

University of Arkansas, Fayetteville

ScholarWorks@UARK

Economics Undergraduate Honors Theses

Economics

5-2021

Mental Illness Economics in the United States: A Comparison with Foreign Countries

Christopher Odum

Follow this and additional works at: <https://scholarworks.uark.edu/econuht>



Part of the [Economic Policy Commons](#), [Health Economics Commons](#), [Health Policy Commons](#), [Other Business Commons](#), and the [Other Economics Commons](#)

Citation

Odum, C. (2021). Mental Illness Economics in the United States: A Comparison with Foreign Countries. *Economics Undergraduate Honors Theses* Retrieved from <https://scholarworks.uark.edu/econuht/33>

This Thesis is brought to you for free and open access by the Economics at ScholarWorks@UARK. It has been accepted for inclusion in Economics Undergraduate Honors Theses by an authorized administrator of ScholarWorks@UARK. For more information, please contact ccmiddle@uark.edu.

Mental Illness Economics in the United States: A Comparison with Foreign Countries

by

Christopher Mark Odum

Advisor: Dr. Amy Farmer

**An Honors Thesis in partial fulfillment of the requirements for the degree Bachelor of
Science in Business Administration in Economics.**

**Sam M. Walton College of Business
University of Arkansas
Fayetteville, Arkansas**

May 7, 2021

Table of Contents

Introduction.....3
Background.....3
Education and Poverty.....4
Costs.....6
Current US Policy and Economics.....7
The Future of Mental Illness and Suicide.....8
Big Picture Impact.....9
Proposal.....11
Conclusion.....12
Works Cited.....14

Introduction

In 2018, suicide was the tenth leading cause of death in the United States, claiming the lives of over forty-eight thousand people.¹ Globally, eight-hundred thousand people die from suicide every year, which is twice the number from homicide.² For years, there has been a stigma around mental illness causing it to be a taboo topic, but recently there has been more of a focus and acceptance in our society. Along with the stigma, throughout most of history there has not been a focus on innovating and curing mental health diseases. In many cases, these diseases left unchecked lead to irrational behaviors and individuals feeling as if they have little-to-no options.

Mental illness and suicide not only affect the people and families involved, but also friends, communities, and the greater society as a whole. There are a multitude of direct and indirect costs associated with these issues. The objective of this paper is to determine the total economic effect and societal impact of mental illness and suicide. The main statistics and comparisons will be with the United States and comparing to overall global positioning. The United States still remains one of the worst countries in this category despite some of the highest rankings in attention to mental illness. It is vital to look at how mental illness is caused and then what these issues can begin to affect in people's lives. After the economic aspects of mental illness are assessed, further studies should be done on how to address this issue and begin to come up with ideas on how to improve this problem and society as a whole.

Mental illness is a global issue. Every country in the world has to face the consequences and negative connotations of this phenomenon. Each country has a different level of focus towards the issue as well. Big organizations such as WHO aid to help all countries in solving this widespread problem. Years of research and innovation in this field can be attributed to them and other developed countries focusing on innovation. The United States is one of the most developed countries in the world, but at the same time is ranked 27th in highest suicide rates.³ Other advanced countries also deal with high levels of suicide due to large population portions having low education, or higher rates of poverty. Suicide is also a large problem in less developed countries due to higher levels of distress, as well as higher levels of poverty, less access to education, and less access to resources in aiding their mental health problems.

In other developed nations of the world, such as Europe, the issue also remains of very high importance. This remains true despite the fact that the mental health sector is receiving more and more policy attention. The increased policies are also advancing treatments and recognizing the problems faster in struggling individuals. Rapid economic and social changes have been occurring throughout Europe. With this reality, there has been a decline in overall mental health in these populations, along with higher alcohol problems, violence, and suicide.⁴

Background

Mental illness is far more common than people know. One fifth of all adults will experience a mental illness. Mental illnesses can develop at any age, but in many cases, they develop early in life. These illnesses can be short or last your entire life, and in some instances, you can have multiple illnesses at once.

