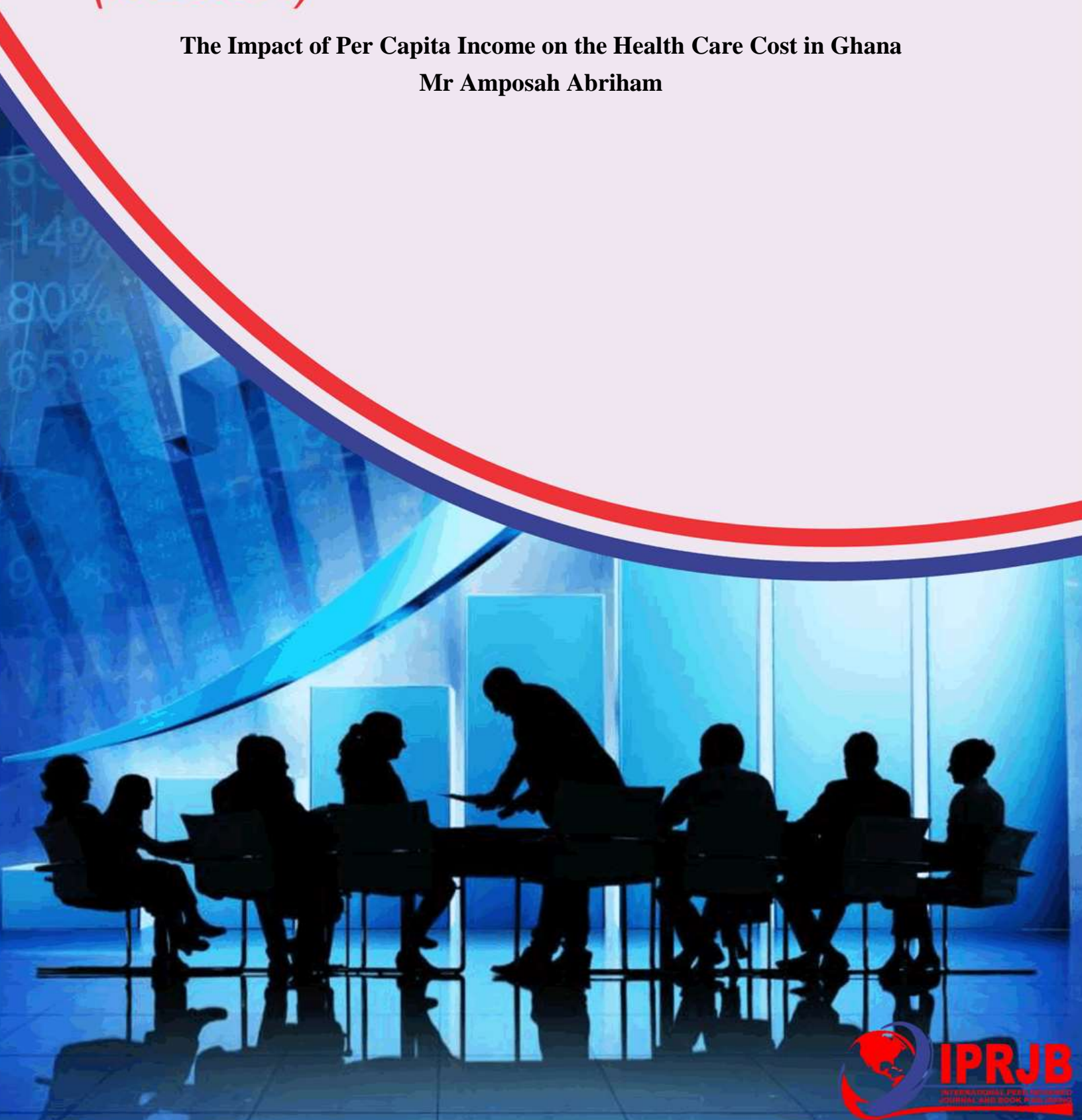


International Journal of **Economics** *(IJECON)*

The Impact of Per Capita Income on the Health Care Cost in Ghana

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Article History

Received 2nd February 2023

Received in Revised Form 27th February 2023

Accepted 6th March 2023



Abstract

Purpose: This study was intended to study the impact of per capita income on health care cost. The objective of the study was to examine the relationship between per capita income and health care cost of patients. Secondary data sources were used and data was analyzed using the regression statistical tool at 5% level of significance which was presented in frequency tables and percentage. The study majorly focuses on the statistical relationship between per capita income and health care cost in Ghana.

