro regions but it is not known if news of the child ‘fatalities’ in Morogoro town reached these places. There was also a newspaper report that there were disturbances in Shinyanga region but this was not one of the regions targeted for mass treatment at this time. (See appendices A to J)

tellingly, it was always a different school from the one where the child of the parent or guardian telling the story attended.

Around the same time, a local radio station⁵ reported that children had died after taking the drugs to treat *kichocho* and *minyoo* and advised parents to take their children to the hospital immediately, even if they were not experiencing any reactions, to ensure they had not been adversely affected by the drugs. On hearing this, yet more parents rushed to the schools to find their children.⁶ When pupils heard of the fatalities in other schools, many of them, understandably, became visibly distressed, fearing they too had swallowed “bad medicine” (*dawa mbaya*) and might die. Numerous pupils who had already swallowed the drugs reported feeling unwell; their complaints included nausea (*kichefuchefu*), stomach-ache (*tumbo kuumwa*), headache (*kichwa kuumwa*) and dizziness (*kizunguzungu*). Some pupils, predominantly girls, began to faint (*kuzimika*).

A young mother, living in Morogoro town with two primary school aged children relates her experience of that day:

We heard that six children died there [in another primary school] after taking this medicine and we ran to the school to prevent our children from swallowing also. When we arrived there were many parents, some of them were arguing and fighting with the teachers and even parents began to fight each other. My daughter had swallowed the medicine and was fainting and suffering stomach-ache (*tumbo kuumwa*), she was very sick (*aliumwa sana*). We took her to the hospital to be cured.

Similarly, a father of six from Chamwino area in Morogoro town said:

We heard that four children in one school died after being injected⁷ and the teachers didn't know what to do, they are not trained in this matter. Children were being rushed to the hospital. Parents had to take their sick children to the hospital... it was full of dying children; many children died here (*watoto wengi walikufa hapa*). More than twenty students died.

⁵ Abood Radio (a privately owned local radio station)

⁶ One hotelier told me how she watched, perplexed, as every member of kitchen staff who had been listening to the radio while preparing the lunch menu suddenly ran out of the hotel. One staff member also received a text saying her daughter had died at school. She later found her suffering from stomach-ache but otherwise well.

⁷ The drugs were actually administered orally.

In some schools the situation quickly turned violent as parents and guardians argued with the teachers who had been administering the drugs. In one primary school in an area of the town called Chamwino, a classroom wall was pulled down (see fig. 1), school property was destroyed, the national flag removed, rocks were thrown at the teachers and one was severely beaten; one informant told me she saw the female teacher being beaten on the head like a coconut (*alipigwa kichwani kama nazi*).



Figure 1 Photograph showing the classroom wall which was destroyed in one of the schools in Chamwino area when parents and guardians protested over their children receiving treatment for urinary schistosomiasis and intestinal worms.

Some of the other schools in the municipality suffered similar disturbances and teachers were physically assaulted or had rocks and stones thrown at them. In all, 356 children were taken to Morogoro Regional Hospital for treatment.⁸ Ten were given milk or oral rehydration therapy to drink and at least one received intravenous rehydration therapy. All the children except one were discharged on the same day, the majority within hours.⁹ However, around this time, a

⁸ Some pupils were also treated in health centres and dispensaries.

⁹One child sustained a head injury when she fell off her bicycle on her way to the hospital and was kept in for observation and treatment.

child who had been in the hospital for some days and had not received any deworming medicine, died due to malaria. Despite a doctor's reassurance to parents that this was the cause, many parents attributed this death to the drugs.



Baadhi ya wanafunzi wa Shule ya Msingi Mwembesongo iliyopo Morogoro mjini wakimkimbiza hospitalini mwenza Happiness Gaitani

Figure 2 Picture from Risasi Newspaper, 30 August, 2008. The caption below the photograph reads, some of the Students at Mwembesongo Primary School in Morogoro running with one of their fellow students Happiness Gaitani of Grade 4 after becoming weak and fainting a short while after being given schistosomiasis and intestinal worm vaccine. (Picture by Dustan Shekidede)

The list of injuries suffered by teachers included a broken arm, a broken finger and a serious head injury. In one school a health worker had the drugs stuffed down her throat causing her to choke and vomit and in another, teachers barricaded themselves into the headmaster's office and called the police (see appendix B).¹⁰ The Field Force Unit¹¹ (riot police) was mobilized and dispersed the angry crowds at a number of schools using tear gas. Approximately thirty protesters were taken into police custody. The Ministry of Health and Social

¹⁰ This was not the only school that called the police.

¹¹ All large towns and cities have their own Field Force Unit (FFU). These are an elite fighting force of police officers.

Welfare officially suspended the programme in Morogoro Region and throughout mainland Tanzania the same day.¹²

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Scandal Govt to repossess houses sold to public servants — Page 2

Scrutiny CAG says all Tanzania foreign missions for audit — Page 5

Parents storm centres to block vaccination

By Lilian Lucas, Morogoro.


Police were yesterday called to quell a disturbance by parents who stormed primary schools in Morogoro municipality to block the vaccination of their children after word spread that some had collapsed and had been taken to hospital after receiving the jabs. Police had to fire tear gas canisters at the protesters and one officer was injured in the mayhem, which started in mid morning. Nearly 30 suspects were arrested. The children were being vaccinated against bilharzia and worms.

Reports from Morogoro said the parents rushed to the vaccination centres that had been set up by health workers in several primary schools and demanded that the exercise be stopped.

Contacted for comment, the minister for Health and Social Welfare, Prof David Mwakoyusa, said: "I am in Tanga for the launch of the national ...continued on page 2

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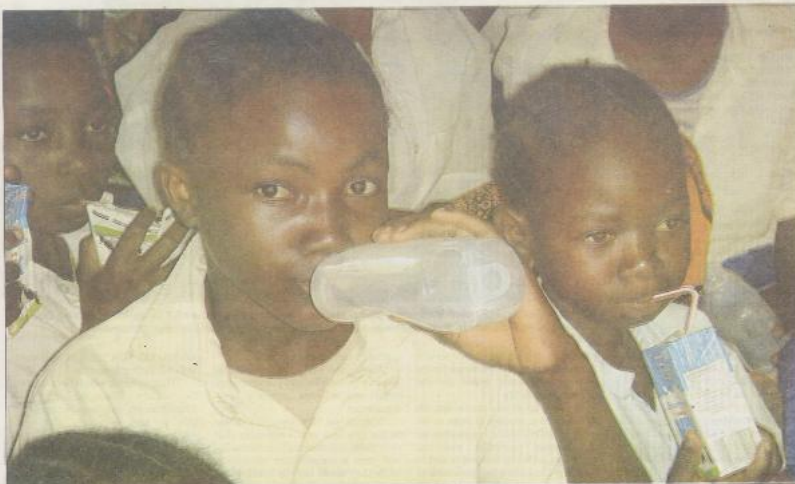
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Standard Six pupils at Mbete Primary School in Morogoro municipality, Shuhuda Hamisi, 12 (centre) and Maria John, 9, (right) drink water and milk after they after they complained of feeling dizzy on being vaccinated against bilharzia and worms yesterday. A total of 42,570 aged above five, were expected to be immunised in the municipality. PHOTO: JUMA NYIRAH

New health and insurance package for MPs

By Bernard James, Dodoma

Members of Parliament yesterday unanimously endorsed a new package which will lead to a review of their salaries and allowances apart from providing them and their families with comprehensive health and life insurance cover.

The new benefits are contained in the National Assembly Administration Act which got the nod in Parliament. Its passing paves the way for the establishment of the National Assembly Fund and the Parliamentary Service Commission.

The health insurance scheme will cover up to four children of the MPs below the age of 18, giving them access to medical treatment within the United Republic of Tanzania and overseas.

The new legislation will also see the setting up of a non-contributory group life insurance scheme for the MPs during their tenure.

The insurance cover, according to the Act, automatically matures should an MP die in office and will lapse upon the dissolution of Parliament.

The Chief Whip, Mr Philip Marmo, ...continued on page 2

Figure 3 Front page of *The Citizen* newspaper, 30 August 2008, showing school children receiving milk and water after they complained of feeling dizzy following treatment for urinary schistosomiasis.

¹² See appendices C, D, E, F, G and H for national newspaper coverage of these events, as well as debates following them.



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NJIA 13 ZA MELI KUWEKWA ZIWA VICTORIA UK 7

★ WANAKIJIJI WAKIMBIA MAKAZI KUTOKANA NA KUUA UK 3

Wabunge wataka mishahara minono

- Wadai ulinzi, walipiwe madereva
- Wasema posho zao ziboreshwe



Mmoja wa wanafunzi wa shule za Manispaa ya Morogoro walioziri baada ya kupatiwa dewa ya chanjo ya kichocho na minyoo akihudumiwa Hospitali ya Mkoa wa Morogoro Jana. (Picha na John Nditi).

NYUMBA ZILIZOUZWA KINYUME ZAREJESHWA SERIKALINI

Na Mwandishi Wetu, Dodoma

Na Cassian Malina, Dodoma

WABUNGE wamesema wanabujaji kuongezwa mitihata, posho, kuripwa ulinzi na kupiwa madereva wanawezé kutokebeka majukumu yao ipasavyo.

Waliyasema hayo wakati wakikangia majadiliano ya Muswada wa Sheria ya Utawala wa Bunge uliopitishwa jana mchana baada ya kutayipwa marokobalio kaahua, yakisema yanayopasika anasao ya wabunge yoyote hivi.

Hata hivyo, wakati wakujadili muswada huo wengi wa Wabunge ambao sasa watazuka kwa kupata mabomu kupitia Dima ya Alya waliambia kwamba watajiweka kwa viananchi kwanza mawada hata unawasilishwa kwa njia ya kujitokeza maslahi yao, hali

UK. 2

SERIKALI inategemea kuhitwa kwa mkataba wa kuruduliwa kwa nyumba kadhaa ilizowazua masafiri wake waandamizi na wito binafsi baada ya kukimika kwamba walituzia kinyume cha sheria au katika selamu zilizozitahili, ilifabianika bungeni jana.

Inebainika pia kwamba Waziri mmoja anataka, laji na kutoa mmoja walituzia nyumba ambazo si za Serikali. Kuu na sasa itabidi zingewe niya na kufitiwa kwa wamidiki wa awali.

Waziri wa Miundombinu, Dk. Shukuru Kawambwa, alitambua hayo Bunge jana kuhusu

UK. 2

Chanjo ya kichocho, minyoo yazua balaa

- Watoto zaidi ya 360 wazirai
- Wazazi wafanya vurugu
- Watawanywa kwa mabomu

Na Wandishi Wetu, Morogoro

ZAIDI ya wanafunzi 360 wa shule za msingi mkoani Rutwa na Morogoro wamefikishwa katika hospitali mbali mbali baada ya kuanguka na kutoa selamu baada ya kupatiwa dewa ya chanjo ya kichocho na minyoo mkoani taasisi.

Katolika na hali hayo ubaji wa otomji katika mkoa huo jana ulitazimika kutanzitiwa kutikana na maslahi hayo.

Hali hayo ilizimu wazazi wa wito

lito lao kutayia vungu katika shule ambazo waliitambua wito wao walitambua kutani nyumbani.

Katika Rutwa Christian Adelf anaripoti kuwa ubaji chanjo hii ulitanzitiwa baada ya wanafunzi wa shule za msingi kuanguka na kutoa povu inakomani huko baodhi yote walitapika na kupotea nyumbani.

Katolika na hali hayo wazazi wa wanafunzi hao walivianchi shule hizo katika Manispaa ya Mwanawazungu hususan shule za msingi Cherechem, Kitandala, Mwingi, Malungu

inaendelea UK. 2

Figure 4 Front page of Habari Leo (Daily News) newspaper, 30 August 2008. The picture caption reads, One of the students from a Morogoro Municipality school who fainted after being given vaccine for schistosomiasis and intestinal worms being attended to yesterday at Morogoro Regional Hospital (picture by John Nditi). The headline (to the right of the picture) reads, Vaccination for schistosomiasis, intestinal worms instigates a calamity. (For full article transcript see appendix A)

Drug distribution in Doma village

While these events were unfolding in Morogoro town, I was monitoring the distribution of drugs to pupils in Doma village, approximately eighty kilometres away (see map 3). In the morning I had walked from the commercial lodge where I was living to the primary school approximately four kilometres into the interior of the village to observe treatment. When I arrived at 8am the headmaster and two teachers were already administering the drugs and a nursing assistant was intermittently in attendance. I took a seat close by to observe. The headmaster called one class forward at a time and the children duly lined up with their water cups ready (see fig. 5). The awaiting pupils giggled and shoved one another behind their teachers' backs. The cacophony of children's voices rose steadily until the headmaster - as if just noticing - would turn and shout to the remaining children to be quiet, which they did, but within minutes the sound would begin to increase once more as children awaited their turn.

As each child came forward a female teacher measured the child's height on a paper height chart (a praziquantel dose pole) which was attached to the wall (see fig. 6). The tape was marked with the corresponding number of praziquantel pills to be administered depending on the child's height. The teacher would then call out the number of praziquantel pills to be given (along with one albendazole) while another teacher recorded this into a treatment register and the headmaster administered the medicine. After each child swallowed the medicine the headmaster instructed the child to open his or her mouth so he could ensure all the pills had been swallowed.

Most children widened their eyes or pulled a face when they saw how large the tablets were and how many they were expected to swallow (usually between two to four pills) and often they pulled yet another face upon swallowing the medicine complaining that the drugs were bitter (*ni chungu*). It all appeared good natured and the children's comic gestures and complaints were laughingly received by both nervous-looking pupils still awaiting treatment and teachers alike. Although the children looked nervous, the atmosphere was fairly relaxed, and much like any other school day. A few children complained of stomach-

ache (*tumbo kuumwa*) after swallowing the pills and were then instructed to sit quietly or lie down in one of the empty classrooms. At one occasion there were around six pupils sitting in the classroom with their heads laid on the desk but usually there were three or four pupils at any one time. I moved away from the drug distribution table and began to talk to some of the children who had already received treatment, asking them why they had taken the medicine and what it was for.



Figure 5 Pupils at Doma Primary School line up to receive drugs for urinary schistosomiasis and intestinal worms.



Figure 6 After having their height measured, pupils receive the drugs albendazole and praziquantel to treat intestinal worms and urinary schistosomiasis.

Things progressed in much the same way until mid-morning, when the father of one of the school children arrived. He was very agitated and shouting as he tried to locate his daughter. He said that four children had died in Morogoro town after swallowing the medicine and he instructed the children present not to take it. The children - understandably - looked anxious and began to run away from the drug distribution point. The headmaster took the man to his office and I phoned one of the doctors who worked on the programme and was visiting the town.

He said rumours of child fatalities had spread before treatment had even begun and that no children had died. I told him of the events unfolding in the village and he said that I should keep in touch. I hung up. I then noticed a group of five or six schoolgirls lying on the ground clutching their stomachs and wailing, seemingly fearing they too were about to die. As I looked up I realized a large crowd had gathered, and more people were arriving. Some teachers and the village chairman came over to where I was standing and said I should hide as they feared for my safety. "Can you run?" asked one.

I hid in the headmaster's house which was close by, along with Zanabu,¹³ a health assistant who had also been present.¹⁴ We entered the house through a back door which was then locked behind us from the outside. We moved to the front of the house and crouched close to the floor away from the windows so as not to be seen. Outside I could hear people shouting, several times it became much louder and, I feared, nearer, but we dared not look out of the window for fear of being seen. I could not get a signal on my phone - as was usual in this area of the village - so Zanabu and I were both alarmed when it rang, not least in case someone should hear it and detect our whereabouts. During a brief call on a bad line I managed to inform the doctor I had spoken to previously what was happening. He said he would call back, but never did. In the meantime, as he requested, I tried to send him the telephone number of the Ward Executive Officer (WEO) who lived in the village. I assumed this was so that he might assist us but after each attempt, my phone would inform me, *message sending failed*.

At this juncture, I could see no way out of the situation and I felt a combination of helplessness and anger, largely with myself, for being in such a vulnerable position. I feared I might be seriously injured, or worse. Zanabu told me not to worry and reassured me that we would be fine, but the look on her face when we heard the bolt on the back door being opened betrayed her words. It was the headmaster's two children who Zanabu hurriedly ushered in before swiftly closing the door and placing a stool in front of it. The children looked on at the strange sight of the visibly distressed *mzungu* (white person) crouched on their floor. With no other option, we waited. After almost an hour, during which time my legs had become completely numb from crouching, there was a startling thump on the bottom of the front door which was directly before us; someone was kicking the door in. On the second blow the door opened, revealing two armed police officers; "Come!" said one, in English.

Outside the crowd had grown considerably in size since I had taken to my hiding place and there were now approximately two hundred people. The villagers

¹³ A pseudonym.

¹⁴ Zanabu was supposed to be assisting with the administration of the deworming medication but had actually been administering measles (*surua*) vaccinations to pupils in one of the empty classrooms.

stared and some shouted as I was led to a waiting car that was so bent and beaten it was amazing it moved at all. I heard the words *sumu* (poison) and *mzungu* being shouted by some in the crowd. Sitting in the back of the car I was flanked on one side by a police officer - still armed - and the village chairman on the other. The other police officer sat next to the driver. Nobody spoke as we crawled at an alarmingly slow pace to the police station which was located at the side of the highway close to my lodgings. I did not know where Zanabu had gone but later learnt she was safe, if a little shaken herself. On route I passed people I knew, including Fatima, a spirit medium and one of my most outspoken informants. I lifted my hand to acknowledge her through the car window but she simply looked at me and did not reciprocate the greeting. I have wondered since whether my frequent visits to Fatima's house, or indeed my numerous visits to other spirit healers in the village, contributed in some way to the accusations which were made against me.¹⁵

Once at the police station some teachers from the school arrived on their bicycles and told me people in the crowd were very angry and calling me '*mwekaji wa sumu mzungu*', meaning a white person who poisons people - in this instance, children. Poison is often synonymous with witchcraft (*uchawi*); therefore, to be poisoned is to be bewitched (*kulogwa*). By this understanding, to be accused of poisoning others could be construed as being a witch (*mchawi*). I was however, unable to explore exactly what people meant by this expression. Nevertheless, it was clear that a lot of people thought I had personally brought medicine into the village to harm their children.

The teachers said I should leave the village immediately. The police concurred and sent an armed officer with me to my lodgings so I could collect my belongings. I was advised not to take a bus but to arrange for a car to collect me from the town, which I duly did.¹⁶ For over an hour I waited with my armed guards in the stiflingly hot police station for my transport to arrive, not quite

¹⁵ It is understandable that Fatima might be reluctant to return my greeting; even if she did not think I was attempting to 'poison' the children, others might think she was involved in the plot with me if she were to acknowledge me. From my enquiries after I left the village I learnt that Fatima was not accused of being involved, although it is harder to determine if she was suspected. As a local spirit medium of some renown, it is doubtful that anyone would accuse her directly.

¹⁶ I will always be immensely grateful to Arun and Michelle, who came to collect me from Morogoro town.

able to digest the events which had just taken place or the sickeningly sweet warm Pepsi that someone had kindly placed in my hand.

The official explanation

In the following days, government officials and police officers - led by the local Criminal Investigation Department (CID) - reported that the “rumours” had been started by, what they called, “anti-government agents” in the region, who sought to embarrass the government by ensuring the treatment programme failed. Opposition party activists belonging to the Tanzanian Labour Party (TLP) were accused of planning the disruption with the assistance of a retired health education officer who was deemed responsible for starting the malicious text messages. Local unemployed youth, known pejoratively as “street boys” were said to have been paid small sums to ride around on their bicycles perpetuating the rumours. Government officials, health workers and those working with the deworming programme, readily concurred and blamed the failure of the exercise on “anti-government hooligans and agitators”, not questioning how unhesitatingly these stories had been accepted by the majority of those who had heard them.

The lack of adequate food prior to the consumption of the tablets was blamed for the adverse effects experienced by some of the children, although health care workers and teachers also noted that most of the children had been seemingly healthy after receiving treatment until they heard rumours of child fatalities, which, they said, caused pupils to panic (*hofu kubwa*) and feel faint (*kuzimika*). While these explanations are not altogether inaccurate, they only provide a partial and official perspective of events, in which the rumours, those who spread them, and acted - sometimes violently - because of them, are held accountable for the failure in treatment.

The official explanation for the events that occurred on this day apportioned blame in two ways: first, the reports of children dying after receiving treatment were said to be mere rumour, purposefully perpetuated by local opposition party activists. Second, the inadequate provision of food was deemed responsible for the physical effects (nausea, headache, stomach-ache,

vomiting, dizziness, fainting) experienced by some of the children, although it was also suggested that many of the pupils reacted out of anxiety and fear, rather than experiencing physiological adverse effects from the drugs. By apportioning blame in this manner, the wider political, social and historical context within which this biomedical intervention was occurring, and in which rumours thrived and the treatment was rejected, is ignored.

Although members of the Tanzanian Food and Drug Administration (TFDA) team visited Morogoro town the day after the treatment exercise in order to establish whether the drugs were responsible for any adverse effects (*Mwananchi* Newspaper, September 1, 2008, see appendix J), their findings were not made public. However, the Minister for Health and Welfare continued to reiterate that the drugs had been in use in Africa for a number of years and were deemed safe.

Curious as to how the events in Morogoro might be reported internationally, I trawled the internet and global health websites for any mention of it in the days and weeks following the treatment exercise and could find only one: In September 2008 IRIN, the UN humanitarian news service reported that millions of children were successfully treated in Tanzania for intestinal worms and schistosomiasis. It briefly mentioned that the deworming exercise had been suspended in two regions until further notice. Informed by a government medical officer, the report went on to say this was because, “Some parents and residents panicked on rumours that pupils fainted after being vaccinated, whereupon they stormed into two schools and attacked teachers”.¹⁷

Alternative explanations

Despite the official explanation of events, many people continued to suspect that children had died or been harmed as a result of treatment. New theories emerged daily - both in the town and in national newspapers - which continued to challenge the official version of events. In the ensuing days and weeks there appeared to be less focus on the child ‘fatalities’ (with some even questioning

¹⁷ From www.irinnews.org accessed 9 September 2008

if these had really occurred) and more on the adverse physical effects experienced by the children who swallowed the drugs. There was a pervasive feeling amongst many townsfolk that something was terribly wrong with this treatment programme. How people understood and explained these events varied, and ranged from the notion that while the programme was perhaps well-intentioned it was incompetently run, to suspicions that the deworming exercise involved the use of expired or experimental drugs, or that the entire programme was a clandestine attempt to sterilize school-age children. Questions such as “why did they poison our children?” were repeated over and over. However, such questions were often rhetorical; the speaker often did not wait for a response but continued on, providing their own explanations.

Based on almost eleven months research which involved four fieldwork visits and multiple fieldwork sites in Morogoro region between June 2007 and March 2010, this thesis addresses the following questions: Why did parents and guardians refuse treatment for their children when intestinal worms and urinary schistosomiasis are endemic in the region and result in wide scale morbidity and suffering? Why would people suspect the National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP) of nefarious practices, such as using experimental drugs or running a covert sterilization campaign? Why would people suspect their government and outside donor organizations of being involved in such conspiracies?

In order to provide some answers to these questions it is necessary to describe the social, economic, political and historical context in which this biomedical intervention occurred. This thesis therefore explores what life is like for people living in Doma village and Chamwino area in Morogoro town. This includes how people eke out a living and the daily obstacles they face in their continued survival¹⁸. It is also necessary to examine people’s understandings of urinary schistosomiasis (*kichocho*) and soil-transmitted helminths (*minyoo*), and the way in which they relate to understandings of sickness and misfortune more generally. Such an approach illuminates a disjuncture between local

¹⁸ I deliberately avoid the term ‘well-being’ here, not only was there no local expression to encapsulate such a notion but people’s daily lives were focused on immediate needs such as obtaining enough food to eat or medicine for a sick family member.

understandings and those held by officials working to control neglected tropical diseases at a global level.

Methods

Beginning fieldwork: Pilot study, June – September 2007

In 2007 I undertook the first of four fieldwork visits to Morogoro region in Eastern Tanzania. Part of my research involved assisting in the monitoring and assessment of the National Schistosomiasis and Soil-Transmitted Helminth Control Programme (NSSTHCP) in mainland Tanzania from an anthropological perspective. In other words, the research involved exploring social responses to this top-down vertical programme from the bottom up. Previous research undertaken as part of my MSc. degree in north west Uganda in 2005 (Hastings 2005; Parker *et al.*, 2008) illustrated clearly that while these drugs may be cheap and clinically effective - and therefore hailed as a breakthrough in the treatment of these diseases by those working in public health (Berquist 2002; Molyneux *et al.*, 2005; Hotez *et al.*, 2009), this does not mean that the intended recipients will be willing to swallow them.

I first arrived in Morogoro in June 2007 armed with some scant epidemiological data that had been provided by the Schistosomiasis Control Initiative (SCI, 2007 unpublished). These data identified villages where infection rates of schistosomiasis *haematobium* (*S. haematobium*) - also known as urinary schistosomiasis - were particularly high. It was therefore in one of these villages that I hoped to conduct my research. To this end, I attended no less than seventeen meetings with regional and district government officials in Morogoro town, the regional capital. During each meeting I would be asked to sign the visitors' book (*kitabu cha wageni*) while several photocopies and photocopies of photocopies were taken, not only of my research permit, passport and credentials, but of any document which any particular official decided were pertinent on any particular day.¹⁹ During these encounters I

¹⁹ Frequently the office photocopier would not be working and I would have to return with my own photocopies. I soon learnt that it was more efficient and expedient to carry several photocopies of all my documents to any meeting. Once, an official noticed I did not offer him one of the papers in my file (I had not copied it as it was just an old letter from SCI) but he insisted that I go and make a copy and return the following day.

explained what type of research I would be conducting, including explaining repeatedly why it was that I did not have a 'ready-made' questionnaire to show them - a fact which caused most government officials to raise an eyebrow and tell me how this was a serious research flaw on my part - after all, as I was told by one, "how can you possibly carry out serious research without a questionnaire?" Finally, and only after I bizarrely had to listen to a high ranking regional officer explain at some length that all the checks had been necessary to ensure I was not an *Al Qa'ida* operative (an unlikely occurrence perhaps as a middle-aged British white woman) was I finally granted permission to study in one of the villages I had requested, Doma.²⁰

Doma village is located approximately eighty kilometres from Morogoro town on the plains which stretch beyond the Uluguru Mountains. I shared a house with Hellen, the clinical health officer, which was located in the centre of the village close to the dispensary (health centre). As a young single woman living alone Hellen said she welcomed my company, as well as assistance with the household chores and financial contributions. Indeed, she had been very insistent that I should live with her when I first visited the village and made me feel very welcome.

The mass administration of drugs to school age children to treat urinary schistosomiasis and soil transmitted helminths (STH) was not scheduled to take place in the region until the following year, so my research objectives at this juncture were to build up a picture of what life was like for people living in Doma village, including examining people's understandings of misfortune, particularly illness, and to explore the various treatment pathways people followed when they were sick. While my doctoral fieldwork was a little unorthodox in that I planned to live in the village for three to four months each year for a few consecutive years rather than one prolonged period - due to the planned annual pattern of drug administration and the way fieldwork was funded - in all other aspects my research adhered to conventional anthropological methods of extended fieldwork involving participant observation, undertaking unstructured and semi-structured 'interviews' whilst becoming familiar with local languages and idioms.

²⁰ See Green, 2010 for an insightful account of the spectacle of power played out in government offices.

I participated in daily life - shopping, fetching water, gathering firewood - and I had regular Kiswahili lessons with one of the secondary school teachers. A great deal of time was spent 'hanging out' in and around people's homes, at the dispensary and drug shops (*duka la dawa*) or anywhere where people might exchange remedies and give or seek advice. I sat with the bicycle hire boys, much to their initial confusion, under the shade of trees where people congregated to chat and around the village pool table. Numerous healers (*waganga*) including biomedical practitioners, herbalists (*waganga wa miti shamba*), spirit mediums and 'traditional' healers (*waganga wa kinyeji*) were visited. I spent time in the school classrooms and in the playgrounds talking to children and even managed to get some of them to call me by my name rather than the generic term *mzungu* (white person). Several school quizzes were conducted, including essay and drawing competitions to help elucidate children's understandings and experiences of the body and illness, including schistosomiasis, known in Kiswahili as *kichocho*, and worms, known as *minyoo*. Things went well, I thought. Additionally, with my funding audience in mind, I completed a 20% random household survey as well as obtaining other quantifiable data such as treatment figures from health registers. In the evenings, once I had completed my domestic chores, I set about writing detailed field notes into my rapidly expanding volumes of notebooks, there being no electricity to power a laptop.

Most nights we were awoken by the clinic night watchman, requesting medical assistance for someone who had called at the health centre in distress. Very occasionally, I joined Hellen in her assessment of these patients, observing from a distance while she attended to them - most often a sick child or a woman in labour. Hellen told me she was not officially required to attend to such demands but was too afraid not to in case something terrible should happen and she might be blamed. Knowing from our conversations that I had previously been a nurse, Hellen would often ask for my opinion on managing a patient's condition. Perhaps because of this collaboration - or the fact that I was living with her or simply because I was a European asking lots of questions, particularly concerning people's health - many in the village believed I was a medical doctor. Try as I might, I failed in convincing them otherwise and

although I did my best to dissuade them, I was frequently referred to, at least to my face, as '*Docta*' or '*Daktari*' (doctor).²¹

After three months I returned to the UK satisfied in the knowledge that I had developed some good relationships with a variety of people in Doma, and that some interesting research themes and questions were emerging. I maintained contact with some of my informants and assistants and felt confident that when I returned to Doma village the following year I would be in a good position to pick up where I had left off.

Fieldwork visit 2: August – November 2008

Sadly, a few months before I was due to return to Doma village in August 2008 Hellen was badly injured in a serious bus accident - an all too frequent occurrence in Tanzania - and she had to return to her natal village to be cared for by her family. I remained in contact with Hellen and although she was hopeful that she would eventually return to Doma, she never did and we never met again. When I returned to Doma village in August 2008, ten months after I had left, Hellen's house was boarded up and there was nowhere, or more specifically, no one, suitable for me to live with. Although it might have been possible to live with the CCM (*Chama Cha Mapinduzi*) (Party of the Revolution) Party Chairman and his young family I resisted this move as I wanted to avoid what might be interpreted as political allegiance on my part by villagers.²² Therefore, with little other option, I chose to live in a small commercial lodge which was located at the edge of the village next to a busy highway. This area was very different to where I had lived previously but I decided that this wasn't necessarily a bad thing as it would provide me with an alternative perspective on village life on what I then thought would be my second of three annual visits.

The mass administration of drugs to school-aged children was scheduled to occur three weeks after I returned to the village so I spent those weeks conducting my research much as before and re-establishing relationships with

²¹ *Mzungu* or *mama mzungu* (white woman) remained my default 'name'.

²² Chama Cha Mapinduzi is the ruling political party.

previous informants. However, the events of 29th August changed everything and I faced some difficult decisions. The accusations against me and the circumstances under which I left Doma village left me considering whether I should continue my research. I was concerned that even in a new place I could again be suspected (and accused) of having brought the (bad) medicine to the children and I feared I might somehow be identified as the 'white poisoner' from Doma village. Furthermore, I remained concerned about those who had assisted me in Doma village who I now heard were experiencing difficulties, as their fellow villagers asked them "why did you walk with the white woman who came to poison our children?" (*kwa nini ulikuwa/ulitembea na yule mama mzungu aliyekuja kuwapa watoto wetu sumu?*) Was it acceptable to now involve new local research assistants and translators under these circumstances when they too might be accused? While I found the thought of leaving very tempting, I felt certain that if I left at this juncture I would, in all likelihood, never return. In the end, after a weekend of deliberation (and vacillation), I decided to stay, but in order to continue I had to decide on a new research location. However, this problem was not as immediately pressing as I had envisaged. The officials from regional government asked me not to continue with my work in order to "let tempers cool down a little".²³

Based in Morogoro town, I kept my ear to the ground, bought as many newspapers as I could each day and talked (unofficially) to whomever I could. I even managed to go away to Zanzibar for a few days. When I returned, local officials and Ministry of Health staff were still reluctant to let me begin my work again so soon. Their apprehension was framed in terms of my own safety, though I also suspect they were none too keen for me to listen to local complaints. I was still shaken enough to allow myself to be directed away from any potential controversy. I now learnt that I had to obtain a letter from the district officer responsible for Doma village to state I had completed my research there before I could even request to work in an area in the municipality (town). From experience, I knew this was all going to take some time so I eagerly accepted the opportunity when offered to accompany the then district school health educator and another health worker while they collected the feedback and treatment forms (Form No. 1 - Report at Primary School Level) from the primary schools in the municipality.

²³ Morogoro Regional Administrative Secretary (RAS) 1 September 2008

Although initially I felt reluctant to be seen travelling in a designated Ministry of Health and Social Welfare (MOHSW) vehicle, clearly working under the auspices of government, especially before I had even located a new research site, this allowed me to visit nearly thirty primary schools over the following three weeks, many of which I would not have been able to visit otherwise as they were scattered throughout the municipality.²⁴ I was also able to observe the interactions between health workers and teachers on these visits, as well as meeting parents and street chairmen in and around the various schools. Sometimes during these visits a certain camaraderie between fellow government employees was tangible and it quickly became apparent during their conversations that certain areas in the town were considered more 'problematic' than others; that is to say, some *people* were considered more problematic than others. Such discussions revealed a dismissive attitude among some of the teachers towards parents and inhabitants around some of schools, particularly in Chamwino area and some of the other poorer parts of town, where teachers and health workers claimed the parents were uneducated (*kuto elimishwa*) and ignorant (*ujinga*). These were most notably the areas where the most violent encounters occurred on treatment day.

Once we had completed collecting the feedback forms and I had obtained research clearance to work in the municipality which, once again, involved several lengthy meetings with local government officials and copious amounts of photocopying, I began to focus my research on the areas the teachers and health workers had identified - in their view - as 'problem areas' and where the most anger had been directed at the school teachers, particularly in Chamwino.

Fieldwork visits 3 & 4: November – December 2009 & February – March 2010

Returning to Morogoro town twelve months later, I expected this to be my final visit of three months duration. However, after nearly two months I

²⁴ In reality the whole municipality had now become my new research site; I just hadn't quite realized it yet. Although I felt I might be compromised if future informants thought I was working on behalf of their government I had to remind myself that I was never going to achieve the perception of neutrality I desired, regardless of whether I was in a MOHSW vehicle or not.

unexpectedly found myself flying home on Christmas Day 2009 after learning my mother had suffered a heart attack. Fortunately, she made a good recovery and five weeks later I returned to Morogoro town for an additional two months.

Returning to the field at all in 2009 was an accomplishment. Having lost my fieldwork funding from SCI (as there was now no programme to monitor) I had to locate the necessary funds elsewhere. Eventually, due to the commitment of my supervisors, I was awarded partial fieldwork funds from the School of Social Sciences at Brunel. This was insufficient however to cover all my costs and my research remained predominately self-funded. This had its advantages however as I was now free to pursue my own research without having to simultaneously conduct research on behalf of SCI.

In late 2009 the 'rumours' and suspicions which had previously surrounded the anti-schistosomiasis and deworming programme had, unsurprisingly, dissipated. The hot topic of debate that now dominated most conversations in the town was the compulsory registration of all mobile phones, which people suspected was a government ploy to spy on them, especially in the run up to the elections taking place in October 2010. Conjecture which had surrounded the deworming programme in August 2008 not only appeared to have mellowed with time but people seemed reluctant to discuss the suspicions which had seemed so ubiquitous previously. However, with time, informants - old and new - gradually began to talk about the deworming programme in 2008. It was evident that many people still harboured suspicions of the programme and, furthermore, felt they had never received an adequate explanation of what had 'really' happened from their government. As such, people viewed it as yet another example of one of the many ways in which those in authority sought to control them.

During these final visits I focused almost exclusively on Chamwino area. Although I was unable to find anywhere to live in the area I visited all day, every day, and conducted my research much as I had done previously in Doma village in 2007. This involved visiting people at their homes, as well as chatting in public spaces such as by the public water tap. I met with members of the various Street Health Committees (*Kamati ya Afya ya Mtaa*) and visited anywhere people living in Chamwino might go for healing. This included

biomedical facilities such as dispensaries, health centres and hospitals, drug shops (*duka la dawa*), herb shops (*duka wa miti shamba*), local healers including herbalists (*waganga wa miti shamba*), spirit mediums and ‘witchdoctors’ (*wachawi*) ‘traditional’ healers (*waganga wa kinyeji*) in Chamwino and throughout the municipality.

When I was in Doma village I had observed mothers bringing their infants to the dispensary to be weighed and immunized against childhood diseases. In the health care facilities in and around Chamwino I again noted how well childhood immunizations appeared to be taken up in the clinics by mothers. This raised the question, why do people mistrust the drugs used to treat *kichocho* and *minyoo* but appear to trust childhood vaccinations? I therefore spent time in various health care facilities during Maternal and Child Health (MCH) clinics speaking with mothers.

Comings and goings: Reflections on multi-sited, multi-visited fieldwork

While I always expected my fieldwork to involve multiple visits over a number of years, and was even prepared for the research site to change,²⁵ I could not have anticipated the way in which I would have to leave Doma village. At the time and for some months afterwards I felt I had been very unfortunate; not only had I lost my fieldwork funding but I felt the repercussion of the events in Doma on a very personal level. The anthropological method necessary involves writing up our ethnographic findings when we return from ‘the field’, but once home I found myself not wanting to write or even talk about the events that had taken place in Doma for some time.

Prior to the distribution of drugs in Doma, most informants said they welcomed the planned programme to treat *kichocho* and even said they thought it should be made available more frequently than the intended annual roll out. From my previous experience researching social responses to the mass distribution of drugs to treat schistosomiasis (*mansoni*) in north-west Uganda (Hastings, 2005;

²⁵ I hoped SCI would continue funding me to monitor the deworming programme in Doma but I was aware they might, at some stage, wish me to conduct research elsewhere in Tanzania.

Parker *et al.*, 2008), as well as my research on the mass distribution of drugs to treat onchocerciasis (river blindness) in Doma (see Chapter Nine) I was sceptical about these positive responses.

Moreover, I often encountered reluctance - at least initially - among informants in Doma to openly criticize things or discuss the difficulties they faced in life. For example, I was frequently told things like, 'the drugs are good' (*dawa yao ni nzuri*) or 'the hospital is good' (*hospitali ni nzuri*) rather than what I suspected people really thought. However, such reluctance was itself noteworthy as it revealed an atmosphere of suspicion in which people feared discussing, particularly with outsiders like me, negative views or bad events. People appeared concerned that any disparaging remarks might get back to those they were criticizing, such as local leaders and those in local government, a situation that prevented many people consenting to having our conversations tape recorded. Moreover, discussing ill feelings and 'bad things' was deemed inauspicious (bad luck) as it evokes an atmosphere of negative feelings such as jealousy and hatred; emotions in which witchcraft (*uchawi*) is understood to thrive. However, the events which occurred in Morogoro town and Doma village in 2008 clearly demonstrated that local people harboured concerns about the deworming programme, often even before the distribution of drugs began. The rumours and ensuing protests and theories about the programme just made such suspicions explicit.

Staying in the research site for a few months at a time each year rather than staying for one prolonged period has both advantages and disadvantages. On the one hand being in 'the field' for a shorter time certainly made it more difficult to build relationships with informants, although, conversely, returning to the field always elicited very positive responses from informants who appeared to appreciate that I did so. Each time I returned to Chamwino I would be greeted by informants with something along the lines of "ah mama you didn't forget us" or something similar. Returning to 'the field' or more correctly, to the people in it, certainly had a positive impact, whether my absence had been five weeks or twelve months and certainly helped to build relationships with key research participants.

James Faubion (2009) comments that the ethics of fieldwork are an ethics of connectivity: that the good anthropologist should connect with her research informants, establishing rapport and working towards a relationships of trust. I don't think any would disagree with such sentiments but building trusting relationships takes time. Certainly I feel my absence of ten months from Doma village (2007 to 2008) was to my detriment. Three weeks, it seems, was not long enough to re-establish the trust and connectedness of which Faubion writes.

During my second visit to Doma, the absence of Hellen - a respected and liked member of the village - was unfortunate for me as I am certain that in some way she 'legitimized' my presence. Although, conversely, my relationship with Hellen probably also led, partially at least, to me being mistakenly identified as a medical doctor and therefore more likely to be perceived as being involved with the drug distribution. Local agents hold all sorts of theories as to what they perceive to be the true identity or role of the anthropologist and this is perhaps largely unavoidable, particularly so at the beginning of research projects when one is entering the field. Unfortunately, 'doing ethnography' is not always apparent to those around us. Moreover, it was debatable whether many of 'my' informants had a conception of what ethnography, or an anthropologist was. To many of them, I was just another *mzungu* asking lots of questions.

Commenting on how fieldwork is perceived by non-anthropologists, Diana Forsythe, an anthropologist working in the field of computer science and artificial intelligence notes, "ethnography is invisible work" and many in the so called 'harder' sciences regard it as "just chatting with people and reporting what they say"(Forsythe cited in Breglia 2009: 133). If those in other disciplines view anthropological methods this way is it little wonder that research participants are sometimes confused - even sceptical - about what it is we are actually doing? Although my research did include semi-structured questions and even a household survey I was frequently 'just' sitting around chatting with people. From my own perspective these provided the most ethnographically rich insights, but my occasional research assistant in Doma would sometimes ask when we were going to start 'work' when we might perhaps have been sitting chatting to someone for some time.

While anthropological methods might be opaque, particularly to informants, in my own experience of living in rural villages in Tanzania and Uganda, the anthropologist is always clearly visible and her actions, interactions and whereabouts, common knowledge. I certainly was not the first - and will not be the last - anthropologist to be accused of lying or spying or being engaged in some form of deception. Accusations of poisoning children seem rather extreme but it is worth noting that the anthropologist Peter Pels, who conducted fieldwork in Morogoro region in the late 1980's and early 1990's was, for a time, suspected of being a white vampire (*mumiani*). This happened after a body was discovered and he was under suspicion until the real murderer was identified (Pels, 1992). Similarly, although not an anthropologist at the time, Wenzel Geissler was accused of being a white vampire/butcher (*kachinja*) whilst undertaking medical research (involving venous blood taking) in Kenya (Geissler, 2005).

Changing research sites involved an expanding and narrowing of the field at certain times. Moving from Doma village to Morogoro town, the size of the geographical research area, as well as the people in it, increased. However, this narrowed again when research focused on Chamwino area. While the research in this thesis covers Doma village and Morogoro town it is clear in the chapters that follow that sometimes one area is preferred over another to illustrate a particular finding. Often this is just due to the chronology of events and ideas, for example, while I was in Doma village I often spoke with mothers attending baby clinics at the dispensary, but it was only towards the end of my research, when I was working in Chamwino that I began to focus on childhood vaccinations *vis a vis* the drugs to treat *kichocho* and *minyoo*. In the same vein, I was obviously unable to follow up on local understandings and explanations of the events which had surrounded treatment in Doma. Neither was I able to observe any of the preparations prior to the administration of drugs in Morogoro town such as training seminars for the teachers and local leaders, school meetings for parents or the way in which people had been informed (or not) of the scheduled treatment.

The words town and municipality are used interchangeably throughout this thesis; indeed, they do cover the same geographical area. However, 'town' can

conjure up notions of busy commercial districts and not all of Morogoro town is like that; the town encompasses areas that appear more peri-urban than urban, particularly on the outskirts and in the so called 'squatter areas'. Locals have no difficulty in identifying these areas as belonging to Morogoro town (*mji*), even if they do sometimes refer to them as more like the village (*kiji / vijji*) (see chapter three). Although municipality is also used by local residents, it is the administrative term for the area.

An advantage of working in both Doma village and Morogoro municipality was that I was allowed an insight into the lives of both the rural peasantry and the urban poor and was able to conclude that although the minutiae of their daily lives may be different, they share many of the same concerns and lead equally precarious lives.

Ethical considerations

I was undecided for a long time as to whether I should name Doma village, but as the events were well known to Tanzanian government officials and SCI, I decided there was little point in trying to disguise the village or its whereabouts. With respect to Morogoro, the events surrounding the treatment exercise in the municipality were widely reported in the national press. By identifying Morogoro municipality it was then extremely difficult not to identify Chamwino as it is so commonly referred to locally as a "squatter area" (*maeneo ya ovyo ovyo*) and I could not have adequately written about the area without mentioning this. This was also the case with Doma as there is only one other village close to Morogoro town which is located next to a game park. I have however used pseudonyms for the majority of informants, only using real names when he or she wished their contribution to be openly acknowledged. In addition, the names of primary schools in Morogoro municipality have been withheld.

Thesis outline

This thesis is divided into ten chapters. Chapter two discusses biomedical understandings of the aetiology, symptoms and pathology of schistosomiasis

and soil-transmitted helminths, and the rationale for mass drug administration in endemic areas like Tanzania. It examines the creation of the category now known as neglected tropical diseases (NTDs), which was developed in response to the establishment of the United Nation's Millennium Development Goals (MDGs). This brought about a renewed international commitment to treat a diverse range of diseases of poverty. Indeed, several leading names in the global health arena have suggested that treating neglected tropical diseases would eradicate poverty in low income countries (Fenwick *et al.*, 2005; Molyneux *et al.*, 2005; Hotez *et al.*, 2009) and even maintain, or bring about peace (Hotez & Thompson, 2009). However, several biological and social scientists have raised concerns regarding the sustainability, ethics and feasibility of mass treatment for neglected tropical disease (Gryseels, 2006; Coulibaly *et al.*, 2008; Parker *et al.*, 2008; Allotey *et al.*, 2010; Cavalli *et al.*, 2010; Parker & Allen, 2011; Parker *et al.*, 2012; Parker & Allen, 2012).

Chapter three provides an economic, political and historical overview of Tanzania, including its colonial and socialist past. It also discusses administrative and social aspects of life in Morogoro region and Morogoro town. It explores some of the public health campaigns undertaken during British colonial rule in Tanganyika and examines local responses to them. Finally, rumours of blood stealing vampires, which emerged during British rule and coincided with the first public health campaigns (Musambachime, 1988; Pels, 1992; White, 2000), as well as more contemporary blood and organ stealing rumours (Weiss, 1998; Sanders, 2001) are explored and contextualized in the light of colonialism and structural adjustment policies in Tanzania. It is suggested that the rumours which surrounded the deworming programme in Morogoro region may reveal new anxieties for new times.

In chapter four, the physical and social landscape of Morogoro municipality and Doma village is described. It examines, in particular, how people in Chamwino 'squatter' area and Doma village eke out a living and explores the economic hardships and uncertainties people face. While inhabitants of the two research sites undoubtedly have to contend with problems specific to their own area, the majority of informants lead precarious lives, in which they struggle to feed their families, educate their children and buy medicine (*dawa*) when they are sick. Despite expressing feelings of powerlessness and hopelessness, informants

in Doma and Chamwino make considerable efforts to obtain money or grow food in order to survive. However, there was also a pervasive sense of resignation, in which many people felt the good or bad fortune they encountered was, respectively, due to God (for Muslims and Christians alike) and witchcraft. People appeared to be acutely alert to anything, or indeed anyone, that might add to their existing burdens and frequently appeared wary and sceptical of other people's actions and intentions.

Chapter five examines local understandings of misfortune, illness, healing and protection. The chapter is divided into two parts. Part one discusses the ways in which people in Doma and Chamwino understand and treat illness episodes. It suggests that decisions over where to seek treatment are not only influenced by a person's cosmology and understanding of the disease, including the aetiology, but by more structural concerns, such as the ability to pay or travel for treatment. By examining the way people seek treatment from various sectors of health care, as well as the way different health care sectors influence and inform one another in Doma and Chamwino, this chapter illustrates a process known in medical anthropology as medical syncretism (Hausmann Muela *et al.*, 2002). The second part of the chapter examines some of the ways that people protect their children from illness. Again, this involves seeking protection from different health care sectors: vaccinations from biomedical health care facilities and protective amulets from local healers.

Local understandings of *kichocho* and *minyoo* are examined in chapter six, including the modes of transmission, symptoms and treatment seeking practices. People in Doma and Chamwino were very familiar with both *kichocho* and *minyoo* and considered them to be an unavoidable and inevitable part of life. *Kichocho* was understood to be primarily a disease of childhood which is always symptomatic; recognizable by blood in the urine. In contrast to biomedical understandings, *kichocho* and *minyoo* were not considered to be major health problems. While parents reported taking their children to biomedical facilities to obtain treatment for both *kichocho* and *minyoo*, they preferred their children to undergo laboratory tests first to confirm the diagnosis, even when symptoms were present. By examining local understandings of *kichocho* and *minyoo*, as well as treatment seeking practices

in this way, the disjuncture between local and global health perspectives of these diseases and the appropriate treatment becomes clear.

Chapter seven focuses on the delivery of the mass drug administration programme, in particular the way in which information about the scheduled treatment flowed 'down' from central government to the intended recipients: the children and their parents. Many parents, and indeed local community leaders (street chairpersons), complained that they did not receive any information concerning the scheduled drug administration, or what information they did receive was insufficient. Parents raised several concerns regarding the delivery of the drugs, including the logic behind treating all school-aged children regardless of their infective status; the efficacy of treatment when so many of the children were likely to become re-infected; and the use of non-medical staff to administer the drugs. These apparent inconsistencies with parents' usual experiences of biomedicine contributed to suspicions regarding the 'real' rationale for treatment. However, many teachers and health care workers expressed the opinion that parents, particularly those in the poorer areas of town, like Chamwino, were 'simply' ignorant and resistant to any treatment.

The drugs which were administered to school children for the treatment of *kichocho* and *minyoo* were widely understood among people in Morogoro town to have been very powerful. Chapter eight examines the ways in which the drugs were perceived locally to have been "strong", "very strong", or indeed, "too strong". The requirement that the drugs be ingested with food, as well as the official explanation that the adverse reactions experienced by some of the children had come about because they had not taken any or enough food implied that the drugs were strong. However, many parents also expressed fears that the children had been overdosed by the teachers when they calculated the dosage according to height rather than weight. The actual physical attributes of the pills also contributed to understandings that they were strong in terms of their size, smell and the number of pills that had to be taken at once (Whyte, 1988; Whyte *et al.*, 2004). Furthermore, the drugs were deemed to be powerful as they were manufactured in the industrialized world and, in many parents experience of buying drugs, these were the most

expensive and therefore most efficacious. Finally the drugs were understood to be strong in relation to the small, weak bodies of the children.

Notions of power are also examined with regard to the relationships between teachers and pupils. It is suggested that as the children were in subordinate positions to their teachers, which were often reinforced with the use or threat of physical 'punishment', the children appeared to have had very little opportunity to refuse the drugs. However, when news of the child 'fatalities' reached them, or when people started to arrive at the schools in protest, the children found themselves in a position where they could reject the drugs. While the adverse reactions experienced by some of the children after swallowing the drugs, in particular fainting, may have been an adverse reaction to the drugs, there may have also been other reasons. From a psychological perspective this could be viewed as a mass sociogenic illness episode (mass hysteria). However, from an anthropological perspective this thesis suggests the children's fainting episodes can be better understood as an embodied form of resistance.

Chapter nine examines local interpretations of the deworming programme; in particular it explores local (as well as national) explanations for the adverse reactions experienced by the children. These include suspicions that the deworming programme administered drugs that had expired or were counterfeit; had never previously been used on humans; or that the entire programme was really a covert sterilization campaign. Anthropological perspectives of rumour are discussed, highlighting the way in which rumour can be seen as counter-narratives employed by those in marginalized and subordinate positions and give voice to local anxieties. In other countries in sub-Saharan Africa, and elsewhere, fears of covert sterilization have been based on religious or ethnic identity (Yahya, 2007; Feldman-Savelsberg, 2000; Renne, 2010). However, while there may have been some suggestion in Morogoro town that there had been a US-led anti-Islamic plot to sterilize children, the majority of informants feared they were targeted because they were poor Africans living in an over-populated continent. This was re-inforced by the ubiquity of a family planning and development discourse which continually stressed the need for people to reduce the size of their families.

Chapter ten concludes the thesis. It provides a summary and highlights the key areas of research. It considers the contribution of this thesis to the study of the mass treatment of neglected tropical diseases from an anthropological perspective, as well as its contribution to the studies of rumour and medical syncretism in medical anthropology.

Biomedical perspectives of schistosomiasis and soil-transmitted helminths

This chapter discusses the aetiology, symptoms, pathology and treatment of two neglected tropical diseases: schistosomiasis and soil-transmitted helminths. It also shows how the creation of the category ‘neglected tropical diseases’ or NTDs is related to the establishment of the Millennium Development Goals (MDGs) and the increasing commitment within the global health arena to control diseases of poverty. Endeavours to control schistosomiasis and soil-transmitted helminths currently involve the provision of free annual treatment to adults and children living in endemic areas. The biomedical rationale for mass treatment of schistosomiasis, soil-transmitted helminths and other NTDs in Tanzania is thus outlined and previous experiences of treating NTDs in Tanzania, including Doma village, discussed.

Schistosomiasis

Schistosomiasis, more commonly known as bilharzia, is a tropical, water-borne parasitic infection caused by blood flukes (trematode worms) of the genus *schistosoma*. There are several species which infect both animals and humans, with the main schistosomes infecting humans being: *S. haematobium* (urinary schistosomiasis); *S. mansoni* (intestinal schistosomiasis) and *S. japonicum*. While both urinary and intestinal schistosomes are endemic in Tanzania (Lwambo *et al.*, 1988; Lwambo *et al.*; 1999) it is urinary schistosomiasis that is endemic in Morogoro region (SCI, 2007 unpublished). This chapter thus focuses

on this species of schistosome, particularly in relation to pathology, symptoms and diagnosis.

It is estimated that over 240 million people are infected with schistosomiasis globally, 90% of whom are located in sub-Saharan Africa (World Health Organization, 2012).²⁶ It has also been estimated that more than 200,000 deaths per year arise from schistosomiasis (World Health Organization, 2012).²⁷ Humans can become infected with schistosomiasis when they come into contact with stagnant water bodies such as irrigation canals, slow moving rivers, lakes, streams, ponds and dams where the intermediate snail host is present. Different snails are infected by different schistosomes. For example, the snail of the genus *Biomphalaria* is the intermediate host for *S. mansoni* while *S. haematobium* infects snails of the genus *Bulinus*. Figure seven depicts the transmission cycle of the parasite. It shows how these are released by the snail into the water. These *cercariae* then penetrate human skin. Once inside the human host, the larvae migrate to the blood vessels around the bladder (in urinary schistosomiasis) or bowel/intestines (in intestinal schistosomiasis) where they develop into adult schistosomes and mate. The female then releases eggs, some of which pass out of the body via the infected person's urine (urinary schistosomiasis) or faeces (intestinal schistosomiasis), while others become trapped within body tissues. If a human host urinates or defecates into water bodies containing the appropriate snail host, the schistosome eggs (*miracidia*) that are released into the water along with the excreta will infect any snails present. These develop inside the snail into *cercariae*. Once mature they enter the water where they can penetrate human skin; and so the transmission cycle between the human and snail host continues.

²⁶From <http://www.who.int/schistosomiasis/en/index.html> accessed 21 November 2012. In some parts of Africa, urinary schistosomiasis is so common that it has historically been regarded as a rite of passage among boys (Gryseels *et al.*, 2006).

²⁷From <http://www.who.int/mediacentre/factsheets/fs115/en/index.html> accessed 20 August 2012

SCHISTOSOMIASIS

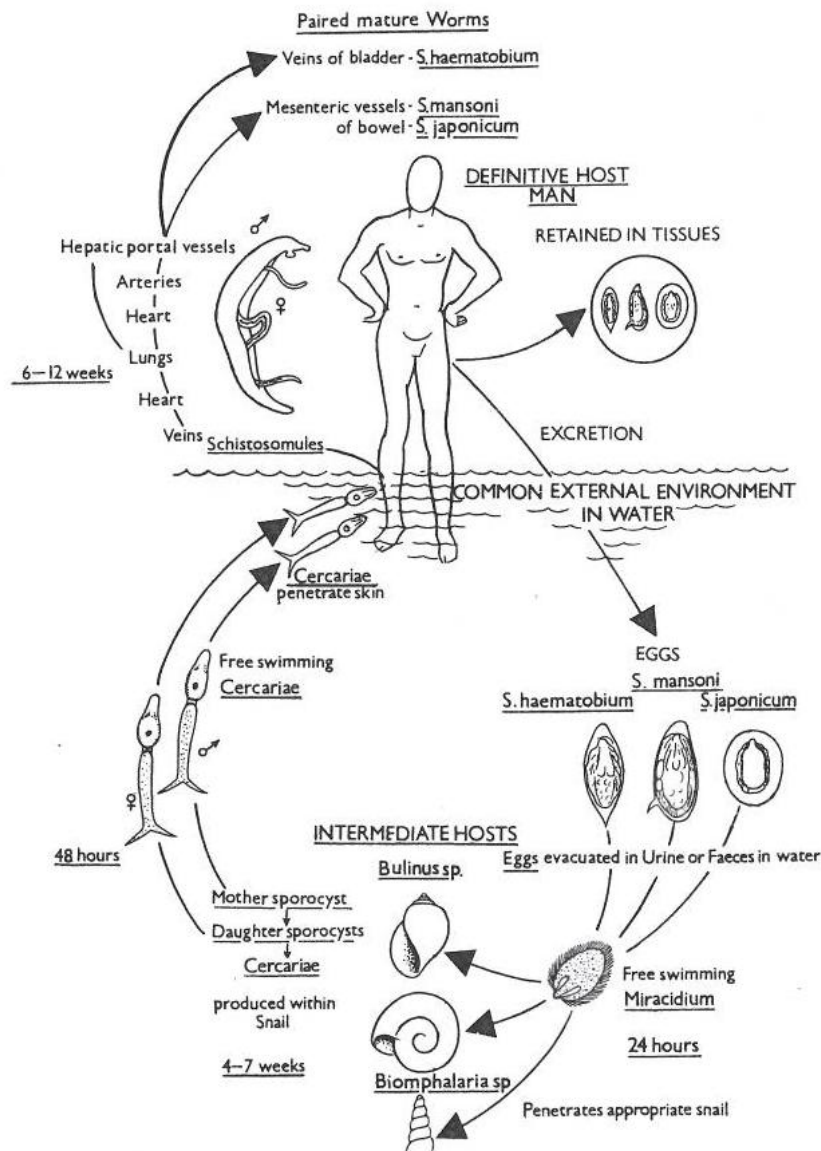


Figure 7 Transmission cycle of schistosomiasis

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Schistosomiasis is a disease of poverty, prevalent in communities where there is poor sanitation and limited access to clean water. Those most at risk are children, who bathe, play and fetch water in these water bodies; women who perform household chores such as washing clothes and utensils; and fisherfolk. Sometimes, 'development' projects actually facilitate the transmission of schistosomiasis. Increased rates of infection have thus resulted from the flooding of rivers due to dam building projects for the provision of

²⁸ Source (Jordan & Webbe, 1982: 4)

hydroelectricity. This was the case when the Aswan Dam was built on the River Nile in Egypt, and it is currently feared due to the new Three Gorges Dam on the Yangtze River in China (Wiley & Allen, 2009).

