The Determinants Of Public Expenditure On Population Health Outcomes In Australia

Ihebuluche Fortune Chiugo[1], Dr Atul Sangal[2], Dr Sunil Joshi[3]

[1]Research Scholar, School of Business Studies, Sharda University, 2021800749.ihebuluche@dr.sharda.ac.in
[2]Associate Professor, School of Business Studies Sharda University, atul.sangal@sharda.ac.in
[3]Professor, School of Business Studies, Sharda University, sunil.joshi@sharda.ac.in.

Abstract

This article aims to establish a relationship between public health expenditure and population health outcomes during the period under review 2021-2026. Owing to the growing need to manage the health of the populace in the country, there is a contributory factor of the Government's continuous investment in public health-giving rise to a healthy population. Findings show that adequate funding of the health sector contributes to a virile economy, productive output, and an increase in the country's Gross Domestic Product. There is also a continuous engagement of the ageing population in public health expenditure taking a large chunk of the health sector. Methodology: Data collection and sources:

Variable selection: public spending, COVID-19 cases, mortality rates, and other relevant indicators. Comparative study design: pre and post-pandemic regression analysis Statistical software and techniques employed

Data Analysis:

Description of the datasets and variables used:

Pre-pandemic regression analysis: relationship between public spending and population health outcomes. Post-pandemic regression analysis: changes in the relationship between public spending and population health outcomes. Presentation of regression coefficients, standard errors, t-statistics, and p-values. Evaluation measures: R-squared, F-test, and p-values for model significance.

Results and Discussion:

Analysis and interpretation of the regression results: Comparison of the pre and post-pandemic effects of public spending on population health outcomes. Addressing potential limitations and biase

Keywords: Expenditure, health determinants, Medicare, OECD.

Introduction

Population health is a new term that has not been clearly defined though it has been in use for some time now. It may be defined as the health outcomes of a group of individuals with a group, including the distribution of such actions within a group. Population health may also include the pattern of health determinants, health outcomes, and other variables that shows a link between the two factors. Certain factors contribute to public health expenditure on the population. It ranges from social to environmental factors that can be associated with all forms of behavior. It is also critical to note that the wealthier a nation becomes the more funds it will spend on its public expenditures. Other factors associated with public health expenditure have to do with an aging population. An aging population will need more attention on Medicare, and this has been observed among most indigenes in Australia. There has been a growing need to pay adequate attention to this class of population because they fall into the dependent population. The health of the people of Australia is highly prioritized as it has a direct correlation with productivity and the state of the nation. There is a continuous effort to improve the citizens' health outcomes even as the Government continues to make necessary budgetary allocations to the different sectors. The livelihood of the people plays a significant role in addressing some socio-economic issues that contribute to the growth of the economy. Australia is ranked among the high-rising economy in terms of health care among the OECD countries. This is a major addition to its economic status in the World today. Significance of studying the relationship between public spending and population health outcomes during the pandemic Objectives, hypothesis, and rationale of the study

This study seeks to provide valuable insights into the role of public spending in managing the COVID-19 pandemic's health impacts. By conducting a comparative analysis and regression modeling, the

study aims to identify the effectiveness of public spending strategies in different OECD countries. However, it is important to acknowledge that this study may face limitations, such as data availability, potential confounding factors, and variations in healthcare systems across countries. Nevertheless, the findings can contribute to evidence-based policymaking and improve future pandemic preparedness strategies.

Literature Review

Total spending on health from 2019-2020 shows an increase in health expenditure estimated to be $81.8 billion representing 16.3 of the total expenditure. The budget review shows a continuous rise in public health expenditure compared to the previous years (Philip J. Grove A, Cook L, 2020). Australia spent an estimated $220.9 billion on health goods and services in 2020-2021 an average of $8,617 per person. This shows an increasing expenditure demand on the health of individuals in the country. A total of $6.7 billion is spent on Primary Health Care in 2020-21 and this was associated with the spread of the pandemic that swept across the world. Attention was given to priority areas to prevent the spread of the virus across the country. This review helps to establish the relationship between public spending on health in Australia and its outcomes as it affects public expenditure. The Australia Institute of Health and Welfare had been reporting on health expenditures for over three decades providing adequate information that helps in policymaking and national planning for the Australian Government. These tools have provided a basis for projecting future health expenditure that forms the basis of our paper. Spending by individuals was the largest source of growth in non-government spending which amounts to $33.2 billion. This is largely associated with the pandemic leading to a 9.3% increase in total expenditure.