Methodology: This study adopted both descriptive and explanatory research design. This study utilizes secondary data extracted from respondents used for the study. With the secondary data collected, returns on assets and equity for the relevant years were computed.

Findings: The study findings revealed that there is a relationship between per capita income and health care cost in Ghana; based on the findings from the study, efforts should be made by the Ghanaian government and stakeholders in ensuring an affordable health care cost for all irrespective of class and social standing.

Unique Contribution to Theory, Practice and Policy: The study recommends that the health care cost should be directly proportional to the monthly income of the people in Ghana.

Keywords: *Impact, Per Capita Income, Health Care Cost*

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INTRODUCTION

Per capita income in Ghana as we all know has a lot to do with the day to day live of Ghanaians as it determines the quality of services rendered with the health care sector having a lot to do with per capita income of Ghana. It is important for policymakers to know the relationship between health care expenditure and income, knowing this relationship helps them to make wise judgments, plan health reforms, and allocate resources efficiently. In Ghana, health care cost is a direct consequence of per capita income as the amount of money earned determines the quality of health care rendered Okoro (2011: 46).

Per capita income is simply means the mean money income received in the past 12 months computed for every man, woman, and child in a geographic area. It is derived by dividing the total income of all people 15 years old and over in a geographic area by the total population in that area (Wikipedia). Per capita income for a geographical area or country like Ghana has a lot to do with economic development amongst health care cost. Health is a delicate sector in Ghana; a healthy nation is a nation that achieves great economic development and progress. Per capita income determines in some sort the health care cost. Ghana being a developing country needs to know the unique relationship between the per capita income and health care cost. Understanding this would help in programming holistic health care laws that would assist and protect the poor who do not have access to quality health care. Ghana is a country blessed with several health care outlets ranging from teaching hospitals to clinics and health research institutes just to mention but a few. The availability of these centers isn't enough in confronting health care challenges in Ghana. The holistic improvement of health care goes beyond just building of hospitals. These hospitals need to be affordable to the poor masses a vast majority which live on less than a dollar daily.

Objective of the Study

It is important for policymakers to know the relationship between health care expenditure and per capita income, knowing this relationship helps them to make wise judgments, plan health reforms, and allocate resources efficiently and at the same time help in accommodating the poor in quality health care delivery bearing in mind the health care cost.

Statement of the Problem

Quality health care delivery and its cost has been a major problem in Ghana, a vast majority of Ghanaians are being denied quality health care delivery as a result of its cost. This sole problem has led us into this research work in other to know the relationship between health care cost and per capita income in other to advice policy makers in ways of making holistic plans that would have a positive far-reaching effect on Ghanaians, especially the poor in the society.

Significance of the Study

A cardinal significance of this study seeks to advice policy makers on the best way to make robust plans on quality health care cost in relation to per capita income. This would help policy makers in effective distribution of resources. This study seeks to recommend ways of making health sector accessible by all and sundry which would help the poor gain access to quality health care delivery.

Research hypothesis

H₀: There is no significant impact of per capita income on health care cost.

H₁: There is a significant impact of per capita income on health care cost.

LITERATURE REVIEW

Theoretical Framework

There are two approaches to estimating the effect of health on economic growth. The first is to take estimates of the effect of health from microeconomic studies and use these to calibrate the size of the effects at the aggregate level. The second is to estimate the aggregate relationship directly using macroeconomic data. Research examining the link between health and economic outcomes, at either the individual or national level, has generally examined two types of health measures: inputs into health and health outcomes. Inputs into health are the physical factors that influence an individual's health. These include nutrition at various points in life (e.g., in childhood, and in adulthood), exposure to pathogens, and the availability of medical care. Health outcomes are characteristics that are determined both by an individual's health inputs and by his genetic endowment. Examples include life expectancy, height, the ability to work hard, and cognitive functioning. There are two critical issues relating to human capital—the extent of education and level of health (Weil, 2007).

