INSIDE THE BRAIN: MENTAL HEALTH ACROSS THE GLOBE

Elia Bendavid

Honors Capstone Project

University Honors

Advisor: Dr. Robert Karch

Fall 2010

Abstract

Mental health disorders are a major contributor to the global burden of disease, and are a great cost of health. This study examines the status of mental health across the six World Health Organization (WHO) defined regions. For the purpose and parameters of this study, one country was selected from each of the six WHO regional structures in order to conduct a comparison among these six countries and provide a global perspective on mental health. A comparison of data points and patterns of the most prevalent mental health illnesses are analyzed in order to highlight the most common mental health problems and the factors that contribute to these mental health illnesses. Furthermore, as numerous studies have revealed significant linkages between mental health and physical health, part of this comparison seeks to determine if there is a correlation between the availability and accessibility of mental health programs around the world, and the physical health statistics of each particular country.

I. Introduction

The function of our brains, thoughts, and feelings is the very essence of life, of being alive. In order to properly function and contribute to society, brain mechanics are essential. Mental health is a constant balance between good and bad, stress and productivity, and dealing with daily challenges in life. Mental health is defined by the World Health Organization (WHO) as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community" (WHO a). Across the globe, mental and neurological disorders, which include mood disorders, psychotic disorders, eating disorders, personality disorders, anxiety disorders (which includes post-traumatic stress disorder), and suicide, are rampant and contribute to many social problems in addition to death. Over the course of a person's lifetime, 25 percent of people will develop one or more types of a psychiatric or behavioral disorder (Kastrup and Ramos 2007, 42).

The implications of mental health disorders and lack of treatment are severe, and this research reflects on the need for mental health stigmas to be combated, and the accessibility, amount, and availability of programs to be available. There are 450 million people currently suffering from some type of neurological, psychiatric, or behavioral disorder, and four out of the ten most important diseases are psychiatric conditions (Kastrup and Ramos 2007, 42). The global implications of mental health are often overlooked for more prevalent and visible physical health problems. However, although many are internal and concealed, it is essential not to overlook them, as many of these mental health conditions could have drastic consequences. Over 20 percent of patients who visit a primary care provider have a mental health disorder but are not

diagnosed or treated, with many serious conditions going untreated throughout the world (Kastrup and Ramos 2007, 42). Depression, which is a mood disorder, is ranked as the seventh most important cause of disease burden in the world in lower and middle-income countries. Depression is even considered to be a leading cause of disability, seconded only to heart disease (Sharma and Atri 2010, 352). Suicide is also prevalent across the world, and as many as 800,000 people commit suicide yearly, the majority in low and middle-income countries (Sharma and Atri 2010, 347). Though most mental health conditions are treatable and manageable with accurate diagnosis and treatment via the many cost effective and affordable programs, the majority of the world's people do not get the treatment they need (WHO b). Many of these barriers in receiving mental health care are due to the stigmas surrounding mental health. Furthermore, in low and middle-income countries a major barrier to providing proper mental healthcare is a lack of mental health facilities, psychologists and social workers (Sharma and Atri 2010, 348). The lack of people across the world receiving health services is extremely detrimental and can even lead individuals into a life of poverty if they are unable to function in society (WHO b). This study will seek to confirm the correlation between mental health and physical health, and the root causes of many mental health conditions in order to provide a basis for better understanding the human condition in the world.

II. Literature Review

In the last 25 years, the face of mental health has evolved and changed, new research has emerged, and new policies and programs across the world have been implemented. New medications have been developed to treat many mental health disorders, along with more

scientific research and an increased awareness of mental illness. The United States Congress declared the 1990's as the "Decade of the Brain" and many new rights and protections were implemented during this time. By the end of the 1990's the first White House Conference on Mental Health was held, as well as the writing of the first Surgeon General's Report on Mental Health (Mowbray and Holter 2002, 137).

Despite many new policies and much new knowledge of mental illness, the financing of mental health treatment continues to be a struggle. Many countries have implemented mental health into part of their primary care system but this often only includes mental health emergencies and excludes long-term treatment and care, often necessary for treating mental health disorders. Since the World Bank and the WHO conducted the analysis of the Global Burden of Disease in the 1990's, focus has been shifted to the economical consequences of mental illness and the severity it poses in the future. Many projections have estimated that the cost of mental health will only increase, and in response countries across the world have began to implement health programs and policies (Kastrup and Ramos 2007, 43).

