

Research article

HEALTH SERVICES DELIVERY AND THE INCREASE OF POVERTY IN TANZANIA: THE INVISIBLE FACTOR

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Abstract

Health services delivery has impact on the persisting poverty in developing countries. However, data to indicate how health services delivery leads to poverty are missing. A study to analyze the impact of health services delivery on poverty reduction was carried out in Kondoa and Dodoma urban districts, Dodoma region, Tanzania. Specifically the study examined how health service delivery reinforces pre-existing poverty situation in Dodoma region by focusing on Government and Faith-Based Organizations (FBO's) health facilities. A sample of 394 respondents was included for this study. Data analysis was based on inferential statistics whereby multiple linear regression models were used to determine how health service delivery facilitates pre-existing poverty situation in Dodoma region. The results showed that, health services delivery by Government and FBOs health facilities increases the level of poverty in the region. To get health services, one has to incur time by long waiting time for treatment compared with other productive development activities, lack of drugs leads to deaths which reduce human resources, walking long distances consumes previous time which would have been spent for other productive development works, lack of preventive facilities increases chances of getting diseases while increase in corruption leads to inequalities in access

and delivery for the health services. High costs in health services delivery hamper poverty reduction efforts. Poverty reduction endeavors need to address these problems.

Keywords: Health services delivery, poverty reduction, Tanzania, Government and Faith-Based Organizations.

1.0 Introduction

Poverty is the status of a household that has fallen below a socially-defined minimum level of well-being, usually manifested with hunger, sickness, powerlessness and illiteracy (World Bank, 2011). The measure of well-being is commonly based upon a household's consumption level (income poverty) and/or indicators such as literacy or health status. Critical factors causing poverty and vulnerability include unemployment and underemployment¹; lack of income and investment (Sachs, 2005), unavailability of agricultural inputs and implements; excessive post-harvest losses; poor infrastructure and unreliable markets (Mshana and Hyandye, 2009). Others are cultural factors such as stigmatization, natural factors such as extreme weather events; macro-economic instability and macroeconomic policies such as cost sharing, privatization and retrenchments (Bratton *et al.*, 2005); inadequate levels of good governance and responsible leadership at the grassroots level².

The delivery of appropriate health services within communities is credited worldwide for its contribution on poverty reduction and facilitating achievement of Millennium Development Goal (MDG) number Two (UN, 2005). However Research in South African hospitals has reported that deaths among severely ill children are due to poor health services (Ashworth, 2004). In Mexico, case control studies have demonstrated relationships between poor adherence to standard treatment guidelines and pre-term delivery as well as prenatal mortality (Cruz-Anguiano *et al.*, 2004).

In Tanzania it has been reported that lack of economic growth due to poor production both in agriculture and industry facilitated the problem of poor health services. Lack of income to the communities, poor investment and poor marketing of products are related to the persistence of poverty in Tanzania (Sachs, 2005). Structural functionalism theory also insisted that failure of an organ to perform its activities increases poverty in a given nation (McClelland, 2000). In this case, efforts to address the causes of poverty in Tanzania have been focused to the major factors and the minor factors have been neglected and considered as invisible. As a result issues related to how

¹ Nsallu, W. N. (2009), *Socio-economic empowerment for Youth infected and affected with HIV/AIDS: A case of mambo poa youth resource center in Dodoma municipality, Tanzania*, a thesis report for award of Msc in community economic development, the Open University of Tanzania.

² Kouzes, J. and Posner, B. (2007), *The leadership challenge*, CA, Jersey.

health services are effectively provided to communities of Tanzania are not seriously considered as the major cause of poverty. However noted that health services delivery have a very strong relationship with the poverty situation in the country.

This paper therefore is intended to present how health service delivery reinforces pre-existing poverty situation in Tanzania. Specifically, it analyzes the impact of health services delivery on efforts towards poverty reduction in Dodoma region by focusing on health service delivery in Government and Faith-Based Organizations (FBO's) health facilities.

