Wartime children's suffering and quests for therapy in northern Uganda

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Chapter Six

Diarrhoea

Introduction

This chapter's objective is to analyse children's experiences and medicine use for episodes of diarrhoea. Children frequently discussed their experiences with *cado* (diarrhoeal diseases), *cado remo* (bloody diarrhoea), *cado pii pii* (diarrhoea with watery stools), dysentery, and cholera, which they treated with pharmaceuticals and herbal remedies. Cholera epidemics in northern Uganda during the two phases of research are presented and analysed in this chapter as a severe form of diarrhoea.

In this chapter empirical data is organised following these themes: prevalence, medicine use, disease aetiologies, and epidemics of diarrhoeal diseases. Analyses of data will focus upon questions concerning the prevalence of diarrhoeal diseases, including cholera epidemics, and its differential prevalence within Gulu district (in affecting mainly resource poor communities); contemporary areas of emphasis in the control of epidemics of diarrhoeal diseases; and the conflict between children's perspectives about their own diarrhoea episodes compared to others'. I will also explore how control of the cholera epidemic in Gulu district at the time of this study presented various challenges.

6. Findings

6.1. Quantitative data: Prevalence and medicine use for episodes of diarrhoea

Table 6.1: Prevalence of diarrhoea(s) within a one month recall (N=165)

Illness	Boys	Girls	Total	P-values
Cado pii pii (diarrhoea with watery stools)	32	22	54	0.73
Cado (diarrhoea)	40	35	75	1.00
Cado remo (diarrhoea with blood)	09	4	13	0.23
Total for diarrhoea	**81**	**61**	**150**	**0.59**

A positive response of 150/834 (approximately 18%) makes the burden of diarrhoeal diseases for the study population second only to malaria. Results suggest no statistically significant difference (P=0.59) between boys' and girls' experiences with diarrhoea within a one month recall.

Table 6.2: Medicines used in treatment of diarrhoea within a one month recall (N=165)

Medicines	Boys	Girls	Total	P-values
Amoxicillin or Tetracycline	87	76	163	0.92
Flagyl (metronidazole)	55	53	108	0.39
Pen V (penicillin V)	62	64	126	0.06
Septrin (cotrimaxazole)	21	22	43	0.49
Antibiotics	**212**	**215**	**427**	
Action	43	46	89	0.18
Vemox (*yat kwidi* – deworming medicines)	41	39	80	0.60
Multivitamins (or vitamins)	55	49	104	0.88
Lagarctil	36	40	76	0.16

Children often managed their episodes of diarrhoea with antibiotics. Other medicines which children mentioned having used for cases of diarrhoea were analgesics, multivitamins, and Lagarctil. Noticeably, no children mentioned using Oral Rehydration Salts (ORS) in the treatment of diarrhoea.

Table 6.3: Herbal medicines used in treatment of diarrhoea within a one month recall (N=165)

Herbal medicines (extracts)	Boys	Girls	Total	P-values
Mango roots	79	69	148	0.97
Pawpaw leaves	82	59	141	0.003
Mango bark	75	51	126	0.004
Neem leaves	24	11	35	0.042
Guava stems and leaves	20	4	24	0.001
Total	**343**	**252**	**595**	

I include a summary of data for herbal medicines used for diarrhoea since it appears that in the main children managed diarrhoeal diseases with herbal remedies. Although some children spoke of the importance of the two parts of the mango tree (mango roots and bark) interchangeably in their narratives, a higher proportion of children illustrated mango tree roots being used for diarrhoea and/or stomach ache, while the number of children who mentioned mango roots at all was slightly higher than those who mentioned mango bark. This high reported usage of mango tree roots may correlate with a high prevalence of diarrhoea and stomach ache among the children. In Illustration 4, the child drew a girl

harvesting mango roots, but wrote about mango stem(bark) for diarrhoea. These are some of grey areas in narrating findings as children relay them, and yet the practice could be slightly different. The latter is also linked to errors in recall data and that is why this study regards triangulation of qualitative and quantitative data with high importance.

Strong statistically significant differences in the use of herbal remedies for diarrhoea were observed in boys' and girls' use of pawpaw leaves (P=0.003), mango tree bark (P=0.004) and guava stems or leaves (P=0.001). There is a weak statistical relationship observed in boys' and girls' use of neem leaves (P=0.042). Except for the use of garlic (boys 34, girls 39: P=0.12), data suggests that more boys than girls used pawpaw leaves, mango tree bark, and other herbal remedies for diarrhoea within a one month recall. This correlates with the findings in Table 6.1, which shows that more boys reported experiencing diarrhoea within the same month. Could this suggest that boys were more likely to have diarrhoea than girls? Could it be that boys shared their experiences with using herbal medicines more easily than girls? Could it be that boys more frequently used herbal medicines for their common illnesses, including diarrhoea?

6.2. Qualitative data: Prevalence, symptoms, severity, and prevention of diarrhoeal diseases

Through qualitative data techniques it was possible to elicit more specific data, particularly that pertinent to severity, to the differential explanations for the aetiology of one's diarrhoea as opposed to others', and about other medicines not captured by quantitative data. In general, the children's narratives signify a high prevalence of diarrhoeal episodes, consistent with the quantitative data presented above.

6.2.1: Exemplary narratives of experiences with diarrhoea within a one month recall

About two hundred children either wrote about or narrated stories related to their experiences with diarrhoea and how they managed them. Some of the archetypal stories are presented verbatim below. They are exemplary because they contain children's perspectives concerning disease aetiologies, differences in interpretations of symptoms and severity, and examples of pragmatism in their quests for therapy.

