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Department of Higher Education
Yangon University of Distance Education**

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Research Journal**

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A Geographical Study on Spatial Distribution Pattern of Health Care Centres in Sanchaung Township

Myo Myo Khine¹, Win Pa Pa Myo², Min Oo³, Kaythi Soe⁴

Abstract

This paper tried to present spatial distribution pattern of health care centres of Sanchaung Township located in Yangon City. The health care centers are unevenly distributed in the study area. The types of health care centres include private hospitals, clinics, drug shops and public regional health care centres. The main aim of this research work is to analyze the distribution pattern of health care centres in Sanchaung Township. The objectives of this study are to study the types and numbers of health care centres in Sanchaung Township, to examine distribution pattern of health care centres in the study area and to observe how to correlate the number of health care centres and population in the study area. In presenting the paper, geographical method was applied and GIS tools were used in portraying maps on spatial distribution of health care centres.

Keywords: health care centre, spatial distribution pattern, public, private

Introduction

The study area, Sanchaung was mainly chosen because it is one of the townships which has the high concentration of the number of health care centres in 2018, far from the downtown area of Yangon City and distinct distribution pattern of health care centres.

Measures to bring about improvement in health and longevity do not confine only to the realm of health service provision. But, health is a blessing and an essential requirement for every human being. Health has an important bearing on the development. A healthy population is one of the major end goals of development. Health care is also one of the most important starting points of the development and is measured purely in economic terms; but its ultimate goal is to improve the quality of life and provide the best possible satisfaction of human needs. Healthy people are an essential element of economic and social progress. Poor health causes unemployment or low productivity and lack of income that also brings inadequate nutrition, a deteriorating environment thus perpetuating poor health, creating a vicious cycle. (www. moh.gov.mm)

¹ Professor (Head), Dr, Department of Geography, Yangon University of Distance Education

² Associate Professor, Dr, Department of Geography, Yangon University of Distance Education

³ Tutor, Dr, Department of Geography, Yangon University of Distance Education

⁴ Tutor, Department of Geography, Yangon University of Distance Education

Study Area

The study area is located in southwestern part of Yangon City Development Area. Sanchaung Township is 16° 47' to 16° 49' North Latitude and 96° 07' to 96° 08' East Longitude. It is surrounded by five townships. It consists of eighteen wards. The area of Sanchaung Township is 2.473 sq-km (0.955 square miles) of the Yangon Region. The shape of the Sanchaung looks like a triangle.

Aim and Objectives

The main aim of this research work is to analyze the distribution pattern of health care centres in Sanchaung Township.

The objectives of this study are:

- To study the types and numbers of health care centres in Sanchaung Township.
- To examine distribution pattern of health care centres in the study area.
- To observe how to correlate the number of health care centres and population in the study area.

Data and Methods

To present the paper, secondary data were derived from departments concerned such as General Administrative Department, articles and online sources. Primary data were also collected to get thorough understanding on spatial distribution of health care centres of Sanchaung Township by interviewing with local people and authorities of the health care centres. Buffer analyzing method is used to analyze spatial distribution of health care centres.

Physical Factors

Topography of Sanchaung Township is undulating with hills and valleys. At present, most of the features are changed by the construction of roads and buildings. It has still relatively more marked relief than other surrounding townships. The northeastern, northern and western sides are relatively higher than the middle of the township which is slightly low and slopes towards the south.

There are many hillocks called "hill"(gon) in the township. Most of the wards are named as "gon" such as Montletsaunggone, Myenigone. 75% of the township area lies between 50 feet and 100 feet above sea level. In western part near the Kyeemyindaing Township, two parts of the township can be found within the closed contour lines of 100 feet. These areas stand more than 100 feet above sea level. Besides these two highest areas Montletsaunggone is located near the boundary of Kamayut Township and sloping towards the eastern and southeastern parts. One of the highland areas can be found near the Shweman Cinema known as Kyuntawkyauunggone.

Formerly, many streams existed in the township. Some are canalized and some are covered by the road construction. Only one largest stream remains in the township. It flows from the highland above 100 feet, through the southwestern part of the township and empties into the Hlaing River.

Human Factors

Population is highly related to the existence and distribution of health care centres and population distribution to economic activities and accessibility. The number of population in 2018 was 79885.

The population within the city is not evenly distributed. Population distribution is highly concentrated in the central part of the Township because of accessibility. The wards with relatively high population density are Motletsaunggone (South) and the wards with low population density are Linlun (South). Generally the wards with high accessibility are high in population density and the wards in Kyuntaw (South) with large area are low in population density. According to the data available for 2018, the majority of people living in Sanchaung Township are Bamars.

