Current Health Expenditure as % GDP (X1)

As the world progresses and grows economically, progress in social issues is generally assumed to improve. While world GDP has been increasing, however, an increase in a county’s economic growth does not imply a decrease in suicide rates [4]. To look at this this further, the global industry of health care which cares for individual’s health was scrutinized. Data retrieved from the World Health Organization which gathered Civil Registration records for countries around the world and published the Current Health Expenditure as % of GDP or (CHE) [1]. As such the data’s accuracy can be attributed to the honesty, transparency and census taking abilities of the reporting agencies of each country. We consider the WHO to be a reliable source of information. CHE is based on expenditures “including healthcare goods and services consumed during each year. This indicator does not include capital health expenditures such as buildings, machinery, IT and stocks of vaccines for emergency or outbreaks.” [2].

For 2018 the USA’s CHE was 18% or $3.5 trillion, and for the world in 2015, globally CHE was 10%, and has been going up continuously for at least the past 40 years. [3]. These increased expenditures can be accounted for by increases in price as well as quantity of goods and services provided. Studies in the past have seen a negative correlation between CHE and suicide rates [5]. Our study has confirmed a this negative correlation between CHE and suicide.

Since there is a negative correlation between CHE and suicide, Policy Makers should consider ways to increase spending on Heath Care. Typically, a majority heath care expenditures are financed through public taxation and the remainder is private health insurance or through out of pocket payments [6]. Public funding can be done either at the federal or local level depending on a country’s government structure. Once funding has been allocated, then execution to combat suicide comes in the form of health policy. To address each country’s rollout of new policies, task forces, cross-departmental bodies, central-local partnerships can overcome institutional obstacles. It has been conjectured that specifically Mental health expenditures could combat suicide, which has been linked to mental health disorders.

A study broke down access to hospital beds per capita and found a negative correlation with suicide. This led to the hypothesis that when health expenditures focus on acute (imitate) care at the marginalization of preventative care, suicide may trend up [5]. If true, this implies that preventative services like screenings could combat suicide.

Michael:

References:

[1] <https://www.who.int/health_financing/topics/resource-tracking/ghed-update/en/>

[2] <https://datacatalog.worldbank.org/current-health-expenditure-gdp>

[3] <https://www.who.int/gho/health_financing/health_expenditure/en/>

[4] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3358624/>

[5] <https://journals.sagepub.com/doi/pdf/10.1177/070674371005500406>

[6] <https://www.sciencedirect.com/topics/medicine-and-dentistry/public-health-policy>

Psychiatrists working in mental health sector (per 100000 population) (X6)

Health care is a large field, and mental health services which employ professions such as Psychiatrists and Psychologists. A Psychiatrist is a practitioner of [psychiatry](https://en.wikipedia.org/wiki/Psychiatry), the branch of medicine devoted to the diagnosis, prevention, study, and treatment of [mental disorders](https://en.wikipedia.org/wiki/Mental_disorder) [1]. Since it has been conjectured that Mental health care could combat suicide, which has been linked to mental health disorders, we decided to determine the correlation between suicide and Psychiatrists. Using data from the WHO which shows the number of Psychiatrists working in mental health sector (per 100000 population) (PWMHS) for many countries across the world [2]. An initial look at this dat reveals that , low-income countries have 0.1 psychiatrists and 0.3 psychiatric nurses per 100 000 people. The rate of psychiatrists in high income countries is 120 times greater and for nurses is more than 75 times greater. See Figure 1 below for a breakdown.

A screenshot of a cell phone

Description automatically generatedA screenshot of a cell phone

Description automatically generated

Figure 1: Psychiatrists working in mental health sector (per 100000 population) [2]

Our analysis shows a negative correlation between PWMHS and suicide. To enact this into policy decisions one need look at the implementation and workforce retention of Psychiatrists in the workforce for both devolved and 3rd world countries. Given that lower income countries have a lower PWMHS, a more cost-effective spreading of mental health practice has been tried. In Rwanda and Haiti, Psychiatrists have trained nurses and other health care workers, primary care centers have provided basic screenings, and implemented referral systems for individuals with devolved cases of mental health issues [3].

