

**Conceptualising inequalities in population health in Masvingo Province, Zimbabwe: A health outcomes based approach**

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**Abstract**

*Masvingo Province experiences variations in health across its spatial units (Administrative Districts). The disparities in health are largely determined by the spatial inequalities in the distribution of major determinants of health. To determine variability of health among districts, eleven indicator variables of health were used. The composite index method was used to integrate the health indicator values of the indicator variables into a single measure so that health could be measured and compared numerically. This enabled the districts to be ranked according to their health from top to bottom to create a visual and statistical display of the spatial patterns of health in the province. Major sources of data for the research were the Ministry of Health and Child welfare (2012) and ZIMSTAT (2012). It emerged from the study that there is severe spatial health inequalities across Masvingo province's administrative districts. Generally, urban administrative districts are experiencing better health than their rural counterparts.*

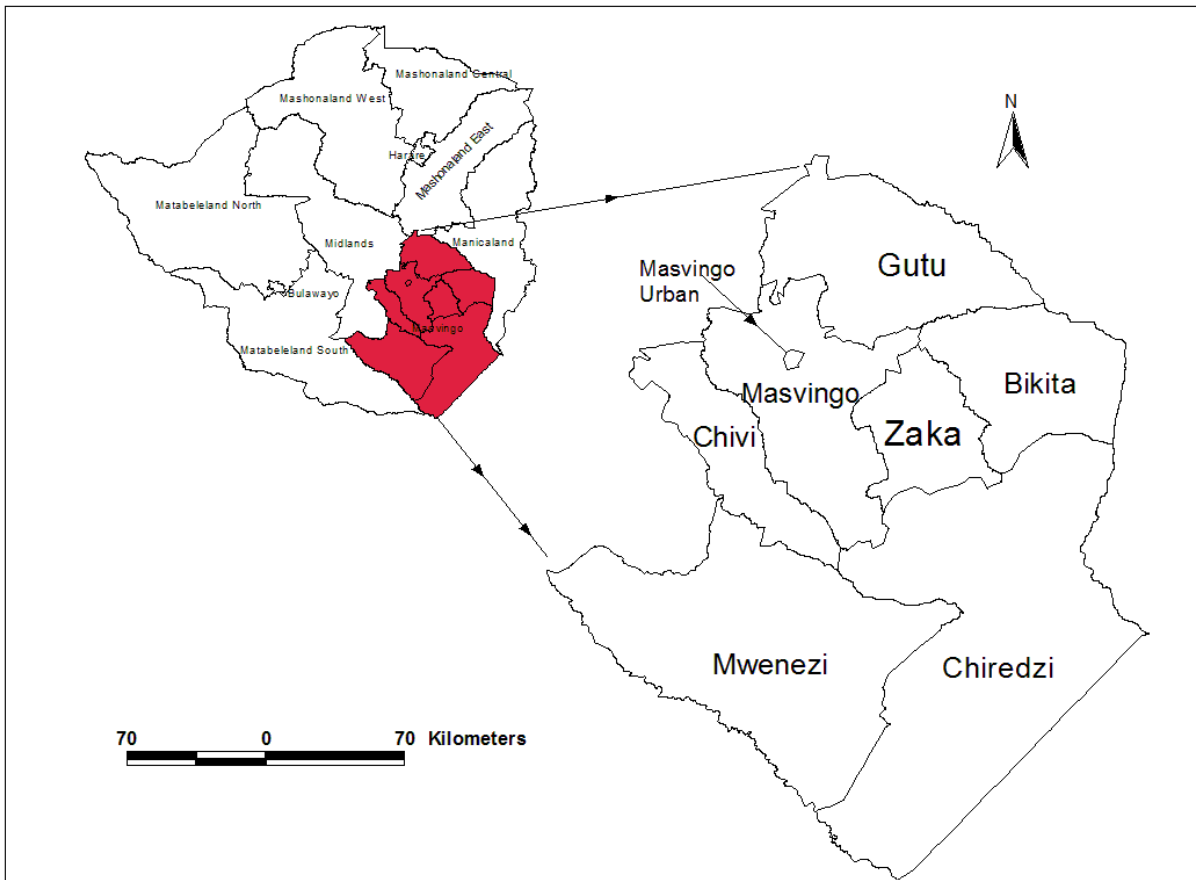
**1. Introduction**

Despite efforts by world organizations and political leaders to reduce health inequalities, health equality remains a major problem (WHO 2011). A significant amount of evidence exists concerning the nature and degree of such health inequalities at different scales. There are inequalities at global level, between the less developed and the more developed countries (Murray and Topez, 1996), disparities at continental level, for example, in Europe (Kunst, 1997), in countries, such as England and Wales (Wiggins *et al.*, 1998, Senior *et al.*, 1998) and in urban areas, for example, Glasgow (Sooman and Macintyre, 1995) and among social groups within, societies Tarimo and Webster (1994). Health in Zimbabwe varies spatially between provinces, districts and even in small areas such as urban centres (Chazireni and Harmse, 2013). Within the first decade after independence, Zimbabwe had the leading health in the region (Osika *et al.*, 2010). However the introduction of the Economic Structural Adjustment Programme (ESAP) in the early 1990s set the gradual decline in unemployment and this coupled with the introduction of user fees to access health services meant the less privileged people experienced difficulties in accessing health care services (Chitora, 1995, Nyazema 2010). The political and economic crisis resulted in severely reduced government funding and prolonged unbalanced distribution of health care resources' from towns to the marginal rural areas Sanders (2008).

This study seeks to examine the spatial variation of health in Masvingo province and propose recommendations to ameliorate the disparities in health. The Rio Political Declaration on health

advocated for the need to tackle socio-economic health challenges at a sub-national scale rather at a broader national scale for the improvement of health among socio-economic groups (WHO, 2011). The current study, therefore, examines the spatial patterns of health in Zimbabwe at the provincial scale. Health in this study is embraced as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1946:2).