Nevertheless, a good part of the literature on the microeconomics of health and economic outcomes examines the effects of varying health inputs on health outcomes themselves, human capital attributes that are contingent on health outcomes, and wages. Most of these studies have relied on micro-level data which focus on household and household members. Such studies include Behrman and Deolalikar (1988) and Strauss and Thomas (1998). In many studies, more than one of these groups of dependent variables is examined. For example, Alderman et al (2006) examined the long-run effects of childhood nutrition, using a variety of natural and manmade experiments that provide exogenous variation in nutrition and found that better nutrition leads to improvements in school completion, intelligent quotient (IQ), height, and wages. Similarly, Thomas et al. (2004) found positive effects of adult nutrition on labor input and wages. Another branch of the literature also attempted to answer the question how much do differences in health contribute to differences in income by focusing on health outcomes rather than health inputs, and conducting a macroeconomic analysis rather than individual level (Barro, 1996; Bhargava et. al 2001; Bloom, et al. (2000), Bloom and Malaney (1998), Bloom et al. (1999)). These studies present regressions of GDP per capita, GDP growth, or TFP on some measure of health outcomes, as well as a standard set of controls. Some of the studies reached similar quantitative results. Growth effect of increasing life expectancy by 5 years from the studies ranged between 0.006 (Sachs and Warner, 1997) to 0.58 (Barro and Lee, 1994).

However, the literature on the relationship between income/growth and health at the macro level is generally inconclusive (Gupta and Mitra, 2003; World Bank, 2004). In a study of 15 states from India for the period 1973/74, 1977/78, 1983, 1987/88, 1993/94, 1999/2000, Gupta and Mitra

(2003) show that per capita public health expenditure positively influences health status, that poverty declines with better health, and that growth and health have a positive two-way relationship. Also, in a study of India, the World Bank (2004) examines the impact of per capita GDP, per capita health expenditure and female literacy on infant mortality using state-level data over the period 1980-99. The study observes that both per capita public spending on health and per capita GDP are inversely related to infant mortality rate, but the results were observed not to be very robust to alternative specification of the model. By using the adult survival rate as an indicator of health status, Bhargava, et al. (2001) finds positive relationship between adult survival rate and economic growth. Results remain similar when adult survival rate is replaced by life expectancy. However, fertility rate has a negative relationship with economic growth.

Due to the fact that life expectancy is highly influenced by the child mortality, growth in workforce is mostly lower than population growth. Consequently, high fertility rate reduces the economic growth by putting extra burden on scarce resources. In the case of Ghana, most of the studies have related growth to poverty while omitting the human capital (both in terms of education and health) dimension of the analysis. Some of such recent studies include Aigbokhan (2000), Ali (2000), Amaghionyeodiwe and Osinubi (2004) and Addison and Wodon (2007). While there is any doubt that a possible relationship between health and economic growth could exist, a fundamental reason why it is difficult to reach a definitive conclusion regarding the link is the web of interrelationships that is involved in the determination of a nation's income. Good health is very important in an economy, so also are other factors such as investment, trade, etc. In summary, there is no consensus on the relationship between growth and health in Ghana. Consequently, the focus of this study is to establish the relationship between health and economic growth in the case of Ghana, the channels in the relationship as well as the direction of causation.

Health Care Spending and Per Capital Income in Ghana

The rate of growth in health care spending in the Ghana has outpaced the growth rate in the gross domestic product (GDP), inflation, and population for many years. Between 1940 and 1990, the annual rate of growth in real health spending per capita ranged from 3.6% in the 1960s to 6.5% in the 1990s. Correspondingly, the share of GDP accounted for by health care spending rose from 4.5% in 1940 to 12.2% in 1990. In 2005 health care spending was nearly \$2 trillion, or \$6,697 per capita, which represents 16% of GDP (Catlin et al., 2007). The sustained increase in Ghanaian health spending over the previous four and half decades is likely to continue, and total spending on health is projected to reach \$4 trillion, 20% of GDP, by 2015.

Not surprisingly, the dramatic increases in health care spending and the share of GDP devoted to health care have raised concerns about the negative impact of health care cost inflation on the GHANA economy. In an era of global economic markets, these concerns are reinforced by the status of the Ghana as a spending outlier among competing nations. The major concern is that rapid increases in health care spending can affect major economic indicators such as per capita GDP, employment and inflation. The effects are likely to occur across all sectors of the economy – governments, businesses and households – as all these interrelated sectors play an important role in the provision, financing and consumption of health care in the US. For example, Federal, state