In general, mental illnesses can occur because of multiple environmental and genetic factors. The first possible cause is inherited traits. Mental illness is more common in people whose blood relatives also have a mental illness. Certain genes may increase your risk of

¹ Suicide

² Ritchie

³ World Population Review

⁴ Knapp

developing a mental illness, and your life situation may trigger it. The next leading cause is environmental exposures before birth.⁵ Exposure to environmental stressors, inflammatory conditions, toxins, alcohol, or drugs while in the womb can sometimes be linked to mental illness. A third cause of mental illness is brain chemistry. Neurotransmitters are naturally occurring brain chemicals that carry signals to other parts of your brain and body.⁶ When the neural networks involving these chemicals are impaired, the function of nerve receptors and nerve systems change, leading to depression and other emotional disorders.⁷

However, these are not the only causes of mental illness. Different risk factors increase your risk of developing a mental illness. Things such as isolation, drug or alcohol abuse, financial stressors, and an already weakened immune system can cause an individual to be more susceptible to developing mental problems.

Education and Poverty

One of the first links to causes and correlations of mental illness is education. Experts usually describe the relationship between the two as causal. Higher levels of education are assumed to enhance personal skills, afford structural advantages, and develop superior coping mechanisms, all of which lead to an overall better mental health.⁸ Higher levels of education were also confirmed to be associated with lower distress levels.⁹

SUMMARY OUTPUT scores							
<i>Regression Statistics</i>							
Multiple R		0.516121824					
R Square		0.266381738					
Adjusted R Square		0.252273694					
Standard Error		5.228918577					
Observations		54					
<i>ANOVA</i>							
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>		
Regression	1	516.2516059	516.2516059	18.88155062	6.47732E-05		
Residual	52	1421.762653	27.34158949				
Total	53	1938.014259					
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i> <i>Upper 95.0%</i>
Intercept	-14.08583203	6.194685232	-2.273857589	0.027131133	-26.51637736	-1.6552867	-26.51637736 -1.6552867
scores	0.019154903	0.004408198	4.345290625	6.47732E-05	0.010309206	0.028000601	0.010309206 0.028000601

Figure 1: Simple regression that I created between suicide rate and test scores per country. Source: World Population Review.

The figure above is a simple regression ran on the data of fifty-three various countries. The data that was analyzed was each country’s suicide rate per 100,000 people vs. the average test scores in each of the respective countries. The highlighted portions indicate the significance in the relationship between the two variables. The low p-value and significance F indicate a relevant relationship between the two factors, indicating that higher better test scores lead to lower rates of suicide.

Another major link to mental illness is poverty. An estimated 350 million people worldwide live with depression and data shows that a majority of these people live in middle- or low-income countries. If this problem is not remedied it will continue to worsen.¹⁰ Consistently, lower income people are more susceptible to mental illness. This does not mean wealthy people do not deal with mental illnesses, it just infers that the risk is elevated for the less fortunate

⁵ Mayo Clinic

⁶ Mayo Clinic

⁷ Mayo Clinic

⁸ Andrew

⁹ Andrew

¹⁰ Lund

members of society. This issue of social causation creates the greater risk for mental illness in these individuals and is most related to depression. People who live in poverty are constantly stressed about personal security and food. These individuals also have access to less social support networks and are more likely to be exposed to violence and crime. People in poverty are also more vulnerable to other health issues and experiencing these health problems can lead to more of a negative externality on their own mental health.¹¹

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.238294136							
R Square	0.056784095							
Adjusted R Square	0.038645328							
Standard Error	5.929012554							
Observations	54							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	110.0483865	110.0483865	3.13053771	0.082702394			
Residual	52	1827.965873	35.15318986					
Total	53	1938.014259						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	10.95006015	1.256228683	8.716613703	9.5538E-12	8.429252878	13.4708674	8.429252878	13.47086742
GDP Per Capita	5.77512E-05	3.26401E-05	1.76933256	0.08270239	-7.746E-06	0.00012325	-7.746E-06	0.000123248

Figure 2: Simple regression that I created between suicide rate and GDP per capita per country. Source: World Population Review combined with The World Bank’s “GDP per capita (current US\$).”

As seen above, there exists a significant relationship between GDP per capita and suicide rates. The low p-values and significance F indicate a relationship between the two. This further confirms the idea that poverty has an impact on mental health. The relationship may have less significance than other factors due to the possibility of a U-shaped relationship. This is possible because of certain countries with higher GDP, or less poverty, do experience higher issues with mental illnesses due to their population sizes being larger as well. If it was a simple as a linear relationships, then all of the successful countries economically would encounter fewer mental illnesses, which simply is not the case. There are high rates amongst some countries that see economic success. The overall economic success of any country could be vastly increased if these mental illness problems would receive more attention.

