ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 11| Issue: 6| June 2025|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2025: 8.691 || ISI Value: 1.188

HEALTHCARE ACCESSIBILITY OF THE ESTATE POPULATION IN THE KALUTARA DISTRICT OF SRI-LANKA

HND Soyza, TS Dissanayake, GD Alwis
Regional Directorate of Health Services – Kalutara

CHAPTER 01
INTRODUCTION
1.1 BACKGROUND

Estate population in Sri Lanka accounts for a substantial minority of the population in Sri Lanka. Historically there have been a number significant challenges the estate community faces which includes and not limited to the healthcare and socio-economic challenges.

The History of the Estate Population in Sri Lanka dates back to The British Colonial era from 1796. When the plantation sector was introduced to the country as a British colony. Due to various reasons The British decided to get the labour from South India instead from Sri Lanka. This included and note limited to various socio economical contexts.

Initially they ruled and administered in a different Estate Management System involving Kanganams separated from the Local Government System. They were confined to the line room and working in the estates with no land ownership. Following the Independence of the country some workers voluntarily repatriated while some remained in the country. Later most of them got the citizenship rights.

The remaining estate population has been considerably contributing to the Sri Lankan economy by engaging in the local export agriculture since then. They have been concentrated over different districts in the country amongst different estates i.e. Tea, Rubber, and Coconut etc.
Out of the districts with estate populations Kalutara is one of the remarkable districts with a considerable estate population.

Rubber is the primary crop in Kalutara, and Tea Rubber Coconut is the major crops occupying Kalutara District Sri Lanka.. There's Rubber 40993, Tea 2603, Coconut 1466 hectares in the region. Emerging crop is Palm Oil. 25% of the total countries rubber plantations are in Kalutara Clones - PB 86RRIC 100RRIC 121 and Other Clones. Sri Lanka in the 14th position of global natural rubber supplier. Exporting finished rubber products to USA, UK and the Europe as well as semi-finished products to Asian countries Rubber plays a major role in the export s industry of Sri Lanka and thus directly a contributor for the economy.

Thereby the well-being of the Estate population directly affect the efficacy of the estate functions and thereby it generally affects the Sri Lankan economy. It's noteworthy to identify the healthcare challenges faced by the estate population compared to the general public and the general rural population in Sri Lanka.
These includes; unhealthy living infrastructure, malnutrition among children lack of accessibility to the government healthcare system and lack of community empowerment etc

The Healthcare system of the District is majorly governed by the Provisional Directorate of Western Province Sri Lanka and also by the Line Ministry of Health. There are several hospitals governed directly from the Line Ministry of Health which include Teaching Hospital Nagoda, National Institute of Health Services, Kalutara, Divisional Hospital Aluthgam – Seenawatte to name a few.

There are different types of healthcare facilities within the district. This includes one District General Hospital (Horana), Two Base Hospitals (Panadura and Pimbura), Divisional Hospitals and Primary Medical Care Units (PMCU). All of these facilities comprises of qualified and licensed medical officers and the ancillary health staff. Other than PMCUs rest of the facilities more than one medical officer.

1.2 OBJECTIVES

To identify the healthcare accessibility of the estate population within the Kalutara District, with reference to the geographical analysis of the distance from the respective estates to the nearest government healthcare facility.

Specific Objectives

- To find the nearest healthcare facility for the Estates in the Kalutara District within 3km radius
- To find the nearest healthcare facility for the Estates in the Kalutara District within 5km radius
- To find the driving distance to the nearest healthcare facility from the Estates in the Kalutara District
- To find the walking distance to the nearest healthcare facility from the Estates in the Kalutara District
- To identify the geographical barriers in accessing the nearest healthcare facility

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CHAPTER 2
METHODOLOGY

The scope of the research extends in geographical and qualitative analysis of the Estates in the Kalutara district with respect to the distance to the nearest healthcare facilities.

