ISSN: 2995- 4010

Research Article

Current Trends in Business Management

The Relationship Between Health Expenditures and Health Care Quality

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Submitted: 2024, Jun 24; **Accepted**: 2024, Jul 26; **Published**: 2024, Aug 01

Citation: Ridvan, O. T. (2024). The Relationship Between Health Expenditures and Health Care Quality. *Curr Trends Business Mgmt, 2*(2), 01-03.

Abstract

Background and Aim

It is aimed to investigate the relationship between quality health care and health expenditures using the data of effective primary care, effective preventive care, effective secondary care (AMI), effective secondary care (stroke).

Materials and Methods

Data from OECD countries were collected from OECD Glance Statistics 2023. Dependent variable is health expenditure; independent variables are effective primary care, effective preventive care, effective secondary care (AMI), effective secondary care (stroke). Pearson correlations were used in the analysis of the data and descriptive statics was performed.

Results

A statistically significant relationship was found between health expenditure (per capita) and effective secondary care (stroke) (R -.500 p<0,05). Other relationships between healthcare quality indicators and health expenditures were not statically significant.

Conclusion

While percentage health expenditures do not affect the quality of health care measured by effective secondary care (stroke), health expenditures per capita increase the quality scale. In countries with high gpd, although health expenditures are high, it is seen that the investment in quality increases the quality scale and there is a low level of deaths due to stroke. As a result of the research, the money spent on healthcare quality is reflected in a decrease in healthcare expenditures. It has been demonstrated that quality indicators should be taken into consideration when planning health expenditures.

Keywords: Health Care Quality, Health Expenditures, Socioeconomic Factors, Health Planning

1. Introduction

Recent economic downturns have led many countries to reduce health spending dramatically, with the World Health Organization raising concerns over the effects of this, in particular among the poor and vulnerable [1]. Although governments around the world are struggling with rising healthcare costs. This raises the need to know more about the determinants of such expenditures, such as Gross Domestic Product (GDP) as well as demographics, medical progress, health system characteristics, public finances, and other non-medical determinants of health expenditures such as alcohol and tobacco consumption gives birth [2]. With the provision of appropriate health care, the population of a country could have better health, thus strengthening the nation's human capital, which could contribute to economic growth through improved productivity. Empirical evidence indicates that when the ratio of health spending to gross domestic product (GDP) is less than the optimal level of 7.55%, increases in health spending effectively lead to better economic performance. Above this, more spending does not equate to better care. The real level of health spending in OECD countries is 5.48% of GDP, with a 1.87% economic growth rate [1]. However, the provision of health care is important for improving a population's health, which in turn can lead to more productivity, better economic performance, and then more fiscal resources. However, could better economic performance be achieved through more health spending? The findings of the current literature with regard to the influences of health expenditure on economic growth are ambiguous [3,4]. The study aimed to determine whether health expenditures lead to better quality health care by examining the relationship between health expenditures and quality health care.

2. Materials and Methods

The research was designed as a retrospective descriptive type with quality scales; the relationship between effective primary care, effective preventive care, effective secondary care (AMI), effective secondary care (stroke) and health expenditures per capita and as a percentage was examined. Health expenditures were taken as the dependent variable and quality scales were

taken as the independent variable. Data obtained from OECD 2023 Glance statistics. 28 countries with identifiable data were included in the research.

2.1. Independent Variables

• Effective primary care: Avoidable hospital admissions (per 100 000 people, age-sex standardized)
• Effective preventive care: Mammography screening within the past 2 years (% women aged 50-69)
• Effective secondary care: 30-day mortality following AMI or stroke (per 100 admissions aged 45 years and over, age-sex standardized)

The numerical value for effective primary care and effective secondary care is inversely proportional to the quality scale. As the numerical value increases, the quality scale decreases.

2.2. Statical Analyses

Mean, standard deviation values and extreme value analyses were performed to define the research data. The suitability of the parameters to normal distribution was evaluated with Skewness and Kurtosis values. Pearson correlation test was applied to evaluate the relationship between variables with normal distribution. All analyses were 95% confidence interval and 0,05 significance level, SPSS for Mac program.

3. Results

In the 28 OECD countries examined, the highest health expenditures were reported in the USA with 12555 dollars per capita, while the lowest was found in Turkey with 1827 dollars. Its average value is 5437± 400. Effective secondary care range is between 3.1 and 15.4. The country with the lowest reported quality scale is Lithuania with 15.4. The highest reported country is Norway with 3.10. The average, skewness and kurtosis values for quality scales and health expenditures are shown in Table 1. As a result of Pearson correlation analysis, in which the relationship between dependent and independent variables was evaluated, a negative significant relationship was detected between effective secondary care (stroke) and per capita health expenditures (R -.500 $p<0.05$). The relationships between other quality indicators and health expenditures are not statistically significant. The results are shown in Table 2.

