Original article

Malaria Epidemics in Dembia, Northwest Ethiopia 1952 – 1953

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Abstract

Background: Malaria has been one of the deadliest killer diseases in Ethiopia. About 68 percent of the Ethiopian people are living in malaria prone areas. Most of these areas have been experiencing seasonal malaria epidemics. In 1952/53, Dembia district bordering Lake Tana in the north had experienced devastating malaria epidemics.

Objective: The main objective of this study is to investigate the history of the 1952/53 malaria epidemic in Dembia and the scale of its devastation.

Methods: The study uses a large number of untapped archival documents kept in Gondar to find out the extent of the epidemic that claimed the lives of thousands of people.

Results: Thousands of people lost their lives in Dembia. Survivors were too weak to bury the dead. Corpses were left unburied and they were devoured by wild animals. Qolla Debba, the capital of Dembia district and the epicenter of the epidemic became a ghost town deserted by its residents. The countryside was equally devastated by the epidemic. Agricultural activities came to a standstill. Since the epidemic coincided with planting and harvesting seasons, it brought about incalculable damage on agricultural production.

Conclusion: For the people of Dembia, the 1952/53 malaria outbreak was the most dreadful and disastrous epidemic in living memory. It caused innumerable human and material damage. Although the epidemic affected all age groups, its impact on the productive section of the population was felt strongly. Local officials dutifully reported mortality figures emphasizing on the severity of the epidemic. But the response from higher bodies was not satisfactory. Apart from sending small teams and limited anti-malarial drugs, the imperial government failed to mobilize human and material resources to effectively deal with the epidemic and save lives. It was only in the wake of that disaster that the government managed to build a health center at Qolla Debba partly through public contribution. [*Ethiop. J. Health Dev.* 2017;31(1):57-63]

Key words: Dembia, malaria, epidemics, district, governor general

Introduction

Malaria is still a serious global health problem affecting mainly developing countries. Currently, about half of the world's population is believed to be at the risk of contracting malaria (1). In sub-Saharan Africa, malaria still claims 1-2 million deaths every year (2). The seriousness of the problem prompted the World Health Organization (WHO) to launch the first malaria eradication program in 1955 by applying the spraying of dichlorodiphenyltrichloroethane (DDT) in households. However, the campaign was suspended in 1971 mainly due to resistance of mosquitoes to DDT and the failure to effectively address target areas including Africa in the program (3).

In Ethiopia, malaria has been one of the leading killer diseases. Among the total population, 68 percent are living in areas identified as malarious. Of these about 40 percent and 24 percent of them are living in malaria epidemic and endemic areas respectively. Every year, malaria cases in Ethiopia are estimated at 4-5 million, but these figures can grow to about 10 million cases during times of malaria epidemic. Malaria mortality accounts for "13 to 26 % of all inpatient admissions, and 13 to 35 % of mortality in health facilities" (4). According to studies conducted in different parts of Ethiopia, the most common malaria parasites are *Plasmodium falciparum* (60-70%) and *Plasmodium vivax* (30-40%) (5).

Areas between 1,500 – 2,500 meters above sea level are believed to be prone to malaria epidemic. Of these areas, the Dembia plains located north of Lake Tana had been devastated by occasional malaria epidemics in the past.

Lake Tana, the largest lake in Ethiopia, receives a considerable volume of water from several rivers. During the rainy season, rivers flowing to Lake Tana usually burst out of their banks and flood hundreds of hectares of the plains around the Lake every year. In addition, as the volume of water from the rivers and innumerable streams flowing to Lake Tana tremendously increases during the rainy season, the low lying areas along the shores of the Lake stay under water for several weeks every year. That is particularly common in Dembia and Fogera plains. That makes these low lying areas a suitable habitat for mosquito breeding.

