International Journal of Scientific Research in Science, Engineering and Technology (www.ijsrset.com)
© 2020 IJSRSET | Volume 7 | Issue 2 | Print ISSN: 2395-1990 | Online ISSN : 2394-4099
DOI : https://doi.org/10.32628/IJSRSET2072116

A Comprehensive Review of The Impact of Health Care Expenditure and Health Outcomes on Economic Growth

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ABSTRACT

Objectives: The unceasing increase of health care expenditures is a very crucial decision to take by most governments and has drawn the attention of scholars and policy makers to research and rethink about the effects on health status and economic growth. However, from open and available literature, it can be established that not much studies have considered this linkage. The study aims to bring to light and review the current state-of-art of all previous studies regarding the interplay between health spending, health outcome and economic growth within both high and middle-income countries.

Methods: An electronic exploration was carried out in the academic databases below: Emerald, Google Scholar, PubMed, Science Direct, Springer, web of Science additionally JSTOR in English language between the period 1990 to 2018.

Results: The results revealed mixed conclusion between health expenditure and population health. The findings of healthcare expenditure and economic growth shows a positive relationship mostly in the developed nations The study again found that better health status improves economic growth.

Conclusion: The outcome of the study appeared to foster more confusion as findings regarding association between health expenditure and health outcome have not been consistent. The research findings revealed that there is still much to be done for scholars to build a strong theoretical base, on these connections to for an effective decision-making.

Keywords : Public Healthcare Expenditure, Economic Growth, Health Outcome, Review

I. INTRODUCTION

Countries all over the world are battling with diseases and other health related issues like sanitation, air pollution, road traffic accident, malnutrition and others. Significantly, promoting good health may accelerate economic growth as well as increasing productivity. Ruhm [(1)] established that, strong and healthy individuals are able to work longer and faster by improving labor participation and production of goods and services. Similar to any other developmental projects, health expenditure involves the deployment of resources for prevention, medical

care, promotion, rehabilitation, to stimulate quality health for citizens.

Within every country's budget, provision is made for the prevention, management and creation of diseases [2]. Governments have been the main source of health funding for most nations across the globe, especially in developed and developing countries. Contribution of government in financing health can be justified for; i) the provision of funds for vaccines with the goal of preventing childhood killer diseases. ii) allocating resources for the provision of potable water and clean sanitation to eliminate the menace of an outbreak of cholera and other fecal oral diseases. iii) providing funds for the support of epidemiological surveillance to alerts government about outbreak of contagious diseases. iv) training and remuneration of health experts. v) the provision of hospitals, drugs and equipment's and [3] vi) elimination of the burden of out of pocket payment among the poor, just to mention a few [4]

Rapid increase of health expenditure drew the attention of scholars and policy makers about its connection with healthy population, and economic growth both in middle income and developed nations [5]. Several literature [6-11] proposed that health care expenditure enhances economic development in the long run while others [12] [13] reported short run relationship. [14] and [15] found no connection between health expenditure and economic growth.

Jakovljevic, Potapchik [16] unveiled that government funds in supporting health care services among BRICS countries has risen in the recent years. The rapid progression of health care expenses exerts excessive pressure on several economic sectors, resulting in a poverty trap and decrease in economic sustainability [17] [18], [19]. Nevertheless, the unceasing increase of health care expenditures has drawn the attention of scholars and policy makers to research and rethink about its effects on health status and economic growth within the developed and middle-income countries.

We therefore explored a number of published studies in relation to spending on health and health status over period of 1990 to 2018. Second, objective is to review the progress and provide in-depth analysis of published studies to the interplay among government health care spending and improvement of the economy. Finally, the study again scrutinized the findings of previous studies regarding the effects of healthcare expenditure and economic growth. This study intends to aid policymakers as well as stakeholders to gain a broad overview of the recent and to promote their approaches to expedite health care spending.

II. METHODS AND MATERIAL

A comprehensive, orderly review of available data was performed to identify the connection involving public health care expenses in improving the health outcome economy, and how such health outcomes of the affect the growth of the economy.

1.1 Search strategy

An electronic exploration was carried out in the academic databases below: Emerald, Google Scholar, PubMed, Science Direct, Springer, web of Science additionally JSTOR in English language. Sage book chapters, significant reviews and editorial references again were examined for further relevant studies discovering expenses of public health on the growth of the economy between 1990 to 2018.

The methodological process of the review was grounded on the outline recommended by O'Malley and Arksey [20]. The complete database exploration strategies, together with the number of studies identified per database, are given in appendix.

1.2 Eligibility criteria

Studies having the criteria below were considered in the systematic review: (1) available before the period

of the latest search (28th, Dec, 2018); (2) studies associated with the interplay concerning public health care spending and economic growth); (3) studies considered to be linked with public health care expenses and health outcome. However, studies excluded include: (1) non -peer- reviewed studies.