	Min	Max	Mean	St. Error	Skewness	Kurtosis
Effective Primary Care	214	827	493.39	29.19	0.218	-0.664
Effective Preventive Care	20.5	83	59.47	3.18	-0.579	-0.151
Effective Secondary Care (AMI)	1.7	11.3	5.98	0.43	0.471	0.077
Effective Secondary Care (Stroke)	3.1	15.4	7.41	0.55	0.683	0.567
Health Expenditure (per capita)	1827	12555	5437.64	400.24	0.441	3.503
Health Expenditure (percentage)	4.3	16.6	9.37	0.47	0.441	1.539

Table 1: Descriptive Statistics on Quality Indicators and Health Expenditures

		Effective Primary Care	Effective Preventive Care	Effective Secondary Care (AMI)	Effective Secondary Care (Stroke)	Health Expenditure (per capita)	Health Expenditure (percentage)
Effective Primary Care	Pearson correlation	1	**-0.571****	0.65	0.62	0.172	0.30
	Sig (2-tailed)		**0.002**	0.742	0.753	0.380	0.881
Effective Preventive Care	Pearson correlation	**-0.571****	1	-0.131	-0.218	0.359	0.387*
	Sig (2-tailed)	**0.002**		0.506	0.265	0.061	0.042
Effective Secondary Care (AMI)	Pearson correlation	0.65	-0.131	1	**0.491****	-0.261	-0.167
	Sig (2-tailed)	0.742	0.506		**0.008**	0.179	0.396
Effective Secondary Care (Stroke)	Pearson correlation	0.62	-0.218	**0.491****	1	**-0.500****	-0.193
	Sig (2-tailed)	0.753	0.265	**0.008**		**0.007**	0.325
Health Expenditure (per capita)	Pearson correlation	0.172	0.359	-0.261	**-0.500****	1	**0.734****
	Sig (2-tailed)	0.380	0.061	0.179	**0.007**		**<0.001**
Health Expenditure (percentage)	Pearson correlation	0.30	0.387*	-0.167	-0.193	**0.734****	1
	Sig (2-tailed)	0.881	0.042	0.396	0.325	**<0.001**	

** Correlation is significant at the 0.01 level (2-tailed)
*Correlation is significant at the 0.05 level (2-tailed)

Table 2: Pearson Correlation Analysis Results Where the Relationship Between Dependent and Independent Variables is Evaluated.

4. Discussion

In the study, a statistically significant negative relationship was found between health expenditures and the quality indicator measured by stroke. As health expenditures increase, stroke-related deaths decrease. Therefore, the quality indicator increases. Phi G. BY, it has been determined that gpd increases the health expenditure [2]. Ot et al. in the research conducted by, it was determined that the increase in gpd had a positive effect on the effectiveness of secondary health care. In other words, an increase in gpd has a positive impact on the quality of healthcare associated with deaths occurring within 30 days after AMI [5]. The increase in health care quality as health expenditures increase, as determined by our research, is similar to the findings of two studies. However, the relationship between health expenditures as a percentage gpd and health service quality was not found to be statistically significant. The main reason for this is Wang et al. it may be the finding that health expenditures as a percentage of gpd determined in the research by, is 7.55%, and that an increase in health expenditures at this level does not lead to better economic performance, and expenditures above this level do not mean better health care. Although the increase in health expenditures is not accompanied by a percentage increase in gpd, it leads to an increase in the quality of health care. The reality determined by our study is that an increase in per capita health expenditures is not always negative and can lead to an increase in quality health services. However, since the increase in health expenditures compared to gpd is not associated with any of the quality indicators, it is clear that the proportional increase in health expenditures does not lead to quality improvement in health and does not produce more economic results. In addition, the statistically significant relationship between effective primary care and effective preventive care, which are quality indicators of preventive and primary health care services, and health expenditures shows that there is no spending on preventive and primary health care services. Global economic downturn, rapidly expanding and increasingly costly treatment regimens, and rapidly aging population [5]. Therefore, it is more important than ever to carry out appropriate policy analysis at the macroeconomic level, which will allow policymakers to better allocate scarce resources in the public sector. In future studies, we will investigate the impact of preventive healthcare on a country's health and economic performance through its effects on improved health and productivity, reduced future demand for healthcare, and possible reductions in healthcare spending. This issue is important because the information gained from such research can help reduce the public budget deficits caused by expensive healthcare systems [4]. With increasing healthcare costs and aging of the world population, the need for preventive healthcare services is increasing. As we have determined, health expenditures are not made on preventive health services and primary health care services. In this context, benefiting from the power of science and, as we have shown, the quality of social health services will strengthen the entire health system, just as the increase in the quality of preventive health services increases the quality of primary health care services.

5. Conclusion

The most important result of our research is that the increase in health expenditures per capita leads to improvement in health quality. But the increase in health expenditures as a percentage is not associated with quality markers. This means that an increase in health expenditures relative to the gpd does not lead to more positive economic outcomes and improvements in health indicators. Another point that should be emphasized is that health expenditures are not made on social health services. This shows that costly health services, especially secondary health services, direct health expenditures. With aging and increasing costs in society, investment in preventive health services comes to the fore. The proportional difference between health expenditures per capita and health expenditures as a percentage may indicate that investment in quality reduces health expenditures. At the stage of planning and producing more economical systems in health expenditures, benefiting from the power of modern science and investing in quality health care (both preventive, primary and secondary) come to the fore.

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