Another problem associated with poverty is the issue of social drift. This is where people who have illnesses tend to become or remain impoverished. In these cases, their condition begins or continues to disable them. Their disability, which studies shown have mostly been related to schizophrenia,¹² causes them to suffer from stigma and other income-stopping opportunities. These individuals tend to spend a higher percentage of their income on healthcare as well, compared to the average person or household.

Poverty does not just affect your life physically, but also neurologically. In the aspect of risk aversion, poor people tend to stick to the straight and narrow because so much is at stake. They also develop an external locus of control where they believe they cannot control or fix their

¹¹ Lund

¹² Lund

circumstances.¹³ They also tend to experience future discounting, which is when they focus more on immediate rewards as opposed to possible improved future outcomes. Individuals living in poverty also begin to develop higher levels stress cortisol even as early as childhood, as well as their executive functioning being diminished, reducing their capacity to solve problems or plan financially.¹⁴

Mental health interventions such as therapy, medication, and rehabilitation led not only to mental health improvement but also economic prosperity. An increased mental state combined with sustainable poverty alleviation increased happiness in both individuals and households. Research shows that for every dollar invested in mental health there would be a four dollar return in economic and healthcare levels in the future.¹⁵

Costs

“By 2030, mental illness costs are expected to reach more than \$6 trillion annually.”¹⁶ Mental illness has both direct and indirect costs associated with it. Direct costs are actual expenditures related to the mentally ill. Costs such as money spent by public and private agencies, the costs to the patients or their families, and by foundations and institutions interested in research. Suicide also contains various direct costs. According to the Suicide Prevention Resource Center, the average cost of one suicide was \$1,329,553.¹⁷ More than ninety seven percent of this cost was due to lost productivity, the remaining three percent was associated with medical treatment. Further findings showed that the total cost of suicides and suicide attempts was \$93.5 billion.¹⁸ Research in this area is vital for our society and the economy. According to surveys, every dollar spent on psychotherapeutic interventions and interventions that strengthened linkages among different care providers saved \$2.50 in the cost of suicides.¹⁹ This data demonstrates how beneficial care provider funding can be in the mental health sector.

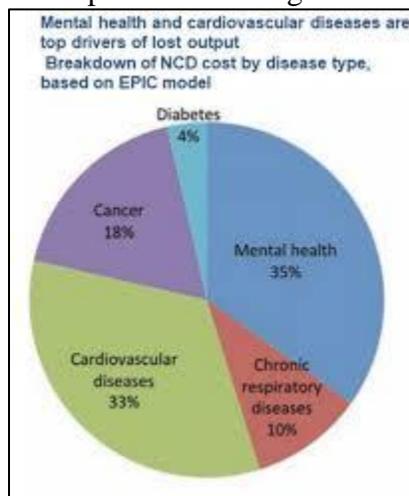


Figure 3: Pie graph depicting the share of mental health issues and the impact on lost output.

Indirect costs associated with suicide and mental illness are also prevalent. Indirect costs are calculated on the basis of the loss of productivity, earnings, and years of work by patients

¹³ Lund
¹⁴ Lund
¹⁵ Lund
¹⁶ Candeias
¹⁷ Costs of Suicide
¹⁸ Costs of Suicide
¹⁹ Costs of Suicide

who are hospitalized and could be presumed to be, if they were not hospitalized, gainfully employed in a full-employment period.²⁰ The National Alliance on Mental Health estimates that untreated mental illness costs the country up to \$300 billion every year due to losses in productivity.²¹ Mental health problems have an impact on employers and businesses directly through increased absenteeism, negative impact on productivity and profits, as well as an increase in costs to deal with the issue. In addition, they impact employee morale adversely.²²

Current U.S. Policy and Economics

Historically, insurance companies have not made mental illness a priority, and there are many reasons why. The first reason is that the medicine to treat these issues are not only more affordable but also more tolerable. Doctors are also more willing to deal with mental health issues due to the improved medication, increased knowledge, and decreased stigma. Overall, there has also been an increase in the number of psychiatrists and therapists in the workforce. Different social programs like Medicare, Medicaid, and supplemental income also make these services more accessible and affordable.²³

When discussing the history of mental illness, we are considered to be “better off but not well.”²⁴ The stigma around mental illness has seen an overall decline attributed to the reality that these diseases can not only be treated but treated well. Mental problems such as anxiety and depression are more common and commonly fixed, lowering societal stigma, but in cases such as schizophrenia where little progress has been made, there is still high stigma.