When Lake Tana retreats during the dry season, peasants of the surrounding plains have developed a tradition of planting maize over the years along the wetlands known locally as *Baher Sheshe* (literally means the sea retreats). The alluvial soil along the shores of the Lake is very suitable for maize cultivation and it does not require much labor. This practice, however, propagates the breeding of mosquitoes and increases the incidence of malaria in the Dembia and Fogera plains. A recent experiment conducted in Ethiopia shows that maize pollen facilitates the growth of mosquito larva to a pupa stage (6).

Having the above background in mind, the study has three objectives: to investigate the magnitude of the

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1952/53 malaria epidemic in Dembia district; to analyse the impact of malaria epidemics on agricultural production; and examine the perceptions of the local people about malaria.

Materials and Methods

Archival sources have rarely been used in reconstructing the history of malaria epidemics in Ethiopia. After a preliminary survey conducted in Gondar in late 2013, I was informed that a lot of archival sources have been kept at the North Gondar Zonal Administration. Then, I came to learn that an enormous amount of dead files have been kept in four rooms: two in the first floor and two in the basement of an old building built by the Italians during the occupation period. Unfortunately, the archives have no catalogues. I had to go through hundreds of folders in all the four rooms. During the course of my search for pertinent documents, I discovered that the malaria epidemic that broke out in Dembia district in 1952/53 was the subject of much correspondence between local, regional and higher officials. After weeks of arduous search through the archives, I managed to discover a total of 161 letters exchanged between lower and higher officials. I got all of them photocopied and began to extract priceless data from those documents. After that, I painstakingly analyzed the data extracted from the documents. Using these untapped archival materials, an attempt has been made to reconstruct the history of that malaria epidemic.

In order to substantiate those documents, I travelled to the localities that had been greatly affected by the 1952/53 epidemic. I managed to find, among local residents, some people who had either been infected by the epidemic or witnessed it. I thus conducted in-depth interview with four individuals who had experienced the epidemic. The oral information gathered through interviews has been used to corroborate data extracted from archival sources. In addition, a limited number of published and unpublished works have been consulted.

This study is, therefore, a qualitative research which involves a careful analysis of archival documents and oral information gathered through in-depth interviews during field research. The archival sources have predominantly been used to give a graphic description of the epidemic that ravaged the study area in 1952/53.

With regard to ethical clearance**,** consent has been obtained from all the informants not only to record the interview but also to disseminate the information they provided. In addition, I have been allowed to access the archival documents and publish the result of the research by the North Gondar Zone Administration. After all, the study deals with an epidemic that broke out more than 60 years ago.

Results

The 1952/53 malaria epidemic was one of the most devastating disasters which wiped out thousands of people in Dembia (7). According to an unpublished field report, about 7,000 people lost their lives in Dembia alone as a result of the 1952/53 epidemic. Soon after its outbreak, local officials repeatedly requested for immediate government intervention. However, the government could not effectively combat the epidemic because of the shortage of health professionals and anti-malarial drugs (8).

There were few dressers in the town who were struggling to treat the sick day and night. As the epidemic engulfed more and more areas, it terrified the local officials. In addition to the policemen who fell sick, the governor of Dembia, his secretary, the local court secretary, the local magistrate and other local officials had already contracted malaria. The remaining local officials feared that since the policemen were sick of malaria, the criminals who were kept at Qolla Debba prison may escape. They, therefore, suggested that the prisoners should be transferred to Gondar to avoid prison break by criminals (7).

In the meantime, it was reported that in the town of Qolla Debba alone 150 people had already died because of the epidemic. Three dressers who had been treating the sick at Qolla Debba fell ill and eventually died of malaria. As the situation became more serious, the Gondar hospital sent three dressers to Qolla Debba (9).

The epidemic was so dreadful that there were no individuals to bury the dead in the town of Qolla Debba. At the height of the epidemic, many inhabitants left their homes. Qolla Debba became a ghost town deserted by its residents. All government offices were closed (10).

The epidemic continued to claim more lives each day. On 30 August 1953, the Dembia district administration reported that 2,135 people had already perished in the town of Qolla Debba and Zengaj sub-district alone. What was even more worrying was the fact that the local people were unable to carry out agricultural activities because of the epidemic (11).