2.0 Material and Methods

2.1 Description of the Study Area

The study was conducted in Dodoma region, which included Dodoma urban and Kondoa districts. Dodoma is one of the 30 regions in Tanzania. It is almost centrally located on the Tanzania Mainland between 5° 30' and 7° latitude and the 36° longitude. The region is administratively divided into seven districts namely Dodoma urban, Chemba, Chamwino, Bahi, Kondoa, Mpwapwa and Kongwa (NBS, 2012). The region covers an area of 41,310 km² and has 2,083,588 inhabitants (NBS, 2012). The region is among the five poorest regions in Tanzania Mainland (NBS, 2009). As illustrated by NBS (2012) more than 34% of the people in the region live below the basic need poverty line. Additionally, the health services delivery are still unfavourable whereby high maternal mortality rates, high under five mortality rates and high prevalence rate of HIV/AIDS are the primary health problems facing the region³.

3.2 Research Methods

A cross-sectional research design was used during data collection. The study also adopted a survey, interview and participation observation methods to collect the primary data. The cluster sampling followed by the simple random sampling techniques was used in this study. Thus, Dodoma urban and Kondoa district were selected for the study. Thereafter, 10 wards were selected randomly in each district followed by two villages from each ward. Based on the population of the two districts, a sample of 394 respondents was selected for this study (169 from Dodoma urban district and 225 from Kondoa district). The sample was calculated using the formula indicated in equation 1 below:

$$n = (Z^2 pq)/d^2 \dots \dots \dots \text{Equation 1 (Kothari, 2005)}$$

³ Nassoro, M. (2010), *Dodoma Regional Annual Plan 2010-2011*, Dodoma General Hospital, Dodoma, Tanzania., Available at: [<http://www.tanzania.go.tz/regions/dodoma/pro>], site visited on 01/09/2010.

Where;

n = Sample size when population is greater than 10,000

Z = Standard normal deviate, set at 1.96 (≈ 2.0) corresponding to 95% confidence level,

p = Proportion in the target population estimate; if not known use 50%.

d = Degree of accuracy desired, set at .05 or .02.

q = 1.0 – P

p = $\frac{\text{population of two districts}}{\text{Total population of the region}}$

$$p = \frac{754271}{1,698,996} = 0.44$$

$$\therefore q = 1 - 0.44 = 0.56$$

Therefore the sample size was

$$n = \frac{(2)^2 \times 0.44 \times 0.56}{(0.05)^2} = \frac{0.985}{0.0025} = 394 \text{ respondents in the two districts}$$

For individual district, respondents were calculated as follow.

$\frac{\text{Population of individual district}}{\text{Total population of the two districts}} \times 394$

For Dodoma Urban district = $\frac{324447}{754271} \times 394 = 169$ respondents.

For Kondoa district = $\frac{429824}{754271} \times 394 = 225$ respondents.

The collected quantitative data were coded into the computer program (SPSS) window version 16.0 software for analysis. Furthermore, open ended questions were transformed into Likert scale through index making for further analysis. The analysis of data was based on inferential statistics analysis whereby multiple linear regression models were used to determine the impacts of health services delivery by Government and FBO's health facilities on poverty reduction in the two districts as shown in equation 2.

$$Y_1 = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \dots + b_iX_i + e$$

Equation 2

Where:

Y_1 = (dependent variable) health services delivery for poverty reduction

b_0 = a constant term showing intercept of factors influencing health services delivery for poverty reduction

b_1 - b_i = coefficient or parameter for the independent variable

X_1 = independent factor showing cost for treatment
 X_2 = independent factor showing waiting time for treatment
 X_3 = independent factor showing drugs availability
 X_4 = independent factor showing distance to health care centers
 X_5 = independent factor showing availability of preventive facilities
 X_6 = independent factor showing situation of corruption
 e = standard error