Suicide is arguably the worst effect of mental disorders and has a large effect on family and community. Mental illness is one of the most disabling of illnesses and can lead to more social ills including addiction. Addiction causes people to become less productive and more dependent. It can also lead to poverty, self-medication with illegal drugs, higher crime rates, and higher levels of homelessness.²⁵ In order to combat these indirect costs, support and stable housing has been found to help. The issue with this solution is that it is costly and difficult to implement on larger scales. A policy idea in this case would be to focus more on vulnerable and impaired people. This policy needs to be open to failure, but new options should be repeatedly tested.

Diving deeper on the economics of mental health, America is a capitalistic economy with a lot of wealth inequalities. Equality helps people feel healthy and connected. These inequalities can worsen the mental health of a nation, especially because of how important one’s work life is related to their mental health.²⁶ Also, wealthier people living in gated communities, and going to private schools and golf clubs separate themselves from the less fortunate. Furthermore, people at an economic disadvantage could be disincentivized and discouraged if they are in an adversarial situation. When a job is trying to get more out of someone whilst trying to pay them less, this can create bitterness and diminish trust.²⁷ This will drive down personal utility and create stressors which can lead to mental illness, driving productivity lower as mentioned previously.

²⁰ Fein

²¹ Ellen

²² Rajgopal

²³ Glied

²⁴ Glied

²⁵ Lund

²⁶ Economic Update

²⁷ Economic Update

When it comes to the economy, future predictions play a valuable role. Studies show that countries with high human development indexes have significant rates of suicide in young people. Specifically, suicide is the second highest cause of death in these countries in the age range of 15-24.²⁸ In 2014, an estimated 6,912 young people committed suicide. These deaths resulted in a loss of ~406,730 years of life at a cost of \$5.53 billion in lost economic income.²⁹

The Future of Mental Illness and Suicide

Over the past couple of decades, mental illness has begun to receive more attention along with more calls to action. As time goes on the stigma for mental illness decreases and the importance of solving this problem grows. Mental illness and suicide have a large impact from an economic and societal standpoint. The death rates associated with this issue have been too high for too long with no substantial focus on breakthroughs in this area. The medical sector of the economy receives a large portion of America’s wealth and the solutions to many physical diseases and injuries have seen significant breakthroughs over the years.

Mental illnesses require more of a focus and perseverance in order to find a solution. There are medicines used to suppress these issues but not many breakthroughs in order to solve mental health problems. Mental health and physical health are supposed to be treated with the same monitoring from a policy standpoint, but that is hard to do considering mental issues are less of a concrete diagnosis. There are also negative externalities in the aspect of too many prescriptions can be used and abused by patients. Overall, psychiatry is one of the few areas where private payers pay less than Medicare.³⁰ This reality is that because of the many alternatives to mental health problem solving. This is seen in examples like the use of clinical social workers and people accessing prescriptions through their primary physicians. One fact that sticks out is that even though there is more of a focus on mental health on a societal level, the percentage of GDP taken up by the mental health share has hardly moved over time. In order to improve economic conditions, a higher share of GDP should be utilized, and policies and experiments could be put in place in order to figure out how and where to spend this money with maximum efficiency.

SUMMARY OUTPUT								
<i>Regression Statistics</i>								
Multiple R	0.299347125							
R Square	0.089608701							
Adjusted R Square	0.084465248							
Standard Error	5.535503067							
Observations	179							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	533.8380708	533.8380708	17.42189335	4.68772E-05			
Residual	177	5423.597575	30.64179421					
Total	178	5957.435646						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	5.218866847	1.06908527	4.881618888	2.33878E-06	3.109072822	7.328660872	3.109072822	7.328660872
% GDP Healthcare	0.63019147	0.150981886	4.173954163	4.68772E-05	0.332235181	0.92814776	0.332235181	0.92814776

Figure 4: Simple regression that I created displaying the relationship between % share of GDP

²⁸ Doran

²⁹ Doran

³⁰ Glied

spent on healthcare vs. the suicide rate in countries. Source: The World Bank's "GDP per capita (current US\$)."