## 2. The study area



**Figure 1: Location of Masvingo Province and districts in Zimbabwe**

The study area comprises the entire Masvingo Province, one of the ten administrative regions of Zimbabwe, situated in the south eastern part of Zimbabwe. The province is demarcated by Mashonaland East to the north, Midlands to the west, Matabeleland South to the south west, and Manicaland Province to the East and Mozambique to the south eastern border. The province has a spatial area of 56 666km and a total population of 1 485 090 people (ZIMSTAT, 2012). There are nine administrative districts in Masvingo Province, namely Bikita, Chiredzi rural, Chiredzi urban, Chivi, Gutu, Mwenezi, Masvingo Rural, Masvingo Urban and Zaka. The major urban centres in the province are Chiredzi, Masvingo and Mpandawana in Gutu district. There are also growth points: Nyika in Bikita, Jerera in Zaka and Chivi which are gradually developing and are therefore potential areas of influence on health development. Masvingo province experiences different climatic conditions and as such the

districts experience variations in agricultural potential. Gutu district, Masvingo and parts of Bikita tend to experience cooler temperatures and higher rainfall totals of about 600 to 650mm per year while the other districts receive 500 to 600mm per annum (Meteorological Department, 2006). The major crops grown are maize and other drought resistant cereals like sorghum and millet. Groundnuts, pumpkins, sweet potatoes are some of the common crops that are intercropped with maize to supplement nutrition.

### 3. Data Collection

Secondary data was used in this research study. Eleven identified indicator variables were used to measure health in Masvingo Province. These were, crude death rates, infant mortality Rate, percentage of people living in shacks, life expectancy, measles incidence rate, dysentery incidence rate, unemployment rate, number of households without toilets, diarrhoea incidence rate, underweight for ages 0-4years by district (% below line) and maternal mortality rate. Data for the first eight variables was obtained from ZIMSTAT (2012) while data for the last three variables was obtained from the Ministry of Health and Child Welfare (2011).

### 4. Data analysis

The health indicator variables used in this research were assigned codes to enable easy identification and analysis using Microsoft Excel spread sheet. The first step in the analysis of the data is the calculation of the simple indices. Where the indicators had negative correlation with health, the reciprocal of the variables were calculated first before calculating the indices. Calculation of reciprocals was done to ensure that the indicator would vary in the same direction with health. The reciprocal is obtained by dividing the indicator value into 1.

Once the indicator values were organised and the reciprocals for indicators that had negative correlation with health calculated, simple indices were then calculated using the following formula,  $I = 100 (OI) / \text{Base number}$ .