Oketch, aged 13-years narrated his story of having diarrhoea as follows:

> I went back home from school at lunchtime when I was hungry. I got some mangoes, which I ate before washing my hands even. That afternoon I started frequenting the pit latrines and my stomach was aching. I felt very weak by the time I went back home after classes. I would

> go to the latrine four times in an hour. Our landlady gave me *tee ocok* (extracts from roots of Sodom apples) but diarrhoea persisted. The next day I went to school but still kept on going to the latrine frequently. If I found the door locked I would defecate near the latrine. At school, teachers advised me to stop eating dirty things. I was taken to hospital and given medicine but it still could not work. The landlady told me to eat *cam ma nwang* (sticky foods or difficult to digest food) such as *kwon kal* (millet bread), cassava, and bread. It was difficult to find such food. I was later admitted to Lacor for one day and then told to go home. Our landlady got for me *tee lira ki tee langо* (roots of neem tree[47] and Rhamnaceae plants) to drink and it stopped the diarrhoea after three days.

Oketch gave conflicting ideas about aetiology for his own diarrhoea episode, attributing it to eating very ripe mangoes or a mixture of foodstuffs, contrary to when he discussed how his sister got diarrhoea through drinking dirty water fetched from an unprotected well. Oketch, in his own words:

> When it was a very dry season, there are so many people at the well. People fetch water which is very muddy, yet other children play in it. Cows drink from the same source. Such water always causes my younger sisters to have diarrhoea. When it is difficult to get water, sometimes we do not wash *jami cam* (cooking and eating utensils).

When asked if he thought the conditions around his home – such as the hut being very close to the pit latrine which many people in the neighbourhood used – could contribute to his having diarrhoea, Oketch responded:

> That latrine is often full of houseflies. These houseflies easily come to our hut and if food is not covered, you find them playing on the food. When you go to that latrine, you remove your clothes and leave them outside. Otherwise, you can have a smell of faeces the whole day. After visiting such a latrine and you have no water to wash hands, you can easily put dirt on your food, even on the mangoes that you eat.

Ojok aged 14-years narrated his experience with diarrhoeas as follows:

> I was very hungry one afternoon so I bought some roasted pork, raw cabbages, tomatoes, and cassava chips. After eating, I started feeling stomach aches. In the morning, I had a running stomach. I had *cado*. I had to sit near the pit latrine all the time and I had a feeling of needing to go to the latrine all the time. I went and bought two Panadol and two Flagyl and took them. But I felt like this for three days. I only got better after using *tee lira ki tee langо* (extracts from roots of a Neem tree and Rhamnaceae plants). I was advised by neighbours to eat *cam ma nwang* (sticky or difficult to digest foods) like cassava and white bread.

The attributions of diarrhoea to food allergies, or eating too much food, was also found in girls' narratives. For example, Ajok narrated how she had diarrhoea over one weekend, mainly because she had gone a long time without eating and so when she finally ate, she

[47] *Lira* was identified as Meliaceae (Neem Tree) and its name *Melia azdarach L*. and *Langо* tree was identified at the Botany department at the Faculty of Science as a plant belonging to class Rhamnaceae, and its name is *Ziziphus abyssinica*

ate more than usual and a mixture of different foodstuffs, which made it difficult for her to sleep for two nights. She kept going to the pit latrines. She recovered when she drank extracts from mango tree stems and *tee ocok* (roots of Sodom apple plants). Anek gave an extensive account of her recent experience with diarrhoea:

> One day we went to harvest maize and ground nuts with my sisters. We roasted some of the maize and ground nuts for ourselves. At night, my stomach started hurting and in the morning, I started having *cado.* I decided to go to school all the same. While there, I kept going to the latrine all the time. One time, since the latrines are so far, I could not make it to there on time. *Cado* flowed through to my legs. I was so embarrassed. I sat there trying to clean myself, but many houseflies started coming over me. I went home. I washed my clothes but I was feeling very weak by that time. I went and collected *tee ocok* and *ki lace*, pounded them and mixed with water. I drank it. I also asked our landlady for Flagyl. She gave me two tablets. I took them as well before I went to sleep. By evening time when I woke up, I was feeling much better.

Critically looking at the illness narratives above, the children related their episodes of diarrhoea to specific practices. In all the narratives, associated factors could signify that the children did know the causes and disease aetiology of diarrhoea. Whether the children had ways of establishing the incubation period for the ingested pathogens, or whether they were able to link the source of pathogens to the illness episode, are, however, another matter. This study envisages that the coherence in the children's narratives – in terms of breaching the gap between aetiology and illness – reflects an attempt to create a logical order to their suffering. In having episodes of diarrhoea, children were prompted to reflect on the questions of how they got the infection and why they were suffering from it. The incubation time for diarrhoea causing pathogens, however, could mean the children might have ingested them much earlier than their narratives suggest; though on the other hand, their episodes could indeed be linked to their perceived cause.

Another aspect of this could be that in narrating an illness experience to another person, the requirement of being orderly and logical prompted children to link their theoretical knowledge to their experiences. In the process, however, the narratives created seemed quite coherent as opposed to the realities where, for instance, an individual might not be aware of the source of infection, or even perhaps how s/he recovered from the illness episode.

No child directly associated his or her illness episode to dirt or eating contaminated foods. This is contradictory to the opinions they expressed in general discussions, or while discussing the likely causes of someone else's diarrhoea, where they readily associate dirt, or the eating of food on which houseflies have been playing, with the

perceived causes of diarrhoea. Perhaps Oketch, in his narrative, came close to attributing his diarrhoeal illness to not washing his hands, but in interviews he still explained it by the fact that he ate both mangoes which were too ripe, and ate a mixture of foodstuffs. Ojok focussed on the fact that he had eaten too much fat as the cause of bloody diarrhoea. In focus group discussions, individual experiences with diarrhoea were related to eating food that the stomach did not like (as in food intolerance or allergies), newly harvested foods, or eating too much. Some children talked about having the illness after *camo mupera* (eating guavas) which are very difficult to digest, cowpeas, beans which are not well prepared, and food which your stomach did not like such as eggplants, green vegetables, and *camo dek angic ki cam anumu* (cold food and foodstuffs which are not well cooked). Some children even mentioned *camo jimi m' okwok* (eating stale food) as the cause of their diarrhoea.