Geographical analysis was done using the open source qGIS (Quantum GIS) 3.34.15 desktop platform with EPSG: 3857; Scale 1:276632; qGIS was selected due to the open source availability and the user-friendliness

Geospatial data was uploaded to the qGIS with different inputs

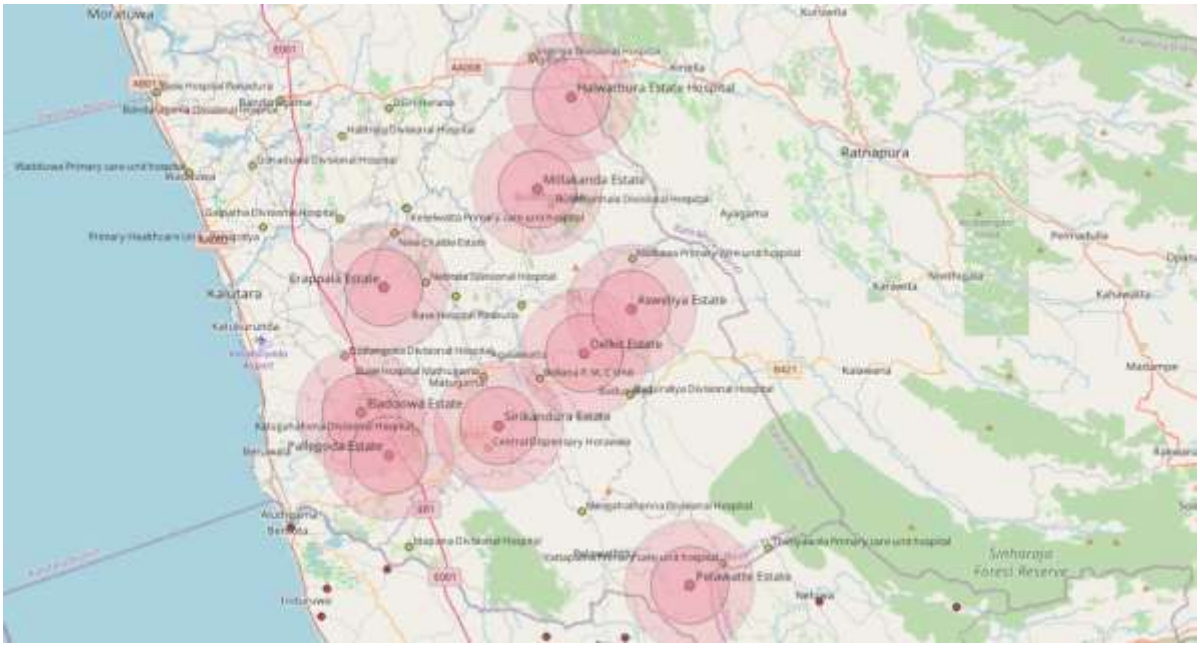
- Open Street map was used to project the geospatial data
- The locations with the geo-coordinates of the estates were gathered from physically visiting each registered nine estates in the district.
- The locations with the geo-coordinates of the health care facilities were taken from the Latitude and the Longitude coordinates from the Google map. There were;
    - One District General Hospital, which is District General Hospital Horana
    - Two Base Hospitals; Base Hospital Panadura and the Base Hospital Pimbura
    - There were Divisional Hospitals and the Primary Medical Care Units
- The geographical obstacles were identified from the QGIS and was further cross-checked from Google map Street view

Geographical data were pre-processed, cleared and exchanged between Google-Earth, Google Map and the qGIS using Microsoft Excel and other similar packages.
Buffer function of the qGIS was used to mark 3km, 5km perimeters from the Estates.
Finally the map data were exported in PNG and PDF formats