Social Determinants of Health

Social determinants of health outcomes are an individual's circumstances that impact their health and well-being, alongside how someone can easily access health care, education, a safe place live and nutritious food. They include political, socio-economic, and cultural factors. The social determinants of health expenditure in Australia include social economic status, housing, education, transportation, food security, psychological risk factors, the social environment, social support networks, community and civic

engagement, and social and civic trust (Department of Health and Human Services 2017).

According to the World Health Organization, Social determinants of health are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, age, and the wider forces of the system shaping the conditions of life. These forces and systems include economic policies and systems, development agendas, social norms, social policies, and political systems. Factors that can be considered as social determinants of health include income and social protection, education, unemployment, and job insecurity, working life conditions, food insecurity, working life conditions, housing, basic amenities, and the environment, early childhood development, social inclusion and non-discrimination, structural conflict, access to affordable health services.

Australia has a great health system but it is believed that there is stillroom for improvement-increased affordability, better universal access, and reduced variability in health outcomes given some social determinants. Australia has one of the best health systems in the world, though its position on the Bloomerang Health index has slipped. The health system faces similar pressures to others globally by the incidence of chronic disease.

Increases in per capita incomes, technological innovation, ubiquitous insurance against medical treatment, and the aging of the population are considered to exert a great influence on the growth of health expenditure. The bulk of health expenditure is due to population aging. But the growth in medical technology has improved life per capita income. Common features of developed countries include an aging population, technological advancement, and high coverage of health insurance, which all positively affect the cost of health care outcomes. It is therefore assumed that technology will be the major determinant of health expenditure.

The trends and determinants of health expenditures in developed countries including Australia include income growth, the aging population, technological progress, and availability of health care insurance.

According to Medical Health Today, Social determinants of health can fall into five broad categories, which include healthcare, economic stability, education, social, and community life, and

lastly neighbourhood. The factors in each category are interwoven and are sub-categorized to make up for access to primary health care, health insurance coverage, health literacy, poverty, employment, food security, housing stability, secondary education, higher education, language and literacy, childhood development, civic participation, discrimination, incarceration, condition within a workforce, quality of housing, transportation, access to healthy foods, water quality, crime, and violence

Social determinants of health contribute to wide health disparities and inequalities. For example, people who do not have access to grocery stores with healthy foods are less likely to have good nutrition. This raises the risk of health conditions like heart disease, diabetes, and obesity- and even lower life expectancy relative to people who do have access to healthy foods.

Australia made efforts to address social determinants of health some four decades ago and has achieved critical outcomes in the area of childhood vaccination, compulsory seatbelts, screening for bowel and breast cancer, tobacco control, and gun control. However, progress made had been slow and has drawn the attention of a great number of people in the larger society.

Advocacy of social health determinants has struggled to secure the broad policy envisaged in key development change by the World Health Organization. Failure to address social determinants of health are big issues on their own because they have a ripple effect on the economy. The broader economic implication of falling addresses social determinants of health is significant.

The cost of not taking action is inescapable. There is so much at stake and policymakers are making frantic efforts at addressing these issues so that they do not become a burden to the people.

Environmental Determinants of Health

Approximately 83 million people still do not have access to a good sanitation system of which 15.6 million people still practice open defecation and 28 million do not have access to safe drinking water resulting in thirty thousand preventable death every year. The health of the Australian population is linked to the state of health of its natural environment. Environmental health addresses all physical, chemical, and biological factors external to a person and all related factors impacting behavior. It encompasses the assessment and control of those environmental factors that can

potentially affect health. It is targeted toward preventing diseases and creating a health-supportive environment (WHO 2017).