This data displays the significant relationship between percentage of GDP spent on healthcare and the suicide rates in those respective countries as well. As shown in Figure 4, the p-values and significance F are both very low. This strong relationship further confirms the hypothesis that more money spent on healthcare can help prevent higher suicide rates. As with the GDP vs. suicide rates, some countries still create inconsistencies in overall results. Certain countries may put a lot of money in healthcare but not necessarily mental healthcare. Also, their money spent may not go towards as much innovation as other countries with lower rates.

In order to have a more efficient equilibrium and get the most utility from this sector, more research needs to be done. Surveys and experiments need to be tested in order to get real results for individuals with mental illness. Improving their situation will improve the economy on a local, national, and international level. Breakthroughs in psychological medicine also equate to more innovation and employment opportunities. Questions to be posed can be things relating to the cost benefit analysis of increasing spending or improving certain programs. What are the goals and outcomes? What are the opportunity costs of spending more in this sector? When, how, and who collects this data?

Answering these questions could be an important step in improving the overall mental health in our society and lowering the impact of suicide. The domino effect from a suicide, or lack of productivity, happiness, and utility from a mental illness creates too many inefficiencies in our economy. Many individuals are disincentivized to work or fix their current situation, and many irrational outcomes occur in our current economic system because of this. Improving mental illness through various solutions such as increased education, supplemental income assistance, better access to resources, and many more options could have a positive outcome on our society.

Big Picture Impact

Historically, mental illness has not received the amount of attention that it requires. The main solutions to mental illness has been therapy and medication, both of which do not necessarily cause any permanent solutions. Between 2011 and 2030, the cumulative economic output loss associated with mental disorders is projected to cost \$16.3 trillion worldwide, making the economic output loss related to mental disorders comparable to that of cardiovascular diseases, and higher than that of cancer, chronic respiratory diseases, and diabetes.³¹ The big question dealing with this issue is how to deal with mental illness from an economic standpoint. Incentives, efficiencies, and equilibriums must be measured in order to decide what the best solution is for this trillion-dollar problem.

When looking at the problems associated with mental health investment, the first question to look at is why this economic focus should occur. When funding different economic sectors, the first issue you come across is resource scarcity. Resource scarcity is based on the overall idea that we do not have the money to fix everything. With these limited resources and funds, money should be spent wisely with as little wasted as possible. This goal is focusing on the outcome being the most efficient. In many cases, policy and decision makers want to see the greatest number of results with the least number of resources as possible. In the world of mental illness, a large focus should be put towards innovation. This stands true because there is evidence that innovation not only is effective but also has value regardless of the results.³² Funds are

³¹ Trautmann

³² Chisholm

limited when it comes to the health sector of the economy, therefore research needs to be done on mental illness in an affordable way. If the money is distributed well and in an efficient manner, other sectors of the economy can also receive the excess funding.

When reallocating funds there are always winners and losers. Public expenditure is a difficult issue and prioritizing and rationing is an inevitable and difficult part of making economic decisions. If a decision is made to improve healthcare funding, other sectors like agriculture, defense, education, and many more will experience some losses. The goals of economic efficiency need to be maximizing value and utility. For example, in mental health if there needs to be a treatment of depression or psychosis, how do you solve the problem? There are costs to society whether the solution is pharmacies, social interventions, or any other outcome.³³

A study put forth must weigh the cost and benefits of different outcomes and compare results. Another aspect of economic experimentation are long-term and short-term results. Will allocating more funds to the mental health sector save money? By upscaling innovation, can we the position of the target group and also possibly save money or improve how it is spent? Figuring out the most cost-effective solution through feasibility and logistical analysis is a crucial part of economic decision making.