CHAPTER 3
RESULTS

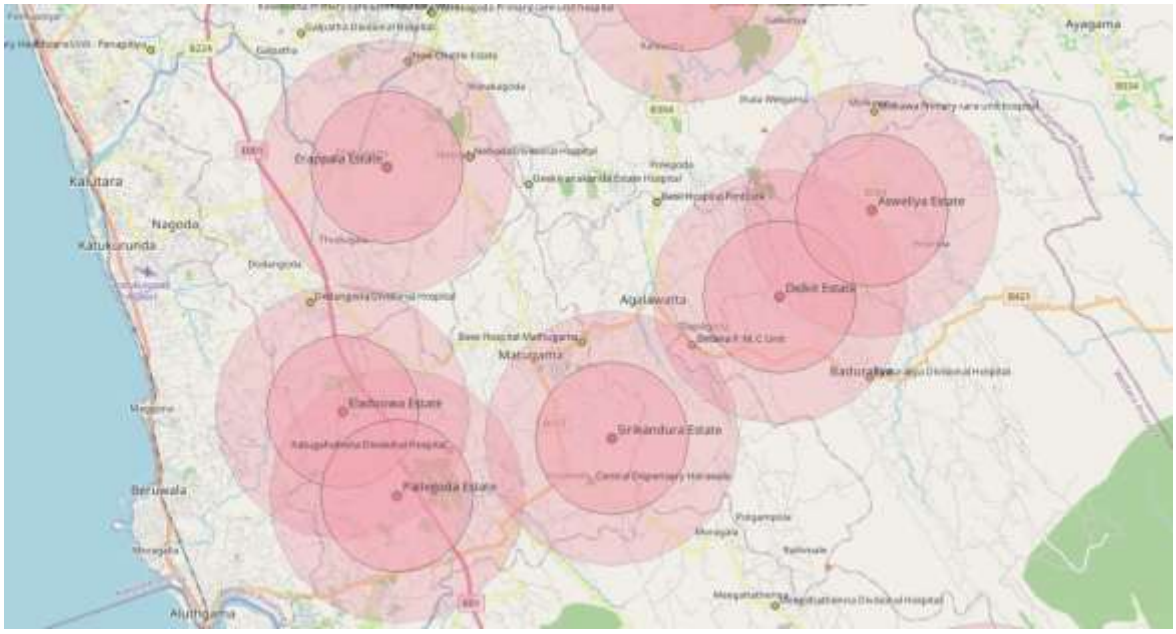
There were nine major estates in the Kalutara district of Sri Lanka. This includes;

Halwathura Estate
Millakanda Estate
Erappala Estate
Eladoowa Estate
Pallegoda Estate
Sirikandura Estate
Delkit Estate
Asweliya Estate
Pelawatte Estate



Closest hospital to the Halwathura Estate is Divisional Hospital Ingiriya, which is located within 4.2km radius with a driving distance of 6.4km with 11mins. Millanda Estate is 1.6km away from the Divisional Hospital Bulathsinhala which is the closest hospital with a driving time of 11minutes.

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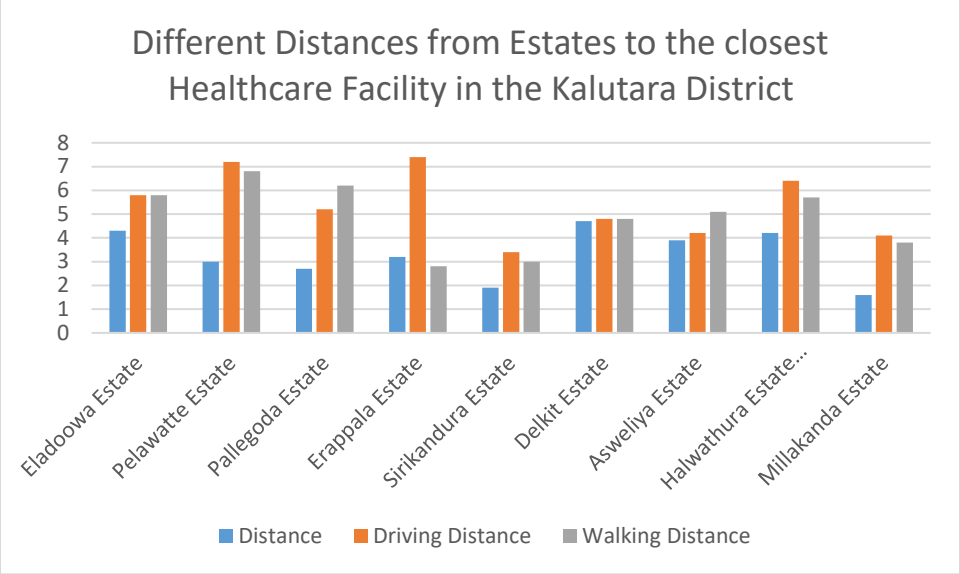
There were two healthcare facilities in the 5km radius of Erappala Estate i.e. Neuchattel Primary Medical Care Unit and the Neboda Divisional Hospital which is 4.1km and 3.2km respectively with 15mins driving distance to the closest. The scenario was same for the Eladoowa Estate with Divisional Hospital Katugahahena and the Divisional Hospital Dodangoda within the 5km proximity. However Pallegoda Estate also had Divisional Hospital Katugahahen in proximity within 3km radius.