4.0 Results and Discussion

4.1 Health Services Delivery by Government and FBO's Health Care Facilities and Poverty Reduction

Health services provided by Government and FBO's health facilities in Dodoma region was found not to meet the expectation of respondents and thus its contribution to poverty reduction efforts pose a dilemma. For instance 74.6% of respondents in Dodoma urban and Kondoa districts indicated that health services provided by Government and FBOs health care facilities were not adequate to ensure reliable labor force for high productivity and their social and economic development. In contrary 13.5% respondents commended on the contribution of health care facilities in stimulating economic development and thus poverty reduction. However, 12% of respondents were undecided as shown on Figure 1. According to Gounder and Xing, (2012) healthier population ensures human resources for economic growth. This implies that in order to have economic growth delivery of health services to the targeted community is inevitable.

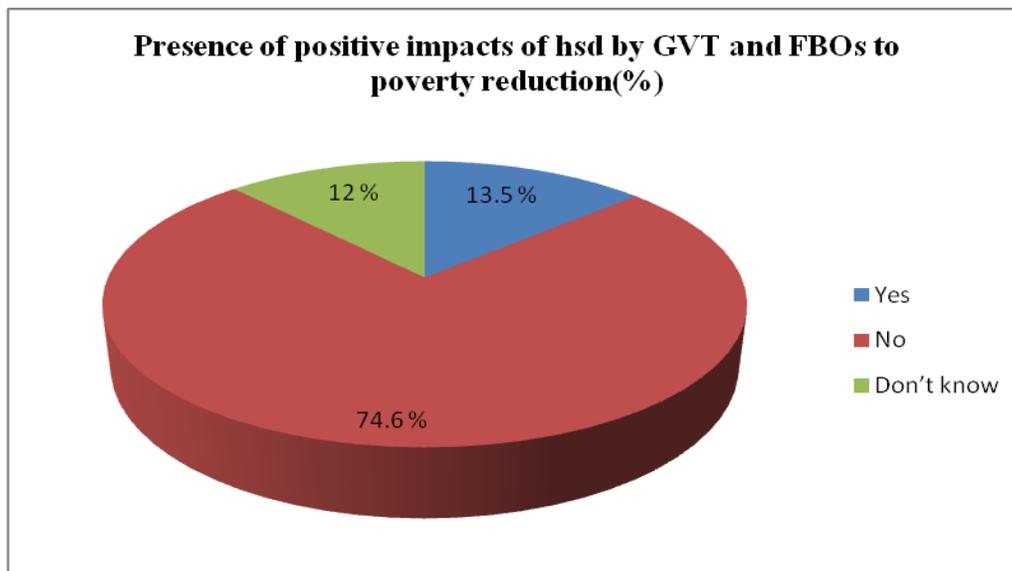


Figure 1: Presence of positive impacts of health services delivery on poverty reduction (Source: Fieldwork Survey, 2012).

4.2 Constraints of Health Care Facilities on influencing Poverty Reduction

Findings of this study indicate several factors which impact Government and FBOs health care facilities to contribute significantly towards poverty reduction efforts. Some of these factors are as shown on Figure 2. High costs for treatment and transport compared to productive development activities were the leading factors (30.8%). While walking distance compared to time spent on productive activities was the least in terms of frequency, i.e. (5.2%) of respondents. Other reasons are shown in Figure 2.