The epidemic was equally severe in the sub-districts of Zengaj and Guramba. In all these areas, most of the inhabitants fell sick and there were no cattle herders. Domestic animals were left in the field for several months. As a result, all crop fields were devastated by cattle. Survivors were too weak to harvest their crops. The other severely affected locality was Arabia Medhanealem. Like other localities, Arabia Medhanealem experienced a terrible loss of human lives (12).

The malaria epidemic in Achera Maryam and Areroch was so severe that corpses were left unburied. As a result, dead bodies were reportedly devoured by dogs and wild animals. That was particularly the case when domestic servants died. They were left in the open field to be eaten by vultures, dogs, and hyenas. Some of the lucky ones were taken to church yards. But all members of the clergy were sick and churches in those localities were forced to bring priests and deacons from other areas for funeral services (13).

Overwhelmed by terrifying reports of mortality figures from several areas, health professionals working at

Gondar Hospital felt that they had a moral obligation to do something. Accordingly, on 29 December 1953, Dr. Graf Bassewitz, the medical director of Gondar Hospital visited the most affected areas: Achera and Arabia. He reported that between early September and late November, 1700 people (900 in Arabia and 800 in Achera) had already died of malaria. At the time of his visit, about 700 people were under treatment. At the height of the epidemic, over 10 people were dying every day. The medical director also reported that crops had not been harvested and he saw well nourished cattle left loose in crop fields. Some of the houses were deserted by their residents. He was told that in one of the villages, 24 people had died and the rest had left the area. He heard similar stories in other areas. In Arabia, he visited 27 families and found 52 sick persons out of whom only 8 had other diseases. The rest had contracted malaria.

According to a report compiled in March 1954, a total of 4,789 people had perished between June and December 1953. The report included the full names of the deceased, their localities and the time of their death. Most of them died in the months of September and October (14).

People in malaria stricken areas were reluctant to take medication as prescribed by physicians. Instead, they preferred to resort to traditional medicine. Traditional medicine did not, however, contain the epidemic. For the people of Dembia, therefore, the 1952/53 epidemic was the most horrifying experience in their life time. It had been haunting them for many years (15).

One may wonder as to how the government responded to that devastating epidemic. Most local officials were busy in sending periodic reports of mortality figures and requesting higher officials to do something. The *awrajja* and provincial governors had also insisted that local officials should remain vigilant in their areas. The governorate general, for instance, introduced a penalty against local officials who failed to report death rates in their areas. According to the regulation, a local official who did not report mortality figures would be fined 10 Birr (16).

Some responsible governors paid a visit to areas ravaged by the epidemic and tried to get the attention of higher officials. Horrified by the growing mortality figures, Colonel Tamrat Zegeye, governor of Gondar *Awrajja*, paid a visit to Qolla Debba, the epicenter of the epidemic in late June, 1953. Then, he sent a telegraphic message to *Dejach* Asrate Kassa, governor general of Begemder and Semen outlining what he had witnessed at Qolla Debba. According to the message, there were 700 patients in the town and about 10 people were dying each day. Colonel Tamrat thus suggested that physicians and anti-malaria drugs should be sent immediately to Dembia (17).

Meanwhile, a medical team from Addis Ababa and Gondar visited Dembia in early 1954. The governor of the Gondar *awrajja* accompanied the medical team. Then, the *Awrajja* governor expressed his lamentation about the malaria epidemic he witnessed during his visit in a letter he sent to *Dejach* Asrate Kassa, governor general of Begemder and Semen. He then suggested the exemption of the people from land tax for a year. (18). On his part, the governor general, *Dejach* Asrate Kassa requested *Ras* Abebe Aregay, the Minister of Interior to exempt the people living in the sub-districts of Guramba and Zengaj from a one year land tax (19). Although peasants were exempted from land tax during the 1953 epidemic, they were required to pay double in 1955 to compensate unpaid taxes in the previous year. That created a serious grievance among the peasants in malaria affected areas. Peasants felt betrayed and they regarded the government as a greedy regime that showed no sympathy to the suffering of its people (15).