6.2.2. Prevalence, symptoms, severity, and medicine use for diarrhoea

After presenting the vignette below featuring a child with an episode of diarrhoea to twenty-one different groups of between eight and fourteen children, a substantial proportion of the children told stories about their experiences similar to that of the child in the vignette.

> At one of the primary schools we went to, we found a girl called Apio Violet. We had started talking to her about our study when she asked to first run to the latrine. She delayed there a lot. When she came back to talk to us, she said she had stomach ache and had been passing watery stools. Before she finished telling us this, she ran back to the latrine again. While there, she saw that her stools had blood as well. Her stomach continued to pain her. This time she did not come back for the interview. We went to the latrine and found she was sitting near it. She said she wanted to go to the latrine all the time. Her mouth was very dry by this time, and she did not have energy either.

Children frequently mentioned diarrhoea, during individual interviews and group discussions, as one of the common illnesses which they suffered them. In naming and ranking common illnesses, children ranked the severity of diarrhoea second to malaria, though of the twenty-four children recruited for extensive follow up, four children taking care of parents sickly with HIV/AIDS ranked diarrhoea as the most severe disease. One of the four children was a thirteen year old girl who gave this rationale for ranking diarrhoea as more severe than malaria:

> Diarrhoea is the most severe, since when you have it, you cannot come to school. My mother always suffers from it. In such times, what I do, even during the night, is to clean her, to wash her clothes, and sometimes we do not have soap.

Results from a naming and ranking exercise for common illnesses which children experienced, conducted at two displaced primary schools with children aged nine to eleven years, show that all two hundred children regarded diarrhoea's severity as second to malaria. In one exercise, where I requested twelve to fourteen year olds to name and rank their common illnesses, twenty of the one hundred and twenty children did not name diarrhoea as a common disease in their home, but ranked it second to malaria in severity. One twelve year old girl concluded "in comparing malaria and diarrhoea, diarrhoea is not as serious".

In an exercise to diagrammatically represent illnesses experienced within a two week to one month recall, conducted with seventy-five children at Noah's Ark night commuters' shelter, all children illustrated episodes of diarrhoea. The medicines written against these illustrated episodes ranged from mango tree roots, guava leaves, Flagyl, Amoxicillin, and Septrin. Two children indicated that they only ate *cam ma nwang* (sticky and difficult to digest food) for their diarrhoea and they recovered after three days. Ojok, in the prologue, named both malaria and diarrhoea as illnesses which he and his siblings had suffered from within a one month recall; they had largely used herbal remedies as treatment. In one workshop discussing how children managed episodes of diarrhoea, forty-six of the fifty children (92%) admitted that they had had diarrhoea within the past month. Individual management of episodes showed slight variation: in the main children indicated using herbal remedies including mango and Neem tree roots, though they had also used Flagyl, and five children had used Flagyl and Amoxicillin.

During observation exercises in September and November 2005 at GRRH, Laliya, Laroo, and Layibi health centres, no child aged between five and sixteen years presented with diarrhoea, and during home visits and frequent discussions with the twenty-four children who extensively participated in this study, they indicated that they used herbal remedies rather than visiting the hospital, and purchased or asked their neighbours for Flagyl. By observation, and through examination of younger children's (below fives) health records, I determined that antibiotics and analgesics were most frequently prescribed for stomach ache complaints and diarrhoeal diseases. In one of the five drug shops where observation was conducted, one time seven girls came wanting medicines for stomach aches; the attendant first inquired if they just had pain in the stomach, or whether they had diarrhoea as well, and also asked if the pain had been persistent. He subsequently gave

each of the girls Flagyl and Panadol, in quantities which depended on the amount of money they had. At the state aided health centres complaints of stomach aches were regarded either as a symptom of malaria or as an infection in the digestive and urinary system. For example, in September 2005 one fourteen year old girl who extensively participated in this study was prescribed Imodium and Amoxicillin after a diagnosis of a UTI (urinary tract infection) by a clinical officer at GRRH, when she presented with stomach ache. I will return to this example in a later chapter on emotional distress, for I suggest that stomach ache might also be a signifier of more complex emotional suffering.

Only children taking care of adults sickly with HIV/AIDS put greater emphasis on the severity of diarrhoea in comparison to malaria; and they gave a unique rationale for this. They particularly put emphasis on the difficulties in taking care of their sick kin when they had (chronic) diarrhoea. For instance, this meant that they needed to wash them frequently and aerate their beddings, and this was a lot of work. Commonly, children taking care of sick kin indicated giving them Flagyl tablets which they could collect on their behalf at one of the hospitals, upon presentation of the patient's 'medical card'. Such children's ranking of diarrhoea as most severe was not due to their direct illness experiences, but because of the challenges confronted in caring for the sick.

For this chapter, I deduce that generally speaking children's perspectives concerning diarrhoeal diseases suggest that they rank it second to malaria in severity. Nevertheless, I recognise that such deductions raise certain questions, which include: (1) If only one child indicated that diarrhoea was the most severe illness s/he had had in the recent past, could that then conflict with the deduction? (2) Is the severity of cholera (see below) comparable to the severity of self-diagnosed malaria? And (3) What about cases where children did not want to rank their illnesses by comparable severity, but only asserted that all illnesses were severe? Ultimately, I question the need for this study to rank illnesses by comparable severity, since individuals might have various perspectives on their own experiences. It nonetheless seems logical to discuss illnesses as independent experiences, and indeed the children demonstrated some ability to rank them by severity. For example, when children were specifically asked to compare their experiences with diarrhoea to the major category of emotional distress introduced by humanitarian agencies – *two tam*, literally meaning 'illnesses of the mind' – this is what they had to say:

> With other illnesses, such as *two tam*, you can go to school, sit in class, and listen to the teacher. At break time you can join your friends to play. However, if you have diarrhoea you cannot even

> sit in class, you keep on running to the pit latrines. You cannot play because you will want to go to the latrine all the time. After one day with diarrhoea, you become very weak, you cannot stand straight and will need help to walk (focus group discussion with children aged 12-15 years old).