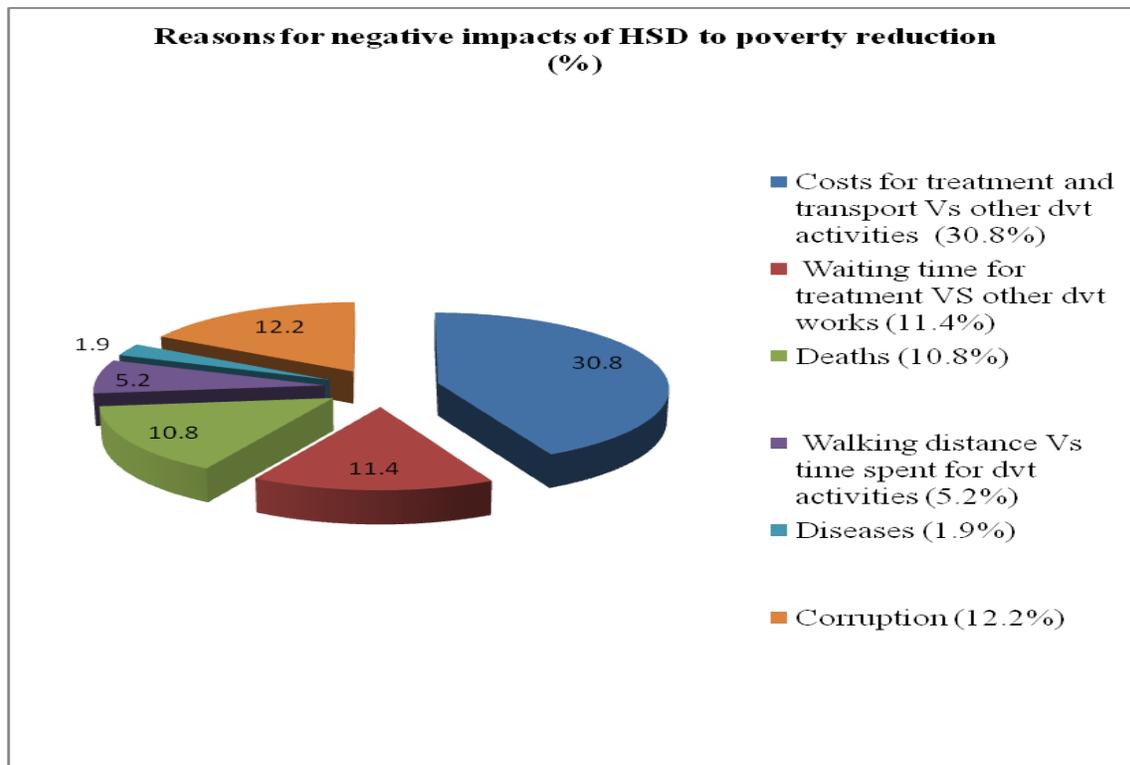


Figure 2: Reasons for negative impacts of health services delivery on poverty reduction (Source: Fieldwork Survey, 2012).

The findings of this study do concur with those of Mamdani and Bangser (2004) who observed that, user fees was not the only obstacles to access health services but also costs related to transport, payment for drugs and supplies, time spent away from productive activities and bribes were affecting seriously productive activities of community and thus accelerate the pace of poverty. Health care charges have therefore placed an impossible burden on the poorest households. Many failed to access primary health care when they needed it most and many more failed to obtain necessary referral for more skilled care. Hence, these increase deaths and chronic diseases, as well as feeble people who are not very productive in Dodoma urban and Kondoa districts. The reasons for the current health services delivery not impacting positively on poverty reduction are as indicated in Table 1.

Table 1: Multiple linear regression results for the impacts of HSD on poverty reduction

Xi	Yi $R^2 = 0.3820$			
	B	Beta	T	Sig
Constant	2.187	-	15.400	0.000*
Costs for treatment	0.030	0.083	1.178	0.240ns
Waiting time for treatment	0.015	0.039	0.688	0.492ns
Deaths	0.012	0.035	0.604	0.547ns
Distance to health care centers	0.041	0.095	1.721	0.086ns
Diseases	0.040	0.118	1.992	0.047*
Corruption	0.057	0.148	2.748	0.006*

* = Significant at 95% confidence level.

(Source: Fieldwork Survey, 2012).

Where: Xi = independent variables, Yi = Gross point average, R^2 = Coefficient of determination, ns = not significant at 95% confident level, B = Regression coefficient, Beta = Standardized regression coefficient.