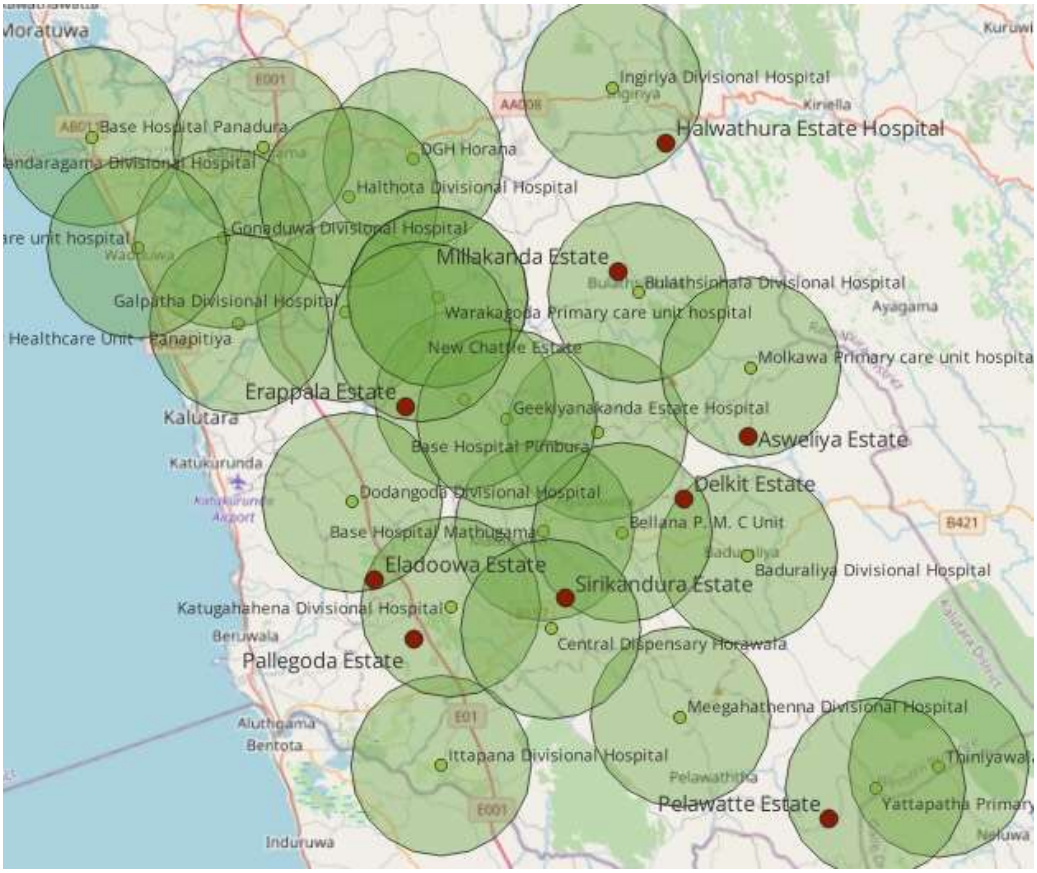
Sirikandura Estate had a Primary Medical Care unit within 3km radius – PMCU Horawala and District Hospital Mathugama in 5m radius with 7mins drive to the closest healthcare facility.