Most Australians have access to clean water, safe food products, and effective water collection and sanitation. However, factors such as population growth and distribution, extreme weather events, and climate change place increasing pressure on Australia's natural environment. This may in turn adversely affect the health of the population.

Environmental issues in Australia describe several environmental issues that affect the environment in Australia, some of these issues are related to conservation. Many activities including the use of natural resources have a direct impact on the environment in Australia. Climate change is also another talking point in Australia in the last two decades. Persistent drought and water restriction are examples of natural events with tangible effects on the environment

Conservation

Conservation in Australia is an issue of State and Federal policy. Australia is one of the most biologically diverse countries in the world. A key conservation issue is biodiversity and it has been on the front burner of discussion among policy makers in Australia. There are attendant effects of these factors as they affect the environmental health of the people. This is the reason attention is given to issues of the environment in the long run in Australia.

The environment plays a critical role in determining the health of the people. There are several diseases associated with the physical environment and this has given the government a good reason at ensuring that all issues relating to the environment find expression in policymaking and implementation in the budget.

Determinants of Public Expenditure on Population Health Outcomes

Population demographics

The demographic profile of the population has a significant impact on public expenditure on healthcare. As the population ages, the demand for healthcare services increases, which in turn puts pressure on the government to increase its expenditure on healthcare. Australia has an aging population, with the proportion of people aged 65 years and above expected to increase from 15%

in 2016 to 21% by 2056 (Australian Government Department of Health, 2018). This demographic change is expected to drive public expenditure on healthcare in the coming years.

Burden of disease

The burden of disease is another important determinant of public expenditure on healthcare. The burden of disease refers to the impact of diseases on the population, including the mortality, morbidity, and disability caused by the diseases. Diseases with high burdens require more resources for their prevention, diagnosis, and treatment, which results in higher healthcare expenditure. In Australia, non-communicable diseases such as cancer, cardiovascular diseases, and mental health disorders (Australian Institute of Health and Welfare, 2020) because of the most significant burden of disease. The burden of these diseases has been increasing over the years, which has resulted in higher public expenditure on healthcare.

Access to healthcare

Access to healthcare is also an important determinant of public expenditure on healthcare. Countries with better access to healthcare services tend to have higher public expenditure on healthcare. The Australian government provides universal access to healthcare services through the Medicare system, which provides free or subsidized healthcare services to all citizens (Australian Government Department of Health, 2021). The high level of access to healthcare services has resulted in higher public expenditure on healthcare.

Technological advancements

Technological advancements in healthcare have led to an increase in the demand for healthcare services and have contributed to the increase in healthcare costs. New technologies and treatments often come at a higher cost, which results in higher public expenditure on healthcare. In Australia, technological advancements in healthcare have led to an increase in public expenditure on healthcare, with expenditure on medical devices and pharmaceuticals increasing significantly over the years (Australian Institute of Health and Welfare, 2020).

Policy decisions

Government policy decisions also play an important role in determining public expenditure on healthcare. The government's policy decisions on healthcare financing, resource allocation, and service delivery have a significant impact on public expenditure on healthcare. In Australia, the government has introduced several policies to increase public expenditure on healthcare, including the National Health Reform Agreement and the National Disability Insurance Scheme (Australian Government Department of Health, 2021). These policies have resulted in an increase in public expenditure on healthcare over the years.

Gaps in Health outcomes

There is a gap in health outcomes across social-economic groups as well as between Australia's indigenous and non-indigenous people. Research shows that lower social-economic groups have higher instances of obesity and other chronic illnesses. Indigenous Australians have a life expectancy of 10 years less than non-indigenous Australians, driven in part by lack of access to health care.

However, healthcare services that are focused on the patients can be driven by developing models that encourage empowerment, wellness, and collaboration for a long-term sustainable health outcome. Areas that can be reformed for better sustainability include consumer empowerment, keeping people healthy, the right care place and time, digital and analytics, reconfiguring the workforce, collaboration, and outcomes- base funding.