Mental health policy is a new phenomenon in the global world, and over 62 percent of countries did not formulate their mental health policy until the 1990's. Before 1960, only six percent of countries in the world had a mental health policy in place. The majority of countries that report to have a mental health policy in place follow the WHO guidelines for mental health policy. Mental health policy is defined by the WHO as a "specifically written document of the Government or Ministry of Health containing the goals for improving the mental health situation of the country, the priorities among those goals and the main directions for attaining them" (WHO n). Further, a mental health policy must include advocacy, promotion, prevention, treatment, and rehabilitation. Advocacy raises awareness in order to gain public and political

support as well as a general acceptance, education, and understanding of the importance of meeting mental health goals. Promotion is similar to advocacy, but it is focused on the individual and promoting them to be aware of their personal mental health and how to improve it. Prevention seeks to promote the mental well-being not only of the individual but of communities as well, providing activities and promotion tools for the understanding of mental health disorders. Treatment includes both clinical and non-clinical psychiatric care that can improve the quality of life of patients as well as reduce some of the major impacts of a mental health disorder with the proper treatment. Finally, rehabilitation is given to patients after the initial treatment, in order to provide them with the tools and knowledge to function in their daily lives (WHO n).

As a variance from mental health policy, many countries have implemented national mental health programs, as well as, or instead of a mental health policy. The WHO defines a national mental health program as "a national plan of action that includes the broad and specific lines of action required in all sectors involved to give effect to the policy" (WHO n). A national mental health program details a plan of action for mental health in that specific country, and provides a time frame and assigns certain figures to implement specific parts of the program. A national mental health program acts as an umbrella organization to administer and coordinate a national plan for mental health. Community-based care is another type of mental health plan that is often emphasized even if a policy and a national mental health program are already in place. The WHO defines community-based care as "any type of care, supervision and rehabilitation of mental patients outside the hospital by health and social workers based in the community" (WHO n). Community-based care could include facilities such as therapeutic services, community mental health services for children and adolescents, and psychiatric rehabilitation centers. Similar to the high numbers of countries that formed mental health polices in the 1990's,

61 percent of national mental health programs were also formed during that time period. Further, community care facilities are established in 68 percent of countries around the world, and are mainly present in higher income countries (WHO n).

III. Methodology

Based on the previous research, which examines a wide variety of mental health conditions and scholarly arguments, the methodology used in this research stems from multiple questions. The main question is two-pronged – it first seeks to find the patterns of specific factors that contribute to mental health conditions. Second, it attempts to find if there is a strong correlation between mental health program quantity and accessibility, and the physical health of each country.

In order to conduct an accurate comparison, countries were carefully selected based on specific criteria. As it would be inequitable to compare countries that are highly impoverished, in a current major conflict, lack a stable healthcare system, and currently encounter major basic health problems such as sanitation and high malnutrition rates, only countries that have established healthcare programs were chosen. The specific requirements for each country included only countries that are economically advanced, have a population of at least one million, have a somewhat advanced health-care system established, and have a relatively low infant mortality rate (at least under 20 deaths/1,000 live births). These decisions were made in order to accurately compare mental health programs across regions where a sufficient public health system is already in place. Though a comparison for every country in the world would have been ideal, for the purpose of this study only one country from each of the six World Health

Organization (WHO) defined regions was chosen. The six countries chosen are as follows: for the Africa region, Botswana; for the Americas region, Argentina; for the South-East Asia region, Thailand; for the Europe region, Switzerland; for the Eastern Mediterranean region, Jordan; and for the Western Pacific region, Japan.

In order to evaluate the first aspect of the question, which compares data points and factors that contribute to the mental health status in each country, a basic overview of the country's mental health system will be examined. The mental health programs and mental health status of each country will be analyzed based on per capita expenditure on health (and on mental health, if statistic is available), ratio of mental health treatment facilities and psychiatrists to the population, as well as general specifics such as literacy rate and life expectancy. In order to research the major factors that contribute to mental health conditions in each country, five major factors will be measured: access and location of mental health facilities, unemployment rates, gender, age, and religion. In order to examine the correlation of mental health conditions with physical health conditions, the general physical health statistics will be compared with the mental health programs that were previously discussed in the answer of the first question. Through this comparison, it will be determined if there is any correlation at all between mental health access and improved physical health.

IV. Results/Findings

Botswana

Botswana, the selected country for the Africa region, is located in Sub-Saharan Africa and has a population of over two million people. One of Africa's healthier countries, Botswana

has an unusually high HIV prevalence rate of 23.9 percent, but also has stable and comprehensive health infrastructure in place to address this rate. Botswana's population is 81.2 percent literate, and Christianity is the major religion for 70 percent of the population. Botswana's unemployment rate is 7.5 percent, which is moderately low in comparison to the rest of the world (CIA Fact Book 2010: Botswana). Botswana was selected due to its sufficient health conditions in order to conduct an equitable study on mental health. With a low infant mortality rate at only 12.59 deaths out of 1,000 live births. Furthermore, though Botswana's life expectancy of 51 years old for males and 52 years old for females is the lowest out of all the countries in this study, Botswana's life expectancy is still far more promising than many other African countries (WHO c). Unlike many African countries where the gross national income per capita is only a few hundred dollars, Botswana's gross national income per capita is $11,730, which also illustrates a healthier population and economy.