6.2.3. Prevention of diarrhoea

One fifteen year old girl's response to a question concerning the prevention of diarrhoea was as follows:

> Do not eat what your stomach does not like and also drink extracts from mango tree stems. The red and yellow or red and black capsules [Amoxicillin and Tetracycline] and extracts from Sodom apple roots can also stop diarrhoea. That is how to prevent diarrhoea.

Another relatively similar account was given by fourteen year old Ojok:

> You could avoid getting diarrhoea by not eating foodstuffs which they sell by the roadside. Last time I ate *samosas* sold by the roadside it was stale, but since I was very hungry I just ate it. That very afternoon I got diarrhoea. We can prevent diarrhoea through using medicines, both *yat acholi* (herbal remedies) and those from the hospitals. I use *tee ocok* (roots of Sodom apples) and *kor muyeme* (stems of mango trees) to prevent diarrhoea. Also capsules which are yellow and red in colour [commonly Amoxicillin or Tetracycline], Flagyl, and Indocid [very small yellow tablets]. They work quickly to prevent diarrhoea, but mostly the *yat acholi*. Those medicines prevent and treat diarrhoea fast. You do not have to buy them even. The medicines which I always use you get from *ilum* (surrounding bushes). Others can be got from the hospital, like Gulu Hospital. For me I like going to the clinic. There are very many near home.

Meanwhile, thirteen year old Anek narrated how to prevent diarrhoea as follows:

> I always get medicines from neighbours. One of our neighbours has many mango trees. We just go and cut part of the stems. At the same time I ask them if they have Flagyl.

When different groups of children were asked how they evaded the likelihood of getting diarrhoea due to exposure to disease causing pathogens, one girl responded:

> Our landlady does not allow us to use the latrine as frequently as we would like to. In case you have diarrhoea, she would instead abuse you for being dirty, not knowing how to cook, and that you will cause the whole neighbourhood to fall sick. Therefore, when one of us has diarrhoea, we instead tell her that she has stomach ache; that in fact she simply has a feeling of going to the latrine but there is nothing there. On such occasions she can even help us with medicines like Panadol, Septrin, Flagyl, and advise us on what *yat acholi* (herbal remedies) to use.

Children's perspectives, in short, reflected a curative approach to diarrhoea, rather than taking actual preventive measures. There was also an apparent avoidance of ideas linking episodes of diarrhoea to dirt or contagion through the oral-faecal route of transmission of pathogens, and other causes of infection. Nonetheless, these apparent contradictions in children's narratives diminished in discussions about the cholera epidemic, to which I now turn.

6.2.4. Intermittent epidemics of cholera: Children's perspectives concerning a severe form of diarrhoea

In the second phase of ethnographic research conducted between July and December 2005 there were intermittent epidemics of cholera in Gulu district. At Pabbo camp, it took about five months to control a single epidemic. A substantial proportion of children referred to the diarrhoea accompanying cholera as the most serious illness they had ever seen. In one focus group discussion, one fifteen year old boy gave a graphic description of his impression of cholera:

> Last Saturday [in September 2005], I went to Pabbo to visit my aunt. As I approached her home, I saw about five tents fenced with black polythene bags. There were messages warning people not to even touch the tents. It was because persons who had cholera were being treated from there. As I moved further on, I could see the entire path had no one else moving there. I later met a group of five men carrying another man. The men were all covering themselves with green polythene bags. They also covered part of their noses. One of the men signalled with his hand that I move away from where they were going to pass. I hid quite close to the path. They bypassed me, but what I saw was very scary. A man covered in faeces, and more *cado* just flowing through him. My aunt told me that many people have died in the camp because of that disease. The camp leader always told people that it was cholera. Cholera is the most serious illness I have seen with my own eyes.

In various interviews at one displaced primary school, four children shared their experience with cholera. Twelve year old Opiyo attributed his survival to the fact that his grandmother took him quickly to Lacor hospital; otherwise, as he often put it, "I would have died on the same day". Apart from Opiyo and the four other children who had personally had cholera, all the others, including the twenty-four children involved in extensive study, had only seen people suffering from cholera, and sometimes even dying . For example, Oketch had seen two neighbours dying shortly after complaining of diarrhoea. In the main, children expressed fear of ever contracting cholera. Anek shared her experience of seeing a neighbour's child, six year old Orach, die within a few hours due to diarrhoea which health workers in Pece told them was cholera. She elaborated:

> That day, Orach, after going to the pit latrine next to our hut twice, collapsed due to weakness just outside the pit latrine. I ran and called his mother. She came running toward Orach and quickly wanted to take him to Gulu Hospital, but Orach was already badly off. She went to collect *yat acholi* in the bush nearby, but found upon her return that Orach had already died. When the nurse from the neighbouring clinic was told about the death of Orach, she told everyone to leave that place, since it had cholera. I and my sisters quickly returned to Alero camp. Our father later rented for us another hut in Kirombe.

In a discussion of a vignette portraying a child who had diarrhoea, some children instead identified it as cholera. One twelve year old girl even started discussing the similarities

between the way the illness had affected the child in the vignette and the symptoms which had led to the death of her neighbour in Pece. She elaborated further on how "Cholera attacks those who are dirty, who do not wash their household utensils and were often eating cold food". Out of nine children in one such discussion, seven still identified the illness episode simply as diarrhoea, and not as cholera; their rationale was that the child could still walk to the pit latrines, whereas with cholera people quickly become weak as their bodily condition rapidly deteriorates, and further, if such a person was at school all the other children would have been affected. Thirteen year old Aol discussed the seriousness and the highly contagious nature of cholera:

> Cholera is a very serious disease. This is because the place where the sick people are put is often covered with black polythene bags and no one is allowed to go there. At the hospital, we were told that just touching that person can make you sick as well. In Kanyagoga, when a child died of cholera, even her parents were not allowed to bury her. The *daktars* who came from *ot yat adit* first covered themselves and also covered the dead body in polythene bags before carrying it away.

