Figure 2.1 Flowline description of the approach towards the present research

1. Age and Gender impact
2. Health Care Accessibility
3. Environment and Climate Influence on SCD
4. Socio-Economic and Cultural burden on SCD
5. Management and Recommendations

SCD status and issues that lead to the current research
Map 3.2 The Distribution of six primitive tribal groups in the Nilgiri district of Tamil Nadu
Map 6.1.3 Distribution Sickle Cell Disease among Total Female in the Nilgiri district of Tamil Nadu

Female disease distribution:
- 0 (25 TVPs)
- 1 - 53 (22 TVPs)
- 54 - 126 (6 TVPs)
- 127 - 237 (2 TVPs)
Map 6.1.6 Taluk wise Age Specific Rates for Sickle Cell Disease in the Nilgiri district of Tamil Nadu
Map 6.1.7 Taluk wise Age Adjusted Rate for Sickle cell disease for the Nilgiri district of Tamil Nadu
Map 6.1.8 Distribution of SS and AS Incidence of Sickle Cell Disease for Male and Female in the Nilgiri District of Tamil Nadu
Map 6.1.9 Status of Sickle cell disease among the four tribes of the Nilgiri District
Map 6.2.3 Population density and SCD cases of the Nilgiri district of Tamil Nadu
Map 6.2.5 a and Map 6.2.5 b Terrain instability during wet and dry season for the Nilgiri district of Tamil Nadu.
Map 6.2.6 Travel time to health centres by Euclidean distance model
Map 6.1.8 Distribution of SS and AS Incidence of Sickle Cell Disease for Male and Female in the Nilgiri District of Tamil Nadu
Map 6.1.9 Status of Sickle cell disease among the four tribes of the Nilgiri District
Map 6.2.1 Spatial layers for the Accessibility modelling

Location of SCD cases and THC

Road Network

Drainage pattern

Slope

Land use land cover

NDVI
Map 6.2.4 Proximity to Health Centers in the Nilgiri district
Map 6.2.5 a and Map 6.2.5 b: Terrain instability during wet and dry season for the Nilgiri district of Tamil Nadu.
Map 6.2.6 Travel time to health centres by Euclidean distance model
Map 6.2.7 Changes in accessibility to health facilities during dry and wet seasons by travel

- **Dry Season**
- **Wet Season**

Legend:
- **H**: Hospital
- **+**: Health facility location
- **Legend for distance (in meters):**
  - 0-1 km
  - 1-2 km
  - 2-3 km
  - 3-4 km
  - 4-5 km
  - 5-6 km
  - 6-7 km
  - 7-8 km
  - 8-9 km
  - 9-10 km
  - 10-12 km
  - 12-14 km
  - 14-16 km
  - 16-18 km
  - 18-20 km
  - 20-22 km
  - 22-24 km
  - 24-26 km
  - 26-28 km
  - 28-30 km
  - 30-32 km
  - 32-34 km
  - 34-36 km
  - 36-38 km
  - 38-40 km
  - 40-42 km
  - 42-44 km
  - 44-46 km
  - 46-48 km
  - 48-50 km
  - 50-52 km
  - 52-54 km
  - 54-56 km
  - 56-58 km
  - 58-60 km
  - 60-62 km
  - 62-64 km
  - 64-66 km
  - 66-68 km
  - 68-70 km
  - 70-72 km
  - 72-74 km
  - 74-76 km
  - 76-78 km
  - 78-80 km
  - 80-82 km
  - 82-84 km
  - 84-86 km
  - 86-88 km
  - 88-90 km
  - 90-92 km
  - 92-94 km
  - 94-96 km
  - 96-98 km
  - 98-100 km

Distance ranges marked with different colors indicate varying levels of accessibility.
Map 6.2.8 Shortest routes for inaccessible areas in the Nilgiri district
Map 6.3.5 Settlement of Tribal villages in three different Elevations of the Nilgiri district of Tamil Nadu
Map 6.3.6 The location of SCD cases in the arid regions of the Nilgiri district of Tamil Nadu
Map 6.4.3 Spatial pattern of SCD incidence for 1997-2012 in the Nilgiri district using Kernel density estimation approach.
Map 6.4.4 Grid wise aggregated distribution of the Sickle Cell Disease cases
Map 6.4.5 Mapping of the fitted values obtained from the Generalised Linear Model
Map 6.4.6 Mapping of the residuals obtained from the Generalised Linear Model
Figure IVa Global Distribution of the HBS data points

Red dots represent the presence and blue dots the absence of the Hbs gene. The regional subdivisions were informed by Weatherall and Clegg (2001), and are as follows: the Americas (light grey), Africa, including the western part of Saudi Arabia, and Europe (medium grey) and Asia (dark grey).

**Figure IVb Global distribution of the sickle cell gene**

*Raster map of HbS allele frequency (posterior median) generated by a Bayesian model-based geostatistical framework. The Jenks optimized classification method was used to define the classes (Jenks, 1967)*