The morbidity associated with schistosomiasis is well documented in the biomedical literature (see for example, Berquist, 2002; King *et al.*, 2005; Gryseels *et al.*, 2006; Molyneux *et al.*, 2005; Hotez *et al.*, 2009; Brown, 2011; Chen, 2012). In urinary schistosomiasis, pathological changes can occur in the renal system (bladder, kidneys, and ureters) and reproductive organs (seminal vesicles in men; uterus, cervix and vagina in women). Such pathology includes: fibrosis and calcification of the ureters and bladder (Gryseels *et al.*, 2006) leading to hydronephrosis and hydroureter²⁹ (Hatz 2001; Richter 2003; Gyseels *et al.*, 2006), kidney failure and bladder cancer (Campagne *et al.*, 2001; Hatz *et al.*, 1998; Kahama *et al.*, 1999; Wagatsuma *et al.*, 1999).

Pathological changes to the reproductive organs affect both males and females. In females, this includes lesions in the vagina, cervix and uterus resulting in possible ectopic pregnancy, abortion and infertility (Swai *et al.*, 2006). It has also been recognized that urogenital schistosomiasis can increase susceptibility to viral infections including HIV (Human Immunodeficiency Virus) and HPV (Human Papilloma Virus) (Poggense *et al.*, 2000, Swai *et al.*, 2006; Mbabazi *et al.*, 2011). The latter is known to cause cervical cancer. In males, lesions in the seminal vesicles of the reproductive system can result in impotence, reduced fertility and infertility.

Iron deficiency anaemia, particularly in children and pregnant women, is a chronic condition caused by any species of schistosomiasis. Furthermore, this is frequently compounded by co-morbidity with other parasitic infections such as intestinal worms, most notably hookworm (Lwambo *et al.*, 1999), and malaria. In children, this impedes cognitive function, which, it has been argued (Hotez

²⁹“Hydronephrosis is defined as distention of the renal calyces and pelvis with urine as a result of obstruction of the outflow of urine distal to the renal pelvis. Analogously, hydroureter is defined as a dilation of the ureter”. From <http://www.eme/article/436259> accessed 16 August 2011. In lay terms, the kidneys become swollen and urine logged leading to a buildup of pressure which results in damage to kidney tissue.

et al., 2009), can lead to poor performance in school due to fatigue and the inability to concentrate on studies. This is an example of how these diseases are said to perpetuate the cycle of poverty; it is extremely difficult for children to do well academically and improve their future livelihoods. In pregnant women, iron deficiency anaemia is regarded as one of the major contributing factors for the high level of maternal morbidity and mortality in Tanzania (SCI).³⁰

Commonly, haematuria (blood in the urine) is a clear indication of urinary schistosomal infection. In endemic areas of sub-Saharan Africa, this sign is regarded as the “red flag” of infection in children, although this can sometimes be mistaken for menstruation in girls and as a “coming of age” in boys (Gryseels, *et al.*, 2006: 1108). After adolescence, haematuria - or more correctly, gross or macrohaematuria - which is visible to the naked eye - may disappear even though infection, and microhaematuria - which is only visible under a microscope - remain, leading many adults to conclude incorrectly, that they are not infected.

The “gold standard” for the diagnosis of schistosomiasis is microscopic examination of stools (intestinal schistosomiasis) or urine (urinary schistosomiasis) to detect the presence or absence of eggs as well as the intensity of infection (egg burden) (Gryseels, *et al.*, 2006: 1111). However, such testing is time consuming and expensive and other, indirect diagnostic methods have been employed in Tanzania. These include: urinalysis, where urine is tested for the presence of microhaematuria using reagent strips; questionnaires and the self-reporting of gross haematuria (Poggensee *et al.*, 2000; Ansell *et al.*, 2001). Although the advantages of these “indirect disease markers” is that they can be quicker, cheaper and performed by non-medical personnel, they are less reliable (see Poggensee *et al.*, 2000 and Ansell *et al.*, 2001).

³⁰From <http://www.3.imperial.a.uk/schisto/wherewework/tanzania> accessed 28 August 2012

Soil-transmitted helminths

Soil-transmitted helminths (commonly known as intestinal worms) are parasitic worms (helminths) that - as the name suggests - contaminate people through soil. The primary species infecting humans are hookworms (*Necator americanus* and *Ancylostoma duodenale*), roundworm (*Ascaris lumbricoides*) and whipworm (*Trichuris trichiura*). The WHO estimate that more than 1.5 billion people are infected with soil-transmitted helminths globally, of which nearly 900 million are children.³¹

Transmission of soil-transmitted helminths occurs in areas of poverty that lack adequate sanitation and sewerage, where infected human excreta contaminate the surrounding environment, including water bodies and soil. Additionally, human excreta may be used as fertilizer and placed on and around vegetable crops. A person becomes infected when they ingest the eggs via contaminated soil, vegetables or water. Hookworm eggs hatch in soil and contaminate people by penetrating their skin, usually via the feet in people who are barefoot. Whipworm and roundworm eggs infect people when they ingest their eggs on vegetables that have not been adequately washed, peeled or cooked, or by drinking contaminated water that has not been boiled. Children are at direct risk from contaminated soil when they place their hands in their mouth after touching soil without washing their hands in between.

The life cycles of these helminths vary, but all eventually end up in the infected person's small or large intestine, where they mate and the females produce prolific amounts of eggs. For example, roundworms produce up to 200,000 eggs per day. Most of these worms live between one and two years and some even longer, growing between 30-50cms long.

The morbidity associated with soil-transmitted helminths is dependent upon the number of worms a person is infected with (worm burden). In cases of light worm burden or roundworm infection, a person may be asymptomatic; in heavy worm burdens, a person may experience a variety of symptoms including: abdominal pain; nausea; vomiting; loss of appetite; general malaise; weakness

³¹From <http://www.who.int/mediacentre/factsheets/fs366/en/> accessed 18 June 2012

and diarrhoea. Definitive diagnosis is made by microscopic examination of the faeces for eggs - this also determines worm burden.

Helminth infections result in iron deficiency anaemia due to “silent blood loss” (Hotez *et al.*, 2005: 5) and protein malnutrition due to the competition for vital vitamins and nutrients with the parasites. This, in turn, is said to lead to impaired cognitive function and malnutrition, which stunts both physical and mental development in children (*ibid*).

Neglected Tropical Diseases and the Millennium Development Goals

In 2000, the United Nations declared their goal of halving the number of people living in absolute poverty by the year 2015. The Millennium Development Goals (MDGs), of which there are eight, each relate to a particular area of development.³² The sixth Millennium Development Goal is to combat HIV/AIDS, malaria and other diseases. With the advent of the Millennium Development Goals the relationship between poverty and health, particularly in relation to the “other diseases”, received renewed and increased attention, leading some of the biggest names in the world of tropical parasitology to capture the term ‘other diseases’ for the less well-known tropical diseases. Numerous articles were published declaring that endeavours to control “Africa’s neglected tropical diseases is one the more convincing ways to ‘make poverty history’ through affordable, pro-poor, effective and tested strategies” (Molyneux *et al.*, 2005:1069); “One of the most potent reinforcements of the poverty trap is the neglected tropical diseases” (Hotez *et al.*, 2009); and “Controlling neglected diseases would be crucial to achieving seven of the eight MDGs” (Fenwick, *et al.*, 2005).

³² The eight Millennium Development Goals are: 1. Eradicate extreme poverty and hunger; 2. Achieve universal primary education; 3. Promote gender equality and empower women; 4. Reduce child mortality; 5. Improve maternal health; 6. Combat HIV/AIDS, malaria and other diseases; 7. Ensure environmental sustainability and 8. Develop a global partnership for development. (www.un.org/millenniumgoals)

But what are neglected tropical diseases? In effect, they are a diverse range of tropical, (primarily) parasitological diseases that occur throughout the ‘developing world’ which were brought together, by those working in tropical parasitology, in a sort of biomedical rebranding exercise, and placed under the wide-reaching banner of neglected tropical diseases (NTDs). The five major diseases included under this term are: schistosomiasis; soil-transmitted helminths; onchocerciasis (river blindness); lymphatic filariasis (commonly called elephantiasis) and trachoma. However, there are numerous others, for example: chagas disease; dengue fever; leishmaniasis; African trypanosomiasis (sleeping sickness) and leprosy, to name just a few. Although these diseases are far from homogenous in terms of their aetiology, geographical location, symptomatology, pathology and treatment, their commonality is that they are all diseases which have been around for a long time and affect the world’s poorest people.

Describing these diseases as neglected is apt in two ways: they have historically received less funding and therefore less intervention in comparison to other diseases such as HIV/AIDS, TB and malaria (Hotez *et al.*, 2005); and it is also recognized that those who suffer from these tropical parasitological diseases (and other diseases of poverty) are themselves neglected and forgotten (Farmer, 1999; Hotez, 2008). Furthermore, as Allotey *et al.*, (2010) note, the choice of the word neglected is far from neutral; it is “...pointed and loaded, forcing us to reflect on our social obligations” (Allotey *et al.*, 2010: 5).

By 2005, when the UN Millennium Project published a group of “Quick Win” interventions which would be likely to deliver the Millennium Development Goals, the treatment of neglected tropical diseases was now regarded as one of the most significant “low-hanging fruits” with which to achieve them (Allen & Parker, 2011: 92). Advocates for treating neglected tropical diseases have employed increasingly colourful and emotive language. In 2005, rapid impact interventions of neglected tropical diseases were said to “benefit the poor” (Molyneux *et al.*, 2005), and four years later treatment was said to be a way of “rescuing” them (Hotez, *et al.*, 2009). In a recent address made by the Director General of the WHO, Dr Margaret Chan, stated that treatment was now “a gift

to their health”.³³ It has even been argued that treating NTDs should be part of US foreign policy in a bid to win the ‘hearts and minds’ of the worlds disenfranchised and marginalized poor - America’s potential enemies - as a way of pre-emptively “waging peace” (Hotez & Thompson, 2009:1).

Funding for the treatment of neglected tropical diseases has certainly been forthcoming: The Gates Foundation has allocated more than US\$46 million towards the control of neglected tropical diseases since 2004 and by 2013 the US Agency for International Development (USAID) will have provided funding up to US\$350 million (Allen & Parker, 2011). The UK government Department for International Development (DIFD) recently announced a “five fold increase” in funding for the treatment of NTDs from GB£50 million to GB£240 million.³⁴ In addition, several drug companies, such as Merk, Johnson & Johnson and GlaxoSmithKline have pledged to donate large quantities of anthelmintic drugs over several years. In effect, NTDs are now “the not so neglected tropical diseases” (Allen & Parker, 2011: 94), or, as DIFD note on their website, “neglected no more”³⁵. Indeed, to reiterate this point I once again quote the Director General of WHO from her recent address: “WHO leadership brought the neglected tropical diseases from obscurity into the limelight. These Cinderella diseases, long ignored and underappreciated, are a rags-to riches story”.³⁶ Who the beneficiaries of such ‘riches’ are remains ambiguous - is she referring to the people who are being treated, or the organizations who have obtained such huge sums of soft funding? Furthermore, it is interesting to note how the WHO now takes responsibility for raising awareness of neglected tropical diseases (see Allen & Parker, 2011).

³³ http://www.who.int/neglected_diseases/dgspeech_may2012/en/index.htm an address made on 21 May 2012, Geneva.

³⁴ Of which £25 million had been awarded to SCI and their partners for NTD control in eight African countries including Tanzania. (DIFD press release 2011)

³⁵ From [http:// www.dfid.gov.uk](http://www.dfid.gov.uk) accessed on 15 September 2012

³⁶ From http://www.who.int/neglected_diseases/dgspeech_may2012/en/index.htm accessed 10 September 2012

The biomedical rationale for mass drug administration

Against this background, campaigners have built a convincing case to develop national programmes for the integrated control of neglected tropical diseases in sub-Saharan Africa involving community-based mass drug administration (MDA) of preventive chemotherapy. The aim of regularly administering drugs free of charge is to reduce the occurrence, extent and severity of these diseases and the morbidity associated with them.

The biomedical rationale for mass drug administration rests upon several points, the central one being that there are a number of effective, cheap and donated drugs that can easily be administered to affected populations making the treatment of neglected tropical diseases as one of the “best buys” in global public health.³⁷ The most expensive drug of all of those used to treat the major NTDs is praziquantel which costs US\$0.08 per tablet or US\$0.20-0.30 per average dose (WHO, 2006). Such is the apparent safety of the drugs and the ease of their administration that non-medically trained staff - such as teachers and village drug distributors - need only attend a short course before they can administer them (SCI website)³⁸. The safety of the drugs also means that it is acceptable and ethical to administer them even when a person might not be infected. In endemic areas where prevalence is greater than 50% the aim is to treat the whole population during mass treatment programmes.

Praziquantel is the drug used to treat schistosomiasis and albendazole is used for the treatment of soil-transmitted helminths. Albendazole comes in 400mg tablets, which is the treatment dose for both adults and children. However, the dose for praziquantel is 40mg per kg, and, as each tablet contains 600mg, the numbers of tablets that need to be swallowed vary between individuals. Although the dose is calculated according to weight, during mass drug administration in Tanzania (and elsewhere) the dose is measured by height, using a ‘praziquantel dose pole’ following WHO guidelines. WHO guidelines on the use of ‘tablet poles’ including ‘praziquantel dose poles’ state that they are preferred over weighing people for several reasons, including: they are cheaper; do not have parts which can break; are simple and quick to use; do

³⁷ SCI website: <http://www.3imperial.ac.uk/schisto> accessed 11 May 2011

³⁸ SCI website: <http://www.3imperial.ac.uk/schisto> accessed 11 May 2011

not involve calculations; are accurate and safe to use as children's height and body weight generally correlate and where they do not the dose received is still of an acceptable level (WHO 2006, 2003; Hall *et al.*, 1999).

Controlling schistosomiasis and soil-transmitted helminths in Tanzania

Like the rest of Tanzania, urinary schistosomiasis is endemic throughout Morogoro region (Lwambo *et al.*, 1999). Doma ward, which is comprised of five villages, namely Doma, Mkata, Kiondo, Maharakata and Msongosi was reported to have a 44.9% infection rate at the time of fieldwork in 2007 (SCI, 2007 unpublished), and data obtained from Morogoro municipal health office in 2009 shows infection rates of primary school pupils in the municipality between 11% and 84%. Pupils attending Chamwino primary school were shown to have a 63% infection rate.³⁹ There was no available data for the prevalence of soil-transmitted helminthiasis in Doma village or Morogoro town, but the WHO state that these are endemic throughout Tanzania, and children in Tanzania suffer poor nutritional status and cognitive impairment due to heavy worm burdens (Partnership for Child Development, 2002).

Established in 2005, the National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP) seeks to control the morbidity and mortality associated with schistosomiasis and soil-transmitted helminths by annual mass drug administration with the drugs albendazole and praziquantel to school-aged children in endemic areas throughout Tanzania. Since 2007 the programme has also been developing plans to integrate the treatment of schistosomiasis and soil-transmitted helminths with other endemic diseases such as lymphatic filariasis (elephantiasis), onchocerciasis (river blindness) and trachoma, which (at the time of fieldwork) had multiple treatment programmes running side by side throughout Tanzania. This is in an effort to reduce the unnecessary duplication of resources these entail. While treatment had been undertaken in other regions in the years prior to my fieldwork, 2008 was the first time mass drug administration of school aged children was delivered in Morogoro region.

³⁹ This data was collected by the Morogoro municipal health office in 2009 using questionnaires.

Prior to the NSSTHCP in Tanzania, treatment of schistosomiasis and soil-transmitted helminths was undertaken periodically by various organizations. In the 1990s, for example, the Partnership for Child Development provided mass drug administration to school-aged children in 352 schools in Tanga region, north-east Tanzania (Brooker *et al.*, 2001), while in the 1980s a different programme treated school-aged children in some of the schools on Pemba Island (Savioli *et al.*, 1989). A survey which was carried out after the first round of treatment in Tanga reports that responses within the community were generally positive, although parents expressed concern about the lack of communication concerning treatment, and that not all schools organized a meeting prior to treatment to explain the programme to the parents. Teachers reportedly said that while they were 'happy' to administer the drugs, it considerably increased their already heavy workload with little financial incentive (Brooker *et al.*, 2001). Furthermore, they reported that they had encountered some difficulties, such as dealing with children when they suffered side-effects and with parents who had not given consent for their children to be treated, although no additional information is provided (*ibid*).

Treatment of schistosomiasis and soil-transmitted helminths in school-age children in Tanzania has been shown to be effective and reduce the prevalence of infection (Hatz, *et al.*, 1998; Magnussen, *et al.*, 2001). However, treatment exercises were often selective. In other words, only children who tested positive for *S. haematobium* were treated. This was certainly the case in Doma village, when, in 2006, primary-school children were only treated at the dispensary if they tested positive with blood in their urine. Interestingly, teachers and health care workers could not recall the organization which had visited the school and tested the children's urine. In addition, the district health officer and the regional medical officer appeared to have no record of this having taken place. The treatment registers at the village dispensary were the only written record I could find of this having occurred. In all, only thirty pupils were treated, which seems to be a very small number considering the school had approximately six hundred students enrolled. However, from what teachers could recall, it seems likely that only children in some of the classes were tested rather than all pupils in the school. I could not locate any of the children who had been treated at this time to elucidate their or their parent's understanding of treatment. However, somewhat tellingly, one of the health

workers told me the children had to be escorted to the dispensary by their teachers to prevent them from “escaping”. This hints that children may have rejected treatment given the chance.

Questioning the merits of mass treatment for neglected tropical diseases

There is however criticism from biological and social scientists concerning the mass treatment of neglected tropical diseases. First, there is continuing debate concerning the prevalence - and therefore global burden - of NTDs, as well as the extent of ill-health caused by them, the latter of which is now measured in Disability Adjusted Life Years (DALY) (Essophor, 1960; Lapage, 1966; WHO, 1985; Jordan, 1985; Tanner *et al.*, 1989; Parker, 1992; King *et al.*, 2005; Mathers *et al.*, 2007). It is only now that robust epidemiological data is beginning to be collected and even so it remains rather thin on the ground (Allen & Parker, 2011). However, it is clear that in areas with scarce resources, there are large numbers of people who are currently suffering from these diseases. What is more debatable is the extent of ‘suffering’: We are told by proponents of mass drug administration that those suffering from neglected tropical diseases are profoundly impaired and commonly unable to engage in pursuits such as agricultural work and other livelihoods (Hotez *et al.*, 2009). However, Melissa Parker’s (1992) biosocial study of female cotton-pickers in Sudan, some of whom were infected with intestinal schistosomiasis and some of whom were not, found that those who were infected worked more efficiently (picked more cotton) than those who were not infected. It was also the case, however, that infected women were unable to maintain such gruelling work practices throughout the day, and picked just about enough cotton to survive economically. By examining their “daily experience of infection” the research suggested that infection with *S. mansoni* may not be the major public health problem it is purported to be (Parker, 1992: 879).

Second, there has been criticism concerning biomedical interventions that focus on pharmaceutical treatment alone while continuing to neglect structural interventions such as: shelter; sanitation; the supply of clean water; food; and health education (Katz, 1998; Landsdown *et al.*, 2002; Gryseels, 2006; Allotey

et al., 2010). As such, these campaigns continue to rely on the “magic bullet” of a biomedical “...context-free, pathogen focused NTD strategy” (Allotey *et al.*, 2010:5) and continue to neglect the social and ecological contexts in which these diseases thrive (*ibid*). Also, and in relation to these arguments, there does not appear to be any interventions aimed at non-human transmission pathways with other control measures such as molluscides, or again, in improving the environment (Gray *et al.*, 2010).

Third, with the integration of various treatments, concerns have been raised over the possible (unknown) drug interactions when multiple drugs are given simultaneously (Fenwick, 2006; Lammie, 2006). Although some pharmacokinetic studies have been undertaken and the safety established of some co-treatments, it has not yet covered all possible combinations (Lammie, 2006). Furthermore, Bruno Gryseels has argued that mass drug administration for schistosomiasis and soil-transmitted helminths is a mistake as it will lead to resistance to the few drugs that are currently available (Gryseels, 2006a). James Grey *et al.* (2010) have argued that praziquantel is only partially effective as it only kills adult worms and not developing schistosomes. He goes on to suggest that there is also considerable ‘rebound morbidity’ when regular chemotherapy (for example, annually) is omitted for whatever reason (Grey, *et al.*, 2010).⁴⁰

Fourth, it has long been argued that vertical programmes deplete the often fragile structures of existing general health care services (Mills, 2005). This happens, for example by removing health care workers from their usual settings to participate in disease-specific mass campaigns, rather than offering treatment in their usual clinical setting as part of standard health care delivery (Coulibaly *et al.*, 2008; Cavalli *et al.*, 2010). Moreover, in the current climate of integrating several vertical programmes together, rather than with primary health care services (for example lymphatic filariasis control merging with schistosomiasis and soil-transmitted helminth control programmes), what is created is an even larger ‘vertical monster’ (Gryseels, 2006a).

⁴⁰ Rebound morbidity is when re-infection causes severe health consequences.

Fifth, and linked to the previous argument, is the problem of sustainability. What happens when external funding ends? Those who require treatment for neglected tropical diseases the most are the very ones least able to pay for it, even if they are willing in principle (see Brooker, *et al.*, 2001). Community-based projects rely on local goodwill to attend training days, as well as the time spent administering the drugs. While small remuneration is often available, local drug distributors frequently complain that they are inadequate (Amazigo, 2002; Parker *et al.*, 2008, Parker & Allen, 2011).

In 2007, when I attended a village drug distributor (VDD) training seminar prior to the mass administration of the drug ivermectin to treat onchocerciasis, VDDs were extremely frustrated about the limited amount of money they were going to receive for taking the time to distribute drugs over several days. They tried to explain to the trainers present that it took far more time to properly distribute the drugs than the programme estimated, as they frequently had to return to households where people might have been absent on their first visit and they had to cover large areas on foot. They were also disappointed that they had not been provided with any t-shirts to identify the programme they were working for and were indignant that, having been in a seminar all day long, they had not been offered any food or even refreshment. By the time I left the village a few weeks later there appeared to be little motivation among the VDDs and distribution had not begun.

Sixth, if drugs are only distributed to children in schools, children who do not attend will not receive treatment. This is especially pertinent as children who do not go to school are those who are more likely to be infected (Allotey *et al.*, 2010; Allen & Parker, 2011). Furthermore, not treating these children reinforces inequalities such as gender and socioeconomic status (Husein *et al.*, 1996). Paradoxically, as Grey *et al.*, (2010) note, in mass treatment campaigns, such as the ones supported by SCI, where chemotherapy is not selective, children who do not require treatment (are not infected) receive it, and those that are infected, but absent from school, do not.

Finally, mass drug administration presupposes that people, both adults and children, will be aware of the benefits of treatment and will be willing to swallow the drugs. However, this is frequently not the case (Parker, *et al.*,

2008; Parker & Allen, 2012). While children are often reluctant, they are usually not in a position to refuse drugs from their teachers once they are in the school environment. Of course, this does not prevent them from missing school on the days of scheduled treatment. When I undertook research as part of my Master's degree in north-west Uganda (Hastings, 2005) it was evident that there was a divergence between biomedical and local understandings of these diseases and that adults were rejecting treatment for a number of reasons. These included: a fear that the drugs might kill a person; fear of side-effects which would make a person incapable of working in their fields for one or several days; fear that the drugs might cause sterility; and the perception of danger in receiving drugs when suffering from a local folk illness (see Parker *et al.*, 2008).

To sum up: a number of optimistic and enthusiastic articles have been published by prominent advocates of mass treatment for neglected tropical diseases which have emphasised the potential of mass treatment. In 2010, the World Health Organization also published the first major report on the treatment of neglected tropical diseases in which the Director General maintains that, as of 2008, approximately 670 million people had received treatment for NTDs. She also suggests, that with continued support, some of these diseases may be completely eliminated by 2020 (WHO, 2010).⁴¹ However, as has been discussed in this chapter, social and biological scientists have concerns over mass drug administration for NTDs. To return to Dr Chan's recent speech in Geneva: is the new emphasis and treatment of neglected tropical diseases a "Cinderella story" or, as Allen & Parker (2011) have suggested, a case of The Emperor's new clothes?

It is against this fast-moving and changing background that ethnographic research was undertaken. This research was conducted as part of a wider study led by Melissa Parker and Tim Allen, monitoring and evaluating mass drug administration of neglected tropical diseases in Uganda and Tanzania. While Parker and Allen's published research (Parker *et al.*, 2008; Allen & Parker, 2011; Parker & Allen, 2011; Parker & Allen, 2012; Parker *et al.*, 2012) focuses on the treatment of adults with schistosomes *mansoni* (intestinal

⁴¹ Accessed 9 June 2012 from http://www.who.int/neglected_diseases/2010report/en/index.html

schistosomiasis) and lymphatic filariasis in Uganda and Tanga region, Tanzania (see map. 2), this thesis focuses on the mass treatment of children for schistosomiasis *haematobium* (urinary schistosomiasis) and soil-transmitted helminths in Morogoro region, Tanzania. It is therefore a unique and important contribution to the anthropological study of the treatment of neglected tropical diseases.

Ethnographic research was undertaken in Doma village, Chamwino area and Morogoro town in Morogoro region. These field sites are discussed in more detail in the next chapter.

Contextualizing the field

This chapter elucidates the historical, economic and political context in which the National Schistosomiasis and Soil-Transmitted Helminth Control Programme (NSSTHCP) attempted to administer drugs to school-age children in Morogoro town and Doma village in Morogoro region. Part one provides a brief overview of contemporary Tanzania, and part two details important administrative, social and economic aspects of life in Morogoro region and town. The impact of German and British colonial rule is considered in part three and, in part four, the enduring effects of *Ujamaa*. The final part of the chapter establishes how the delivery of biomedical health care has been shaped by these political and economic changes. It also shows that rumours and suspicion are no strangers to the people of Morogoro region.

Tanzania

Located in East Africa⁴², Tanzania is the largest and least urbanized country on the African continent. It borders Kenya and Uganda to the north, Rwanda and Burundi in the north-west, The Democratic Republic of Congo to the west; Zambia and Malawi in the south-west; Mozambique in the south; and is bounded by the Indian Ocean to the east (see map.1). With numerous game reserves and national parks, including the Serengeti National Park, the highest mountain in Africa - Mount Kilimanjaro - and the white sandy beaches of the coast and the islands of Zanzibar, Tanzania is a popular tourist destination. It is however, a poor country: the United Nations Human Development Index (UNHDI) recently ranked Tanzania 152nd out of a total of 187 countries.⁴³ In addition, it is

⁴² Some of the earliest hominid remains - some of them nearly two million years old - were discovered in northern Tanzania at Olduvai Gorge, leading some palaeontologists and anthropologists to call the region the “cradle of mankind” (Leaky, 1979: 165).

⁴³ From <http://hdrstats.undp.org/en/countries/profiles/TZA.html> accessed 21 November 2012

heavily dependent on foreign aid and 68% of the population - which exceeds 46 million - live below the international poverty line of \$1.25 per day (2000-2009, UNICEF; The World Bank).⁴⁴ Seventy-five percent of the population live in rural households and form 80% of the country's poor (The World Bank)⁴⁵.

Health expenditure comprises 6% of GDP (World Health Organization, 2010)⁴⁶ and the ratio of doctors and other health workers to the population is very low with only 10 health workers per 10,000 of the population and less in rural areas (World Bank, 2010).⁴⁷ Life expectancy at birth is 53 years of age for men and 58 years of age for women (WHO Global Health Observatory, 2009).⁴⁸ Infant and maternal mortality rates are high, although, according to UNICEF, Tanzania is making some headway in reducing infant mortality rates and is therefore on target to meet MDG4 (which aims to reduce mortality rates in the under-fives by two thirds) by 2015. However, it is not expected to reach the fifth MDG (of reducing by three-quarters the maternal mortality ratio) in the same period.⁴⁹ The country suffers high disease burdens, especially from malaria, tuberculosis and diarrhoeal diseases. HIV prevalence is estimated to be 9% (UNICEF, 2012)⁵⁰ and it is common for people to experience co-morbidity due to numerous bacterial and parasitic diseases.

Tanzania is home to approximately one hundred and thirty major ethnic groups, each with their own language and dialect (Omari, 1995). However, Kiswahili is the nation's *lingua franca* - the official language spoken in government and schools. Commonly said to be a mixture of Bantu and Arabic vocabulary, Kiswahili was originally only spoken along the coast among the Swahili people. However, over several centuries Kiswahili spread into the interior along with the slave and ivory traders who used it to transact business. Kiswahili was the official language of the German administration and during that period it was already the language most commonly used between different ethnic groups (Iliffe, 1979). By the time of independence, it was spoken throughout most of the country (Omari, 1995).

⁴⁴ From http://www.unicef.org/infobycountry/tanzania_statistics.html, accessed 17 September 2012 and <http://www.worldbank.org/en/country/tanzania> accessed 21 November 2012

⁴⁵ From <http://search.worldbank.org/all?qterm=tanzania> accessed 10 September 2012

⁴⁶ From <http://www.who.int/countries/tza/en/> accessed 17 September 2012

⁴⁷ From <http://search.worldbank.org/all?qterm=tanzania> accessed 17 September 2012

⁴⁸ From <http://www.who.int/countries/tza/en/> accessed 10 September 2012

⁴⁹ From <http://www.unicef.org/infobycountry/tanzania> accessed 17 September 2012

⁵⁰ From <http://www.unicef.org/infobycountry/tanzania> accessed 17 September 2012

It is common for Tanzanians to be at least bilingual, speaking both their 'tribal' / natal language and Kiswahili. However, in some places Kiswahili is becoming the sole language spoken. For example, in Doma village children used to first learn Kiluguru in the home, 'at their mother's knee', before commencing primary school, where they would be taught in Kiswahili. However, due to the close proximity of 'cosmopolitan' Morogoro town, many people stated that Kiluguru had been replaced by Kiswahili as the principle language. Even so, some words and idioms continued to be spoken of in Kiluguru, for example, notions of misfortune, and protection from witchcraft.

Tanzania is currently in the grip of high inflation with soaring food and oil prices. However, the economy has continued to grow fairly steadily over the past decade, largely due to the increased production of gold and the high price it fetches on the world market. Mining (gold, diamonds, tanzanite) and tourism are the leading areas for growth, while agriculture forms the backbone of the economy and provides over a quarter of the GDP and 85% of all exports (World Bank).⁵¹

It is estimated that over 80% of Tanzanians are involved in some form of agricultural production, whether subsistence or cash cropping. The principle cash crops grown on the mainland include coffee, sisal, tea, cotton, pyrethrum,⁵² tobacco, cashew nuts, maize, wheat, sunflower and tobacco, while subsistence farming includes a variety of crops such as maize, cassava, bananas, tomatoes, potatoes and other vegetables.

Infrastructure in the country is poor and is regarded as a major obstacle to development, particularly in the private sector. Energy supplies are sporadic in the towns and frequent power cuts make it especially difficult for the manufacturing industry, while in rural areas such as Doma village there is no electricity supply. Wealthier households own petrol fuelled generators and even in villages it is not uncommon to find local entrepreneurs with a generator to power television for people to pay to watch - usually football matches. The railroads, built during the time of German colonial rule with later additions by

⁵¹ From <http://search.worldbank.org/all?qterm=tanzania> accessed 10 September 2012

⁵² An insecticide made from chrysanthemums.

the Chinese during the socialist era, have been in decline for a number of years. Although the major trunk roads are tarred, the secondary roads are not, and these dirt roads are frequently washed away during the rainy season, making large areas inaccessible.

The country has enjoyed relative peace, and avoided the internal conflicts and civil wars that other African states have witnessed post-independence and indeed taken in many refugees from Burundi, fleeing such conflict in their own country in the 1970s and 1990s. However, the country did briefly go to war in 1978 when President Nyerere ordered the Tanzanian army into Uganda after it had invaded northern Tanzania. The Tanzanian army, aided by Ugandan exiles, marched to the Ugandan capital, Kampala, and forced President Idi Amin into exile.

Morogoro: region, town & village

Morogoro region, with a population of approximately 1.75 million,⁵³ is the second largest region in Tanzania. It lies in the east of the country, bordering seven other regions: Tanga; Pwani; Lindi; Ruvuma; Iringa; Dodoma and Manyara (see map 2). The region contains two national game parks, Mikumi and Udzungwa, and the northern section of Selous Game Reserve. They all attract foreign visitors as well as revenue from hunting permits. For administrative purposes, the region is divided into five districts: Kilombero, Kilosa, Morogoro Urban (also known as Morogoro Municipal), Mvomero and Ulanga.⁵⁴ The sites of fieldwork, Morogoro town and Doma village, are in the districts of Morogoro Municipal and Mvomero, respectively.

Morogoro town, nestled at the foot of the north-west slopes of the magnificent Uluguru Mountains, is situated approximately halfway between the commercial coastal city of Dar es Salaam, 195km to the east, and the administrative capital, Dodoma 253km west. Morogoro town may be one of the oldest

⁵³ 2002 censuses (from Morogoro regional office)

⁵⁴ With the exception of Morogoro Urban, these districts are sometimes grouped variously together as Morogoro Rural.

settlements in the history of Tanganyika.⁵⁵ In the early 18th Century, one of the primary caravan routes transporting slaves and ivory from the interior towards the Indian Ocean would stop at the township, then known, possibly, as Bungo Dimwe. In the latter half of the 19th Century, the explorer Henry Stanley visited the region searching for Dr Livingstone, and in his journals writes of the walled settlement of Simbaweni, which was located a few kilometres from present day Morogoro town. He estimated the population at that time to be in the region of three to five thousand people (Stanley, cited in Young & Fosbrooke 1960: 23).

Today, the town is one of the fastest growing urban centres in Tanzania. It is a sprawling settlement, with almost three hundred thousand inhabitants and twenty seven and a half thousand domestic dwellings.⁵⁶ The town serves as the headquarters of Morogoro region, and is the seat of regional government and the municipal and district councils. It is a bustling cosmopolitan town. With an estimated growth rate of 4.7% per annum⁵⁷ and immigration rates estimated at 9.6% per annum,⁵⁸ the town, which is officially comprised of 531 sq. km, is continually expanding.⁵⁹ The municipal council admit that they are struggling to meet the demand for basic services such as clean water and sewerage, healthcare provision and school books.⁶⁰

UN Habitat estimates that there are fifty unplanned, un-serviced settlements in the town. They also estimate that 65% of the town's population live in these areas, characterized by no or only limited services such as clean water and sewerage systems (UN-Habitat, 2009). These areas house people of various socio-economic backgrounds, with those on the outskirts of the town (which have the poorest quality housing and the least infrastructure) being referred to locally as 'squatter areas' (*eneo la waingiliaji ardhi/ wavamiaji wa nyuma*), as people do not hold deeds to the land (*hati miliki*) or building permits (*kibali*

⁵⁵ Morogoro Planning Office, 2010

⁵⁶ Population estimated at 294,467 in 2009 based on annual growth rate projection of 4.7% since the 2002 Census when the population was 227,921. 27,476 houses are registered with the Municipal Council for domestic purposes. (Municipal Planning Office (MPO) data)

⁵⁷ Morogoro Municipal Planning Office, 2009

⁵⁸ Migration was estimated at 3.7% in 1967 and at 9.6% in the 2002 census. (MPO, 2002)

⁵⁹ And occasionally upwards: there are a few multi-storey buildings built in the 1950's and these have been added to recently with a large three floor apartment block.

⁶⁰ Morogoro Municipal Council document

cha kujenga). These areas were home to people occupying the lowest socio-economic status in the town.

Doma village (pop. 3,500)⁶¹ is located on the plains, approximately eighty kilometres south of Morogoro town bordering Mikumi National Park and adjacent to the Dar es Salaam-Zambia highway. The village extends along a dirt road that turns off from the main road and continues for several kilometres up into the hills. As a linear settlement located beside a major road, it is possible that Doma began as one of the new *Ujamaa* villages established under socialism. However, no-one in the village government appeared willing to say so with any certainty.

The indigenous people of the region belong to a number of ethnic groups of Bantu origin, including, *Wapogoro*, *Wakonde*, *Kakaguru*, *Wasagara*, *Wavindonda*, *Wahehe*, *Wandingo*, *Wakutu* and *Wakwere*, to name just a few. However, since the eighteenth century the Uluguru Mountains and the surrounding plains have predominately been home to people identifying themselves as *Waluguru* (pl.), meaning “People of the Mountains” (Iliffe, 1979: 8-9) or “People of the Great Mountains” (Brain, 1980: 370). It appears that what today constitutes ‘*The Luguru*’ began when ancestors of Bantu origin began to settle in the mountains and on the plains. As Roland Young and Henry Fosbrooke note: “The Luguru were not originally a single tribe, and the people who now call themselves by that name are the product of migration and assimilation of people from several different tribes” (1960: 21). When or where these ancestors came from is uncertain. Young and Fosbrooke note that this migration took place in the early 18th century and comment that it was not a mass tribal migration, but was comprised of individuals and their families who were seeking more fertile ground or, very likely, fleeing the slave raids which were occurring on the plains (Young & Fosbrooke 1960). Other commentators agree that there was no common origin of *Waluguru*, but place the time frame of the migration later, in the late 18th and early 19th centuries as people arrived “from all points of the compass” escaping war and famine as they settled down as agriculturists (Mzuanda 1958: 7-8, cited in Pels 1999: 33). Thus, sometime

⁶¹ Figures obtained from village government office. Population figures were not available for each of the six sub-villages.

between the early 18th and early 19th centuries migrants arrived in the region seeking a safer, more peaceful and prosperous existence.

The situation is similar today, particularly in Morogoro town, with migrants of disparate socioeconomic backgrounds and ethnicities arriving from all over Tanzania. The town does not therefore have one dominant ethnicity. However, those living in the so-called squatter areas such as Chamwino were predominately *Waluguru*, although there were also inhabitants from other areas including *Wapogoro* from elsewhere in Morogoro region, *Makonde* from Mtwara region, *Nyamwezi* from Tabora and *Wasukuma* from northern Tanzania. Many of the *Waluguru* inhabitants had either moved down from the mountainside or were from other areas in the region. Sometimes however, they had ‘simply’ moved from other areas in the town seeking cheaper accommodation. The majority of villagers in Doma were *Luguru*, although there had been some migration into the village in recent years. With the exception of the *Maasai*, who pass through periodically with their cattle, migration into the village has occurred without conflict.⁶²

There was no explicit animosity between Tanzanians of different ethnic origins in Morogoro town and the majority of townsfolk with whom I spoke were keen to point out that they were “firstly Tanzanian”. However, people were always aware of other people’s ethnic identities and I often witnessed fellow Tanzanians asking each another where they were from ‘originally’ or to which tribe (*kabila*) they belonged. This often involved people guessing where a person was from and asking them to confirm. In my experience, this was usually done in a good-humoured and joking manner. This echoes with Lissi Rasmussen’s comments, when he notes: “In Tanzania, no major ethnic group has dominated and identification with an ethnic group is not conceived as contrary to national identity, but rather as complementary” (Rasmussen, 1993: 62). The exception to this was the less than cordial relationship between African and ethnic Asian Tanzanians in Morogoro town. Indeed, many indigenous

⁶² Shortly before I arrived in Doma there was an altercation between a Maasai herdsman and a local farmer. The farmer complained the cows were destroying his crops and when the Maasai herdsman did not remove them the farmer killed one of the cows. The Maasai man and the farmer then fought and the farmer killed the Maasai man. The farmer is now in Morogoro prison but people said he will be killed by Wamaasai once he is released. While this is an extreme example, arguments between Waluguru farmers and Wamaasai cattle herders were common.

Tanzanians did not even consider those in the Asian diaspora to be Tanzanian, regarding them as foreign interlopers.

Although Arab and Asian merchants have lived along the East African coast for hundreds of years, the majority of Asians from the Indian sub-continent in Tanzania today are third or fourth generation, descending from those who arrived to work on the railroads during the time of British colonialism. The indigenous population has shown considerable resentment of Asians who were favoured over Africans by the British regime, and occupied many of the 'middle-class' mid-level civil service and clerical positions not available to Africans (Brennan, 2006). Furthermore, Asians attained considerable financial success as shopkeepers and merchants and, particularly during the socialist years, were accused of exploiting the country rather than engaging in the ideology of 'nation-building' (ibid). In Tanzania today many businesses are Asian owned including manufacturing, shops and hotels; this situation was reflected in Morogoro town and was commonly resented. There continues to be no visible integration between African and Asian Tanzanians.⁶³

Some people in the town also made disparaging remarks to me about the *Waluguru*. These comments ranged considerably: One teenaged girl told me, "They [*Waluguru*] are funny"; when I asked her to elaborate she said that they are "short and ugly". Others, most often health care workers or teachers frequently remarked that *Waluguru* were ignorant (*kutokuwa na uelwa*) and made no effort to better educate themselves. The words, "difficult" (*ngumu*) and "ignorant" (*ujinga*) were the ones most frequently used to describe the perceived attributes of the *Waluguru* by others. One doctor even remarked that *Waluguru* were "warrior like" and therefore, he thought, difficult to educate.

⁶³ A newspaper reported how a couple was attacked in a market by black Tanzanians, because the woman appeared to be Asian and was with a Tanzanian man. <http://www.thecitizen.co.tz> (17 September 2010). Although, at the time of independence many Asians left the country, indeed, many had had their businesses, properties and land nationalized, they were not expelled from Tanzania the way Asians were from Uganda in the early 1970s by Idi Amin. At the time of independence, Asians were offered Tanganyikan citizenship; President Nyerere saying he wished to incorporate Asians into the newly independent country; he even appointed Asian ministers into his government (See Kassum, 2007).

While there is no comprehensive ethnography of *Waluguru*, several anthropologists have studied and written about the *Luguru* people and their history. Thomas Beidelman mentions *Waluguru* in his study of matrilineal descent groups in East Africa (Beidelman, 1967) and James Brain has written on several aspects of *Luguru* culture and history. These include: girls and boy's initiation and puberty rites (1978, 1980b); allegorical story telling (1973); witchcraft beliefs (1982); and land rights and use (1977, 1980a). More recently, Peter Pels's (1999) book, *A Politics of Presence*, explores the contact between catholic missionaries, the Holy Ghost Fathers and *Waluguru* towards the end of British rule in Tanganyika. He has also published on *Luguru* politics, particularly the rise of nationalism, land use in Uluguru and an analysis of vampire rumours, which surfaced in Morogoro region during the British colonial era (Pels, 1992, 1999, 2002). Pels's research was undertaken in Matombo, which is located on the other side of the Uluguru Mountains to Morogoro town and where there is considerably less ethnic diversity. As such, these studies do not offer any reasons for why *Waluguru* might be regarded so negatively by others in Morogoro town today. From a historical perspective, the above studies reveal that *Waluguru* were hoe agriculturalists and, although now engaging in petty trade in the town, they remain agriculturalists.

People were often derogatory when speaking about *Waluguru*; however this was not, paradoxically, necessarily based on *Luguru* ethnicity but rather on their identity as rural peasants. A common term, often used pejoratively, by people in the town to denote those from rural areas was *washamba*, literally, people of the farm. Chamwino and other settlements like it were often referred to by those living in the town as 'villages' (*vijiji*), and indeed they did more closely resemble houses in the villages than the town. Sitting on the outskirts of the town they were in any case more peri-urban than urban, but this reference alluded to more than just architecture: the inhabitants of these dwellings were considered, as one educated young woman told me, "...uneducated (*kutoelimika*), and superstitious (*ushirikina*), like those in the village". Once, when I was in the market in town I came across a young boy being taunted by some older children: "Don't worry about him," they told me in English, "He is just a stupid boy from the village".

Morogoro 'urbanites', who were (usually) engaged in regular waged employment, such as clerical staff in offices, teachers, health care workers and other government employees, were frequently keen to stress their own 'modern' attributes, which they almost always set up in contrast to "those in the village". On closer questioning, it was clear that the attributes ascribed to *Waluguru*, such as 'ignorance' and 'backwardness' were not reserved for *Waluguru* alone but for any rural peasant. Thus, as the majority of peasants - by which I mean subsistence agriculturalists - in and around Morogoro town were *Waluguru*, they were the principle focus of such derision. This was frequently also the way Government officials spoke of the rural peasantry. For example, when I was trying to obtain research clearance for Doma village, a government official asked me, "But why would you wish to live with peasants? They are very superstitious and backward people." On other occasions I heard comments such as: "those who live in the village are poor minded"; "drunken"; "lazy" and "stubborn".

I was to come across this division between rural and urban throughout my fieldwork: on one side of this dichotomy stood urban dwellers, who were equated (by urbanites) with being 'modern' and educated; and rural dwellers were on the other side. They were perceived to be 'backward', traditional (*mila*) and 'superstitious'. In this understanding, modern was equated with not only being literate, but also having a smaller family, a better standard of house, regular employment, wearing 'western' style clothes and, publically at least, rejecting 'traditional' beliefs, such as maintaining ancestral shrines, and privileging biomedicine over other forms of local healing. Such sentiments were predominately held by Christians. Rebecca Marsland (2007) suggests that, in contemporary Tanzania, the material possessions that signify one's attainment of 'modernity' (*maendeleo*) are frequently out of reach. Therefore, for many people, "modernity and *maendeleo* have come to represent a dream: an impossibility that can only be realised by others who live elsewhere (Marsland, 2007: 754). In Morogoro town, this did not appear to prevent those who privileged notions of *maendeleo*, even if they did not have all of the 'modern' things to go with it, from deriding others who they perceived as 'traditional'.

German and British colonialism (1885 – 1961)

The area known today as Tanzania experienced nearly a century of European colonial rule, first under the Germans (1885-1916) as German East Africa (*Deutsch Ost-Afrika*) and then under the British (1918-1961) when the country was renamed Tanganyika. German rule was initially implemented under the auspices of the German East Indian Company (1885-1891), followed by the German government (1891-1916). During the time of German colonialism Morogoro was occupied by German forces who established the town as the headquarters of the Eastern Province of German East Africa. Morogoro was the site of the last vestiges of German resistance, which, under the command of Colonel Von Lettow-Vorbeck, who trained his soldiers in the Uluguru Mountains, conducted ambush assaults against the incoming forces (Dolby 2008).⁶⁴

The German administration ruled through the *akida* (headman) system, which had been implemented previously by Arabs who controlled various territories. As a result, those of Arab descent tended to have greater access to administrative positions under German rule. The system did not involve lineage heads but rather headmen from other areas who were used as tax collectors, labour recruiters and spies, although local lineage heads might also be engaged to assist the *akidas* (Young and Fosbrooke, 1960).

Under German colonisation, a new capitalist mode of production was introduced. This involved the use of forced labour on the plantations in order to produce the newly introduced crops such as cotton and sisal. Colonial treatment of the indigenous population included frequent and widespread corporal punishment such as flogging as well as imprisonment (Iliffe, 1979). In response to this, the *Maji Maji* Rebellion⁶⁵ (1905-1908), a resistance movement in the south, which reached Morogoro region, not only sought to overthrow the German colonialists but was also “a movement against economic imperialism in

⁶⁴ There is a large cemetery in Morogoro Town which is immaculately maintained by the Commonwealth Graves Commission. In it are the graves of named soldiers from all over the commonwealth who fell at Morogoro. Poignantly, these graves are interspersed with the graves of unknown German soldiers; their headstones marked simply, “Ein Deutscher Soldat”.

⁶⁵ The name of the rebellion, translates as ‘water water’ as water, which had been transformed into medicine by the initial leader and prophet of the rebellion, Kinjikitile Ngwale, was believed to protect men against German bullets (Iliffe, 1979).

general, including that of the trading communities of Indian, Swahili and Arab traders” (Rasmussen, 1993: 32). However, the rebellion was unsuccessful: 250,000 to 300,000 rebels died during the fighting and in the aftermath due to widespread famine (Iliffe, 1979).

During the First World War (1914-1918) British and Belgian troops occupied German East Africa as part of the East Africa Campaign (1916-1917). After the war, the League of Nations (later the United Nations) declared the territory a British mandate in 1919 and the country was renamed Tanganyika. Initially the British continued to rule, much as the Germans had done before them, using the *akidas* system. However, in 1926 they implemented Indirect Rule with the creation of Native Authorities. In Morogoro, the installation of these new Native Authorities upset the local balance of power, as decision making, particularly with regard to land ownership and usage, had previously been made by *Luguru* lineage heads, and was now wielded by some favoured headmen or big men (*wakubwa*) over others (Pels 1999).

In Morogoro, cash cropping was heavily ‘encouraged’ by the British colonialists and often enforced. This, it was argued, was in an effort to ‘lift’ the *Luguru* from subsistence agriculture to more productive and profitable pursuits. Even millet, the crop widely grown to make home-brewed beer (*pombe*) was turned into a cash crop, as was coffee and cotton. On the outskirts of town, huge sisal estates required ever increasing amounts of wage labour. While *Waluguru* had engaged in wage labour for the first time with German colonialists, cash cropping was a marked shift away from the subsistence agriculture they had practiced up until this point. By the 1950s, *Waluguru* supplied the then capital, Dar es Salaam, with six to seven hundred tons of vegetables annually (Iliffe, 1979).

From the 1940s the recently established Native Authorities, on behalf of the colonial government, repeatedly attempted to move many *Waluguru* off the mountains and onto the plains, where, it was argued, they might better engage in cash cropping. The previously fertile soils of the mountains were continually being eroded and in 1950 the Uluguru Land Usage Scheme was implemented by the Native Authorities. Through this scheme the mountainside was to be terraced by the farmers. Not only did this involve back-breaking work, there

was also much debate among lineages about who exactly should be working the land in this manner. For this and a number of other reasons (see Maack, 1996) *Waluguru* resisted the Uluguru Land Usage Scheme, and, most notably, the power wielded by the Native Authorities. Riots ensued and many of the farmers set fire to their land on the hillside, a prohibited act, and refused to engage in any of the terracing work. Eventually the colonial government abolished the Uluguru Land Usage Scheme. Today, looking at the North Western slopes of the mountains, soil erosion and evidence of minor landslides are clearly visible and only a few trees remain.

Islam and Christianity

Although there is no definitive data, Muslims and Christians are in approximately equal numbers on the Tanzanian mainland (Brennan, 2006).⁶⁶ It is also estimated that approximately one third of the population of mainland Tanzania continue to adhere to indigenous or 'traditional' African beliefs (ibid). While cosmologies and practices vary, this very generally includes notions of unseen nature spirits and ancestral ghosts, rain-making, spirit possession, divination, witchcraft and sorcery (*uchawi*). These are often practiced alongside either Islam or Christianity.

Islam has been practiced in East Africa for hundreds of years. However, it spread considerably in the late nineteenth century as Arab traders increasingly entered the interior from the Swahili coastline (Rasmussen, 1993). Islam gained momentum again during the German colonial period when literate Muslims, often 'Afro-Arabs' from the coast were employed by the Germans to work in the interior (Iliffe, 1979; Mesaki, 2011).

It was also during the period of German rule that the Christian missions, both Catholic and Protestant, expanded considerably and Africans first started attending mission schools (Pels, 1999). By the end of German rule, missionary schools had expanded to the point where there was one in almost every region of the country (Iliffe, 1979). Regardless of their denomination, by the early

⁶⁶ People in Zanzibar are almost entirely Muslim.

twentieth century, these missions were all equally evangelical and were not only 'competing' with each other but also with the expansion of Islam. In 1912, a Bishop of the Holy Ghost Fathers wrote, "Our principal duty at present is to occupy the country by rural schools, in order to close it to Islam and the Protestants" (cited in Iliffe, 1979: 218).

Unlike the Germans, the British colonists favoured Christians over Muslims because the former had attended missionary schools and spoke English. With the advent of mission schools right up until the time of independence, Muslims found themselves educationally marginalized with fewer places in public schools. While funding came from western countries to build Christian welfare institutions such as churches, hospitals and schools, it was not until much later that Islamic states started to do the same and support Muslim welfare. This meant that there were fewer Muslims employed in either colonial or post-independent government (de May, 1997). Indeed, the All Muslim National Unity of Tanganyika sought to delay self-rule until Muslims were better educated and able take up an equal position in the new post-colonial era (Mesaki, 2011). During the socialist period, Tanzania was promoted as a secular state with no official religion. President Nyerere, himself a Roman Catholic, advocated respect for an individual's religion and viewed it as a personal rather than state matter.⁶⁷ It has been suggested that this has been influential in preventing inter-religious conflict on the mainland (Magesa, 1999), at least during the post-colonial period.

Islam dominates in the rural areas of Morogoro region, while Christians form the majority in Morogoro town.⁶⁸ One possible reason for this may be that those in rural locations converted to Islam during the time of the Arab caravans, perhaps as a means to escape capture or even to engage in trade. Conversely, in the town Christian missionaries had the most influence. In addition, many who have arrived in the town from outside the region today are Christian, although not exclusively so. Most *Waluguru* in Morogoro region today identify as being either Catholic or Muslim (Pels, 1999).

⁶⁷ The second President of Tanzania, Ali Mwinyi was a Muslim, as is the current President.

⁶⁸ No exact data on religious affiliation was available.

There was no available data on the number of Muslims and Christians living in Morogoro town, although churches considerably outnumber mosques. Of the eighty two mosques, *Ishmaeli*, *Sunni*, *Sh'ia* and *Bahai* are all represented. Like the churches, the mosques vary in scale and grandeur; some of the more recently constructed ones are large and impressive with glistening white facades and tall minarets, while others are humble mud buildings with only a loud speaker tied to the top of a wooden pole with which to broadcast *adhan* (call to prayer).

Churches of almost every denomination are represented in the town including Catholic, Lutheran, Anglican, Seventh Day Adventist, Pentecostal, and Baptist. In total, there are one hundred and thirty seven churches, all of which appear to have large congregations. Additionally, there are Catholic and Lutheran Seminaries - both of which are situated on the outskirts of town. The latter is also a language centre, teaching Kiswahili to missionaries mostly, but welcoming anyone willing to pay the tuition. Catholic missions were the first to arrive in Morogoro region, with the founding of the Matombo Mission in 1905. However, the greatest number of Christian conversions - in non-Muslim areas of the region - occurred in the early 1930s (Pels 1999).

Villagers in Doma were predominately Muslim and there were several Mosques at which most men attended Friday prayers and boys were taught the *Qur'an*. Few people practised Christianity, usually only those who had come to Doma to teach in the schools or to work in the dispensary and there was no church. There was a partially constructed building, which was apparently being built by the Seventh Day Adventist Church, although this had been left incomplete for a number of years.

For the most part, Muslims and Christians live quite peacefully with one another in Morogoro region and in the town. Moreover, it was not uncommon to find marriages between Muslims and Christians. However, there are currently increasing concerns of tensions between Muslims and Christians on mainland Tanzania (see De Mey, 1997; Brennan, 2006; Mesaki, 2011). One example of this is the so called, Dibagula case (after the name of the defendant), when a court in Morogoro town sentenced a Muslim man to eighteen months in jail in 2001

for declaring publically that Jesus was not the son of God. Despite this being written in the Qur'an, and part of conventional Islamic thought and teaching, the magistrate accused Dibagula of purposely trying to “wound the religious feelings of Christians” with his words (Mesaki, 2011: 255). In response to this ruling many Muslims took to the street to protest in Dar es Salaam and other areas of the country. In Dar, the situation turned violent; protestors were beaten by the police and taken into custody and two offices of the ruling party (CCM) were fire bombed (ibid). Eventually the ruling was overturned on appeal.

Aspects of independence

Towards independence: The rise of TANU and Nyerere

In 1954, Julius Nyerere (1922-1999), a teacher who had been educated at universities in Uganda and Scotland, became President of the political party, the Tanganyikan African National Union (TANU). Nyerere had transformed The Tanganyika African Association (TAA) into TANU. The former had been a social club for African civil servants and businessmen, encouraging unity between Tanganyikans, regardless of religious affiliation or ethnicity. TANU was a political party, intent on obtaining independence from British colonialism and governing the country thereafter (Iliffe, 1979; Omari, 1995).

Nyerere left teaching and travelled the country garnering local support for TANU. He was well received. Much of this came from local opposition to unpopular colonial agricultural policies, often implemented by the Native Authorities. This was the case in Morogoro region, where TANU achieved widespread local support due to its opposition to the Uluguru Land Usage Scheme (Young and Fosbrooke, 1960; Maack, 1996). TANU speakers attacked the exploitation of the colonial regime, frequently through the metaphor of ‘blood sucking’ (*unyonyaji*, literally sucking), which became synonymous with exploitation (Brennan, 2006). The idiom of *unyonyaji* was central to the nationalist cause (ibid) and echoes the rumours of blood sucking vampires that will be discussed at the end of this chapter.

Uhuru na Ujamaa (freedom and socialism)

In 1961, Tanzania became self-governing and Julius Nyerere was appointed Prime Minister. The following year, when Tanganyika became a republic, Nyerere was elected the country's first President, winning 99% of the vote, a position he held until his retirement in 1985. The newly elected government nationalized land, major businesses, the personal properties of wealthy landlords and the labour unions in a bid for the state to own the means of production (Read, 1995). In 1964, Tanganyika merged with the isles of Zanzibar to form the United Republic of Tanzania and became a one-party state with TANU as the ruling party.⁶⁹ In 1977, TANU became *Chama Cha Mapinduzi* (CCM) (Party of the Revolution) when, under Nyerere's leadership, it merged with the Afro-Shirazi Party (ASP) of Zanzibar.