When looking at the United states, there is a predicted lack of Psychiatrists being outpaced by population growth. This coupled with an aging workforce and not enough enrollment in training programs is a worrying picture. These problems can pop up in other countries as well. To combat this, policies like increasing the number of federally funded residency positions, and cost effective measured implemented in developing countries could be practiced in developed countries. Finally, just 55-6-% of psychiatrists accept insurance which “contributes to maldistribution of services and limits access to mental health care.” [4]

References:

[1] <https://www.psychologytoday.com/us/basics/psychiatry>

[2] <https://www.who.int/gho/mental_health/human_resources/psychiatrists_nurses/en/>

[3] <https://www.usnews.com/news/best-countries/articles/2016-09-14/developing-countries-struggle-with-treating-mental-illness>

[4] <https://ps.psychiatryonline.org/doi/full/10.1176/appi.ps.201700344>

Follow up work:

Furthermore, Keyes stresses the social dimension to positive health as in a person’s social integration, social actualization, social acceptance, and social contribution. Keyes (2002)

POLICY

National Suicide prevention strategies have been implemented in many countries to combat it. Many countries have found their own way of handling the problem but there was not widespread acceptance and organizational response to the problem until recently. In 1993 The United Nations created a task force which teamed up with the WHO to put together a study on the causes, preventative, and rehabilitative measures of suicide, and which culminated with the release of a report in 1996 called “Prevention of suicide: guidelines for the formulation and implementation of national strategies” [1]. Before this Finland was the only national government to which had a national program for suicide prevention. These guidelines were followed to varying degrees by different countries or local municipalities. The 1996 study was followed up in 2018 with a study called “National suicide prevention strategies; progress, examples, and indicators” [2] which contained updated recommendations and findings since 1996. For instance, the intersection of biological, psychological, social, environmental, and cultural factors which influence suicide, as well as successful policies which countries which countries which had national suicide prevention programs had implemented. It is from this 2018 study which contained a list of all countries which “stand-alone national suicide prevention strategy (NSPSs) adopted by the government” was drawn for our research.

Since a WHO report on suicide prevention, the WHO has tracked a growing number of technical requests from countries on how to implement NSPSs. [2] Since the UN has reporting member states and collaborated with the WHO to write the 2018 report, we consider the reliability of the database to be accurate. While the degree to which national suicide programs were implemented may vary, they are recognized. Other countries which “Other examples are Canada with a national framework but not a national strategy” or government-adopted strategy were not included in the list, which implies a level of cultural seriousness and awareness to fight suicide for included countries. Countries in this dataset tend to be devolved and display lower suicide rates, so for low income countries the WHO devolved the MiNDbank website to provide widely available information on the subject.

Government policy to combat suicide allows for the “development and strengthening surveillance (of at-risk groups), and to provide and disseminate information” [3] on at-risk individuals to inform action. An implementation of a NSPS in Scotland called “Choose Live” decreased suicide rates by 20% over 10 years. This sort of improvement in suicide rates after implementing is implied in the 2018 report and lends to the recommendation that national strategies should be implemented. We found a link to lower suicide levels and countries which have implemented NSPSs. This topic is however nuanced, take the Figure 1 below for historical rates suicide rates of different countries [4][5][6][7]. When we look specifically at the Sweden and Switzerland’s rates, they both fall in ~1972 and 1981 respectively. By comparing historical events of each country some interesting hypotheses can be drawn. Governmental changes coinciding in 1971 for both countries did not dramatically improve the rate. Cultural events which affected how masses might view a social issue had much greater temporal impacts on their rates. For instance, Euthanasia in the 1980s Switzerland coincided with an inversion of the curve of its rate. The cultural perception of suicide as a “bad” thing became more accepted in certain circumstances and may have translated to individual self-perceptions of suicidal thoughts to be a more normal occurrence which would not be cause for social abandonment. Sweden’s “Sexual Revolution” translated to an acceptance of a group, LGBT identifying individuals, which today has been identified as an at-risk population. While government implementation of NSPSs may lead to a reduction in suicide, it may also be the cultural recognition of the issue, in addition to specific policy actions which decrease overall suicide.

A close up of a map

Description automatically generated

Figure 1: Historical Suicide rates for different countries, and historical events

References:

[1] <https://www.suicideinfo.ca/resource/siecno-19960289/>

[2] <https://apps.who.int/iris/rest/bitstreams/1174021/retrieve>

[3] <https://www.who.int/mental_health/suicide-prevention/world_report_2014/en/>

[4] <https://en.wikipedia.org/wiki/Suicide_in_Switzerland>

[5] <https://en.wikipedia.org/wiki/Switzerland>

[6] <https://en.wikipedia.org/wiki/Sweden>

[7] <https://en.wikipedia.org/wiki/Riksdag>