It is observed that 34 percent of the health gap in Australia between the indigenous and non-indigenous people was due to social determinants (employment and hours worked, highest non-school certificate, level of schooling completed, housing adequacy, and housing income), and 19 percent of the gap was due to risks factors (risky alcohol consumption, high blood pressure, overweight, obesity status, inadequate fruits, and vegetable consumption, physical inactivity and smoking).

Australia ranks first among OECD countries for equity and healthcare outcomes and holds their third place in overall healthcare performance behind Norway and Netherlands. Countries are ranked for performance across five domains: access to care, care processes, administrative efficiency, and equity and health outcomes.

The Gap between Public Expenditure and Population Health Outcomes:

Despite the significant increase in public expenditure on healthcare in Australia, there has not been a corresponding improvement in population health outcomes. This has resulted in a gap between the expenditure and the outcomes, which has been a matter of concern for policymakers and healthcare providers. The following factors among others have contributed to this gap:

Inefficient resource allocation

The inefficient allocation of healthcare resources has been identified as a major factor contributing to the gap between public expenditure and population health outcomes. Australia has a fragmented healthcare system, with multiple funding sources and healthcare providers, which makes it difficult to optimize the allocation of resources. Inefficient allocation of resources leads to wastage and duplication of healthcare services, which results in higher costs and does not lead to the desired improvement in population health outcomes.

Lack of focus on prevention

Australia's healthcare system has traditionally focused on the treatment of diseases rather than the prevention of diseases. This approach has resulted in higher healthcare costs and has not led to a significant improvement in population health outcomes. Prevention is a cost-effective approach to healthcare, which can lead to significant savings in healthcare costs and can improve population health outcomes. However, Australia's healthcare system has not been successful in implementing effective prevention strategies, which has contributed to the gap between public expenditure and population health outcomes.

Fragmented healthcare system

Australia's healthcare system is fragmented, with multiple funding sources and healthcare providers. This fragmentation has resulted in a lack of coordination and integration in the healthcare system, which has contributed to the inefficiency of the system. Fragmentation leads to duplication of healthcare services and results in higher healthcare costs. It also results in a lack of continuity of care, which hurts population health outcomes.

The future health of Australia

Australia is projected to have 42 million people by 2063 and by this projection; the population of people aged 65 and above must have risen to 23 percent. The working-age population will decrease to 61 percent, while the dependency age will be 28 percent. Total health expenditure rises from an increase in price, increase in service volume per capital treatment, increase in population, and a combination of these factors. An aging population will be associated with an increase in healthcare expenditure per person. This is because there is a dependency need by this age group without contributing to the GDP of the economy.

Other key areas are also identified for the acceleration of the future of healthcare outcomes in Australia. They include consumer empowerment and engagement, increasing access to health information to empower health consumers and improve transparency, designing and implementing initiatives to build consumers' trust, keeping people healthy, increasing health literacy, leveraging changing community sentiment through collective action initiatives, connecting remote communities to health care services through virtual care, defining standards to enable a connected health system, etc.

Climate change has also been identified as a social determinant of public health expenditure in Australia because of the changing climatic conditions globally. More attention has been paid to global warming and its attendant effect on the life of the populace-giving rise to a growing need for more social care.

Table 1. Health function expenses 2021-2022 and 2023-2026

	2021-2022	**2022-2023**	**2023-2024**	**2024-2025**	**2025-2026**
	$	$	$	$	$
Medical services and benefits	38,980	39,471	40,317	42,115	43,998
Pharmaceutical services and benefits	16,443	17,299	17,101	17,226	17,281
Assistants to States for public hospitals	25,013	27,333	28,717	30,659	32,653
Hospital services	1,105	1,062	1,058	1,055	1,059

Health services	24,133	15,290	10,552	10,403	10,224
General administration	4,801	4,227	3,684	3,595	3,560
Aboriginal and Torres Strait Health	992	1,142	1,145	1,172	1,137
Total	**111,467**	**105,754**	**102,575**	**106,225**	**109,932**