In the Arusha Declaration of 1967, Nyerere fully unveiled and reaffirmed his vision of African socialism which he named *Ujamaa* (familyhood), based on the principles of freedom (*uhuru*), egalitarianism, and self reliance (*kujitegemea*) (Read, 1995); "an apparently indigenous form of African socialism" which he 'rediscovered' (Green, 2010: 23). The notion of freedom, *uhuru*, was particularly directed at freedom from exploitation (*unyonyaji*). For the nation to develop - to be self reliant and free from foreign aid - Nyerere focused on rural production through the process now known as villagization.

Villagization

In theory, the movement of people to the new *Ujamaa* villages was a welfare and development project: by placing the population into concentrated settlements it could then be provided with state services such as education, health care, sanitation and clean water. Villagers could then undertake cooperative farming methods to feed both themselves and the nation. In reality, as James Scott writes: "The thinly veiled subtext of villagization was also to reorganize human communities in order to make them better objects of

⁶⁹ The islands of Zanzibar have a semi-autonomous government and legislature.

political control and to facilitate the new forms of communal farming favoured by state policy” (Scott, 1998: 224).

From the late 1960s until 1976 between six and ten million people were relocated, sometimes forcibly, into the newly created nucleated, registered villages (Jennings, 2008; Read, 1995; Scott, 1998). By 1980, nearly 90% of the population was living in villages (Green, 2010). Initially voluntary, the government encouraged urban dwellers to move to the newly established co-operative villages with the aid of plays, films, personal testimonials and propaganda pamphlets, which told of a better life in the villages (Brennan, 2006). However, in spite of increasing coercion, for example famine relief was reserved for those who moved voluntarily, there was little interest in moving away from homes, crops and ancestral shrines to the new villages. In response to this, in December 1973 President Nyerere declared, “to live in villages is an order” (cited in Scott, 1998: 234). In effect, this repeated the pre-existing colonial policy whereby the urban unemployed had been forcibly moved to rural locations to engage in agricultural production (ibid). With the ‘assistance’ of the militia and the army, people were loaded onto trucks and taken to the new villages. Their existing homes were burnt to prevent them returning. Refusal to do so was met with imprisonment. Like many others throughout the country, *Waluguru* were expected to move to the new villages, leaving the hamlets they had been living in, which were spread out over the mountains and plains (Pels, 1992).

To control labour for ‘cooperative’ agricultural production, the villages were divided into areas called streets (*mtaa*) and again into ten-cell households, each with a ten-cell leader (*balozi*) who was responsible for the cultivation of communal land for each area (Scott, 1998). However, villagers favoured working on their own private plots rather than on communal land and there was little cooperation between them. As Scott notes, “They had also forgotten the most important fact about social engineering: its efficiency depends on the response and cooperation of real human subjects (Scott, 1998: 225). Local leaders could impose fines and penalties but were often reluctant to do so. Eventually, the communal plots were subdivided amongst the villagers to farm each section independently.

The new villages were an ecological and economic failure: by 1979, they contained 90% of the rural population but only produced 5% of the national agricultural output. Local knowledge and ecological considerations, such as soil type, climatic conditions and availability of water had been ignored and 60% of the new villages were located on semi-arid land, which was unable to support the villagers (Scott, 1998). Food shortages, exacerbated by periods of flooding and drought meant increased food imports were necessary.

When Nyerere retired as President in 1985 (the first African head of state to do so)⁷⁰ there had been improvements in health care and education, which are not insignificant. However, the economy had failed. The country had huge external debts - not least due to the 1973 OPEC oil crisis - and was heavily dependent on foreign aid: the antithesis of *Ujamaa*. Nyerere's successor, Ali Hassan Mwinyi, had little option but to commit Tanzania to economic 'structural readjustment' led by the International Monetary Fund and the World Bank.

Multi-party politics

One of the conditions for continued aid from international donor agencies, most notably from the IMF, involved the Tanzanian government facilitating political and economic reform (Kweka, 1995). This included the introduction of a multi-party system, which was written into the constitution in 1992. The first multi-party elections took place in 1995, when Benjamin Mkapa of CCM became the third President of Tanzania. Mkapa continued the economic policies of neo-liberalization and structural adjustment begun by Mwinyi. CCM have continued to win at every election since. The current President, Jakaya Kikwete was elected in 2005 and he was re-elected for a second and final term in 2010. As President, Jakaya Kikwete is the head of state and government. The 357-seat National Assembly (*Bunge*) primarily sits in Dodoma, the administrative capital.

In both Morogoro town and Doma village there is clear support for CCM. The elected National Assembly members representing the town and Mvomero

⁷⁰ He remained chairman of CCM for a further five years.

district, where Doma village is located, belong to CCM. However, there is also visible opposition from other political parties in the town. These include: the Tanzanian Labour Party (TLP) - especially in some areas of Chamwino; *Chama Cha Demokrasia na Maendeleo (Chadema)* (Party for Democracy and Progress); and the Civic United Front (CUF) (*Chama Cha Wananchi*). Despite winning the last election, CCM is no longer necessarily seen as the party of the people and there has been growing political opposition throughout the country. During my fieldwork in 2010, the President's car had stones thrown at it when he visited Ifakara in Morogoro region. Officials glossed this over and said people had thrown stones because they were disappointed the President had not stopped to meet with them, rather than seeing it as a demonstration against dissatisfaction with the Party. More recently, a *Chadema* supporter was killed by a police bullet during a political demonstration in Morogoro town in August 2012.⁷¹

The legacy of Nyerere and *Ujamaa*

Nyerere is ostentatiously idolized in contemporary Tanzania. His face appears on banknotes and his framed picture hangs in government offices alongside those of incumbent presidents. Written on these portraits are the words *Mwalimu* (teacher) or *Baba wa Taifa* (Father of the Nation). *Mwalimu* is how Nyerere was commonly addressed: this refers to his profession before entering politics but it also has a wider meaning, as a wise, benevolent educator of the people. As the first President and the architect of the post-colonial, socialist state, the latter title is both patriarchal and self explanatory.

Nyerere is credited with maintaining unity in Tanzania during post-colonialism, at a time when other newly independent countries experienced internal conflict based on religion or ethnicity. Indeed, as already mentioned, Tanzania does not suffer the inter- and intra- ethnic and religious conflicts currently

⁷¹ The Morogoro riot police were attempting to end the rally as political demonstrations had been prohibited during this time, as the 2012 census was taking place. However, *Chadema* supporters were protesting that this was an infringement of their civil liberties. (See <http://www.thecitizen.co.tz/component/content/article/37-tanzania-top-news-story/25437-tv-journalist-killed-as-police-chadema-clash.html>) accessed 24 October 2012

experienced in other African countries, although it is debatable whether Nyerere should be given all of the credit for this.

Nyerere's primary legacy is the enduring effect of *Ujamaa* on the development of the nation and also perhaps on the psyche of its citizenry. *Ujamaa* promoted central government and increased the power of the state, including the tentacles of state surveillance, which can still be felt today. With the establishment of Ten Cell Leaders who were elected by the Party there was the ever present potential for the ear of government to listen in. This continues to have echoes in today's Tanzania, as people, particularly at village level, remain cautious over who might overhear 'sensitive' conversations. As will be discussed in the following chapter, mistrust - and scepticism - seemed to be a common feature among many people in Morogoro town and Doma village. Not only is there frequently concern over those who might be listening, but also those who might exploit you. Understandably perhaps, in the era of post-colonialism, TANU rhetoric put great emphasis on those who would exploit the citizenry and urged Tanzanians to be ever vigilant against them.

Although not initially endorsed by the Party, *Sungusungu* vigilantism, which arose in northwest Tanzania in the 1980s, was supported early on by Nyerere (Abrahams, 1987; Heald, 2005). These grass-roots groups formed in response to the very real threat of robbery, in particular cattle theft. However, the 'movement' spread and a number of vigilante groups continue to this day (Ntetema, 2006). When Party officials belatedly endorsed, even 'hijacked' (Heald, 2005) these groups for the services of the state, they spoke of how these young men (and women) were undertaking the work on behalf of *Ujamaa*, to protect the citizens and promote security (ibid).

Finally, a further way in which *Ujamaa* created an atmosphere of suspicion was in response to the realities of villagization. As Pels notes, among *Walaguru* the increased close contact of so many 'strangers' living together in the newly established villages, where they had previously been spread out over larger areas, increased witchcraft suspicions (Pels, 1992) and mistrust of one's fellow citizens.

The delivery of biomedical health care has been profoundly shaped by the historical changes described above.

Colonialism and biomedicine

Biomedicine, in common with anthropology (Asad, 1973), has an uncomfortable historical relationship with colonialism (Arnold, 1988; Olumwullah, 2002; Lock & Nguyen, 2010; Pels, 1011). As Jean Comaroff notes,

...medicine both informed and was informed by imperialism, in Africa and elsewhere. It gave the validity of science to the humanitarian claims of colonialism, while finding confirmation for its own authority in the living laboratories enclosed by expanding imperial frontiers. (Comaroff, 1993: 324)

During the “colonial phase” of biomedicine (1920-1960), native populations were treated for the first time (Lock & Nguyen, 2010: 148). Having initially only cared for the well-being of soldiers and white settlers in the colonies, biomedical attention turned to the health of indigenous peoples amid concern that diseases within the black population could contaminate white settlers and even spread to Europe. Furthermore, the colonial enterprise was keen to maintain ‘healthy’ African bodies to ensure an efficient and productive labour force (Arnold, 1988; Comaroff, 1993). Large-scale public health initiatives in colonial sub-Saharan Africa, such as the human sleeping sickness campaigns, were important to the colonial regimes and were (scientific) instruments with which to promote ‘development’ in the regions. In doing so, it was also hoped, the burgeoning discipline of colonial tropical medicine would receive international recognition (Lyons, 1988). Such sentiments are explicit in the following quote by Dr J. L. Todd of the Liverpool School of Tropical Medicine, who worked on several sleeping sickness campaigns in Africa, when he stated, “the future of imperialism lay with the microscope” (cited in *ibid*: 245).

Between 1919 and 1945, human trypanosomiasis (sleeping sickness) outbreaks led to ‘public’ health campaigns, which involved the resettlement and quarantine of indigenous people. The tsetse fly had been identified as the vector responsible for trypanosomiasis infection some years earlier and

interventions focused on separating the vector from humans as well as livestock. Between 1922 and 1945 alone, it is estimated that approximately 140,000 people were forcibly removed from their homes (huts were often burnt down) and placed in resettlement camps by the colonial authorities (Fisher & Arce, 1999). A positive diagnosis of sleeping sickness could be confirmed by identifying the presence of trypanosomes in blood or lymphatic fluid. The latter of which was obtained by inserting a needle into the lymph gland on the neck, close to the ear. The drugs which were administered were experimental and toxic, and although they could cure the disease they could also result in loss of vision and even kill. Blood was regularly taken from people in the camps to assess the efficacy of the treatment and help establish a therapeutic drug dose (ibid). As David Arnold notes, “medical interventions impinged directly upon the lives of people, assuming an unprecedented right (in the name of medical science) over the health and over the bodies of its subjects” (Arnold, 1988: 18).

The biomedical epistemology of sleeping sickness was not shared by local people who blamed local ancestral spirits for the deaths. In an effort to placate the spirits, various rituals including animal slaughter were undertaken (Fisher & Arce, 1999). Within this local understanding, abandoning the area was only likely to incur further anger from the spirits and wreak retribution (ibid). Resettlement often led to further economic hardship as those who had been moved, as was the case in Morogoro, found themselves coerced by the colonial administrations into new agricultural practices, such as cash cropping. Furthermore, local conflicts arose when people from one area found themselves living in other chiefdoms, placing them in new social relationships in which they were subordinate (ibid). Writing about colonial medicine generally, but as is particularly relevant to the arguments presented here, Arnold notes,

Western medical measures threatened many deeply-held beliefs, many long-established social practices. Not surprisingly, they were often greeted with wild rumours, profound suspicion, evasion and resistance.⁷² There was violence and rioting as homes and property were destroyed,

⁷² Writing on the anti sleeping sickness campaign in Tabora region, Tanganyika, Fisher and Arce (1999) note how local resistance took shape in the form of an anti-witchcraft movement, *Muchape*. Sleeping sickness was blamed on witchcraft in which the tsetse fly could be regarded as a witch’s familiar. A powerful *mganga* would visit the settlements to identify witches who were made to drink (and pay) for *Muchape* medicine, which would purify the witch and prevent him or her from bewitching anyone ever again or else they would die. Such explanations for sleeping sickness explicitly challenged the colonial vision of sleeping sickness.

people were searched, and medical suspects were carted off, like convicts, to hospitals, segregation camps and lazarets (Arnold, 1988:20).

And, as Margaret Lock and Vinh-Kim Nguyen comment,

... the legacy of these campaigns lives on today manifest in widespread wariness of biomedical research and recurring reports that contemporary public health campaigns are viewed with apprehension and often suspected to be forms of experimentation carried out on unwitting participants (Lock & Nguyen, 2010: 154).

Vampire rumours

Luise White's (2000) analysis of vampire rumours in colonial East Africa (Kenya, Tanganyika, Uganda and Northern Rhodesia) illuminate African experiences of colonialism, especially new forms of labour, in which the African colonial body is commodified, and colonial medical practice.⁷³ These vampire stories are not identical and have historical and local particularities. However, they all involve rumours in which white men⁷⁴ (colonial officers, doctors, health inspectors, hunters, settlers, game rangers, miners, surveyors) were said to be vampires who extracted blood from Africans with which to make medicine for white people living in Africa. The various rumours frequently involved the use of biomedical apparatus such as injections, tubes, bandages and chloroform masks, as well as biomedical procedures such as the taking of blood and lymphatic fluid. Rumours often focused on hospital buildings or around public health campaigns, such as those for sleeping sickness and yellow fever (Musambachime, 1988; Pels, 1992; White, 2000).

The white vampires did not necessarily murder all of their own victims; they sometimes employed Africans (firemen, game wardens) to murder them and take their blood. In Tanganyika, vampires were known by the Swahili name, *mumiani*, who were said to cut their victims' throats, hang them upside down

⁷³ The emergence of the vampire rumours after the First World War (1914-1918) coincided with the "colonial phase" (1920-1960) of biomedicine, which, White argues, was the impetus for the rumours. However, Peter Pels (1992) disagrees with White on this matter and argues that the origins of vampire rumours in East Africa were more likely to have been carried over the Indian Ocean by Indian soldiers.

⁷⁴ Vampires were usually said to be men although Dr Hope Trant was accused of drinking blood in her hospital in Northern Rhodesia and nurses (presumably female) wearing lipstick sparked *mumiani* rumours in Kigoma, western Tanganyika during a WHO survey in 1955 (White, 2000).

and drain their blood into a bucket (White, 2000). Tanganyikans that were employed by the state, who wore uniforms and came from elsewhere in the country (i.e. were not local), were those most suspected of working for, and therefore also being, *mumiani*. For example, during the sleeping sickness campaigns in Northern Rhodesia, members of the Tanganyika Game Department were suspected of being *mumiani*, particularly the ‘fly boys’⁷⁵ who worked out in the bush.⁷⁶

The image of blood sucking, murdering vampires extracting vital body fluids from indigenous people was metaphorical. However, the extraction of blood (and labour) by the colonists was literal. As White notes, it was not the new biomedical technologies *per se* which aroused local anxieties, but rather who was using them: “vampires were more than new imaginings for new times, they were new imaginings for new relationships” (White, 2000: 22). *Mumiani* rumours were reported in Morogoro region, most notably during the late 1930’s when locals were subjected to blood testing during yellow fever research (Pels, 1992). Between the 1930s and 1950s, *mumiani* rumours emerged periodically in which white men such as engineers, miners, surveyors and game officers were suspected of murdering local *Waluguru*, draining their blood and drinking it.

Peter Pels observes that *mumiani* rumours emerged in Morogoro region during times of hardship and increased levels of conflict between the local *Waluguru* and the British colonial administration (Pels, 1992). For example, rumours coincided with the depression in the 1930s when *Waluguru* cash croppers were forced to work on the sisal estates in and around Morogoro town and again in the mid-1930s when the colonial government considered relocating *Waluguru* from the Uluguru Mountains to the surrounding plains. This was a move which the *Waluguru* had repeatedly resisted, not least because those who had been coerced to move and enter cotton cash cropping previously had experienced hardship when the crop failed. Rumours again emerged between 1939-1945 when the British forcibly attempted to conscript *Waluguru* into the Army and in

⁷⁵Fly pickets or fly boys, were boys who were employed to count tsetse flies in the bush and to literally pick off tsetse flies from passing people.

⁷⁶ *Mumiani* in the Tanganyika Territory Game Department were said to remove a piece of their victims’ brain from behind their ear. This resonates with the practice of aspirating fluid from lymph nodes performed on indigenous peoples during the sleeping sickness campaigns (White, 2000).

the late 1940s during post-war famine, and yet again in the 1950s during the Uluguru Land Usage Scheme (see Young & Fosbrooke 1960).

Pels argues that the significance of blood in these rumours is related to *Luguru* kinship relations in which blood represents the “continuity of the generations”⁷⁷ (ibid: 179). Kinship relations controlled agricultural practice and the access to land; by engaging in wage labour young *Luguru* men entered into new relationship whereby they surrendered their bodies (labour) in exchange for money. In so doing, these men were now absent from home, earning money they did not have to share with other kin (ibid). Contextualizing the rumours in this way, Pels notes, “...the metaphoric potential of the taking away of blood (which also indicates descendents and other kin and their productive capabilities) without giving anything in return (except, perhaps, money) becomes profound indeed” (ibid: 180).

Rumours of blood stealing are tenacious and have reappeared during times of uncertainty and distress. Their reappearance in contemporary Tanzania during ‘structural adjustment’ and neo liberalization policies post-socialism will be discussed below.

Contemporary blood and organ stealing rumours

In contemporary Tanzania, blood (and now organ) stealing rumours have re-emerged at different times and continue to be noted by anthropologists (Weiss, 1999; Sanders, 2001). Among the Haya of northwest Tanzania, Brad Weiss encountered blood stealing (and selling) rumours (Weiss, 1999). Unlike *muminai*, however, those suspected of engaging in this activity were not outsiders, but locals who were doing inexplicably well economically. Young Haya men who left their rural homes in search of employment in the towns and cities of Tanzania were those considered most at risk of falling prey to blood thieves, who would drain their blood and sell it to hospitals. Such rumours elucidate “embodied dimensions of commoditization” (ibid: 174), in which blood thieves can be seen as engaging in “a model of ‘business’ taken to its

⁷⁷ *Walaguru* who were not related by birth could become kin by sharing blood, as was the practice between husband and wife on their wedding day (Pels, 1992).

horrifically logical conclusion” (Weiss, 1999: 190). This resonates with Pels’s analysis of *mumiani* rumours in Morogoro, when young *Waluguru* men entered into the colonial mode of production as wage labourers (Pels, 1992), in which bodies were commoditized and exploited.

Contemporary rumours concerning the trade in human body parts for occult purposes are widespread throughout sub-Saharan Africa (Comaroff & Comaroff, 1999; Sanders, 2001). In 1999, rumours of people being murdered and having their skins removed and sold to make (witchcraft) medicine reached Morogoro town (and elsewhere) in Tanzania following the murder and skinning of a school boy in neighbouring Mbeya region (Sanders, 2001). Todd Sanders comments that occult practices and their idioms increased during the 1990s in Tanzania as people sought answers for their current misfortunes; the “(de)pressing materialities of people’s daily lives...” brought about by the neo-liberalizing policies of the World Bank and the International Monetary Fund. Moreover, as a result of these policies: everything increasingly became commodified including, not only bodies (body parts, labour) but the occult itself (Sanders, 2001: 162).

Sander’s analysis of the trade in human skin in 1990s Tanzania is also pertinent with regard to another “occult economy” (Comaroff & Comaroff, 1999) currently taking place in Tanzania: the trade in body parts of people with albinism. During my fieldwork period (2007-2010), a number of attacks and murders of adults and children with albinism occurred in the north and north-west of the country, and continue to occur.⁷⁸ I met a law student with albinism in Morogoro town who had fled Mwanza fearing for his life, leaving his family and studies behind. A Canadian NGO⁷⁹ has estimated that, as of June 2012, seventy one people with albinism had been murdered in Tanzania, twenty eight had been attacked (usually involving the loss of limbs) and that there had been seventeen reported grave robberies. Furthermore, it is thought that such estimations are conservative, as attacks and murders frequently go unreported.

⁷⁸ From <http://news.bbc.co.uk/1/hi/8270446.stm> accessed on 07.10.2012, and <http://www.telegraph.co.uk/news/worldnews/africaandindianocean/tanzania/7687951/Seven-new-albino-killings-in-Tanzania-and-Burundi.html><http://uk.reuters.com/article/2010/07/28/uk-tanzania-albino-idUKTRE66R3XF20100728> accessed 07 October 2012

⁷⁹From <http://www.underthesun.com> accessed 7 October 2012

The body parts, including hair, blood, bones, skin, and genitalia of people with albinism are considered to be highly potent and are used by *waganga* to make 'good luck' charms. The trade is a lucrative one: *waganga* are said to pay large sums of money for body parts belonging to people with albinism and in return demand high fees for the charms. Artisanal miners and fishermen in the north-west are said to be particularly keen for such charms to ensure good fortune in their respective economic pursuits, which have been failing. Fishermen have been reported to sew hair belonging to people with albinism into their fishing nets (Smith, 2008) and there have also been reports of cannibalism and blood drinking by the killers who sell to the *waganga* (ibid).

The rumours which circulated around the mass distribution of drugs in Morogoro town and Doma village did not involve blood or organ stealing; rather they involved the purposeful poisoning of children by outsiders in the developed world. How then do these rumours of vampires and organ theft relate to the rumours that circulated in Morogoro Town and Doma village concerning the drugs to treat schistosomiasis and soil-transmitted helminths?

Poisoned children: New rumours for new times?

Drawing from the idiom of witchcraft, poisoning can involve anything that is detrimental to the person who has been bewitched/poisoned (*uchawi*). With regards to health, this can include any type of physical illness: minor, major, fatal, chronic or acute. However, *uchawi* frequently involves harm to a person's reproductive capacity. Therefore, when people in Morogoro town asked why the children had been poisoned, they could be alluding to a number of things. It could be in reference to the transitory physiological effects, such as dizziness, headache and stomach-ache the children experienced. However, it was frequently apparent that people were asking why attempts had been made to sterilize the children.

Taking White's (2002) contention, that vampire rumours were a way of imagining new relationships at a particular (colonial) moment in time, is it possible to view rumours of poisoned children in the same way? Various authors

have shown that vampire rumours have emerged in response to the experiences and anxieties surrounding colonial labour practices (Pels, 1992), colonial biomedicine (White, 2002) and local inequities of wealth (Weiss, 1999). Similarly, Sanders (2001) has argued that organ stealing rumours were a response to the hardships borne out of structural adjustment policies (Sanders, 2001). What, then, can poisoning rumours tell us about the daily realities and current anxieties of people living in Doma village and Morogoro town? Why do people living in these places think those in the developed world are trying to prevent their continued survival by preventing future generations being born? Could such rumours be a response to the current global development project, which aims to reduce the number of people living in poverty in Africa?

“Somehow we survive”: Precarious lives in Doma village and Chamwino ‘squatter’ area

For the inhabitants of Doma village and Chamwino 'squatter' area, life can be characterized as one of extreme hardship (*maisha magumu*, literally, it's a hard life). Informants in both research settings frequently spoke of the difficulties they encountered while trying to ensure their family's survival. Although these challenges varied, depending on the specific local context, the overwhelming fear people expressed was that they would not have enough food to provide for their family each day or that they would be unable to care for members of their household if they became sick. Adult informants expressed feelings of resignation and hopelessness (*kutokuwa na matumaini*, literally, a loss of hope) and felt that however how hard they worked, they were unable to escape the poverty and hardship in which they lived. Comments such as “we work hard but still we are poor” and “somehow, we survive” (*kwa namna fulani, tutaendelea kuishi*) were common and go some way to illustrating the powerlessness people felt concerning their inability to escape the perpetual cycle of poverty.

This chapter describes the physical and social landscape of Morogoro town, Chamwino 'squatter' area and Doma village. It examines what life is like for people who live in Doma and Chamwino, how they eke out a living and the daily challenges they face. The final part of the chapter describes how the inhabitants of Doma and Chamwino appeared vigilant for anything, or indeed anyone, that might cause them further hardship and be perceived as a threat to their survival. For the majority of informants in Doma and Chamwino, surviving in such circumstances was frequently said to be due to God's benevolence, or God's will, for both Muslims and Christians alike.

Morogoro town

Arriving at the main bus station, the huge, hulking vehicles, many of which do not appear road worthy,⁸⁰ pull in, and are immediately engulfed by vendors (*machinga*), usually adolescent boys and young men, hawking their wares. As they raise their produce above their heads, so that those on the buses may better see, the peddlers suck their teeth loudly and with clenched fists bang on the sides of the buses to better attract potential custom. At any one time a traveller is likely to be offered an astonishing assortment of articles including, brightly coloured plastic ware manufactured in China, woven baskets, oranges, pineapples, cashew nuts, peanuts, biscuits, small cakes, seasonal vegetables, shoes, and sandals to name just a few. Shouts such as “*Chipsi moto! Chipsi moto!*” (hot chips); “*Maji baridi! Maji baridi!* ” (cold water); “*Voucha! Vouch!*” (telephone air time vouchers) and “*Mayai! Mayai!*” (eggs) compete in volume with touts shouting the destinations of ‘their’ buses: “*Iringa!*”; “*Dodoma!*”; “*Arusha!*”; “*Dar!*” Add to this the hoots and honks of loud air horns - pushed all too frequently and lengthily - by impatient drivers ready to leave and you begin to have an idea of the cacophony of sound that one is greeted with when arriving, or indeed departing, Morogoro town via the central bus station.

Touts and taxi drivers enthusiastically ‘greet’ those alighting from their journey. This can be quite an ordeal for the uninitiated: I once saw a young woman with a baby on her back, a toddler at her knee and several large bags, literally being pulled this way and that by competing bus agents eager for her custom. People move purposefully: middle aged men carrying briefcases appear to be undertaking familiar, daily journeys. While others, most often women, can be seen travelling with huge heavy pieces of brightly coloured luggage and numerous, often fractious, children. It is apparent that some have travelled great distances; many will be visiting families, perhaps to attend a wedding or funeral or to visit a sick relative. Others arrive looking for work or

⁸⁰The buses travel long distances at alarmingly fast speeds and it is not uncommon to see the burnt out twisted remains of buses involved in accidents along the roadside. Newspaper articles frequently report on fatal bus accidents and people complain that bus companies, in the pursuit of profit, encourage their employees to drive too fast in order to make the maximum number of journeys daily.

to move in with relatives, perhaps following bereavement. The hustle and bustle of the bus station is aptly described by the Kiswahili word *shagalabaga* meaning random, untidy and chaotic and, to this extent, it is a bus station much like any other I visited in Tanzania.

Contemporary migration into the town is commonplace for numerous and varied reasons. Industries, including textile and plastic manufacturing, tanneries, bottle processing, and oil and tobacco refineries draw those from nearby rural areas as well as other regions seeking waged employment, often unsuccessfully.⁸¹ In recent years several factories including a soap manufacturing plant, a tannery and at least one textile mill have all closed contributing to the number of unemployed (*kutokuwa na kazi* lit. to be without work). Some rural migrants are fortunate and do find opportunities for self-employment as petty traders (*biashara ndogo ndogo*) selling goods such as second hand clothes. Out towards the tobacco processing plant, second hand clothes line the roadside and some resourceful traders hang various items of clothing on the trees, making for a very curious multi-coloured spectacle. Each Sunday a large market is held on the grounds where the annual *Saba Saba* (Peasant's Day) celebration takes place. Anything from second hand fabrics, sheets, shoes, handbags, and clothes from Europe and North America can be bought or sold.⁸²

Improved prospects in agriculture, whether renting land or being hired as wage labour also draws migrants to the town. However, they are often disappointed when they cannot find waged work. Moreover, the plots of land available for hire, an acre at a time, are a long way from the town in neighbouring districts. There is a large vegetable market (*soko*) in the centre of town and people pour in from around the region to sell their produce. Agriculture forms the back bone of the economy in town as well as for the region, known for its fertile plains; it has been called the 'breadbasket' of Tanzania. It is estimated that seventy five percent of the town's population are engaged, in some way, in subsistence agriculture.⁸³ Crops grown include maize, rice, tomatoes, legumes,

⁸¹ Several large factories including a soap and shoe factory and a coca cola bottling plant have closed recently.

⁸² *Saba* meaning seven. Peasant's Day is held on the seventh day of the seventh month.

⁸³ Agricultural Department, Municipal Office, 2009

bananas and cassava. However, people frequently talk of the recent lack of rain and the subsequent loss of crops and with them, livelihoods.

A tenth of the town's population are employed in government offices and institutions including schools, hospitals, health centres and nationalized companies.⁸⁴ As the region's capital there are numerous government offices, all of which appear abundantly staffed. Those holding higher appointments usually belong to Tanzania's educated middle classes, while those employed in administrative, support and secretarial capacities have usually completed secondary school education. I found it unusual to meet employees in these offices who were native to Morogoro and never from Chamwino area. Most often they had been transferred from other areas; part of the government's policy to combat nepotism and corruption.

Morogoro's central location, situated between the commercial city of Dar es Salaam and the administrative capital, Dodoma, makes it a convenient (and diplomatic) locale for organizations to host conferences or locate national offices.⁸⁵ An additional advantage is the running costs of such ventures are considerably cheaper here than they would be in Dar es Salaam. As a consequence, there are numerous guest houses, lodges and hotels, many of which are often occupied by government employees or members of international NGOs attending conferences.⁸⁶ Walking into any of the larger hotels on any weekday lunch time, one is likely to be greeted by a sign board displaying the title of the current day's conference topic, and crowds of people - each with their name badge prominently displayed about their person - taking the ubiquitous conference buffet lunch.

Driving away from the bus station the three kilometres towards 'down town' one comes across a series of neatly manicured roundabouts worthy of any Middle England town. It was somewhat bizarre to see these municipal flower beds, part of the Mayor's beautification project, being watered regularly when there was frequent talk of an impending severe water shortage, as the Mindu dam,

⁸⁴ Municipal Planning Office, 2009

⁸⁵ For example the Spanish branch of Oxfam, *Intermon*, and War on Want all have their national offices located in Morogoro Town as do several other international NGOs.

⁸⁶ 234 guest houses and 45 hotels are registered with the council.

which supplies the majority of the town's water supply, was at alarmingly low levels due to a dearth in rainfall and the dam's poor structural condition.⁸⁷

Small shops (*maduka* pl.) are packed tightly together a little back from the road. These vary in structure, some have glass windowed fronts with metal grills while others are converted metal shipping containers and some are simple wooden market stands. All manner of goods and services can be obtained here: Drug stores (*duka la dawa*); restaurants; phone shops; phone repair shops (*fundi wa simu*); plumber's merchants; hairdressing salons with names such as "Joy" and "Blessings Salon"; and numerous stationary stores offering secretarial services, photocopying, and internet offices all nestle together.

A business selling car parts displays second hand tyres by piling them perilously high at the roadside. Another, a carpenter's workshop, displays wooden beds, sofas, wardrobes and coffins. Beside this a metal worker sits in front of his premises welding intricate iron gates with seemingly no concern for the white hot sparks which fly into the path of passing pedestrians or, for that matter, his own ocular safety.

The town is a hub of activity as people go about their daily business. Young girls wearing skin-tight jeans joke and flirt with boys in jeans as baggy as the girls' are tight. Designer labels with recognizable names - though counterfeit - are ostentatiously displayed. Many of these clothes are from Europe or America and are sold second hand in the market. T-shirts with English writing on them appear popular, but the words written across them are incongruous. For example, 'Kiss me I'm Irish' and 'Shit happens!' The youths' fashion and behaviour is heavily influenced by music videos, football stars and soap operas made in Africa, South America and America, which are shown on television. Such influences are relatively new as the first ever Tanzanian television broadcast did not take place until 1994 and during the Socialist period

⁸⁷The total average annual rainfall ranges between 821mm to 1,505mm. Long rains occur between March and May and short rains occur between October and December each year. (Meteorological Department, Sokoine University of Agriculture, Morogoro 2004). However, in February 2010 the short rains due at the end of the previous year had still not materialized in the town. Unfortunately, when heavy rain occurred in some parts of the region in January 2010 severe flooding occurred and hundreds of thousands of people were made homeless.

President Nyerere banned the imports of television sets so that people could not access Kenyan broadcasts.⁸⁸

School children walk along in their brightly coloured uniforms: sky blue, magenta, purple and emerald green. Other school-aged children, dressed in clothes that are so ripped and torn they hardly cover the children's bodies, spend their days selling fruit, vegetables or some other produce which has usually come from their family's garden (*bustani*) or farm (*shamba*). Women in western style office attire, often times chatting on their mobile phones, mix with women wearing the more traditional brightly coloured cotton two piece *kanga*, while some women wear the black *hijab* and veil. Taxi drivers congregate around newspaper stands, chatting to each other as they check out the day's news (*habari*) and await customers. Men in smart shirts adorned with the seemingly favoured large kipper tie head for work in offices. Lorries load and unload, and in so doing block the busy roads and side-walks, resulting in frequent petty squabbles between drivers, pedestrians and ethnic Indian shopkeepers.

The roads are usually congested with traffic and vehicles sit snarled bumper to bumper. Old cars with low slung chassis and bone shaking suspension vie for space with luxury Japanese land cruisers. Many of the 4x4 vehicles have the names of organizations such as "Forestry Commission" or "UN" painted on them, but often these vehicles have long been sold on to new owners. Hand operated carts and occasionally, carts pulled by oxen (*lori ya ngombe*) can bring the traffic to near standstill. Bicycles (*baiskeli*) and motorbikes (*piki piki*) weave perilously through the traffic, as do pedestrians.

Funeral processions are a common sight along the main road. Large lorries are rented to take the deceased and their mourners to the main cemetery ground out on the Old Dar es Salaam Road. At weekends these same lorries are often full of wedding party guests. Wedding processions can usually be heard before they are seen as the hired jazz musicians lead the motorcade playing their

⁸⁸President Julius Nyerere maintained that mainland Tanzania would not have television until it was possible for the whole nation to watch, not just a wealthy elite. But it also prevented Tanzanians hearing opposing ideas or criticisms of Nyerere's African socialism (*ujamaa*). However TV was available on the autonomous island of Zanzibar.

brass instruments standing up in the back of pick-up trucks. They are immediately followed by the bride and groom, usually in heavily decorated cars bedecked with ribbons and plastic flowers, while those in the wedding party travel in a lorry behind.

House prices are lower here than in Dar, the climate is cooler too, but with relatively close proximity to the larger city, Morogoro town is a desirable location for house building. Many 'middle class' Tanzanians such as university professors, civil servants or businessmen build in the town in order to rent out the properties. Expatriate workers, usually in the tobacco industry, seeking comfortable homes, are often the inhabitants of these grander houses. They are usually located in one of several more desirable residential areas. In these places well proportioned houses with green lawns and red tiled roofs sit behind high walls and iron gates, which are attended by armed *askaris* (guards) and ferocious looking dogs. Any children in these houses will most likely attend Morogoro International School and their parents, the golf and Gymkhana clubs.

Morogoro town is governed by the Municipal Council and, for administrative purposes, is divided into nineteen sub-sections called Wards (*kata*). These are then divided further into areas, and again, into smaller parcels called streets (*mitaa*). The number of areas and streets in each ward depends, not surprisingly, on its size. Each ward has a government appointed Ward Executive Officer (WEO) (*Afisa mtendaji wa kata*) and each street a Street Executive Officer (*Afisa Mtendaji Wa Mtaa*) and a locally elected street chairperson (*mwenyekiti*).

Chamwino 'squatter' area

Chamwino area is located in the large ward of Mazimbu (pop. 52,656).⁸⁹ In total, Mazimbu Ward contains thirty two streets and between five and six thousand households.⁹⁰ Many of the streets contain 'luxury' houses, which are

⁸⁹ 2002 census

⁹⁰The household figures from the 2002 census vary between government departments. The planning and statistics office in Morogoro Municipal Council show 5,300 households, while Mazimbu Ward Office show 6,094.

owned by university professors and other professionals. This is also where Mazimbu University and hospital are located. However, fourteen streets form an area called Chamwino, a so-called “squatter area”, as people do not hold deeds to the land (*hati miliki*) or building permits (*kibali cha kujenga*). When I first met the WEO of Mazimbu, a very cheerful and helpful government official, and I mentioned I was interested in working in Chamwino, she looked to the other two staff members in her office, laughed, rolled her eyes and exhaling loudly exclaimed, “Ah! Chamwino! Chamwino! Chamwino!” to which everyone in the office laughed. In a reasonably affluent ward (at least by local standards), it appeared as though Chamwino was a perpetual thorn in the local government’s side.

While Mazimbu Ward contains houses that are the visible sign of capital and are located at one extreme of the economic spectrum, the pathetic structures in the squatter area of Chamwino on the outskirts of town are at the other. Sometimes these areas sit side by side and even coalesce at their boundaries. Wattle and daub or crudely made mud bricks are the principal building materials. Many have corrugated tin roofs but most have grass and some only paper. As there are no building regulations, the houses sit too close to one another, are poorly erected and already crumbling. The infrastructure here is poor and even non-existent in several places. There are only a few public water taps (*maji ya jamii ya bomba*) and many of the latrines (*vyoo pl.*) are old and disintegrating.

Unemployment is high in the squatter areas and it was frequently said (by those that do not live there), that these places were full of rapists (*wabakaji*), thieves (*wezi*), murderers (*wauaji*) and prostitutes (*malaya kahaba*). Drugs were also said to be a big problem here - usually marijuana (*bangi*), but there was also talk of heroin and even cocaine in the town.⁹¹ Townsfolk who lived elsewhere would not wish to venture into such places after dark.⁹² These areas were not only considered lawless, but people suspected and feared, that witchcraft (*uchawi*) was at work in such places.

⁹¹ It was difficult to understand what exactly people were referring to when they mentioned drugs; often times they could not be specific. Marijuana is grown locally and this is what I believe most people mean when they talk of illicit drugs. However, it was also said that young men from wealthier families of Indian and Arabic descent were using cocaine.

⁹² One recent case, which was recounted to me, was the rape and murder of a teenage girl who was found hanging from a tree.

Most Chamwino inhabitants were engaged in subsistence agriculture, growing maize, cassava and a variety of vegetables. However, most people had to travel long distances to their farms outside the town. These were usually plots of approximately one acre in size. Commonly, they were obtained for farming (not ownership), through lineage and clan ties, or were privately rented, although, these two methods of obtaining land were not necessarily exclusive. A parcel of lineage land might be farmed and the person in control of the plot, paid in cash, as well as receiving a portion of the crops. Most people complained they were unable to spend as long as they would like on their farms as they had to return to their households in the town. Furthermore, many were frustrated by the cost of travel to and from the farms and said they did not go as frequently as they should and that this had a detrimental impact on crop yield. Finding money to pay for seeds, insecticides and travel expenses was a continual source of anxiety. As the comments made by these mothers living in Chamwino illustrate:

I am looking for some small amount [of money] in order to get to my farm (*shamba*)... ...The maize will be spoiling, but what can I do? There is no money.

(Mother, Chamwino)

I have a small farm and can only grow one crop. When this fails we will have no food...and the seed will be of poor quality. (Mother, Chamwino)

The prices are too high [to travel]... I do not know how I will visit my farm now. We will not have any vegetables to sell if I cannot bring them back [to town]... (Grandmother, Chamwino)

Most people living in Chamwino do not have a source of regular waged employment and are extremely cash poor. Wherever possible - when they have the money - people supplement their agricultural work with 'petty trade'. This usually involves selling anything that can be bought and sold on for a small profit, for example, second hand clothes, surplus vegetables, charcoal or other goods, such as single cigarettes or cooking oil. However, there are frequently periods when people are unable to engage in trade as they do not have the money available to do so. Some households receive funds from husbands who are working away from home. Indeed, many of the households I encountered

were headed by females, as husbands were either deceased, working away or had abandoned their wives and children.

Daily life in Chamwino revolves around obtaining enough food to eat and fuel on which to cook it. As a mother of three told me, “I can't think. No! Not about tomorrow or the day after. I need to find money for today, we need to buy food and we have very little money... Each day I worry for them [the children]: What will they eat? How can I make them *ugali*?” Most households generally ate one meal a day, of *ugali* (a thick porridge made from maize meal), usually eaten in the afternoon. This may be supplemented by vegetables, usually tomatoes, onions and spinach. However, meat and fish were not generally part of the diet as they were too expensive.

There are five primary schools in Chamwino area. Teachers reported poor attendance and complained that parents kept their children out of school as they did not appreciate the value of education. Indeed, I commonly found school-aged children at home when I visited during school hours. However, this was frequently so children could assist in household chores and trade in the town on behalf of their households. Domestic chores included: sweeping areas around the house; washing clothes and cooking utensils; food preparation, collecting water from the water taps and looking after younger siblings. I suspect girls took the lion's share of these chores as whenever I visited during school hours, girls were present more often than boys. However, it could also be that boys were absent because they were engaged in petty trade around the town. Both girls and boys frequently accompanied their parents to the farms to assist in agricultural work.

Since primary school fees were abolished in 2001 the number of children attending school has increased and Tanzania is expected to meet two of the Millennium Development Goals (MDG), universal primary education and gender equality within primary school attendance, by 2015 (DIFD 2008). The majority of parents (and guardians) I spoke to said they would like their children to go to primary school more often, but frequently needed their help at home. In addition, although primary school is free, they frequently struggled to pay for exercise books, pencils and uniforms. Some parents said they hoped their children might be able to attend secondary school, but thought, realistically,

that this would be impossible, as they would never be in a position to afford the fees, let alone the additional costs of uniforms and other materials. Furthermore, many parents in Chamwino questioned the benefits of secondary school, saying there appeared to be many people in the town who had completed secondary school but were still unable to find employment. Very few of the parents I spoke to had completed primary school education.

Doma village

Like the main bus station, the *daladala* stand in Morogoro town is a hive of activity and trade. Passengers sit waiting until the buses are full in order to depart. Porters place heavy bags of maize, rice or some other foodstuff, including live chickens, onto the tops and into the vans. Space is always a premium both inside and out, and only when the driver and conductor are satisfied that no space is left available for human, animal, or vegetable will the minibus depart. It was from here that I would take the two to three hour journey to Doma village.

Doma village is comprised of six sub-villages, known as streets (*mitaa*); these are Doma Stand, Doma Kilosa, Doma Stoo, Mtakinini, Songa and Ngwambe. Doma Stand, which is the nearest to the highway, is the administrative and trading centre of the village. Kiosks selling household items, a couple of 'restaurants' and a small lodge with an outside pool table line the road. This is where villagers would sit, selling buckets of tomatoes to passing trade on the road. Lorry drivers taking a rest stop rather than locals tend to frequent the restaurants and lodge. Local boys congregate around the pool table, not having the money to play a game they wait hoping to see one. The village government office, police station, secondary school and newly built mosque are all located here and this is where village meetings take place. Doma Stand is home to those occupying a higher socio-economic status including most of the village government, The CCM village party chairman and secondary school teachers.

Houses in Doma village are made of either fired bricks or mud, with grass or tin roofs. Exceptions include a large brick built and rendered house with a tin roof near the dispensary in Doma Stoo, which is used to house dispensary staff, a

row of terraced houses, one with a generator, for primary school teachers in Songa and the house of the CCM party chairman. His house is the grandest, and a visible sign of wealth and status. It has a generator, solar panels, glass windows and a satellite dish. Generators were rare, the only other ones being at a small local shop and the lodge. At night his extremely comfortable living room, which had several large sofas and chairs, was full of neighbours and their children, seated on the floor watching a popular Tanzanian soap opera or, of course, football.

There is a large primary school located in Songa sub-village. Between five hundred and seventy and six hundred children are registered, and the headmaster reported good attendance. While the majority of adult informants had not completed primary school they were keen that their own children should do so. Many parents also hoped their children would be able to attend secondary school but worried they would be unable to pay the school fees and all the additional costs this would ensue, such as materials and uniforms.

The newly built secondary school in Doma Stand, with only two classrooms and sixty-five pupils, was only able to provide the first year of secondary school. Although it is government policy to teach in English at secondary school this was not the case here. Teachers said that while they encouraged their students to learn English, they were unable to teach lessons in English as the students would simply not understand, and it would not therefore be in the children's best interests. If students were to complete secondary schooling they would have to attend a school in another area of the district. Parents struggled with meeting the cost of school fees and it was common for children to be absent for long periods while their parents attempted to locate the necessary resources. Parents were often unable to do so and their children could not finish school. As the number of secondary school children above illustrates, the majority of children from Doma village do not receive any formal education past primary school.

The village government was comprised of locally elected members as well as government appointed positions. The village elects community leaders such as the street and village chairmen for a period of five years. Government

appointed positions include the Ward Executive Officer (WEO), who holds the most senior post, and the ward officers for agriculture, development and education. Usually people from outside Doma hold government positions, although in this instance the WEO was a Doma native and appeared to be well known and liked. While having no official voice in the village government, the CCM party chairman, who is also from Doma, held an influential position in village life.

CCM appeared to be widely supported in Doma village and many villagers could be seen sporting the yellow and green CCM t-shirts. However, when explicitly discussing political affiliations, many people expressed an attitude of resignation; it seemed their needs were never a priority by those in government, whichever one it was, although they have only ever known one. Many informants expressed an idea that it was preferable to lead a quiet life without causing any conflict by opposing the political status quo.

However, while there was certainly no explicit opposition to local or national government in the village, illegal covert operations were occurring (of which the police were aware), including poaching, marijuana cultivation and possibly unregulated artisanal mining. Perhaps a 'quiet life' is desired to prevent any outside scrutiny of these illegal undertakings. Moreover, during my stay in the village, in which I asked lots of questions and attended meetings with the village government, it is understandable that I may have been perceived as having government affiliations. It would not therefore be surprising if villagers felt nervous to voice dissent, and indeed many interviewees did not consent to having conversations tape recorded. While it was rare to hear explicit criticisms of 'The Government', *per se*, rumours of covert government operations to sterilize the rural poor certainly reveal local mistrust and ambiguities.

Subsistence farming forms the basis of economic livelihood in Doma village and daily life revolves around manual agricultural work in the fields (*shamba*). Tomatoes are the principle cash crop and are harvested between May and September, sunflowers, a lesser cash crop are also harvested at this time. Due to persistent decline in rainfall since the early 1990s, rice cultivation, which had previously been a source of income, was now rare. Additionally, cotton,

which had previously also been a cash crop, was no longer grown since its market price has fallen. Maize and cassava were grown for local sustenance and to a lesser extent, pumpkins and sweet potatoes; any surplus vegetables could also be sold to neighbours for a small sum of money. Other sources of income included shop keeping, tailoring, basket weaving, carpentry and renting bicycles.

Informants readily reported that the principal threat to their economic livelihoods was the destruction of crops by elephants from the neighbouring game park. There was even talk that Mtakinini sub-village or hamlet (*vitongoji*) would have to relocate as it was no longer worth planting crops in this area because of the frequency with which they were destroyed. Farmers slept in their fields at night and sounded an alarm, by banging on pots, when elephants entered the village. However, this has not proved to be an effective deterrent and farmers could do little but watch their crops being trampled and eaten. Some farmers had been injured in the process of trying to remove the elephants and were angered by what they regarded as a lack of assistance from either the local leadership or the game park. The ward game officer, who is the only person licensed to shoot animals, had not been provided with money for bullets from the regional government for two years. During an interview with him late one afternoon an extremely distressed farmer came running for assistance as three elephants had entered his field. He was told to go away as nothing could be done.

Local animosity was directed toward the game park as many informants felt the animals were afforded more rights than they were. Some villagers thought the government was protecting the animals because they draw the *wazungu* (white people) tourists, who are seen as huge source of revenue for the government in Dar es Salaam. They complained that this situation was at the expense of those living in the village, who, as a result, were now facing further economic uncertainty. Poaching in the game park, or at least on its periphery, was therefore seen as a fair exchange by villagers. One man recounted how several people had assisted in killing a giraffe in the village some months previously. When I inquired whether this was legal he replied that while most villagers did not engage in poaching in the park, although there are certainly those that do, if an animal entered the village it was literally fair game.

Conversely however, the Ward Executive Officer (WEO) reported that a mutually beneficial relationship existed between the game park and village and said that 10% of the game park's profits were divided annually between the surrounding villages. The police station, which he said had been necessary to discourage local poachers, and the dispensary, had all been built from these funds. Local leaders did concede that elephants were a huge problem for farmers but stated that with no allocated budget from regional or central government they were unable to offer any assistance.

Farmers also reported failing crops due to the reduction in rainfall and crop fungi, and said they could not afford to pay for the necessary fungicides and insecticides to ensure their crops remained healthy. The Ward Agricultural Officer (WAO) agreed that this was currently of great concern as some farmers had lost the majority of their tomato crop. Farmers often sell their tomatoes to middle men in advance, but when they subsequently lose all or some of their crop they then have to pay the money back; if it has already been spent this places the farmer in an ever-increasing cycle of debt. Additionally, as well as elephants destroying crops, vermin and baboons were also a menace. The WAO reported that elephants accounted for approximately 50% of lost crops, while baboons and rats destroyed a further 25%; the remaining 25% were ruined by disease and insufficient rain.

People in Doma village have very little access to money. While informants said they felt they had the most money during the tomato harvest, December and January were considered the harshest months financially, when they could not afford to pay for medicines, seeds or school fees. With little access to money and fears over crop failure, life in Doma village can be characterized as one of economic hardship and uncertainty.

Although the environments of Doma and Chamwino are obviously quite different, one being a rural village and one an urban 'slum', the people who live in these places share similar anxieties: How will they feed their children? How can they buy seeds? What will they do if their crops fail? How can they afford to buy medicine if they get sick? Leading such precarious lives,

informants always appeared acutely alert for anything, or indeed, anyone, who might tip the fragile balance and cause them further hardship.

Daladala sentiments

In Morogoro town and throughout the region hundreds of over-crowded *daladala* (minibuses) transport passengers and goods to and fro each and every day. The destination of the *daladala* is usually written on the front window or on a sign placed in front of the driver. On the back windows it is common to see brightly coloured hand written signs and pictures. Approximately one third of these display the names of favoured international football teams which are painted in the appropriate team colours; Manchester United, and Arsenal seemingly the most popular. Others have pictures painted on them such as palm trees or mountains. In 2008, several pictures appeared of Barak Obama and revealed an optimistic mood among many townsfolk that the United States of America might be about to elect a President of East African (Kenyan) descent. About half of the *daladala(s)* display religious sentiments, both Christian and Islamic, such as “*I Love Jesus*”, “*Jesus Loves You*” and “*Inshallah*” (God willing). One read (in English and Kiswahili), “*Trust in God*” (*kumwamini Mungu*). Over the course of several hazardous journeys in these vehicles, driven by distracted, reckless young men, I came to the conclusion that it probably helps to have a religious faith when riding in one.⁹³ Another slogan I frequently noticed on some of the *daadala* around Morogoro town read (in English) “*Trust No One*”. These decorative signs reveal pervasive sentiments, including: a love of football, certainly by young men; hopes for increased assistance and respect for Africans; faith in God; and a wariness of others. It is to these last two sentiments that this chapter now turns and concludes with.

“Trust no one”

Living in poverty with inadequate access to resources such as food, shelter, healthcare and education is obviously in and of itself a threat to survival. For

⁹³ Or indeed any other form of public transport in Tanzania. It was said that many drivers chewed khat to stay awake.

the inhabitants of Doma and Chamwino these extremes of hardship can be further exacerbated - or are seen to be - by the intentions and actions of others. For example when a government official is suspected of the misappropriation of funds intended for projects which might benefit the poor, people often regard this as a personal affront which may indeed jeopardise their own endeavours to survive. Or, if a local businessman puts up his prices for goods or services, this is seen as an additional hurdle to survival. There was public outrage in Morogoro town during my visit in 2009 when *daladala* owners increased the fares. Even the drivers and conductors rebelled; fearing a drop in revenues once the fares were increased, they went on strike for one day, but with little effect. The hike in fares was a popular talking point for several weeks.

People are also vigilant of others around them who they believe may wish them harm, for example a jealous (*uwivu*) neighbour or relative. Emotions such as envy (*wivu*) and hate (*chuki*) are understood to be responsible for bringing about misfortune (*bahati mbaya*, literally, bad luck), through witchcraft (*uchawi*). Such misfortune can include a loss of revenue, crop failure, adultery (*kuzini*), infertility (*ugumba*) illness (*ugonjwa*) and suffering (*kuugua*) or anything which harms a person or those in their household.

In both Doma and Chamwino there was a pervasive mood of scepticism, even mistrust, of just about everything. Nothing, it seemed, was ever taken at face value. For example, I heard the following questions: Why did the bus *really* crash? What *really* happened to the funds? Why do they let the animals destroy *our* crops? Why is there no water tap *here*? How did *he* afford a motorbike? What was that medicine *really* for? Such questions were a rhetorical device, and generally preceded conversations in which the actions of others were discussed. Sometimes, I was told, such conversations were not appropriate for public consumption, and would be reserved for trusted household members. At other times however, conversations, such as those which discuss the latest 'hot topics' of conjecture in the town would be discussed quite openly around the newspaper stands, taxi ranks, in the market, or, indeed when riding the *daladala*.

Being so alert to anything or anyone that might further impede their access to resources or add to their already considerable hardships it seems likely that any biomedical intervention would be questioned and treated with a degree of scepticism. One of my initial research questions had been, why would people refuse free drugs to treat endemic diseases that reduce morbidity and suffering? However, I re-framed this to, why would people trust a biomedical programme handing out free drugs?

"In God we trust"

For people living in Doma and Chamwino, being able to survive in such difficult conditions was widely believed to be possible due to the good fortune (*bahati nzuri*) bestowed upon people by God (*Mungu*), for both Muslims (*Wawislamu*) and Christians (*Wakristo*) alike:

We have nothing; no money and very little food. The work in the fields is very difficult, and often I cannot feed my children... They [the children] suffer with malaria and other complaints but I cannot afford medicines. It is in God's hands. (Muslim mother, Doma village)

We struggle every day to feed ourselves... When we are sick we cannot afford medicines, but, somehow, with God's help, we survive. (Catholic mother, Chamwino)

Our family is very poor. If we are sick it is God who decides if we live or die. (Muslim grandfather, Chamwino)

God was most frequently spoken of in terms of the good fortune he⁹⁴ bestows on people, however, God could also be responsible for suffering. For example, when a young child died in Doma, the parents told me somewhat resignedly that it had been "God's will" (*mapenzi ya Mungu*). This was a common refrain I heard from informants experiencing economic hardship, suffering, illness and

⁹⁴ When speaking in English, informants always used the male pronoun when discussing God. Although there is no male pronoun in Kiswahili, informants, when asked, always said that God was male. Indeed, they found it a very strange question.

bereavement. However, when bad things, such as these happened, it was, it seemed, a lack of intervention by God rather than as a direct action from God. Although, it could be ambiguous: while God is responsible for benevolence and good fortune, one must be continually alert to possible threats from the actions of others.

In conclusion, people living in Doma village and Chamwino area live precarious lives, which they frequently feel powerless to change. Whether a person has good or bad luck is deemed to be largely out of their control. However, it is important to avoid stereotypes of fatalistic, passive Africans, and although people may feel powerlessness I do not mean to suggest that they do not do everything in their power to ensure their own survival. In addition, by adhering to one's religious teachings and practices, one can hope to receive God's help (*Mungu anatusaidia*, literally, God is helping us) and protection from further hardship and misfortune. Even so, it is necessary to be alert to external influences which may harm a person or members of their household.

Misfortune, illness, healing and protection

This chapter demonstrates the dynamic and multiple ways that illness is interpreted and treated in Doma village and Chamwino. It also examines some of the ways people protect their children from illness including those inflicted by malevolent forces. In so doing, it reveals the bricolage of resources people access for understanding and managing their (and their children's) illnesses. This involves seeking treatment and protection from various health care sectors, such as biomedical health-care facilities, herbalists, and drug shops, as well as from local indigenous healers, either sequentially or simultaneously. This illustrates the complexity and interrelatedness of these various sectors, a process known as medical syncretism (Hausmann Muela *et al.*, 2002).

While these processes may be similar to other parts of Tanzania (Green, 1996; Hausmann Muela *et al.*, 1997, 2003; Langwick, 2008, 2011; Marsland, 2006, 2007; Swantz, 1990), the Democratic Republic of Congo⁹⁵ (Janzen, 1978); northern Nigeria (Last, 1986); Uganda (Reynolds Whyte, 2004), not to mention parts of India (Leslie, 1976) and China (Kleinman, 1980); it nevertheless illustrates how the biomedical approach is just one of the many ways in which illness is understood and acted upon in Doma and Chamwino. It also contextualizes the environment into which the National Schistosomiasis and Soil-Transmitted Helminth Programme (NSSTHCP) arrived and attempted to operate. This biomedical programme could therefore be viewed as an additional, and perhaps advantageous, treatment option. However, the emphasis placed on mass treatment by the NSSTHCP and the apparent urgency with which it was delivered aroused suspicion.

⁹⁵ What was lower Zaire at the time of Janzen's research (1978)

By examining the everyday lived experiences of illness, therapeutic pathways and the methods of preventing ill-health that people employ in Doma and Chamwino, it is also possible to address a variety of issues that are important to any public health campaign. For example, when is it appropriate to take allopathic medicines? Or, perhaps more pertinently, when is it not? Why do people seemingly trust one type of biomedicine such as vaccinations, provided in the Maternal and Child Health (MCH) clinics, but mistrust and resist another - the anti-helminthic drugs provided to school-aged children during the mass treatment campaign?

The chapter is divided into two sections to address these questions. Part one concerns understandings of misfortune, illness and the quest for healing, and part two deals with the way people protect themselves and their children from illness.

Part I: Misfortune, Illness and Healing

Misfortune & Illness

Misfortune (*bahati mbaya*, literally, 'bad luck') is part of the fabric of everyday life for people living in Doma and Chamwino. Misfortune can be described as any occurrence which has a detrimental impact on the well being of an individual or household. As Susan Reynolds Whyte (1997) has noted, understandings of misfortune can include illness episodes, the loss of crops, marital difficulties (including infidelity), impotence and infertility as well as accidents and conflicts: termed respectively "failure of health', 'failure of prosperity', 'failures of gender' and 'failures of personal safety'" (1997: 16-18).