Results in Table 1 show positive correlation on the factors for the impacts of health services delivery by Government and FBOs health care facilities on poverty reduction.

Through multiple linear regression analysis indicated in Table 1, coefficient of determination (R^2) obtained was 0.3820. This indicates that, the mentioned independent variables accounted for 38% of the variation in the dependent variable model, where the listed independent variables determined the dependent variable by 38%. The remaining variation in the dependent (62%) is accounted by other factors not included in the model.

The asterisks for significance level at 95% confidence interval indicate variables that are statistically predictors of the impacts of health services delivery by Government and FBOs' health care facilities on poverty reduction. The regression coefficient allows determination of the relative importance of the predictors that are shown by the size of regression coefficients. Thus, best predictor variables which had the greatest standardized regression coefficient (beta weight) were increase of corruption hence no equity (0.148), followed by lack of preventive facilities hence increased chances of getting diseases (0.118), long walking distances compared to time spent on productive development activities (0.095), high costs for treatment compared to development activities (0.083), long waiting time for treatment compared to productive development works (0.039) as well as lack of drugs leading to deaths and reduction of human resources (0.035).

Furthermore, Figure 3 shows how the independent variables are scattered along the linear regression model.

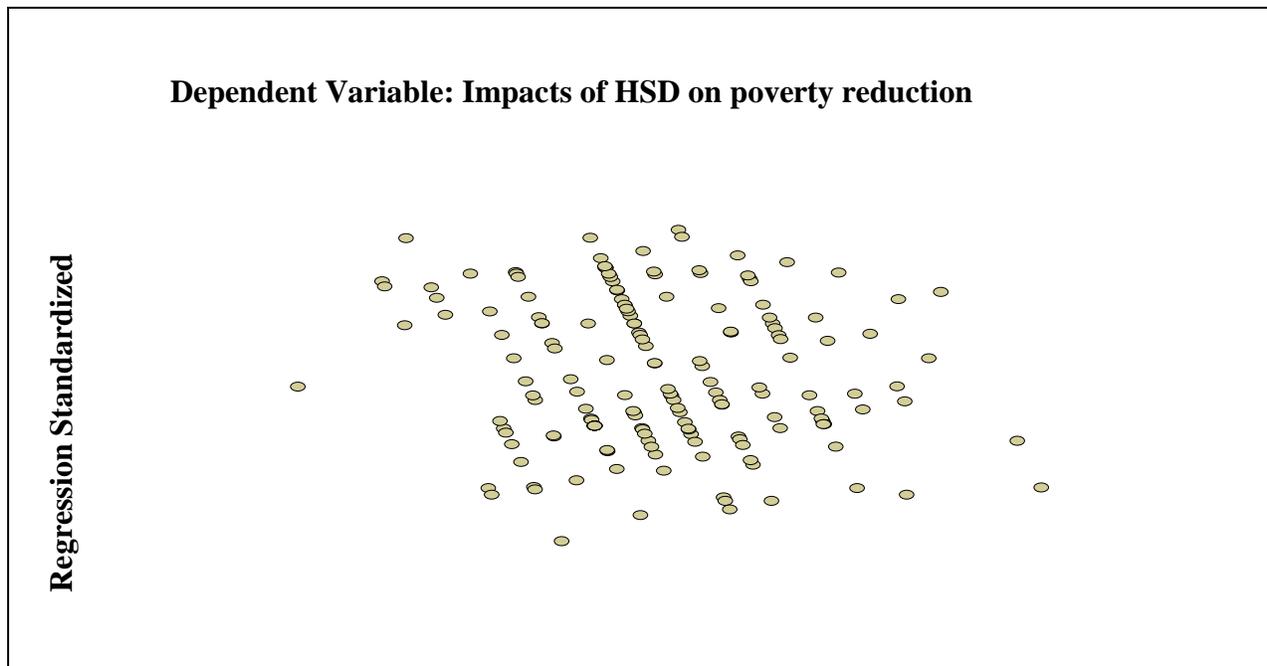


Figure 3: scattering of independent variables along the linear regression model (Source: Fieldwork Survey, 2012).