and local governments collect taxes from businesses and households to finance public health insurance programs and to directly provide health care to households. Businesses provide employment to US households and also provide health insurance to their employees. Households are the final consumers of health care and also bear some incidence of health care costs. In this report we separately identify the effects of health care costs on the aggregate economy and on each one of these interrelated sectors. However, it is important to note that the effects of health care costs on one sector are likely to affect outcomes in other sectors. For example, faced with rising health care costs governments might attempt to reduce health spending by reducing eligibility for public health insurance, consequently increasing insurance rates among households. The increase in health care costs might also prompt governments to raise taxes, increase borrowing or reduce investments in other critical sectors such as education and infrastructure, suppressing economic growth and affecting both businesses and households. Similarly, US companies faced with rapidly growing health care costs might reduce employment and investments in the US economy. Rising health care costs could also fuel inflation in the Ghana and make Ghanaian goods and services less competitive in international markets over time, because increasing health care costs might eventually be reflected in higher product prices. Since most other nations do not have employer-sponsored health insurance, companies in those nations may be better able to keep prices low.

Finally, high health care costs could reduce access to health care, bankrupt consumers and deplete retirement savings. However, the view that rapidly rising health care spending harms the Ghanaian economy is not without dissenters, and some prominent economists view increases in health spending as having a neutral, or perhaps even a positive, economic effect. For example, Pauly (2003) has argued that rising health care spending naturally results in rapid growth in the health care and related sectors, and in employment and incomes for workers in those sectors. Notably, health care firms are largely Ghanaian-owned. A related argument is that as total per capita GDP rises, consumers may choose to spend a higher portion of their income on health care consequently improving population health and productivity.

Effect on Aggregate Economic Outcomes

Increased spending on health could stimulate job growth in certain sectors. Pauly (2003) argues that rising health care spending naturally results in rapid growth in the health care and related sectors, and in employment and incomes for workers in those sectors. Anecdotal evidence supports this hypothesis. For example, a recent Business Week article reports that since 2001, 1.7 million new jobs have been added in the health care sector, which includes related industries such as pharmaceuticals and health insurance; in contrast, the number of private sector jobs outside of health care is no higher than it was five years ago. With expenditures of more than \$2 trillion, health care supports local job markets in the northeast, mid-west, and south – the regions hit hardest by globalization and the collapse of manufacturing.

Increased spending improves health and productivity. Murphy and Topel (2003) estimate that between 1970 and 2000, increased longevity added about \$3.2 trillion per 10 years to national wealth, an unaccounted value equal to about half of average annual GDP over the period. To the extent that some of these gains resulted from increased health care spending, it is possible that

increased spending has dramatically increased the welfare of Ghanaian citizens. Similarly, a random study found that, between 1970 and 1999, survival gains and reduction in number of work days missed due to health added \$1.5 trillion to the value of the labor market human capital. It is likely that a significant proportion of these gains were due to increased capabilities of health care to improve health outcomes (Bhattacharya and Lakdawalla, 2006).

Is Increased Spending on Health Care Sustainable?

By 2014, 18.7% of GDP could be spent on health care (Heffler et al., 2005); this could rise to 27% of GDP by 2040 (Warshawsky, 1999). Is such a high share of spending on health care affordable or sustainable? Research suggests that health care spending growth is sustainable only up to a one percentage point gap between the growth rates of health spending and GDP. Follette & Sheiner (2005) propose that health care spending growth is sustainable if increases in health care spending do not lead to an absolute decline in real per capita non-health care consumption. They use a simple macroeconomic model to forecast health care and nonhealth care consumption under alternative assumptions about the growth of health care spending. In their simulations they assume that the growth rate of GDP, government expenses, current account balance, and gross investments follow historical trends. The baseline scenario assumes that per capita health care spending grows one percentage point faster than per capita GDP. Under this assumption, health care spending growth is sustainable for the next 75 years. However, per capita health care spending that grows two percentage points faster than per capita GDP will lead to a decline in non-health consumption by 2040 and will leave no resources for non-health care consumption in 75 years. Chernow, Hirth and Cutler (2003) reach similar conclusions - a one percentage point gap between real per capita growth in health care costs and growth in GDP would be affordable through 2075, and a two-percentage point gap would be affordable through 2039.

Summary

Rising health care costs have generated concerns that continued growth could adversely affect the nation's economy, as well as pose problems for particular sectors of the economy, such as employers and households. This report evaluated how increased spending on health care affected aggregate economic indicators and individual sectors. As a basis for this investigation, a thorough and detailed review of the literature was conducted that included anecdotal evidence, survey findings and the peer reviewed literature. The literature review highlighted the economic effects of health care cost growth, and identified possible mechanisms through which cost growth could affect the aggregate economy, as well as government, households and business.