As discussed in chapter three, for most people in Doma and Chamwino life can be characterized as one of extreme hardship and uncertainty: indeed, I never encountered a household that did not seem to be in unfortunate circumstances. However, bad luck is relative. It is dependent upon the circumstances of those around you. This leads people to ask, why is *my* child sick and not my

neighbours? Or, why did *our* crops fail while others are harvesting theirs? Commonly, it is the single household and the individuals who comprise it, that are the target of misfortune. However, sometimes misfortunes can extend to a wider area or kin group. For example, one informant recounted the cause of local hardships in an area of Chamwino:

We are not happy here... This is a very bad place as previously some bad things happened here. There was some violence. Now people living here have bad health and are troubled by spirits and demons... This is because a long time ago there were some problems here.⁹⁶

Whether one experiences good luck (*bahati nzuri*) or bad luck (*bahati mbaya*) is dependent upon several factors including: one's God (for both Muslims and Christians), ancestral ghosts, spirits (*roho/majini*) and witchcraft (*uchawi*). Misfortune can strike anyone at any time. Affliction may appear completely random; seemingly without cause or meaning, but there are always reasons why a particular individual or household may be so adversely affected.

Invisible spirits were said to be everywhere and capable of possessing a person at any time. Several informants in Doma said that on windy days one should be especially alert, as spirits may inadvertently be blown 'into' a person. Spirits are particularly attracted to children: the children's high energy and frolics attracting the more mischievous spirits. It was also said that spirits sometimes "love children too much and just want to play with them". In these cases the spirits do not necessarily intend to cause the children any harm - although they do just that.

Ancestral spirits usually afflict a person in order to alter a person's behaviour; perhaps the sufferer or close kin has committed an indiscretion or taboo. For example, they may be considered promiscuous, engaged in adultery, or failing to respect their ancestors by maintaining shrines. Divination ceremonies are

⁹⁶ Some years previously a young woman was raped and killed. Her body was found in the morning hanging from a tree with a rope around her neck.

usually necessary for the healer (*mganga*) to determine which spirit is causing the illness and how it might be placated. Sometimes the afflicted person, as well as other members of their household, might be instructed to make amends for the wrong doings of their ancestors. This often involves an animal sacrifice.

Everyone is vulnerable to witchcraft (*uchawi*). Even talking about witchcraft is deemed inauspicious and is avoided. But what is witchcraft? The term is wide-reaching and implies a homogeneity of practices and understandings. However, the way in which witchcraft is understood depends on the particular local, social and historical context. Contemporary anthropologists therefore suggest that rather than attempting to provide definitions which “assume monolithic meanings” (Moore & Sanders, 2001: 13), it is necessary to contextualize such understandings (Stewart & Strathern, 2004; Moore & Sanders, 2001).

Anthropological studies of African witchcraft have historically differentiated between sorcery and witchcraft (Evans Pritchard, 1937; Middleton & Winter, 1963; Harwood, 1970). However, when the word *wachawi* was used in Doma and Chamwino, there was no apparent distinction made between witches, sorcerers and ‘witchdoctors’. Moreover, in common with Susanna Hausmann Muela and her colleagues’ findings in south-eastern Tanzania (1998), the majority of informants avoided the use of the words witchcraft (*uchawi*) and witches (*wachawi*). Instead, they referred to them implicitly, for example, with terms such as “bad people” (*watu wabaya*), “a jealous person over there” (*mtu mwenye wivu anayekaa huko*), “someone who wants to harm me” (*mtu ambaye hafahamiki anataka kunifanyia mabaya*) and “some person who wishes me harm” (*mtu fulani anataka kunifaniya mabaya*).

Wachawi were understood to be capable of all sorts of nefarious practices. These included moving around at night when invisible and entering people’s homes without detection; robbing graves and turning the recently buried into night-walking zombies; eating the deceased; causing a person harm by psychic acts and the use of bad medicine (*dawa mbaya*). Most commonly, people in Doma and Chamwino feared *uchawi* due to the psychic powers of witches and

the use of medicine against them. *Uchawi* is widely understood to be borne out of jealousy and hatred, as the following quotes illustrate:

When people have bad feelings inside... this is a problem for us. We have some small trade at our shop and my son is a successful businessman [carpenter] here. People may wish us harm so we are always vigilant against bad people (*watu wabaya*); it [witchcraft] is rampant, especially for our grandchildren. (Farmer, Doma 2007)

Illness from witchcraft (*uchawi*) is caused from hatred (*chuki*) and jealousies (*wivu*). A woman over there (points to surrounding households) may feel jealous because my husband is good; he has employment and all my children go to the school. Perhaps her husband is bad... maybe he beats her or she is unable to have children. Such things cause bad feelings. (Mother, Chamwino 2009)

Whenever a woman has difficulty starting a family we are certain it is because some person around is jealous and they have bad feelings towards the woman... to stop her reproducing. (Mother, Chamwino 2010)

People may be jealous of me as my children take good care of me, but others are not, they may try to cause me illness. (Elderly man, Doma, 2007)⁹⁷

Children are considered to be the prime targets of witchcraft. This is because, as I was often told, by harming a child the whole household suffers. From a biomedical perspective children are particularly vulnerable to diseases such as malaria and diarrhoeal disease. Malaria in particular can result in high fevers causing febrile convulsions. Furthermore, children's health can decline rapidly. Perhaps as a response to this, local understandings of the high incidence of childhood morbidity and mortality are placed into the realm of witchcraft (*uchawi*). Convulsions in children are particularly feared, not only are they

⁹⁷ Due to his fear of being bewitched this man had visited a local healer (*mganga*) some years previously seeking protection (*kujikinga*). His chest had two large horizontal scars where the *mganga* had cut his skin (*kuchanjia*), to protect him.

considered a definite indication of the child having been bewitched (*kulogwa*) but they may also result in the child experiencing irreversible loss of cognitive function, which is often understood as the intended outcome of such malevolence.

People who appear to have exceptional 'good luck' may also find themselves under scrutiny and vulnerable to accusations of involvement with witchcraft (*uchawi*). Those regarded as being highly successful in either business or politics - or both - especially when it seems unexpected, are often thought to have made such advantageous positions by employing the powers of the occult. As Peter Geschiere has noted in his research on witchcraft in Cameroon, witchcraft is dynamic and, as well as being a levelling force, it can also bring about the accumulation of wealth and power (Geschiere, 1970). Even at a village level, people appeared keen to downplay any successes they might have, however minor: a fruitful crop; a large or healthy family, relative wealth. I heard the story of a man and his son who lived in Morogoro town who managed to buy a car only to have jealous neighbours fill the petrol tank with sugar (also a fairly expensive commodity). Apparently, as the neighbours later explained to a friend of mine, they felt that in owning the car the man and his son had taken good luck away from everyone else; by ruining the car they had re-set the balance.

While understandings of *uchawi* are by no means homogeneous they are pervasive and when misfortune befalls an individual or family, they, as well as those around them, will look for reasons for such events. Explanations for misfortune are various and are necessarily dependent upon an individual's cosmology. Indeed, a few informants in Chamwino were eager to point out that believing in *uchawi* was not compatible with their Christian faith. Such declarations involved statements such as:

We do not believe in old traditional (*ya zamani*) ways, such things... These are only believed by people with superstition (*watu wenye ushirikina*)... but they are ignorant. We know it is only God who holds such power.

(Middle-aged Catholic father, Chamwino)

Only God can cure, but still people go to ‘witchdoctors’ (*wachawi*). But he is only taking their money and doing nothing. (Young Catholic mother, Chamwino)

Ah! Ignorant people still think there are witches (*wachawi*)... when they are ill or bad things happen to them they think this is the reason. But no, this is not the reason. They are foolish and remain superstitious (*ushirikina*) - they do not see that these are just stories, that there is no truth to them. (Elderly woman who attends Morogoro Assemblies of God Church, Chamwino)

*Waganga ya kienyeji*⁹⁸ are only interested in taking money and they have no means to stop people from suffering. I used to go... Yes! But do not go for many years, from when I was young. Now I know that everything is God's plan and only he can save us. (Young woman who attends Morogoro Pentecostal Church, Chamwino)

I encountered relatively few Christians (*Wakristo*) in Chamwino and almost none in Doma, but when discussing *uchawi* with people who identified as *Mkristo*, I would frequently be met with such protestations. Although I never attended any Christian services, I gathered from some of the European members of the various congregations that a common theme preached from the various pulpits in Morogoro town involved lessons on what it took to be a 'Good Christian'. This included permanently shunning what the various clergy referred to as “traditional superstitions”. However, I suspect that notions of witchcraft were not suddenly disbelieved but ‘merely’ publicly denounced. This seems likely for a number of reasons, including the various accounts I heard about people being asked to leave churches (Catholic, Lutheran and Methodist) due to apparent transgressions. For example, one story told of a local lay minister who took his acutely sick child to a *mganga* rather than the hospital, believing the illness was caused by *mchawi*. Sadly the child died and those in the upper echelons of his church ordered him to leave the congregation. Additionally,

⁹⁸ The term used here, *waganga wa kienyeji*, refers to healers who work in the spiritual realm, deal with illnesses caused by witchcraft and perform divination.

when I was talking to informants who were keen to tell me they were not “superstitious” (*ushirikina*), by which they were implicitly referring to *uchawi*, I would observe that the younger children in the household were wearing amulets to guard against illnesses caused by spirit possession and witchcraft, which I will discuss in more detail below.

There did not appear to be such incompatibility between a belief in *uchawi* and Islam for those who identified as Muslim (*Mwislam*). Adherence to Islam did not exclude a belief in malevolent forces from an invisible world inhabited by spirits (*majini*); indeed, these are mentioned in the *Qua’ran*. Although Islam, like Christianity, is a monotheistic religion, beliefs in *uchawi*, and particularly *majini* appeared to sit quite comfortably with people’s practices of Islam and their identification as Muslim. There did not appear to be any local Islamic teaching which forbade or discouraged such beliefs. Of the numerous *waganga* I encountered, all identified as Muslim.

Explaining Illness

When an illness (*ugonjwa*) occurs it may be explained in a number of ways. How the illness is attributed depends on several factors, including the severity of symptoms; the length of the illness; the perceived seriousness of the illness; and whether or not it is a recurring affliction. Any illness may be attributable to *uchawi*, spirits (*mashetani/majini*) and ancestral ghosts. However, if an illness is protracted or recurring this is often regarded as a definitive sign that the illness is due to unseen, malevolent forces, such as witchcraft (*uchawi*) and spirits, (*majini*), or, less often, ancestral ghosts.

Certain types of illness are more readily attributable to witchcraft than others; for example, convulsions in children (*degedege*) are a clear indication that the

sufferer has been bewitched or possessed.⁹⁹

When a person, or their child, becomes sick they will look for the cause of the illness and fear that they may have been bewitched. This will be heightened if they suspect that there are those around who harbour jealousies or other malicious thoughts towards them. With this in mind, one must be vigilant as anyone could be *mchawi*: capable of psychic powers, invisibility and nocturnal visits to bring about illness or other misfortunes and mischief.

Illness and disease were both commonly known as *ugonjwa*, and were not differentiated. All illness is said to be caused by disease being present in the body. Most informants stated that illness and disease were really the same as it was impossible to suffer an illness without a disease first being present. But how the concept of disease is understood locally diverges significantly from biomedical notions. For example, while informants frequently understood that infected mosquitoes are the vectors for malaria, they, like many people elsewhere in sub-Saharan Africa (Evans Pritchard 1937: Reynolds Whyte 1997) required further explanations: Why did the mosquito bite and infect *my* child and not someone else? Reynolds Whyte (1997) has termed this the “explanatory idiom”, which are sought within “personalistic agents” including “human cursers, sorcerers, shades of death and spirits” (Reynolds Whyte 1997: 23).

Even when an illness episode is attributed fully to *uchawi*, it was said to be impossible to have the illness without the disease first being present. During a discussion with a *mganga* in Doma, he commented,

⁹⁹ Convulsions, also called seizures, often involve a loss of consciousness; involuntary movements; twitching of the facial muscles and limbs such as are seen in *petit* and *grand mal* seizures in epilepsy (*kifafa*). Infants with high temperatures, usually caused by infection, particularly from malaria, may experience what are known biomedically as febrile convulsions; limp or thrashing limbs and ‘rolling’ of the eyes. Such seizures can appear quite dramatic and can be disconcerting for the observer. There is a rich literature on the stigmatization of people suffering from epilepsy (Schneider & Conrad, 1983; Scambler, 1989), including how such afflictions have been associated with spirit possession and demons (Fadiman, 1998).

The spirit (*majini*) bring a disease into the body by another disease. So, someone will be shivering and they assume it is malaria. But if he goes to the hospital, malaria, it can't be found.

The *mganga* explained that no disease would be found using biomedical tools as, he maintained, witchcraft illnesses are invisible to all but those who can commune with spirits and identify witches. In many cases he said the witchcraft illness would simply mimic another (non witchcraft) disease - even to the point of death. He said that this illness was still caused by a disease but that it was a disease caused by witchcraft, without a specific name, it was just "a disease caused by witchcraft" (*ugonjwa umesababishwa na uchawi*).

Several other *waganga* explained that *uchawi* is also capable of bringing any 'real' disease (not mimicked) into the body of a victim. As one practitioner, Baraka, in Morogoro town stated:

It is possible to inflict *any* disease upon another person through this [*uchawi*]. The person may suffer from malaria or other bad diseases but it may just be constant headache and fatigue. Most often the victim is made barren; if it is a women she is made so she cannot reproduce and for men it is to make his private parts soft (impotence). This is what people fear most from *uchawi*. They will not be cured at the hospitals... No! They will need to go to *mganga* for this to be cured.

When I asked if malaria that is due to *uchawi* could be cured at the hospital, he replied:

Malaria? Yes! It is possible to cure somewhat at the hospital... The person will feel better but it [malaria] still remains inside the body; it can stay hidden for a long time. This can only be fully cured by an experienced *mganga*, like me, as we have the traditional knowledge (*ujuzi wa mapokeo*).

Initially, it may seem that disease is conceptualized in a similar way in both local and biomedical epistemologies - as a pathological change within the body. However, what constitutes disease varies enormously between local and

biomedical knowledge(s). For the people living in Doma and Chamwino, disease can be any affliction which causes ill health. This may be - as it is in biomedicine - physiological changes which are often visible upon biomedical investigation such as detecting the presence of cellular changes under a microscope or the presence of parasites by blood and stool examination. However, local understandings of disease also include an additional notion; an invisible presence - a witch illness - which cannot necessarily be made visible by biomedical technologies. Paradoxically perhaps, the disease may be identified in a biomedical facility but the underlying cause - the witch illness - will not be seen or treated successfully using biomedical means.

When an illness is due to *uchawi* it is as if there are two processes happening simultaneously; one is the visible, often biomedically recognizable disease, such as malaria or TB, while the other, which is hidden (except to *waganga*) is also afflicting the sick person. When a disease is present it is always understood to be symptomatic; people would often laugh if I asked whether it was possible to have a disease and not know it. This, as will be discussed in more detail in the following chapter, is significant because *kichocho* can be asymptomatic.

Healing

Choices in therapy are dependent upon a number of considerations including economic status; biomedical knowledge; prior experiences; and confidence in the efficacy of a particular therapy or therapists. Treatment pathways often include several different therapies and are used simultaneously or sequentially until a cure, or relief from symptoms has been established, as the following conversation with Abdullahi, a Doma farmer in his late fifties who had been suffering from intermittent chest pain for several months, illustrates:

JH: Where have you been for treatment?

A: I get the treatment from the dispensary in Doma, but the problem was not solved. After that I go to Mikumi¹⁰⁰ hospital and I take the X-ray picture for more treatment but I was not cured at all.

JH: What treatment did they give you at the hospitals?

¹⁰⁰ A nearby town

A: Just medicine
 JH: What did they say was the cause of your chest pain at the hospital?
 A: I do not know... They gave me some medicine that is all
 JH: What medicines are you taking now?
 A: I stopped taking now for some time...
 JH: Why?
 A: They only gave me some small [amount of] medicine.¹⁰¹
 JH: Where else have you been to find a cure?
 A: I go there to Ifakara [town]¹⁰² to see *mganga* and I get medicine and my condition was somehow good.
 JH: What treatment did the *mganga* give you?
 A: He gave me 'traditional' herbs (*miti shamba*) and some hospital medicine (*dawa ya hospitalini*) but even now I am not exactly cured.
 JH: What did he say was wrong with you?
 A: I am disturbed by bad spirits, even now. There was some wrongdoing in my family. Even up to now I have been unable to solve this problem.
 JH: What will you do now?
 A: I should first make a sacrifice to god¹⁰³ and then after that I shall go to the hospital for more treatment.

Abdullahi's story is fairly typical of those I encountered and illustrates a number of issues surrounding treatment seeking practices in both Doma and Chamwino. Furthermore, his illness narrative demonstrates the concept of medical syncretism (Hausman Muela *et al.*, 1998, 2002), whereby different types of treatment can interact, blend and complement each other. Abdullahi visited a number of different places and practitioners in his "quest for therapy" (Janzen, 1978). Indeed, biomedicine alone was insufficient in curing his chest pain and he therefore also visited local indigenous healers (Langwick, 2008). Abdullahi did not necessarily differentiate between these different 'systems' (Kleinman, 1980; Last 1981), but rather, pragmatically, accessed whatever he could, when he could afford to do so, and in his case, visiting them sequentially; although people in Doma and Chamwino frequently used different therapies simultaneously.

The practitioners Abdullahi visited inhabit various sectors of health care: professional; popular and folk (Kleinman, 1980) However, as Kleinman notes, these do not form discrete sectors, but rather inhabit spaces with fluid boundaries that enable different sectors to merge into one another, for

¹⁰¹ Although later he showed me some pills he received from the hospital and had saved.

¹⁰² Ifakara town is located in southern Morogoro Region, approximately one hundred kilometers from Doma village.

¹⁰³ In this case a chicken which, at the time of fieldwork, cost between 3,000 to 5,000 Tanzanian shillings (approximately one pound to two pounds and fifty pence sterling).

example the professionalization of indigenous medicine (Last, 1986). When Abdullahi went to the *mganga*, he was given both herbs (*miti shamba*) and allopathic medicine (*dawa ya hospitalini*). The provision of allopathic medicine by the *mganga* illustrates the way in which one health care sector may be used by another, thereby expanding its categorization. The use of ‘hospital medicine’ by the *mganga*, places this medicine into the folk as well as professional sector (Whyte 1988).

Another feature of Abdullahi’s treatment pathway supports Susan Reynolds Whyte suggestion that the “explanatory idiom”, is usually provided by healers who deal with the invisible world of witchcraft and spirits (Reynolds Whyte 1997: 23). Indeed, the *mganga* was the only practitioner to provide Abdullahi with an explanation - at least one he could understand and remember - for his suffering. However, Abdullahi planned on visiting the hospital for treatment again, once he had carried out the instructions of the *mganga*. This, as he later explained to me, was because the medicine from the hospital would be more effective once he had carried out the sacrifice to placate his ancestors.

Treatment choices in Doma

There are a myriad of places to seek treatment in Doma village. However, how one makes such decisions is not only contingent on one’s understanding of illness but dependent on what is available and a household’s finances. Treatment choices include self-treatment with plant/herbal medicines as well as pharmaceutical (allopathic) drugs, biomedical treatment and drugs from health workers in the dispensary, as well as indigenous forms of healing from local *waganga*.¹⁰⁴

¹⁰⁴ In Kiswahili, *waganga* (singular, *mganga*) refers to any type of healer and it does not distinguish between biomedicine and indigenous healing. Indeed, *mganga* was written over the clinical officer’s door. However, when Hellen (the clinical officer) was greeted by villagers, they usually called her “doctor” (*docta*). This differentiated her role as a biomedical healer from local indigenous healers who were referred to as *waganga*. I therefore do likewise in this thesis. This is also a conventional way of differentiating between indigenous and biomedical healing in Tanzania by medical anthropologists (see Marsland, 2007 and Hausmann Muela *et al.*, 1998).

When illness strikes, self-treatment is often the first action taken. This is available in the form of local herbs, which are often provided by a neighbour or purchased from someone in the village with the appropriate knowledge. However, when discussing herbal remedies with people, it was common for them to remark on a specific flower, tree or root that they considered efficacious in treating a particular disease.¹⁰⁵ It seemed as though most people had at least some knowledge of common plant therapies.

Biomedical treatment is usually first obtained from Doma dispensary. This is a small health care facility staffed by a clinical officer, a nurse midwife and two nursing assistants.¹⁰⁶ A visiting public health nurse also came to the dispensary occasionally. The dispensary always appeared to be well attended, especially in the mornings when mothers would come with their babies for the Maternal Child health (MCH) services. These services included monitoring the infant's weight, providing vaccinations and discussing any of the mother's concerns. During the late morning and the afternoon the dispensary would be quieter. At these times people would come complaining of various complaints or injuries. The most frequent reason for people attending the dispensary was because they - or their children - were suffering from malaria (*homa ya malaria*, literally, malaria fever). Although the dispensary closed in the afternoon, Hellen, the clinical officer, could usually be called upon to attend to a sick person, injury or birth.

If the drugs were unavailable or deemed ineffective in the dispensary, then other biomedical facilities, such as the health centre at Mellela a few miles away or the regional hospital or private clinics in Morogoro or Mikumi town may be visited. However, most informants reported that they could not afford the 4,000 shillings necessary to pay for the round-trip bus fare to visit these facilities. Therefore when someone wishes to attend a hospital in one of the towns they will often delay treatment for several weeks or even months until they can afford to do so.

¹⁰⁵ The plant may not be named, but identified by its characteristics, such as the "small white flower" or some such thing.

¹⁰⁶ A clinical officer is an individual who has received two years training in medical care. They can if they wish, and are able (both intellectually and financially) to train as a medical doctor.

However, it may also be the case that the delay in treatment is a way of establishing how serious the illness is and whether the condition will improve by itself. As money is such a scarce resource it will only be paid out if death is a real possibility.



Figure 8 Doma village dispensary. The Sightsavers International sign in the foreground concerns the treatment of *usubi* (river blindness).

Some allopathic medicines could be purchased from the drug shop (*duka la dawa baridi*) in the village.¹⁰⁷ In Kiswahili, *baridi* means cold. Cold medicine (*dawa baridi*) refers to medicine that can be purchased without a ‘prescription’, such as panadol and aspirin.¹⁰⁸ Allopathic medicine is also shared between household members, friends, kin and neighbours. These drugs have usually been saved from previous treatments. On numerous occasions, informants would fetch medicine to show me when we were discussing previous illness episodes and treatment. Frequently, people stop taking medicine (both allopathic and ‘natural’)¹⁰⁹ when they start to feel better. There are a number of reasons for this: first, it was commonly understood that the medication was

¹⁰⁷ This shop (*duka*) sold other household items such as soap and candles as well as non-prescription medicine such as cough syrup, antacids and panadol. It was not a *duka la dawa baridi* in the true sense of the word.

¹⁰⁸ Officially, prescriptions are required for drugs such as antibiotics, anti-malarial medicine and even praziquantel. A prescription is simply a piece of paper that a biomedical health worker has written the name of the required drug on. However, it was common for people to be able to purchase drugs in the larger pharmacies in Morogoro town without a prescription.

¹⁰⁹ By ‘natural’ I am referring to plant/herbal medicine (*dawa ya miti shamba*) and ‘traditional’/original medicine (*dawa za asili*).

no longer necessary. Second, there was a widespread understanding that it was inappropriate to take medicine unless one is sick. When I asked one elderly farmer why he had stopped taking the medicine he had obtained from the dispensary he replied: “Why would I take medicine when I am no longer suffering? It is not good to take [medicine] unless you are sick...” One reason for this was the concern of using drugs over an extended period of time and what detrimental and, indeed, accumulative affect they might have. As the same informant went on to explain, “...the medicine from the hospital, it is strong and can give people bad side effects (*madhara*)”. Third, although medicine from the dispensary in Doma is free, people may have spent time travelling there and waiting to be seen. Obtaining drugs can therefore prevent a person from engaging in other, usually agricultural, duties. Furthermore, they may have travelled beyond the village to obtain the medicine, incurring more lost time and travelling expenses, as the following comments illustrate:

When we go to the hospital [Doma dispensary] they do not have the medicines and the nurse tells us we must buy them. I have to go over there, to the health centre [at Mellela]. This is very expensive... I ride the *daladala*. Sometimes the drugs are not available and I must return without any medicine (Father, Doma village, 2007).

The pills (*vidonge*) that are effective are not in the hospital here [Doma dispensary]. When I am sick I must to travel to the hospital in Morogoro town... I am suffering now but there is no money (Mother, Doma village, 2007).

Medicine which is considered effective is therefore frequently difficult to obtain. Doing so can take a great deal of time and money. Being hard to come by it is therefore a valuable resource and is frequently saved in anticipation of the next illness episode. This is especially true if the medicine has been paid for.

There are numerous *waganga* in Doma village and the surrounding villages. Indeed, there are far more *waganga* available than there are health workers or biomedical facilities. In a country with an estimated ratio of 1:400 *waganga* to the population and only 1: 20,000 biomedical doctors to the population, it is evident that treatment from *waganga* is far more accessible (Marsland, 2007: 756). In Doma, those who lived the furthest away from the dispensary had a

long walk, or, if they were able and could afford it, a long bicycle ride, in order to see a nurse or the clinical officer.

The local *waganga* I met in Doma village all identified as *waganga wa kienyeji*; offering healing for those afflicted with illness due to spirits and witches.¹¹⁰ However, they practised in different ways and frequently specialized in particular treatments. For example, Fatima rubbed ‘Arabian’ oils into the bodies of the afflicted. She also burnt incense and hung large swathes of fabric in various colours to attract particular spirits which would guide her healing.¹¹¹ Fatima specialized in the treatment of a local folk illness called ‘parallax’ which afflicted young children.¹¹² Other *waganga* I met provided herbs (*miti shamba*), and frequently allopathic medicines too. Inside *waganga* consulting rooms, it was common to see bottles of brightly coloured cough syrups and even bottles of panadol, alongside bark, herbs, animal skin, hair and bone. While all *waganga* I met in Doma said they were able to cure *any* affliction, there were certain ailments which were more likely to be treated by *waganga*. For example, several specialized in ‘fertility problems’ and one was said to be an expert in locating people who had gone missing from their families. With the exception of Fatima, all *waganga* I met in Doma provided protection (*kinga*) from illness (and other misfortune) as well as healing (*kugangiwa*). For protection in adults, *waganga* cut small incisions into the skin with a razor blade, (*kuchanjia*) into which they rubbed various medicines, herbs and pharmaceuticals.¹¹³

Medicine obtained from *waganga* is often seen to be effective if, after ingesting it, the individual experiences stomach-ache, vomiting or diarrhoea. The provision of medicine may be the only treatment provided, but if the sufferer wishes to know the reason for their illness, or that of their child, the *mganga* can perform a divination ceremony to identify the agents responsible. Once this has been established the *mganga* usually instructs the sufferer (or

¹¹⁰ Rebecca Marsland (2007) has noted that *mganga wa kienyeji* can be a pejorative term as it is associated with notions of ‘backwardness’ and superstition. Certainly, informants who were critical of these healers appeared to use the term in this way. However, this was not evident when *waganga* in Doma identified as such themselves.

¹¹¹ Particular smells and colours attracted particular spirits. Conversely some smells were used to dispel spirits.

¹¹² Parallax was an affliction caused by spirits in young children. Initially the child would suffer a convulsion, followed by paralysis of the limbs.

¹¹³ Several *waganga* also rubbed anti-malarial drugs into these incisions to treat malaria.

their family) to take certain actions. This may involve an animal sacrifice, especially when one needs to atone for past wrongdoings by family members or resolving inter-personal conflicts and disputes with kin or neighbours. It is unusual for an *mganga* to identify the particular witch (*mchawi*) responsible but he or she will provide clues for the sufferer often detailing recent conflicts or possible jealousies. For example, one woman stated, “the *mganga*, he told me I was sick as a woman near to me was jealous. My children are all in [secondary] school and my husband is good”. Similarly, an elderly man recounted how a neighbour had bewitched him because there had been a dispute over some missing bricks. In this instance as well as giving the sick man some herbs to boil and drink, the *mganga* instructed him to try and put aside the differences with his neighbour by helping the neighbour look for - or being seen to look for - the missing bricks.

Treatment choices in Chamwino

The facilities available in which to seek treatment, both biomedical and indigenous, are greater in both number and variety for the people living in Chamwino. While the dispensary in Chamwino was very much like the one in Doma, there were several other biomedical facilities in the town that people could reach quite easily. These included a private dispensary in Mazimbu ward, where Chamwino is located, numerous *duka la dawa baridi* and larger pharmacies in town, private clinics, mission hospitals and the government regional hospital. As well as professionalized herbalists there were several *duka la dawa za asili* where people can buy herbs and other ‘natural’ remedies, often on the advice of the shop staff (see figs. 9 to 18). However, many of these private clinics, pharmacies and laboratories (for blood and stool examination) would be too expensive for inhabitants of Chamwino; therefore biomedical treatment is usually confined to government services.

There are numerous *waganga* in Chamwino and Morogoro town. Like Doma, the way they heal people varies and many specialize in curing particular afflictions. Some are better known - and frequented - than others, as they have built reputations for being particular efficacious in curing certain illnesses. Conversely, a few *waganga* in town were widely viewed as charlatans.



Figure 9 A duka la dawa asili ya sanda, which sells 'natural' medicine, herbs and shrouds, in Morogoro town.



Figure 10 Interior of the above shop.



Figure 11 A *duka la dawa za asili* in the centre of Morogoro town.



Figure 12 Interior of above *duka la dawa za asili*. The shop worker offered potential customers advice on the various herbs and products for sale



Figure 13 A *duka la dawa baridi* in Chamwino area.



Figure 14 Interior of the above *duka la dawa baridi* showing multiple bottles of cough remedies and tubs of analgesics.



Figure 15 A Dental surgery and a *duka la dawa* in the centre of Morogoro town. This type of pharmacy provided 'prescription' medicine such as anti malarial treatment and antibiotics.



Figure 16 A private laboratory and dispensary in Morogoro town.



Figure 17 A woman enters the consulting rooms of a professional herbalist in Morogoro town. The writing on the wall advertises “genuine/authentic medical treatment, without superstitions”. The writing on the door is a list of treatable illnesses, including “chronic malaria, intestinal worms (*minyoo*) and traditional family planning.”



Figure 18 The interior of the above consulting room. The poster on the back wall is of the African Association of Traditional Medicine printed by the government.

Treatment decisions in Doma and Chamwino

When they - or their child - are sick, people do not appear to hesitate in going to the local dispensary for treatment. Seeking relief from symptoms, even when witchcraft is suspected, did not exclude biomedical treatment, as has been identified elsewhere (Hastings, 2005; Parker *et al.*, 2008; Pylpa, 2007). The biomedical treatments provided included anti-pyretic medication, antibiotics or anti-malarials, and even intravenous rehydration. Mothers who take their children to the dispensary (or other biomedical facilities) often regard the treatment of the *symptoms* as effective even though they suspect the cause of the illness is witchcraft. The perceived aetiology of an illness will influence the treatments sought, and also in what order. Thus, while a child may receive allopathic medicines from one of the biomedical facilities such as dispensary, pharmacy or hospital, he or she may also be taken to visit a *mganga*, so that the parents can determine who is bewitching the child, as well as identify the necessary actions they need to take for it to cease. For example, one young mother in Doma recounted how her child - who had not been sleeping under a mosquito net - had repeatedly been suffering from malaria. At the onset of fever (*homa*) the mother rushed her child to the dispensary, as, she said, "when we suspect malaria we run to the hospital". However, although the child improved initially, the fever returned and the child had a convulsion. Again the mother took her child to the dispensary for treatment and this time the infant improved. After a few days the child was without fever, feeding well and feeling better. However, around this time the mother began to suspect that her child had been bewitched. This was reinforced when, several days later, her ten-year old son also contracted malaria.

Although the mother had a reasonable biomedical understanding of malaria, in as much as it is caused by infected mosquitoes (*mbu*) and can be treated with drugs obtained from the dispensary, she did not have her child sleeping under a net. Malaria was considered a seasonal occurrence in Doma village. At the time of this period of fieldwork in 2007, the prevalence of mosquitoes was believed to be low due to the cold and windy conditions, and many people - including health care workers - did not use their mosquito nets. This gap in the

mother's biomedical knowledge, the perceived failure of initial biomedical treatment and the recurrence of her infant's illness therefore all contributed to her conclusion that the illness was caused by *uchawi*. This was, in the mother's view, confirmed when her older child also became sick.

An illness can be attributed to *uchawi*, even when biomedical treatment is deemed to be 'successful'; however, it was particularly common for people to suspect *uchawi* when allopathic medicines were seen to have failed. Indeed, the 'failure' of biomedical treatment in curing an illness episode was indicative that the illness was indeed caused by witchcraft. In this way, biomedical 'failures' can be viewed as a sort of diagnostic tool: if an illness does not respond to biomedical treatment it is because it is an illness caused by witchcraft. This supports research findings undertaken by Hausmann Muela *et al.*, (1998) in Ifakara, approximately one hundred kilometres south of Doma. In this study, which focuses on local knowledge and treatment-seeking behaviour for malaria, the authors conclude, that "... reinfections, relapses and recurrence of symptoms" after biomedical treatment are not perceived to be due to the "limitations and failures of medical practice" but rather the strength and influence of witchcraft (Hausmann Muela *et al.*, 1998: 58). Thus, biomedical 'failures' not only reinforce perceptions that the illness was due to witchcraft but also explain why biomedicine has not been successful.

While this was certainly how biomedical 'failures' were understood locally, it is also worth noting why such 'failures' occur from a biomedical perspective. This is due to structural barriers that inhabitants of Doma and Chamwino face in their attempts to obtain efficient and appropriate biomedical care. This often results in the use of inappropriate drugs, either because people are 'prescribed' the wrong drugs or because they cannot afford to buy the right ones. I frequently witnessed people being treated inappropriately by health care workers in the dispensaries and hospitals. Usually this was due to a lack of adequate medicine; for example, on several occasions in Doma I witnessed adults diagnosed with hypertension (elevated blood pressure) known locally as "*pressure*" being given diazepam, more commonly known by the brand name Valium- a strong sedative, and Panadol, an analgesic. In these cases there was

no anti-hypertensive medicine available, but neither was the patient advised to buy these from elsewhere. Many of the medical staff in the dispensary felt it would only cause the patient more suffering, as they could not afford to buy the drugs, and this would lead to further stress, and possibly an even higher blood pressure. Health workers therefore thought it was beneficial to just try and keep people with high blood pressure calm.

At other times, people took the correct drug but of insufficient quantity, either by dose or for the appropriate length of time. People frequently struggle to buy medicine, and, when they can, buy what they can afford rather than what is recommended. Moreover, they will buy cheaper - often inferior - drugs. As this petty trader from Chamwino complained:

When I have a serious sickness I first go to the hospital (local dispensary in Chamwino) but they never have the drugs I need. No! They are never there. If I go to the drug shop (*duka la dawa*) they will tell me which drug [to take]. First they show me a drug from Germany and they tell me 'this is the best' but it costs 15,000 shillings for the pills I need... This I cannot afford. Then they show me the same medicine but this one is made in India... this costs 5,000 shillings for the same amount of pills. They then show me the medicine made in Tanzania, this is 1,000 shillings. So I buy the cheapest medicine but it does not cure me as the pills are inferior or fake even but I cannot afford to buy the superior medicine that will cure me and still I have lost my money. It is because we are poor that we are sick. Yes! These drugs should be available for us in the hospital because we cannot afford to buy them (Petty trader living in Chamwino area).

However, local expectations of biomedical care may actually contribute to the use of inappropriate drugs. This is because most people expect to be given medicine when they attend a biomedical health care facility. Indeed, for many informants this was the only sort of biomedical treatment they ever received. As drugs are frequently unavailable, especially in the smaller facilities such as dispensaries, health care workers feel obliged to provide some sort of

medicine. One doctor working in a Catholic church- sponsored health centre discussed his frustrations with his patients' expectations:

When people come here to the hospital they expect to be given pills (*vidonge*). If the doctor does not provide them with medicine (*dawa*) then the patients, they say, 'this doctor, aye! He doesn't know what he is doing, he is a bad doctor'...So we give them some medicine even if it is just some panadol so they will know they have been treated well.

Thus, a person may end up taking medicine that has no therapeutic value, or simply treats symptoms rather than the illness. For example, panadol (a brand name product for paracetamol) or aspirin might reduce fever and pain, but will not cure the underlying cause. Paradoxically, medicine from biomedical facilities is frequently understood to be strong even though it often appears to 'fail' in curing a person.

Part II: Protecting against illness in young children: Vaccinations (chanjo) & amulets (kidusa/fubala)¹¹⁴

Thus far, this chapter has examined how people living in Doma village and Chamwino 'squatter' area seek treatment for illness episodes. The final section of this chapter explores some of the ways in which people protect themselves and their children against illness. As the following quotes illustrate, children are considered particularly vulnerable to illnesses caused by spirit possession and bewitchment as well as to 'natural' diseases:

¹¹⁴*Chanjo* is the *Kiswahili* word for vaccination. *Chanjo* (from (*kuchanjia*)) also denotes the small incisions on the body which are made by *waganga* to protect against witchcraft. *Kidusa* and *fubala* are both *Kiluguru* words for the amulets worn by infants and toddlers to guard against witchcraft and spirits.

Children are especially vulnerable to illness, this is because they have little immunity... and also because they are at risk from witchcraft; if the child is harmed we all suffer. (Grandmother & farmer, Doma village, 2007)

Spirits are attracted to children; maybe they [the spirit] just want to play... But they make the child very sick even if they do not intend to, they cause the child to suffer; it may be paralysed and fall to the ground. Some other spirits, their purpose is to bring death. (Spirit medium Doma village 2007)

We must always be alert for our children; the spirits, they can cause illness. And witches too, Yes! Witches harm and even kill our children. (Mother Chamwino 2009)

My children are often sick...
There are too many 'bacteria' in this place
and the children lack the strength to resist the way we [adults] can.
(Father, Chamwino 2010)¹¹⁵

I fear our children being bewitched... They are the target whenever there is jealousy and hatred. (Mother and petty trader, Chamwino Area, 2010)

With this in mind, and as the National Schistosomiasis and Soil-Transmitted Helminth Control Programme (NSSTHCP) sought to treat children rather than adults - albeit only those over five years of age - I focus primarily on the protective practices undertaken on the bodies of children. These include receiving vaccinations (*chanjo*) against childhood diseases such as diphtheria, whooping cough and polio, as well as wearing amulets which contain small pouches filled with herbs (*kidusa/fubala*) to guard against illness caused by spirits and witches.

I include these methods of illness prevention here as although the drugs given by the NSSTHCP are called preventive chemotherapy by the World Health Organization because, by treating large numbers of children (and adults) the life-cycle of the schistosome is interrupted and the drugs therefore help prevent future infection, they are not preventative in the same way as

¹¹⁵ This father was speaking in *Kiswahili* but used the English term 'bacteria' which was quite common among informants. Bacteria referred to any unseen organism which might cause illness, for example "the mosquito brings bacteria into the body" or "there is bacteria in the dirty water". Bacteria was not a term usually used when discussing illness caused by witchcraft.

immunization. However, this was sometimes how treatment for *kichocho* and *minyoo* was understood. Although these confusions will be discussed more fully in chapter seven, by exploring the ways in which people attempt to prevent illness my aim is to demonstrate the myriad of ways people in Doma and Chamwino strive to maintain good health through both treatment seeking and preventative methods.¹¹⁶

Maternal and child health services

Throughout my fieldwork whenever I visited a health care facility in the morning, whether it was a large urban hospital, peri-urban health centre, or small village dispensary, I always encountered the ubiquitous sight of large groups of women sitting around with their children waiting to be seen by medical staff. Most often, the women would sit with their infants either feeding at their breast or else tied tightly to their backs, so that only the child's head - which was usually covered in a brightly coloured knitted hat - was visible. Commonly, the infant would be strapped to its mother's back with a piece of printed cotton known as a *kanga*. This would usually match or compliment another *kanga* piece, which the mother would wear wrapped around her waist forming a long straight skirt; a t-shirt or blouse would complete her outfit. It was evident from their appearance that the women took some care in how they presented themselves, as well as their children, to the medical personnel and other mothers. While the mothers¹¹⁷ sat caring for the infants, their toddlers would be playing close by, generally getting into the sort of mischief and fractious states which seem universal to all toddlers.

Mothers visit the clinics¹¹⁸ for a variety of reasons and the services available to them vary considerably depending upon the size, location and funding source of the particular health-care facility. In the larger hospitals, which have their own laboratories, services such as HIV testing and AIDS counselling were

¹¹⁶ Although this may also include other behaviors such as good food hygiene and sanitation within the household I focus on practices that usually require consultation with health care staff and other, non-biomedical healers.

¹¹⁷ Sometimes grandmothers or other guardians would accompany the children. They were almost exclusively female.

¹¹⁸ I use the term clinic here to describe all government sponsored places where biomedical services are available; it may be a small village dispensary, health centre or large hospital.

available as well as blood, sputum, urine and stool examinations. Smaller dispensaries such as the ones in Doma village and Chamwino are without such resources and therefore unable to provide such services. In these smaller dispensaries mothers frequently complained that the necessary medicines (usually antibiotics) were often unavailable and they would instead be instructed by the nurses to buy the pills (*vidonge*) from a *duka la dawa* - literally, a medicine shop, but they rarely had the funds with which to do so. Similarly, vouchers which entitle the mothers of newborn babies to subsidized anti-malarial treated bed-nets were not available in any of the smaller dispensaries I visited.¹¹⁹

Although the services offered vary substantially between health-care facilities most do provide basic ante natal care for expectant mothers including tetanus-toxoid vaccination for pregnant women, advice on infant nutrition particularly concerning post-partum feeding and weaning, and baby health checks, including weighing and childhood vaccinations. The provision of such government directed health care comes under the umbrella of Maternal and Child Health (MCH) services, and are referred to as such by those working in the Ministry of Health and Social Welfare (MOHSW), various stakeholders, those working in public health and sometimes, by health workers in the larger health facilities. However, in the smaller clinics nursing staff did not generally appear to refer to such acronyms, at least not among themselves or to the mothers, but rather, it simply appeared to be widely understood as merely the designated time for mothers to come with their children. Similarly, mothers referred to these 'mother and baby' clinics as *hospitali* (hospital) and did not make any distinction in name depending on the reason for their visit. In other words, the health care facility was called *hospitali* whether it was a large hospital or small dispensary and it would be called this whether the women

¹¹⁹However, mothers in Doma village did report receiving treated bed-nets via the dispensary at various (unspecified) times; this seems to have been due to one or several anti-malaria campaigns but neither the staff at the dispensary nor the mothers could recall any details. Likewise, mothers in the squatter districts reported being given bed-nets from the village government during anti-malarial campaigns, the last of which they could remember occurring in 2008, but these had been distributed from the village government office rather than the dispensary.

were attending for reproductive and child health services or for any other reason.¹²⁰



Figure 19 A Mother weighs her baby at the dispensary in Chamwino.

In some of the larger hospitals such as Mazimbu University Hospital¹²¹ in Mazimbu Ward - the same ward that Chamwino is located in - the MCH clinic is located in a newly built separate building within the neat well manicured compound. The clinic is impressive and was like no other I entered in Doma or Morogoro municipality. It had fresh white paint on the exterior and interior

¹²⁰ This was common amongst all informants, not only the women. There are differences between the types of health care facilities, including staffing levels and diagnostic equipment, for example a dispensary will not contain a laboratory whereas a health centre and hospital will. Also, a dispensary's highest qualified medical staff will be a clinical officer whereas in a health centre this will be a medical officer (with an additional two years training) and, in a hospital, a qualified doctor.

¹²¹ The hospital is now affiliated with Sokoine Agricultural University (SUA) but it was originally the African National Congress (ANC) hospital, serving the South African ANC training camp which was in operation here during South Africa's apartheid years.

walls, a highly polished floor, airport-like waiting room chairs and smelled of disinfectant: the way I remember hospitals in the UK smelling when I was a child. It appeared well staffed by smiling nurses in clean white and blue uniforms and had several treatment rooms each with its own refrigerator to maintain cold storage of vaccinations and a 'sharps box' to safely dispose of used needles. As well as providing ante natal services, contraception and childhood vaccinations it also provided HIV testing, AIDS counselling and anti retroviral therapy.¹²²

Despite being located in the same ward as Chamwino area I only occasionally found women from Chamwino here. Observing the main waiting area to the hospital it was clear that it was patronised by wealthier looking townsfolk from Morogoro and university staff and students, rather than those from the squatter areas. The hospital is approximately five kilometres (a little over three miles) from the streets in Chamwino which is only a little further than the Regional Hospital in Morogoro town.¹²³ However, there are charges to see a doctor here¹²⁴ as well as for any drugs which are dispensed, though not for services within Reproductive Child Health - such as vaccinations and contraception - which remained free.

¹²² The medical officer informed me that approximately nine percent of women tested positive for HIV and, of these, fifty percent (three hundred patients) were receiving anti retroviral therapy (ART).

¹²³ Morogoro Regional hospital is approximately two to three km from Chamwino.

¹²⁴ 2,500 Tanzanian shillings for a consultant, 10,000 Tanzanian shillings for a specialist cardiologist. At the time of fieldwork 1,000 Tz shillings was approximately the equivalent of fifty pence sterling. Most of the households I encountered in Chamwino where household members were employed would make approximately ten thousand shillings per month. Mazimbu hospital is financed both privately through the university and also by the government.



Figure 20 A mother weighs her child at the Maternal and Child Health Clinic, Mazimbu hospital.



Figure 21 An infant receives a vaccination while his mother looks away. Maternal and Child Health clinic, Mazimbu hospital.

For the residents of Chamwino, biomedical services were usually accessed through the dispensary in Chamwino area itself. This dispensary is much like the dispensary in Doma or any other village dispensary I encountered. It consisted of a single story building with several treatment rooms and is predominantly staffed by nurses and a clinical officer, although it also had a visiting doctor who was often in attendance at the Maternal and Child Health clinic. Unlike Mazimbu hospital which smelt of disinfectant, the dispensaries in both Doma and Chamwino smelt overpoweringly of guano (bat faeces) deposited by the bats living in the roofs.

In the dispensaries in Doma and Chamwino there is no separate RCH clinic, the delivery of these services are just held at a particular time of day, usually first thing in the morning when the dispensary opens. This is when the dispensaries are at their busiest with women and children attending for RCH services as well as anyone else who wishes to be seen. Mothers attend the clinics for various reasons - some come so that they might obtain treatment for a particular illness episode for one of their children, some may be pregnant and come to receive ante natal care including a tetanus vaccination, but most appeared to attend so that their children could be weighed and vaccinated. Mothers frequently came to the clinic for multiple reasons too. For example, an infant may have been suffering a fever (*homa*) in the days previous, and the mother may also be pregnant or seeking information on contraception.

In the larger health care facilities such as Mazimbu Hospital and Morogoro Regional Hospital most of the women carried a health card for each child on which the nurses would make a note of the child's weight and any vaccines (*chanjo*) received. But in the smaller dispensaries such those in Doma village and Chamwino the children's 'medical card', if they had one, was a simple exercise book which the women kept with them. Whenever I asked waiting mothers in the clinics why they were attending, the overwhelming majority - regardless of location or health care facility - would reply something along the lines of, "*Because the nurse told me to*". The nurse to whom they usually referred was the nurse or nurses who had been present at the time of their infant's delivery. None of the mothers I spoke to said, when asked, that they had given birth at home - all preferring (so they said) to attend a medical

facility where they could be assisted if complications developed.¹²⁵ As one young mother noted:

In the past it was common to have your child at home but now we like to come to the hospital... It is better for us because if there is a problem the nurse can assist. If we are at home there may be no one to offer help and mothers and children may die. The nurses receive good training in these matters. (17 year old mother, Mazimbu Hospital, 2010)

During my stay in Doma village in 2007 when I shared a house with Hellen, the clinical officer, we were frequently woken during the night for her to assist a woman in labour, and it was common for two or three births to take place at the dispensary on any given day where the expectant mother would be cared for by either the clinical officer, a midwife or a nurse. Women were also giving birth at home, most often with the assistance of female relatives, neighbours and/or a traditional birth attendant (TBA). However it was difficult to identify mothers who had undergone home births - at least recently - and those that had were quick to state that this had been due to circumstances out of their control, for example, the health care facility was too far away and/or the mother could not afford transport, rather than undergoing a home delivery out of choice. Female informants in both Doma village and Morogoro municipality seemed reluctant to tell me they had 'chosen' to give birth at home, fearing, I suspect, that I would disapprove of such actions.¹²⁶

When I asked mothers what happened during their visits at the clinic they usually said that they were there for their child or children to receive vaccinations (*chanjo*). However they had very little idea of the diseases which these vaccinations were meant to prevent. Most often a mother would smile and laugh and look to an accompanying friend or another waiting woman to see if she knew. Sometimes they were able to name one or two such as *pepopunda* (tetanus toxoid) or *kichomi* (pneumonia), although all the women were very aware that there was no vaccination against malaria (*homa ya malaria*) or -

¹²⁵ UNICEF estimates that between 2006-2010, 50% of births in Tanzania took place in a biomedical institution (UNICEF). From http://www.unicef.org/infobycountry/tanzania_statistics.html accessed 17 August 2012)

¹²⁶ As I have discussed elsewhere, I was most often perceived to be a medical doctor.

their biggest fear - *degedege* (cerebral malaria)¹²⁷ as the following conversations with three waiting mothers at Mazimbu hospital illustrates:

JH: Why have you come to the hospital today?

Mother 1: For our children

JH: Are your children sick?

Mother 1: No. My children are healthy but I think her child (looks at mother 2) has infection

Mother 2: My child has been sick with high fever (*homa kali*) but the nurse gave him medicine (*dawa*) some time ago and now he is improving.

JH: Why have you brought your children here today?

Mother 1: Our children are to receive vaccination against diseases which affect the young

JH: Which diseases?

(All three mothers laugh and look at each other, I think hoping that someone other than themselves will respond)

(silence)

JH: for malaria?

(The mothers laugh and shake their heads)

Mother 3: It is impossible to be vaccinated against malaria. This is for other diseases, we do not know the names of all of them there are so many, *pepopunda* (tetanus) is one but I do not know all the names.

JH: How do you know about these vaccinations?

Mother 3: the nurse tells us to come so that our children may be protected against diseases

JH: Which nurse?

Mother 2: At the hospital

Mother 3: Yes, we are told it is important to come by the nurse when we give birth - they tell us to come.

JH: Where did you give birth?

Mother 3: At this hospital

Mother 1: I gave birth to my child at another dispensary which is nearer to my home but this is a better hospital as they usually have drugs here - other hospitals often don't have the drugs we need when our child is sick but this is a big hospital.

JH: (to mother 2) where did you have your child?

Mother 2: at the hospital

JH: This hospital?

Mother 2: I was far away in another region but I live here now [in Mazimbu Ward] so I come to this hospital.

¹²⁷ Although *degedege* is understood within a biomedical framework as cerebral malaria for most mothers with whom I spoke *degedege* is a form of malaria or malaria like disease which afflicts a child who has been bewitched (*kulogwa*). It is feared greatly not only because it is an *uchawi* illness, but also because it may leave the child with permanent cognitive impairment.

Speaking with mothers at numerous health-care facilities throughout my fieldwork the situation was always very similar; mothers having their children vaccinated seemingly without being entirely certain of the diseases their children were being vaccinated against. However, mothers frequently said they found the staff at the dispensaries in Doma and Chamwino helpful and friendly and that they were grateful for the advice and assistance the staff gave concerning particular problems such as feeding and weaning. The majority of mothers with whom I spoke to at the dispensaries in Doma and Chamwino as well as elsewhere throughout Morogoro town said they liked to visit the dispensary each month to have their baby weighed and to receive vaccinations:

The nurses are friendly here ... They assist if you have a problem with your baby, if it is sick. I come each month they weight her and check she is in good health and give injections (*sindano*) against diseases. This is very good (Young mother, Doma dispensary 2007).

There are too many illnesses for them [children] and they are small and weak and can become sick easily... It is important to keep our children in good health. They are a blessing. That is why I am here (Mother of two children, Doma dispensary 2007).

They [infants] need medicine to protect them from illness when they are small. It is good to come here for assistance in this matter (Mother, Chamwino, 2009)

In light of the fear and mistrust which surrounded the National Schistosomiasis and Soil-Transmitted Helminth Control Programme (NSSTHCP) in Morogoro and ultimately, the overwhelming rejection of the drugs during the mass drug administration to children in 2008 it struck me that the mothers attending MCH clinics appeared very comfortable having their children vaccinated. This raises the question: Why do mothers trust giving *these* drugs to their children and not the drugs to treat schistosomiasis and intestinal worms? Or, put another way: Why do mothers not fear giving vaccinations to their children?¹²⁸ After all there

¹²⁸ UNICEF figures show, for example that in 2008 in Tanzania 89% of one year-old children were immunized against polio. 88% of one year - old children were immunized against diphtheria, polio and tetanus (DPT) DPT1 in Tanzania and 84% of one year old children were immunized against DPT3 (the third vaccination in a course of three).

are many well documented controversies surrounding vaccination programmes in other countries in sub-Saharan Africa. For example, ante natal tetanus in Cameroon (Feldman-Savelsberg *et al.*, 2000) and polio in Nigeria (Yahya, 2007; Renne, 2010).

The apparent willingness by which parents have their children vaccinated may be in part due to the ubiquity of these vaccinations, as well as the length of time they have been used in Tanzania and therefore people's familiarity with them. In almost every health care facility I visited throughout the whole of my fieldwork periods - spanning three years - there was nearly always a poster informing parents of the need and ease of having their child immunized. One such poster in the dispensary in Chamwino, which depicted a plump (and therefore healthy) infant read: *A single vaccination against six diseases (Chanjo Moja Dhidi ya Magonjwa Sita): diphtheria (dondakoo); whooping cough (kifduro); tetanus toxoid (pepopunda); hepatitis B (ugonjwa wa ini); meningitis (homa ya uti wa mgongo) and pneumonia (kichomi) (see fig. 22).*

However, is being familiar with childhood vaccinations or being told they are good for your child enough for such biomedical technologies to be as accepted as they seemingly are by the mothers with whom I spoke? Could it also be that the mothers are informed of the vaccines benefits empirically; that they are aware that children suffer fewer illnesses as a result of receiving these vaccinations and are therefore aware of the benefits? If this is the case, then it seems likely that it must take some time for such benefits to be realized.



Figure 22 Poster in a dispensary in Chamwino depicting one vaccination for six diseases.

As well as the above mentioned reasons for the acceptance of vaccinations in Doma and Chamwino I suggest that parallels can be made between this biomedical method of disease prevention and other non-biomedical methods: the wearing of amulets by young children to defend (*ulinzi, kinga*) against illnesses due to spirits and witchcraft. It is to this practise which I now turn.

Protecting children against spirits and witches

To protect young children from spirits (*majini*) as well as witches (*wachawi*), parents may visit *waganga* to obtain an amulet for their child to wear. I always heard this amulet referred to in *Kiluguru* (the language of *Waluguru*) as either *kidusa* (in Doma village) or *fubala* (in Chamwino). When I asked if the amulet - or the practise of wearing the amulet - had a *Kiswahili* name, people usually

said either *kinga* (protection, prevention, immunity), *ulinzi* (protection, defence) or, less frequently, *hirizi* (amulet).

When a child is born the parents may decide to protect their child from harm caused by spirits and witches. As I have mentioned elsewhere, children are considered to be particularly vulnerable to such attacks for a number of reasons. Some informants said spirits are attracted to young children due to the child's high energy, game playing and general frivolity. Many informants also felt that children are the principle line of attack from witchcraft as harming a child also harms other members of the household (sadness and anxiety watching one's child suffer, financial burden attempting to cure the child, bereavement).

Usually the amulet is made by a *mganga* who mixes several components together including herbs and bark and places this mixture into a piece of fabric or animal skin which she or he then rolls together to make a necklace or bracelet with a small pouch which contains the herbs etc. held firmly in the middle. The herbs inside the amulet smell bitter and repel spirits which are said to be attracted to sweet smells. As Fatima, the spirit medium in Doma told me: "even if you only smell sweet because you are carrying fruit the spirits will be attracted to you."

Sometimes the practice varies and the child simply swallows all of the mixture in one visit. This will protect the child for the same length of time as wearing the amulet. Swallowing the medicine rather than wearing an amulet is dependent upon the practices of the particular *mganga*. However, it is also possible that some parents wish to avoid such a highly visible indicator that they have chosen to protect their child using such means. Some may protest that they do not use *waganga*, while others may simply be keen that other people do not know their business. I would estimate that in Doma I saw approximately seventy to eighty percent of young children wearing an amulet and in Chamwino approximately fifty percent.

The amulets cost between approximately four and five thousand Tanzanian shillings¹²⁹ and the child will wear the it up to the age of approximately three years, to protect against what some mothers termed “falling down with devils” (*kuanguka kwa kusababishwa na mashetani*) due to witchcraft and spirit possession. Illnesses that are described as such include *degedege* (cerebral malaria), *kifafa* (epilepsy) and a folk illness called *parallax*.¹³⁰ If the amulet falls off prior to three years of age the parents will replace it but after the age of three (or thereabouts) the amulet will not be replaced once it disintegrates and falls off, as one mother stated:

If we see the child (under three years of age] is not wearing *fubala* we are keen to replace it quickly. But once the child is older... [When it is three or four] then we are no longer concerned and just leave it like this... we do not run to replace it. We do not even notice it is gone. (Grandmother, Chamwino 2009)

The methods employed to protect children utilizing both biomedical means (vaccinations) and local practises (*kidusa/fubala*) seem to share certain parallels. The rationale to protect young children against illness/disease can be seen as quite similar: Both the biomedical practise of vaccination and the local practise of *kidusa* share an understanding that the young child is vulnerable and in need of added protection in order to successfully ‘fight’ off disease. One type of knowledge (biomedicine) understands that disease is caused by pathogens (viruses, bacteria, protozoa) which can be fought by antibodies in the immune system. While the other type of knowledge (local) understands that disease is caused by spirits and witches which can be repelled using amulets containing herbs and over which incantations may have been spoken. Additionally, the age ranges at which such protective practices are carried out are comparable; the vaccinations are usually given from birth until four or five years of age and the *kidusa/fubala* is worn until the age of three or four. These similarities may also in some way make vaccinations more readily acceptable to the inhabitants of Doma and Chamwino.