As clarified by Gupta (1999)⁴, who made a study on SPSS for beginners, the smaller the distance between the diagonal line and the dotted curve, the higher the chance of the distribution of the variables. Therefore, the mentioned independent variables in Table 1 determine the impacts of health services delivery by Government and FBOs health care facilities on poverty reduction at different levels of a unit change. Units change in a particular independent variable results into the increase or decrease in poverty by a particular unit of change in Dodoma urban and Kondoa districts. Thus, different factors influence health services delivery and hence poverty reduction at different levels of unit changes, positively or negatively as detailed in the following sections:

4.2.1 Costs for treatment

Although the cost of treatment under t-test is not significant ($p = 0.240$) as shown in Table 1, costs for treatment affect poverty reduction in Dodoma urban and Kondoa districts. A positive regression coefficient ($B = 0.030$) implies that, an increase of 1 unit of cost for treatment increases poverty situation within Dodoma urban and Kondoa districts by a factor of 0.083, while an unit decrease of costs in treatment decreases poverty in the two districts by a factor of 0.083. The results corroborate to the study by Lillie-Blanton *et al.* (2004). In their study on the disparities in cardiac care and the rising challenge of healthy people they reported that, raising health care costs makes it difficult for families to pay for their medical bills and when they cannot afford to pay, they do not receive health

⁴ Gupta, V. (1999), SPSS for Beginners, available at: [<http://www.vgpta.com>], site visited on, 17/02/2012

care, hence, reduce access to health care. Furthermore, WHO (2003) argued that, high costs of ill health reduces economic growth and limits the resources Governments have for investing in public health. Therefore, spending money for illness increases poverty situation in Dodoma urban and Kondoa districts.

4.2.2 Waiting time for treatment

Although not significant ($p = 0.492$), waiting time for treatment affects poverty reduction in Dodoma urban and Kondoa districts. A positive regression coefficient ($B = 0.015$) implies that, the increase of 1 unit of waiting time for treatment increases poverty situation in the two districts by a factor of 0.039, while a unit decrease of waiting time for treatment decrease poverty in Dodoma urban and Kondoa districts by a factor of 0.039. The results match to the study of Mamdani and Bangser (2004) as well as Jappelli *et al.* (2006). While Mamdani and Bangser (2004) noted that time spent away from productive activities is critical for people living in poverty, Jappelli *et al.* (2006) observed that, patients who face long waits before treatment is received cannot work or can work fewer hours than desired, hence loss of earnings. Therefore, spending more time in waiting for treatment reduces time for other productive development activities and thus increases poverty situation in Dodoma urban and Kondoa districts.

4.2.3 Deaths

Despite the fact that this factor was not statistically significant ($p = 0.547$), a positive regression coefficient ($B = 0.012$) for deaths implies that, the increase of 1 unit of deaths increases poverty situation within Dodoma urban and Kondoa districts by a factor of 0.035, while decrease in deaths decreases poverty in the two districts by a factor of 0.035. The results corroborate the study by Newton *et al.* (2010) who made investigated the impacts of poor quality medicine in developing world and found that, lack of medicine in the health sector increases morbidity and mortality and thus, increases deaths within the community. Therefore, lack of drugs in health care facilities increases deaths which in turn decreases human resources and hence, increases poverty situation in Dodoma urban and Kondoa districts.