Source: Australia Government: Budget strategy and outlook: Budget paper 1:2022-23:

Canberra, Australia, 2022:115)

Summary of Findings

Our findings show that the Government of Australia spend more funds in promoting the well-being of its citizens by providing for the need of people through various means as tabulated. There is a strong indication that the healthier the people, the stronger the workforce, and a more industrious economy will be built upon. There are efforts by the Government to increase the yearly expenditure on public health to satisfy the needs of the aging population that has become redundantly dependent on Government social welfare schemes. Many funds are expended on the aging population because they require more attention, and they deserve intensive care from the authorities. There is a continuous increase in social awareness among the citizenry on the need to promote a healthy lifestyle to manage their health outcomes. Other significant findings show that Australia's health system functions well in terms of spending, with less spent on health care as a percentage of income.

There has been a concerted effort to preserve the natural environment in Australia as it contributes enormously to the sustainability of the total environment.

Conclusion

Public expenditure on healthcare is an essential measure of a government's commitment to the welfare of its citizens. In Australia, the government has made a significant investment in healthcare, but there is a gap between the expenditure and the outcomes, which is a matter of concern. The determinants of

public expenditure on population outcomes in Australia also show a positive relationship that improves upon the general output of livelihood in Australia as more funds are injected into the health sector to cater to public health needs. A major case in the study is funds expended on the coronavirus pandemic which shows a relative increase in the cost of public expenditure, which helped to guide against the spread of the virus in the country. Other related outcomes include healthy and wealthier people poised to contribute to the economy's growth.

The general well-being of the people is determined by the resolve of the Government to provide basic amenities for the citizens. Also, the need to improve upon the economic status of the citizenry. The paper has identified the determinants of public expenditure on population health outcomes in Australia and has highlighted the factors contributing to the gap between expenditure and outcomes. The paper has also emphasized the need for efficient resource allocation, a focus on prevention, and a more integrated healthcare system to improve population health outcomes and bridge the gap between public expenditure and the outcomes.

References

Australia Government, Budget strategy and outlook: Book paper 1: 2022-23, Canberra, Australia, 2022: 115

Australia Institute on Health and Welfare (2022). Health expenditure Australia accessed on 2nd June 2023 at https://www.aihw.gov.au/reports/health-welfare-expenditure/health-expenditure-australia-2020-21/contents/overview/total-health-spending.

Australian Government Department of Health (2021). Loxton, D., Byles, J., Tooth, L., Barnes, I., Byrnes, E., Cavenagh, D.,& Mishra, G. (2021). Report prepared for the Australian Government Department of Health May 2021.

Australian Institute of Health and Welfare (2020). Australian Institute of Health and Welfare (AIHW). People with disability in Australia 2020.

Australia Institute of Health and Welfare (2018). Impact of health on the natural environment accessed on 30th May 2023 at https://www.aihw.gov.au/getmedia/cfd6abd4-32fb-4995-835f-5e94dac7a827/aihw-aus-221-chapter-4-1.pdf.aspx.

Department of Health and Human Services, Government of Australia, accessed on 1st June 2023 at https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Li library/pubs/rp/BudgetReview201920/Health.

Health Economic Review (2017). Convergence and determinants of health expenditure in OECD countries accessed on 2nd June 2023

athttps://healtheconomicsreview.biomedcentral.com/articles/10.1186/s13561-017-0164-4

Medical News Today (2018). What are social determinants of health accessed on 30th May 2023 at https://www.medicalnewstoday.com/articles/social-determinants-of-health#neighborhood.

Philip J. Grove A, Cook L (2020). Public Health Expenditure in Australia. Canberra, Australia, 2020:110.

Pwc Australia (2017). The Future of Health in Australia, accessed on https://www.pwc.com.au/health/health-matters/the-future-of-health-in-australia.html.

Schlesinger N and Philip S (2017). Social determinants of health in Australia accessed on https://www.pwc.com.au/health/health-matters/social-determinants-in-health- australia.html

World Health Organization (2021). Social determinant of health accessed on https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1