1.3 Study Selection

The database exploration produced 1124 papers, following the rejection of the duplicates. Additional studies 35 were found through manual exploration in related lists of reference such as Google Scholar together with web of Science. The assortment of the study was undertaken in two forms. To begin with, the complete database after a search was finalized, the principal author (DS) plus the second author (TL) autonomously scrutinized the same 162 abstracts, and established uniform eligibility assessment grounded on the mainly defined characteristics (see eligibility criteria). Second, the abstracts finally was divided into two groups and scrutinized independently by each researcher. A number of 1001 of papers were not incorporated in the initial after resolving the disagreements among the two researchers about the inclusion of the selection. Again, complete studies were considered for the remaining 158 were suitable for the studies. Generally, only 85 studies met standard criteria whiles 73 records were considered ineligible for further analysis. A summary of considered studies collected by author, year, and inclusion criteria in the appendix.

1.4 Data extraction and Analysis

Three researchers (DB and LT) employing a consistent data extraction form individually mined data for the research. The data considered include: name of author, publication year, and place of the study, study variables and method of study. Eligible studies were revised by the authors individually to ascertain aspect of connection relating to public health expenditure and economic growth. Initially the one author (LT) established the basis of theories, founded to study and applicable to the field of study. Secondly, authors (BZ) and (LT) mutually established this framework, reviewed the studies to ensure accuracy of the study.

2. *Main findings of the study*

Studies focusing on the relationship between government healthcare cost, health status and economic growth are categorized in the following sub-sections.

2.1 Connection between health outcome (HO) and economic growth

Being healthy is documented as the sources of satisfaction and happiness of individuals, regardless of their status in society. Spiteri [21] concluded that health outcome has inverted U-shape relationship with economic growth in 27 EU countries. This implies that child mortality increases at the beginning of economic growth reaches stabilization and then decreases as income increases. The implication is therefore that cardiovascular disease mortality at first increases with economic development, before peaking at some level of income and then declining at subsequent levels of development. [22] found that socioeconomic status of families affects the health outcome of their unborn child in Greece. Also, concluded that there is no relationship between health outcome and economic growth [23].

In low-income nations like Somalia and others, per capita spending stays less than $100 per year, and insufficient resources keep needy individuals from getting quality health care. However, in middle-income nations, there is a massive transformation in health care delivery. Nigeria, Vietnam, Thailand and Mexico stand out in gaining ground towards universal coverage and guaranteeing that the whole population has access to fundamental health care [24]. Good health benefits the individual and significantly increase market value and national output [6]. Enhancing the health of the population is consequently viewed as an essential method for raising human capital among

policymakers, achieving sustainable development, diminishing poverty and inequality and enhancing the welfare of people [25, 26].

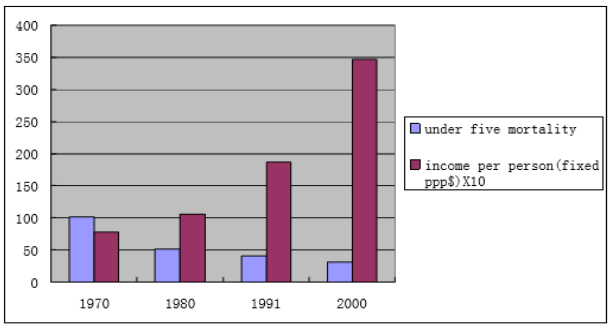

Figure 1 Under 5 mortality rate by GDP per Capita by Purchasing Power
Source; Gapminder, 2015

Figure 1. shows that prior to the economic reform in China, child mortality reduced speedily, with Under-5 mortality rate declining from 101 births in 1970 to 51 per 1000 live birth in 1980. The level of GDP per capita only increased slightly by 778$ to 1061$. Notwithstanding the successful economic reforms of China after 1978, under5 mortality rate, however declined slowly as the economic growth increased. From the graph, it can be seen that Under-5 mortality rate decreased slowly from 41 during 1990 to 32 per 1000 live births in 2000. This shows rapid increased in economic growth does not foster health outcome. This outcome supports the reasons why high income nation nations are still battling with the reduction of child mortality [27].

Sub- Saharan African had the highest average under-five mortality rate, having 76 per 1000 live births in with 1 in 26 children dying before age 5 in 2017 [28]. This strongly indicates poverty is a fundamental motivation for increase in child death.