Delkit and Asweliya Estates were located with 5km to each other with Primary care Unit Molkawa being the closest healthcare facility to the Asweliya Estate and Primary care unit and the Divisional Hospital Baduraliya both being at 5km radius from the Delkit Estate.
Pelawatte estate was located quite distant from the rest of the estates and had Primary Care Unit Yattapatha within 5km radius.

Estate	Within 3km	Within 4km	Within 5km	Driving Distance	Driving Time	Walking Distance	Walking Time	Closest Healthcare Facility	Distance
Eladoowa Estate	0	0	DH Dodangoda, DH Katugahahena	5.8km	12min	5.8km	1h20m	DH Katugahahena	4.3 km
Pelawatte Estate	0	PMCU Yattapatha	PMCU Yattapatha	7.2km	11min	6.8km	1h33m	PMCU Yattapatha	3 km
Pallegoda Estate	DH Katugahahena	DH Katugahahena	DH Katugahahena	5.2km	13min	6.2km	1h11m	DH Katugahahena	2.7 km
Erappala Estate	0	DH Neboda	DH Neboda, PMCU Neuchattle	7.4km	15min	2.8km	37mins	DH Neboda	3.2 km
Sirikandura Estate	PMCU Horawala	BH Mathugama	PMCU Horawala, BH Mathugama	3.4km	7mins	3km	41mins	PMCU Horawala	1.9 km
Delkit Estate	0	PMCU Bellana	PMCU Bellana, DH Baduraliya	4.8km	10mins	4.8km	1h4mins	DH Baduraliya	4.7 km
Asweliya Estate	0	PMCU Molkawa	PMCU Molkawa	4.2km	7mins	5.1km	1h8mins	PMCU Molkawa	3.9 km
Halwathura Estate Hospital	0	0	DH Ingiriya	6.4km	11min	5.7km	1h17mins	DH Ingiriya	4.2 km
Millakanda Estate	DH Bulathsinhala	DH Bulathsinhala	DH Bulathsinhala	4.1km	11min	3.8km	52mins	DH Bulathsinhala	1.6 km

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Considering the universal healthcare coverage of the Kalutara District, all the Estates were located within at least 5km from a healthcare facility with basic healthcare facility. The minimal services offered includes and not limited to; emergency care, outpatient care, clinics – Non Communicable disease prevention, Maternal and Child Health Care, Elderly healthcare.

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CHAPTER 4
DISCUSSION

Estates provides a valuable contribution to the economy of the country to the current date but their population faces multiple health and non-health related challenges historically to date.
Physical accessibility to basic healthcare systems remains a significant factor when understanding their health related challenges.

All the nine, Major Estates in the Kalutara District have healthcare facilities within 5km radius from the respected estate. The radial distance vary from 1.6km to 4.7km. Driving distances for each estates vary from 3.4km to 7.4km and the walking distance vary from 2.8km to 6.8km

There is a significant variation of the distances within healthcare institutions and the estates on driving, on walking and on Euclidian radius. One of the major reason for this is the availability of the shortcut pathways available which are beyond the geographical level of the Google map and the open street map which is commonly known by the community.

Thereby individual data collection from the community is important to identify the distance-wise healthcare accessibility barriers in the estate population.

CHAPTER 5
CONCLUSION

The distance to the nearest healthcare facility is a key indicator of the healthcare accessibility of a certain population.

The study consisted GIS data driven and qualitative analysis to understand the maximum distance which the estate population in the Kalutara District has to travel in order to receive basic healthcare facilities to the Estate population.

Within the scope of the research we could not identify any Sri Lankan healthcare policy or global level standard for an ideal maximum distance which the population has to travel to the nearest healthcare facility. But several previous international studies suggests a maximum of 5km distance to the nearest healthcare facility to provide the best care to the patients.

However all the estates in the Kalutara district were located within the 5km radius from at least one healthcare facility providing basic healthcare needs including and not limited to outpatient general care, emergency, maternal and child health care with accessibility to a licensed medical practitioner.

But the Euclidean distance which was estimated from the GIS doesn't tally with the driving distance and the walking distance from the estates to their nearest healthcare facility. There are various reasons including and not limited to the availability of routes which are beyond the available GIS platforms.

CHAPTER 6
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