Where 1 = the index for the indicator and OI = the observed indicator value

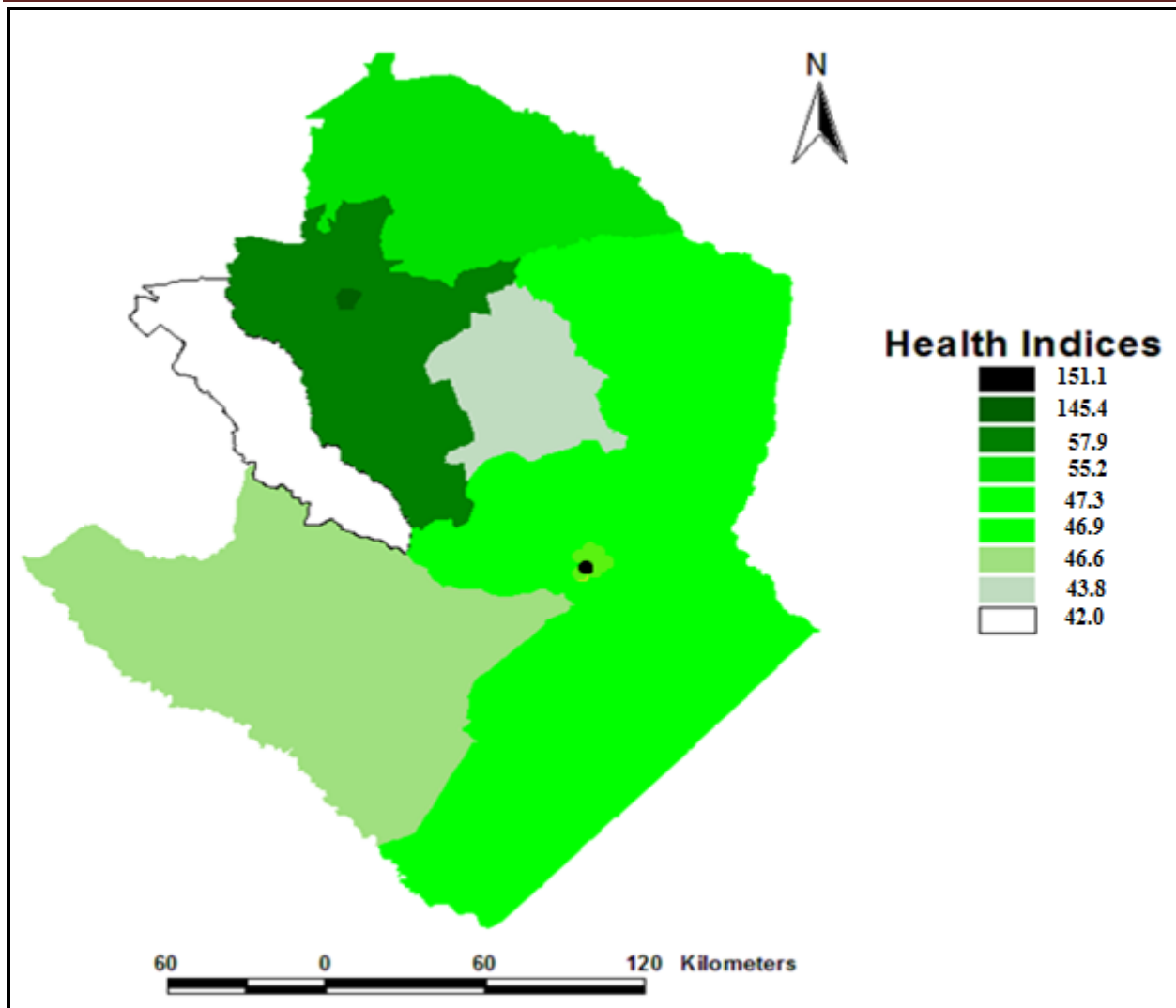
Base number = is the base number used as a standard. In this case it is the average of the organised indicator values.

The simple indices for each particular spatial unit (administrative district) were then combined into one value called the composite index. This particular value gives the overall level of the state of people's health. The composite index is essentially the geometric mean of the simple indices. The geometric mean is a type of average, which indicates the central tendency of a set of observations by using the product of their values (unlike the arithmetic mean which uses their sum). The function for the calculation of geomean available in Microsoft Excel is,  $=GEOMEAN(X_1: X_2 \dots X_n)$ , where  $X_n$  is the cell number containing the index value of the respective observed indicator. The calculated composite indices are given in Table 1.