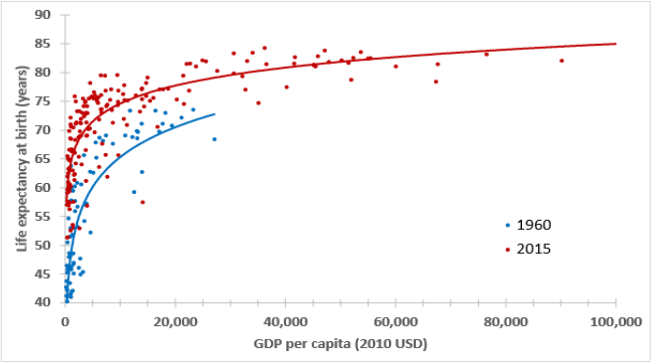

Figure 2: Preston curves in 1960 and 2015
Sources: World Bank (2017)

Decrease in under five mortality rates in advanced nations suggest that economic growth contributes to the reduction of child mortality. Strong positive connection exists between health outcome and economic growth as it can clearly be seen in Figure 2. The "Preston Curve" depicts an increase in economic growth, enhance better health outcome [29]. Moreover, [30] study in Nigeria uncovered health care expenses had no huge consequence of improving the economy while instruction expenditure had positive huge effect on economic growth in the period of study.

Bloom, Canning [31], result is that good health has a positive, sizable, and statistically significant effect on aggregate output. According to Weil [32] a 10-percentage-point increase in adult survival rates translates into a 6.7-percent increase in labor productivity. In an attempt to establish whether government intervention in the health sector has resulted to better outcomes, [33] re-examines the relationship between public health expenditures and health outcomes in Ghana. The result suggests that, apart from income, public health expenditure contributed to the improvement of health outcome for the period covered by the study. In all, increasing public by 10 percent leads to 0.12 – 4.4 reduction in infant and under-five deaths.

Bloom, Canning [34], also concluded that health outcome improves economic growth. The authors argue that increasing life expectancy raises population

growth, which, in turn, increases capital dilution in the neoclassical growth model and therefore reduces income growth during the convergence process. They support this theory empirically using the global epidemiological revolution as an instrument for life expectancy. Acemoglu and Johnson [35] is one of the few studies finding of no evidence for the effect of health improvements on economic growth.

1.1 Linkage regarding healthcare expenses and health outcome

The interplay between the rise of health expenditure and enhancements of population health has attracted many concerns from policy makers, academicians and other conclusions in plethora of studies. Some studies discovered no causal association between healthcare expenses and health Gupta, Verhoeven [5] in Columbia.

Chang and Ying [36], and Wu, Wang [37] also disclosed that increments in health spending successfully lead to better health status. Crémieux, Ouellette [38] established the reduction of health care expenses is related to increase infant death and reduction in life expectancy in Canadian territories.

Barenberg, Basu [39] found government health care expenses reduce the rate of infant mortality. Their baseline measurement revealed, an increase in public health expenditure by 1% of state-level net domestic product is associated with a reduction in the IMR of about 9 infant deaths per 1000 live births. Ashiabi, Nketiah-Amponsah [40] study shows that as health expenditure rises, child mortality tends to decline though the fall in child mortality rate.

It was also revealed by Maduka, Chekwube [41] a positive connection between healthcare expenses and female and male life expectancy. Rahman, Khanam [42], also revealed health expenditure had a huge role in lessening the crude death rate. Per capita income growth and better sanitation facilities had significant positive roles in improving the population health in the selected countries.

1.2 Health expenses and economic growths Nexus

These results indicate uniqueness in the results of the bearing of causality between health expenditure and economic growth in the short-run in addition over the long run . For instance analysis of [43], [44, 45] [46] [47] using the health led growth model found a long-run relationship between health expenditure and economic progression. Piabuo and Tieguhong [48] acknowledge that investing money in the sector of health would not automatically contribute to economic growth, rather other accommodating measures have to be considered for optimum response of expenses on health.

Some scholars Olulu-Briggs and Onoh [49], Adamu and Hajara [11] provided evidence on Granger-causality between real per capita GDP and real per capita health care expenses by using large macro panel data set. Variables included in their study were real GDP per capita (GDP) and real health expenses per capita. The study revealed a dimensional causality runs from health care expenses to income in poor and developing nation's whiles for high-income nations is the reverse. However, Khan, Razali [50] outcomes uncovered the relationship concerning health care spending and developing the economy is not as good as over the long and short run. It was proven in the short-run connections that unidirectional causality runs through per capita GDP and Healthcare expenditure in the South Asian nations. They also discovered two-way causality among labor force, the elderly populace of age 65 and expenses concerning health care. A study on the immediate and external impacts of health expenditures on economic growth was conducted by Kurt [51] using the Feder– Ram model. The findings obtained showed the direct effect of government expenses on health in economic growth at Turkey is significantly positive whiles the indirect effect remained negative and significant.