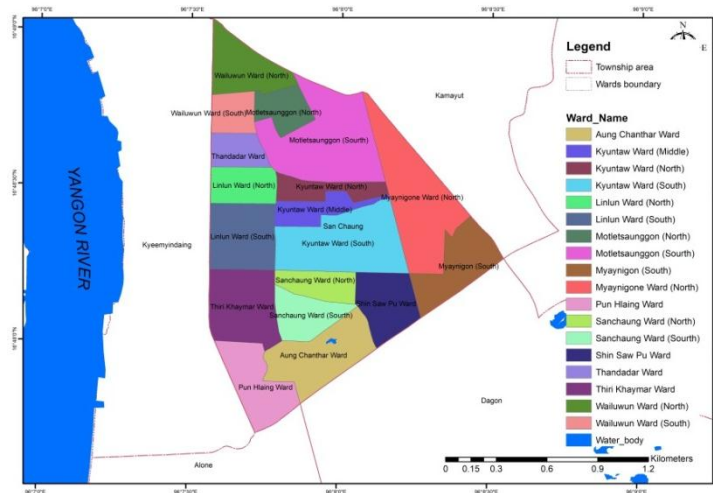


Figure 1 Location of Wards in Sanchaung Township
Source: Based on Topographic Map

Results and Findings

Distribution Pattern of Health Care Centres in Study Area

Types of Health Care Centres

Table 1 Types of Health Care Centres in Sanchaung Township

No	Wards	Private Hospital	Clinic	Pharmacy shops	Regional Health Care
1	Weluwon (North)	-	-	1	-
2	Weluwon (South)	-	2	1	-
3	Montletsaunggon (North)	-	2	2	-
4	Montletsaunggon (South)	-	3	3	-
5	Thantada	-	2	1	-
6	Linlun (North)	-	7	1	-
7	Linlun (South)	-	3	1	-
8	Kyuntaw (North)	-	1	1	-
9	Kyuntaw (Middle)	-	5	2	-
10	Kyuntaw (South)	1	9	4	1
11	Sanchaung (North)	-	7	4	1
12	Sanchaung (South)	-	4	3	-
13	Shinsawpu	-	6	3	-
14	Thirikhema	-	3	1	-
15	Aungchantha	1	4	1	-
16	Panhlaing	1	1	-	-
17	Myenigone (North)	1	9	4	-
18	Myenigone (South)	-	5	5	-
Total		4	73	38	2

Source: Field Survey and Township Medical Office

Health care centres can be classed into two types namely government health care centres and private health care centres (table 1).

Government health care centres consist of township regional health care centre and maternal and child health care clinic. Private health care centres are grouped according to the type and number of physicians.

Private General Hospital is defined as private owned hospital that has enough facilities and doesn't get any support from the government. In these facilities, there are operation theatre, bed sitting rooms, for patients and medical imaging methods. Private General Clinics are called places that are opened in the residences. The total number of health care centres is 117 including two government regional health care centres, four private general hospitals, 73 private general clinics and 38 pharmacy shops. The largest numbers of health care centres can be found along the main roads because of good transportation and high population density (table 1, figure 2).

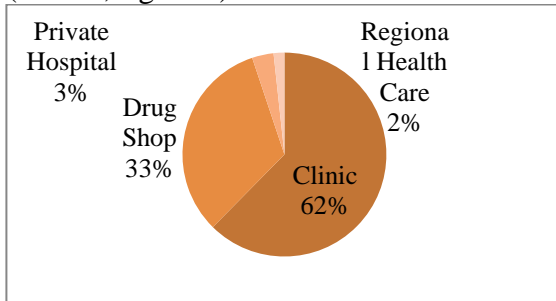


Figure 2 Number of Health Care Centres in Sanchaung Township

Source: Based on table 1

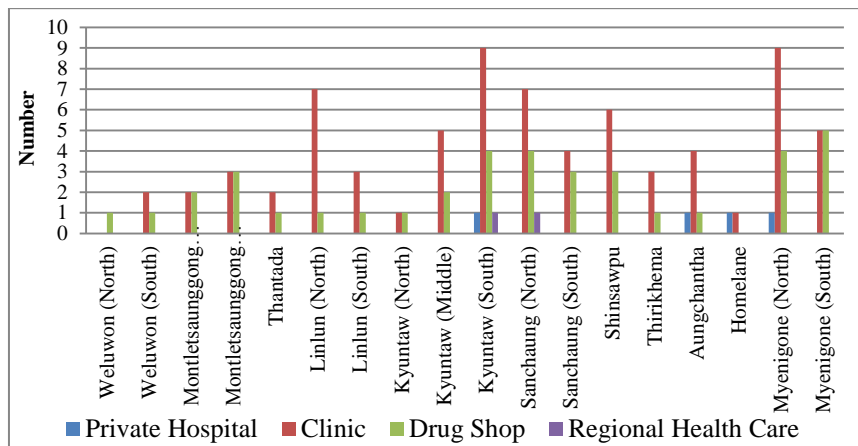


Figure 3 Types of Health Care Centres in Sanchaung Township
Source: Based on table 1