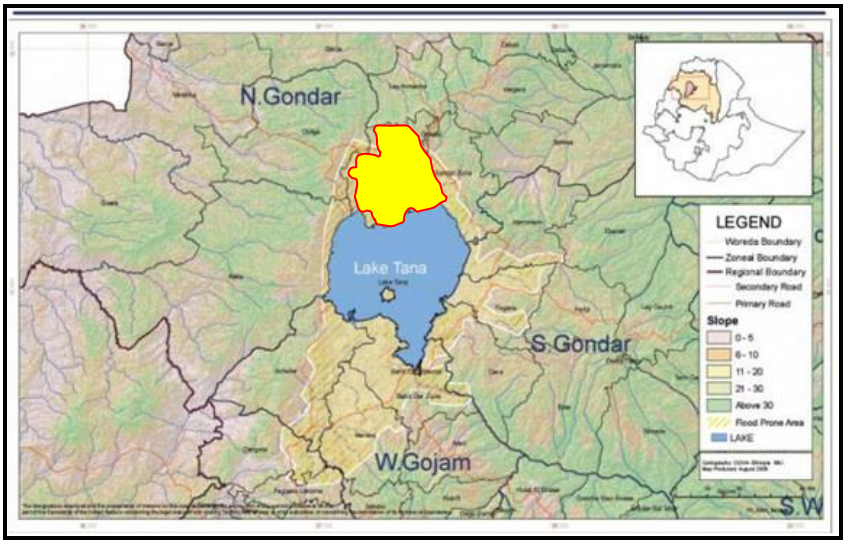
Peasants also complained that the government did very little to save lives during the height of the epidemic. Truly, apart from sending a few number of dressers and limited anti-malaria drugs, the government largely failed to mobilize resources so as to effectively control the epidemic before it was too late.

As the 1952/53 epidemic began to subside, the district administration began a fund-raising campaign for the construction of a health center. Accordingly, every person was required to contribute 1.50 Birr. In April 1955, the Gondar Hospital reported that it had received a total of 71,145.50 Birr from the public and it had already started the construction of the health center at Qolla Debba. The construction was completed and the health center was inaugurated by the emperor on 14 December 1956 (20).

Discussion

The first systematic study on malaria in Ethiopia was conducted by the Italians during the occupation period (21).

In the post-liberation period, with the help of international organizations, the Ethiopian government tried to gather information on malaria infections through blood samples and carried out malaria control activities. Even then, seasonal epidemics continued to ravage malaria prone areas like the Dembia plains. (8).



Map of the Study Area

In late May 1951, local officials in Dembia reported the outbreak of malaria in the district. Then, it was decided to send a health professional to Dembia so as to gather first hand information about the status of the disease. Accordingly, on 23 June 1951, Dr. G. H. Frick, a medical officer from Gondar Hospital visited Qolla Debba, capital of Dembia district. He witnessed the outbreak of malaria in the area but not in the form of an epidemic. He suggested that a dresser should make a trip once a week into the countryside to control the spread of the disease (22).

In June 1952, all the sub-districts of Dembia were affected by malaria. In the severely affected areas such as Guramba Mikael, Gana Got, Geracha (in Guramba sub-district), Achera Maryam (in Zengaj sub-district) and Fenja (in Jenda sub-district), farming came to a standstill and people could not plant crops. The dresser at Qolla Debba was overwhelmed by patients and he was unable to contain the epidemic. According to a report from Dembia district, 49 people had already died in the sub-districts of Guramba, Zengaj and Jenda (23).

Because of the gravity of the situation, the Ministry of Public Health ordered the regional health office to send a health professional to Qolla Debba in order to identify the epidemic. Then, the person sent to the area reported back that the epidemic which ravaged Dembia was actually malaria (24).

As the epidemic reached an alarming rate, the hospital at Gondar assigned a dresser named Mengistu Mana to work at Qolla Debba clinic for some time (25).