4.2.4 Distance to formal health care facilities

According to the findings of this study distance to health care facilities affects efforts for poverty reduction in the study area. A positive regression coefficient ($B = 0.041$) implies that, the increase of 1 unit of distances to health care facilities increases poverty situation within Dodoma urban and Kondoa districts by a factor of 0.095, while the decrease of distance to health care facilities decreases poverty in the two districts by a factor of 0.095. These results are in line with the findings of Mamdani and Bangser (2004) who related the loss of time with the increase of poverty within the communities. Hence, time lost due to long walking distances seeking for health services reduces time for productive development works and thus increases poverty.

4.2.5 Diseases

Diseases were found to be statistically significant ($p = 0.047$) affecting poverty situation in the study area. A positive regression coefficient ($B = 0.040$) implies that, the increase of 1 unit of diseases increases poverty in the two districts by a factor of 0.118, while a decrease of diseases decreases poverty in Dodoma urban and Kondoa districts by a factor of 0.118. These results are in line with the findings of Mehdi (2007) who made a study on the impacts of preventive health care on Indian industries and economy and found out that, diseases increase absenteeism, leading to poor performance at work. Therefore, reduce work-force and hence, increases poverty.

4.2.6 Corruption

Corruption was found to be significantly ($p = 0.006$) affecting poverty reduction efforts in Dodoma urban and Kondoa districts. A positive regression coefficient ($B=0.057$) implies that, the increase of 1 unit of corruption in health services delivery increases poverty situation within Dodoma urban and Kondoa districts by a factor of 0.148, while the decrease of corruption decreases poverty in Dodoma urban and Kondoa districts by a factor of 0.148. These results match with the findings of Duqurav (2011)⁵ who found out that, corruption results in social inequality and widespread income gap between the rich and the poor. These inequalities increase poverty and lack of basic needs like food, water and drugs. Therefore, corruption reduces access to health care services and hence, increases poverty in Dodoma urban and Kondoa districts. Furthermore, leadership theory has a very important reflection on the findings of the impacts of health services delivery on poverty reduction. Unavailability of a strong leadership in health care centers in Dodoma urban and Kondoa districts inhibit implementations of daily activities by workers. Thus, it leads to time mismanagement and corruption resulting into poverty.

5.0 Conclusions, Policy Implications and Recommendations

Health services delivery situation in the two districts are characterized by high costs which hamper poverty reduction efforts. Poverty reduction endeavors need to address these costs. To get health services, one has to incur time cost by long waiting time for treatment compared with other productive development activities. Lack of drugs leads to deaths which reduce human resources, walking long distances consumes previous time which would have been spent for other productive activities. Lack of preventive facilities increase chances for getting diseases while increase in corruption leads to inequalities in accessing and delivery of health services.

In view of the major findings of the study and conclusion, the following recommendations for policy and decision makers of the Ministry of Health and Social Welfare and the FBOs are made in order to stimulate and promote health services delivery for the purpose of reducing poverty in Tanzania.

⁵ Duqurav, M. (2011), *Struggle for new Tanzania*, available at:
[<http://www.duquravmakange.com/>] site visited on 20th may, 2012

- i. The Government of Tanzania through the Ministry of Health and Social Welfare and FBOs should increase budget to the health sector to improve the status of health services delivery. This would enable health care facilities to maintain essential services such as drugs, ambulances and laboratory equipments.
- ii. Furthermore, the Tanzanian Government through the Ministry of Health and Social Welfare and FBOs should ensure availability of professionals and community health workers in order to provide appropriate service. A comprehensive training programme for basic and continuing education should be made to the health staff. Curricula in health education should also be modernized to take account of the latest developments which also would insist ethics in working stations by health staff.
- iii. The Tanzanian Government through the Ministry of Health and Social Welfare as well as FBOs should ensure effective management of health plans. Improvement in salaries and work conditions is a critical factor for success. Thus, there should be additional flexible career paths, supportive supervision, recognition of credit hours and continuing professional development and fostering motivation and retention strategies.
- iv. The Ministry of Health and Social Welfare as well as FBOs should improve health infrastructure especially in remote villages as it will help to avoid unnecessary time lost and money that could be used for other development activities.

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