¹²⁹ At the time of fieldwork this was approximately two pounds sterling or the same price as a mosquito net.

¹³⁰ From a biomedical perspective, *parallax* is most likely to be febrile convulsions.



Figure 23 Grandmothers, mothers and their children in Doma village. The amulet is visible on young boy in the forefront of the picture (who, incidentally is holding a tub of pharmaceutical pills). The two infants were also wearing amulets to guard against witchcraft and spirits but these are not visible in the picture.

However, what happens when the child is older than three or four - is it still appropriate for them to receive vaccinations? It appears not. Once a child is above this age, like adults, it no longer requires protective medicine. Medicine is now only appropriate when one is sick, although older children do still receive some oral and injected vaccines and supplements (Vitamin A, tetanus toxoid). However, vaccinations later in life appeared to cause more suspicion in parents than the earlier ones. For example, in Doma some parents were sceptical of the annual roll out of the Vitamin A supplement which was provided for children. However, there did appear to be one exception; pregnant women did not seem anxious receiving the tetanus toxoid vaccine, perhaps viewing this as a method to protect their unborn child. But overall, it seemed that medicine was only appropriate when sick in older children and adults. This, as I will be examining in chapter seven, is significant, as during the mass drug administration, children were expected to swallow drugs to treat *kichocho* and *minyoo* when they were not feeling ill.

Conclusion

This chapter has demonstrated the myriad of ways people living in Doma and Chamwino account for misfortune and seek treatment and protection from illness. It has illustrated the different types of healthcare available in Doma and Chamwino from biomedical facilities and local healers, and discussed how people make 'choices' in seeking a cure. However, it has also shown that these decisions are not wholly dependent upon cosmology and perceived causes of illness episodes, but also on more structural considerations, such as the ability to pay and travel for treatment.

The way treatment is utilized by people living in Doma and Chamwino can usefully be analysed in relation to the concept of medical syncretism, in which various sectors of health care inform one another and intermingle. By following informants' treatment pathways it is clear that biomedicine is not the only form of treatment sought, nor is it privileged over other forms of healing. Indeed, biomedicine alone does not meet many of the healthcare demands of Doma and Chamwino inhabitants. It is in this context that the mass distribution of drugs to treat school aged children for *kichocho* and *minyoo* occurred. However, the apparent urgency for free treatment *en masse* was unfamiliar. Furthermore, it was widely understood to be inappropriate to take medicine unless one was sick.

Local understandings of *kichocho* and *minyoo*

The inhabitants of Morogoro town and Doma village were very familiar with urinary schistosomiasis and soil-transmitted helminths, known in Kiswahili respectively as *kichocho* and *minyoo*. As chapters seven, eight and nine will demonstrate, the disjuncture between local and biomedical understandings of these neglected tropical diseases, particularly *kichocho*, contributed to suspicions surrounding the National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP). This chapter therefore focuses on local understandings of these diseases. More emphasis is placed on local understandings of *kichocho* than *minyoo* as it was the rationale for treating *kichocho* that was the most problematic.

After briefly discussing the prevalence of *kichocho* and *minyoo* in Doma village and Morogoro town, this chapter examines local understandings concerning the modes of transmission and associated symptoms of these diseases as well as treatment seeking practices. Local perspectives of these diseases are not only provided by adult informants, but also from children in Doma primary and secondary school, who wrote essays, drew pictures and answered questions concerning their knowledge and experiences of *kichocho*. These reveal that *kichocho* and *minyoo* are considered to be a normal and unavoidable - albeit an unwelcome - part of life. This contrasts markedly with the biomedical perspective advocated by proponents of mass drug treatment for neglected tropical diseases, as discussed in chapter two, who argue they are a major public health concern (Hotez *et al.*, 2009; Molyneux *et al.*, 2004).

Prevalence of *Schistosoma haematobium* and soil-transmitted helminths

The prevalence of *S. haematobium* in Doma Ward¹³¹, where Doma village is located, was reported to be 44.9% at the time of fieldwork in 2007.¹³² The same data shows Mazimbu Ward, where Chamwino is located, to have a prevalence rate of 23.8% (SCI, unpublished).¹³³ Data from Morogoro Municipal Health Office shows schistosomal infection rates of primary school pupils in the municipality to range from 11% and 84% (2009).¹³⁴ In the structured survey¹³⁵ undertaken in Doma village in 2007, 52% of adult respondents stated they had been infected (usually as a child) with *kichocho*. During discussions in the primary and secondary schools in Doma village and Morogoro town, whenever I asked pupils who had suffered, or were presently suffering, from *kichocho* to raise their hands, between 69% to 91% did so.¹³⁶

Soil transmitted helminths are reported to be endemic throughout sub-Saharan Africa (WHO);¹³⁷ however there is no specific data available regarding the prevalence in Morogoro town or Doma village. During the household survey in Doma in 2007, 56% of adult informants reported that they had suffered from *minyoo*. Indeed, throughout my fieldwork it was unusual to find a household that did not report having a member either currently or recently suffering from *minyoo*.

¹³¹ Doma Ward contains five villages, of which Doma is one.

¹³² This data did not specify whether this was for adults and children or just children.

¹³³ The figures concerning the prevalence of schistosomiasis in Doma were provided by SCI at the time of fieldwork in 2007. The second figure concerning the prevalence of schistosomiasis in Mazimbu ward was provided by a Tanzania public health consultant working on behalf of SCI in 2009. The first figure was again provided at this time. These figures do not appear to have been published and I am uncertain whether they pertain to the population as a whole, or to just children.

¹³⁴ These figures were obtained when the municipal council undertook urinalysis screening of primary school pupils in the municipality in 2009.

¹³⁵ In total 172 structured questionnaires were completed. This accounts for approximately 23% of all homesteads throughout the five sub-villages or streets in Doma village.

¹³⁶ While I do not wish to dwell on the quantitative data collected during my fieldwork it does serve to illustrate the ubiquity of *kichocho*.

¹³⁷ From <http://www/who.int/mediacentre/factsheets/fs366/en/> accessed 18 June 2012

Local understandings of *kichocho*

Kichocho is *always* and without exception, understood to be symptomatic, recognizable by blood in the urine (*mkojo wenye damu*). This may or may not be accompanied by painful urination (*maumivu kakatiwa kukojoa*), difficulty urinating (*taabu kukojoa*) and stomach ache (*tumbo linauma*). Throughout my fieldwork I encountered very few informants who did not immediately state that *kichocho* was recognizable by bloody urine - or that *kichocho* *is* bloody urine; the two were synonymous, as the following quotes illustrate:

It is impossible to have *kichocho* and not know, as the urine turns red with blood. (Sixteen year old school-girl, Doma)

We know when we have *kichocho* because we are urinating blood at the end [of urinating]. It can be painful also; it makes us scream. (Thirteen year old school-boy, Doma)

Kichocho is the process of moving blood in the urine. (Mother, Doma)

Kichocho is a common problem here; it makes the children urinate blood. (Teacher, Chamwino primary school)

Ah yes, we know *kichocho* too well. It is when children urinate blood. Even as a child I suffered from this (*kichocho*). (Street Chairman, Chamwino)

In the structured survey I undertook in Doma village, 82% of respondents stated that blood in the urine, sometimes also associated with painful urination (*maumivu kakatiwa kukojoa*), is how a person can recognize they are infected with *kichocho*. This was also the overwhelming finding amongst school children. When I asked sixty five pupils in standard 6 (the penultimate class of primary school education) in Doma village primary school to draw a picture of someone infected with *kichocho*, 86% drew a person, usually male (96%), urinating blood. The situation was the same throughout all the research sites. Indeed, whenever I mentioned *kichocho*, the first thing a person would usually reply was “*mkojo wenye damu*” (blood in the urine).

People living in Doma and Chamwino, as well as elsewhere in Morogoro town had a reasonable biomedical understanding of the modes of transmission of *kichocho*, in as much as they were aware that infection was likely if a person

entered stagnant water (*maji yanayosimama*) in the environment. In Doma, this was in the seasonal ponds/puddles (*bwawa/dimbwi*), while in Morogoro town, including Chamwino, it also included the slow moving rivers.



Figure 24 A drawing by a primary-school pupil in Doma village, depicting a person suffering from kichocho. The English translation was written by the form teacher.

However, while identifying the stagnant water as a source of possible contamination, the reason for this being so was usually vague and ambiguous. Most informants in Doma and Morogoro town were aware that there was *something* in the water, usually referring to it as either a visible scum they called '*bacteria*', dirty (*chafu*) or with insects (*wadudu*).¹³⁸ Furthermore, the modes of transmission of *kichocho* was very often confused with the aetiology of *minyoo*, as many people thought that by walking barefoot, especially to visit the latrine (*choo*), one could contract *kichocho*.

¹³⁸ Snails (*konokono*) the intermediate host were very rarely mentioned, if at all, with the exception of the responses from the school drawing competitions. The fact that so many children in Doma primary school drew very accurate and similar drawings of people swimming in ponds infested with snails, leads me to conclude that the pupils probably received education regarding the transmission of *kichocho* prior to my scheduled visit.

During the structured survey in Doma village, when households were asked how somebody became infected with *kichocho*, 54% reported that only by entering the seasonal pools of water could one become infected. A further 16% also thought that entering the ponds would lead to *kichocho* but also included other modes of transmission in their answers, such as drinking the pond water or walking barefoot, particularly to the lavatory. The situation was similar in the town, with most informants being aware that entering infected water one could contract *kichocho* but unable to give a reason as to why this was the case.

In one of the drawing competitions¹³⁹ at Doma primary school, 78 pupils in class (standard) 7 - the final class of primary-school education - were asked to draw a picture illustrating how someone became infected with *kichocho*. In all, 87% of the children drew pictures of children swimming and urinating in pond water and 48% depicted snails - the intermediate host - in the water. Although some of the drawings (32%) also depicted people going to the latrine without shoes, the mode of transmission for hookworm (*safura*) rather than *kichocho*, and 17% included people drinking 'dirty' (pond) water (*kichafu maji*).

At Doma secondary school, fifty pupils were given an eleven-question quiz paper pertaining to household water collection, the aetiology and symptomatology of *kichocho*, as well as their experiences of suffering from *kichocho*, including treatment. When asked how someone could become infected with *kichocho*, 90% of pupils responded by children swimming in pond water. Fourteen per cent of answers also included people going to the latrine without shoes, 6% included children urinating in the water, while others were swimming and 6% also mentioned people drinking the water.

¹³⁹ With the permission of head teachers, drawing competitions, essays and quizzes were undertaken in several classes in Doma primary and secondary schools. All pupils who took part received a pen or pencil. The winner was chosen by the class teacher and me, based on effort and providing the most correct answer or information, rather than ability to draw or write. The winner received additional pencils and an exercise book. In addition, each class that participated received a football and netball. An additional football and netball was given to the headmaster to be available to classes who did not participate in the quizzes and competitions.

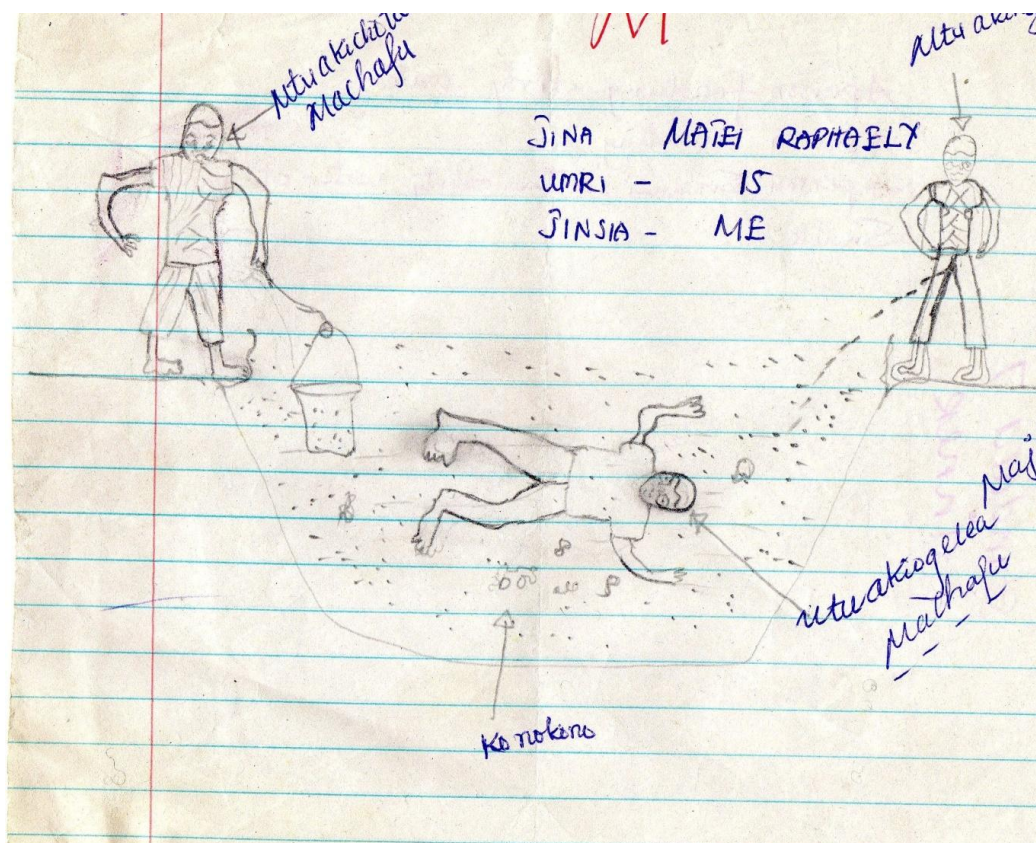


Figure 25 A pupil's picture drawn in response to the question, "how can a person become infected with kichocho?" The picture shows a person swimming in the dirty water (*machafu maji*), another collecting water in bare feet, and a boy urinating into the water. The pupil has also included snails (*konokno*), the intermediate host, in his picture.

However, sometimes understandings of the aetiology, associated symptoms and treatment, of *kichocho* were very confused, as the following conversation with a mother of seven children living in Doma illustrates:

JH: Have you heard of *kichocho*?

M: I suffered from *kichocho* when I was in primary school

JH: How did you know that you were suffering from *kichocho*?

M: I felt I was suffering from that disease when I started to feel my stomach was aching several times and to pass the worms during urination.

JH: Could you see the worms in your urine?

M: No...Sometimes. But they were there because it became painful to urinate.

JH: What treatment did you get?

M: The doctor assigned me twelve injections when I was young for vaccination of that disease.

JH: You were vaccinated against *kichocho*?

M: Yes, when I was young.

JH: So why did you become infected with *kichocho*?

M: I don't know but I was cured because of that injection/vaccination and up to now I am cured.

In the above account it seems as though this mother has merged several disease symptoms, as well as public health interventions, together. Intestinal worms (*minyoo*) were widely reported to cause stomach ache and an infected person can pass worms when they defecate. The treatment for *kichocho* is confused with what I suspect were childhood immunisations, leading her to conclude, incorrectly, that she is both cured and protected from *kichocho*. Generally, children in the primary and secondary schools appeared to have a better biomedical understanding of both *kichocho* and *minyoo* than their parents. This is probably because pupils receive health education in school concerning *kichocho* and *minyoo*. This was usually taught in either the science class or during social studies lessons (*maarifa ya jamii*).¹⁴⁰

Kichocho is (almost always) a disease of childhood

Kichocho was understood as a disease which affects children rather than adults. This is because it is children who commonly enter the infected ponds and rivers to bathe and swim, and because it is predominately children who complain of having blood in their urine. The understanding that *kichocho* is a disease of childhood was reinforced during the mass drug administration, when only school-aged children were targeted for treatment.

However, adults also enter infected water bodies. For example, women enter the ponds and rivers to wash clothes and household utensils, especially in areas where the rivers or ponds are closer than the water taps. Yet adults frequently stated that *kichocho* affects children rather than adults, and most informants recollected suffering from *kichocho* in their childhood rather than as an adult. It may be that people felt it less likely that adults would become infected as, when they do enter water, they are in it for less time and expose less of their bodies. Furthermore, the primary symptom associated with *kichocho*, haematuria, may dissipate in long term infection, leading adults to assume they are no longer infected.

¹⁴⁰ Health education forms part of the school curriculum. However, exactly when pupils were taught about what, varied on the different primary schools I visited. As a general rule it seemed pupils were taught about *kichocho* and *minyoo* in standard 1 to 5, and education concerning HIV/AIDS and sexually transmitted disease was taught to older pupils in standard 5 to 7.

Paradoxically however, it was recognized that adults *may* become infected if they enter such bodies of water. One day, while I was with Barbara, a Lutheran missionary, in Morogoro town, she was approached by a drunken looking man who appeared as though he might also have mental health problems. He asked her for money to buy medicine as he was sick. Barbara knew the man and asked him what he was suffering from. “*Kichocho*” he replied, “from collecting water from the river to wash cars”. At this, she took the man into the pharmacy we happened to be standing in front of, and purchased four praziquantel tablets for him. This cost her almost two thousand shillings, a sum the man said he could never afford. This encounter illustrates that adults are aware they *can* become infected with *kichocho* if they enter infested water. It is not so much that adults are considered to be immune, but rather that it is thought inappropriate or unbecoming to enter the river or ponds unless one is a child. Indeed, when I asked the head master at the secondary school in Doma village if he suffered from *kichocho*, he appeared rather affronted and replied, somewhat tetchily, “What! Me? No! Of course not, I am not a child; I do not go swimming”. However, his response may be due to the perception that bloody urine (*kichocho*) in adulthood is associated with sexually transmitted infections and therefore suggestions of sexual promiscuity. Perhaps this is why *kichocho* is considered a childhood disease. Bloody urine in adults may be understood as something other than *kichocho*.

It can be shameful to suffer from kichocho

Whenever I asked children, usually between the ages of seven to fifteen, if they had or had ever suffered from *kichocho* there would always be a certain amount of laughter, foot staring and playful nudging with any other children present. Most children I encountered said they were presently, or had previously experienced blood in their urine and therefore, as already discussed, were suffering from *kichocho*. However, in adults, and I suspect in adolescents too, haematuria can be associated with sexually transmitted diseases and therefore notions of sexual promiscuity.

During a conversation with a group of older secondary-school boys in Doma, they suggested that urinating blood can also be a sign of a sexually transmitted disease.

When a person has blood in their urine it can be *kichocho* but it could also be that he has been with a woman and she has given him a disease of the private parts. (Fourteen year old secondary schoolboy, Doma village)

When I asked another boy if he thought *kichocho* was shameful, he remarked,

It is very shameful to have a sexually transmitted infection especially if the person is young, and not married... Yes, it is very bad. A boy or girl can become infected with *kichocho* by swimming in the ponds but they can also pass it on to another person if they have sexual intercourse. (Sixteen year old secondary schoolboy, Doma village)

It seems then, that in certain circumstances, especially if the person involved is sexually active, reporting haematuria can make a person feel ashamed. Although it doesn't appear as though *kichocho* in itself is necessarily shameful, it is the association with sexual activity and possible accusations of sexual promiscuity and sex outside of marriage that makes it so. Children elsewhere in Tanzania have reported similar feelings concerning *kichocho* and its association with sexual promiscuity (Mwanga *et al.*, 2004). That *kichocho* - or blood in the urine - is associated with sexually transmitted infections is perhaps understandable especially when the symptoms associated with genital schistosomiasis in females mimic those of cervical cancer and sexually transmitted infections (Swai *et al.*, 2006). The notion that *kichocho* was - or could become - a sexually transmitted disease was not uncommon, as this mother in Doma noted: "If untreated, *kichocho* can become syphilis (*kaswende*) and it can pass between husband and wife".

Local understandings of *minyoo*

Minyoo was widely understood to infect both adults and children alike, however, children were considered to be at greater risk. *Minyoo* referred to intestinal worms generally and included hookworm (*safura*) and other types of worms, such as tapeworm and roundworm. The majority of informants had a reasonable biomedical understanding of the aetiology and symptomatology of *minyoo*. For example, during the household survey in Doma, nearly 49% of households reported that a person could become infected with *minyoo* by walking barefoot (3.4%), eating food that had been improperly prepared (*chakula kichafu*, literally, dirty food) (31.3%), or both (9.3%) and eating soil (4.6%). When I asked a mother in Doma how her four-year old son had become infected with *minyoo*, she responded,

He is always playing in the dirt and eating soil. I wash the food to prevent illness but he just eats the soil and I cannot prevent.... Also, he does not have shoes; we cannot afford to buy.

This mother's response was typical, as many people felt they were helpless in preventing *minyoo*, particularly in the case of children who would play in the dirt. Symptoms associated with *minyoo* were widely reported by informants to include loss of appetite, or conversely always feeling hungry, swollen stomach and sometimes worms visible in the stool and an itchy anus. The mother of the boy mentioned above said she knew her son was suffering from *minyoo* because,

He has no appetite and will not take food... he is crying all day long and his belly is swollen. This tells me he is suffering from *minyoo*. At other times it is possible to see tiny worms in the stool. In adults the appetite is sometimes more and the hunger feeling is always present.

In the survey in Doma, nearly 60% of households responded that changes in appetite are the prime indication of infection with *minyoo*. Unlike *kichocho*, the majority of informants in Doma and Chamwino thought that *minyoo* could be asymptomatic and that it was possible for a person to be infected without knowing. However, it was thought that this was only likely in the early stages of infection.

Kichocho and minyoo are just part of life

Similar to Wenzel Geissler's research on children's perceptions of worms among the Luo in Kenya (1998), people in Doma and Morogoro town were resigned to the idea that *kichocho* and *minyoo* was 'just part of life'. However, unlike Geissler's findings, people did not think that being infected with *kichocho* or *minyoo* was beneficial; there was no symbiotic relationship present, as in the Luo children's perceptions of worms, it was merely unavoidable. *Kichocho* and *minyoo* were not considered to be major health problems; after all people do not die from these diseases. Indeed, suffering from *kichocho* and *minyoo* was considered commonplace, and viewed as a normal occurrence rather than as an acute illness. When I asked informants to name their major health concerns, malaria (*homa ya malari/malaria*) was almost always the first illness mentioned. Tuberculosis and HIV/AIDS (*ukwimwi*) were also cited as prominent health concerns, but *kichocho* and *minyoo* were rarely mentioned unless I raised them in the conversation. However, once mentioned, people would often talk about how frequently their children suffered from *kichocho* and *minyoo*.

Kichocho and *minyoo* were considered to be 'normal' (*ya kawaida*) or 'natural' (*ya asili*) diseases. The concept of 'normal' and 'natural' was used in the sense that these diseases came from the environment (*mazingira*) or God (*Mungu*) rather than from spirits and witchcraft (*uchawi*). As common and chronic conditions, *kichocho* and *minyoo* did not arouse suspicions concerning the involvement of malevolent forces, as one mother in Chamwino stated, "We do not suspect such things. Why? Because everybody is suffering, it is just normal".

Seeking treatment for *kichocho* and *minyoo*

Kichocho

As discussed in the previous chapter, there are a myriad of possible treatment pathways available to the inhabitants of Doma and Chamwino from various sectors of health care, and these were all utilized in the treatment of *kichocho*

and *minyoo*. However, the majority of informants said that they attended biomedical facilities for the treatment of these diseases. Biomedical treatment was preferred because *kichocho* was understood as a 'natural' disease, it was not therefore necessary to visit *waganga* to determine the malevolent forces responsible.

Speaking about the treatment for *kichocho* available in Doma dispensary, Hellen, the clinical officer stated,

There is no laboratory here... but most people feel free to take the medicine [praziquantel] without checking [at the laboratory in Melela] because they have been in this situation a long time. They return if it continues, but usually the drugs finish this problem and they are going well... Most people come here [to the dispensary] and not traditional healers because this *kichocho* is known. They know some little of how they are infected; they know it is from the rivers and ponds.

Despite Hellen's comments above that people in Doma "felt free" to take praziquantel without being tested first, my research findings suggest that people preferred to have laboratory tests to confirm whichever disease was suspected, before taking any medicine. I therefore suspect that when people in Doma did seek biomedical treatment for *kichocho* they preferred, if they were able, to go to the health centre at Melela, as it had a laboratory. In addition, one of the reasons some informants said they sought treatment from a biomedical facility rather than *waganga* was that the hospital or health centre was able to test for *kichocho* before having to take any medicine, as these informants stated,

Waganga give medicine but they don't know how much you're infected as they have no measurement. At the hospital they know if *kichocho* is present, they test the urine and have the right dosage of medicine. This is correct and you can proceed. (Grandmother, Doma)

If I go to the *mganga* he can give the children herbs, sometimes they are successful in treating *kichocho*. But at Melela [health centre] the nurse will take the urine. Then I know it is good for them to take the medicine... it is free there (Mother, Doma)

In the clinical officer's room in Doma dispensary a large poster on the wall cites the ten most commonly seen diseases in the dispensary.¹⁴¹ This 'top ten' read:

1. Malaria
2. Acute respiratory infection
3. Intestinal worms
4. Diarrhoeal disease
5. Pneumonia
6. Skin disease
7. Urinary schistosomiasis
8. UTI
9. STI, HIV/AIDS
10. TB

An examination of the treatment register¹⁴² at the dispensary showed that in one year between 7 June 2006 and 6 June 2007, seventy-seven people (24 female and 53 male), the majority of whom were children, were diagnosed with *kichocho* and given praziquantel. However, for a village population of approximately three and a half thousand, this means that just over 2% of the village population received treatment from the dispensary, this does not seem like very many. However, in the household survey, over 80% of households said they had previously obtained drugs from a biomedical facility to treat *kichocho*. This was supported during less formal conversations, and during semi-structured interviews, for example, the conversation with this mother was fairly typical;

JH: Have any of your children suffered from *kichocho*?

M: Yes, she [daughter] suffered from *kichocho*...

JH: What did you do?

M: At the hospital here [dispensary] to get tablets (*vidonge*). They first measure the weight then the doctor or nurse gives the medicine

JH: What happened to your daughter after she got the medicine?

M: She was recovered, then it occurred the next year

JH: What did you do then?

¹⁴¹ All dispensaries I visited had a similar list on the wall. Usually however, it was two lists; one for five years and under and one for above five years of age. In Doma both posters were the same.

¹⁴² Register code: 05/020/06.7

M: The teacher at school sent her to the dispensary to get medicine because she was sick

JH: How was she sick?

M: She urinate blood

While this young girl received drugs from Doma dispensary, it is likely that some people obtained biomedical treatment from facilities elsewhere. However, trips to the biomedical facilities in the towns of Mikumi and Morogoro were usually only undertaken when households had enough money to pay for travel expenses, usually at harvest time. It therefore seems unlikely that people would wait to undertake these journeys when the same treatment was available in either Melela health centre or the village dispensary.

Doma school children's accounts of the treatment they received when they had been suffering from *kichocho* also supports that they attended biomedical facilities. In the secondary school quiz, 64% of pupils stated that they had attended a biomedical facility when they were suffering from *kichocho* to receive treatment. In addition, the short essays written by secondary school pupils revealed similar treatment seeking narratives.¹⁴³

Local *waganga* in Doma also had a reasonable biomedical understanding of *kichocho*, much like the other inhabitants of Doma. The majority of *waganga* I spoke to said they could treat *kichocho* with a local plant that has a small white flower. They all said that they were successful in treating *kichocho* and therefore had no need to send their clients to any biomedical facilities. However, most of them also said that people didn't usually go to see them to cure *kichocho*.

For the inhabitants of Chamwino the situation was very similar. Most parents said they took their children to the local dispensary in Chamwino or to other biomedical facilities in Morogoro town when they had *kichocho*. At Malipula Street dispensary in Chamwino, the register showed that in February 2010, health care workers at the dispensary diagnosed 23 people with *kichocho* and

¹⁴³ These essays were translated by school teachers and I copied them into files on my laptop during my fieldwork visit in 2008. Unfortunately, my lap top (and memory stick) was stolen shortly after in Morogoro town.

gave them praziquantel¹⁴⁴. Twenty two of these were children and the majority were boys. Staff at the dispensary reported that most people went to a laboratory in town first so they could obtain urinalysis to confirm *kichocho* before taking praziquantel. Urinalysis cost the parents 200 shillings but the drugs at the dispensary were free. *Kichocho* did not even appear on the dispensary's wall charts of 'top ten' conditions diagnosed for either the under or over fives.



Figure 26 : "Natural pills" (made from plants) for the treatment of "amiba"¹⁴⁵, and minyoo. The professional herbalist in Morogoro town said these drugs would also be successful treating *kichocho*.

Many Chamwino inhabitants attend the health centre in neighbouring Mafiga ward when they need to access a lab or require drugs that are unavailable in the dispensary. The Assistant Medical Officer at the health centre reported that in February 2010, nineteen people above the age of five years old attended the

¹⁴⁴ I had hoped to look at the numbers of people diagnosed with *kichocho* and treated in a year but the dispensary was always so busy that it proved impossible to have the treatment register for long enough to go back further than one calendar month.

¹⁴⁵ "amiba" generally referred to diarrhoea and gastrointestinal upset of any origin but refers to amoebic dysentery.

centre complaining of *kichocho*. Again, most of these were boys. He went on to say that most people came to the health centre first rather than to *waganga* or to buy drugs at a *duka la dawa*.

Indeed, most of the pharmacist shops (*duka la dawa*) in Morogoro town sold praziquantel, with an average price of 500 shillings per tablet. This was also the cost at most of the mission and private clinics. The majority of pharmacists I spoke to in the town said that they only sold small amounts of praziquantel. It seems that those who are most likely to become infected are the ones least able to pay for the drugs. Furthermore, when the drugs are free in the government dispensaries, health centres and hospitals, there appears to be little reason to buy them from the *duka la dawa*.

Waganga in Morogoro town, including Chamwino area, said it was possible to treat *kichocho* with local herbs, but like the local healers in Doma, very few people came to see them complaining of *kichocho*. Of nine *waganga*, only one said he would send a client to the hospital for treatment if they were suffering from *kichocho*, as he said, “the hospital is the correct place to go for this condition... they have the medicine at that place, I do not keep it here”. The other *waganga* said that when they did treat *kichocho*, they were always successful.

Shop workers at the *duka za asili* in the town also said that they were rarely asked for natural medicine to cure *kichocho*, but that there were some local herbs people sometimes collected for their own use. However, they did not know what it was called or what it looked like. The professional herbalist in Morogoro town said he did not see many cases of *kichocho*, but when he did, he could successfully treat them with a group of medicines that deal with “problems of urine” including *kichocho* and sexually transmitted diseases. He also had drugs to treat *minyoo* (see fig. 26).

Minyoo

In Doma, some parents said they would sometimes chew a particular plant to rid themselves of *minyoo* but that this plant had been difficult to find for some

time. When discussing their children, most parents said the best treatment for *minyoo* was available at the village dispensary. In the household survey, over 80% of households said they had attended a biomedical facility to treat *minyoo*. The dispensary treatment register showed that in one year from 7 June 2006 to 6 June 2007,¹⁴⁶ ninety seven people visited the dispensary and were diagnosed and treated with the drug mebendazole for worms. People in Doma seemed familiar with this drug and sometimes knew it by name, calling it “bendezole”. This drug had been given out annually in the village in previous years, as Hellen, the clinical officer commented,

Mostly children come to the dispensary with hookworms. We give them mebendazole. Also, we give this drug once per year with Vitamin A drops on children’s day in June. The village leaders tell the people to come to the dispensary. Many people come. They know a little about this, they complain of loss of appetite or feeling hungry when they have worms - or they may be pale, with yellow skin, or feel something around their anus.

Informants still said they preferred to have a laboratory examination (stool) before taking the drugs to treat *minyoo* however, and similar to the treatment for *kichocho*, many people said they would go to Melela health centre so they could be tested first. Some *waganga* in Doma said they could treat *minyoo*, but that they were not asked to do so. Several mentioned the local herbs which kill *minyoo*, and said that this herb was known to many people so people would not come and pay a *mganga* for it.

In Chamwino, the majority of parents said they take their children to the local dispensary or hospital in town to get treatment when they are suffering from *minyoo*. Some of the parents said they would rather travel into town, to the hospital or to the health centre in Mafiga, because then they, or their children, could be tested first. The health workers at Malipula street dispensary in Chamwino said it was very common to see children suffering from *minyoo* and they treated them with mebendazole. Although they said parents sometimes went to the biomedical facilities in town so that they might have stool examination in the laboratories, the majority of parents were usually satisfied

¹⁴⁶ Register code: 05/020/06.7

that the child was suffering from *minyoo* and for them to receive treatment without being tested first.

There were several remedies and herbs available in the various *duka la dawa za asili* in and around the town. However, the majority of parents in Chamwino said they preferred the drugs from the biomedical facilities as these were free and were known to be effective. The herbal remedies were not always considered to be as efficacious.

Conclusion

This chapter has discussed local perceptions of *kichocho* and *minyoo*. In so doing, it has illustrated the disjuncture between local and biomedical understandings of these diseases. The latter of which was discussed in chapter two. People in Doma and Chamwino had a reasonable biomedical understanding regarding the aetiology and symptomatology of *kichocho* and *minyoo* although it was often incomplete and vague. For example, while people were aware that entering stagnant water could result in *kichocho* they did not know why. Generally, children who attended school had a better biomedical understanding of these diseases than their parents.

In Doma and Chamwino, *Kichocho* and *minyoo* were not considered to be major health problems, but rather as normal if annoying occurrences. *Kichocho* was understood as a disease of childhood, and it might therefore seem appropriate for school children to receive treatment during the mass drug administration. However it was thought that if a child is infected with *kichocho* they would always be symptomatic, experiencing bloody urine and also perhaps some pain when urinating. Parents stated that biomedical treatment was the best treatment for both *kichocho* and *minyoo* and the school children's illness narratives supported this. However, the majority of parents preferred to take their children to biomedical facilities where they were able to confirm a diagnosis of *kichocho* by urinalysis, even when symptoms were clearly visible. As will be discussed in chapter six, during the mass drug administration, giving the children drugs without testing them first was widely opposed by parents.

Both adults and children could become infected with *minyoo* although children were considered to be at greater risk. Parents appeared to attend biomedical facilities to receive drugs but they also used herbal remedies at home. The drugs to treat *minyoo* had also been distributed annually in Doma village and people appeared familiar with the drug mebendazole. However, parents still thought it preferable to be tested for *minyoo* before taking the drug, even if this was not always possible. In both Doma and Chamwino people therefore travelled further in order to attend biomedical facilities that had laboratories.

Dilemmas in the delivery of mass treatment

The participation of the community from the start of planning is a key factor in the success of a control programme. (World Health Organization [2002]2011)

In pastimes, medicines have arrived abruptly, with little warning, so we were unable to give adequate health education. When the medicine comes next year [in 2008] I need time to prepare; to inform the people in the village, so they understand to get the medicine. (Doma village chairman 2007)¹⁴⁷

The provision of information to parents and pupils prior to the mass administration of drugs to treat school aged children for urinary schistosomiasis and soil-transmitted helminths in Morogoro municipality was inadequate. The first many parents knew of the drug distribution was when they heard that children had died because of it. The situation was mirrored in some areas of Doma village. With either a total lack of information, or only partial information concerning the deworming programme, parents asked pertinent questions concerning the methods and rationale of this medical intervention. Their questions and criticisms also illustrate the disparity between biomedical understandings held by those working in global public health, including the National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP), and local biomedical knowledge of urinary schistosomiasis, including whether urinary schistosomiasis was indeed a serious health problem requiring mass treatment of school aged children.

¹⁴⁷ When the village chairman said this to me in 2007 we did not then realize the mass drug administration would only target school aged children.

The chapter is divided into three sections to illustrate these points. Sections one and two focus on the methods employed by the NSSTHCP to inform parents and pupils of the mass drug administration. It explores how people were informed (or not) of the deworming programme and, when they were informed, what they were told. In so doing, it examines the channels of communication employed - and those circumvented - from the level of district government 'downwards' to street level and the 'community'. It illustrates how the programme reinforced local social hierarchies, particularly between teachers and parents, in Chamwino area where there was existing animosity between these groups. Additionally, it discusses the assessment provided by teachers on NSSTHCP feedback forms concerning 'sensitization' of 'the community' which on paper looks to have been sufficient but obscure the ambiguities and shortcomings experienced on the ground.

Section three explores the bewilderment voiced by many parents in Morogoro town concerning the administration of drugs to treat children for *kichocho* and *minyoo*. These are analysed in a series of three commonly heard questions concerning, first, the rationale for treating all children regardless of infective status ("why did they not test the children first?") second, the efficacy of treatment ("why give the children this medicine when they will become infected again?") and, third, the wisdom of having non-health care personnel administering the drugs ("why did teachers administer the drugs and not nurses?") By examining the questions posed by parents, as well as those in the wider population in Morogoro municipality, it is evident that people were voicing relevant, pertinent questions informed by their own experiences of biomedicine. This is in contradiction to the assertion by many government employees, including health workers, teachers and government officials that the parents - particularly those in poorer areas of Morogoro municipal, including Chamwino area - were 'ignorant' and resistant to the deworming exercise.

I have included multiple perspectives concerning the drug administration from pupils, parents, teachers, health workers of all levels, local leaders and other

townsfolk. Perspectives from Doma village before and during drug administration are also included.

Informing parents and pupils

A frequent criticism of the deworming programme was that parents and guardians had not been informed, or sufficiently informed, of the intention to treat children beforehand. Whether adequate information had been provided depends, unsurprisingly, on who one spoke to; while teachers in Morogoro municipality were adamant that they had, in most instances, sent out letters to parents and organized meetings at the schools prior to drug distribution, many parents were equally adamant that the first they knew of the drug distribution was when they heard of children dying because of it. As one grandmother of two primary school children states:

I was not informed [of the mass drug administration] there must be education if our children are to be given drugs. The parents should go with the children to give approval. It is not correct that only the teachers had information, they are not medical people.

And a father:

I have three children at the primary school. They [teachers] sent a letter to tell us our children were to take medicine for *kichocho* and *minyoo*. *Minyoo* was a problem before so we agreed for the children to be protected but they [the children] were not suffering from *kichocho*. There was no information, they did not come with education... and then we heard that children were dying from these injections (*sindano*).¹⁴⁸

In the weeks preceding treatment, meetings were held at the municipal government building to discuss the planned deworming programme. I was told by medical staff and government officials these meetings had been well

¹⁴⁸Even at this stage several days after the mass drug administration, this father did not know that the treatment had been tablets and not an injection.

attended by head teachers, health teachers¹⁴⁹, religious leaders from the churches and mosques, councillors from the municipal government, and local leaders including ward executive officers (WEO) (*afisa mtendaji wa kata*) and street chairpersons (*mwenerkiti mitaa*). Approximately two weeks before mass drug administration, seminars were held in several primary schools which head teachers and health teachers attended, as well as health workers from local government dispensaries and health centres. It was then the responsibility of each of the seventy-two individual schools to arrange meetings to inform local leaders (street chairpersons), school health committees and teachers (who had not attended previous meetings), pupils and parents of the forthcoming exercise to treat pupils for *kichocho* and *minyoo*. Additionally, notice of the intention to treat the children was covered by the media, on radio and television up to three months before scheduled treatment.

In Doma village, the primary school teachers informed pupils of the intended drug administration two days beforehand during lessons, simultaneously discussing the modes of transmission of both *kichocho* and *minyoo*. At this time, pupils were also instructed to ask their parents for a one hundred shilling contribution which they were to bring to the school to pay for porridge so that the pupils might eat something at the school before swallowing the drugs.¹⁵⁰ Although I usually met with some of the primary school teachers every day, I was never aware of any meeting held at the school to inform parents of the scheduled administration of drugs. However, on the morning of treatment, one of the teachers said this had occurred the previous day, but another teacher who overheard our conversation, denied this had been the case and said some parents had just come to the school to make a payment for the porridge, as it was not paid for by the village government.

¹⁴⁹ Every school has designated health teacher who is responsible for educating pupils on health issues and takes a lead role in 'sensitizing' and 'mobilizing' pupils when medical interventions are planned.

¹⁵⁰ 100 Tanzanian shilling is approximately £0.04 sterling (at the time of fieldwork). Or, to place it into context, 100 shillings would buy two handfuls of fresh chillies or a bunch of greens, such as spinach. 100 shillings was the monthly contribution of each household in Doma village for using the public water taps/pumps. Doma farmers sold buckets of tomatoes (approximately 3kg each) at the roadside for around 3,000 shillings.

In Morogoro municipality, even when parents were aware of scheduled meetings at their children's school many complained they had been given insufficient notice to attend, due to conflicting work commitments or agricultural duties. As this mother relates:

Two days before I was told by my daughter that on Friday there will be an exercise at her school and she will be given drugs for *minyoo* and *kichocho*. But my child also told me that I must come to the school the next day for a seminar but I was unable to go. On the Friday morning I gave her some tea and I released her to go to school and take the drugs.¹⁵¹

In most cases, these meetings were held at the schools one or two days before the drug administration. Parents were informed by the school either by letter or, as in the above account, via messages sent home with their children. Even when parents did receive a letter, many of them complained that they were not given any information concerning the need for treatment or indeed anything else: “We were just told that the children should eat before attending school as they should not take this drug without food”, said one mother.¹⁵²

Educating pupils

In the days leading up to the scheduled treatment, pupils in Doma primary school were taught about *kichocho* and *minyoo*, including modes of transmission. While pupils were sometimes called upon to answer questions in class, much of the teaching I witnessed involved the teacher writing something on the blackboard and the children copying it down into their note books and drawing pictures. At the same time, the pupils were informed that treatment for *minyoo* and *kichocho* was scheduled and the importance of eating beforehand was stressed in order for them to avoid stomach ache (*tumbo linauma*).

¹⁵¹ Mother of school girl in Morogoro municipality.

¹⁵² Mother of three children attending primary school in Morogoro municipality.

It is likely that similar episodes happened among the primary schools in Morogoro municipality prior to treatment. While asking a head teacher in one of the schools what health education had been provided to the pupils before the treatment exercise, he proudly handed me two pupils's notebooks which he wanted me to keep. Both books reveal the teaching which had occurred regarding *kichocho* and *minyoo* dated 25 September 2008, four days before the drug administration. Inside each book the first page had a drawing of a boy, and as the writing below revealed, it was of a boy not suffering from *minyoo*, while the second picture was of a boy with an extended abdomen who was suffering from *minyoo*. Similarly, the third page showed a boy urinating 'normally' who was not suffering from *kichocho* while the fourth page had a drawing of a boy who seemed to be in pain urinating blood and, therefore suffering from *kichocho* (see fig. 27). The accompanying writing below is in both Kiswahili and English. However, one of the pictures depicting a boy urinating blood has the wrong caption in English: while it was written in Kiswahili that the boy was infected with *kichocho* in English he had written "trypanomiasis" (sic) presumably meaning trypanosomiasis (sleeping sickness) rather than schistosomiasis. It is unknown whether he copied this incorrectly himself from a book (where presumably it had information on other tropical diseases) or whether the teacher had written it incorrectly on the blackboard for all the pupils to copy. However, the medical name is certainly less important, irrelevant perhaps, for the child when compared with learning the modes of transmission, signs of infection and appropriate treatment of *kichocho*.

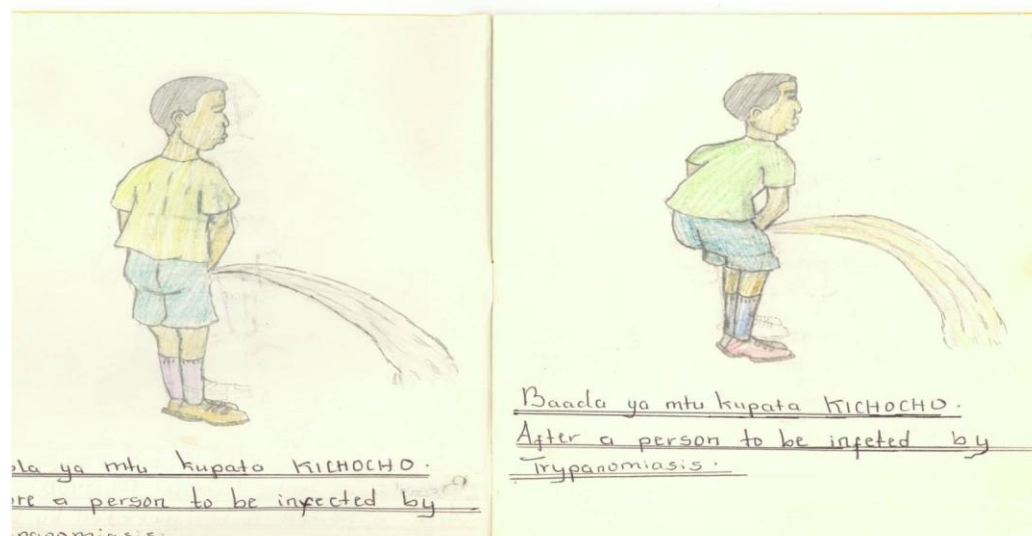


Figure 27 A pupil's drawing of a boy (on the left) not suffering from *kichocho* and a boy (on the right) suffering from *kichocho*. Note the incorrect medical term in 'English' for *kichocho*.¹⁵³

Assessing 'sensitization'

After the first round of the mass distribution of drugs, each school completed a feedback form for the Ministry of Health and Social Welfare (MOHSW) and the Schistosomiasis Control Initiative (SCI)¹⁵⁴ The first section of the form entitled "advocacy (sensitization)" had eight "questions/issues" regarding how those in the local population: community leaders; teachers; school committee members; parents; health workers; "other persons" were 'sensitized, as well as when, by whom, and the topics taught. How well these forms were completed varies quite considerably; sometimes the response did not even fit the question. For example:

Question 1: Number of school/community leaders who attended sensitization meetings on this school deworming campaign?

Response: The massage [sic] was sent to the community leaders and parents by the pupils.

This teacher appears to be providing information concerning *how* local leaders were informed of the meeting rather than answering the question, which was

¹⁵³ Permission to reproduce drawing obtained from headmaster.

¹⁵⁴ 'Form No. 1 - Primary School Level Report.' My research details the findings from a 21% random sample of these forms.

who attended. In other instances, it seems teachers have perhaps entered the total number of people who attended the meeting rather than just including the local leader, although, perhaps this is just as useful. For example:

Question 1: Number of school/community leaders who attended sensitization meetings on this school deworming campaign?

Response: 1000¹⁵⁵

And another example from the same form,

Question 4: How were the sensitization meetings conducted?

Response: No

Question 7: Main content (topics) on school deworming taught in the sensitization meetings?

Response: No

Whether the forms were completed correctly or not depended on the reporting teacher's command of written English; not an easy task for some, as one head teacher commented: "The language on the forms is too difficult" and as the health worker responsible for collecting them complained:

This form should be in Kiswahili. Many of the teachers don't speak English - or it is not sufficient. This results that the forms are not completed. Now we have to return to the schools to explain the form in Kiswahili. We have spent weeks so far and we plan to work on for some more weeks.¹⁵⁶

I often witnessed exasperation on the part of the health workers as they repeatedly implored teachers to complete the forms both promptly and correctly, and it was necessary to visit several schools on more than one occasion in order to obtain a completed form. However, several teachers were visibly unhappy with recent events and appeared less than enthusiastic about completing forms after their recent ordeal.

Even with the various errors on the forms taken into consideration, on paper, the 'sensitization' effort looks adequate: The schools held meetings, usually

¹⁵⁵ If this number relates to the total number of people who attended the meeting, one cannot help but note the 'neatness' of the figure.

¹⁵⁶ Several of the forms were only ever completed in *Kiswahili*.

one or two days prior to the distribution of drugs; the meetings were attended by at least two local leaders though usually more; the treatment for *kichocho* and *minyoo* was discussed. Looking at the forms alone it would be easy to conclude that the local population had been sufficiently (even well) informed. However, the forms do not give any indication of the numbers of 'ordinary' people who attended these meetings (i.e. parents rather than local leaders) and it is impossible to know exactly who did attend. Though undoubtedly useful, the forms are incapable of conveying the diverse situations which surrounded each school and do not reveal how haphazard the notification was in many cases. Moreover, the forms do not convey what information was provided at the meetings or what was discussed. Instead all the reports offer are some generic all-encompassing comments such as those given below, from which it is impossible to assess the quality of information given to parents and pupils:

Question 7: Main content (topics) on school deworming taught in the sensitization meetings?

Response: The effects and prevention of kichocho and minyoo

Question 7: Main content (topics) on school deworming taught in the sensitization meetings?

Response: Supplying the drugs of worms and schistosomiasis

Question 7: Main content (topics) on school deworming taught in the sensitization meetings?

Response: The best way of deworming the pupils

Question 7: Main content (topics) on school deworming taught in the sensitization meetings?

Response: deworming campaign

During my research, I spoke with nearly two hundred parents of primary school pupils after the mass drug administration in Morogoro municipality (in 2008, 2009 and 2010) and very few of them had a full and informed understanding of the deworming exercise at the time of treatment. While some parents knew that treatment for *kichocho* and *minyoo* was scheduled, they did not understand why the children should eat first and were concerned as to why this was the case. Partial information such as this fuelled anxieties that this was strong medicine (*dawa kali*) the implications of which will be discussed in the next chapter. Additionally, the method of calculating the dosage by height,

rather than the more familiar method of weight, was apparently not discussed beforehand. Other parents had no idea that treatment was even going to take place. Even those parents who had attended the meetings at the schools felt they had not been told of the possible 'side effects' their children might endure. The following quotes from parents illustrate this point:

I went to the meeting at the school but they did not tell us about these drugs, not about the side effects... that they would make my child sick. No! Only that she should be eating before school. (Father, Morogoro municipality)

[At the meeting] we were told the children would be treated for *kichocho* and *minyoo*. But they hid from us how dangerous this vaccination was. (Mother, Morogoro municipality)

If I had been given the correct information regarding this exercise I would have told them [teachers] No! This is the wrong way. You must weight someone for the dose. But they did not tell us this. (Father, Morogoro municipality)

The teacher just said to make sure my child ate something before coming to the school as he would be given medicine for *kichocho* and *minyoo*. (Mother, Morogoro municipality)

And as some of the teachers also noted,

It would have been better if the parents had been told about the side effects of praziquantel. It would have been better if we had been told to tell them. (Health teacher)

Teachers want parents to be told the 'side effects' of the drugs: dizziness and vomiting. Teachers were told in the seminar but this was not passed on to the pupils or parents. The pupils ate before but the amount of food is not enough, it must be increased to reduce the side effects. (Sister, mission school)

However, it is worth noting that although some 'side effects' such as stomach ache are associated with both the drugs to treat intestinal worms and schistosomiasis, the reaction of the pupils was unexpected and could not

therefore have been pre-empted in the advice given beforehand. In retrospect, many of the teachers appeared to feel they had been given insufficient time to adequately inform the ‘communities’ (*jamii*) surrounding the schools as some of their comments on the feedback forms under the final ‘suggestions’ section illustrate:

More education to the society [is] needed for more or long [longer] period before the exercise. (Teacher, primary school, Morogoro municipality)

The programme should be sustainable, but community/parents should be educated more before the beginning. (Head teacher, primary school, Morogoro municipality)

For peace and security wise, there should be to educate all the people before such practices occurrences, the next time teacher’s gives the long education about this practice. (Assistant head teacher, primary school, Morogoro municipality)

1. Enough time for preparation. 2. Parents should be informed before the programme... (Head teacher, primary school, Morogoro municipality)

The ministry should educate people about these drugs for a long time before they are administered to pupils... (Head teacher, primary school, Morogoro municipality)

1. Politically! - The govt. should educate the politicians to understand the campaign. 2. The time of educating the mass should be taken for a long time, at least 3 months. (Head teacher, primary school, Morogoro municipality)

The sentiments made clear in the above comments were common among the teachers. During conversations with over forty primary school teachers who had been involved in the school deworming programme throughout the town, I repeatedly heard similar complaints and suggestions:

We needed longer to sensitize the community - up to one month. Although they did use the local leaders to sensitize it was too sensitive and the time was too short. *gida* (rice porridge) was not sufficient food we wanted to buy millet porridge which is heavier but the funds were not enough. (Head teacher, primary school, Morogoro municipality)

I suggest to you that the education of the school health committee should be at least one month before [MDA]. (Assistant head teacher, primary school, Morogoro municipality)

We need to get information before, what the effects can be when taking this drug. We need to know in advance so we can prepare well and give parents the right answers as this time we didn't know and the teacher who had attended the training was not present on the day [of MDA]... The porridge had very little taste - there was no sugar or salt and the children didn't like it, but if it had sugar in it they would have taken it. (Teacher, private primary school, Morogoro municipality)

Since the aggression and rumours of death, next time there should be education to the people at least three months [before] and parents should understand that the teacher is a guardian of the children so they can give the drugs. We do a lot of health activity to students without problem, so why this one? This is because this time someone is starting words like joking that the drugs is killing and causing no pregnancy and no birth. (Teacher, primary school, Morogoro municipality)

However, speaking with the District Medical Office (DMO) several weeks after the drug administration, I asked him if he was satisfied with the way in which the general populace had been informed and whether there was anything he thought could be improved upon. He responded,

This programme was very well prepared. We called in all the religious leaders and street leaders and chairpersons. There was also mass communication via radio, television and magazine... Porridge was paid for by the municipal [government] Yes! This was very well prepared. It was a very good programme.

Vertical structures, the flow of information and social hierarchies

In vertical, top-down biomedical intervention programmes such as the National Schistosomiasis and Soil-Transmitted Helminth Control Programme (NSSTHCP) funds, directives and information travel downwards. In the case of the NSSTHCP, the Schistosomiasis Control Initiative (SCI) is situated at the top of this hierarchical structure as an international donor and monitoring organization, alongside central government and the Ministry of Health and

Social Welfare (MOHSW); at the bottom were the intended recipients of treatment: the primary school pupils, as well as their parents. The dissemination of information regarding this programme - initially at least - ran parallel to and entwined with existing structures of governance in Tanzania. For example, information came from central to local government; from the MOHSW to the regional government in Morogoro and on to the respective district governments in the region; to Mvomero district government in the case of Doma village and to the Municipal government for Morogoro town.¹⁵⁷ However, at this juncture the downward flow of information and resources took a detour from the usual structures used in Tanzanian governance.

In Tanzania once information and directives are received from central government to district level it then moves downwards via various office holders to Ward level (Ward Executive Officer (WEO) *Afisa mtendaji wa kata*; Ward Education Coordinator, *Mratibu wa Elimu wa Kata*; Ward Health Officer, *Afisa afya wa kata*). These government actors then pass the information 'down' yet again. In urban areas this reaches street level (via Street Chairpersons, (*Wenyekiti wa Mitaani*) and Street Health Committees (Kamati ya Afya ya Mtaa), and in rural locations, to village governments (*serikali ya mitaa*), including Village Chairpersons (*Wenyekiti wa Kijiji*) and sub-village chairpersons (also known as street chairpersons in Doma).

Although no less hierarchical, the NSSTHCP followed an alternate route 'down'. Once information concerning the deworming campaign reached district level, rather than informing officials at the ward level (who would then inform those 'below' at street level and so forth) the programme instead held meetings at the municipal government offices inviting teachers, local leaders (including those at Ward level) and religious leaders. From this juncture, teachers were responsible for ensuring information continued 'down' to the school (pupils and parents) and 'communities'. Although leaders who were present at these meetings would have been expected to pass the information on (down), the primary onus was on teachers. Furthermore, throughout my fieldwork I was never able to locate any of the religious leaders who attended these meetings

¹⁵⁷ Both of these local government offices are physically located in Morogoro town.

and only one street chairperson, but he unfortunately left Morogoro town sometime after the drug administration and never returned,¹⁵⁸ so it was not possible to ascertain who he, in turn, informed.

Speaking with twenty-three street chairpersons in Morogoro municipality after the drug administration exercise, I only found three (two from the same ward) who said they had been informed of the planned deworming programme. However, only one of these had been informed by the teachers from the schools, the other two had been informed via the usual channels - their ward officers. The following conversation with one of these street chairpersons was illuminating:

SC: It was announced to every chairperson in my ward that there would be vaccinations for measles (*chanjo ya surua*). Also from the school it came through to me that there would be drugs to treat *kichocho* and *minyoo*. Then we went house to house and the response was good. We had no problems, when the day came; we went over there [to the school]. The pupils came by themselves and there was preparation of food to eat before the tablets. In fact from my street there were no complaints; no telling me this and this - No!

JH: Who went house to house with you?

SC: I was assisted by some leaders and members of the health committee on my street (*kamati ya afya ya mtaa*).

JH: So what went wrong?

SC: There is no communication with the other street chairpersons who have no schools in their street. The information did not come from the schools; from the teachers to all the street chairpersons...They were not informed and did not know this was going to happen. It is better to educate the community before this exercise through street chairpersons to the people. It is better when we are informed in the usual manner.

JH: What is the usual manner?

SC: The chairpersons are called to a meeting at the Ward office where we are told of exercises which will take place; that is how we were informed about the vaccinations to treat measles. It would be better if the Ward office had also told us about the exercise to treat *kichocho* and *minyoo* because then all the street chairpersons would have been informed and they would have informed the people living in their street. But the way it happened, the community did not have information... In my street they did, but not in the others.

From this street chairperson's recollections, it seems that information was not forthcoming from the schools to street chairpersons other than those on streets

¹⁵⁸ It was said due to a family bereavement rather than anything to do with the programme.

where schools were located. If this was indeed the case it would have had a considerable negative impact on information sharing in the town. In the municipality there are 274 streets and seventy two primary schools. In Mazimbu Ward (the most populated ward with between fifty-three and seventy thousand inhabitants),¹⁵⁹ there are eight primary schools and thirty two streets. In Chamwino area alone there are four primary schools but fourteen streets and over six thousand households.¹⁶⁰ The twenty other street chairmen supported these findings as they were also adamant they had either not been informed at all or had only been told treatment was to take place with no additional information.

