

Temporal and spatial pattern of salient parasite diseases in the Hambantota District

Edirisinghe, G.

Department of Geography, University of Ruhuna, Matara

Introduction

Parasite diseases are the most serious tropical diseases in the world endemic to the tropics and sub-tropical countries. According to the WHO2004, malaria continues to be a major health problem in the tropics and it is still a fast spreading disease characterized by high morbidity and mortality than other parasite diseases. Malaria is a debilitating infectious disease characterized by chills, shaking and periodic bouts of intense fever caused by single celled protozoan parasites of the genus *plasmodium*. Dengue fever also known as **break bone** fever is an acute infectious disease caused by the dengue virus.

Research Problem

Parasite diseases occupy a very important place among the main environmental health issues in the Hambantota district. Most of the studies done with strong a geographical perspective, there is a large amount of writing on different aspects of malaria, but no one has done such as study regarding dengue, in terms of extensive studies or controlling methods, based on scientific, medical, sociological, anthropological and historical approaches. Under these conditions the natural environmental factors that have caused these diseases like malaria and dengue are significant epidemic hazards in the district. On account of this problem, people have found that it has been impossible to lead normal healthy lives since they are subjected to debilitating conditions, which have made them physically unfit to carry-out normal agricultural activities at full-strength.

Objectives of the Study

The main objective of this study is to identify the temporal and spatial pattern of the salient parasite diseases as malaria and dengue.

Specific objectives are as follows:

- to identify the annual, seasonal and monthly trends in the two parasite diseases.
- to identify the methods of minimizing issues emerging from the two diseases, malaria and dengue.

Methodology

This study consists of two data collections. One is primary and the other is secondary data. Primary data were collected from the field study through direct interviews with dengue and malaria families in the District. Secondary data were collected by published and unpublished sources as books, journals, articles. Data is concerned with the incidence and treatment of malaria and dengue related information was collected from various government officers.

Key Findings and Conclusions

Malaria and dengue have been common place in Hambantota District. In most part of the area malaria as well as dengue prevalence in the District. Hambantota district consists of 12 MOHareas, lying within the dry zone. While, Lunugamvehera, Tissamaharama, Sooriyawewa and Hambantota have been identified as more vulnerable to malaria, Tangalle, Hambantota, Ambalantota and Beliatta have been identified as more vulnerable to dengue. (See Table 1).

Table 1: The Distribution of Malaria and Dengue Cases in the District, 2004-2010

Year	Malaria cases	Dengue cases
2004	59	84
2005	20	44
2006	32	219
2007	02	102
2008	56	136
2009	111	981
2010	73	809

Source: Anti-malaria Campaign and Epidemiology Unit, Colombo. 2010

On the other hand in 2004 information given in Figure 1 depicts that malaria and dengue diseases are spread in the District during 2004-2010. According to above figure 59 malaria cases were reported in 2004. This trend had changed drastically down to just 2 malaria cases in 2007. However, 56 malaria cases were reported 2008 while the highest number of cases which is 111 were reported 2009. In 2010 this figure has dropped again to 73 malaria cases. In terms of the dengue the year 2005 shows 84 cases which dropped to almost half, which is 44 in 2005. After that a marked increase can be observed with a fluctuation from the three year period 2006-2008. However, two years that follows, 2009 and 2010 records a staggering 981 and 809 cases reported in 2009, 2010 respectively.

Figure 1: Malaria and Dengue Cases in the District 2004-2010

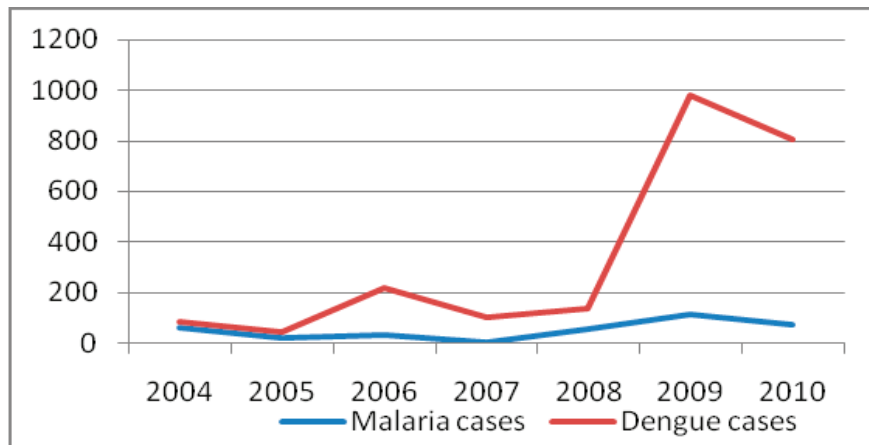
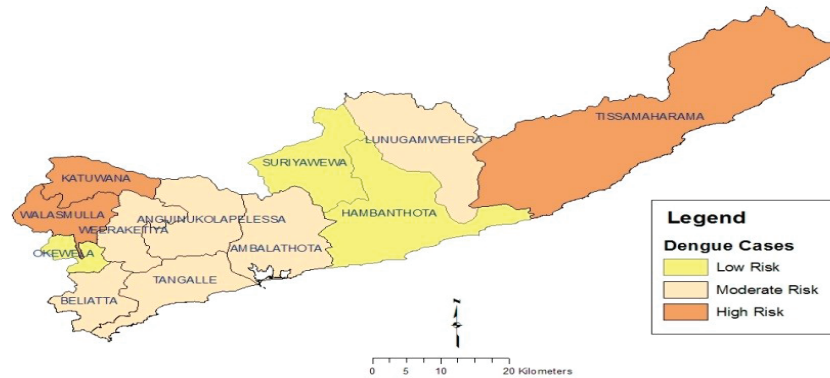