**Table 1: Calculated simple indices and Composite index**

Masvingo Districts	Composite index	Rank
Chiredzi urban	151.1	1
Masvingo urban	145.4	2
Masvingo rural	57.9	3
Gutu	55.2	4
Bikita	47.3	5
Chiredzi rural	46.9	6
Mwenezi	46.6	7
Zaka	43.8	8
Chivi	42.0	9

The composite index values of Masvingo provincial districts above clearly indicates that health as measured by the selected health indicator variables used in this research reveal clear health disparities among the districts. Clearly urban districts experience better health as revealed by the statistical figures above where Chiredzi urban and Masvingo urban districts have higher health indices and therefore higher health status. Rural districts like, Bikita, Mwenezi, Zaka and Chivi on the other hand have lower health indices values and thus lower or poorer health. . These results concur with research from other scholars Montgomery, (2009) and WHO, (2008) that urban areas have better people's health and health care services than the rural counterparts.



*Figure 2: Spatial distribution of people's state of health in Masvingo Province*

The map (Figure 2) above illustrates the spatial variation of health among spatial units. The darker the colour on the map, the better the health while the lighter the colour the poorer the health of people in that particular district. The map creates a clear visual impression of the spatial variation of people's state health in Masvingo Province. The immediate noticeable pattern is that between rural and urban districts. Chiredzi urban and Masvingo urban districts experience better health than their rural districts counterparts.

The other distinctive pattern of health in Masvingo according to the research results is spatial variation of health between rural districts. Rural districts in Masvingo province do not experience equally uniform health. There are differentials in the status of health among rural districts with some districts experiencing poorer health than others. Masvingo rural and Gutu districts have higher health status than other rural districts. This is possibly due to the influence of the improved urban health spilling over to the semi-urban districts to which the two districts belong. This concurs with the findings of other scholars. A study by Chazireni and Harmse (2013) indicates that rural districts around the city of Harare like Seke and Goromonzi experience better health due to the influence on facilities in Harare city. This

also concur with the core-periphery theory of development which assert that regions close to urban centres experience better economic development that include better health due to the benefits of urban socio-economic development spillovers to surrounding rural areas. Forming the bottom three in districts health ranking are Chivi, Zaka and Mwenezi districts respectively. These variations are a result of complex differences in the spatial distribution of the determinants of health, which are not fairly distributed among districts, communities and individuals within the communities.

There is also distinct spatial health pattern that exist between urban districts with Chiredzi urban experiencing better health than the provincial capital, Masvingo Urban District. This pattern is probably a result of the economic and health provision challenges that the government funded health institutions have suffered in the past decade Nyazema (2010). This has resulted from severe health hazards like the acute sewage and garbage pollution in the city of Masvingo due to the failure of sewage reticulation system, compounded with the rapid population growth without corresponding growth or expansion of essential health services Mapira (2005). Chiredzi urban has tended to benefit from the financial support of Triangle and Hippo Valley sugar Estates. Triangle and Hippo valley hospitals and Clinics are better funded than government or mission Clinics /hospitals and therefore tend to provide better health care services, (ZIMSTAT, 2012) and (Masvingo Census Report, 2012). The population size of Chiredzi is also much smaller than Masvingo urban which means less strain in health service provision.

## 5. Recommendations

### ➤ Complementary and alternative medicine

The use of traditional medicine has been part of the healthy practice in Zimbabwe since time immemorial (Waite, 2000). There is considerable need to improve the use of complementary and alternative medicine, ethno-medicine. Results have indicated that most rural folks have limited access to contemporary medical care due to numerous socio-economic and physical factors. Despite the reports that an estimated 80% of Zimbabweans use traditional medicines for their health, the system remains pervasive in nature, lacking clear regulated and documented form of practice that has often left the poor sick people vulnerable to cheating and subsequent undermining of the value and relevance of supplementary traditional medicine in the contemporary world Maroyi (2013). A study in the Mutirikwi communal area of Masvingo rural district confirms the significance of complementary herbal medicine/medicinal plants in the treatment of abdominal diseases to improve health (Chigora, 2007: 1515). The Ministry of health and child welfare Masvingo Province should emulate the Mutirikwi community and spread the knowledge of the use of medicinal plants to cure disease to other districts in the Province. The establishment of herbal gardens at hospitals or clinics with the help of NGOs can help to promote the use medicinal plants with proper guide. In Manicaland Province, the establishment of herbal garden at Regina Choeli Mission Hospital in Nyanga District has gone a long way in teaching people of Nyamaropa area to use medicinal plants/ herbal medicine to improve their health.