Another twelve year old boy from Pece graphically described an incident in which a neighbour died from cholera within a few hours of developing symptoms:

> Since people had been ordered through radio announcements and camp leaders kept telling people not to touch others suffering from cholera, the affected family went to collect health workers at Gulu Hospital to help them take the sick person to hospital. The *daktars* took a very long time to come and see the sick child. They found his mother already struggling with him, and trying to give him something to drink. Shortly after their arrival, the child died. The *daktars* ordered everyone not even to touch the dead child since they could also get the same disease. They even brought black polythene bags, and first covered themselves with green clothes before carrying away the dead child.

6.3. Key informants' perspectives on, and intervention approaches towards, the control of diarrhoeal diseases and cholera epidemics

The information in the excerpts below constitutes much of what was broadcast in print and audio media about the dangers of cholera during the period of research in 2005 when Gulu district experienced a severe epidemic of cholera. Similar information exists in biomedicine, and is evident in what medical workers often gave as a response to my inquiries concerning the aetiology, severity, prevention, and treatment of cholera.

> Cholera is an acute form of diarrhoea caused by bacteria *Vibrio cholerae*. Its major mode of transmission is through the oral-faecal route. This infection in the intestines will cause heavy loss of body fluids and electrolytes, minerals and rapid loss of body weight. Management of cholera episodes is mainly through restoring fluid balance much as sometimes an antibiotic may be used. Since cholera is a highly contagious infection, it is advised that people at risk take extra precautionary measures to avoid being infected. Measures like avoiding contact with infected

> persons are quite effective, but the best way to control cholera epidemics is through ensuring good sanitation.

A doctor at GRRH, interviewed about children's notion of the link between diarrhoeal diseases and allergies to different foodstuffs, refuted the children's perspectives on the following basis:

> Diarrhoea due to allergies in some people is basically due to fats and lactose intolerance. Such food intolerance mostly affects children below five years of age and elderly persons. There is, however, no scientific explanation for episodes of diarrhoea due to eating such foods likes green vegetables, fish, and cowpeas. Well, it is possible that those children were really allergic to those foodstuffs, but we cannot attribute those diarrhoeas to fats and lactose intolerance. The major causes of diarrhoea, especially in children above five years, are associated to the oral-faecal route of transmission of pathogens.

Concerning children's opinions on the practices which caused their diarrhoea, one doctor indicated that:

> The incubation period of diarrhoea causing pathogens is dependent on the quantity and virulence of the organisms. But on average, the incubation period could be one day to two weeks.

Between July and November 2005, Pabbo camp and the suburbs largely inhabited by resource poor persons within Gulu Municipality experienced an epidemic of cholera. In the various attempts to control the epidemic, the issue became politicised, was misrepresented, and awareness messages were spread which implicitly blamed victims for their ordeal. Key healthcare officials at the District Directorate of Health Services (DDHS) frequently castigated the Water and Sanitation Department during their joint and regular meetings, demanding that they investigate new strategies for controlling the cholera epidemic. In addition, they instructed the Water and Sanitation Department not to politicise the cholera issue by sending alarm messages to the 'masses', and even discouraged disseminating the information that water sources were infected with *Vibrio cholerae.* The DDHS office's approach for checking the epidemic was narrowed down to sensitising the population at risk, and to therapeutic or curative management of severe cases at emergency cholera centres, as depicted in the child's description of Pabbo camp above, where tents had been fenced in with black polythene bags for the treatment of severe cases.

In sensitising the population at risk, workshops, radio announcements, placards, and t-shirts were designed with messages about *Vibrio cholerae*, and how cholera cases should be handled. The dominant messages were about improving hygiene, identifying

cholera victims, and stressing the importance of immediately reporting cases to cholera emergency centres. In practice, it is difficult to comprehend how people at risk were expected to avoid infected persons while at the same time ensuring their prompt transportation to designated sites where cholera cases were managed.

In early October 2005, at the peak of the controversial public debate about the failure to control the cholera epidemic after almost four months, and the increasing number of deaths, President Yoweri Museveni was invited to Pabbo camp. In his speech the president attributed the persistence of the cholera epidemic to the existence of the Lords' Resistance Army in the region. Presenting a different view, during a meeting in November 2005 organised by the WHO's Gulu office, for key healthcare officials from Gulu district and NGOs focussing on the healthcare issues of people in conflict zones, one medical doctor from Lacor Hospital presented his findings on the sanitation status in Pabbo camp. In this report he disclosed how all the water sources, especially the shallow water wells, were infected with *Vibrio cholerae* bacteria, and shed light onto the poor sanitation practices and conditions in the camp, particularly the fact that most of the pit latrines were shallow and virtually filled up. In sum, a substantial proportion of the population in Pabbo camp had no sanitation or access to clean water. He proposed that these were the central issues which needed to be addressed if the cholera epidemic was to be controlled. In response, one key healthcare official severely criticised his argument and instead pointed to the relevance of promoting awareness messages in the control of cholera.

In Gulu district between July and September 2005, cholera led to the loss of life of numerous children and adults. The people most severely affected were those from displaced person's camps like Pabbo camp, and the over populated suburbs within Gulu Municipality such as Pece, Kirombe, Kanyagoga, and Kasubi. These suburbs and camps had one unifying factor, which was that of providing housing to resource poor persons. The sanitation situations were appalling and in the main there were few or no basic healthcare amenities in these areas. Yet in the Gulu DDHS's strategic healthcare plan for 2006-2007, the first chapter, providing a brief overview of Gulu district's health status, gave only a succinct report stating that "there were two major cholera outbreaks which lasted most of the year. About 10 IDP camps were affected and over 1000 cases treated" (Gulu DDHS 2006:4).