Distribution of Health Care Centres

In the 18 wards of Sanchaung Township, 117 health care centres are found. Most of the health care centres are located along the streets and main roads. There are two-government health care centres namely government regional health care centre and maternal and child health care clinic in Sanchaung Township. Government Health Care Centres are situated in Kyuntaw (South) Ward. Private General Clinics are mostly concentrated along the road of Linlun (North), Kyuntaw (South), Sanchaung (North) and Myenigone (North) wards. These types are in every ward except Weluwon (North) Ward.

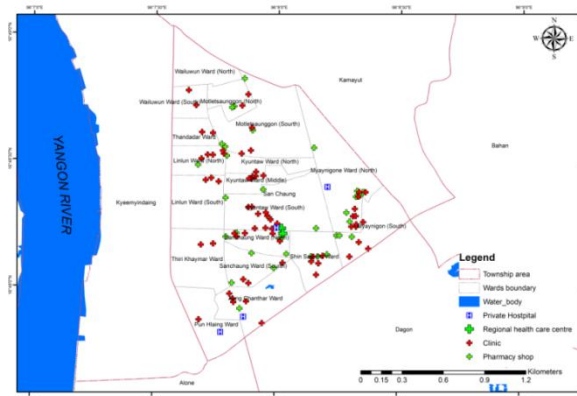


Figure 4 Distribution of Health Care Centres in Sanchaung Township
(Source: Based on table 1)

Four private general hospitals such as Asia Royal Hospital, Sakura Hospital, Mahamyine Hospital and Neo Vision Hospital are found. They are located in Kyuntaw (South), Aungchantha, Panhlaing and Myenigone (North) wards.

There are 73 private general clinics which are found in except Weluwon (North) Ward. Drug shops are situated in the wards of except Panhlaing Ward. Among the streets and roads within Sanchaung Township, Baho Road, Kyuntaw Road and Bagaya Road, most health care centres are mainly concentrated.

Generally, most of the health care centres in Sanchaung Township are situated along the both sides of the main road and streets. Thus, distribution of health care centres can be found near good transportation and highly populated area.

There are 38 pharmacy shops in Sanchaung Township. Among them, both Myanmar traditional medicines and western medicines can be available in some pharmacy shops. But some have only western medicines and some also have cosmetic. These wards have large number of shops due to the high density of population and easy transportation. Among the three types of pharmacy shop, pharmacy shop with western and traditional medicine is more numerous and attracted to the customers in figure 4.

Analysis on the Distribution of Health Care Centres

Spatial Analysis on Health Care Centres

A study based in the geographical point of view is to understand the distribution pattern of specific phenomena which occur over the surface of the earth. Because of its effectiveness for interval and ratio data, the Pearson's Product Moment Correlation Coefficient r is applied to analyze the relationship between the number of population and number of health care centres.

According to calculated values, number of health care centres, areal extent is $r = +0.25$, this result reflects the fair correlation between the number of health care centres and area extent. There is a positive correlation exist between number of population and number of health care centres. The correlation coefficient $r = + 0.72$, clearly implied that there is a significant degree of moderate correlation between the number of population and number of health care centres in Sanchaung Township.

Buffer Analysis on Health Care Centres Distribution

For the spatial analysis, in this study, to analyze the differentiation of the health care center types spatially distributed from the centre point of the private hospitals, multi-buffering analyzing method was used by using Geographic Information System (GIS) software (Version 10.1). To conduct buffering analysis, by using Geographic Information System (GIS) software (Version 10.1), under Analysis Tools, buffer analysis tool was used, especially, to create six multi-buffer zones with distances of 200 m to provide basic information for analyzing the distribution of health care center types in Sanchaung Township.

To make buffer analysis the parameter settings, firstly used the private hospital sites of the study area, where the location distribution is uneven. Secondly, buffer radius with 200 meters, 400 meters, 600 meters, 800 meters, 1000 meters and 1200 meters was used. Then, overlaying analysis with health care center density was made.

Based on the buffer analysis, within 200 metres buffer zoning, the highest concentrated areas of the clinic were found adjacent to Neo Vision Hospital, in Kyuntaw Ward (South), and the second followed by Asia Royal Hospital in Aungchanthar Ward. The second highly concentrated areas could also be found within 400 meters buffer zones, more adjacently to Mahamyine Hospital which lies on southern part of Myenigone Ward. But, the third highly concentrated areas could be find in the northwestern part of the study area, and which are only found in 600-800 meters distance from the private hospitals.