Several scholars [52] [53] studied on the impacts of spending on healthcare and improvement of the economy. They employed both per capita gross

domestic product as a marker of economic growth as well as per capita health expenditure (HEX) as a proxy of health care expenditure whilst adopting the Mushkin's health-led growth theory. The outcome of their study indicated health care as a need opposed to a luxury.

Subsequently, creating the impression that increments in income level stimulate health care expenditures for a share of the emerging sector economies. Aboubacar and Xu [53] findings indicated health care spending to improve economic growth and development.

Grant, Lama [54] Examines the prime part of preventive health care expenses and researched the consequences of preventive health benefits on economic performance and the population's prosperity. They built up economic growth model to embrace health-economic studies for Taiwanese. The study covered the period from 1975 to 2013, this exploration further looked at the model's forecasting on the connection between preventive health care expenses and economic performance. Hypothetical investigation and numerical simulations showed a reverse U-shaped connection exists between the extent of GDP percentage on preventive health expenses and social welfare, the outcome preventive health spending and economic growth. Their results displayed, it is advantageous expanding investment to the point when there is an enhanced level of economic improvement and social welfare.

However, Bein, Unlucan [12] and Jafar, Haaland [13] found short run relationship whiles Bloom, Canning [14] utilizing granger causality test examined the long-run affiliation. It was that found no connection between health cost and economic improvement in the CEMAC sub-area. Chang and Ying [36] model demonstrated the convergence among poorer and wealthier nations when both physical and health capitals. Besides Mankiw, Romer [55] have excessive health care expenses for the previous two decades. A portion of the nations revealed a diminishing example of overspending and finally achieves the ideal level. However, some did not show any regulation of cost in controlling health care spending.

Following the ARDL method developed by [56], studied the link between healthcare expenditure spending (private and public) and economic growth from 1980 to 2015 by utilizing investment in Turkey. The result of the bounding test displayed variables are co-integrated indicating a strong connection between them in long term. Atilgan [57] outcomes demonstrate that 1unit of per-capita spending on healthcare will prompt 0.434% increase in per-capita gross domestic product. These conclusions are upheld by Kalman filter model's outcomes. Ilori, Adeniyi [58] in studying the explicit influence of public health expenses on life expectancy amongst Nigerians by utilizing time series data covering 1981 to 2014 showed long-run connection between government health care and growing of the economy.

Jafar, Haaland [13] selected Asian nations by utilizing yearly data from the World Bank with countries that have at least 24 years of unremitting annual data. The expanded endogenous growth theory is utilized in the investigation. Following typology established that nations within Asia is relatively disseminated in four cycles namely; vicious, health disproportionate, virtuous, and economic growth lopsided cycles. Firstly, causality between expenses on healthcare and economic growth is bound to happen over the long term rather than short- term. Secondly, the trend of causality is dynamic, as shown by the causality trend over short-run and the long-run, which are not really the same.

Tıraşoğlu and Yıldırım [45] also utilized time-series data from Turkey to examine health led growth model. The researcher's utilized co-integration and structural break tests to study the conceivable impacts of worldwide economic crisis of 2008 on the connection between health expenditure and economic growth found a long-run linkage among the

variables studied. In such manner, this paper varies from others, particularly those undertaken in Turkey, by employing the Kalman filter demonstrate, which empowers the investigation of the dynamic link among expenses on health care and economic growth.

Halıcı-Tülüce, Doğan [59] and Piabuo and Tieguhong [60] analyzed the interplay regarding health expenditure and economic growth utilizing panel data comprising poor and developing nations. Utilizing dynamic panel information procedure, they employed fully modified ordinary least square (FMOLS) panel ordinary least square (OLS), and dynamic ordinary least square (DOLS) as econometric method of investigation.

Dieleman, Baral [61] also projected national spending concerning health data for 184 nations somewhere in the range of 2013 and 2040. They evaluated the forthcoming gross domestic product (GDP), ODA for health, total -sector government expenses, out-of-pocket payments, also prepaid private health expenses within 2040. Health expenditure was found to be associated with economic growth, but however, concluded that spending will stay variable, low in some limited-resource settings. Change in policy could contribute to expanded health spending, though the deprived nation's external support may stay fundamental. In conclusion, the trend of causality among expenses on healthcare and economic growth differs between nations.

III. RESULTS AND DISCUSSION

Discussion

This review identified diverse methods and health care spending variables, due to the absence of a typified method in the study area. Majority of these studies reviewed, employed Eagle Granger CausalityOlulu-Briggs and Onoh [49], Adamu and Hajara [11], Generalised methods of moments , autoregressive-distributed lag approach (ARDL) [56], , Fully Modified Ordinary least squares Halıcı-Tülüce, Doğan [59] and Piabuo and Tieguhong [60], DOLS, panel fixed effect models [26] to study long and short run relationships between health care expenses and economic growth. This could possibly results from the lack of a standard method for the examination of the effects of health expenditure.