The next large aspect is the question of what specifically should be done. The first step is to design a study, but different goals and outcomes need to be known before anything else. There needs to be an assessment of what the innovation costs, and what results should come out of it. There are different ways to measure this. The first measurement aspects are health and welfare costs. These can be seen in hospital visits, medicine, and lab tests. The next cost that needs to be measured is time. Access to care, informal caregiving, and other time costs needs to be accounted for when deciding on solutions to funding mental illness. The last cost that needs to be considered is productivity. This cost plays a slightly different role. The hypothesis put forth previously is that increased economic innovation and funding within the mental health sector will have a positive impact on the overall economy. With an overall improved societal mental health, productivity should increase, causing the domino effect in other aspects of the economy receiving a boost as well.

When looking at outcomes like increased productivity, others must be considered as well. If innovations occur that reduce symptoms or disabilities, then there will be an overall gain in public health. Social and economic outcomes must also be measured. Mental health patients would be able to not only go back to work, but also be able to work more efficiently. Additionally, utility from life and overall happiness per person will increase as well, creating a more positive livelihood.³⁴ An initial real-life example could be a psychosocial treatment added to pharmacy treatment to help psychosis. The hypothesis of this study could be that this combination could speed up the rate at which people recover from episodes. If true, there is clinical, health, and economic gains that occur, and people overall would need less hospitalizations. This is just one small example of what could be done.

A significant portion of an economic decision is when calculating the opportunity costs of a certain decision. To begin, if more money is spent on mental illness, then there is less money for other sectors of the economy. After that, calculations on the value of time must be made as well. How long should money be spent and how much should be spent are important questions when considering opportunity costs. On a smaller scale when it comes to informal caregiving,

³³ Chisholm

³⁴ Chisholm

time plays a major roles and when people have to help assist loved ones, they lose value, time, and money overall as well.³⁵ If innovation and funding are utilized in mental health, time lost from depressed and ill workers will decrease, further demonstrating the improvement for sick patients and beneficiaries of their improved situation.

Overall, a big fight against reallocating funds for mental illness comes from the overall avoidance of negative short-term trade-offs. While that is a risk, if increasing money in the mental health sector increases productivity in a major way then the risk of a trade-off could end up being worth it in the long run. There are different ways to go about this. A good direction to tax could involve overall tax on certain corporations. If these businesses benefit largely from the increased productivity, then it would be more worthwhile for them to invest in this research in order to counteract losses they are already experiencing and will continue to endure.

There are other non-health outcomes when improving mental health as well. The first aspect is the ability to go back to work. This is vital because depression causes millions of days lost working. If an innovation occurs, how many days would you get back in ill patients working? If people are able to generate income, their livelihood increases along with overall happiness levels and utility. Short-term outcomes are important but the overall goal of improving mental health in the US and worldwide needs to have long-term results as well.

If mental illness in society gets more attention, at some point everyone will benefit from it. Mental illness is not just a personal issue, with the amount of people that have mental health problems, everyone is affected in some way. If a funding and innovation focus occurred for the mental health sector, not only would innovators and health service researchers benefit, but many more individuals and entities. Mental health has become an increasingly problematic sector on a societal level and has gradually become more of a priority. Even with the increasing importance and relevance, the percentage of GDP taken up by the mental health sector has barely increased over time. In order to improve economic conditions, a higher share of GDP should be allocated to mental health. Policies and experiments should be put implemented in order to figure out how and where to spend this money with maximum efficiency.³⁶

The last few questions and areas to focus on is the “how” and the policies. In the aspect of what should be done, how do you know if an idea or investment is affordable and if it is cost-effective? The affordability is the question of low cost and low impact on overall budget. The lower the cost, the higher possible maximum utility, indicating a successful investment. Cost-effective is focusing more on comparisons to other investments. With the money spent on the increased investment or innovation to the mental health sector, is there enough of an improvement in the economy to continue solving certain issues? If the money is well spent and improvements are shown through data, then more money and research should be allocated to ensure continued success.

Proposal

Suicide and mental illness have a domino effect on our society. A person going through depression experiences a lack of happiness, productivity, and overall utility in life. One in five adults experience mental illness, making it an extremely common problem in our lives. These illnesses have short- and long-term effects on a small scale, person to person, and on the economy when looking at the big picture. Increasing the share of GDP that the mental health sector receives could cause an overall increase in economic prosperity. Research and innovations in this area would increase productivity and utility both on a macro- and micro-economic level.