6.4. Discussion of results

Cholera is caused by the bacterium *Vibrio cholerae* and is endemic throughout many resource poor regions of the world. Epidemics often occur during or after war, civil unrest, and natural disasters when water or food supplies become contaminated, and is compounded by crowded living conditions with limited sanitation, poor hygiene, and poverty (Hartley et al. 2005:7; Hill et al. 2006:362). Mild to moderate cases of cholera are often indistinguishable from other causes of acute diarrhoeal disease (WHO 2007). Transmission occurs through ingestion of faecally contaminated water and food, and large amounts of bacteria (10^8 – 10^{11}) are needed to establish infection in people with normal gastric acidity. Cholera is characterised by the sudden onset of profuse watery stools, with occasional vomiting (Sack et al. 2004:223). The incubation period is usually two to five days, but may be only a few hours. In severe cases of disease, which occurs in 5-10% of those infected, dehydration, metabolic acidosis, and circulatory collapse may rapidly develop (Hill et al. 2006:362).

Treatment of cholera is by rehydration with oral or intravenous fluids. In severe cases, antibiotic treatment can be given to reduce the volume of diarrhoea and duration of excretion (Sach et al. 2004:223). There is increasing drug resistance of the *Vibrio cholerae* bacteria to Doxycycline, the antibiotic of choice, so alternatives such as Co-Trimaxazole (Trimethoprim-Sulfamethoxazole), Erythromycin, Chloramphenicol, Ciprofloxacin, and Azithromycin can be used where organisms are sensitive (Mhalu et al. 1979:345; Threlfall et al. 1993:1173; WHO 1993).

In the analysis I interpret data under two thematic areas. The first theme addresses the question of why empirical evidence suggests a high prevalence of diarrhoeal diseases, including cholera. In particular, I examine the predisposing factors, including socio-economic ones, which could account for this phenomenon. I further link the emphasis on curative approaches, the persistence of cholera epidemics and the high prevalence of diarrhoea in situations of armed conflict; to the fact that disempowered people living in dire contexts were told to themselves prevent being infected. In the second theme, I assess the efficacy of various curative approaches. While addressing this issue, I link my analysis to the concept of pragmatism. Though I recognise that curative approaches are short term approaches and are not effective in dealing with infectious diseases in the

long term, I propose that using pharmaceuticals and herbal remedies in the management of diarrhoeal diseases is an appropriate strategy for the children who participated in this study, given the context in which they lived.

6.4.1. High prevalence and prevention of infection

Both quantitative data and children's narratives signify a high prevalence of diarrhoeal diseases, and the explanation for this should take into account the presence of (socio-cultural) predisposing factors to contagion by diarrhoeal disease causing pathogens. The foregoing assertion is consistent with MSF-Holland's (2004b) data suggesting a prevalence of 21 per cent for diarrhoeal diseases-closely associated with the living environment in which war-affected people in northern Uganda lived. Nevertheless, children were reluctant to attribute individual illness episodes to probable environment-related causative factors. It is possible that the children's causative theories – which included eating a mixture of foods, and eating food which your stomach 'does not like' – were responsible for children's diarrhoea. However, from the doctor's assertion above, it is largely through the oral-faecal route that diarrhoea causing pathogens are transmitted; thus children's places of residence should provide indicators of such sources of contamination. This is also consistent with the likely causes of the cholera epidemic identified in the doctor's research conducted at Pabbo camp, presented in brief above.

Concerning the predisposing factors to cholera infection, all of the children who extensively participated in this study lived in congested suburbs characterised by poor sanitation, unhygienic living conditions, and a lack of clean water. There was a direct link between the children living in such an environment and their exposure to sources of diarrhoeal disease causing organisms. It is therefore plausible to argue that there was a high prevalence rate of diarrhoea among children because their living conditions were conducive for diarrhoeal disease causing pathogens, which therefore put the children at high risk of exposure to infection.

In information dissemination, key healthcare givers and institutions sensitised people at risk with messages which bordered on blaming them for their inability to practice hygienic living. Such messages advised people in resource poor communities to practice better hygiene, but only had limited success. In my interpretation, such messages contributed to children redefining their episodes of diarrhoea, for in essence, it is more

acceptable to have allergy related diarrhoea than diarrhoea which is directly linked to poor sanitation or living in unhygienic conditions. This could explain why in the main children appeared to attributed their diarrhoea only to non-stigmatised causes. I argue further that children (consciously or unconsciously) realised their inability to practice the preventive measures outlined in the awareness messages. Subsequently they reshaped their explanations as a survival strategy, and also as part of an attempt to communicate their inability to practice good hygiene, such as drinking clean and safe water or washing their hands with soap and clean water after every visit to the toilet. In short, it appears that the children were constrained by wider socio-economic and political factors from practicing or implementing the knowledge gained from sensitization messages.

During frequent interactions with the children, diarrhoea prevention was often discussed concurrently with its treatment. There was a confusion of sorts whereby, for instance, a child would mention ways in which to avoid diarrhoea, yet still put emphasis on how to cure it once it had been contracted. In general, it appeared that there was no distinction between curative and preventive measures for diarrhoea, and I got the impression that preventing episodes of diarrhoea, or infection by diarrhoea causing pathogens, lay in stopping episodes of diarrhoea. Perhaps the children were making it explicit – especially in light of the numerous awareness messages – that given their circumstances it was possible to treat episodes of diarrhoea but not to prevent contagion. I still cannot precisely explain why there was such confusion when discussing this simple question. It might be that while the public health messages clearly spelt out ways to avoid infection, the children's lives and circumstances posed great challenges in adhering to such messages. It could also be because the children did not comprehend the idea that they could prevent diarrhoea by implementing preventive measures, and therefore they merely resorted to curative approaches.