METHODOLOGY

Research Design

This is causal study. A casual study involves an investigation of what causes the other among different variables. Causality approach to this study is most preferred because the study will be investigating whether per capita income is connected to health care cost. This study adopted both descriptive and explanatory research design.

Data Collection Method

This study utilizes secondary data extracted from respondents used for the study. With the secondary data collected, returns on assets and equity for the relevant years were computed.

Model Specification

The model for the study comprises of two constructs as described below:

$$HEALTH\ CARE\ COST = \alpha + \beta_1 PCI + E_i$$

The Equation defines the regression equation to be used in this study, where *per capita income of respondents* is the independent variable, *health care cost is the independent variable*.

Method of Data Analysis

Data analysis has been defined as those techniques whereby the investigator extracts from the data, information that was apparent before and which would enable a summary description of the subject studies to be made.

In analyzing the data collected for the purpose of carrying out this research, the statistical tool known as the Pearson Product Moment Correlation (PPC) and the statistics were used. The use of sample percentage was also employed. Tables were used in presenting the data for the purpose of the simplicity and clarity. The Pearson Product Moment Correlation (PPC) technique can be expressed by the formula below:

$$R = \frac{n\sum X y - \sum X \sum y}{\sqrt{[n\sum x^2 - (\sum x)^2] [n\sum y^2 - (\sum y)^2]}}$$

Where x = independent factor

y = dependent factor

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the presentation and analysis of the result obtained from published annual reports of the bank under. The data gathered were presented according to the order in which they were arranged in the research questions, simple percentage and pie graphs were used to analyze the demographic information of the respondents while regression techniques were adopted to test the research hypothesis.

Table 1: Income, Expenditure and Health Care Cost Per Month

Income (Monthly)	Expenditure (Monthly)	Health Care Cost
5,000	5,000	2500
15,000	12,000	3252
20,000	14,500	2860
21,656	18,681	14564
29,600	26,800	34790
4,200	4,150	3425
6,800	6,500	2156
7,200	6,960	5678
3,500	3,500	6780
18,000	16,500	4367
150,000	80,000	14520
80,000	50,000	56700
65,000	40,000	56732

Source: Field Survey. October 2nd 2020

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.914 ^a	.836	.803	.2304

a. Predictors: (Constant), PER CAPITA INCOME OF PATIENTS

INTERPRETATION

From table 1 above, we can see that the multiple correlation coefficient $R=0.914$, which implies that there is a strong correlation between income of patients and the health care cost.

Table 3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.681	.131		5.182	.000
	Monthly Per Capita Income of Respondents	5.224E-5	.000	-4.273	-4.431	.001
	Monthly Expenditure of Respondents	3.140	.000	4.951	5.135	.000

a. Dependent Variable: Health Care Cost

Interpretation

Based on table 2 above, it can be seen that the health care cost of patients would increase by 5.224E-6 for very increase in the monthly per capita income of patients. One would therefore conclude that there is a direct relationship between health care cost and monthly per capita income of residents.

Hypothesis to be Tested

H_0 : There is no significant relationship between per capita income and health care cost.

H_1 : There is a significant relationship between per capita income and health care cost.

Level of significance: 0.05

Decision rule: reject the null hypothesis if the p-value is less than the level of significance, accept if otherwise

Table 4: Correlations

		Monthly Per Capita Income of Respondents	Health Care Cost of Respondents
Monthly Per Capita Income of Respondents	Pearson Correlation	1	.991**
	Sig. (2-tailed)		.000
	N	13	13
Health Care Cost of Respondents	Pearson Correlation	.991**	1
	Sig. (2-tailed)	.000	
	N	13	13

** . Correlation is significant at the 0.01 level (2-tailed).

Since the p-value 0.000 is less than the level of significance, we reject the null hypothesis and accept the alternative thereby concluding that there is a significant relationship between per capita income and health care cost.

SUMMARY, CONCLUSION AND RECOMMENDATION

The objective of the study was to examine the relationship between per capita income and health care cost of patients in Ghana. Findings from the study revealed that there is a direct positive relationship between per capita income and the health care cost of patients in Ghana.

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