³⁵ Chisholm

³⁶ Glied

SUMMARY OUTPUT % GDP Healthcare								
<i>Regression Statistics</i>								
Multiple R	0.397039765							
R Square	0.157640575							
Adjusted R Square	0.10809002							
Standard Error	3.499909496							
Observations	19							
<i>ANOVA</i>								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	38.9702435	38.9702435	3.181408897	0.092341674			
Residual	17	208.2392302	12.24936648					
Total	18	247.2094737						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	7.840524753	2.730117049	2.871863957	0.0105741	2.080481273	13.60056823	2.080481273	13.60056823
% GDP Healthcare	48.72177944	27.31576676	1.783650441	0.092341674	-8.909450797	106.3530097	-8.909450797	106.3530097

Figure 5: Simple regression that I created displaying the relationship between % share of GDP and the suicide rate in countries. Source: World Population Review.

In the figure above, a regression was run on the relationship between suicide rates in certain countries, including the United States, European countries, and a few others. The results show that there is a significant relationship between the two. This result is interesting because increased share of GDP should equate to increased funding therefore lower suicide rates. This can be explained by the actual breakdown of the GDP on *mental* healthcare specifically. As stated, healthcare overall has increased in the United States specifically, but the mental health sector share has not increased. This does have significant implications though because even though more money has been spent on healthcare just to have increased suicide rates anyways, the money needs to go more towards the mental aspect of healthcare, not just physical.

Many ideas have been put forth in order to combat these issues. In general, mental illness is an expensive habit to deal with, and a lot of victims of these illnesses already are living in hard times. Combining poverty alleviation along with therapy and medication could be a successful step in improving the livelihood of the individuals.

Conclusion

My proposal is to increase overall spending on mental health. The goal of the increased spending is to create more innovation in this economic sector but to also see the results of the increased funding. When it comes to mental health, a lot is still unknown, including possible long-term cures for certain illnesses. If more of a focus is given to mental health, then strides could be made in this area similar to the success of various physical health innovations. Even if large strides are not made, an increase in funding would help support people living in poverty who suffer from these illnesses. Depressed individuals are less likely to work the same number of hours, so if someone living in poverty suffers from depression then they are put in an even more vulnerable position.

An increased focus in mental health will also benefit the private sectors as well. If individuals are guaranteed more assistance or have more opportunities to high quality service, then they are more likely to be treated. A lot of people cannot afford the prices of medicine or the hourly wages of therapy. Since 2014, many insurance companies and plans are required to cover mental health, but just because someone has a plan does not mean they are able to receive all the help they need. If more money is circulating in the mental health sector overall, more individuals can have access to better therapists and treatments.

In conclusion, despite being advanced in the overall worldwide picture, the United States still has one of the biggest issues when it comes to mental health. Other developed countries experience problems as well, but financially, the mental health sector has not received the appropriate funding that it needs in the United States. From a worldwide aspect, WHO has made

great strides in increasing the overall mental health of the world, but other factors such as less wars and tensions have also decreased the threat of suicide in some societies over time. Overall quality of life in the United States is higher than many countries, but suicide rates still remain higher despite this fact. Many underlying and continually developing mental disorders require more attention. Our nation has some of the highest lost output worldwide due to mental illness and suicide.

Mental Illness has a powerful and expensive impact on our society. The Suicide Prevention Resource Center measured the average cost of one suicide being \$1,329,553.³⁷ Everything has to be considered when looking at mental illness. Mental illness has gained more attention in recent years as the stigma around it has decreased. There still is a lot of progress to be made in the aspect of discovering cures, improving medication, and improving other avenues of help for victims of these diseases. “By 2030, mental illness costs are expected to reach more than \$6 trillion annually.”³⁸ This is a daunting truth that our economic policies need to face. If costs continue to increase, and overall mental health continue to worsen, then the problem will become harder to fix. We need to begin funding the mental health sector so we can save money and save lives. If we fix these issues in our society then we can improve our overall equilibrium, and quality of life for everyone.