In Sanchaung Township, as the second most densely distributed type, they were mostly randomly distributed around the private hospitals. Moreover, the highest concentrated areas were only found in 400 meters buffer zone in southern part of Myenigone Ward, and distant from the private hospitals. In the study area, within 200 meters buffer zone, the Regional Health Care centers distributed adjacently to Neo Vision Hospital. This concentration is somehow related to accessibility and population density of the area. The distribution of clinics and pharmacy shops supports the public and private hospitals in the area.

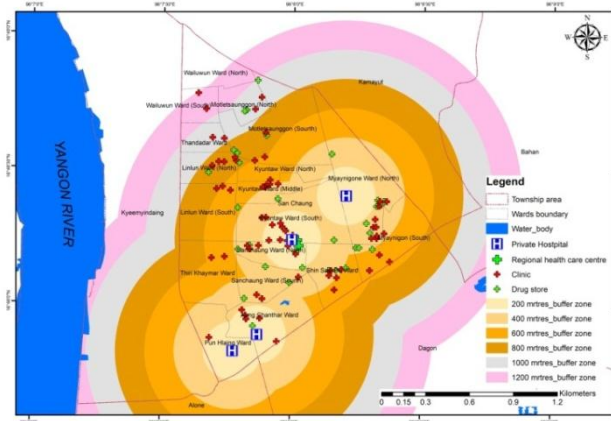


Figure 5 Buffer Analysis on the Health Care Centres Distribution

Source: Based on multi-buffering analyzing method

Conclusion

In this paper, two major types of health care centres: government health care centres and private health care centres were found in Sanchaung Township.

Sanchaung Township possesses 117 health care centres: four private general hospitals, 73 private general clinics and 38 drug shops. In the area, the largest number of health care centres can be found along the main roads. Health care centres are located along the streets and main roads. Asia Royal Hospital, Sakura Hospital, Mahamyine Hospital and Neo Vision Hospital are found.

Seventy three private general clinics are located in Weluwon (North) Ward on both sides of Baho Road, Kyuntaw Road and Bagaya Road in Sanchaung Township. Traditional medicines and western medicines can be available in some pharmacies. In Sanchaung Township, the wards that possess large population have the largest amount of clinics. In calculation by using statistical methods, there is a significant degree of moderate relationship between the number of population and number of health care centres. Moreover, accessibility is one of the factors supporting distribution of health care centres because most of the health care centres are found in accessible area of Sanchaung Township.

In summing up, health care centres adequately support local people in Sanchaung Township. As health care centres are mainly concentrated in densely populated area, it can support most population in the area. As they are located in the accessible area, local people can go there easily. Health care centres, private clinics and pharmacy shops are supporting each others and they all serve local people's health matters. The highest concentrated areas are within 400 meters buffer zone in southern part of Myenigone Ward and the distribution of health care centres in Sanchaung Township supports the private and public hospitals and this distribution is mainly controlled by accessibility and population density. In the future, local people will surely get better health care from existing health care centres because of better accessibility and growth of health care centres. To get complete understanding of existing health care centres, it is necessary to do further researches on facilities used in health care centres, number of specialists, as well as services given by health care centres of Sanchaung Township.

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A Study of Crop-Climate Relationship in Hlegu Township

Win Pa Pa Myo¹, Myo Myo Khine²

Abstract

This research work analyzes the physical factors of the area, especially climate factors, which are of critical importance for the crop-climate relationship in Hlegu Township. The main objectives are to study the relationship between crop and climate, to present climatic conditions of the study area and to show suitable crops for study area. As its chief economy is based on agriculture, it can somehow satisfy the high food demand of Yangon City. Paddy cultivation plays important role in Hlegu Township. People living in rural areas mainly depend on agriculture and most farmers in rural areas cultivate paddy. The paper highlights climate elements such as temperature, rainfall, day length and humidity. The crops mainly grown are monsoon paddy, groundnut, sesame and sunflower. To highlight the suitable crops for study area, climatic data were used for 35-year period (1982 and 2017). Climate data were obtained from meteorology and hydrology department in Yangon. To do the research work, primary and second data were collected through 3 field trips. Physical factors and human factors, data and information were obtained from library, departments concerned, field surveys and interviews were organized and analyzed. According to the results, sunflower and sesame are not well suited for the study area. Others crop such as monsoon paddy, groundnut and sunflower are favorable.

Keywords: crop-climate relationship, suitable crops and monsoon paddy

¹ Associate Professor, Dr, Department of Geography, Yangon University of Distance Education

² Professor (Head), Dr, Department of Geography, Yangon University of Distance Education