

Original Research Article

The Spatial Dimension of Health Service Provision in Mashonaland West Province, Zimbabwe

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Abstract: Zimbabwe like many other developing countries has serious problems in its healthcare system. The quality of health service provision in Zimbabwe is generally poor Chazireni. Different parts of the country have serious healthcare problems. Mashonaland West, like other provinces in Zimbabwe, experiences numerous healthcare challenges. The research examines health service provision in Mashonaland West province in Zimbabwe. Data for this study was collected from ZIMSTAT published census reports and Ministry of health and Child Welfare published national health profiles. The analysis of the data was done through the composite index method. The calculated composite indices were used to rank the districts according to the level of health service provision. The researcher found out that there overall, the conditions of health service provision in Mashonaland West province is poor and that there are health service disparities among administrative districts in Mashonaland West province of Zimbabwe. There are many reasons which contribute to disparities in health care services at different levels (global, continental, regional, national and district level). It emerged from the research that the disparities are due to social, economic, physical and political factors.

Keywords: Health, disease, disparities, Zimbabwe and composite Index.

INTRODUCTION

Health is a multi-facet condition or experience. Health service provision often referred to as healthcare refers to the prevention, diagnosis and treatment of disease and injury including financing and allocation of resources. Health care service distribution and the patterns of diseases are determined by various physical, social and economic environments. Health service provision is defined as the delivery of services that are used in diagnosis and treatment of diseases or prevention and maintenance[8]. Health service provision has proved to be unequally distributed due to socio-economic and environmental factors. The provisional of health enhancing tools varies at global, continent, regional, country and even at a local level. Numerous researchers [1, 2, 3] agree that there is unequal spatial distribution of health service provision at global national and even local level. Mashonaland West province in Zimbabwe is not spared from such a general global and national trend. In addition, the general conditions of health are generally in a poor state. According to Ministry of health and Child Welfare [8] Mashonaland West province is one of the provinces with the highest incidence rate of infectious diseases in the country. Allen Consulting Group [9] argues that, inequalities in health service delivery have

severe negative impacts. Given the serious negative repercussions of the unequal spatial distribution of health service provision in the districts of Mashonaland West province, there is need for a research to analyse the nature of the inequalities in health service provision.

THE STUDY AREA

Mashonaland west is a province in the northern part of Zimbabwe as shown in Figure 1. Mashonaland West province is divided into six administrative districts which are Chegutu, Kadoma, Hurungwe, Kariba, Makonde and Zvimba. The districts in the province are depicted on the map in Figure 1. All districts with the exception of Zvimba in Mashonaland West have urban centres. The urban centres are Kadoma in Kadoma district, Chinhoyi in Makonde district, Kariba in Kariba district, Karoi in Hurungwe district and Norton and Chegutu in Chegutu district. Despite the abundance of the urban centres the health care provision system is experiencing numerous challenges. It has an area of 57,441 km² and a population of 1.5 million [10]. The climate of the region is generally hot and wet. The province has diversified economic activities which include mining, agriculture; trading, power generation and tourism [4].As alluded to in the introduction, the provinces.



Fig.1: Administrative Districts of Mashonaland West province (Source: Adapted from Central Statistics Office (2004))

Health service provision system manifests a high degree of inequality among the administrative districts. This can be attributed to various economic, physical, social and political factors. The administrative districts are used as spatial units of analyses for the examination of the pattern of health service provision in the province. The province is also within the largest water catchment in Zimbabwe, thus the Manyame basin.

METHODOLOGY

Secondary data were gathered and used in this study. The data was collected from Ministry of health and Child Welfare [9] and ZIMSTAT published census reports[10]. To determine the conditions of health service provision in each district, 10 health indicators/variables were used. The variables/indicators on which data was collected are: Crude death rate, Infant mortality rate, Number of hospitals per given population, Number of clinics per given population, Number of doctors per given population, Number of qualified nurses per given population, Maternal mortality rate per 100 000 people, Number of hospital beds per district, Diarrhoea incidence rate per 1 000 people and Dysentery incidence rate per 1 000 people.

The composite index method was used to analyse data on the selected variables to determine health service provision for the identified spatial units. The composite index method represents measurements derived from an empirical process of aggregation of a number of variables [5]. The use of composite indexing means that numerous indicators of health are integrated into a single measurement that represents the level of health service provision for a specific region. An index is the ratio of the observed indicator value to a particular base number (such as an average). This means that different values (measured in different units or at different times) can be compared, since all the data is evaluated in terms of the extent to which they compare with a value set as an expectation. Before the calculation of simple indices, it was necessary to determine the correlation of each indicator with health service provision. In cases where particular indicators had negative correlation with the general level of health service provision the reciprocals of the values for all the districts for those indicators were calculated. After the calculation of the reciprocals, all the indicators that had positive correlation with the general level of health service provision. Once all the indicators had positive correlation with health service provision, simple indices for each of the indicators were calculated. Simple indices were combined into composite indices so that each administrative district has a single composite index value. The calculated composite indices on health service provision for all the administrative districts in Mashonaland West province given in Table 1.

RESULTS AND DISCUSSION

The composite indices have been employed to determine conditions of health service provision in the six administrative districts in Mashonaland West province. With the exception of Chegutu district and to a lesser extent, Makonde district, all the districts generally have low composite index values. This implies that generally the conditions of health service provision in Mashonaland West province are poor. Such findings are in agreement with the findings of Chazireni[6] who observed that a large proportion of the administrative districts in Zimbabwe (districts in Mashonaland West province included), have poor health conditions in both people's state of health and health service provision.