From the evidence above, there is a mixed conclusion concerning the influence of health care spending and health outcome, between developed and middle-income nations. Health outcomes have driven numerous nations to increase health spending drastically, as a result, the World Health Organization raises concern about its effects, specifically among the poor vulnerable group. Empirically, no consensus on the results of health cost on infant and children under-five death. Numerous findings have provided evidence of no impact while some have reported weak impact. [62], [63] showed that health cost is not a major determinant of child mortality outcomes. Similar conclusions were indicated by [64] that no important connections between health cost and the trend of infant death in low-income nations. Moreover, Or [65] study in 21 OECD nations between 1970 -1995 evinces a weak association between health cost and health status. [65] also using a cross-sectional data among 117 countries in 1993 show that health expenses is not a major factor causing infant death rates. Other studies that also identified weak connections of health cost and health include [66], and [67]. These contradictions give enough motivations for researchers to reexamine the association between these variables. It is believed that, a more recent study of the influence of health expenditure on health status will enable policy makers to established their policy right either to invest more or reduce their expenses in the health sector. The study again found that, most of the health outcome variables employed in previous literature concentrated child health outcomes neglecting non-communicable and adult mortality diseases which is equally a great concern to the for the attainments of sustainable developments.

The study also reviewed studies that focused on the relationship between Health expenditure and economic growth. Majority of the studies were conducted within the developed nations. [48] established a positive relationship between health care cost and economic growth among the central African countries. An important and significant relationship of health care cost and economic growth is confirmed by the findings of [68] [69]. Contrary, other findings from revealed a negative of health expenditure on economic growth. [70] for 49 African countries, [71], in 120 developing nations. The reasons for the inconclusive theoretical base regarding the connections between health cost and economic growth could be that diverse reasons such as the presence of multicolinearity existing among the exogenous variables. It could possibly be attributed to the failure of previous literature to account for cross-sectional dependence in their panel data analysis and therefore contributing to the spurious findings. The study further reviewed literature regarding the relationship between health outcome and economic growth. Despite the differences in the methods and settings employed in the studies reviewed, it can be established that, majority of the studies [25, 26]. Weil [32], [33] , [34] confirmed that, increase in health outcomes will enhance the growth of the economy. with only few studies [35] establishing no important relationship between health and economic growth. This clarifies why governments over the globe are trying tremendously to accomplish great health for all.

The study however encountered some limitations. The inclusion principles only considered publications in English and only published work, neglecting other publications different languages. Not only that, because purely grey literatures and articles published online are incorporated there is the likelihood that other vital studies were neglected. This is possible for results to bias and possibly influenced the results. Although the interplay among public health care expenses and growing of the economy has become inquisitively extensive area of research, only few studies unequivocally focus on the role of public health expenditure on the health outcome among the aged population. Future research is required to study their connections.

IV.CONCLUSION

Improving population health today is a significant social objective among researchers. The study seek to examine the effects of health expenditure on health outcome and economic growth by reviewing previous published works from1990 and 2018. Google Scholar, PubMed, JSTOR, web of Science and Science Direct were utilize as the main sources of obtaining the articles. It was found that, most of the studies reviewed have econometrically employed diverse procedural approaches in arriving their conclusions. Review of literature focusing on the connections between healthcare expenditure and population health revealed inconsistent. Considering the trend of healthcare expenditure and economic growth, the review shows that a positive relationship existed among studies conducted in the developed nations. However, in the case of health outcome and economic growth, it is confirm that, a positive relationship existed between health outcome and economic growth. Majority of the studies employed mortality cases, as the health outcome variables.it will therefore be appreciating for other future research consider other variables such as health-balanced life expectancy. Others also failed to report novel policies and the time length of the studies in the middle-income nations was relatively short which is likely to effect on the robustness of the causal outcomes for the significant middle nations. Future research would explore these worries.

V. REFERENCES

[1]. Ruhm CJJTQjoe. Are recessions good for your health? 2000;115(2):617-50.

[2]. Flessa S. Where efficiency saves lives: A linear programme for the optimal allocation of health

care resources in developing countries. Health Care Management Science. 2000;3(3):249-67.

[3]. Kaul I, Grunberg I, Stern MAJGpgicitsc. Defining global public goods. 1999:2-19.