The problem was there was no education before; no communication with the street chairmen - the parents were not educated; it was by the teachers only. There was no problem with the drugs but the education was not good. In my experience the education before is necessary for the street chairmen to educate the parents - it was not good that it was in the schools only. (Street chairperson, Morogoro municipality)

They didn't inform us [street chairmen] so they told teachers only. It is better to inform the street chairmen as we live with the community... We know how to tell them [people] if there's a problem we know how to solve it with the people. The information was not good. (Street chairperson, Chamwino area)

One street chairperson, who had been informed by the teachers, spoke of his feelings of frustration when news of child 'fatalities' spread, as he did not have any information regarding the treatment programme with which to appease the 'rioting' parents:

In my street most people agree to let their children take [treatment] and they send their children to school to get drugs but after a little time there is changes and they see that some of the children feel sick (*kichefuchefu*) and dizziness (*kizunguzungu*) and they hear that in a school close by some children have died after taking drugs, so some parents come to the school to take their children home. Before I was only told by the teachers of the treatment. I had no other information. So there was a big disaster between parents and

¹⁵⁹ Figures from the 2002 census. In 2009 a year after this event the Municipal council estimated that there were nearly 70 thousand people living in Mazimbu Ward.

¹⁶⁰ Figures from the 2002 census, Mazimbu Ward Office.

teachers and all the street chairmen went to the schools to prevent the teachers being beaten by parents. It was a bad day, teachers were beaten with stones and school property was destroyed. (Street chairperson, Morogoro municipality)

Even the acting Ward Executive Officer for Mazimbu Ward, where Chamwino area is located, conceded that people had not been provided with adequate information. In her estimation, people in Chamwino had not even been told about the necessity for food before the drugs. As she states:

There is need of more education for child's parents before taking this drug, to give sufficient food. I doubt about the porridge the children got before as some of them don't like. So, for next time it is better to follow the rules; that the Ministry give [information] to municipal, then municipal give to Ward, Ward gives to Street Chairpersons and they give to the community.

The dearth of information made available to parents not only had a negative impact on the treatment programme but it also raises serious ethical concerns surrounding the issue of consent. Why was it deemed permissible to give drugs to African children without their parent's consent when this would be intolerable in the countries where drugs such as these are manufactured - in Europe and the United States? Why should it be any different for people living in Morogoro region?

Writing on the Tanzanian system of governance, Maia Green has noted that "...government in Tanzania is essentially about levels, about the staggered hierarchical intersections of those who govern and the governed" (Green 2010: 21) and as such can be seen as a "performance of power" (Ibid.) Such a system continually perpetuates and reinforces social hierarchies and inequalities. This was not only mirrored in the NSSTHCP but it also exacerbated existing tensions between parents and teachers, most notably in Chamwino area but also in some of the other areas of Morogoro town.

Teachers and health workers frequently spoke of the difficulty in educating the ignorant (*kutokuwa na uelwa*) and difficult people (*ngumu wagumu*) of

Morogoro. However, they were usually referring to *Waluguru*, but also anyone who lived in the squatter areas, were uneducated, visibly poor - usually living in mud houses (*nyumba ya fito*) with thatched roofs (*paa ya nyasi*) - wore 'traditional' (*ya zamani*) rather than 'modern' (western) clothes (at least for women), who were without waged work and existed by subsistence agriculture and petty trade (*kutokuwa na kazi*) alone. Such people, although living in the town were often regarded as more like those from the village (*kijijini*) with all the negative connotations just described. During my time with the health workers visiting the schools I often heard such remarks made about the parents, particularly about those in the poorer areas of the municipality, like Chamwino. Sometimes these comments took on a paternalistic connotation as teachers and health workers discussed how difficult their work was in the face of such opposition:

There must be more sensitization and it must take longer. People as a whole from Morogoro, they find it difficult to understand. They only know street words. It is difficult for them to accept new knowledge. They are poorly educated. (Health teacher, Chamwino)

It is very difficult for the pupils here, they try... but their parents do not understand the value of education. There is very poor attendance and it is hard... We teachers try but it is too hard. (Assistant head teacher, Morogoro)

In this area there are many pupils living with grandparents... their parents have died from AIDS and other diseases...They cannot stay in school all day or even everyday as they are needed by their families. It is not possible to educate such children. (Teacher, Chamwino)

This is very poor area and there is a big drugs problem and unemployment; there are lots of street boys. We are despairing of the children in this area. (Teacher, Chamwino)

Comments were far more dismissive and derogatory in character at other times:

The people who live in this place [Chamwino] are very low quality. They have no education and no work. It is very difficult to sensitize people like this. (Health worker, Chamwino)

The parents of these children here [Chamwino] do not have any education and they do not wish it for their children. They do not work and do not contribute to society. How are we [teachers] to educate such people? (School teacher, Chamwino)

The people here in Chamwino live like those in the village; they are very superstitious and do not recognize the high value of education. (Teacher, Chamwino)

The parents here, they are ignorant and do not care for education. (Teacher, Chamwino)

The people here are illiterate, they speak bad language, 85% speak bad language. They are like street children, even the parents... (Head teacher, Morogoro town)

In one of the primary schools in Chamwino there had been long running tensions between teachers and parents, as parents objected to the way in which their children were punished by teachers. In one episode, a teacher punished pupils who had repeatedly missed school by making them carry heavy loads of manure to the school garden¹⁶¹. The children had told their parents and many parents had complained to the school but felt they were ignored. Interestingly, this was the school where there had been significant violence directed at teachers during the ‘riots’ and this was the school where the classroom wall had been torn down. The teacher who had handed out such punishments was not involved in the MDA, however, on a classroom wall someone had written his name followed by the statement, “it is good that you ran” implying he too would have been beaten, as some of the other teachers had been.

The poor relationship between teachers and parents in some areas of Morogoro town was recognized by government employees including teachers, health care workers and government officers at ward level:

There is a bad relationship between teachers and parents in the schools, in most of the ward as parents do not want teachers to punish their children (teacher, Mbuyini Ward)

¹⁶¹ Sometimes it was said that it was the teacher’s own garden rather than the school garden.

The problem in Chamwino is that the parents do not want their children to be disciplined by the teachers, but how else can they control the children? Agh! Chamwino is a difficult case. (Ward education officer, Mazimbu)

The wisdom of using teachers to educate parents in places where antagonistic relationships already exist is questionable. On the one hand, teachers and health workers said it was difficult to educate parents in these areas and appeared resigned to facing opposition from parents. On the other hand, parents said the teachers didn't tell them anything. Whatever the 'truth', it is clear that these were not the ideal environments in which to have an open and honest forum concerning the deworming programme in which parents could express their anxieties to teachers. Despite meetings being held and letters being sent, some parents said the only information they received was to ensure their children ate before taking the drugs, but that they were never told why.

Health workers and government officials also maintained that after the mass drug administration, people in Chamwino area had been particularly 'resistant' to the deworming exercise. This, they stated, was because the people were uneducated, and therefore unable to comprehend the advantages of such a programme. Furthermore, they said that many people in Chamwino opposed the ruling party (CCM) and this had contributed to the violent resistance because people in Chamwino were suspicious of the government and did not necessarily view projects sanctioned by them as benevolent. These statements implied that resistance was a purposeful act of sabotage against the government. The events in the schools in Chamwino were accounted for in this way; it was not the 'failure' of the programme to adequately inform the people but the people themselves who caused the deworming programme to 'fail'.

Although the acting Ward Executive Officer for Mazimbu Ward was aware that the information made available to the people of Chamwino had been inadequate, her summing up of the situation reveals how many government employees, including teacher and health care workers as well as other Morogoro 'urbanites', viewed those living in Chamwino:

There is a lot of political opposition to the government around Chamwino and people believe the bad things they hear about the government because they are not educated. There was no education in the community about this exercise so people did not understand. CCM society knows these drugs are good but in other communities there's no effort to educate the community about these drugs.

Her characterization of "CCM society" - or rather that which it is not - appears quite extraordinary, but it was not an uncommon opinion held by those in authority. However, while many people in Chamwino visibly supported the Tanzanian Labour Party (TLP), it was not by any means homogenous and many people were CCM supporters. Moreover, in one of the most visible TLP areas, and where the street chairman was a TLP supporter, there had been less 'trouble' than elsewhere.

While many people in Chamwino and throughout the town were perhaps quietly sceptical of government, and therefore also of the deworming programme, accusing them of sabotaging the programme due to their political affiliations somewhat misses the point. People were sceptical of all sorts of things in Morogoro town, and in failing to adequately inform people about the MDA this programme failed to alleviate local anxieties. In Tanzania, the system of governance lends itself to the flow of information from central government to the grass roots. It is a pity the NSSTHCP did not utilize the role of the street chairpersons. Street chairpersons are not appointed government employees, but rather elected volunteers, voted for by their communities, and as such they are more likely to be trusted than government officials. Although there are undoubtedly local tensions at street level, it was evident that street chairpersons were generally held in regard by those in their streets and were considered to be working for - and a part of - 'the community'. However, the way information was passed 'down' from those in a position of authority - when it was passed 'down' - reinforced local social hierarchies which many people resented.

Questioning the MDA to treat *kichocho* and *minyoo*

By comparing the public health discourse surrounding urinary schistosomiasis with local understandings (including the lived experiences of *kichocho* in Doma village and Morogoro town), it is clear that while there are points of overlap, there are also significant areas where they diverge. This is particularly pertinent when considering perceptions of whether or not this parasitic disease is a serious health problem. As previously discussed in chapter two, the biomedical literature informs us of the serious morbidity and mortality associated with schistosomiasis (Chen *et al.*, 2012; Hotez *et al.*, 2009; Swai *et al.*, 2006; Molyneux *et al.*, 2005), however, as also discussed in chapter six, for most people living in Doma and Morogoro, although common, *kichocho* is considered an unwelcome and inevitable nuisance rather than a serious health concern. After all, countless people have suffered from *kichocho* but no one has seen or heard of anyone dying because of it.

With this in mind, it should not perhaps be surprising that people were bewildered by a public health intervention which sought to give free drugs to all primary school pupils irrespective of whether or not they were infected with *kichocho*. Many of the parents' reservations regarding their childrens need for treatment were grounded in their previous experiences of 'biomedical care', often in relation to seeking treatment for malaria at local dispensaries, health centres and hospitals. After mass drug administration, numerous questions were raised about the programme. For reasons of clarity, these are divided into categories below, but in reality they were not discrete. Moreover, one question which seemed to underpin all the others - sometimes explicitly and sometimes implicitly - was, why would foreigners (*wazungus*/white people) want to give free drugs to poor Africans (*Waafrika maskini*) for *kichocho* when it is not really a serious health problem? Especially, they said, when people were dying from diseases such as malaria and cholera.

"Why did they not test the children first?"

As *kichocho* was understood as a disease occurring in childhood, it might therefore seem appropriate for children to receive treatment. However, as has

already been discussed, it was also overwhelmingly thought that *kichocho* was always symptomatic, recognizable by blood in the urine (*mkojo wa damu*). Therefore, many parents could not comprehend why their children were being treated when they did not have bloody urine and were therefore unlikely to be infected. As discussed in chapter two, Gray *et al.*, (2010) note that mass, rather than selective treatment programmes, may treat children who are not infected but attend school and miss treating children who are infected but do not attend school.

Most people in Doma and Morogoro town were familiar with the need for blood tests to confirm a diagnosis of malaria, or a stool test to diagnose intestinal worms (*minyoo*). Why then, they asked, were the children to be given drugs to treat *kichocho* when they had not been tested first?¹⁶² For many parents and guardians it was inconceivable that their children would be given drugs if they were not infected. Moreover, as discussed in chapter five, (with the exception of infants) it was considered inappropriate to take medicine unless one was sick. This was frequently supported by medical staff in the clinics,¹⁶³ who discouraged the practice (at least in adults) of taking medicine, particularly for malaria, without being tested first.¹⁶⁴ The absence of screening pre-treatment was one of several reasons people questioned the rationale for treatment and frequently provided alternate explanations, as these comments illustrate:

These drugs that were brought here, they are to stop them [the children] from having their own families. Why else were they to be given to all [children] whether they were suffering from *kichocho* or

¹⁶²Many informants did not know the correct method for detecting urinary schistosomiasis, which is microscopic urinalysis, although this can also be achieved by testing urine with reagent strips, although it is less reliable. Some parents believed a blood test was necessary as is the case with malaria.

¹⁶³I use the term 'clinic' to refer to any biomedical facility, be it a government dispensary, health centre, hospital, private doctor's office or surgery and other funded facilities such as mission hospitals.

¹⁶⁴Dispensaries such as the one in Doma do not have the laboratory facilities to test blood for malaria; in these cases people (adults, children and infants) are given the medicine without screening. However, they are encouraged to attend the nearest health centre where there is a laboratory for such tests, although most people in Doma did not do so as the bus fare was prohibitive and the dispensary staff knew and were sympathetic to this. In Morogoro town with its hospitals and health centres it was more likely for people to have a blood test first, though not always. Like all dispensaries the one in Chamwino also did not have a laboratory. Indeed the staff at Doma dispensary were frequently frustrated by their lack of a laboratory and said the inclusion of one would greatly increase their ability to improve the services to, and health of, the villagers.

not. They would have tested the blood if it was for *kichocho* (Grandmother, Chamwino)

Our children do not suffer from *kichocho* so why were they told to take this medicine? (Father, Morogoro town)

The nurses here (at the dispensary) tell us to check our blood before taking drugs for malaria so why did our children take this medicine when they did not check them for this [*kichocho*]?. Because this was not to treat *kichocho*... (Mother, Chamwino)

Those responsible for 'sensitizing' the local population, teachers, medical staff and other government officials did not address such concerns. Indeed, I routinely asked teachers why all the children were to be treated without prior urinalysis and usually they were unable to state why. Most often, they would just tell me, it was because *kichocho* was a 'big problem' in the area or that "*kichocho* was "rampant" or that all the children swam in the 'dirty water', therefore, they explained, all the (primary school) children needed to receive treatment.¹⁶⁵ That *kichocho* was endemic in the region was not disputed but neither the teachers nor health care workers informed parents - or pupils - why the children were given treatment without being tested first.

"Why give the children this medicine when they will become infected again?"

Another perplexing issue for many parents in Morogoro town, and one which was frequently voiced in the aftermath of the attempted distribution of drugs, was the seeming futility of treating the children when they would go back in the infested water, perhaps even on the same day, and be reinfected:

They say this drug is to treat *kichocho* but it cannot work. No! The children here (Chamwino) will swim in the ponds again... Every day! Every day! You understand? ...So they will have *kichocho* even if they take this medicine in the school. If they [the government] wanted to wipe out *kichocho* why don't they direct their efforts and put something in the water to really kill it [*kichocho*]?. (Father, Chamwino)

¹⁶⁵Treatment was also to be made available to children of similar primary-school age who were not enrolled in, or attending school. Unlike schools in the UK, the age range of pupils in primary-school ranged from between six to eighteen. From my observations in Doma primary-school the children ranged in age from seven to sixteen.

Children take the drugs in the morning and go swimming in the afternoon so what is the point? It does not cure *kichocho*. (Father, Morogoro municipality)

The drugs, they do kill the bacteria in the body but they do not stop it [*kichocho*] and it comes back when they [the children] go in the water again. (Grandmother, Chamwino)

Again, such concerns were not addressed and parents were just told the children should take the medicine because it would prevent (*kuzuia*) *kichocho*.

While treatment of neglected tropical diseases is aimed at ‘preventive chemotherapy’, the way in which it is preventative can be confusing. From a biomedical, epidemiological perspective, mass treatment interrupts the transmission of schistosomiasis and therefore reduces the likelihood of re-infection in any given ‘community’. Second, treatment can prevent the morbidity associated with the disease, especially in the long term. However, it sometimes seemed that teachers were speaking of prevention in terms of immunisation. Indeed, the word for vaccination, *chanjo*, was widely used in relation to the deworming programme, not only by teachers, but also health care workers, parents and other commentators. However, this was not a vaccination exercise; the children were not made immune to further infection from *kichocho*, but the use of the word *chanjo* implied that it did.

Mothers regularly take their infants to receive vaccinations (see chapters five and nine) and the notion of prevention and protection is a common one, practised by both biomedical health care workers and local healers. Perhaps the use of the word *chanjo* was employed - intentionally or not - to make the treatment seem more familiar. Or perhaps this was just how it came to be known, as most biomedical interventions which had taken place previously were immunisation programmes. This would also explain why many people in the town and the media thought treatment for *kichocho* (and *minyoo*) had been given by injection.

The distribution of drugs for the treatment and prevention of *kichocho* and *minyoo* took place on 29 August 2008. The following day was the first day of the national immunisation campaign, which was providing measles vaccinations

(injections) and vitamin A (oral drops) around the country in health care facilities over several days. At one time it seemed the administration of drugs to treat *kichocho*, *minyoo* and the immunisations would take place on the same day, although this was changed, apparently following World Health Organisations (WHO) guidelines concerning the unknown outcome of such multiple drug interactions. However, in Doma village, the nursing assistant who was present at the school drug administration, seized the opportunity to vaccinate the children against measles (*surua*) while she was at the school, saying that they would probably not come to the health centre the following day as some of them lived so far away. These children thus received a whole cocktail of injections, drops and pills. It was little wonder they were perhaps confused over what was treating, curing and preventing what. Although the twenty pupils I spoke with in Doma immediately after they had swallowed the drugs for *kichocho* and *minyoo* were reasonably well informed, with the majority knowing what the drugs had been for, this was before they had been given the injection for measles.

The rationale for treating the children for *kichocho* was, for many people, puzzling and ambiguous; this added to the general confusion and suspicion surrounding the treatment campaign: had the drugs really been given to prevent *kichocho*, or for something else entirely?

“Why did teachers administer the drugs and not nurses?”

The method in which the drugs were administered also caused great concern: why, people asked, were the drugs given to the children by teachers rather than nurses, and why in schools and not in hospitals? “Teachers for education and nurses for healthcare” was a common adage. Such concerns appeared justified, when, as many thought, the teachers - lacking in the requisite medical skills - had been incapable of assisting the ‘sick’ and ‘dying’ children:

They [teachers] should teach our children only and let nurses give medicine. When there was a problem with the children fainting the teachers did not know what to do. (Mother of primary school girl in Morogoro town)

This vaccination should have been provided in the hospitals. It was not safe to give [the drugs] without medical care... The children needed the assistance of doctors and nurses but there were only teachers. Parents had to take their children all the way to hospital. (Father of primary school boy, Chamwino)

People are asking why the government direct teachers to give the children these drugs. Why were nurses not the ones when they have the correct training? (Teacher and parent, Morogoro town)

When I arrived at the school there was fighting and the children were fainting and crying... The teachers were arguing with the parents and telling them the children should take this drug, but the children were sick and the teachers did nothing. The government should have directed doctors to be present at the schools... or this should have been done in the hospital where they know the correct method. (Mother, Morogoro town)

However, nurses or doctors were present at several of the schools, although not always it would seem. On the report forms, section (i) entitled “supervision” has six questions regarding the role and support of local government officers and medical staff - doctors, clinical officers and nurses. Question 4 asks: Did local health personnel supervise this school on drug delivery day? From a randomly selected 22% sample of report forms, 80% responded ‘yes’, 10% responded no and 10% did not answer the question. Question 5 asks: Type of local health workers who visited the school. 19% responded that their school was visited by the so called “in charge” (IC) of the local health unit, 25% responded their school was visited by a nurse, 12% by a doctor, 12.5% were not visited by any health worker and 31% did not answer the question. So it would seem that according to the reports, albeit somewhat sketchy, that at least some of the schools were visited by a health worker.

In question 6, the final question on this section of the form, it asks: Type of support/assistance the local health workers offered during their visit. Just over 81% of this sample reported that those health workers present had assisted in

various ways from giving advice (12.5%) to actively assisting in the administration of the drugs to the pupils (56%), with such statements as '*alisaidia kutoa dawa* (he helped deliver the medicine); '*kugawa dawa*' (distribute drugs); and '*aligawa dawa*' (divides drugs). Another 12.5% assisted by measuring the children or keeping a record in the treatment register. Obviously this sample is only small (22%) but it does go some way in helping to elucidate what role health workers played at the schools on the day of treatment.

Somewhat conversely, from my own observations in Doma, although the nurse was present she did not actually assist at all in the administration of the drugs to treat schistosomiasis or intestinal worms, but instead worked in another area of the school giving pupils the measles vaccination in one of the classrooms. Likewise, very few parents had actually seen any health workers at the schools and did not even know they had even been involved. Those parents who had been informed of the MDA or attended meetings had been given information by the teachers, yet the involvement of health workers was not explicit. Additionally, some teachers complained that they had not been supervised or given support from the health workers as the comments on the form made by this head teacher reveals:

The programme were (sic) not in good condition there were misunderstandings between the teachers and parents. No other health care (carer) who is coming to supervise the program. (Head teacher, Morogoro town)

Similar sentiments were also made to me during my conversations with teachers:

It is better to have health people, nurses and doctors, at the school to give these drugs and not rely on teachers but by health professionals. That is what I have to say. (Assistant head teacher, primary school)

It was left to us teachers alone and the parents came and asked us, why should teachers give these drugs to our children, you are not trained? And it is true, we are not... We are teachers not nurses or doctors and we did not know what to do when the pupils began to shake and faint. (Teacher, primary school)

It was not only parents that questioned the judgement of employing teachers rather than health care workers. After the MDA many comments made to me by teachers revealed their reluctance to be involved in any future treatment programmes:

Teachers should not continue with this exercise. I am not a doctor! Some teachers have asked the government to omit treatment in schools and use the sectors responsible like the Ministry of Health and health workers. Next time we will not obey in this exercise. (Head teacher, Morogoro town)¹⁶⁶

Please do not give in schools, we are not capable - they [the pupils] need a nurse or doctor at the health centre. We will not do it again; the parents will have to take the children to the medical centre or hospital. The teachers will not be willing to take the responsibility again as that day six hundred parents came asking “what is this sister?” and we were not able to respond. (Sister, mission primary school, Morogoro town)

When the nun made the above comments the health worker present replied, somewhat defensively, “Then you will go against national policy”, to which the sister simply shrugged her shoulders and stood up letting us know our interview with her was over; she had after all completed her report form.

The teachers were not shy in their suggestions on the forms either:

It is better for health workers to supply the medicine to the pupils. (Teacher, Morogoro town)

Schools should not be used as centres for the delivery of the drugs. Ward offices and health centres should be used instead. (Head teacher, Morogoro town)

Parents and some of the children need to talk about the problems of these diseases and they say teachers are not doctors to be giving their children medicine. (Health teacher, Morogoro town)

¹⁶⁶ The study undertaken in 2004 by the Municipal council estimated that 86% of children at this school were infected with schistosomiasis, the highest infection rate of all schools in the town.

...3. This programme should be done by doctors and nurses and not teachers because it is not teacher's field. (Head teacher, Morogoro town)

...2. Drugs should be provided at health centres and not at school grounds to avoid further violence. (Head teacher, Morogoro town).

It was evident after the mass distribution of drugs to treat *kichocho* and *minyoo* that many of the teachers felt they were being blamed by not only parents and other townfolk for what had happened, but also by the health workers and they had been used as convenient scapegoats in the face of national scrutiny. One very angry teacher shouted to the health workers one day as we were driving away "You public health workers are blaming the teachers but why did only two teachers from our school get trained?" The driver stopped and the two health workers explained, rather briskly, that it was because his school was small that only two teachers received training. As we drove on they laughed, "He's just old," they told me!

Conclusion

This chapter explored how, in this vertical programme, information regarding the targeted mass treatment of school aged children in Morogoro town was passed 'down' from district and municipal government to parents and pupils. The information was disseminated through (in the case of Morogoro town) the municipal council to ward leaders and primarily school teachers. From this point, schools were responsible for informing parents and pupils, as well as street level leaders, of the scheduled treatment and providing the necessary health education - a role which was referred to locally as "sensitizing the community".

However, it has been demonstrated that little or no information reached parents for several reasons. First, the way information flowed 'down' circumvented the usual avenues that such information is provided to the population - from the municipal council to ward and street level. In so doing, street level chairpersons and other street level organizations such as street health committees were unaware of the scheduled drug administration. They were not therefore instrumental in informing those in 'the community' as they

usually would have done. The nature in which street chairpersons were involved appeared haphazard: on the seemingly rare occasions that street chairpersons were informed by the schools it was only because they happened to have schools located on their particular street.

Second, teachers were given insufficient time to inform parents of the scheduled treatment. This meant that little notice was provided to parents to attend meetings at the schools, and as a result many parents were unable to attend due other commitments. As most street chairpersons had not been informed there was no other way in which parents could garner information if they were unable to attend the school meetings. Third, the health education provided during these meetings appears to have been minimal: Teachers informed people that treatment would take place, but not necessarily the rationale for the targeted MDA of all school age children or the method in which drug dose would be calculated. It is impossible to determine exactly what was discussed at each of these meetings as the feedback forms concerning such information are vague and ambiguous. However, from parents' comments it seems as though some schools did better than others. Fourth, it illustrates how the programme exacerbated existing tensions between teachers and parents in some areas, most notably in Chamwino. This led to accusations that parents had not been receptive to health education and were resistant to the programme, and counter accusations that the teachers had shown little inclination and effort in providing information to the communities in Chamwino.

The principle message given by teachers throughout the town seems to have been the necessity for children to eat beforehand, so they might avoid experiencing stomach ache. This also involved telling parents that the municipal council had provided funds for the provision of porridge at school although it was still advisable for children to eat at home. This, of course, was not unreasonable, although few children in the poorer areas of town like Chamwino or in Doma would normally eat before school. However, with the dearth of other information made available, or a forum in which parents could have voiced concerns or asked questions (and received answers), the

importance placed on the need for food became the principle message. This suggested that the drugs were very strong.

Chapter Eight

“The drugs were too strong”: Notions of strength, weakness and resistance.

After the news of child ‘fatalities’ and the other adverse reactions experienced by children following the mass distribution of drugs, people in Morogoro town commonly stated that this was because the drugs had been strong (*dawa nguvu*), very strong (*dawa kali*), or too strong (*dawa ilikuwa kali mno*). Such comments alluded to the power of the drugs. This chapter explores the fears and anxieties associated with these powerful drugs. It is divided into six parts: part one details the pharmaceuticals used in the mass treatment programme as well as local familiarity with them. Part two shows that the drugs were deemed to be particularly strong because they had not been ingested with food - or enough food - to counteract their innate strength. As a result, they led to undesired ‘side effects’. Part three explores the notion of overdose. While this was refuted by government officials - at least locally - parents and commentators throughout the town expressed anxieties that children received too many drugs because, unfamiliarly, the dosage had been calculated by height rather than weight.

The fourth part of this chapter shows that fears and anxieties about the strength of the drugs were also influenced by the drugs themselves, as medical material objects (*materia medica*) (Whyte *et al.*, 2002). This includes their size, smell and dosage. In addition the drugs were perceived as powerful; having been manufactured in ‘scientific’ laboratories in the ‘developed’ world and donated by *wazungus* (white foreigners) (Van der Geest & Reynolds Whyte 1988; Reynolds Whyte *et al.*, 2002). As Poole and Geissler note, “The pharmaceuticals that biomedical interventions often rest on are more than what a laboratory has put into them”. (Poole and Geissler 2005: 90). Furthermore, the strength of the drugs was always a relational one; they were powerful in comparison to the bodies of the children, who were small (*miili ndogo ya watoto*) and/or weak (*dhaifu miili ya watoto*).

Children are viewed not only as less powerful than the drugs, but also in relation to those administering them: their teachers. Thus, part five discusses the relationship between pupils and teachers, a relationship which emphasized the pupils' ideal role as one of obedience. To this end, teachers commonly employed severe disciplining techniques which reinforced pupils' subordinate position. In so doing, it suggests that once at school, the pupils appeared to have had very little agency with which to refuse the drugs. Indeed, some parents felt their children had been forced into swallowing the drugs by their teachers. Such feelings escalated into violence towards teachers distributing medicines in some schools.

Some teachers and health workers hinted that the pupils' illnesses may have been brought about by panic rather than 'side effects'. It is not my intention to disregard what may well have been adverse drug reactions in children who were frequently under-nourished and suffering from co-endemic diseases including malaria, schistosomiasis and intestinal worms. However, my observations of children in Doma and subsequent research in Morogoro town led me to suspect that many of the children reacted in response to intense fear. The sixth and final section therefore examines some possible explanations for the children's reactions and asks, was it adverse drugs reaction, hysteria or resistance?

In common with fainting episodes experienced by school girls elsewhere in Tanzania (Waller, 2009; Chidawali, 2008), these occurrences may be viewed as episodes of mass sociogenic illness¹⁶⁷, including what has been called the "nocebo phenomenon" (Kennedy, 1961 cited in Hahn, 1997: 608). However, such understandings are problematic, not least because they are located within western psychiatry and therefore viewed as a psychiatric 'disorder'. It is therefore suggested here that that the pupil's actions (reactions) can be better understood as an embodiment of resistance in the face of extreme discipline, uncertainty and fear (Scott; 1985; Ong, 1987).

¹⁶⁷ Within mental health, mass sociogenic illness falls under the wider heading of 'somatoform disorder' and includes 'epidemic hysteria' more commonly known as mass hysteria (Bartholomew and Wessely, 2002: 300).

The anti-helminthic drugs administered during mass treatment

It is worth reiterating here that the oral anti-helminthic drugs which were administered to primary school pupils were albendazole (one tablet per child) for the treatment of intestinal worms and praziquantel (between one and five tablets depending on height) for the treatment of urinary schistosomiasis.¹⁶⁸ Although the World Health Organization (WHO) notes that stomach ache has been associated with albendazole, both the WHO and the Schistosomiasis Control Initiative (SCI) contend that the drugs are 'safe'. Indeed, as discussed in chapter two, the safety of the drugs is a crucial aspect of the rationale for targeted mass drug administration to school age children regardless of their infective status (SCI)¹⁶⁹.

Albendazole (and also mebendazole)¹⁷⁰ were common drugs in both Doma village and Morogoro town, available in most drug shops (*duka la dawa*) and biomedical facilities. They had also been distributed at previous biomedical interventions in the region. In Doma, albendazole had been offered alongside Vitamin A drops in previous years at the dispensary and the situation was similar in the town. However, praziquantel was less familiar. Although it was periodically stocked in the dispensary at Doma and generally available in the health care facilities in the town, it was usually only available to purchase in the larger pharmacies. It was not stocked at all in the *duka la dawa baridi* in Doma village.

After the mass administration of the drugs, people in Morogoro town often spoke of drugs (*dawa*) or 'the drugs' (*madawa ya kulewya*) that had been given to the children during the 'deworming programme' without differentiating which they were referring to, praziquantel or albendazole. However, if asked, it was usually made explicit that they meant the drugs which had been given to treat schistosomiasis (*madawa ya kutibu kichocho* or *dawa ya kichocho*). However, in the newspapers (journalists columns, editorials, letters from the public, cartoons) such distinctions were not made, sometimes they only referred (or depicted) one type of medicine, whichever it was or, particularly

¹⁶⁸ The dose for praziquantel is 400mg per kg.

¹⁶⁹ <http://www.3.imperial.ac.uk/schisto> accessed 13 August 2012

¹⁷⁰ Both mebendazole and albendazole are used to treat intestinal worms.

in the English language press, combined the two into the generic category of 'deworming medicine'. Moreover, most of the print media reported (or depicted), incorrectly, that the drugs had been administered by injection rather than orally. Although vaccinations may indeed be oral, such as the oral polio vaccine, the use of the word *chanjo* (vaccination) also implied that the drugs had been injected.

'Side effects' and the lack of food

The official reason given for the untoward physical symptoms experienced by some of the children was that they had taken the drugs praziquantel and albendazole without eating sufficient food first, as directed in WHO guidelines (WHO 2006) and as was suggested by the Ministry of Health and Social Welfare (MOHSW). Although the municipal council had provided funds so that rice porridge (*uji/gida*) might be made available to all primary-school children before they took the drugs in an effort to reduce or counteract the possible undesired physical effects - or 'side effects' as they were commonly referred to - for various reasons not all children received it.

Accusations were again made by some parents that the teachers had kept the money provided by the municipal council, or some of it at least, for themselves, leaving the children without any - or sufficient - porridge to eat beforehand:

The children were supposed to eat porridge first, that is why they took their cups to school. We were told the children would eat first as the drug is too strong on an empty stomach. But the children did not get any [porridge]...What happened? The teachers they took the money but did not provide food. (Grandmother of two pupils, Morogoro town)

It was very bad, very bad...They [the children] had to eat first but we do not eat in the morning here [at home] so they were to have food at the school but there was none. The teachers did not provide it and they have the money still. (Mother of two pupils, Morogoro town)

However, according to the teachers, some children refused to eat the porridge, complaining that it was too bland, while in some schools there was not enough to go around. Most teachers complained that there had been insufficient funds from the municipal council with which to buy the food. However, the very fact that it was recommended that the children should eat before taking the drugs reinforced an understanding locally that these were strong and powerful drugs. Furthermore, parents were angry that despite the apparent need for food beforehand, which the teachers had themselves suggested, the teachers still insisted pupils swallow the medicine knowing they had not eaten. Teachers, health workers and government officials responded to these criticisms by maintaining that the porridge provided by the municipal council had only ever been intended as a supplement and parents and pupils had been informed of the need for children to eat at home before coming to school on the day of treatment. However, as already discussed in the previous chapter, many parents maintained they did not receive any information concerning treatment at all. Moreover, such a response by those working on the programme fails to recognize the lived realities of these children's lives. With the majority of adults in Morogoro town surviving below the 'poverty line' (UN-HABITAT 2004: 7) the provision of food was a constant source of anxiety for household members. Meals were usually taken once a day in the afternoon or evening - very often from funds which had been garnered that day to provide not only the food but the fuel - charcoal or kerosene - on which to cook it. The additional provision of adequate food, especially so early in the morning, was never realistic in these circumstances. As figure 28 shows, such anxieties were well illustrated in a newspaper cartoon.

Uchambuzi



Figure 28 Cartoon from *Mwananchi* newspaper, four days after the distribution of drugs. The label on the bottle reads *vaccination for intestinal worms*. The character is thinking 'with a meal of a cup of tea and a piece of cassava, good heavens are we ever going to faint!'

Overdose? The method of calculating the dose for praziquantel

In the days following the mass distribution of drugs, a pervasive suspicion was palpable in the town that the teachers had 'overdosed' the children due to their inexperience and incompetence by measuring the children's height to establish the dose rather than weighing them, which most people thought was the correct method. People pointed out that while a child might be tall he or she could also be slim - as was usually the case - or even underweight or malnourished, resulting in the child getting too many pills for their body weight. However, measuring the child's height using the 'Praziquantel Dose Pole' to establish the correct dose of praziquantel was the approved method for calculating the dosage following WHO guidelines; the teachers were

following what they had been instructed to do, but this was not how those in the wider town population viewed it:

Why did they not weight the children? They were supposed to. This is the correct manner to calculate the dosage. Yes! It is not good to only take their height they may be tall but small (slim) like my son and get too many drugs, this is what made those children sick. Even my own son he was dizzy and had stomach-ache. (Mother, petty trader, Chamwino)

The children who were sick, they were tall but not much weight and the drugs were too many for them. The teachers should not have done it like this, they should have weighed all the children but they are not nurses they do not know the correct ways. (Father, Morogoro town)

Those children that died... they swallowed too much medicine. The teachers did not know how to give the correct number of pills (*vidonge*). (Grandmother, Chamwino area)

Even pupils feared they were being given too many drugs by their teachers, as was reported in one of the national newspapers:

Some of the students talking to Majira at another time said they were given the medicine according to their height so some were given two, three, and up to five tablets and this situation convinced them that this was the root of the side effects (Majira newspaper, Saturday 30 Aug 2008).

One of the health educators even reported that a paediatrician working in Morogoro Regional Hospital was refusing to use the praziquantel dose pole as she was adamant the children should be weighed before receiving drugs and could not be convinced otherwise.

The widespread understanding that measuring the children's height to determine the dosage of praziquantel had been a mistake was seemingly 'confirmed' by the acting director of Tanzania Food and Drug Administration

(TFDA), Hiiti Sillo, when, during his visit to Morogoro in the days following drug administration, he reportedly told a journalist:

...[T]here were a number of deficiencies in how the drug was given, such as giving children the vaccine without weighing them, not educating the parents and children about the side effects of this vaccine as the drug used during this exercise is very strong (Mwananchi newspaper, Monday Sept 1 2008).¹⁷¹

Other officials also appeared to place blame on the teachers for the way they administered the drugs, including those who held high office. Even the Regional Commissioner, Major General Saidi Kalembo, was reported to have said that “[T]hose giving out the drugs had not followed the regulations” (*Mtanzania* newspaper 30 August 2008). While his comments were more likely to be in relation to the lack of food, his comment, or at least the way it was reported, is ambiguous and people may have thought he was referring to the method in which teachers calculated dosage.

People living in Morogoro and Doma were familiar with infants and young children being weighed, often (though not always) to establish the dose of medicine to be administered. For example, this was how the nurses calculated the dose of praziquantel to pupils in Doma in 2006. Infants and toddlers were also weighed regularly at ‘baby clinics’ to monitor their nutrition and overall health. Conversely, the method of calculating dosage by height had not been seen or even heard of before in Morogoro town or, I suspect, Doma. This was yet another reason people questioned the wisdom of letting teachers rather than health workers administer the drugs. Arguments between parents and teachers at the schools over this issue were common as the following accounts from school teachers illustrate:

No pupils received the drugs [here], I failed. The parents came and it was very crowded, they entered the school and stopped the process. Some of the parents insulted us. They said “Why are you stupid? You want to give poison to our children. You want to kill my only son. The

¹⁷¹ It is also rather surprising that the (acting) director of the food and drug agency would refer to the treatment as a vaccination, although this may have been the journalist’s interpretation.

people came with cars driving around inside the school compound very roughly; driving high speed without caring if there were pupils or not. They said “Why do you give without measuring weight? Height is not a proper measurement. So that is a problem too, as they say in the rumours that there is a problem not weighing the children (Headmaster, primary school, Morogoro municipality).

One parent hit out at our health teacher saying she did not know what she was doing and that she was giving the children too many drugs... We attempted to explain to him that this was the correct way but he would not believe us. He said we were responsible for killing the children, but no pupils died here (Assistant head teacher).

The parents here did not comprehend that what we were doing was correct and came directly from the government. They blamed us and even beat us but measuring the height was correct... [w]e do not have weighing scales so how could we weight the children? (Primary school teacher)

Such reactions appear to support many parents’ complaints regarding the lack of information they were given prior to the mass drug administration, in that they did not know this would be the method employed to calculate the number of drugs each child should swallow. It also highlights again the lack of confidence people had in the teachers’ ability to administer the drugs ‘correctly’.

Drugs are ‘powerful substances’

As anthropologists have noted elsewhere in sub Saharan African, western pharmaceuticals are frequently regarded by local populations as powerful by virtue of their origins (Whyte 1998, Bledsoe & Goubaud 1998, Whyte *et al.*, 2002, Pool & Geissler 2005). The situation was no different in Morogoro town, and the way in which local understandings of the drugs imbued them with an innate power cannot be underestimated. As the drugs originated in the ‘developed’, industrialized world they were considered to be extremely strong and efficacious. This was supported by people’s experiences of buying medicine in the local drug shops (*duka la dawa*) in the town. As discussed in chapter five, the cheapest pharmaceutical medicines available in Morogoro town were produced in Tanzania; these were considered to be the weakest and least

effective. The most expensive drugs available in town were those from Europe and the United States of America, and were considered the strongest and most efficacious.

Moreover, the power of the drugs was seen in contrast to the size and/or weakness of the bodies of the school children:

That medicine had a lot of energy compared to the bodies of children so it caused dizziness and vomiting so the children had to eat a lot before that medicine. (Street chairman, Chamwino)

My child is disturbed by worms so she is already weak and the medicine was too strong for her; she is only small... My husband had to take her to the hospital and still she has stomach ache and dizziness. (Mother of nine year old school girl, Chamwino)

This is not like Tanzanian medicine, it is very strong as it was made for *wazungus* (white people) and they are big like you. (Grandfather of two school children, Chamwino)

Young children are not given this drug [for *kichocho*] as their bodies are so small. But my son is also small and he has been sick with malaria but still the teacher said he was to take [the medicine]. But he could not stand up to it and it made him dizzy. She should not have made him take it when he was so weak. (Father of school boy, Morogoro town)

Not only were the medicines considered strong but the children were also expected to take multiple pills - at least two and anything up to five. However, it was apparent during my fieldwork that people in Doma and Chamwino did not like to take this kind of medicine every day over several days or more than one pill at a time. Speaking to people about recent illness episodes they would very often present me with the drugs (usually antibiotics) they had been given at the dispensary or health centre. When I asked why they had not finished all of the pills, I was often told that the drugs from the hospital were very strong and it was not a good idea to take all of them, and not more than one at a time. It

was also considered a good idea to save some until one was really very sick, or to have some in case another member of the household needed them. People also kept medicines to sell or exchange with neighbours.



Figure 29 Cartoon in Mtanzania (Tanzanian) Kiswahili language newspaper, 31 August depicting a pupil (*mwanafunzi*) being injected with a vaccination for schistosomiasis and intestinal worms (*chanjo minyoo [ya] kichocho*) by a huge anonymous, but apparently African, hand. All around him other pupils have already collapsed, presumably after having already been injected. One pupil even appears to sleeping (and snoring).

While I observed the children at Doma primary school, it was evident they were nervous of taking the drugs, especially when they realized they had to take at least two and usually more, as this short excerpt from my field notes illustrates:

Standard six are called forward now, they run to take their positions and make a line against the classroom wall. They are still laughing and playing with one another and appear relaxed; apparently enjoying a break to the usual school routine. John is next, the headmaster's wife measures him against the dose

poll and calls out “two and a half”, the health teacher then writes this down in the treatment register. She then gives John one albendazole tablet which he immediately swallows along with a drink from his water cup. Behind him another boy is measured and the head teacher’s wife calls out “three”. The headmaster has checked inside John’s mouth to check he has swallowed the first pill before giving him the praziquantel pills which he now hands him. John looks at them and screws up his face. The other boy laughs at him and they begin talking to one another. I cannot make out what they are saying but they are clearly now comparing the number of praziquantel drugs they are both holding in their hands. The headmaster tells them to swallow the pills and replenishes John’s cup with water. John holds the pills up to his mouth apparently smells them and lets out an “Agh!” The headmaster is growing impatient. Finally, John places them in his mouth pulls a face which communicates they don’t taste very nice, takes several more gulps of water, chokes and coughs after each one but finally manages to swallow all his praziquantel pills. Behind him the other boy has swallowed his with more ease but with even more face pulling. They walk away together declaring “Agh! Ni chungu” (they are bitter) to the other pupils. Now they have taken their tablets they seem to enjoy making the pupils who are waiting even more nervous than they might already be. I look up to see a similar scenario with the next boy who appears to be asking the headmaster if he really has to take all of them.

That the drugs both smelled bad and tasted bitter supported the local notions that praziquantel was a powerful drug. It is also possible to make some comparisons with local folk cures using herbs, which are often taken as a ‘tea’, and usually taste bitter - indeed this is often understood as proof of its effectiveness. Similarly, the ‘medicine’ (herbs, allopathic drugs, bark, and bone) which is placed inside the amulets to ward off spirits which are attracted to young children was said to work - at least in part - by repelling spirits with its noxious smell. Also, stomach ache and vomiting after ingesting medicine from the local *waganga* was verification of its potency. Although the children vomiting was unexpected, it again reinforced opinions among townsfolk that these were indeed powerful drugs, as did the other ‘side effects’ experienced by some of the children.

Punishment and obedience: The relationship between teachers and pupils

While I was observing the distribution of drugs in Doma primary school, I spoke with twenty pupils (individually) immediately after they had swallowed the drugs. Initially, I asked an ill-thought-out question: 'why did you swallow the drugs?' However, what I really wanted to know was what the children thought the drugs were for. Their answers were illuminating in that they very clearly illustrated the power teachers held over pupils, as all of them replied they had swallowed the drugs because the teacher had told them to. While the hierarchical relationship between teacher and pupil might not be remarkable *per se*, it is important in contextualizing what happened during the drug administration when pupils 'fainted'.

I had previously witnessed the strict discipline that was maintained in Doma primary school including the corporal punishment 'sessions'. On these occasions several pupils would be caned on the hand by the headmaster while the rest of the school was expected to look on. The headmaster did not appear to take any delight in these proceedings and the pupils 'only' received one of two hits to the palm of their hand. But it was common for teachers to threaten pupils who were misbehaving - talking in class, wearing incorrect uniform, not paying attention, being late, not obeying a command quickly enough - with physical punishment. Later, when I was in Morogoro town visiting schools, I saw on several occasions extreme cases of punishment. One involved the beating of a boy of approximately ten years old repeatedly with a stick - the teacher lifting his arm high above his head each time - bringing the stick down hard against the boy as he lay on the floor and tried to defend himself with his hands. On another occasion, as I passed a classroom, I drew the attention of a young girl and she watched me walk past, presumably turning her attention away from her lessons. This did not go unnoticed by the teacher who immediately hit her around the face with a swift and forceful whip of her stick.



Figure 30 A cartoon in *Majira* newspaper 2 September 2008 depicting an overbearing school teacher 'forcing' a young school girl to open her mouth to take the medicine for *minyoo* (intestinal worms). (*kichocho* is not mentioned) The school girl is saying to the teacher "But today I haven't had even a cup of tea!" To which the teacher replies "Hey, don't tell me how to do my job, say aah..."

While I obviously cannot generalize on the use of physical punishment in all the primary schools in Morogoro town, I frequently witnessed its use and it appeared that such practices were not uncommon. Corporal punishment is currently permissible in Tanzanian schools and the practice is reportedly widespread (MKUKUTA monitoring system 2007 cited in Johnson Frankenberg *et al.*, 2010) despite it contravening the Convention on the Rights of the Child (CRC) of which Tanzania is a signatory. There have even been occasions when children have died due to beatings by teachers (Feinstein and Mwachombela, 2010) and, in response, the Tanzanian government placed restrictions on its

use. However, research has found that teachers and pupils are usually unaware of any restrictions (ibid).¹⁷²

With such institutional discipline that continually reinforces the ideal role of the pupil as obedient and attentive, it appears that short of running away or not attending school on the day of treatment - which seems to have been the case in some schools - there would have been little opportunity for pupils to refuse the drugs from their teachers. (See fig. 30). Indeed, some parents even accused the teachers (and the government) of forcing the drugs upon their children:

I did not have any information... and then the teachers forced my daughter to swallow this medicine. (Mother of nine year old schoolgirl, Chamwino)

Even when I arrived they [teachers] were arguing with parents that the children should take this medicine...Other children were made to swallow this drug by the teachers there but they were wrong to do so. (Mother of thirteen year old schoolgirl, Morogoro town)

Parents who spoke with Forever Tanzania directed blame at the government for agreeing to take these medicines and for pressuring children to take them. (Forever Tanzania newspaper (*Tanzania Daima*) Saturday 30 August 2008)

However, while pupils may not have been able to refuse drugs from their teachers, there may have been other ways in which they negotiated the rejection of the deworming programme and their teacher's authority.

¹⁷² The punishment should only be carried out by the head of the school to prevent teachers administering 'punishments' when they may be angry and they are only allowed to give four hits (Feinstein and Mwachombela 2010). There is currently a debate in Tanzania concerning the abolition of corporal punishment in schools (Johnson Frankenberg *et al.* 2010).

Pupil reactions: adverse drug event, ‘mass hysteria’ or resistance?

Once people began to arrive at the schools with news of child ‘deaths’, the pupils were no longer expected to take the medicine, certainly not by their parents and the other people who arrived at the school, even if the teachers argued they should still do so, at least up until the time that the government suspended treatment. In Doma, when the father of a school girl arrived telling us of the deaths in Morogoro town, the children immediately ran away from the distribution area even though they had been told to stand still by the headmaster before he went away to talk privately with the man. Other pupils, all girls, began to fall to the ground complaining of stomach ache. I did not witness what I would recognize as fainting (involving a brief loss of consciousness) in any of the children although it was very soon after this that I went to the headmaster’s house so I do not know what happened then. What I did see was a group of girls who looked incredibly distressed lying on the floor, clutching their stomachs and groaning. Some had their eyes open, some were crying and others had their eyes closed, but they were all conscious. One girl was crying and wailing so much that she was struggling to catch her breath and appeared to be hyperventilating. Most of the other children (and all of the boys) had run away towards the gathering crowd. Obviously I did not witness any of the children’s reactions in Morogoro town but parents, teachers, and other townfolk reported that many of the children complained of stomach ache, headache, dizziness, nausea and vomiting and that many of them fainted.

My neighbour called to say my daughter was dying after taking the pills. I rushed to the school but she was not there. I thought she was dead but she had not arrived to the school. I was very happy. (Mother of 13 year old school girl, Morogoro town)

My son swallowed the drugs to treat *kichocho* and also for *minyoo*. He suffered from stomach ache and had to open his bowels. He felt dizzy but did not faint. (Father of 9 year old school boy, Morogoro town)

Our child took this medicine from the teachers... but it was too strong and it made her faint. (Mother of twelve year old school girl, Morogoro town)

We were not prepared when the pupils began to faint. (Sister, mission school, Morogoro town)

The children here complained of stomach ache and also dizziness... Some of them fainted. They were taken away by their parents to go to the hospital. (Health teacher, Morogoro town)

A few of the pupils began to complain of headache and dizziness after they had swallowed the pills but once they heard those bad stories they panicked and began to faint from fear. (Head teacher, Morogoro town)

This is how it was also reported in the national press:

Speaking to this newspaper... these students said after being given the vaccine, they started feeling dizzy and later to collapse before becoming unconscious. (Forever Tanzania newspaper (*Tanzania Daima*) Saturday 30 August 2008)

Children nearly escaping death admitted to hospital (headline)... Some of the students at those municipality schools began collapsing and fainting after being the drug 'praziquantel... and mabendazole (sic). (*Majira* newspaper, Saturday 30 August 2008)

More than 260 students faint (headline)... More than 363 primary schools in Rukwa and Morogoro regions were taken to various hospitals after collapsing and becoming unconscious a very short time after being given medicine to prevent schistosomiasis and intestinal worms. (Today's news newspaper (*Habari Leo*) Saturday 30 August 2008).

This national campaign to prevent schistosomiasis and intestinal worms... cause[d] more than 180 children in Morogoro Municipality alone to be affected with weakness, diarrhoea and vomiting... (*Mtanzania* newspaper, Saturday 30 August 2008)

When I attempted to talk to children in the days, weeks and months after these events regarding their experiences they always appeared reticent. More often than not, especially in the early days, parents or other caregivers who were present would talk on behalf of the child. For example the following conversations took place (separately) three weeks after the drug administration with children who - it was said - had been very ill after swallowing the drugs:

JH: What happened after you swallowed the drugs at school?

Child 1: silence
JH: Did you swallow any medicine at school?
CH: Yes (laughs)
JH: What happened after you swallowed it?
CH: I don't know
JH: How did you feel?
CH: Fine
JH: I heard that you were sick after you swallowed the drugs
CH: Yes
JH: What happened?
Mother: She fainted and we had to rush her home and give her food. She couldn't walk; we had to carry her. She was very weak.

Child 2: I took the medicine for *kichocho* and *minyoo* at my school
JH: What happened after you swallowed the pills?
CH: The people came to the school
JH: Why did people come to your school?
CH: I don't know
JH: Was it to do with the drugs that were being given?
CH: It was
JH: How did you feel after you took the drugs?
CH: I fainted
JH: Then what happened?
CH: I don't know
JH: Did you go to hospital?
CH: No
Mother: It was too far to go to the hospital. She came home with her brother and she had to be very quiet and rest and we gave her food to eat.

JH: What happened after you took the drugs for *kichocho* and *minyoo*?
Child 3: I had stomach ache
JH: Did you have any other problems?
CH: No
Father: We took him to the nurses at the hospital [local dispensary] and they gave him water and told us to give him some food.

JH: What happened after you took the drugs at school?
Child 4: (silence)
JH: Did you take the medicine at school?
CH: Yes
JH: What happened after you took the medicine
CH: I don't remember

All my conversations with children who swallowed the drugs were similarly subdued, even with children who were not normally shy with me. However, this was probably a very difficult topic for children to discuss as they may have feared saying the 'wrong' thing or getting into trouble with their parents, teachers or the authorities. Unfortunately, I also recognize that by undertaking multi-sited fieldwork for periods of no longer than three months at a time I was

not in a position to develop any meaningful long-term relationships with the children in Morogoro town, in which a situation of trust might have developed. Moreover, unlike fieldwork visits in 2009 and 2010 when I focused on one or two areas, after the mass drug administration in 2008, I was working all over the town. At this juncture I spent a great deal of time trying to locate children who had swallowed the drugs. I would often be directed to a house by a neighbour who would recall the child had been sick after receiving the drugs, only to be told that this was not the case by household members, or else the conversation progressed like those noted above.

As already discussed, the official explanation given by the National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP) was that children had suffered 'side effects' because they had not eaten any or enough food before ingesting the medicine. The children's reaction following treatment was reported to the World Health Organization by the Schistosomiasis Control Initiative.¹⁷³ Although there was disagreement among people concerning the way in which the drugs had been responsible for the children's 'illness'- including, as already discussed: side effects; overdose; or, as will be discussed in the following chapter, expired or counterfeit drugs; hitherto untested drugs (drugs trial) or drugs which were other than they were reported to be (covert sterilization campaign) - most people were in agreement that pharmaceutical toxicity had been responsible.

However, some teachers suggested the rumour of child fatalities had also been influential in the pupil's behaviour, as these teachers comment:

There were no problems... One child complained of headache and another girl had stomach ache... But when those people came with this

¹⁷³ Personal communication with Dr Melissa Parker. The World Health Organization (WHO) defines an adverse event (AE) as "any untoward medical occurrence that may present during treatment with a medicine but that does not necessarily have a casual relationship with this treatment" (WHO 2011: ix). An adverse drug reaction is defined as "a response to a drug which is noxious and unintended and which occurs at drug doses indicated for use in humans" (ibid.) Finally, a serious adverse event (SAE) is "an event that is fatal, life threatening, disabling or results in hospitalization after drug intake (ibid: xii).

bad story, then pupils panicked, some fainted and some vomited. But before it was very calm (health teacher, Morogoro town)

The children were very afraid, it caused them to faint. These were good drugs... We were running smoothly until parents came to say a child had died after taking the medicine. (Head teacher, Morogoro town)

Conversations with health workers and government officials sometimes revealed an implicit assumption that not all of the children had necessarily experienced 'side effects' due to adverse drug reactions but rather, had succumbed to the various ailments out of fear. This was usually hinted at by the idiom of panic: "These drugs were really very good you know, the children just panicked"; "...the children were frightened of course, they panicked and they fainted"; "There were no problems elsewhere, only here... because of those reports the children panicked and it made them sick". However, these views were not for public consumption and were only spoken of among colleagues or fellow government employees. Such views may have been felt to be too controversial for public statements or they may have feared that such 'explanations' would be met with accusations of a 'white wash' in which people would accuse them of blaming the children rather than the deworming programme. It may also have been that such suspicions were deemed to be just that; with no evidence to support these theories it was best to remain quiet. Furthermore, if it was suggested that it wasn't the drugs which caused the children to become ill then, like cases elsewhere in which school children have become suddenly and unaccountably sick (Chidawali, 2008), suspicions would very likely turn to witchcraft. In any case, these views were considered personal rather than official.

If the children's 'symptoms' were not due to pharmaceutical toxicity, then how else might they be explained? A psychological interpretation of events might conclude that the children experienced a mass sociogenic / psychogenic illness episode (mass anxiety hysteria). This behaviour is associated with the "nocebo phenomenon" in which "the subject has negative expectations and experiences a negative outcome" (Hahn, 1997: 608). In sociogenic illness a person experiences an illness - even death - when they see or learn of the illness in

others (Hahn, 1997).¹⁷⁴ As the name implies, mass sociogenic illness (MSI) involves a group of people and is more commonly known as “epidemic hysteria” or “mass hysteria” (Bartholomew and Wessely 2002; Hahn 1997)¹⁷⁵. The symptoms associated with mass sociogenic illness are short-lived (typically a day) and involve “sudden, extreme anxiety following the perceptions of a false threat” (Bartholomew and Wessely, 2002: 300).

Mass sociogenic illness episodes are dependent upon shared cosmologies within any given group and are therefore usually culturally and historically specific. As Bartholomew and Wessely note, they “mirror popular social and cultural preoccupations that define each era and reflect unique social beliefs about the nature of the world” (Bartholomew and Wessely, 2002: 300).¹⁷⁶ At different times and in different places, mass sociogenic illness episodes, it is argued, reflect the harsh living conditions, anxieties and ‘beliefs’ of the sufferers.¹⁷⁷ In a retrospective study in 1974 schools were frequently identified as sites in which mass sociogenic illness episodes occur (Sirois 1974, cited in *ibid*).

In Tanzania, there have been several reports of school girls ‘fainting’ in school (Chidawali, 2008; Waller, 2009).¹⁷⁸ Often this appears to coincide with examination time which has been described as a “common trigger” (Waller, *The Guardian*, 18 September 2009). Waller, a medical historian who has written extensively on the subject of mass sociogenic illness notes, “[I]n many central

¹⁷⁴Cannon’s study of Aboriginal peoples in Australia detailed how pointing a bone at someone resulted in their immediate death. Similarly, in Africa and Latin America being bewitched can lead to sudden “voodoo death” (Cannon 1942, cited in Hahn and Kleinman 1983:17).

¹⁷⁵ There is another type of mass sociogenic illness called “mass motor hysteria” this involves “disassociation, histrionics and alterations in psychomotor activity” (Bartholomew and Wessely, 2002: 300).

¹⁷⁶ Robert Bartholomew is a sociologist and Simon Wessely, a psychiatrist.

¹⁷⁷For example, the medieval dancing epidemics which occurred in pockets throughout modern day continental Europe in the 12th to 14th centuries followed years of extreme harshness involving floods, famine and sickness (Waller, 2009). Those who were afflicted belonged to communities in which there was an existing belief in satanic dancing curses (*ibid.*). Likewise, the ‘satanic’ “possession epidemics” which afflicted nuns living in harsh convent environments, often not of their choosing, reflect their desperation in the face of their over-disciplined lives as well as their shared ‘belief’ in the devil and possession (*ibid*: 644). More modern day episodes of MSI in which people believe they have been poisoned, reflect, it is argued, historically appropriate anxieties such as chemical warfare following WWII, nuclear warfare during the cold war years and, in the 21st Century, biological terrorism (Bartholomew and Wessely, 2002).