Another significant factor is the narrow approach taken in the control of infectious disease epidemics, namely through promoting awareness and sensitisation seminars. Although healthcare providers linked the exposure of vulnerable people to their lack of information – and it was true that such people lacked information about pathogens such as *Vibrio cholerae* and the treatment of cases – I am doubtful as to whether information dissemination was an effective intervention to control the cholera epidemic. I propose that a lack of information about an epidemic contributes only minimally to the spread and

prevalence of infection compared to the effect of living in squalid conditions characterised by poor sanitation, lack of access to clean water, overcrowding, and living in camps due to prolonged civil war. Further, although existing literature suggests that there is a link between low gastric acid levels, low socio-economic status, and cholera (Sack et al. 1972:857; Zuckerman et al. 2007:521-530), and that gastric acidity is a major determinant of the size of inoculum required to generate disease, and further that gastric acid acts as a natural barrier to *Vibrio cholerae* (Sack et al. 1972:858; Van loon et al. 1990:1361), in this study I propose that people living in resource poor settings are more likely to be exposed to *Vibrio cholerae* because of poor sanitation and other opportunistic conditions than because of their gastric acidity levels. However, differences in gastric levels could help to explain why even in Pabbo camp, there were some people who did not fall sick regardless of their being exposed to cholera-causing pathogens. In Gulu district, these opportunistic conditions were commonplace, especially in camps and suburbs within the municipality where the poor lived. Such conditions easily made residents vulnerable to *Vibrio cholerae*, therefore affirming the WHO reports which suggest that most cholera cases occur in Africa: 95% in 2005, and 94% in 2004 (WHO 2005, 2004:262-268).

Perhaps President Museveni needed to expand on his philosophy that the high prevalence of cholera in Pabbo camp was linked to the fact there were LRA fighters in the area. In this statement he implicitly acknowledged that the epidemic was linked to broader factors such as political insecurity, which culminated in people settling in squalid, congested, and unhygienic camps, and living in abject poverty and misery. That the president instead narrowed his focus to telling people to stop drinking unboiled water and ensure they lived in a clean environment, and to providing emergency funds to the DDHS to effectively manage the cholera cases through curative procedures, again reflects the dominant approach taken in the management of infectious epidemics, namely through sensitisation (information dissemination) and curative approaches, as opposed to practicing effective preventive measures.

In sum, results suggest high prevalence of diarrhoeal diseases, not only among children of primary school age but also the entire war affected population. In particular, resource poor persons living in displaced persons' camps were disproportionately affected. This study has made it explicit that, in the main, high prevalence of diarrhoeal diseases coincided with poor socio-economic and living conditions. In Gulu Municipality, records of cholera admissions in August and September 2005 suggest that the majority

of those affected lived in suburbs like Pece, Kanyagoga, and Kirombe – areas mainly inhabited by resource poor persons. These suburbs were characterised by congestion, poor sanitation, poor living conditions, and a lack of basic amenities. If the empirical evidence provided in this chapter could be used as a premise for emergency healthcare intervention, then it is likely that a major focus on wider socio-economic factors is necessary for the control of diarrhoea and cholera epidemics. The fact that a substantial proportion of emergency interventions focused mainly on curative approaches, and on the pathogens including *Vibrio cholerae*, is quite disturbing. However, it could also be that the healthcare interventions function within a meagre budget and that is why, it is not possible to implement costly preventive approaches.

6.4.2. Treatment of diarrhoeal diseases and related complaints

In the context of medical pluralism, children used both herbal and pharmaceutical remedies in the treatment of episodes of diarrhoea. When the episode of diarrhoea was considered less serious or life threatening, children frequently indicated opting to eat *cam ma nwang* (difficult to digest food) including cassava, white bread, millet, and maize meal. Whether difficult to digest foodstuffs are in fact a remedy for diarrhoea is, however, contestable. Although it is apparent that difficult to digest foods might stop diarrhoea or the 'running stomach', and a substantial proportion of children indicated how readily they recovered after such practices, there are inconsistencies to such an explanation; for example, Ojok above had diarrhoea after eating foodstuffs which he had bought, including cassava – a difficult to digest food. If it is true that it is possible to treat diarrhoea episodes with difficult to digest foodstuffs, then children in Gulu should not have episodes of diarrhoea at all since their daily meals always include at least one component of difficult to digest starchy food. Where episodes of diarrhoea reportedly started after eating difficult to digest foods, it is doubtful how these foods could then provide the remedy.

The pharmaceuticals used in the management of diarrhoea were, in the main, antibiotics and analgesics. However, these were rarely if ever taken in complete doses, in part because it was rare that a child would have the money to buy a complete dose, and further, if a child asked for the pharmaceuticals from neighbours, it would be unlikely that s/he would be given a complete dose. Here lies another contradiction in children's opinions on diarrhoeal disease aetiology and their treatment of it; namely the use of antibiotics for diarrhoea which children attributed to food intolerance or allergies, but

which were probably due to infection, involving a pathogen or bacteria in causation. Children's use of antibiotics perhaps demonstrates a pragmatism in their short term approaches for restoring normality in case of illness. Regardless of the causes of disease, during an illness sufferers strive to find an effective remedy, and where there is experiential knowledge concerning an effective remedy, various attempts are therefore made to access it. Nevertheless, available publications suggest the dangers of over use, under use, and the misuse of antibiotics and other pharmaceuticals, particularly in generating drug resistant pathogens, reducing the efficacy of drugs, and poisoning (Hardon 1990; Van der Geest 1996:243). These dangers are likely to be present for children in Gulu.