Botswana spends 7.2 percent of its GDP on healthcare, but a mere 1 percent of its budget on mental health, the primary source of this budget coming from tax revenue. Per 10,000 of Botswana's people, there are only 1.1 total psychiatric beds. Furthermore, the number of psychiatrists in comparison to Botswana's population size is extremely small – only 0.4 psychiatrists per 100,000 people. While psychiatrists are not the only ones needed for improving the mental health treatment and availability of care in particular countries, the number of psychologists per 100,000 is even smaller – a mere 0.3. On the other hand, the number of social workers as well as psychiatric nurses is significantly higher than psychiatrists and psychologists in Botswana, at nine psychiatric nurses per 100,000 population and three social workers per 100,000 population. A major mental health indicator in Botswana is the complete lack of neurosurgeons in Botswana. Though it is psychiatrists and psychologists that treat most patients

with mental health disorders, neurosurgeons add a necessary element of surgery and research that is needed in order to advance the medical field. However, there are zero neurosurgeons per 100,000 people in Botswana, which illustrates a lack of mental health advancement (WHO d).

Finally, according to a study conducted by DI Ben-Tovim and JM Cushnie, the most prevalent mental health condition in remote areas in Botswana is schizophrenia among adolescent children ages 15 and above. It was concluded that in six different villages in rural and removed areas, schizophrenia rates not only ran high but there was very little immunity to developing the condition (WHO d). Botswana's Department of Public Health outlines specific goals for the coordination and implementation of mental health. Botswana's national mental health program was founded in 1992, and includes introducing and developing a national mental health system. Other goals are education and social awareness programs about mental health as well as alcohol and drug abuse, training health workers for villages at the local level in order to integrate community-based mental health programs, and focusing more on child and adolescent programs (Botswana Ministry of Health 2010).

Argentina

The selected country for the Americas region is Argentina, which is located in Southern South America bordering the South Atlantic Ocean and has a population of over 41 million people. Argentina's infant mortality rate is lower than most of the other selected countries, at 11.44 deaths per 1,000 live births. Argentina's life expectancy, 62 years for males and 68 years for females, is higher than Botswana's but lower than the other four selected countries. Argentina has an extremely high literacy rate of over 97 percent, and 92 percent of its population is Roman Catholic. Argentina's unemployment rate of 8.7 increased from 7.9 percent in 2008, but it is still

lower in comparison to many other countries in the world. Argentina's GDP per capita is $13,900 and has remained thus since 2008 (CIA Fact Book 2010: Argentina).

Argentina spends 10.1 percent of its GDP on healthcare, but Argentina's expenditure on mental healthcare varies based on its different federal regions within the country. Each ministerial office has a different budget for mental health, and one of the primary sources of the budget is from tax money, in addition to insurance and personal out-of-pocket expenditures. Argentina's national mental health program was founded in 1998 and Argentina allocates 10 percent of its mental health budget to the national level for public psychiatric hospitals. Mental healthcare is incorporated into the primary healthcare system, and Argentina has a structure in place that allows for persons with mental health disorders to receive disability benefits, a major factor that Botswana lacks (WHO e).

Argentina has nearly six times the number of psychiatric beds per population than Botswana, with six beds per 10,000 people. This indicates a much more available mental health system, with services that are more accessible. Argentina also has a greater number of psychiatrists in relation to its population, with 13.25 per 100,000 people. Furthermore, Argentina has a large number of psychologists for its population, 106 per 100,000 people, which enables people in Argentina to receive psychiatric care far more often than Botswana's population. Social workers are an important part of mental health care as they often advocate for families, teenagers, and organize awareness programs. Argentina has far fewer social workers than it has psychologists and even psychiatrists, with only 11 social workers per 100,000 people. Unfortunately, data for the number of psychiatric nurses in Argentina is unavailable, which makes it difficult to determine if there is adequate trained staff in mental hospitals to care for patients. While Botswana has zero neurosurgeons per 100,000 people, Argentina has 1.1 per

100,000. This is still a very small number, but it does indicate that there is the option for neurosurgery, even if it requires travel to another part of the country (WHO e).