Figure 2: Spatial Pattern of Dengue in MOH Wise 2010

Spatial pattern of Dengue in MOH area wise, 2010



The highest number of malaria cases were reported in Lunugamvehera which is 64 and the lowest which is just 3 cases were reported from Hambantota. In contrast, dengue cases were reported from all MOH divisions. The highest number of dengue cases which is 141 was reported from Tissamaharama while the lowest was reported (9 cases) in Okewela.

Figure 3: Spatial Pattern of Dengue in MOH Wise 2010

Spatial pattern of Dengue in MOH area wise, 2010

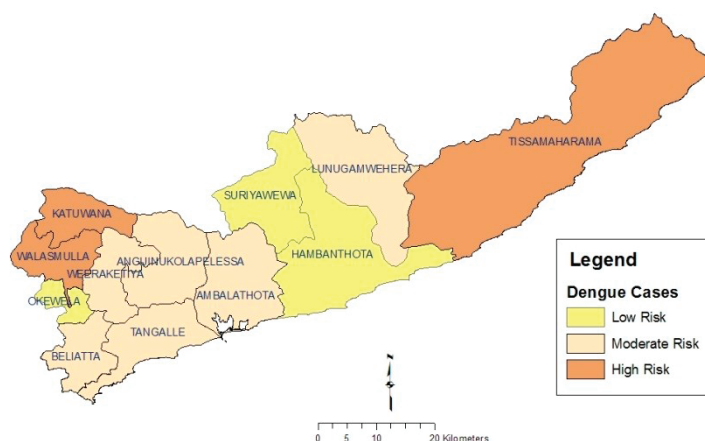


Table 2: Malaria and Dengue Occurrences in Monthly Pattern In2008-2010 in the District

Month	Malaria						Dengue					
	2008	%	2009	%	2010	%	2008	%	2009	%	2010	%
January	4	7.1	4	3.6	6	8.2	14	10.9	23	2.3	49	6.0
February	5	9.0	4	3.6	19	26.0	23	16.9	13	1.3	128	16
March	3	5.3	4	3.6	6	8.2	2	1.4	6	0.6	85	10.5
April	3	5.3	2	1.8	16	21.4	7	5.1	34	3.4	45	5.5
May	3	5.3	3	2.7	6	8.2	5	3.6	281	28.6	29	3.5
June	2	3.5	24	21.6	2	2.7	3	2.2	173	17.6	82	10.0
July	2	3.5	8	7.2	4	5.4	10	7.3	162	16.5	161	20.0
August	4	7.1	9	8.1	5	6.8	10	7.3	77	7.8	122	15.0
September	6	10.7	10	9.0	3	4.1	11	8.0	50	5.0	67	8.2
October	7	12.5	26	23.4	1	1.3	2	1.4	59	6.0	24	3.0
November	9	16.0	11	10	3	4.1	12	8.8	52	5.3	7	1.0
December	8	14.2	6	5.4	2	2.7	37	27.2	51	5.1	10	1.3
Total	56	100	111	100	73	100	136	100	981	100	809	100

Source: Anti-Malaria Campaign & Epidemiology unit, Colombo 2010

The incidence of malaria during the Maha season was 65.5 percent in 2009, while the figures during the same season in 2008 and 2010 were 36.3 percent and 49.7 percent respectively. When compared with the Yala season, figures for 2008 was 64.7percent while in 2009 and 2010 figures were 34.5 percent and 51 percent respectively. Thus, it is clear that there is an increasing trend for the disease to spread during the Yala season rather

than in the Maha season with 51 percent occurrence. During the Maha season, the numbers of dengue cases in 2008 were 64 percent while the figures in 2009 were 20.7 percent. In terms of spatial distribution, Lunugamvehera, Tissamaharama and Hambantota MOH areas have been identified with a high prevalent ratio in malaria epidemic while Tangale, Beliatta, Ambalantota and Hambantota MOH areas have been identified as high risk areas in terms of dengue in the District. The wet areas tend to be more vulnerable to dengue spread while the dry areas tend to have more incidents of malaria. As Hambantota district is currently experiencing massive changes in terms of development, infrastructure needs to be equally matched with such changes.