### ➤ Focus on the prevention rather than curative healthcare

The promotion of basic health care infrastructure like toilet and protected water wells for domestic water in rural areas. It is more important and cost effective to prevent than to treat illness and diseases. There is need for the Ministry of Health and Child Welfare to seek assistance and partner with NGOs to promote hygiene and safe protected drinking water. This can be achieved through the provision of basic building materials for building toilets for individual rural households as well as safeguarding their domestic water sources like wells and bore halls to reduce water borne diseases like cholera, typhoid, and diarrhea which according to the provincial department of epidemiology are among the major

challenging communicable diseases in most rural districts in Masvingo province. A study by UNICEF (2009) established that Masvingo Province was ranked the lowest in terms of provision of safe drinking water at national level.

➤ **Increasing medical care personnel in rural hospitals and clinics**

It emerged in the study that there is severe shortage of Doctors and Nurses in hospitals and clinics in some administrative districts in Masvingo. The doctor to patient ratio is very high especially in rural hospitals and this help explain why many rural districts have poorer health compared to their urban area counterparts Central Statistics Office (2012). It is recommended that the Ministry of Finance and Ministry of Health and Child Welfare should work hard to attract doctors, nurses and other health care professionals to the rural districts. The higher death rates in rural districts compared to the urban could be a result of poor diagnosis and treatment by inexperienced junior medical staff as well as inadequate medical drugs to cope with the rising demand. The Ministry of Health and Child welfare should be allocated a bigger budget in order to cope with the increased demand health services.

➤ **Establishment of mobile health clinics in remote areas**

The land redistribution exercise has seen people staying in places far away from clinics and hospitals minimizing their access to health care and thus contributing to lower health. This has been attributed to as one of the major reasons behind a lower health status of rural districts in Masvingo province. The Ministry of Health and Child Welfare should therefore introduce the use of mobile clinics to help easy the access problem particularly in resettlement areas as well as other remote areas in rural districts. This can be achieved by partnering with Non Governmental Organisations in the country to ensure provision of basic health care to the marginal areas. The provision of mobile clinics will help to provide medical care to infants, breast feeding mothers as well patients with chronic sicknesses, HIV/Aids and diabetes among others to improve health. This is assumed to bring a reduction in infant mortality rates and immediate detection as well as eradication of communicable diseases like cholera, dysentery diarrhea among other diseases.

➤ **Revival of community health worker programme**

The Ministry of Health and Child Welfare (MOCHW) should revive the role of community health worker. From the interview held with the Masvingo Provincial Information officer, it emerged that there is no longer involvement of community health due to financial challenges to keep the programme running. In order to improve people's health, there is need to involve them in health and decision making and this can better be achieved through the involvement of community health workers, who speak their language and share similar cultural values. Any health related information is likely to be adopted and understood better. The revitalization of community health workers will help to teach people hygienic practices to lower poor hygiene oriented diseases like cholera, typhoid, and dysentery among others. Community health workers are also fundamental in detection of possible dangers or complications in pregnant woman at or before birth and this will in turn lower the maternal mortality rates which are high in most rural districts compared to their urban counterparts. Community health workers need to be valued since they play a key role in areas where both Doctors and Nurses cannot reach at grass roots level of health care system. The Ministry of Health and Child Welfare (MOCHW) should consider having at least two community health workers per ward in rural districts to enhance health or hygiene information dissemination to rural areas where many people hardly have access to Doctors in their life time.



## 6. Conclusion

This study demonstrated that there are severe health inequalities in Masvingo province. The spatial distribution of people's health is influenced by both physical and human-centred forces. Districts with an urban inclination generally have far much better health compared to those which are rural biased. Administrative districts with a cooler and wet climate in Zimbabwe generally have better health than the hot dry once. Numerous recommendations were made for the development of people's health in the province. It is hoped that if these recommendations are taken into account, there is going to be reduction in health inequalities that are currently predominant in the province. It is not intended that the reduction of the inequalities in health be achieved through absolute reduction in level of health in the urban centres but by stimulating faster development of health in the rural or less developed districts.

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