Another locality highly affected by malaria was the port of Gorgora on the northern shore of Lake Tana and its environs. On 8 November 1952, Lt. Colonel Shiferaw Tesemma, commander of the Eighth Infantry Brigade reported that 2-3 people were dying of malaria every day in and around Gorgora. A month later, local officials in Dembia district reported that 717 people had already died in the sub-districts of Guramba, Zengaj, and Gorgora as a result of the malaria epidemic. The report showed that the epidemic had reached catastrophic proportions by the fall of 1952 (26).

Between January and April 1953, however, the epidemic seemed to have subsided and no deaths of malaria were reported. But in May 1953, the regional police deputy commander reported that all members of the police in Qolla Debba had fallen sick and there was nobody to maintain the security of the town (27).

Apart from the Gondar archives, the only written source about the 1952/53 malaria epidemic in Dembia is a mimeographed report by M. A. Chabaud which states that about 7,000 people perished in Dembia alone as a result of the epidemic (8).

The church administrator of Achera Maryam named Wonde Getahun gives a graphic description of the malaria epidemic that ravaged his locality. Part of his letter reads:

> An epidemic has broken out in the countryside named Achera Maryam. A plague of catastrophic proportion has befallen the community. Since the people are sick, there was no one to take the dead to church grave yards. Sick people are collapsing in the field. There was no one to look after cattle. I am weeping while applying to you that the church has been closed and Dembia has become a waste land (28).

Likewise, the secretary of the Zengaj sub-district, Wolde Yesus Worqneh who lost his wife and brothers expressed his lamentation with a heart breaking poetry. Part of the poetry reads:

> My wife passed away abandoning children to my care
> So did my brothers who perished this year
> I would rather prefer to die
> It is pointless to live without relatives in any way.
> I am heartbroken for my children
> For they lost their mother who went to heaven
> Dembia, a great country is laid waste
> It used to welcome a hungry guest (29).

In late October 1953, a certain resident from Achera Maryam named Mengistu Tesemma requested the Dembia district to send a physician to his locality. He had this to say in his letter:

> In some parishes, ten people are dying every day. Since there are no people to bury the dead, corpses are left unburied for 3-5 days. The remaining people are on their death beds. There are no cattle herders and domestic animals are left loose destroying crop fields. Since there are no people to take the dead to churches, some women bury them in shallow graves not far from their houses. It is with the sense of grief I apply to you to request higher officials so that a physician could come to treat the sick (30).

Survivors of the epidemic have also horrifying stories about the disaster. One of them recollects: "Death was everywhere. Every family has lost several members. Wild animals were busy in devouring dead bodies. People felt helpless. People were too weak to bury the dead. It was really a miracle to survive that epidemic." (31)

Another survivor has a similar story: "I lost four members of my family. They all died before the arrival of a dresser in our locality. I was very lucky to get some anti-malarial drugs. Gradually, I was able to recover from my sickness." (32)

In response to the alarming mortality, the Gondar Hospital sent two additional health workers to Dembia in November 1953. Meanwhile, Assefa Belay, a health professional from the Pasteur Institute made an inspection tour in the most affected areas of Dembia between 17 and 25 November 1953. At the end of his trip, he reported that there were 1,059 malaria cases in Qolla Debba, 300 in Guramba, 600 in Arabia Medhanealem and 346 in Zengaj areas. He thus suggested that no less than 25 health workers should be sent to Dembia. But his proposal went unheeded for the critical shortage of malaria control professionals (33).

Similarly, Dr. Graf Bassewitz visited the malaria ravaged areas in December 1953 and reported: "All had fever and enormous swelling of the spleen and nearly all of them had serious anemia." He also visited a cemetery where about 1,000 people were buried. The medical director finally concluded that there was:

> "A real malaria epidemic over a wide area with a high mortality, Hundreds of people are still sick and moreover new cases are reported every day. The high mortality and the wide spreading of the epidemic had caused serious impoverishment of the population. The cause of the epidemic depends on climatic and geographical situation of this district: swamp and low situation (34).