[4]. Akazili J, Ataguba JE-O, Kanmiki EW, Gyapong J, Sankoh O, Oduro A, et al. Assessing the impoverishment effects of out-of-pocket healthcare payments prior to the uptake of the national health insurance scheme in Ghana. 2017;17(1):13.

[5]. Gupta S, Verhoeven M, Tiongson ERJHe. Public spending on health care and the poor. 2003;12(8):685-96.

[6]. Marmot M, Allen J, Bell R, Goldblatt P. Building of the global movement for health equity: from Santiago to Rio and beyond. The Lancet. 2012;379(9811):181-8.

[7]. Gyimah-Brempong K, Wilson M. Health human capital and economic growth in Sub-Saharan African and OECD countries. The Quarterly Review of Economics and Finance. 2004;44(2):296-320.

[8]. Boachie MK, Mensah IO, Sobiesuo P, Immurana M, Iddrisu A-A, Kyei-Brobbey I. Determinants of public health expenditure in Ghana: a cointegration analysis. J Behav Econ Finance Entrep Account Transp. 2014;2(2):35-40.

[9]. Bedir S. Healthcare expenditure and economic growth in developing countries. Advances in Economics and Business. 2016;4(2):76-86.

[10]. Olulu RM, Erhieyovwe EK, Andrew U. Government expenditures and economic growth: The Nigerian experience. Mediterranean Journal of social sciences. 2014;5(10):89.

[11]. Adamu J, Hajara B. Government expenditure and economic growth nexus: empirical evidence from Nigeria (1970–2012). IOSR Journal of Economics and Finance, 6 (2), 61–69 (ISSN 2321–5933). 2015.

[12]. Bein MA, Unlucan D, Olowu G, Kalifa W. Healthcare spending and health outcomes: evidence from selected East African countries. African health sciences. 2017;17(1):247-54.

[13]. Jafar TH, Haaland BA, Rahman A, Razzak JA, Bilger M, Naghavi M, et al. Non-communicable diseases and injuries in Pakistan: strategic priorities. The Lancet. 2013;381(9885):2281-90.

[14]. Bloom DE, Canning D, Sevilla J. The effect of health on economic growth: a production function approach. World development. 2004;32(1):1-13.

[15]. Ghorashi N, Rad AAJg. CO2 emissions, health expenditures and economic growth in iran: application of dynamic simultaneous equation models. 2017;9:11.

[16]. Jakovljevic M, Potapchik E, Popovich L, Barik D, Getzen TEJHe. Evolving health expenditure landscape of the BRICS nations and projections to 2025. 2017;26(7):844-52.

[17]. Jakovljevic MB, Milovanovic OJFiph. Growing burden of non-communicable diseases in the emerging health markets: the case of BRICS. 2015;3:65.

[18]. Jakovljevic MB, Vukovic M, Fontanesi JJErop, research o. Life expectancy and health expenditure evolution in Eastern Europe—DiD and DEA analysis. 2016;16(4):537-46.

[19]. Khan HN, Razali RB, Shafie ABJFip. Modeling determinants of health expenditures in malaysia: evidence from time series analysis. 2016;7:69.

[20]. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. International journal of social research methodology. 2005;8(1):19-32.

[21]. Spiteri J, von Brockdorff PJSS, Medicine. Economic development and health outcomes: Evidence from cardiovascular disease mortality in Europe. 2019;224:37-44.

[22]. Kyriopoulos I, Nikoloski Z, Mossialos EJSS, Medicine. Does economic recession impact newborn health? Evidence from Greece. 2019;237:112451.