Here I present my dilemma, which I could call the pharmaceuticalisation of diarrhoea. Although it is clear that diarrhoea causing pathogens are predominantly transmitted through the oral-faecal route, and therefore addressing these associated factors would constitute a concrete intervention, major healthcare institutions including the World Health Organisation had narrowed their focus to curative approaches at the time of this study. Recent research about diarrhoeal diseases also reveal a focus on finding better therapies (medicines or pharmaceuticals), rather than prevention. For example Bhuta et al. (2000:1516-1522) demonstrated how a two week course of daily zinc tablets significantly reduced the severity, duration, and mortality of diarrhoea in young children. In line with this finding, the World Health Organisation and UNICEF recommended that children under five years with diarrhoea receive 20mg zinc for 10-14 days, in addition to the newly formulated lower asmolarity oral rehydration salts (WHO/UNICEF 2004). In the same vein, Ellis et al. (2007:701) designed an intervention study to promote household and community level management of childhood diarrhoea through a short course of zinc. Although these studies and pharmaceuticals have contributed substantially to saving lives, it is propositioned in this thesis that the high prevalence of diarrhoeal diseases, including childhood diarrhoea, could be effectively minimised through concerted efforts to address social-political factors linked to oral-faecal transmission of pathogens.

6.4.2.1 Pragmatism in quests for therapy for diarrhoeal diseases

There is a conflict between children's frequent assertions about the danger of mixing pharmaceuticals and herbal remedies in case of illness with what they actually practiced when they were ill. In case of illness, children indicated using both pharmaceuticals and

herbal remedies concurrently. Underlying this conflict between theory and practice is the inherent need to alleviate suffering and find a cure for episodes of illness, and it is this conflict which is a central issue at stake when pragmatism is evoked in the analysis of quests for therapy or attempts to minimise suffering. That children did not adhere to the rationalities they themselves proposed is not consistent with conventional anthropological literature suggesting disease aetiologies as determinants of healthcare seeking (Foster 1998; Pool 2003). In addition, although scholars' evidence points to non-western 'exotic' disease aetiologies which culminate in personalistic quests for therapy (Foster 1998; Pool 2003), this study's findings firstly suggest naturalistic disease aetiologies for a non-western population. Secondly, there is inconsistency in the way children attributed individual illness experiences to allergies or to eating a mixture of different foods or fatty foods, yet in their quests for therapy they instead focussed on finding a pharmaceutical or herbal cure or way to minimise their suffering. In short, there was no link between the definition of the apparent disease causing agent and the rationality behind the steps taken to alleviate suffering.

The children's curative approach in management of such illness experiences, including the therapeutic management of cholera cases, are just short term and are not very effective in dealing with infectious epidemics. Nonetheless, I propose that it was fitting to that context for children to engage in curative approaches for infectious diseases such as diarrhoea, because to a great extent the dire circumstances in which they lived made it impossible for them to practice effective preventive measures. However, as long as questions are not asked by healthcare intervention agencies about the key sources of infection, who are most likely to be infected, and how to prevent a recurrence of episodes, cure-guided solutions packaged up in medicines including antibiotics, zinc, and analgesics, seem to serve as perfect solutions. This is despite the fact that if preventive approaches were implemented it would drastically reduce the likelihood of a population confronting diarrhoeal diseases in the first place.

As findings suggest, no children indicated using oral rehydration salts (ORS) in case of diarrhoea. This finding is likely to have implications concerning the concerted efforts to promote ORS in the management of common episodes of diarrhoea. It is probable that many children needed the ORS, as they probably lost valuable body fluids during episodes of diarrhoea. It is also likely that if the episodes of diarrhoea which the

children experienced were of an infective type, they might need to use antibiotics rather than ORS. If, as reported by Weiss (1988), a majority of programmes promoting the use of ORS highlight its ability to increase strength, prevent dehydration, and save children's lives – while acknowledging that ORS does not stop diarrhoea – then promoting use of ORS is likely to be problematic if sufferers' primary aim is to stop the diarrhoea. Similar findings from Mali were reported by Ellis et al. (2007:701), indicating that although nearly all parents knew that ORS would replace valuable lost fluids, its inability to stop diarrhoea caused them to seek antibiotics, anti-malarials, or traditional medicines from local markets in order to cure the illness.

Conclusion

Statistical evidence and qualitative data show a high prevalence of diarrhoeal diseases among the study population. Children's narratives suggest a severity, acuteness, primacy, and rapid deterioration of bodily condition due to illness episodes of diarrhoea, and children managed diarrhoeal diseases with both pharmaceuticals and herbal remedies, similar to malaria. Its primacy as a healthcare priority is portrayed in children's narratives which depict how it causes disorganisation of daily life, and how they require immediate attention when they fall ill. In the discussion, however, I highlight how the focus of emergency interventions aimed at reducing the high prevalence of diarrhoeal diseases through sensitisation seminars and case management was a contentious issue at the time of this study. For instance, upon closer examination of the distribution of cases, it is evident that figures were skewed towards people living in overpopulated camps, the congested suburbs of Gulu Municipality, and in general to areas where resource poor persons lived. This therefore leads me to deduce that wider socio-economic factors, including poor living conditions, a lack of sanitary facilities, congestion, and living in camps due to insurgency, play a substantial role in determining who becomes infected, how many get infected, and at what rate. Answers to such critical issues are likely to lead to concrete ways of minimising epidemics of an infectious nature. In contrast, interventions focussing on the treatment and education of people at risk serve to redefine the problem of an infectious epidemic as an issue of a lack of information. This could be the likely reason why efforts to control cholera epidemics in Gulu district have yielded limited success, and raises broader questions concerning the relevance, efficacy, and acceptability of contemporary

healthcare interventions during wartime.

Nonetheless, at the micro level it is probable that short term curative approaches for the management of infections offer the most practical solutions. In fact, the ready availability of pharmaceuticals over the counter made it easier for individuals to access a pill to cure their diarhoea episode than to prevent its occurrence. This curative approach in dealing with illnesses such as cholera and diarrhoea were less effective, however, it is this study's proposition that preventive means could constitute better ways of managing such easily preventable diseases. The real solution to diarrhoeal diseases, like other infectious diseases, therefore lies not in pharmaceuticals or herbal medicines but in dealing with wider social-economic factors, regardless of how costly the procedures could be.