³⁷ Costs of Suicide

³⁸ Candeias

Works Cited

- Andrew Halpern-Manners, Landon Schnabel, Elaine M. Hernandez, Judy L. Silberg, Lindon J. Eaves, The Relationship between Education and Mental Health: New Evidence from a Discordant Twin Study, *Social Forces*, Volume 95, Issue 1, September 2016, Pages 107–131, <https://doi.org/10.1093/sf/sow035>
- Belo, Pedro, Esperanza Navarro-Pardo, Ricardo Pocinho, Pedro Carrana, and Cristovao Margarido. "Relationship Between Mental Health and the Education Level in Elderly People: Mediation of Leisure Attitude." *Frontiers in Psychology*. Last modified April 1, 2020. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00573/full>.
- Candeias, Vanessa, and Rihana Diabo. "Here are five priorities for better cooperation on mental health." *World Economic Forum*. Last modified November 8, 2018. <https://www.weforum.org/agenda/2018/11/five-ways-mental-health-care-better-depression/>.
- Chisholm, Dan. "Mental Health Economics: Analyzing Value." *National Institute of Mental Health*, www.youtube.com/watch?v=K4PK_UUD12M.
- "Costs of Suicide." *Suicide Prevention Resource Center*. <https://www.sprc.org/about-suicide/costs>.
- Doran CM, Kinchin I (2020) Economic and epidemiological impact of youth suicide in countries with the highest human development index. *PLoS ONE* 15(5): e0232940. <https://doi.org/10.1371/journal.pone.0232940>
- Economic Update: Capitalism and Mental Health*. 2019, www.youtube.com/watch?v=eBWuTVABTWA.
- Ellis, Mary E. "The Real Cost of Untreated Mental Illness in America." *Constellation Behavioral Health*. Last modified March 27, 2019. <https://www.constellationbehavioralhealth.com/blog/the-real-cost-of-untreated-mental-illness-in-america/#:~:text=There%20were%2070%2C237%20drug%20overdose,are%20attributed%20to%20mental%20illness>.
- Fein, R. (1958). *Joint commission on mental illness and health monograph series: Vol. 2. Economics of mental illness*. Basic Books. <https://doi.org/10.1037/11257-000>
- Fond, G., Llorca, PM., Boucekine, M. *et al*. Disparities in suicide mortality trends between United States of America and 25 European countries: retrospective analysis of WHO mortality database. *Sci Rep* 6, 20256 (2016). <https://doi.org/10.1038/srep20256>
- "GDP per capita (current US\$)." *The World Bank*. Last modified , 2019. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>. <https://data.worldbank.org/indicator/SH.STA.SUIC.P5> https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?name_desc=false
- Glied Ph.D, Sherry. 9 Feb. 2020., www.youtube.com/watch?v=No04vyGQLyc.
- Knapp, Martin, et al. *Mental health policy and practice across Europe*. McGraw-Hill, 2007, www.euro.who.int/__data/assets/pdf_file/0007/96451/E89814.pdf.
- Lund, Crick. "Mental Health & Poverty: Unlocking the Potential." Dec. 2016, www.youtube.com/watch?v=NNOmRvh82Fc.
- "Mental Illness." *Mayo Clinic*. <https://www.mayoclinic.org/diseases-conditions/mental-illness/symptoms-causes/syc-20374968>.
- "Percentage of GDP Spent on Health Care." *The Commonwealth Fund*, The Commonwealth Fund, www.commonwealthfund.org/international-health-policy-center/system-stats/percentage-gdp-spent-health-care.

- Rajgopal T. (2010). Mental well-being at the workplace. *Indian J. Occup. Environ. Med.* 14 63–65. 10.4103/0019-5278.75691
- Ritchie, Hannah, Roser, Max and Ortiz-Ospina, Esteban (2015) - "Suicide". *Published online at OurWorldInData.org*. Retrieved from: '<https://ourworldindata.org/suicide>'
- "Suicide." National Institute of Mental Health. Last modified September, 2020. <https://www.nimh.nih.gov/health/statistics/suicide.shtml>.
- Trautmann, S., Rehm, J., & Wittchen, H. U. (2016). The economic costs of mental disorders: Do our societies react appropriately to the burden of mental disorders?. *EMBO reports*, 17(9), 1245–1249. <https://doi.org/10.15252/embr.201642951>
- Wasserman, D., Cheng, Q., & Jiang, G. X. (2005). Global suicide rates among young people aged 15-19. *World psychiatry : official journal of the World Psychiatric Association (WPA)*, 4(2), 114–120.
- World Population Review*, worldpopulationreview.com/country-rankings/suicide-rate-by-country.