In addition to the poor conditions of health service provision, the province experiences disparities in health service provision. The administrative district with a large composite index values would mean comparatively good health service provision. The ranking was done according to the values of composite indices hence proving that there are disparities in health service provision among administrative districts under one provincial administration. As depicted in Table 1, Chegutu district has the highest composite index (25) of

health service provision. Makonde which has Mashonal and West provincial capital has a composite index value of (13) and is ranked second. Zvimba is in third position with a composite index value of 11. Kadoma is ranked fourth with a composite index value of 9. Hurungwe administrative district is in the second from last position (sixth position) and has the composite index value of 8. Finally, Kariba which has a composite index value 7 has the least health service provision among the administrative district.

Table 1: Ranking of districts using composite indices (Source: Research Data, 13-12- 2015)

Districts	Composite Indices
Chegutu	25
Makonde	13
Zvimba	11
Kadoma	9
Hurungwe	8
Kariba	7

Chegutu having the highest above the other 5 indices emerges as the district with the comparatively the best health care service delivery system in Mashonaland West province. This is probably due to the fact that Chegutu high rate of infrastructural development which has been stimulated by big mines in it such as Zimplats. The second position of Makonde can be attributed to the district is the one with the provincial

capital, Chinhoyi which is a big urban area with the provincial hospital. Zvimba and Kadoma administrative districts have the moderate composite indices. As indicated in Section 2, there is no urban centre in Zvimba. Kadoma is a moderately sized urban centre. Hurungwe and Kariba districts have the lowest health service provision probably due to poor physical conditions. The districts are located in the Zambezi lowveld to the north of the country as depicted in Figures 1 and 2. The region is hot and dry and this negatively affects the attraction of medical personnel, the jungle like environment and terrain might also negatively influence medical supplies and siting of medical facilities.

The map Figure 1 shows the spatial pattern of health service provision in Mashonaland West province. The numbers in brackets in the map legend are composite index values for the administrative districts. The purpose of the map is to combine and depict the spatial distribution of the districts with the distribution of composite index values in the province. It is evident from the map that there is a high degree of inequality in health service provision of Mashonaland West province. As shown in the map, the northern districts in the province are experiencing the least health service provision in the province. The choropleth map clearly shows the spatial dimension of health service delivery and gives more supporting evidence of disparities in health service provision.

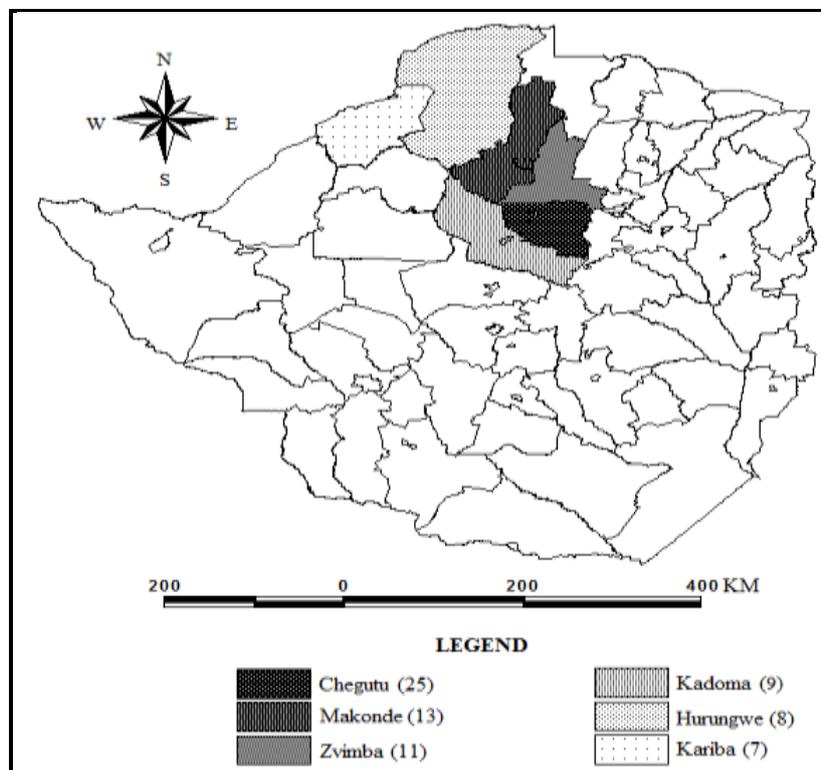


Fig.2: Spatial patterns of health service provision in Mashonaland west province (Source: Research Data, 13-12-2015)

CONCLUSION

This study presents the research findings on health service provision in Mashonaland West province. Different environments influence various health determinants therefore different areas or districts have different health care service provision system [7]. The ranking of the six administrative districts is an evidence of the unequal spatial distribution of health service provision. The composite index method was employed to rank the six districts according to the level of health service provision. Furthermore, a cartographic presentation was made to show the unequal spatial distribution of health care services. There is clear evidence of unequal spatial distribution of health service provision. The disparities are shown by unequal access to health facilities, qualified health personnel, incidence rates of selected diseases and different mortality rates. It emerged from the research that the inequalities in health service provision in Mashonaland West province can be attributed to physical, social and economic conditions.

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