¹⁷⁸ See also the case of the so called ‘laughing epidemic’ which started in a mission-run girl’s school in northern Tanganyika in 1962 causing the school to be closed. It then spread to several surrounding schools and villages affecting adults and children (Rankin and Phillip 1963).

African schools pupils are placed under such extreme pressure that mass hysteria has become virtually endemic” (ibid: 1). Indeed, in the case of the school girls fainting in Iringa, southern Tanzania, the local education officer reportedly said that such occurrences “were very common” (ibid.)¹⁷⁹ Similarly, an American mission teacher in Morogoro commented on her experiences of school girls fainting in various regions of Tanzania. She said that in an effort to prevent it happening she would tell the girls any ‘mass fainting episodes’ would prevent them from being awarded their leaving certificate, which, she said, appeared to work. Although the case of the “mystery illness” in Dodoma region (next to Morogoro region) in which school girls collapsed and lost consciousness (*The Citizen*, 2nd September 2008) did not occur around the time of any examinations, it did occur on the first day of school after the events in Morogoro town, which may have been influential. However, local explanations located the girls’ illnesses in the realm of witchcraft (ibid). This is not unusual; any occurrence in which an individual experiences an altered state of consciousness, including fainting and convulsions/seizures is usually explained within the idiom of spirit possession and witchcraft in Morogoro.¹⁸⁰ Moreover, if such an occurrence were to happen *en masse* - without an ‘obvious’ alternative explanation as there was during the mass drug administration - then this would undoubtedly be attributed to witchcraft.

Episodes of mass sociogenic illness are often associated with events that are deemed responsible for the illness, for example, unidentified noxious smells or insect bites (Colligan and Murphey (1979) cited in Hahn 1997). As already discussed, the drugs were held responsible for the untoward physical symptoms that followed, however, might it be that having learnt of child ‘fatalities’ due to these powerful drugs, pupils feared they too had been poisoned? There are several distinct features associated with mass sociogenic illness, these include: “high female attack rate, rapid onset and recovery, hyperventilation, and line of sight transmission” (Bartholomew and Wessely, 2002: 304). It would seem that to a professional psychologist - in the absence of any other environmental or pharmaceutical reason - this might look like an example of ‘mass hysteria’.

¹⁷⁹ As well as fainting the girls were screaming, running around, sobbing and yelling.

¹⁸⁰ For example, a folk illness affecting infants called ‘degedege’, which from a biomedical perspective is most likely cerebral malaria, which causes the infant to have altered states of consciousness and convulsions (due to a high temperature) is much feared by parents and is always attributed to witchcraft.

However, even in cases that have looked like text book examples of sociogenic illness there have been other explanations.¹⁸¹

The problem with such an explanation is that it is framed within western psychiatry and therefore places the children's illness into the realm of a psychological 'disorder'. As Ong comments, "mass hysteria is attributed to the failings of the afflicted" (Ong, 1988: 30). However, Hahn and Kleinman (1983) provide an alternative, anthropological perspective of the placebo/nocebo phenomenon. They argue it is necessary to discard the "Cartesian fallacy" that is the foundation of western psychiatry, as it is this that leads to the stigmatization of those who experience the placebo/nocebo effect (ibid: 3). Furthermore, it is necessary to view such incidents within the specific cultural context in which they occur and they propose a reframing of the nocebo/placebo phenomenon as examples of, what they term, an "ethnomediogenic" disease (ibid: 3). To quote:

Human events are not exclusively mental *or* physical, so that one cannot ask how mental events cause physical ones, or vice versa. Rather, all human events have physical *and* mental aspects (and other subdivisions as well, for example, chemical, physiological, conscious and unconscious). The mind is embodied, the body mindful. Thus, when we talk of any disease, there is always an accompanying psychological process. Conversely, when we talk of "mental states" (belief or expectation; hopeful or fearful), there are also physiological correlates of these states (Ibid: 18 emphases in original).

It is impossible to state categorically that the pupils did not experience an adverse drug reaction or even that they did not experience a mass sociogenic illness episode or an "ethnomediogenic disease"; additionally, the children's experiences may not have been homogenous. However, I am more inclined to view the pupil's reactions as embodied forms of resistance (Ong, 1987; Boddy, 1988). While the children were not understood to have been possessed by spirits

¹⁸¹ In 1990 pupils in a London primary school complained of abdominal pain, nausea and vomiting. The event appeared to be a text book example of mass sociogenic illness: primarily girls were affected; rapid onset and recovery; hyperventilation and symptoms appeared once the suffer saw others succumb to the illness. However, it was later found that pesticide on the cucumbers which had been served at lunchtime had been responsible (Aldous *et al.*, 1994).

(even though fainting and loss of consciousness is sometimes an idiom of possession), there are parallels that can be drawn between the pupils' 'illness' and the periodic spirit possession of the young female Malay factory workers of which Ong (1987) writes.

Ong argues that the spirit possession that afflicted these young women can be understood (at least partially)¹⁸² as expressions of resistance in the face of relentless working conditions: performing intricate work for long hours with minimal breaks under constant surveillance by male managers. In Malay society, young unmarried women were expected to be "shy, obedient, and deferential, to be observed and not heard" (Ong, 1988: 33). Indeed, this is what made them so attractive to the multinational corporations looking for a new cheap workforce for the burgeoning factories in the free trade zones. As a form of resistance Ong argues: "They are acts of rebellion, symbolizing what cannot be spoken directly..." (Ong, 1988: 38).

As discussed above, the pupils in Doma and Morogoro were subjected to hierarchical relationships in which the pupils' ideal role as obedient, quiet and attentive was frequently reinforced by teachers with physical punishment, or fear of it, for minor transgressions. In some schools in Chamwino, there were already simmering tensions between teachers, pupils and parents concerning the punishments which were being bestowed upon pupils. One of the rationales for utilizing teachers in the distribution of drugs to school-age children was that teachers are "perceived by the community as those possessing attributes of honesty, good conduct, integrity, trustworthiness and good record keeping" (SCI, 2012).¹⁸³ It would seem that in Morogoro at least, such sentiments were not shared by all. When parents arrived at the schools there was an opportunity in which pupils could - if only fleetingly - resist the authority of their teachers as agents of the deworming programme and also future programmes.

¹⁸² The violation of 'moral boundaries' was also responsible for the women being possessed: working alongside men; working in an area which had previously been swamp land known to be inhabited by particular spirits, and the 'dirty' and 'polluting' effect of the women being in this space. (Ong 1988)

¹⁸³ From <http://www3.imperial.ac.uk/schisto/whatwedo/howwework> accessed 28 June 2012

Unlike the Malay women in the factories who had a biomedical rationale thrust upon them - identifying their episodes of spirit possession as 'mass hysteria' therefore medicalizing (and medicating) them (Ong 1987) - the pupils themselves explained their sickness by the ingestion of the strong medicine. As such, the explanation is already placed within a biomedical framework; there is no alternate biomedical understanding necessary. The pupils' acts of resistance were well camouflaged. Although their actions may at first appear more explicit than the everyday forms of resistance identified by Scott (1985), they can still be viewed as part of the armoury of the weapons of the weak (Scott 1985). I would suggest that episodes of school girls fainting elsewhere in Tanzania appear to be similar expressions of resistance, located within the familiar idiom of witchcraft and spirit possession.

Conclusion

This chapter has examined how the drugs administered in the treatment of *kichocho* and *minyoo* were conceptualized locally (as well as in the national press) as 'strong' or 'very strong'. Such strength was attributed to the drugs in a number of ways including: inherent pharmaceutical strength not dampened by food; overdosing due to teachers employing an 'incorrect' method of calculating the dose by height rather than weight; provenance and physical attributes. In addition, it has demonstrated how the teachers who were administering the drugs were in a position of power over their subordinate pupils.

While it cannot be ruled out that the children's illnesses on treatment day were not adverse drug reactions, it was suggested that there are alternative ways of understanding what might have happened. A psychological perspective such as a mass sociogenic illness episode ('epidemic hysteria') was discussed, and it was argued that such a western psychological explanation places the children's actions inappropriately in the realms of a psychiatric 'disorder'. Instead, it was argued that a more anthropological reading, which frames the children's illnesses as an embodiment of resistance is more pertinent.

Also, from the arguments put forth in this chapter, as well as in the previous one, it has been demonstrated that despite teachers being viewed by global health professionals as the ideal professionals to administer drugs to children during mass treatment campaigns, this is not necessarily how target populations (or their parents) viewed it. Assigning a group of non-health professionals to distribute drugs was met with incredulity by many people in Morogoro town, and the use of teachers fuelled mistrust surrounding the programme. Teachers were never entirely trusted to know what they were doing, illustrated by people's certainty that teachers had not calculated the dose correctly. If parents are not confident that those who are administering drugs to their children possess the requisite knowledge and skills, it is unlikely they will want their children to take the drugs.

“Why did they poison our children?”¹⁸⁴ Local explanations, sterility rumours and anxieties of reproduction

In the days and weeks following the mass distribution of drugs in schools, a frequent topic of conversation was the fact that some children were reported to have fallen ill, while others were reported to have died from treatment. This chapter analyses the views of parents and guardians, as well as the views of high level government employees and other local elites, including American, white African and European expats (missionaries, volunteers, tobacco employees and NGO workers). The perspectives of Tanzanians who lived elsewhere (cartoonists, newspaper editors and clergy) are also included. While these perspectives are not ‘local’ in the sense it has been used throughout this thesis, their contributions challenged the official version of events and added to the conspiratorial discourse which circulated in the municipality in the days and weeks following the mass distribution of drugs. Furthermore, by including them here, it is possible to illustrate how the various interpretations of the deworming programme were largely informed by a person’s socio-economic status.

The first section of this chapter briefly expands on the rumours of the child fatalities already discussed in the introductory chapter in order to contextualize the various theories regarding the drugs and the ‘real’ rationale for their use. It is important to remember that many people in Morogoro municipality, particularly poorer and less educated inhabitants, continued to believe that children had died as a consequence of the drugs they took to treat *kichocho* and *minyoo*. In the second section, various explanations of the deworming programme are explored and contextualized. These include ideas of

¹⁸⁴ “*Kwa nini waliwapa watoto wetu sumu*”, spoken by the mother of a school girl in Chamwino.

expired and counterfeit drugs, ministerial corruption, drug trials and covert sterilization campaigns.

The use of the term rumour commonly conjures up notions of dubious stories and conspiracy theories with questionable validity in the popular imagination. Indeed, this was certainly the official view of the stories of child fatalities, drugs trials and sterility rumours in the municipality. However, as will be discussed throughout the remaining three sections of this chapter, anthropological perspectives tend to view rumour as a counter-narrative, by those in marginalized and subordinate positions. Such narratives not only illuminate local anxieties, but can provide opportunities for negotiation and resistance to official discourses and hegemonic apparatuses, such as public health interventions. Sterility rumours frequently reveal anxieties of continued survival based on ethnic and religious identity. Indeed, suspicions of a US led anti-Islamic plot may have been voiced by certain imams in Morogoro municipality. However, for the majority of informants, fears concerning a covert sterilization campaign appear to have been in response to the ubiquity of public health education regarding the need for family planning and the commonly heard development discourse concerning the overpopulation of Africa.

Rumours of dead children

As discussed at the very beginning of this thesis, on the day anti-helminthic medicine was administered to school children in Morogoro municipality, rumours circulated that children had died after taking these drugs. People learnt of the child 'fatalities' from a variety of sources including: kin; friends; neighbours; co-workers; boys on bicycles¹⁸⁵; radio; mobile phones or just about anyone who had themselves heard the news. In the days following the treatment exercise, various stories emerged which supported and perpetuated the rumour of child deaths (*vifo vya watoto*). Such narratives continued to challenge the official version of events, which stated that no children had died

¹⁸⁵ As discussed in the introductory chapter, government officials and the local police force maintained that the 'political agitators' who started the rumours paid adolescent boys to spread the rumours at the schools using bicycles as a means of transport, so they could get to as many schools as possible.

as a result of taking the deworming drugs. It is worth mentioning at this juncture that I never located a family who suffered a child fatality due to the de-worming treatment and - apart from one individual - I did not meet any one who said they personally knew of a family who had been bereaved in this way. However, each day, for several days - and usually more than once a day - I heard various accounts and theories (often contradictory) about dead or dying children, some of which I relate below.

Ruth, an American expat calls me on the evening of the treatment day to say her friend's children are "gravely ill" after taking the medicine. Her friend also knows of a family whose child has died after taking the drugs. Several days later she informs me that she had misunderstood; her friend's children had not taken the drugs and were actually suffering from malaria. However, she remains adamant that her friend's housekeeper knows of a family bereaved after the child took the deworming medicine.

When no bodies were in evidence, one story which gained prominence in Morogoro town, told how government vehicles had arrived under the cover of darkness to remove the corpses of the children. Bereaved families, it was said, were paid or even threatened to keep quiet.

The bodies of the children are being hidden in Morogoro hospital and they are not allowing the families to see the children. (Group of mothers, Chamwino area)

Children are still critically ill after swallowing (*kumeza*) the medicine (*dawa*). (Grandmother and mother, Chamwino area)

Children are still critically ill after receiving the vaccination (*chanjo*). (Mother, Morogoro municipality)

Children continue to die in the days following the de-worming exercise. (Father, Morogoro municipality)

A European expat tells me her neighbour's child died after receiving the drugs and that this had been confirmed by a doctor in the town. She has seen the child's grave near her house.

An Indian medic who was working under the auspices of the Prime Minister's office, researching infant mortality in Tanzania, tells a friend that she visited Morogoro morgue with government inspectors and saw the bodies of the children who had died after taking the deworming drugs "stacked up". She also said that the Tanzanian government was considering whether it was a case of "attempted genocide".

As the weeks progressed, narratives about children dying, or the whereabouts of their bodies, gradually abated. Informants seemed less inclined to talk

spontaneously about the children who had died during our conversations and when they did they seemed less convinced of the stories' validity. Teachers in a couple of the schools I visited even reported that a few parents had since asked for the drugs to be given to their children as they no longer believed children had died. Unsurprisingly, when I returned to Morogoro town a year later, in November 2009, tales of children dying due to deworming medicine no longer appeared to be in circulation. Now, what people were very keen to discuss was not the stories of children dying over a year ago, but the compulsory registration of mobile phones, which people said the government was implementing so they (the government) could spy on people (*kupeleleza*) to learn who they would be voting for in the upcoming elections in October 2010. However, when I raised the topic of the programme which treated *kichocho* and *minyoo* the previous year, informants would soon recount that there had been a disturbance (*fujjo*) or a problem (*tatizo*) with the deworming exercise in the schools. Research participants continued to explain the untoward symptoms experienced by the children with various theories, which will be discussed below, and complained that the government never provided an adequate explanation for the children's adverse reactions to the drugs. The perceived lack of information from government sources reinforced local understandings that there had indeed been something untoward about the programme. As one informant stated, "They [the government] should have come here and told the people the truth about these drugs. We know it already... but they should have come clean in this matter".¹⁸⁶

"Why did they poison our children?" Some 'local' explanations

In the narratives of the children's deaths which circulated in 2008, there was not usually any explicit mention of why the medicine had killed the children, only that the children had died after taking it. As already discussed in chapter seven, suspicions surrounded the deworming programme in part because the biomedical rationale for treatment did not sit comfortably with local understanding of *kichocho*, nor did the way in which the programme operated, including the method used to administer the drugs. Furthermore, as discussed

¹⁸⁶ Conversation held in English with a businessman and father of two primary school children in Morogoro municipality, 2009.

in chapter eight, the drugs were deemed to have been very powerful (*dawa kali kali*). These understandings were also enmeshed with the theories that arose, and which offered alternative explanations for the children's adverse reactions to the drugs (and 'deaths'), than those provided by the government.¹⁸⁷ Indeed, official statements which continued to assert the safety of the drugs - such as the one reported in *Sunday News* (31 August 2008: 1), in which the Minister of Health, Professor Mwakyusa speaks of the safety record of these drugs - only appeared to reinforce people's fears that there was a 'cover-up'. This was also suggested by an editor in another English print newspaper:

Indeed, the authorities must come out clean on this issue rather than making general statements that seek to down-play the gravity of the matter. (Editorial in *The Guardian*, 1 September, 2008)

In addition to the reasons discussed in the previous chapters, such as the possibility of overdose, there were four principle theories concerning the safety or the 'real', covert, purpose of the drugs. In no particular order, these were: first, that the drugs had expired; second, the drugs were counterfeit; third, the drugs had not been tested on humans before; and finally, the whole exercise had been a covert sterilization campaign.

In trying to unpick these various theories and present them clearly, it is important to stress that in reality - like many of the other local understandings presented so far in this thesis - the way in which they were expressed were not necessarily so clear-cut: Informants might have favoured one particular explanation over another; changed their opinion over time; or mixed several components from a variety of theories together. That said, one theory was usually preferred over another depending upon a person's level of education and their socioeconomic status, and this will be discussed further in each particular section.

¹⁸⁷ The government did not of course offer any explanation for child fatalities as these were deemed to be mere rumour.

Expired or counterfeit drugs

One explanation of why the drugs had made the children so ill was that they had expired. As a European missionary remarked:

You have to look at these drugs very carefully; there must have been something wrong with them. It was only in this area that they make the children ill... They gave the drugs in other places with no problems. Perhaps they expired, they could have kept them from previous years - who knows? I asked the nurses in the clinic but they just said the children had not eaten enough - but this is not the real reason. I would not let the children [in her care] be treated.

Indeed, it was not unusual to read in the newspapers of drugs or other products (usually from India or China) being recalled or monitored by the Tanzanian Food and Drugs Authority (TFDA).¹⁸⁸ Suggestions that the deworming programme had either used expired or counterfeit drugs was the view most often expressed by European and American ex-patriots (missionaries, teachers, NGO workers, tobacco company employees) in the municipality, as well as Tanzanians who occupied a higher socioeconomic status, both in the municipality and nationally. While some viewed the possible expiration of drugs as mere negligence by the Ministry of Health and Social Welfare (MOHSW), others suspected more corrupt motives and accused those in the MOHSW of buying cheap drugs that had either expired or were counterfeit in order to siphon off money. One commentator, a Bishop Kulwa Karedia wrote in his letter to the Editor in the *Tanzania Daima* Newspaper:

...the corruption that takes places around drugs and bringing in expired vaccines ... it seems the situation is bad and it deserves to be taken care of. This is indeed why I question as to when Professor Mwakusa¹⁸⁹ will take steps to take to task his assistants who seem to have dirtied up their performance?¹⁹⁰

¹⁸⁸ Milk powder from China was recalled by the Tanzania Food and Drugs Authority (TFDA), as it was globally, during my fieldwork visit in 2008. Public announcements appeared widely in the Tanzanian Press. Also in 2008 the TFDA implemented a surveillance scheme of drugs manufactured at Ranbaxy laboratories in India, after the US Food and Drug Administration (FDA) issued warning letters to this company for violations concerning current Good Manufacturing Practices. Again, this public announcement was placed in Tanzanian newspapers.

¹⁸⁹ The Minister of Health in 2008

¹⁹⁰ *Tanzania Daima* Newspaper, 2 September 2008

Accusations of government corruption were the stuff of daily conversation in Morogoro municipality as well as nationally.¹⁹¹ The national press frequently ran stories about government ministers and other high profile officials who were under scrutiny or who had been found guilty of corruption.¹⁹² While those occupying a higher socioeconomic status may follow these stories in the media and be well informed of the names of those involved and the intricacies of each case, most people - even those who did not buy newspapers or could not read - were aware of government corruption at a national level, however vague, and were sceptical of politicians. There was a resignation that those in The Government were there for themselves and not for the benefit of anyone else, certainly not the rural peasantry or urban poor. The following quotes illustrate this point:

The government says they will improve this and this but there is never change. There is no assistance for us in the village... Governments change but it is always the same."¹⁹³ (Farmer, Doma village)

The animals [from the game park] destroy our crops but the government does not help us. They say the *wazungu* (white people) bring money [to see the animals] but we do not see it, it is for the politicians only. (Farmer, Doma village)

The government should help us, but they only like to help themselves. (Mother and petty trader, Chamwino area, Morogoro municipality)

People here support the government, but things are very difficult and they do not give us assistance (*serikali haitoi msaada*)... Money is for the pockets of politicians (*Hela ni kwa ajili ya mifuko wa waniasia tu*). (Street trader, Morogoro municipality)

¹⁹¹ In the Corruption Perception Index (CPI) Tanzania was listed as 94th (of 179 countries) in 2007. In 2008 Tanzania fell to 102nd place (of 180 countries), and in 2009 fell again to 126th place. In 2010 Tanzania moved up to 116th place out of 178 countries). Accessed on 26.08.2012 from, http://archive.transparency.org/policy_research/surveys_indices/cpi/2010/results. UNICEF reports that corruption in Tanzania is still a major challenge to development (UNICEF 2011)

¹⁹² Such cases are often also written about in the international press, including the UK. For example, in 2008 the Governor of the Tanzanian Central Bank was sacked amid corruption allegations in which he was accused of paying over £60 million sterling to local companies, many of whom were fictitious. (BBC News 10 January, 2008) accessed at <http://news.bbc.co.uk/1/hi/world/africa/7181065.stm>. Also in 2008, the Prime Minister resigned over an energy contract which was awarded to a 'ghost' company. (BBC News 27 October 2010) accessed at <http://www.bbc.co.uk/news/world-africa-11589013>. In 2010 the British company, BAE were found guilty of improper accounting which suggested bribes had been paid to Tanzanian officials in the Ministry of Defense to secure a radar deal well beyond Tanzania's needs, costing £28 million (BBC News 20 December 2010) accessed at <http://www.bbc.co.uk/news/business-12036628>. In 2012 President Jakaya Kikwete sacked six high profile government ministers amid wide-spread allegations of corruption. These included the ministers for finance, energy, tourism, transport, health and trade and industry (BBC News Africa 4 May 2012).

¹⁹³ Doma residents appeared, outwardly at least, to be strong supporters of the ruling party, CCM. It is not clear whether this man was talking about the national government or the village government, but the sentiment remains the same.

Your queen is very rich and lives in a big palace, unfortunately some of our politicians think they should do the same. (Development worker, Morogoro municipality)

However, accusing the government of negligence or corruption was perhaps one of the least sinister of the alternative explanations.

Drugs trial

The apparent severity of the reactions or ‘side effects’ (*madhara*), experienced by so many of the pupils made people doubt that the drugs were safe, and even question whether they had ever been given to humans before. Informants frequently stated that the drugs distributed had not been to treat *kichocho* or *minyoo* at all, but were experimental drugs (*dawa ya majaribio*) which were being tested on the children. This was also suggested in the aforementioned Bishop’s letter:

Is it pressure from the big fellows like America, England and France? Anyone can agree with me that the wealthiest nations in the world have a habit of distributing things on this continent that seem to be part of drugs trials. This is life threatening.¹⁹⁴

Local perceptions of a drugs trial were also reported in the national press, as this section reporting on the riots notes:

The distribution of the medicine also caused some teachers and those giving out the medicine to be beaten by parents and guardians of the children, being suspected of doing a drugs trial on their children. (*Mtanzania* newspaper, 30 August 2008)

And, as this newspaper editor asks,

We hope that we have not fallen into the trap of becoming an experimental laboratory for trial vaccines, because this has happened elsewhere in Africa in the past. (Editorial. *The Guardian* (English print) newspaper. 1 September, 2008)

¹⁹⁴ *Tanzania Daima* Newspaper, 2 September 2008

However, what was meant by ‘drugs trial’ (*majaribio ya dawa*) was often fairly nebulous. Some people thought it involved using drugs that were not fit for human consumption (*dawa siyo kwa matumiza*): “this drug was only for animals before” (*siku za nyuma, dawa ile imetumika kwa wanyama tu*);¹⁹⁵ “...it is possible they were brought into the country as a big trial test on children instead of animals”.¹⁹⁶ While other people frequently entwined the notion of a drugs trial with that of a sterilization campaign involving the testing of anti fertility drugs: “This was a drugs trial to stop reproduction” (*Ilikuwa majaribio ya dawa ya kuzuia kuzaa*).¹⁹⁷ A few people even appeared to call what they viewed as a covert sterilization campaign a ‘drugs trial’; “They gave the children this drug to prevent them having families in the future; it was a drugs trial...”¹⁹⁸

Even though local understandings of the concept of a drugs trial varied, it was a frequently voiced opinion throughout the municipality in the days following the mass drug administration. Furthermore, it was not uncommon to hear very similar remarks being made by people from disparate socioeconomic backgrounds and educational levels. For example,

I did not allow my children to take this drug [praziquantel]. What do you call it? I have not heard of it before and it seems, given the result, that it was a new drug being tested. (Assistant Director of the Morogoro branch of a well known international aid organization)

So, America’s been testing drugs on Africans again? Why am I not surprised! (American Peace Corps Volunteer, Morogoro Municipality)

Even the children who ate some porridge fainted; maybe this was a drugs trial... (School teacher, Morogoro municipality)

These drugs were strong, not like those we get from the hospital. They [the drugs] were being tested on children (*Inajaribiwa na watoto*)... It was not for *kichocho*. (Mother, Chamwino area, Morogoro municipality)

¹⁹⁵ Mother, Morogoro municipality

¹⁹⁶ Forever Tanzania Newspaper (*Tanzania Daima*) 30 August, 2008

¹⁹⁷ Grandmother, Chamwino area, Morogoro municipality

¹⁹⁸ Parents meeting at primary school in Morogoro municipality

Medical research, including drug trials, are commonplace in sub-Saharan Africa (Renne, 2010; Shah, 2007; Fairhead *et al.*, 2006; Geissler and Poole, 2006; Geissler, 2005; Petryna, 2005) and there have been some recent high profile cases which it is likely would have been reported in the Tanzanian media and on internet sites. For example, the testing of the anti-meningitis drug, Trovan® in Nigeria by the US pharmaceutical company Pfizer in 1996 left several children dead and many more disabled.¹⁹⁹ South Africa halted an antiretroviral drugs trial by a US drugs company following five deaths in 2000 amid controversy over issues of 'consent'.²⁰⁰ Similar controversies surrounded antiretroviral drug trials on sex workers in Cameroon by US pharmaceutical company Gilead in 2004. It has been reported that similar trials are being conducted in Malawi, Ghana and Nigeria, with a reported 6.5 million USD grant from the Bill and Melinda Gates Foundation.²⁰¹ Therefore, the explanation that this had been a drugs trial was not an unfamiliar concept and it certainly was not beyond the realms of possibility in many peoples' opinion.

Such anxieties revealed local concerns that the Tanzanian government would allow its citizens - in this case primary school children - to unknowingly be subjected to possible harm, even death, by providing them with untested and - as it appeared - harmful drugs. Moreover, it was implicit in such explanations that the lives of Tanzanians were not felt to be equal to those in the developed world. As this father, who had previously been voicing his opinion, rather animatedly, that it had been a drugs trial, commented:

Many children died after taking these drugs... Why would our Government allow this?.. This would not happen in America.²⁰²

However, it was usually (though not always) those who occupied a lower socioeconomic status and educational level who suspected the drugs trial

¹⁹⁹ Fifteen years later Pfizer paid an out of court settlement to the bereaved families and to those whose children were disabled as a consequence of receiving Trovan ®. BBCNEWS AFRICA (2011) Accessed 18.08.2012 from <http://www.bbc.co.uk/news/world-africa-14493277>

²⁰⁰ Sidley, P (2000) *BMJ* 15 April 2000; 320. Accessed on 15.08.2012 at <http://www.bmj.com/cgi/content/full/320>

²⁰¹ Maliniki (2005) Accessed on 10.08.2012 from <http://www.socilaistworker.co.uk>

²⁰² Father of two primary school pupils, Chamwino area, Morogoro municipality.

involved anti-fertility drugs or who combined notions of a drugs trial with that of a sterilization campaign.

Covert sterilization campaign

By far the most common explanation for the children's illnesses following treatment was that the medicine distributed was an anti-fertility drug (*dawa ya kuzuia kuzaa/mimba*) which would cause sterility or sub-fertility in any child that took it, girls and boys alike. Why exactly this would make the children ill, or prove fatal however, was never part of the explanation, at least not explicitly. When I asked people to elaborate on why they thought this would make the children ill, they would usually just reiterate that the drug prevented children from reproducing in the future as it worked by 'destroying the reproductive system' (*dawa hii inaharibu mfumo wa uzazi*, literally, this drug destroys the reproductive system). It seems as though this process was understood to simultaneously cause other untoward physiological effects, such as those the children complained of (headache, dizziness, nausea).

Neither was it always entirely clear whether the drugs were thought to have been combined with anti-fertility properties or whether they were completely different drugs, which had no purpose beyond sterilizing the children. However, the majority of informants favoured the second explanation and felt the mass distribution of drugs to treat *kichocho* and *minyoo* had been a ruse to hide the 'real' rationale for 'treatment'.

There is so much *kichocho* here and we have *minyoo* many times but this medicine in the school was not for that. No! This was to stop children being born (*mama asipate mtoto*). (Mother of 9 year old school girl, Chamwino area)

The teachers said this drug was to treat *kichocho* but it was brought here to reduce the population... (Father of school boy, Chamwino area)

This [drug] was to prevent reproduction (*kuzuia mimba*), not to prevent *kichocho*... (Father, Morogoro municipality)

Informants frequently framed their suspicions of the ‘deworming programme’ in the form of a rhetorical question, their (own) answers almost always including a statement about sterilization (*ugumba*) or family planning (*uzazi wa mpango*). For example,

Why did they poison our children? These drugs are to destroy the reproductive system (*mfumo wa uzuzi*) - it is for family planning (*uzazi wa mpango*). These children [the ones who swallowed the drugs] they will not have any children or perhaps only one (*hawatapata watoto au labda mmoja tu*). (Mother of school girl, Morogoro Municipality)

Why did they give these drugs to the children?... It is so they cannot reproduce when their time comes (*walipewa ili hatashindwa kuzaa ikifika wakati wao*). (Grandmother and guardian of two school girls, Chamwino area)

What were these drugs for? Not kichocho, No!... They were for family planning (*uzazi wa mpango*). (Father of school boy, Morogoro municipality)

Why did health workers not provide these drugs to our children?... They (the drugs) will stop babies being born (*kuzuia mimba*). (Guardian of school girl, Chamwino area)

We ask ourselves, why did they bring these drugs to the schools here?.. It was an exercise of family planning (*uzazi wa mpango*). (Mother of school age children, Chamwino area)

Why did they give this medicine to all of the children without testing them first?... Because this medicine disturbs the reproductive system.” (Father, Chamwino area)

Within this understanding, by masquerading as medicine to treat *kichocho* and *minyoo*, the anti-fertility drugs could be delivered to as many school children as possible. Furthermore, a covert sterilization exercise explained many of the doubts which had been expressed by parents and guardians (either before or after drug distribution). For example, this offered an explanation of why the drugs had been administered in schools rather than hospitals, by teachers rather than health care workers, (seemingly) irrespective of whether or not the children were infected with *kichocho*.

These drugs that were brought here, they are to stop them [the children] from having their own families (*ni kuwazuia watoto kuwa na watoto*)

wao). Why else were they to be given to all [children] whether they were suffering from *kichocho* or not. They would have tested the blood if it was for *kichocho*. (Grandmother and guardian of seven year old school girl, Chamwino area)

Our children do not suffer from *kichocho* so why were they told to take this medicine? It is to prevent reproduction (*kuzuia mimba*). (Mother of two primary school children, Morogoro municipal)

Those who expressed ideas such as these nearly always belonged to the poorest socioeconomic groups in the municipality. Although, very occasionally, even well-educated Tanzanians expressed an opinion that they would not be surprised if it was later discovered these stories (of anti-fertility drugs) turned out to be correct.

Anxieties that the drugs to treat *kichocho* and *minyoo* were really drugs to render children infertile or a drugs trial, illuminate local peoples' anxieties that the Tanzanian government, as well as other governments in different countries across sub-Saharan Africa, are trying to reduce their populations as a result of coercion from the international community. This will be discussed in more detail below.

Rumours

Whenever a person in Morogoro municipality told me they had heard about the children's deaths due to the drugs for *kichocho* and *minyoo*, they did not use the word rumour (*uzushi*) or gossip (*umbeya*); rather, it was just some news (*habari*) they had heard. However, they might begin by saying "I heard that..." (*nimesikia kwamba*), which can be a subtle way of communicating they consider the information ambiguous and are not entirely convinced of its validity, but neither are they discounting it. People tended to use the word

uzushi when they were in disagreement with the information that was ‘going around’ and considered it erroneous.²⁰³

Similarly, when informants discussed *why* the ‘deworming’ drugs had made children ill, or even killed them, they did not call it rumour, gossip, or even news; rather, it was just their opinion (*kauli yao*) they were expressing. As if to reiterate this point, informants would not uncommonly declare at the end of such conversations something along the lines of, “that is what I have to say” (*hiyo ndiyo ninayo la kusema*). This is not to suggest that such opinions wouldn’t have been informed by stories they heard or the views of others, which, depending upon one’s perspective, might be regarded as rumour. As Geissler and Poole note: “Rather than providing hard-and-fast facts, rumours enable people to debate current events and concerns, and in order to do this it is not necessary that everyone actually believes them” (Geissler & Poole, 2006: 980).

Municipal and regional government officials, including medical officers, were keen to stress that the stories of dead children, as well as the various local explanations concerning the ‘real’ rationale for the drug distribution discussed above, were nothing but rumour and summarily dismissed. Within this official perspective, rumour is not only understood to be “unreliable oral information”²⁰⁴ (White 2000:56) that officials “...have not engendered, shaped or controlled” (ibid: 210), it is also placed in opposition to ‘truth’ (Geissler and Poole 2006). However, as Isak Niehaus, writing on incest rumours in the South African Lowveld, has commented, “...truth is not the most relevant aspect of rumours...” (Niehaus, 2010: 848). Indeed, social scientists and historians have moved beyond such a limiting “truth-based approach” (Kaler, 2009: 1717), and view rumour as an idiom or counter-narrative with which people are able to articulate anxieties and concerns in (un)certain situations in particular times (White, 2000; Geissler, 2005).

²⁰³ *Kuzunguka* means something going around; encircling or wandering, and the word for rumour, *uzushi* shares the same root. It is possible that the word for white person, *mzungu* (pl. *wazungu*) also shares the same root, as whites (so it is said) were seen to be perpetually wandering (travelling) around (presumably in countries other than their own). However, this is a topic of debate, and it is also thought the word *mzungu* may be a distortion from an original name given for white foreigners by the Chagga people of northern Tanzania.

²⁰⁴ The ‘news’ of child ‘fatalities’ were also spread via text messages on mobile phones making the ‘rumour’ oral, aural and visual.

It has been suggested by those in other disciplines in the social sciences, such as folklore, communication studies and social psychology, that rumours emerge when a “formal information gap exists” (Rosnow and Fine 1976, cited in Feldman-Savelsberg, 2000: 168). Such gaps are said to exist when insufficient information is provided, or when the information that is provided is not trusted. Certainly, as discussed in chapter seven, there were several shortcomings in the way in which information concerning the deworming programme was disseminated to local people, and the way the drugs were administered frequently raised suspicion among parents. The view that a lack of information can potentially lead to rumour is a conventional one within public health, and organizations such as UNICEF routinely implement methods to explicitly confront rumours surrounding immunization programmes in an effort to dispel them (Kaler, 2009). Similarly, some medical research projects have been keen to stress how ‘participatory involvement’ of target groups has supposedly been instrumental in negating rumours surrounding medical trials (Vallely, *et al.*, 2007).

However, the problem with such a perspective is that it presupposes local (African) target groups are unfamiliar with the medical technologies employed, which is not necessarily the case: for example, injections may be sought after - even highly regarded for their efficacy and strength - in one context, but resisted in another, such as a vaccination campaign (White, 2000, Geissler & Poole, 2006). It is not necessarily the specific (biomedical) technology which causes anxiety so much as how they are being used and, most importantly, by whom (White, 2000). Similarly, rumours may involve very familiar substances such as powdered milk, grains, and other (donated) foodstuffs (Malkki, 1995; Geissler & Poole, 2006; Kaler, 2009). Although increased knowledge might bring about increased acceptance of biomedical interventions, this is not always the case, as rumours sometimes surface among the better educated in target populations (Feldman-Savelsberg, 2000; Geissler & Poole, 2006;).

There was insufficient information regarding the rationale to treat children for *kichocho* and *minyoo* in Morogoro municipality and increased health education would, in all likelihood, have been welcomed and perhaps would have gone

some way in counteracting the confusion and anxieties which many people experienced. However, local explanations of the deworming programme, which included suspicions of covert drug trials and sterility campaigns, were not likely to have been abated by health education alone. Such locally held suspicions reveal profound anxieties about unequal social relationships locally, nationally and globally.

Sterility rumours and anxieties of reproduction

Sterility rumours surrounding public health interventions in sub-Saharan Africa are not uncommon (White, 1995; Malkki, 1995; Feldman-Savelsberg *et al.*, 2000; Geissler, 2005; Geissler & Poole, 2006; Fairhead *et al.*, 2006; Parker, *et al.*, 2008; Yahya, 2007; Kaler, 2009; Kingori *et al.*, 2010; Renne, 2010; Stadler & Saethre, 2010).²⁰⁵ While it is always necessary to examine rumours in their particular socioeconomic, political and historical contexts, sterility rumours such as these, which emerge during public health campaigns, reveal general, wide-spread anxieties relating to perceived threats to reproduction in sub-Saharan Africa. As such, these rumours allow for local discussion, negotiation and resistance in the face of hegemonic global development (including global health), in which decisions are, as Maryam Yahya notes,

...made in environments far removed from the local realities of targeted societies, resulting in an awkward clash between grand global objectives and local priorities, practicalities and peculiarities (Yahya, 2007: 203)

Rumour and rumours have been analyzed in various ways: metaphorically (Kroeger, 2003; Niehaus, 2010); as existential ‘truths’ (Scheper-Hughes, 1996); as forms of resistance (Feldman-Savelsberg *et al.*, 2000); as ways to express anxieties (Leach & Fairhead, 2007); as counter-epistemologies (Kaler, 2009); as a form of “somatisation” within the body politic (Kroeger, 2003: 243); and as debates concerning inequalities of wealth and contemporary ethical concerns, particularly surrounding medical research projects (Geissler & Poole, 2006). Common to all of these however is the understanding that rumours are counter-narratives of marginalized groups in subordinate social relationships. Indeed,

²⁰⁵ See Kaler, 2009: 1712 for a comprehensive list of sterility rumours surrounding public health initiatives in sub-Saharan Africa, although the author notes that even this list is far from extensive.

among anthropologists, as Leslie Butt notes, "... the term rumour has been widely used to describe collective imaginaries reacting to experiences of inequality" (Butt, 2005: 414). Luise White comments that rumours can be viewed as a diagnostic tool, which reveals anxieties to national and global projects (White, 1994). As such, it is possible to view rumours as an everyday form of resistance (Scott, 1985) and as a subaltern discourse (Gramsci, 1971; Spivak, 1991). Indeed, some anthropologists, informed by Bayart's (1989) 'politics of the belly', have called for a "(subaltern) politics of the womb" (Feldman-Savelsberg, *et al.*, 2000:173).

Sterility rumours have emerged at various times and places in Tanzania. For example, women and children fled Hutu refugee camps in Mishamo district in the west of the country, as they feared the United Nations High Commission for Refugees (UNHCR) vaccination programme was really a Burundi plot to make women (and girls) infertile (Malkki, 1995). Elsewhere in Tanzania, sterility rumours have surrounded both tetanus toxoid and oral polio vaccinations (Clements and Drake, 2001 cited in Yahya, 2007: 204). Similarly, some informants expressed ideas that condoms were somehow instrumental in spreading HIV, or that the virus was manmade, as one young man in Morogoro town told me, "America made HIV to control Africa". Such understandings resonate with those concerning the origins and spread of HIV elsewhere in Africa (Hooper, 1999; Poole & Geissler, 2005; Niehaus & Jonsson, 2005; McNeil, 2009; Fassin, 2011).

Sometimes, perceived threats to survival (including the ability to reproduce) involved non-medical technologies. For example, when I returned to Morogoro in 2009, the roads were full of 'cheap' Korean motorbikes (*piki piki*) which were being used as taxis. With 'affordable' bank loans, businessmen were buying these motorbikes and employing young inexperienced drivers to carry pillion passengers. These provided a cheaper alternative to normal (car) taxis and were very popular in and around the town, especially with younger men and women (of child bearing age). Drivers rarely wore safety helmets and passengers never did; women passengers looked particularly precarious riding 'side saddle' at alarming speeds. I heard a few remarks in the municipality that the sudden influx of these motorbikes was a government plot to reduce the

population of Morogoro. Indeed, never a week went by when at least one of these young men or their passengers were not killed.²⁰⁶

Informants were sometimes aware of controversies surrounding public health campaigns beyond Tanzania. These anxieties (rumours) were not contained by national borders, as the conversation with this government employee, and father of three school children in Morogoro municipality, illustrates:

Father: Some people in the community blame the teachers and ask why they gave the children these drugs until now. Some of them, they believe the children were given family planning pills, not treatment for *kichocho*.

JH: Why do you think people think that is true?

F: Because they didn't have any education

JH: But why the focus on family planning?

F: They fear that because two and even three years ago there was an exercise to treat girls between 12 and 14 years of age for tetanus in schools in Tanzania. People asked why this drug is for girls only and not both male and female? Also, in either Malawi or in Cameroon there was something very similar, where girls were treated for birth control, so people ask why this is.

The vaccination programme in Cameroon this father mentions may be the one in 1990 when school girls were vaccinated in an effort to reduce neonatal tetanus. Fearing the vaccinations would sterilize them, girls ran away from the schools, even jumping out of the windows when the public health teams arrived (Feldman-Savelsberg *et al.*, 2000). Concerns that drugs used during public health campaigns would cause infertility also arose during my time in Doma village, to which I now turn.

Infertility fears amid onchocerciasis treatment in Doma village

During my first fieldwork visit to Doma village in 2007, a year before treatment was due to arrive for *kichocho* and *minyoo*, I explored - among other things - how villagers had responded to previous biomedical interventions. To this end, I investigated the social responses and uptake of treatment for another endemic

²⁰⁶At one point during my fieldwork in 2010, it seemed there were fatalities related to motorbike taxis on a daily basis.

and neglected tropical disease, onchocerciasis (river blindness), known in Kiswahili as *usubi*.²⁰⁷

In 2004 and 2006²⁰⁸ the drug ivermectin was distributed house-to-house throughout the village by small teams of village drug distributors (VDD) accompanied by local leaders such as street chairman. Everyone over five years of age was eligible for treatment with the exception of pregnant women and those who were in ill-health. In 2004, after swallowing the drugs some men and women experienced genital swelling, although it seems this was part of an overall reaction which included generalized swelling of the body and skin irritation, the primary focus of villagers was on the involvement of the genitalia. Ultimately, this led to wide-spread fears - what some might call rumours - in the village that the drugs were destroying people's reproductive organs. Furthermore, the fact that young children and pregnant women were excluded from taking the drug reinforced the idea that the drug was both harmful to young children and an abortive. The following quotes reveal concerns held by many of the villagers:

People thought the medicine was not good for them so they refused to take it. They thought the drugs reduced the power of men and women to reproduce and for women to empty the womb when pregnant. (Doma village Chairman, 2007)

I did not take the medicine to prevent *usubi* (in 2004) because I was afraid. I heard by word of mouth of the people, if you swallow these drugs you become swollen in your reproductive organs, such as your penis, and it will prevent reproduction, that is why I didn't take. (Street chairman, Doma village, 2007)

We heard the medicine they bring for *usubi* will make a woman deliver [abort] her baby if she is pregnant, that is why pregnant women cannot be given this drug (Grandmother, farmer, Doma village, 2007)

When treatment for *usubi* returned in 2006, the onchocerciasis programme and the Ministry of Health and Social Welfare (MOHSW) were keen to dispel these,

²⁰⁷ This involved examining treatment registers which had been completed (often incompletely) by the village drug distributors (VDD) who had administered the drugs and were retained by them. Additionally, during semi-structured interviews, informants were routinely asked whether they had taken the drugs to treat *usubi* and what their thoughts were about this programme as well as their knowledge of the disease. These questions were also included in a 23% random household survey.

²⁰⁸ It remains unclear why there was no distribution in 2005.

so called, sterility rumours.²⁰⁹ An event was therefore held in the village at which school children sang songs concerning *usubi* including the safety of treatment. A local government official even swallowed the drugs in front of an audience to prove it was not harmful. However, in three areas (sub-villages) of Doma where the onchocerciasis treatment registers were made available, the uptake of drugs fell from 44% in 2004 to 28% in 2006. Semi-structured interviews and the household survey revealed an even lower self-reported uptake of drugs, from 31% in 2004 to 29% in 2006.²¹⁰ Furthermore, it was often the case that the same people did not take the drug in both years - in other words, people rarely took the drug for a second time. The third annual round of treatment began in 2007, just at the time I was leaving the village. However, I did observe many of the preparations, such as the training seminar for the VDD, in which many of them complained about the difficulties in persuading people to take the drugs which they feared caused sterility.²¹¹ At this time, informants continued to express their concerns over the anti-fertility properties of this drug. To quote one father:

I took this drug [in 2004] because they said I was suffering from *usubi* even though I was not sick... My private parts became swollen, my wife too, her vagina was swollen. We were told this was because we were infected with *usubi* and they [nurses in the dispensary] gave us medicine to reduce the swelling. I will not take this medicine again... I refused when they came [in 2006] and would not allow anyone here [in the household] to take it. My son's wife has not become pregnant since taking this drug... I will refuse it whenever they come again. (Father, Doma village, 2007)

The politics of sterility rumours

Sociologist, Amy Kaler (2009) theorizes that sterility rumours surface when several “sociopolitical forces” come together, these, she argues, are characterized by:

- a) Asymmetries of power, in which one collectivity understands itself as subordinated to the interests of another; geopolitical power;
- b) Perceived ongoing and historical threats to the collective survival of a particular group;

²⁰⁹ According to staff at Doma dispensary.

²¹⁰ It was also distributed in 2007, just as I was leaving Doma. It had been my intention to follow up on the 2007 mass drug distribution when I returned in 2008 but this was not possible.

²¹¹ It was my plan to follow up on this round of treatment when I returned the following year in 2008, but this had not been completed by the time I had to leave the village.

- c) The exercise of biopolitics, in the form of projects to improve collective health;
 - d) Reproductive bodies as targets and means of these projects.
- (*ibid*: 1714)

The context in which the medicines to treat *usubi*, *kichocho* and *minyoo* were administered in respectively, Doma village and Morogoro municipality meet all of the above criteria. Taking Kaler's points in reverse order, first, (d) the target groups in both treatment programmes included people of reproductive age, and even though many of the school children were pre-pubescent, they were still bodies with the potential for reproduction.²¹² Second, (c) as Kaler herself notes, public health interventions (such as the deworming and onchocerciasis treatment programmes) "epitomize 'biopolitics' as envisioned by Foucault" (Kaler, 2007: 1716), whereby individual bodies are disciplined (treated/vaccinated) in order to transform not only the individual body but the social body (population) (Scheper-Hughes & Lock, 1987) - the body politic (Foucault, 1976).

Third, (b) anxieties that the deworming and onchocerciasis treatment programmes were, respectively, plots to sterilize school children in Morogoro municipality and potentially everyone over five years of age in Doma village, illustrates locally perceived threats to collective survival. All of these anxieties illustrate Kaler's first point (a), that local people understand themselves to be in a subordinate position to governments in the 'West', which are widely known to fund development projects including health-care programmes.

A few informants in Morogoro municipality suggested that Western governments, particularly the US government, were attempting to sterilize people because they were Muslim, as one grandfather in Chamwino commented, "America thinks Muslims are bad people. Have they have provided these drugs to reduce our numbers?" However, it was unusual for informants to voice such opinions and certainly for them to be so explicit.

²¹² Indeed, Kaler means to include bodies which have both the actual and potential means for human reproduction, by what she terms "reproductivity" (Kaler, 2007: 1715).

As the drugs to treat *kichocho* and *minyoo* were administered on a Friday, many people were at mosque for prayers. Some Imams therefore informed people about the child ‘fatalities’ at this time. Some health workers complained to me that in one mosque in the town, the Imam told people that the drugs were provided by Western governments to sterilize and even kill children. However, when I spoke to several Imams, including one from this particular mosque, they said they were just passing on the news of the child ‘fatalities’ as part of their duty to their community (*jamii*). After all, this was the news they had heard. It was difficult to determine what had been said retrospectively, but it is certainly possible that some Muslims in Morogoro municipality held such fears as well as anti-Western sentiment. However, I was unable to verify this.

The understanding that the drugs to treat *kichocho* and *minyoo* were part of an anti-Islamic plot to sterilize Muslim children resonates with the rejection of the oral polio vaccination in northern Nigeria in 2003. Members of the Supreme Council for Sharia in northern Nigeria (SCSN) encouraged parents to refuse to allow their children to be vaccinated over anxieties that the vaccine contained anti-fertility drugs and was contaminated with substances which could lead to HIV infection (Yahya, 2007; Rene, 2010). As Maryam Yahya comments however, it is necessary to view such anxieties within the historical and political context of northern Nigeria, which is primarily Muslim, especially in the wake of the United States (so called) ‘war on terror’. Furthermore, as Yahya suggests, by blaming the rejection of treatment on these sterility rumours alone, other factors concerning the Polio Eradication Initiative (PEI) in northern Nigeria are overlooked. For example, these were the same regions where children died or were permanently disabled in 1996 due to drug testing by the American drug company Pfizer already discussed in this chapter.²¹³

Moreover, there were several other reasons for local concerns regarding the polio vaccination programme. These include, first, that there were fundamental differences between biomedical and local, Hausa understandings of polio, in which polio, known as *shan-inna*, was understood to be caused by spirits. Second, people were concerned at the lack of skill of the vaccinators, who were young girls aged between nine and fourteen years, employed specifically for the polio programme rather than experienced health care

²¹³ See BBCNEWS AFRICA (2011) <http://www.bbc.co.uk/news/world-africa-14493277>

workers. Third, parents who had already vaccinated their children against polio were reluctant to do so again, especially when there was inadequate health education concerning the possible risks of doing so. Fourth, people were surprised by the amount of resources being devoted to the polio vaccination when basic health care was unavailable, particularly at a time when there had been an outbreak of measles (Yahya, 2007).

However, there were certainly anxieties that the polio programme was a covert eugenics exercise; this was made explicitly clear when the Chairman of Supreme Council for Sharia accused the programme of being “modern day Hitlers” (Yaha, 2007: 187). Similar fears concerning the polio vaccine have also been reported in Pakistan, where local religious and Taliban leaders have accused the United States of attempting to sterilize children with it (Walsh, 2007a, 2007b). In 2009, the Taliban banned the polio vaccine when it took control of the Swat valley calling it an “infidel vaccine” to cause infertility (Chambers, 2011)²¹⁴. Such anxieties were no doubt ‘confirmed’ when it came to light in 2011 that the CIA had recruited a high ranking doctor to perform a regional vaccination programme in an area of Pakistan where they suspected Osama Bin-Laden might be in hiding. This allowed unwitting local health care workers access to the family compound under the pretext of providing a hepatitis B vaccine for children (ibid). Such actions have had a profound negative impact on aid workers and medical professionals, particularly in Pakistan where *fatwa* against UN, WHO and foreign NGO workers had already been declared in some regions (Walsh, 2007) and where the Red Crescent compound in Peshawar has been bombed. Indeed, in December 2011, nine people, mostly young women, were killed in Karachi during a polio vaccination exercise by Taliban gunmen (Chambers, 2011) and in January this year, six female Pakistani aid workers and a male doctor working on a public health campaign were also killed (Burke, 2013).

The co-opting of public health programmes by the US military adds credibility to conspiracy theories in which, it is said, the US are administering sterilizing vaccines to particular people based on their religious or ethnic identity. There have also been other, equally ethically corrupt, biomedical collaborations in the past. For example, writing on sterility rumours among black men in the

²¹⁴ Accessed on 20 August 2011 from www.guardian.co.uk/commentisfree/2011/jul/13/bin-laden-vaccine-plot-cia

United States, Patricia Turner comments that it is not surprising that black African Americans - particularly males - fear sterilization plots, when one takes into consideration the syphilis experiments conducted on black men from the rural south by the Tuskegee Institute (Turner, 1987). During these experiments, treatment was withheld from the men so that the long term effects of syphilis could be observed (ibid). In South Africa, during the thirty month trial (1999-2002) of Dr. Wouter Basson, head of the apartheid government's chemical and biological weapons programme, several alleged atrocities became public knowledge.²¹⁵ These included: contaminating drinking water with yellow fever and cholera at refugee camps; giving poisoned beer to ANC operatives; developing poisoned tipped walking sticks, as well as other nefarious methods and plots to murder people regarded by the apartheid government as enemies of the state (Niehaus and Jonsson, 2005). Isak Niehaus and Gunvor Jonsson suggest that these revelations helped fuel conspiracy theories among men in the South African Lowveld, in which Dr Basson, was said to be in collaboration with the US government, manufacturing HIV/AIDS as part of a eugenics project to kill black Africans (ibid).

With the growing anti-vaccination movement in the industrialized world, there is a plethora of information regarding the perceived dangers of vaccination available on the internet and concerns regarding the safety of vaccines have influenced uptake in developing countries (Parry, 2010). For example, the scare surrounding the MMR vaccine in the UK caused widespread fears and low uptake of the vaccine in South Africa (ibid). Indeed, the Chairman of the Supreme Council for Sharia in northern Nigeria maintained that he was informed of the dangers of the polio vaccine from information he obtained on the internet rather than from within Nigeria (Yahya, 2007).²¹⁶

While the rejection of the polio vaccine in northern Nigeria and Pakistan was - and is - based on religious identity, at other times, in other places in sub-Saharan Africa, sterility fears have been based on ethnicity. In Cameroon for example, Pamela Feldman-Savelsberg and her colleague's retrospective study

²¹⁵ Basson was on trial for a series of alleged crimes, including numerous murders and attempted murders but was acquitted.

²¹⁶ See for example, Miller, 1995 at <http://educate-yourself.org/cvd/cvcvaccineslacedwithbirth-control>

of a sterility rumour surrounding the neonatal tetanus campaign in 1990, revealed that local anxieties were enmeshed within the political unrest of the Grassfields region in Cameroon. At that time there was growing regionalism and a burgeoning of new opposition parties and democratic movements. Furthermore, the campaign coincided with the legalization of contraception and a shift in state policy which now promoted family planning (Feldman-Savelsberg *et al.*, 2000).²¹⁷ In western Kenya, Wenzel Geissler's research (2005) found that Luo people, who were politically and economically marginalized, feared vitamin supplements were laced with anti-fertility drugs and that HIV was an attempt to kill Luo people. However, there were also anxieties that there was a wider US plot to "kill black people" and depopulate Africa (Geissler, 2005: 181).

In Morogoro municipality, whenever informants spoke of their (or other people's) anxieties concerning a covert sterilization exercise, they never explicitly identified a particular ethnic identity such as *Waluguru*, as being the intended target for sterilization, but rather, spoke of "Africans" (*Waafrika*) or "poor Africans" (*Waafrika maskini*), as the following excerpts from some semi structured interviews reveal.

JH: Why do people think the drugs are to sterilize them?

Health Teacher: We are always being told that Africans have too many children and we need to reduce our families.

JH: Who is telling you that?

HT: It is those in the developed world who say we are too many.²¹⁸

JH: Why do you think people are saying the drugs were bought here to sterilize the children?

Mother 1: Because the drugs prevent reproduction.

Mother 2: It is to depopulate Africa; they say there are too many Africans (*Waafrika*).

JH: Who says there are too many Africans?

Mother2: *Wazungu* (white people) (laughs)²¹⁹

Mother 1: Central government...²²⁰

²¹⁷ One unintended consequence was that girls who feared their fertility was in jeopardy due to the tetanus vaccine engaged in sexual activity younger than they might have done otherwise (Feldman-Savelsberg *et al.*, 2000).

²¹⁸ Health teacher, primary school, Morogoro municipality. Conversation held in English.

²¹⁹ Mother of six children, Chamwino

²²⁰ Mother of two primary school pupils, Chamwino

JH: Why do you think the drugs were given to the children if not for *kichocho* and *minyoo*?

Father: We are encouraged to reduce our families.

JH: By whom?

Father: Doctors and nurses tell us to reduce the number of babies... But this comes from America; they provide the drugs for family planning.²²¹

JH: Why do you think the drugs were given to stop reproduction?

Mother: ...There are too many poor people in Africa.

JH: Can you say more about that?

Mother: Yes... There is a big organization to stop Africans (*Waafrika*) from reproducing.

JH: What organization?

Mother: (laughs) I do not know the name.²²²

JH: Why do you think people are saying the drugs were given to sterilize the children?

Teacher: Many Africans are ignorant. They are poor and have too many children. They cannot educate them or even feed them. Our government tells people to reduce the number of children, but they keep reproducing. People here [Chamwino] fear the government will take the matter into their own hands to reduce the number of poor Africans.²²³

The children who attend primary school in Morogoro town belong to different (tribal) ethnicities, religions and socioeconomic backgrounds. Therefore, the 'sterilization campaign' was, in theory, capable of reducing the fertility of any and all of these children, regardless of their ethnicity, religion or socioeconomic situation. However, there was a pervasive feeling among informants, particularly those in Chamwino, that the children from poorer socioeconomic backgrounds were the principle targets of the 'covert sterilization campaign'. Informants frequently spoke of the desire of their government, as well as Western governments, to reduce the population of, not only Tanzania, but Africa as a whole. The pervasiveness of these sentiments appears to have come from the ubiquity of family planning and development discourse in the municipality, in which people felt those in industrialized countries were telling - or forcing - Africans to have fewer children.

²²¹ Father of three primary school pupils in Morogoro municipality and NGO worker.

²²² Mother of three primary school aged children and petty trader in Chamwino area.

²²³ Primary school teacher, Chamwino area. Conversation held in English.