[23]. Granados JATJSs, medicine. Economic growth and health progress in England and Wales: 160 years of a changing relation. 2012;74(5):688-95.
[24]. World Health O. Working together for health: the World health report 2006: policy briefs. 2006.
[25]. Devlin N, Hansen P. Health care spending and economic output: Granger causality. Applied Economics Letters. 2001;8(8):561-4.
[26]. Baltagi BH, Moscone F. Health care expenditure and income in the OECD reconsidered: Evidence from panel data. Economic modelling. 2010;27(4):804-11.
[27]. McGuire JWJWD. Basic health care provision and under-5 mortality: a cross-national study of developing countries. 2006;34(3):405-25.
[28]. Article UJAahduotc-su-f-mVi. Under-five mortality. 2018. 2018.
[29]. Bloom DE, Kuhn M, Prettner K. Health and economic growth. 2018.
[30]. UDEORAH SAF, OBAYORI JB, ONUCHUKU O. Health Care Expenditure and Economic Growth in Nigeria.
[31]. Bloom DE, Canning D, Sevilla JJWd. The effect of health on economic growth: a production function approach. 2004;32(1):1-13.
[32]. Weil DN. Health and economic growth. Handbook of economic growth. 2: Elsevier; 2014. p. 623-82.
[33]. Kofi Boachie M, Ramu K, Põlajeva TJE. Public health expenditures and health outcomes: New evidence from Ghana. 2018;6(4):58.
[34]. Bloom DE, Canning D, Kotschy R, Prettner K, Schünemann JJ. Health and economic growth: reconciling the micro and macro evidence. National Bureau of Economic Research; 2019. Report No.: 0898-2937.
[35]. Acemoglu D, Johnson SJJopE. Disease and development: the effect of life expectancy on economic growth. 2007;115(6):925-85.
[36]. Chang K, Ying Y-H. Economic growth, human capital investment, and health expenditure: a study of OECD countries. Hitotsubashi Journal of Economics. 2006:1-16.
[37]. Wu C-H, Wang C-C, Katz AJ, Farley J. National trends of psychotropic medication use among patients diagnosed with anxiety disorders: Results from Medical Expenditure Panel Survey 2004–2009. Journal of anxiety disorders. 2013;27(2):163-70.
[38]. Crémieux PY, Ouellette P, Pilon C. Health care spending as determinants of health outcomes. Health economics. 1999;8(7):627-39.
[39]. Barenberg AJ, Basu D, Soylu C. The Effect of Public Health Expenditure on Infant Mortality: Evidence from a Panel of Indian States, 1983–1984 to 2011–2012. The Journal of Development Studies. 2017;53(10):1765-84.
[40]. Ashiabi N, Nketiah-Amponsah E, Senadza B. The Effect of Health Expenditure on Selected Maternal and Child Health Outcomes in Sub Saharan Africa. 2016.
[41]. Maduka AC, Chekwube VM, Ekesiobi CS. Health Care Expenditure, Health Outcomes, and Economic Growth Nexus in Nigeria: A Toda–Yamamoto Causality Approach. 2016.
[42]. Rahman MM, Khanam R, Rahman MJG, health. Health care expenditure and health outcome nexus: new evidence from the SAARC-ASEAN region. 2018;14(1):113.
[43]. Gerdtham U-G, Jönsson B. International comparisons of health expenditure: theory, data and econometric analysis. Handbook of health economics. 1: Elsevier; 2000. p. 11-53.
[44]. Kumar RR, Singh M. Role of health expenditure and ICT in a small island economy: a study of Fiji. Quality & Quantity. 2014;48(4):2295-311.
[45]. Tıraşoğlu M, Yıldırım B. Yapısal kırılma durumunda sağlık harcamaları ve ekonomik büyüme ilişkisi: Türkiye üzerine bir uygulama. Ejovoc (Electronic Journal of Vocational Colleges). 2012;2(2).
[46]. Atilgan E, Kilic D, Ertugrul HM. The dynamic relationship between health expenditure and

economic growth: is the health-led growth hypothesis valid for Turkey? The European Journal of Health Economics. 2017;18(5):567-74.

[47]. Tang CF, Chrsquo KS. The Granger causality between health expenditure and income in Southeast Asia economies. African Journal of Business Management. 2011;5(16):6814-24.

[48]. Piabuo SM, Tieguhong JCJHer. Health expenditure and economic growth-a review of the literature and an analysis between the economic community for central African states (CEMAC) and selected African countries. 2017;7(1):23.

[49]. Olulu-Briggs OV, Onoh UA. The Interplay of Government Expenditure and the Private Sector Investment on the Nigerian Economy (1981-2013). European Journal of Business and Management. 2014;6(35).

[50]. Khan HN, Razali RB, Shafie AB. Modeling determinants of health expenditures in Malaysia: evidence from time series analysis. Frontiers in pharmacology. 2016;7:69.

[51]. Kurt S. Government health expenditures and economic growth: a Feder-Ram approach for the case of Turkey. International Journal of Economics and Financial Issues. 2015;5(2):441-7.

[52]. Litvak E, Bisognano M. More patients, less payment: increasing hospital efficiency in the aftermath of health reform. Health Affairs. 2011;30(1):76-80.

[53]. Aboubacar B, Xu D. The impact of health expenditure on the economic growth in Sub-Saharan Africa. Theoretical Economics Letters. 2017;7(03):615.

[54]. Grant RM, Lama JR, Anderson PL, McMahan V, Liu AY, Vargas L, et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. New England Journal of Medicine. 2010;363(27):2587-99.

[55]. Mankiw NG, Romer D, Weil DN. A contribution to the empirics of economic growth. The quarterly journal of economics. 1992;107(2):407-37.

[56]. Pesaran MH, Shin Y, Smith RJ. Bounds testing approaches to the analysis of level relationships. Journal of applied econometrics. 2001;16(3):289-326.