He recommended that the two dressers from Pasteur Institute should stay for two more months and the villagers in the low lying areas should be relocated.

Dr. Jacoby a physician working at Gondar Hospital visited Qolla Debba in late December 1953. After his visit, he proposed that the population of the town should be relocated. Part of his proposal reads:

> Coladuba [Qolla Debba] is a malaria infested place. Malaria appears there in an epidemic form for about three months of the year and for the rest continues endemically and it decimates the population… With a view to finding a satisfactory solution it is on medical ground proposed to transfer the population … to another place. Chronic malaria can … not be eradicated from its victims in a short time. Its parasites remain silent within the organs of the affected persons and can be transmitted by malaria mosquitoes to other people. The proposal of such a population transfer is, therefore, based on the condition that a place can be found which is entirely free of malaria mosquitoes. The selection of such a place should be left to the discretion of the Pasteur Institute (35).

But Dr. Jacoby's recommendation was ignored probably for lack of resources for population relocation.

However, the government managed to build a health center at Qolla Debba in December 1956. Months before the inauguration, it was decided that treatment of epidemics would be free of charge but patients of other diseases should pay for their drugs and dressings but not for the services.

The health center erected at Qolla Debba contributed a lot in minimizing mortality from malaria. However, recovery from the 1952/53 epidemic was very slow (15). While the people of Dembia were recovering from the 1952/53 disaster, another malaria epidemic of catastrophic proportions broke out in 1958 in several regions of Ethiopia. More particularly, it heavily affected Shewa, Gojjam, Wollo and Begemeder and Simen (8). It was mainly caused by "unusually high rainfall over an extended period as well as … elevated temperatures and relative humidity" (36). The southern shores of Lake Tana were one of the hardest hit areas (37).

The only area in the Lake Tana region that evaded the 1958 epidemic was Dembia district which was selected by International Cooperation Administration (ICA) as a malaria control project area. Following the 1953 catastrophic epidemic, the ICA team began to apply spraying of "DDT at the rate of 2g of DDT per m^2 of wall space" in all the households in Dembia covering 2,500 square kilometers. As a result, "only 80 cases were reported from the project [area] with an estimated population of 60,000 and there were no deaths attributed to malaria" (8).

The epidemic lasted for over 6 months (June – December). During those six months about 3 million people are believed to have contracted malaria. Among those malaria cases, about 150,000 people are estimated to have perished" (8, 38).

The year 1959 saw a major breakthrough in the fight against malaria. With the help of the United States

Agency for International Development (USAID), the Ethiopian government set up the Malaria Eradication Service (MES). The MES then embarked on a series of malaria control operations in malaria prone areas (39).

Conclusion:

In 1952/53, Dembia experienced the worst malaria epidemic in living memory. As a result, thousands of people lost their lives in that district. The epidemic was so dreadful that corpses were either buried in shallow graves or left in the field to be devoured by dogs and wild animals. Since the epidemic broke out during the planning and harvesting seasons, agricultural activities came to a standstill. There were no people to look after cattle. They were left in the field for months. On the other hand, the suspension of farming activities brought about food shortages.

Local officials sent periodic reports of mortality figures and requested higher officials to do everything possible to save human lives. The response from the higher officials was so sluggish that the epidemic continued to claim more lives every day. There was considerable delay even in sending a few number of dressers and anti-malarial drugs. By the time the dressers arrived, the epidemic had already engulfed every village in that district. The dressers were so few that they could not treat the sick in every locality. The government was not at all prepared to such an emergency situation. The imperial government on the whole failed to mobilize human and material resources to combat the epidemic and save lives before it was too late.

The main lesson learned from this epidemic is the fact that governments should always be prepared to combat the outbreak of major epidemics. Now in the 21st century, human beings are still facing new epidemics like Ebola. Once a certain epidemic breaks out, the response from lower and higher officials should be swift. Finally, governments should mobilize resources to save human lives during such outbreaks.

Acknowledgements

I would like to thank the Faculty of Social Sciences, Bahir Dar University for supporting me in covering my field research expenses in Gondar.

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