Family planning and development discourse in Doma and Chamwino

Whenever I entered a health facility in Doma or Morogoro municipality, there was, without exception, at least one poster on the wall relating to family planning, such as the one shown in fig. 31. With the population of Tanzania projected to reach 65 million by 2025 and with half of the current population under the age of fifteen years, there has been renewed effort by the Ministry of Health and Social Welfare (MOHSW), supported by international donors,²²⁴ to increase 'modern' contraceptive prevalence rate from the current twenty eight percent to sixty percent by 2015 (National Family Planning Costed Implementation Program 2010-2015).²²⁵ The high fertility rate is viewed as a considerable obstacle to development in Tanzania, as the National Family Planning Costed Implementation Program notes,

A continuing high rate of population growth is presenting major challenges to social and economic development in Tanzania... putting increased strain on already overstretched health and education services, infrastructure, food supply and the environment. (ibid: 10)

Furthermore, by reducing the rate of fertility, it is expected that there will be a corresponding reduction in maternal and infant death rates in Tanzania. Indeed, family planning is regarded by the Tanzanian MOHSW and global health agencies as both necessary and urgent, especially as it can contribute to all of the United Nation's Millennium Development Goals, including, as the report notes, "reducing poverty and hunger, promoting gender equity and empowering women, reducing child mortality, improving maternal health, combating HIV/AIDS, and ensuring environmental sustainability" (ibid: 7).

²²⁴ Funding is obtained from international agencies such as the United Nations Population Fund (UNFPA), the World Health Organization (WHO) and the World Bank (WB). Bilateral donors include governments from the United States, the United Kingdom, Canada, Sweden and Norway (National Family Planning Costed Implementation Program 2010-2015) available at www.fhi.org/NR/.../NatlPlanFPIImplementationTZmain.pdf

²²⁵ Accessed from www.fhi.org/NR/.../NatlPlanFPIImplementationTZmain.pdf on 1 December 2012. 'Modern' contraceptives include pills, injections, IUD, diaphragm, foam, jelly and male and female sterilization. This is placed in contrast to 'traditional' methods which include periodic sexual abstinence, withdrawal technique and the ingestion of herbs (Richey, 2004).



Figure 31 A poster on the wall of a dispensary in Chamwino area. The man is depicted as saying: *This is very good. I understand. Let's start using a modern method of planned parenthood (birth control).* To which the woman is depicted as saying, *I agree, my companion, this health worker (servant) helped us.* The captions below read: *Speak with a health worker wearing a badge with a green star. S/he will help you. Plan births for better health. Family Planning Tanzania.*

Not only is population seen as a 'problem' but, in Morogoro town, those who continue to have large families are themselves viewed by certain other townsfolk as a problem. The number of children a women gives birth to also highlighted the division between those who identified themselves as being 'modern', and those they identified as being 'backward'; 'traditional'; and "superstitious", as discussed in chapter three. Informants who considered themselves to be 'modern' and progressive were keen to explain that they did

not have large families “like those in the village” or from the farms and fields (*washamba*)²²⁶, or indeed, like those who live in Chamwino area.

In her research of family planning in several regions of Tanzania, including Morogoro, L.A. Richey notes how the use of modern contraception can itself be incorporated into a ‘modern’ identity, as she writes:

While using modern family planning is certainly not the only way of signifying one’s modernity, it provides the opportunity for asserting an identity that is progressive, regulated, scientific and Western. This identity is embedded in the international population discourse and passed down to service providers and local women through the apparatus of modern family planning (Richey, 2004: 63).

Conversely, those who continue to have large families are sometimes considered by others as obstacles to development and, in effect, placing the nation as a whole in jeopardy. It is within this context that people in Doma village and Chamwino area feared that the government and aid-giving governments in the West were attempting to sterilize them and their children. However, anxieties over reproduction are not necessarily new, women who have difficulty conceiving or carrying a pregnancy to term often attribute the source of such misfortune to witchcraft (*uchawi*). Indeed, the idiom of poison (*sumu*) was frequently employed in relation to women being bewitched and made infertile. While anxieties over reproduction may not be new, looking for the cause of such misfortune in witchcraft illuminates local antagonistic relationships between kin and neighbours. However, fears over covert sterility operations reveal anxieties of wider global relationships.

Conclusion

A cacophony of rumours surrounded the mass drug administration to treat school-aged children for *kichocho* and *minyoo*. Initially, rumours spread on the morning of the drug administration that children had died as a result of receiving the drugs. This was the primary impetus for parents running to the

²²⁶ A pejorative term for rural people.

schools to prevent their children taking the drugs, and for the ensuing riots. In the days and weeks following the failed treatment exercise, explanations for the children's 'deaths' gave rise to new rumours which circulated in the municipality. Possible explanations to account for the adverse physical reactions experienced by so many of the pupils were printed in national newspapers and continued to be a frequent topic of conversation in the municipality. From an official perspective, these explanations were also considered nothing but mere conjecture and rumour.

While some informants thought the drugs had expired, either due to incompetence or government corruption, others suspected a drugs trial had taken place. However, informants with the lowest socioeconomic status in the municipality, including Chamwino residents, were more inclined to view the deworming programme as a thinly disguised sterilization campaign. This, it was understood, was organized by governments in the West, most notably that of the United States of America, but also Europe, in collaboration with the Tanzanian government.

From an anthropological perspective, rumours can be understood as the counter-narratives of people in unequal power relations. As such, they reveal local anxieties and provide a way for those in subordinate positions to negotiate official information, as well as resisting hegemonic processes. In this case, a public health intervention was resisted and, ultimately, rejected. As anthropologists and other social scientists have commented (Feldman-Savelsberg *et al.*, 2000; Yahya, 2007; Kaler, 2009), it is always necessary to examine the particular social, political and historical context in which rumours - in this case, sterility rumours - arise. As has been demonstrated in this chapter, in Morogoro municipality and in Doma village, there was a ubiquitous public health campaign aimed at family planning. Coupled with a common development discourse concerning the over-population of Africa, many people harboured anxieties concerning their continued capacity to reproduce.

Conclusion

This thesis examined in detail local understandings and responses to a biomedical intervention which sought to provide preventive chemotherapy to school aged children for two neglected tropical diseases: schistosomiasis *haematobium* and soil-transmitted helminths, in Morogoro region, Tanzania. From the perspective of global policy makers, these diseases are considered major health problems. It has been suggested that by treating them, the lives of people living in low-income countries, such as Tanzania, will be improved, as it will rid people of the associated morbidity, allowing them to fully engage in economic pursuits and thus, escape poverty (Molyneux *et al.*, 2005; Fenwick, *et al.*, 2005; Hotez, *et al.*, 2009). However, this thesis has demonstrated that such grand global rhetoric does not resonate locally.

The National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP) caused concern and raised suspicion among many local people in Morogoro town and Doma village. While initial rumours of child fatalities were the impetus for parents' protests at the various schools, there were still many questions raised regarding this treatment programme before and after the riots. However, these were not sufficiently answered by government officials, the programme itself, local health workers, teachers or other government employees working on the programme. For example, why were the drugs given to children by school teachers rather than health care workers? Why were children given drugs even though they had not been tested to see if they were infected? Why did the teachers not weigh the children to establish the dose but, unfamiliarly, measure their height? These concerns, especially after children fell ill after receiving the drugs and in light of the dearth of information coming from official channels, led to the entire rationale of the programme being scrutinized and suspected of being other than what it claimed to be. Locally, as well as nationally, there were suspicions that the drugs had perhaps expired or were counterfeit, due to either negligence or corruption or that the programme was really a drugs trial. However, local townsfolk who

occupied the lowest socioeconomic group, such as those who lived in Chamwino ‘squatter’ area, suspected the programme had really been a covert sterilization campaign organized primarily by governments and organizations in the developed world, but also in collaboration with their own government.

This final chapter provides a summary of the thesis and considers its contribution to social science research on the mass treatment of neglected tropical diseases.

Summary of the thesis

The beginning of this thesis described the events which surrounded the distribution of drugs to school-aged children in Morogoro town and Doma village on a late August morning in 2008. Rumours, which quickly spread around the town, told of children dying after they had received treatment for *kichocho* and *minyoo* from their teachers. Fearing for their safety, anxious parents and guardians ran to the schools to locate their children to prevent them from taking the drugs, or if they had already done so, to ensure they were safe and to take them to hospital. In several schools in Morogoro town the situation turned violent and, in some, teachers were beaten. Some pupils who had already swallowed the drugs complained of stomach ache. However, once news of the ‘fatalities’ reached the schools, children, apparently fearing they too had been poisoned, began to complain of various untoward physical ailments, including dizziness, nausea and headache. Many of them fainted.

The rumours of dying children also spread to other regions and to other districts within Morogoro region, including Doma village in Mvomero district, where I was conducting fieldwork. In this case, the reason for my presence in the village was incorporated into the rumour and I was accused of bringing the drugs into the village with which to “poison” the children. In the aftermath of the riots and protests, government officials blamed those they called “anti-government hooligans and agitators” for starting the rumours and also therefore for the subsequent rejection of treatment and the eventual suspension of the programme. However, blame was also directed towards anyone who passed these rumours on or who acted upon them, especially when

this involved violence. Local people, particularly those who lived in the poorest areas of town, were frequently portrayed as being ignorant and therefore - not knowing any better - being easily influenced by rumours which made them panic. Furthermore, alternative explanations for the rationale in treatment were also relegated to mere hearsay and rumour. Local people were deemed culpable for the rejection of the drugs and thus the programme's failure. The National Schistosomiasis and Soil Transmitted Helminth Control Programme (NSSTHCP) was not held accountable for the failure in treatment in any manner. In so doing, the local social, political and economic context in which this programme arrived and attempted to function, as well as the way it operated and delivered treatment, was ignored.

By examining local responses and understandings of this top-down biomedical intervention from the bottom up, it has been demonstrated in this thesis that a disjuncture existed between biomedical and local understandings of these tropical diseases, including, most importantly, the perceived necessity for treatment. The biomedical rationale for the treatment of the endemic parasitic diseases, schistosomiasis and soil-transmitted helminths, was discussed in chapter two. It was shown that the creation of the category 'neglected tropical diseases' was established in response to the United Nation's Millennium Development Goals and that experts in global health argued that treating neglected tropical diseases was one of the best ways of "making poverty history" ((Molyneux *et al.*, 2005:1069). However, it has been shown throughout this thesis that such grand global rhetoric does not resonate locally. Indeed, those working in the global health arena cannot - or should not - assume that those targeted for biomedical interventions will even be willing to accept treatment.

Having provided the biomedical perspective, the remaining chapters in this thesis either detailed the local context in which this programme occurred: historical, political, social and economic, or examined local responses to it. As each chapter builds upon the next this thesis has attempted to illustrate in detail the numerous dilemmas people had with the programme locally. Chapter three explored the historical, political and geographical landscape of Tanzania and Morogoro region. Tanzania is a low-income country, primarily agricultural, with poor infrastructure, including inadequate health care provision coupled

with high disease burdens. The situation was mirrored in Morogoro town, where constant migration into the town had added to the local council's burden in attempting to provide basic services, including health care and sanitation. Large areas of the municipality have no basic services and areas on the outskirts, known as slums or squatter areas, house those belonging to the lowest socioeconomic groups in the town.

While the inhabitants of these areas have different ethnic identities, the majority are *Waluguru*. While not indigenous, *Waluguru* have lived in Morogoro region - on the plains and in the Uluguru Mountains - for the past two to three hundred years (Young & Fosbrooke, 1960; Iliffe, 1979; Pels, 1999). In the region, including Doma village, residents are primarily *Waluguru*, but in the town people have arrived from all over the country making it ethnically diverse. There is no dominant ethnic group in Morogoro town and there is no explicit ethnic rivalry. However, *Waluguru* were often referred to pejoratively by others. Those who are not engaged in agriculture were keen to stress their 'modern' attributes and express these in opposition to those who live in the village or come from the farm (*washamba*), such as *Waluguru*. Rural people were considered "backward", "ignorant" and "superstitious", unlike the 'modern urbanites' that saw themselves as progressive and modern.

Also in chapter three, this thesis discussed the colonial history of Tanzania, first under German and then British rule. From this colonial history, it is possible to see the changing power relations for the people living in Morogoro region and how *Waluguru* have remained marginalized (Iliffe, 1979; Pels, 1999). Under the German administration, Muslims were given privileged positions within the administration. However, under the British, this shifted towards Christians, as they had learnt English while studying in the mission schools which had flourished during the German administration. In the late colonial period, the British set up a system of Indirect Rule and established the New Native Authorities, consisting of local elites. In Morogoro, this shifted the power over land away from *Waluguru* lineage heads (Pels, 1999). In the 1950s the introduction of the Uluguru Land Usage Scheme, which attempted to make *Waluguru* farmers terrace the hillside, met with extreme local resistance and riots leading the eventual abandonment of the proposal (Young & Fosbrooke, 1960; Maack, 1996).

The period of socialism, known as *Ujamaa*, was discussed, including the legacy of this period, and its first President, Nyerere, on contemporary Tanzania. *Ujamaa*, especially the project of villagization, increased state power and surveillance (Scott, 1998). It was suggested in this thesis that informants in this research appeared to remain vigilant against such government surveillance.

The thesis discussed the history of biomedicine in Africa, including Tanzania. It was during British colonial rule that biomedicine was first used on the native population of Tanganyika. This was primarily to achieve optimum productive output in the form of labour. Furthermore, there were fears throughout Africa that the indigenous population might contaminate settler communities (Arnold, 1988). Under colonial rule people were subjected to forced medical treatment, including blood and lymph taking, toxic medicine, and resettlement, all in the pursuit of 'good health'. It was at this time that rumours of vampires began to emerge. These coincided with the use of biomedical technologies on the native population by the colonial government and also the increase in the use of native waged labour on the plantations (Musambachime, 1988; Pels, 1992; White, 2000).

Pels (1992) suggests that such rumours emerged during periods of increased hardship and insecurity in Morogoro and can be understood as metaphors revealing the anxieties of the time. Indeed, this seems likely, especially in light of the more recent vampire rumours which emerged in response to new hardships brought about by structural adjustment policies in the 1990s (Weiss, 1999; Sanders, 2001). This thesis proposed that the rumours which surrounded this biomedical intervention, particularly the sterility rumours, revealed new anxieties for new times.

In chapter four, the focus narrowed, and the research sites, Morogoro town, including Chamwino 'squatter' area and Doma village, were described in more detail. This was with a view to presenting the social landscape in which this biomedical intervention arrived and examining the daily lived experiences for the inhabitants of Doma and Chamwino. This included exploring how people eke out a living and the hardships and uncertainties they face. It was shown that people from a diverse range of socioeconomic backgrounds live in

Morogoro town. However, Chamwino is one of the poorest areas, and is considered by other townsfolk to be a dangerous area, known for witchcraft and harbouring unsavoury individuals who engaged in a variety of illicit pursuits.

While Doma village is more homogenous in terms of ethnicity and socioeconomic status, the chapter described how villagers also feel marginalized and forgotten by their government. In both of these environments I suggest that informants appeared wary of the intentions of others and anything which might cause further detriment to household members already struggling to survive. In such an environment it was perhaps unexceptional that the deworming programme was met with a certain degree of scepticism.

Chapter five examined local understandings of misfortune and illness, and explored the many ways in which residents of Doma and Chamwino sought healing. Treatment was obtained from various sectors of health care, professional and folk (Kleinman, 1980), from, respectively, biomedical health care facilities, pharmacies and other drug shops and from a variety of local healers (*waganga*) and herbalists. Treatment decisions were based on the perceived cause of a particular illness episode. However, other factors, such as the availability of funds with which to pay for services, medicine or travel expenses also influenced where and when treatment would be sought. It was demonstrated that people in Doma and Chamwino access a variety of health care resources, either simultaneously or sequentially. Furthermore, these often interrelate and mingle, for example, while a family may suspect their child is suffering from malaria and seek immediate treatment from a biomedical facility they may also visit a *mganga* to determine the cause. Similarly, witchcraft is understood to be capable of 'playing' with the blood results from the laboratory, resulting in a false negative or false positive result, by treating the child for witchcraft the *mganga* allowed biomedical care to be more effective. Not only were there pluralistic methods of healing, of which biomedicine was just one, but the way in which these different sectors intermingled demonstrated the process of medical syncretism (Hausmann Muela, *et al.*, 2003) whereby various types of healing inform one another.

Chapter six examined local understandings of *kichocho* and *minyoo*. It demonstrated that while local and biomedical understandings of these diseases overlapped, there were also significant differences. For example, contrary to biomedical understandings of urinary schistosomiasis, *kichocho* was always understood locally to be symptomatic, recognizable by blood in the urine. As was illustrated in chapter seven, this led to local concerns of treating children who had not only not been tested first, but in the absence of bloody urine, were not perceived to be infected. Moreover, and perhaps most importantly, there was a significant divergence in the global health perspective and local understandings regarding the seriousness of these neglected tropical diseases. While, from a global health perspective, urinary schistosomiasis and soil-transmitted helminths are considered major health problems, locally, *kichocho* in particular, was regarded as an inevitable part of life. Locally, the focus on treating *kichocho* and *minyoo* and the resources allocated to the programme, appeared incongruous with the seriousness of the disease, especially when people were struggling to obtain treatment for other, more serious diseases such as malaria.

Furthermore, this thesis has shown that locally, the rationale for the deworming programme was often poorly understood because, as discussed in chapter seven, many people in Morogoro town were not adequately informed about the rationale or the scheduled treatment. Indeed, many informants said they knew nothing about the distribution of the drugs until they heard about pupils dying after receiving treatment. The thesis discussed the way information travelled from central government 'down' to street level. It was found that the usual channels of communication were circumvented, resulting in many parents and street chairpersons not being informed of the scheduled mass drug administration in schools. When parents were informed, the information was inadequate and did not provide any information regarding the rationale for treatment. For example, anxieties were raised by parents over the need to treat all the children, regardless of whether they had *kichocho* or not. As was discussed in chapter five, informants preferred to have their children tested for a positive diagnosis of whichever disease before allowing their child to receive treatment, even when symptoms were present. The efficacy of treatment was questioned as it was likely that children would quickly become re-infected, and the biomedical rationale for treating the children did not

appear to have been communicated to the parents. Moreover, many people in Morogoro town questioned why it was that teachers - and not health care workers, who were seen as being better qualified - should administer the drugs. While this sentiment was evident throughout the town, it was particularly pertinent in Chamwino where there was existing animosity between some of the teachers and parents. While teachers may indeed be ideal candidates in other global health initiatives, the 'one size fits all' approach which ignores the local context added to the mistrust of the programme, particularly in Chamwino.

The principle message provided by teachers was the need for the children to eat prior to taking the medicine. This reinforced fears that the drugs were very strong. Indeed, this was proved when many of the children began to experience adverse physical effects after swallowing the drugs. The notion of the drugs strength was examined further in chapter eight. It was shown how, by way of their provenance, the drugs were attributed with strength (Whyte, 1988; Whyte *et al.*, 2004). Furthermore, there were fears that the children had been overdosed due to teachers incorrectly calculating the dosage by height rather than weight.

While the adverse physical reactions experienced by the children may have been due to the drugs, chapter eight also examined the possibility that the children experienced a mass sociogenic illness. However, the thesis suggested that rather than place the children's actions into a psychiatric disorder, it was more useful to understand them from an anthropological perspective as an embodied form of resistance. This allowed the children's actions to be seen in response to the subordinate position they inhabit in relation to their teachers, in which it was otherwise difficult for them to refuse the drugs.

Chapter nine examined local, as well as national, interpretations and explanations of the deworming programme. Following the children's untoward reactions, several theories about the drugs and the treatment programme emerged. Among those occupying a higher socioeconomic status in the town, such as government employees and NGO workers, as well as many in the expat community, there were suspicions that the drugs had either expired due to negligence or corruption or that they were counterfeit; purchased at a lower

rate by government officials greedy to pocket the savings. There was also concern that the programme had really been a drugs trial. Both of these interpretations were also expressed in national newspapers, particularly in letters to the editor written by the public, as well as cartoons. However, informants who occupied the lowest socioeconomic group in the town including the majority of informants in Chamwino were fearful that the whole programme had been a covert sterilization campaign. The development discourse concerning the overpopulation of Africa - and indeed the ubiquity of a public health initiative informing people to reduce the size of their families - fuelled such anxieties.

Situating the thesis in relation to anthropological research on neglected tropical diseases

The research presented in this thesis is a unique contribution to the study of the mass treatment of neglected tropical diseases from an anthropological perspective. To date, with the exception of Parker and Allen (Parker 1992, 1993; Parker *et al.*, 2008; Allen & Parker, 2011; Parker & Allen, 2011; Parker *et al.*, 2012; Parker & Allen 2012), the control of schistosomiasis and soil-transmitted helminths have not been the focus of anthropological study.

This is the only anthropological research to explore local understandings and responses to mass drug administration for the treatment of schistosomiasis *haematobium* in Tanzania or indeed elsewhere. Furthermore, it is the only anthropological study to focus on the delivery of mass treatment to children. While this thesis focuses on the treatment of children it also explores the views and understandings of their parents. In so doing, it was shown that there were different generational understandings of these diseases: children's biomedical understanding usually being greater than that of their parents.

However, this did not mean that children necessarily wanted to swallow the drugs, but once at the school, pupils appeared to have had very little opportunity to refuse them, especially when considering the power relations between them and their teachers. This thesis is informed by, and contributes to, the anthropological literature on embodied forms of resistance (Ong, 1987,

1998; Boddy, 1988) when it suggests that the children's reactions, in particular the wide-spread fainting episodes, can be understood as embodied forms of resistance.

This thesis also contributes to the anthropological literature on medical syncretism in that it illustrates the interplay between the biomedical mass treatment programme and local understanding of *kichocho* and *minyoo*. For example, the drugs that were administered to the children were understood to be strong, in part, due to their bitterness (*nu chungu*). Such understandings were informed by local concepts of medicine (*dawa*) - particularly medicine obtained from local 'traditional' healers (*waganga*) - in which bitterness is associated with efficacy and strength - even more so if it makes a person suffer stomach ache and/or vomit. Furthermore, informants frequently asked why the children had been poisoned. The way in which the drugs were perceived locally as poison (*sumu*) resonates with local understandings of witchcraft, in which a bewitched (*uchawi*) individual was said to have been poisoned. Indeed, being poisoned and being bewitched were synonymous. Similarly, I was accused of poisoning the children in Doma, and although I was unable to follow up on these accusations, it appears as though I was being accused of being involved in witchcraft in some manner. Moreover, being poisoned/bewitched was frequently understood as an attack to one's fertility; this resonates with the anxieties which were expressed about the programme by informants in Chamwino.

This thesis has explored people's understandings and experiences of *kichocho* and *minyoo* from the ground up, but it has also examined how the programme was delivered from the top down to illustrate how information about this programme was disseminated and therefore, where programmes like these have the potential to go wrong - and, as illustrated here, may go wrong in a dramatic and even violent manner.

Indeed, in light of widespread resistance to treatment - and in the case of Morogoro town, violent unrest - it is important to carry out detailed, local level research in order to understand why it is that people reject free treatment for endemic diseases that lead to morbidity and mortality. Furthermore, it is important to identify and examine the unintended consequences of such

biomedical interventions. The events which surrounded the treatment campaign resulted in a low turn-out in various regions across Tanzania the following day for the annual provision of the measles vaccination and vitamin A drops (see appendix J). With time, it is possible that further research might identify other unintended consequences which are not presently apparent.

While the initial rumours of children dying caused parents and guardians to protest over treatment, sometimes violently, there were many other anxieties surrounding this treatment programme before these rumours took hold. This thesis has analysed these rumours and anxieties and demonstrated that the programme was rejected for several reasons.

First, vertical programmes such as these pass information ‘down’ but not ‘up’ (Feierman *et al.*, 2010): local voices were not heard, including pertinent questions from parents concerning the rationale as well as the method of treatment. For example, it would have been helpful if parents had been told about the method of calculating the dosage by height as it could have reduced anxieties regarding the perceived potential to overdose the children. In a similar vein, the biomedical rationale for treatment should have been explained, focusing on the reason for providing preventive chemotherapy even when it is clear that there is a strong likelihood that children will be infected again if they enter infected water.

Second, there was inadequate notice and information provided beforehand to parents and local leaders such as the street chairpersons. Although higher level government employees were informed, this did not ‘trickle down’ to the grass-roots. While teachers informed some of the street chairpersons, it appeared that only those located on a street with a school were actually told about the mass drug administration. It was certainly a missed opportunity not to adequately involve locally elected leaders.

Third, a ‘one size fits all’ approach ignored the local political and social context. For example, the antagonism between parents and teachers in Chamwino meant that teachers were not the appropriate people to be delivering the drugs. Although this was a very localized and specific occurrence, there was still a pervasive understanding throughout the town that

school teachers were not adequately qualified for such a role and it would be preferable to use health care workers. Taking this further, it would also be worth considering administering the drugs in health centres and hospitals rather than schools.

However, even if parents and pupils had been better informed, it does not necessarily mean that fears and rumours of covert sterilization campaigns would simply have disappeared. These are deep-rooted anxieties, embedded in historical, political and global relationships. Furthermore, the current climate of development discourse, which focuses on the over-population of countries such as Tanzania, and the need to reduce population growth if development goals are to be achieved, raises anxieties among marginalized groups that it is not so much the international community's aim to reduce the number of Africans living in poverty, but rather to reduce the number of poor Africans.

The findings in this thesis resonate with research around other medical interventions elsewhere in sub-Saharan Africa (see Kaler, 2009). For example, the rejection of the oral polio vaccination in northern Nigeria (Yahya, 2007; Renne, 2010) and an anti-tetanus campaign in Cameroon (Feldman-Savelsberg *et al.*, 2000) where sterility rumours also arose and where there was widespread resistance to treatment which revealed anxieties of internationally led eugenics plots. However, even in these cases, such rumours were not in isolation. There were other concerns, too, relating to the delivery of the particular treatments, such as who was delivering them and in what political context.

While recognizing that the political, economic and social context profoundly shapes the way in which mass treatment is received, this research highlights important issues which are relevant well beyond Morogoro region and even Tanzania. These are, first, the disjuncture between global rhetoric and policies established in the cities of the industrialized world and local realities of people living in low-income countries, and, second, misplaced assumptions in global policy. These findings raise an important question: what place should vertical biomedical interventions, such as this one, have in endeavours to improve the health of the poor?

While this thesis presents a vertical biomedical intervention that failed, in the sense that it did not administer treatment to enough children to be considered successful by epidemiological criteria, it does not argue that all mass drug administration cannot work. Indeed, Parker and Allen's (2011) research in northern Uganda shows that in some situations it can. However, despite the rhetoric of success heard from global health policy makers, including the Director General of the World Health Organization, biomedical interventions involving mass treatment have also frequently been rejected, including preventive chemotherapy and inoculations (Feldman-Savelsberg *et al.*, 2000; Parker *et al.*, 2008; Kaler, 2009; Renne, 2010; Parker *et al.*, 2012; Parker & Allen, 2012). It was shown in this thesis that in Doma village, people were also rejecting the drugs provided by another mass treatment campaign for the treatment of onchocerciasis (river blindness). Again, this was amid fears that the drugs would result in infertility.

In order to improve the likelihood of successful outcomes for the delivery of these sorts of biomedical programmes, policy makers and planners should consider how they use the work anthropologists develop in the field, even sometimes as part of the programme teams (Feierman *et al.*, 2010). However, having anthropologists 'on board' does not necessarily mean that policy makers will be interested in their findings and, in my own experience, are all too apt to consider anthropological research anecdotal (see also Allen, 2006). In spite of the grounded evidence, based in theory, that anthropologists (and other social scientists) have provided (Yahya, 2007; Coulibaly *et al.*, 2008; Parker *et al.*, 2008; Cavalli *et al.*, 2010; Parker *et al.*, 2012), this has not translated well into use by policy makers, as they do not appear to take this as valid evidence on how not to implement these programmes.

Indeed, in some cases anthropological research has been met with hostility, for example when Allen & Parker (2011) questioned whether the mass treatment of lymphatic filariasis was working in Tanzania, it was suggested in a paper co-authored by a leading parasitologist in the field of global health, and the Tanzanian head of medical research, rather provocatively, that the anthropologists' criticisms amounted to "neo-colonialism" (Molyneux & Malecela 2011: 8), deliberately 'missing' the anthropologists' arguments.

With regards to my own experiences in Doma, I suspect that what happened to an anthropology student in a small village is hardly on the radar of those working on the mass treatment programme in Tanzania or London. I suspect further, that as an anthropologist, living in a village, it was felt I could always have been a target for such an occurrence, whatever the cause. I do not feel it was considered a significant event in terms of the implications to the overall delivery of the mass treatment programme. Otherwise, surely, there would have been an interest in my research findings, and there was not.

In conclusion, this thesis suggests that it is unlikely that schistosomiasis *haematobium* and soil-transmitted helminths will be effectively controlled in Morogoro region (and beyond) so long as policy makers persist with the idea that a 'one size fits all' policy - designed far away from the daily lived realities of the impoverished people it is designed to help - can be provided uniformly, irrespective of the political, social and economic context in which the programme occurs.

Appendices

Appendix A: *Habari Leo* Newspaper (*Today's News*) Saturday 30 Aug 2008

Chango ya kichocho minyoo yazua balaa

VACCINATION FOR SCHISTOSOMIASIS, INTESTINAL WORMS INSTIGATES A CALAMITY

Our reporters in Sumbawanga and Morogoro

Picture caption:

One of the students from a Morogoro Municipality school who fainted after being given vaccine for schistosomiasis and intestinal worms being attended to yesterday at Morogoro Regional Hospital (picture by John Nditi)

- More than 260 students faint
- Parents riot
- Parents dispersed with tear gas

More than 363 primary school students in Rukwa and Morogoro Regions were taken to various hospitals after collapsing and becoming unconscious a very short time after being given medicine to prevent schistosomiasis and intestinal worms.

As a result of these events, those who gave the vaccines in these regions yesterday were forced to stop giving them out.

The situation made parents of primary school students to riot at various schools to force their children to be allowed to return home.

Gurian Adolf from Rukwa reported that those giving out the vaccines were forced to stop after primary school students collapsed and foamed at the mouth while some vomited and became unconscious.

Resulting from this, parents of those students attacked their schools in Sumbawanga Municipality, especially Chemchem, Katandala, Mwenge, Malangali Primary Schools.

At Jangwani they threatened to beat the teachers as they claimed that they caused the problems.

The situation was made even worse when the parents of those students arrived at Rukwa Regional Hospital in Sumbawanga and were refused to go into the wards, their intention being to see those of their children who had been taken to hospital for medical treatment.

Parents of those students threw stones at doctors and nurses of that hospital. This caused a police riot squad to go to the hospital and disperse the crowd of more than 600 people using tear gas.

For more than three hours, tear gas was used to disperse the crowd and make them stay at a distance of 500 metres although some of them continued to weep as they thought their children had died.

The Rukwa Regional Medical Officer, Saduni Kabuma said the students who were brought to hospital were treated and many were then released.

He said that not even one student died due to this event or was anyone in critical condition after being given the vaccine.

The Regional Commissioner, Daniel ole Njoolay wanted parents of students to not jump to conclusions when facing a problem and instead to be calm since the government would never poison her citizens.

Njoolay wanted parents of Rukwa Region to continue taking their under five year old children for measles and polio vaccines tomorrow as the vaccines are safe and there have been no negative side effects at all.

From Morogoro, John Nditi reported that the vaccine for schistosomiasis and intestinal worms came to a standstill in the region after riots broke out at a number of schools when rumours spread that some students died after being given the vaccines.

In giving out the vaccine, 63 students fainted and were taken to the regional hospital for medical treatment.

Riots broke out causing the police to use tear gas to disperse the crowd that had gathered at places where the vaccines were being given when they threw stones at workers and teachers in order to force them to stop and let their children go home.

The police detained 25 people, among them two women, for rioting.

In one of the riots, one police, identifying himself as Clemence Bazo, was injured after being hit under his eye by a rock and was taken to the regional hospital where he received six stitches.

Appendix B: *Forever Tanzania* Newspaper (*Tanzania Daima*) Saturday 30 Aug 2008

Chango ya kichocho yazua balaa shuleni

Schistosomiasis vaccination in schools brings about a disaster

- Children given the vaccine become weak, faint
- Students harmed in Morogoro, Shinyanga
- Parents decide to attack school, beat teachers
- FFU (*Field Force Unit - riot squad*) get in the middle, fire tear gas
- The Minister of Health confirms to have received this information

By our reporter

Riots broke out and caused great losses at primary schools in Morogoro Municipality where teachers and nurses were injured, some parents attacked schools to protest their students being given vaccines for schistosomiasis and measles that causing thousands of students to become weak and to faint.

Schools stricken by this uproar were Mtawala, Kiwanja cha Ndege, Msamvu, Uhuru, Bungo, Mchikichini, and Mwenbesongo.

This happened yesterday at different times at various schools in the region.

Rioting parents were angry and caused some teachers and clinicians who were giving out the vaccines at schools to be injured and to run into offices and closing themselves inside with the intent of keeping safe.

As a result of this situation, the work at vaccination stations which started yesterday came to a halt after some medicine cause side effects and resulted in some of the students being raced to the hospital, dispensaries, and health centres.

Forever Tanzania [newspaper] witnessed groups of parents pouring into the Morogoro Regional Hospital, dispensaries and health centres, to look for their

children who were raced to the hospital here in order to get medical treatment in which cars, motorcycles and bicycles were used to take them.

Wards number three and five were jammed with people and caused some of the children to be laid on clothes placed on the floor to wait for medical treatment.

Forever Tanzania was able to get the names of some of the students Charles Pantaleo (12), Fatuma Abdul (13) and Emmanuel Dickson (13) as being some of those who were hurt.

Speaking to this newspaper at different times, these students said after being given the vaccine, they started feeling dizzy and later to collapse before becoming unconscious.

Parents who spoke with *Forever Tanzania* directed blame at the government for agreeing to take these medicines and for pressuring children to take them.

Eva Joseph, a resident of Boma, whose child was among those who were affected by the medicines, said it is possible they were brought into the country as a big trial test on children instead of animals.

The Morogoro Regional Education Officer, Fatima Kilimia, stated that children had been affected by the medicine but she said not one child lost their life and all students were doing fine.

Kilimia said the government had already decided to close schools for a time in order that students who were affected could have a chance to get some rest.

Speaking to news reporters, the headmaster/headmistress of Mtawala Primary School, Shufah Ngozi, said that the riots started at his/her school between 10 and 11 AM yesterday.

He/She said the riots started after a group of more than 100 parents of students who go to his/her school arrived and started throwing stones, dumping the children's food, while others started beating teachers, claiming that they were not ready to see their children being given dangerous drugs.

This teacher immediately after seeing the situation, along with other teachers and a doctor who was there for giving out the vaccinations, closed themselves up in the school's teachers' office in order to keep themselves safe.

“After seeing this, the parents decided to throw stones at the windows which caused a great loss of which as yet we have not estimated the cost,” he/she said.

Also, this teacher claimed that they reported the incident to the police and its anti-riot squad (FFU) came and started to disperse the rioting parents by using tear gas.

The Regional Police Commander, Thobias Andengenyne, confirmed that a riot took place and he said that events such as this took place at other school in Morogoro Municipality.

Commander Andengenyne said some schools had reported similar situations to police stations at Mtawala, Kiwanja cha Ndege, Msamvu, Uhuru, Bungu, Mchikichini na Mwembesongo Primary Schools.

Even so, Commander Andengenyne said FFU police had already been sent to schools in the municipality to ensure safety and calm and had returned.

In further news, it was reported that in Mvomero District there was a similar situation of students being adversely affected which is outside of Morogoro Municipality.

According to this information, this event in Mvomero was caused by students being raced to Turiani Hospital which is owned by Mtibwa Sugar Factory.

Outside of Morogoro, ill effects like these were said to have happened in Shinyanga Region where some students who were given medicine also fainted and became unconscious.

Speaking on the situation, the Head Doctor for the Ministry of Health, Dr Deo Mtasiwa said the government had news of this event and it is researching it in order to know the cause, especially why children were affected.

“The medicine for schistosomiasis was given out also in Manyara, Arusha and Sumbawanga Regions but there we didn’t hear anything about these effects, so indeed we are trying to research why it happened in Morogoro,” said Dr Mtasiwa.

Even so, he said that not one student had lost his life and that all had returned to their homes after feeling better.

He said the medicine that caused the problems are those of schistosomiasis, but the measles vaccine had yet to be given out and it was expected to be given out today in all regions of the country.

“The measles vaccine is being given out today and yesterday it was schistosomiasis, so therefore we ask people to bring their children in for these important vaccinations for the sake of their health and I want to get rid of any fear that there is any side effect like that of schistosomiasis,” he said.

Prepared by Femy Aidan and Joseph Malembeka, Morogoro, and our reporters in Shingyanga and Dar-es-Salaam.

Appendix C: *Mtanzania* Newspaper, Saturday 30 August 2008

Balaa Morogoro

CALAMITY IN MOROGORO

By Merina Roberts, Morogoro

- Campaign against schistosomiasis causes a disturbance
- Parents attack schools, caning teachers
- Campaign paused, 25 people in custody

The campaign to give out medicine for intestinal worms and schistosomiasis at primary schools here in the region was blemished and was paused after some students were affected by the drugs and caused parents to get in the middle, rioting against the campaign.

This national campaign to prevent schistosomiasis and intestinal worms was planned to be carried out in six regions of the country caused more than 180 children in Morogoro Municipality alone to be affected by weakness, diarrhoea and vomiting and some were admitted to the Regional Hospital of Morogoro.

The distribution of the medicine also caused some teacher and those giving out the medicine to be beaten by parents and guardians of children, being suspected of doing a drugs trial on their children.

The Morogoro Regional Education Officer, Ms Fatum Kilimia, told reporters yesterday that this campaign of giving out the medicine Mabendazole for treating intestinal worms and Praziquantel for schistosomiasis has been paused as a result of the effect that has appeared.

Kilimia said the news that there had been deaths as a result of the campaign were unfounded, except there were only rumours that were being spread by some people after seeing some of the children after they had taken the medicine.

Those news reporters who were at the Regional Hospital in Morogoro witnessed the things that had happened after some of the women there claimed they did not find their children there and they believed that that went along with the death of their children. Others used force to see their children who were admitted in ward number five which was set aside for children who were affected by the medicine.

Some of the children admitted to the Regional Hospital were those who go to Mwere B Primary School, Edmund Jackson (13), of Grade Six, Emmanuel Dickson (12), Charles Panthaleo and Fatuma Abdul, all of Grade Seven, all who said that after having taken the medicine they felt nauseated and weak and were taken to the hospital for medical treatment.

A teacher of Kaloleni Primary School who didn't want his/her name mentioned said many students were sick with schistosomiasis, a situation that causes teachers some times to use their own money to buy medicine and they were surprised by this step by parents to prevent this campaign when the drugs they were being given were free.

The teacher said it was normal for someone to become weak when taking this drug but they weren't expecting such a thing to happen like this. Teacher Philemon Kibuja of Area 5 Primary School here in the town, where it was claimed that two children had died, said there was no such thing yet even they had heard that students had died who go to school at Mtawala Primary School.

As a result of rumours, more than 100 parents attacked those schools and started a large riot even before drugs for these diseases even started to be given out.

One of these parents, Halid Malipula, said his child, Richard Halid was admitted to the Regional Hospital after his grandmother met him on his way from leaving Nguzo School where he was weak and she was forced to give him milk as first aid before taking him to the regional hospital.

Regional Police Commander Tobias Andengenyé said the riot at schools started around 11 AM and 12 PM until afternoon. 25 people were arrested for being suspected of starting the riots, beatings teachers and police who went to calm down the disturbances. One policeman, Clement Bazo was injured during the rioting after being hit in the face with a stone while he was trying to calm the

riot at Mafisa A and B Primary School and he was taken to the regional hospital where he received six stitches.

Commander Andengenyé said no person had died as a result of this even nor from the medicine but rumours were started by one person.

The Regional Commissioner, Retire Major General Saidi Kalembo visited ward five at the hospital. He said those giving out the drugs had not followed the regulations but he believed that the drugs were not harmful at all.

In Mlali Ward, teachers at Mlali Primary School in Mvomero District were forced to leave the school grounds after three students fainted after taking medicine.

After this reporter left the area, all students were doing fine at the Mlali Dispensary where they were admitted, although students who had not taken the medicine were being taken by their parents.

Appendix D: *Majira* Newspaper, Saturday 30 Aug 2008

Chango yazua tafrani

VACCINATION INSTIGATES DISTURBANCE

By Nickson Mkilany, Morogoro

Picture captions:

Students at Sombetini Primary School, Arusha, from the left, Margreth Reginald, Fatma Said, Gift Kasola and Pendo Alex those who were claimed to have fainted after taking medicine for schistosomiasis and intestinal worms. These students were raced to the Arusha Regional Hospital Mount Meru for treatment. In the picture on the right, a good Samaritan gives milk to Margreth Reginald to relieve the severity of the medicines. (All picture by Said Njuki)

- Children nearly escaping death, admitted to hospital
- Parents attack schools, beat teachers and clinicians
- Tear gas used to put down riot

The vaccination campaign for intestinal worms and schistosomiasis for children starting from new born to age ten which was instigated yesterday in the country showed to be defective after children who were given these vaccines claimed to have narrowly escaped death and others were admitted into hospital.

In Morogoro Municipality, this campaign was bogged down after parents attacked various schools in this municipality, preventing their children from receiving the vaccines, claiming that their children were being harmed by the drugs.

Those parents claimed to beat some teachers and those giving out the vaccine, a step which caused the police brigade to step in and send police to face the disturbance. A total of 42,570 children were expected to have been given those vaccines.

Some of the students at those municipality schools began collapsing and fainting after being given the drug 'Praziquantel' which was being given as a preventative vaccine for schistosomiasis and 'Mabendazole' for intestinal worms.

As a result of those parents rioting at primary schools at Uwanja wa Ndenge, Uhuru, Mtwala, Mwembesongo, Sabasaba, Mkwajuni, Mchikichini, Mwere and Bungo, the police were forced to use tear gas to calm the uproar.

In that it as claimed these vaccines were harmful, a large number of children were admitted into wards number four and five of the Morogoro Regional Hospital.

As a result of a shortage of beds, children were found to have been laid two to a bed in ward number four and having been placed in the doctors' offices as the wards were flooded [with people].

The news of the negative effects of the drugs quickly spread here in town yesterday causing crowds of people to gather at different schools where vaccinations were given while others flooded into the Regional Hospital, especially when rumours circulated that some children had died after receiving the vaccine.

Speaking on the problem, Morogoro Regional Education Officer, Ms Fatum Kilimia, stated that regrettably the riots were caused by the vaccinations.

Some of the parents of those students who were affected showed they were worried about the quality of those drugs used for humans since they claimed their children followed all the instructions given prior to the vaccination - that they be given enough food.

Further news showed that those same drugs caused side effects in Mvomero and Kilosa Districts.

Said Njuki reporting from Arusha said that this campaign was shown to be defective in Arusha Municipality the day before yesterday after children who were given the vaccine became weak and collapsed.

Sombetini and Osunyai Primary School is one where her students were stricken by this calamity. Six children were forced to be raced to Arusha Regional Hospital for medical treatment.

This event happened the day before yesterday when those children after leaving the school were overcome and collapsing in the area of Mbuada bandambili while others fainted.

Majira [newspaper] witnessed those children while in this crisis before a good Samaritan took the responsibility of giving them milk, finding a car and racing them to the hospital.

When this reporter arrived at Sombetini and Osunyai yesterday morning following this story, teachers confirmed the event and explained that this situation contributed to affecting the attendance at other schools because students were afraid to go get the vaccines.

Some of the students talking to *Majira* at another time said they were given the medicine according to their height so some were given two, three, and up to five tablets and this situation convinced them that this was the root of the side effects.

Those taken to hospital were Magreth Reginald, Fatna Sid, Gift Kasola, and Pendo Alex, all of Sombetini Primary School, Asha Mohamed and Husna Joseph of Osunyai, claiming headaches and dizziness after the vaccination.

The assistant headmistress of the Sombetini Primary School, Ms. Lidya Kileo confirmed the events and claimed two children; Jeliet Masaki and Mwanaidi Selemani become worse and were raced to the hospital.

The assistant headmistress of the Osunyai Primary School, Ms Dines Jackson also said there was a problem at her school and confirmed that a large number of students had not come to school yesterday fearing the vaccination.

The Regional Medical Officer, Dr Salash Toure and Medical Director of Arusha Regional Hospital, Dr Omai Chande when being asked by phone about this problem said they knew nothing about the start of the campaign the day before yesterday and they had no news of those children being overcome from the vaccines.

'I know that this exercise started today (yesterday) and not the day before yesterday. If there are those who have started ask the Municipal Medical Officer, who will give you answers to your questions,' said Dr Chande. Dr Toure also showed his surprise as hearing the campaign started the day before yesterday.

Appendix E : Tanzania Newspaper. Monday 1 September 2008

Wanafunzi waathirika wa chanjo bado wapo hospitali

AFFECTED STUDENTS OF VACCINE STILL IN HOSPITAL

Reporter: Joseph Malembeka - Morogoro

Six students of more than 300 in Morogoro Municipality who arrived at the Morogoro Regional Hospital as a result of being affected after taking the vaccines for schistosomiasis and intestinal worms have still not being given permission to leave and they continue well with treatment.

The students are Feith Jonas Meena (8), Emanuel Dickson (13), Jane Willison (13), Nuru Ramadhani (8), Geonofora Godfrey (18), and Neema Ainilel (15).

A nursing officer of the hospital, Obadia Peter, spoke with reporters yesterday saying the students how are still in hospital are bothered by headache, stomach ache, and dizziness.

“Nonetheless, they are doing well. I think that most likely it is fatigue that is bothering them. The pain they feel is very normal,” said Dr Peter.

In the beginning, when speaking with the reporters, the Acting Head of Morogoro District, Hawa Ngh’umbi, said this experience was ruined by technology and communications especially in town.

“For example, I was on a trip in Mvomero District in the Mkindo area and there was no problem there. But the phone calls I received from Morogoro Town frightened even me as many said deaths had occurred,” Hawa said.

She said besides those communications there were also some problems in areas where children took the drugs without having anything to eat.

At the same time, it was expected that this exercise would continue yesterday with drops for small children yet it seems to have gotten bogged down as many health stations as few children were brought for the vaccination.

Tanzania Daima (another newspaper - br) visited some of the stations in Nunge, Mji Mpya, Kilakala, Kichangani, and Bigwa and found only staff members waiting for children.

“The continuation of this exercise to not happen is a result of the dissention that happened the day before yesterday, that is to say I think everyone is afraid,” said one nursing officer waiting at one of the stations.

Appendix F: *Majra* Newspaper. Tuesday 2 Sept 2008

Kutoka kwa Mhariri - Elimu zaidi ya chanjo itolewe

From the editor - More education about vaccination should be given

Last Friday, a national campaign to vaccinate for schistosomiasis and intestinal worms in schools was flawed after a large number of children who were given the drug 'Praziquantel' and 'Mabendazole' were overcome while others fainted and admitted into hospital.

This situation instigated a huge conflict within a number of regions in the country after some parents took steps to attack schools and vaccination centres and beat teachers and clinical officers who were involved in the campaign.

In Morogoro Town, this situation caused the police force to get involved and to use tear gas in order to calm the riot. Some people were placed in police custody as a result of the disturbance.

We believe that this vaccination is important and was given with good intentions of prolonged quality health for our children while fighting illnesses which are one of three enemies of development of the nation which were announced immediately after independence.

The main reason given for children being adversely affected by these drugs was not following the regulations for their use, that is, it is claimed that parents and teachers were supposed to ensure that every child had eaten (until full) before being given the vaccine.

As a result of these negative effects, now there is a great fear concerning the use of these drugs. Among many schools throughout the country, was recorded that attendance has fallen so as to avoid this vaccination. This matter in one way or another, threatens to reduce the progress of academic studies.

In order to put things right and to get rid of this fear, the Ministry of Health and Social Welfare needs to take intentional steps to further educate parents and children about the importance of these vaccinations and what caused the side

effects. We believe there were no harmful drugs used contrary to their mandated usage.

Appendix G: *Nipashe* newspaper Tuesday 2 September 2008

Mwakyusa: Natafakari ushuari wa kujiuzulu

MWAKYUSA: I'M CONSIDER THE ADVICE TO RESIGN

By Simon Mhina

The Minister of Health and Social Welfare, Professor David Mwakyusa, said he listened to the advice wishing him to resign after the problems of children fainting after being given the drugs for schistosomiasis and intestinal worms occurred but he is still considering it.

Speaking with *Nipashe* by phone yesterday, Professor Mwakyusa said that immediately upon return to Dar-es-Salaam from travelling, the issue of him being wished to resign was the first thing he heard.

“Well, I can’t give a quick answer. The issue of resigning is a weighty thing. I still need to think about it,” he said.

Even so, the minister said he would not take any hasty steps to resign or with the intent of making someone happy.

Concerning the effects of the drugs, he showed surprise at people “getting dressed up in groundnut plants” over as few problems that occurred without wanting any explanation from the government.

Professor Mwakyusa disagreed with the claims that there was corruption involved in the importing of these drugs as claimed by the head bishop of the Full Gospel Fellowship, Zakaria Kakobe.

Minister Mwakyusa said those who make these accusations are not familiar with the situation and without a doubt they are speculating without any substantiation and are just talking about the problem could make it seem to be a much bigger deal than it really was.

He said there is no person in his ministry who would even think about sabotaging the health of the people. “Those who say such things, I think they are just guessing” said Professor Mwakyusa.

“If there are people who think I’m not fit, ok. But they also need to say who then is more fit more for the job than I. They should say who that is so the President can select ministers after seeing this name,” he said.

When he was asked to give further explanation of how much more time he will use to consider this request to resign, the minister said he had no idea.

The day before yesterday, Bishop Kakobe was quoted that he wanted Professor Mwakyusa and the Executive Secretary of the ministry, Willison Mkama, to resign immediately as a result of this event.

At the same time, *Fatima Haule of PST was reporting from Morogoro* that the Tanzania Food and Drug Administration (TFDA) sent its experts to Morogoro Region to evaluate the quality of the drugs and the side effects that happened following the vitamin ‘A’ vaccination exercise as well as schistosomiasis and intestinal worms.

It is claimed that more than 300 children from various primary schools were affected by this medicine.

A commission of two people led by Acting Director of this administration (TFDA - br) Mr Hiiti Sillo arrived in the region the day before yesterday with the goal of doing research in order to know if the effects that happened to the children had any relationship to or was caused by the medicine they were given or if there might be something else.

Mr Sillo said they will carefully research further in order to come to the truth of the matter about these side effects from the drugs which were claimed while at the same time differentiating as to whether or not there is any relationship to the quality of the drugs.

Appendix H: Tanzania Daima Newspaper. Tuesday 2 September 2008

Profesa Mwakyusa chukua hatua sasa

PROFESSOR MWAKYUSA TAKES STEPS NOW

By Kulwa Karedia (opinions)

Last week, the Ministry of Health and Social Welfare gave an historical account of its work after more troubles emerged and so there is a need for an in depth explanation for Tanzanians.

I said a problem because this past week the ministry started an exercise to give out drugs to prevent schistosomiasis and intestinal worms for children starting from age one day to five years old.

We agree that giving this service is good and we must agree with it along with every person who wishes to not see our children lose their lives without a fundamental reason.

According to statistics from the World Health Organisation (WHO) it shows that Africa leads in the amount of children suffering from these diseases.

But after starting this exercise in different places within the country, complaints strung up and shocked hundreds of parents to the point of taking steps to join in a demonstration march and to angrily beat teachers, and later their children fainted after being given the vaccine.

This news was bad for every parent as children left home in good health. How was it then they were given a vaccine and then fainted? Here there are some basic answers needed from those concerned with this matter.

Those who are involved are not very many but rather it is the sponsoring ministry which, we believe before starting this exercise, had carefully investigated and designated areas where these diseases are chronic.

Apart from the investigation, the ministry I believe satisfied itself that all drugs it would administer during this exercise would be safe for human use.

I regret to see that until yesterday after what happened, the sponsoring minister, Professor David Mwakyusa, has been silent and given no opinion about the lives of people...this silence makes me wonder if his concern extends to those in trouble?

I would advise him that the time for taking steps against those under him has arrived. This situation pushes me to believe that if these drugs reached the children and they were harmed to this extent, it is possible that the drugs had expired.....if that is not the case then why is Professor Mwakyusa sitting silent?

When Professor Mwakyusa continues to be mute during this time, his lead executive is his Executive Secretary, Wilson Mukama, who decided to fall asleep without giving any explanation at all.

I wish to say: if these drugs came into this country and they had expired and the ministry decided to bless their use without any concern for the effects that might happen, I would advise Minister Mwakyusa to leave his post.

Since he was selected for this position, his ministry has had three significant calamities; we think it is only right for him to resign - one was the question of three surgeries at the orthopaedic hospital at the national hospital, Muhimbili (MOI).

The second event was when patients with serious mental health issues were beaten and injured to the point where they killed their fellow patients while the doctors and nurses were on strike. The third is children falling unconscious after being given a vaccination.

These were huge problems that we openly believe that Professor Mwakyusa should have made a serious statement about. Instead, regarding the three surgeries, he put together a commission that fired low level employees who later complained they were mistreated.

It is no longer a usual thing in this country for those big fellows who were involved to not be taken to task. Instead the 'small fish' are carrying the 'sharks' and I say it's enough.

When Tanzanians have cooled off from one 'pain' another problem of children fall unconscious after being given a vaccination enters in.

I cannot get it into my head that not even for one day a nation such as this one which is loaded with expensive equipment would import expired drugs without those concerned being shocked even before carrying out this vaccination exercise or is it pressure the big fellows like America, England, and France?

Anyone can agree with me that the wealthiest nations in the world have a habit of distributing things on this continent that seem to be part of (drug) trials. This is life threatening.

I believe that drugs are important for humans to use especially when they are issued by experts who were entrusted with the responsibility of people's lives. District Medical Officers who colluded with these problems must be held responsible in accordance with work laws.

By not doing this, some Tanzanians will continue to believe that there a lot of loopholes of corruption which control drug importation or those involved are given their 'ten percent' and have they decided to finish all the patriots off by these means?

Without disputing, this is something to ask one's self about; the corruption that takes place around drugs and bringing in expired vaccines; and what if this was the case when ordering government cars and office equipment? It seems the situation is bad and it deserves to be taken care of. This is indeed why I question as to when Professor Mwakyusa will take steps to take to task his assistants who seem to have dirtied up their performance? I wish to finish up by saying that now is the time for Professor Mwakyusa to start showing his claws to his employees and hold them responsible because they hold the lives of more than 35 million Tanzanians. If you remain silent, we will be ruined. God bless you.

Appendix I: *Mwananchi* Newspaper. Monday 1 September 2008

Timu ya kuchunguza dawa za minyoo yaja

TEAM COMES TO INSPECT WORM MEDICATION

Reporter: Samwel Msuya - Morogoro

The hit that the vaccine for schistosomiasis and intestinal worms took and the claims that they caused harm to 300 primary school children in Morogoro Municipality has taken on a new look after the Tanzania Food and Drug Administration (TFDA) arrived in the region in order to inspect the vaccine.

A two person team, led by the Acting Director of TFDA, Hiiti Sillo, arrived here in the region on Saturday, the day before yesterday, with the intention of doing research in order to know whether or not the harm to the children has any relationship or was caused by the drug they were given or if there is something else.

Siilo said they will research extensively in order to see if there is any truth of harm the drug was claimed to have caused together with seeing if there is any relationship between this harm and the quality of the drug. He said if they discover that the drug was harmful, the law will take its course.

He said they were compelled to come to the region to do this research for three days after being shocked by the breadth of this vaccination's adverse effect after being passed around by the media.

He said after this research, if they see there is any connection to the drug being harmful they will communicate with those who made the vaccine so that they will attach a label regarding the harmful effects of this drug.

He said that during their initial research he was able to see there were a number of deficiencies in how the drug was given such as giving children he

vaccine without weighing them, not educating the parents and children about the side effects of this vaccine as the drug used during this exercise is very strong. He said that despite that, they are continuing with their research of the drug quality in Morogoro, Mvomero, and the municipality and after looking into the problem they will give an official statement.

Also the Member of Parliament for Morogoro district, Dr Omar Mzeru, talked about how he visited Morogoro Regional Hospital where the students who were affected were treated. He said that were whole manner in which the vaccine was given had many deficiencies.

Appendix J: *Nipashe* Newspaper. Monday 1 September 2008

Kampeni ya chanjo ya surua yasuasua Mbeya

MEASLES VACCINATION CAMPAIGN IN MBEYA SPIT OUT

- Only a few people turn out

Reporter: Tobias Mwanakatwe, Press Services Tanzania (PST), Mbeya

The vaccination campaign for measles, polio, and Vitamin A drops for children in this region did not go as expected as a result of many parents refusing to bring their children for fear of harmful effects similar to those that happened with the schistosomiasis and intestinal worm drugs.

Investigations done by Press Services Tanzania (PST) at some centres which were set aside to administer these vaccines showed that on the first day of this exercise only a few people turned out to bring their children in for these vaccinations.

Some people who talked to PST said they were afraid to take their children as a result of being worried that their children would be affected in the same way as what happened to those who received vaccinations for schistosomiasis and intestinal worms in Morogoro, Rukwa, and Manyara.

The vaccination coordinator for Mbeya, Ms Mhale talked with PST and said on the first day of this exercise only a few people indeed turned out to bring their children in for vaccinations.

The information given out by the government explained that Mbeya Region planned to administer vaccinations to 1,515,443 children.

At the same time, the exercise to give out the drugs for schistosomiasis and intestinal worms for primary school children in Singida Region had some problems in few areas after parents were frightened by their children fainting;

some of the centres that were specified for this exercise didn't have enough equipment, reported *Elisante John of PST Singida*.

In the same fashion, up until yesterday, Saturday afternoon, the parents at some school went on strike saying their children ought not be given these drugs, with health experts struggling to go around here and there in their cars to educate their citizenry.

Investigations done by PST showed that those putting on the campaign did not adequately educate people in understanding the difference between the vaccinations and the drugs given to treat intestinal worms and schistosomiasis. Instead, they were told that all were vaccinations.

Even so, the District Medical Officer of Iramba District, Dr Dorothy Kijugu requested parents and guardians they make sure all their children were taken to special centres so that they might be given drugs for schistosomiasis and intestinal worms and to get the vaccines to prevent various diseases.

Even so, some people said that this procedure of giving out drugs for intestinal worms, schistosomiasis, and vaccines all at the same time caused this campaign to be rejected as compared to those undertaken by the World Food Programme (WFP) within some of the villages in the region.

They said this organisation had given students drugs for intestinal worms and schistosomiasis without any harm being done as a result of students eating first before taking the drugs. This was different from what happened with the current plan.

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