[57]. Atilgan E. The technical efficiency of hospital inpatient care services: an application for Turkish public hospitals. Business and Economics Research Journal. 2016;7(2):203.

[58]. Ilori MO, Adeniyi AA, Oyewale AA, Sanni SA, Irefin IA. Developing a manufacturing-based economy in Nigeria through science and technology. Technovation. 2002;22(1):51-60.

[59]. Halıcı-Tülüce NS, Doğan İ, Dumrul C. Is income relevant for health expenditure and economic growth nexus? International journal of health economics and management. 2016;16(1):23-49.

[60]. Piabuo SM, Tieguhong JC. Health expenditure and economic growth-a review of the literature and an analysis between the economic community for central African states (CEMAC) and selected African countries. Health economics review. 2017;7(1):23.

[61]. Dieleman JL, Baral R, Birger M, Bui AL, Bulchis A, Chapin A, et al. US spending on personal health care and public health, 1996-2013. Jama. 2016;316(24):2627-46.

[62]. Musgrove P. Public and private roles in health: theory and financing patterns. 1996.

[63]. Burnside C, Dollar D. Aid, the incentive regime, and poverty reduction: World Bank Publications; 1998.

[64]. Bokhari FA, Gai Y, Gottret PJHe. Government health expenditures and health outcomes. 2007;16(3):257-73.

[65]. Or Z. Exploring the effects of health care on mortality across OECD countries. 2001.

[66]. Nolte E, McKee M. Does health care save lives? Avoidable mortality revisited: The Nuffield Trust; 2004.

[67]. St Leger S. The anomaly that finally went away? : BMJ Publishing Group Ltd; 2001.

Cite this article as : Ampon-Wireko Sabina, Zhou Lulin, Asante Antwi Henry, Wireko Brobby Ebenezer, "A Comprehensive Review of The Impact of Health Care Expenditure and Health Outcomes on Economic Growth", International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 7 Issue 2, pp. 585-597, March-April 2020. Available at doi : https://doi.org/10.32628/IJSRSET2072116
Journal URL : http://ijsrset.com/IJSRSET2072116

Table 1. Summary of literature reviewed

Author	Health measure	Method	Type of Data /Country	Outcome
1. Boachie, Mensah, et al., (2014).	public healthcare expenditure	Engle-Granger cointegration tests and FMOLS procedures	time series data covering 1970 to 2008, Ghana	Public health care expenditure aid in promoting health
2. Bedir, S. (2016).	Health expenditure in constant 2005	Granger (1969) causality test	Panel data within the periods of 1995 to 2013. Developing countries	Increase in income level stimulate healthcare expenditures for some of the emerging market economies.
3. Bein, M. A., Unlucan, D., Olowu, G., & Kalifa, W. (2017).	total healthcare expenditures	regression procedure	From 2000-2014 panel data East African countries.	Positive and strong correlation exist between total healthcare expenditures and total life expectancy.
4. Jakovljevic, M., Potapchik, E., Popovich, L., Barik, D., & Getzen, T. E. (2017).	Total health expenses	A System of National Health Accounts	Panel data, BRICS	Significantly increase in health care investments will promote the economy.
5. Baltagi, B. H., & Moscone, F. (2010).	Adult survival rate	Fixed effects and random effects	Panel data covering 1971–2004. From 20 OECD countries	health care is reported to be a necessity rather than a luxury

6. Barenberg, A. J., Basu, D., & Soylu, C. (2017).	Public health expenditure	N/A	a panel data from 1983–1984 and 2011–2012, Indian States	public health expenditure aid in decreasing infant mortality
7. Atilgan, E., Kilic, D., & Ertugrul, H. M. (2017).	Per-capita health expenditure	Bound test approach, autoregressive-distributed lag approach (ARDL) and Kalman filter modeling	Time series data from 1975–2013, Turkey	Per-capita health expenditure has a positive effects on gross domestic product
8. Tang, C. F., & Chrsquo, K. S. (2011).	Public healthcare expenditure	autoregressive distributed lag (ARDL) and Granger causality tests	1970 to 2006.Southeast Asia economies.	Variable are not correlated in the long-run.
9. Kurt, S. (2015).	Government health and medicine expenditures	Feder–Ram model.	Time series data 2006, Turkey.	There is a direct and positive association between government health expenditures and economic growth
10. Aboubacar, B., & Xu, D. (2017).	Health expenditure per capita and purchasing power parity (HEPC)	Generalized Method of Moments (GMM) technique	Panel data from 1995-2014, Sub-Saharan Africa.	Health care is found to be a need instead of a luxury in Africa (Sub-Saharan)
11. Daron Acemoglu and Simon Johnson	Life expectancy and economic growth	Ordinary least square		Life expectancy has a much smaller effect on total GDP,