In a study conducted of the Greater Buenos Aires, which includes several Buenos Aires Province districts and is the third-largest conurbation in Latin America, it was revealed that there was a high prevalence of mental disorders, as high as 30 percent prevalence in females and 20 percent in males (Di Marco 1982). In more recent research on addictive substances conducted by the Ministry of Health, it was revealed that over 91 percent of Argentina's population reported a lifetime use of alcohol, and alcohol abuse represented the leading cause of mental illness in Argentina (WHO e). Furthermore, strained family conflict, childhood drug abuse and suicidal thoughts were found to be major sources of depression in Argentina. Additionally, lack of education, high unemployment rates, and divorce were also found to be factors that contributed to substance abuse. In addition, more patients who had substance abuse problems were found to be in mental hospitals and have mental health disorders (WHO e). Finally, research indicates that since 1997, there have been increasing suicide rates in Argentina, and it was most common among young people ages 15 to 24, accounting for 17 percent of violent deaths in women aged 15 to 44 (WHO e).

Thailand

Thailand was selected for the South-East Asia region, and has the second largest population out of all other countries in the region that were selected, comprising over 67 million people. Thailand is 94 percent Buddhist, and has a literacy rate of 92 percent. Furthermore, Thailand is one of the healthier countries in the South-East Asia region, with a high life expectancy of 72 for male and 77 for female. Despite its high life expectancy, Thailand's infant mortality rate is not as satisfactory as many of the other selected countries, and is comparable

only to Jordan, with an infant mortality rate of 17.48 deaths out of 1,000 live births. Thailand's infant mortality rate indicates a lack of adequate maternal and child healthcare regarding the prevention of infant deaths. Thailand is also one of the less economically rich countries out of the selected countries, second to only Jordan, with GDP per capita of $7,440. Thailand's unemployment rate is also quite significant – it is a mere 1.5 percent and the lowest out of every other country in each region selected for this study (CIA Fact Book: Thailand 2010).

Considering the significantly large size of Thailand's population, the amount the government spends on healthcare – only 3.5 percent of the GDP – is quite miniscule and the smallest amount in comparison to any other country in the study (WHO f). Thailand's mental health policy was initially created in 1995, and is included in its national healthcare system. The main goals in the mental healthcare policy include "advocacy, promotion, prevention, treatment and rehabilitation" (WHO g). Furthermore, the policy outlines the hope for the future to develop education and knowledge at the community level, similar to Botswana's community level approach. Thailand spends only 2.5 percent of its total health budget on mental health, and the majority of Thailand's mental health financing sources are tax based (WHO g). Though Thailand advertises having a universal mental healthcare program, in reality most healthcare plans do not include mental health, and for citizens with a low income who receive Government insurance, the plans only include very minimal coverage for hospitalization for severe psychotic episodes for up to 15 days (WHO g).

Thailand's number of psychiatric beds per 10,000 people is quite small, at only 1.4 beds for 10,000 people. The number of psychiatric nurses is also staggeringly small, only 2.7 per 100,000 people, meaning that even if there were more psychiatric beds available, there would not be enough nurses to care for the amount of people in those mental hospitals. Thailand's number

of psychiatrists is even more grim at 0.6 – not even one psychiatrist – for every 100,0000 people. Thailand also has an extremely low number of psychologists and social workers in its population, with only 0.2 psychologists and 0.6 social workers for every 100,000 people, indicating that it is nearly impossible for an average citizen to see a psychologist or social worker regularly. Though better than Botswana's zero neurosurgeons per 100,000 people, it is still strikingly small at only 0.4 neurosurgeons per 100,000 people (WHO g). Finally, it is important to note that out of these extremely stark numbers, the majority of the psychiatrists and occupational therapists are located in Bangkok, leaving the rest of Thailand, particularly rural areas, without vital mental health treatment. Psychologists and psychiatric nurses are spread out more evenly throughout Thailand, but without psychiatrists with the ability to diagnose and prescribe medications to treat mental health conditions, psychologists are only able to help to an extent (WHO e).

In the *Journal of the Medical Association of Thailand*, a study was published that evaluated 3000 adults, selected by random sampling, throughout Thailand to find the most common prevalence of mental disorders. The top five highest mental health disorders were alcohol use at 18.4 percent, drugs and substance at 11.2 percent, anxiety disorders at 10.2 percent, major depressive episodes at 9.9 percent, and manic episodes at 9.3 percent. Suicide was also quite high, and had a prevalence rate of 7.1 percent (Thavichachart et al. 2001). Furthermore, multiple studies have assessed the most common mental health disorders among Thai children. It was discovered that mental health disorders in Thai children are extremely high, with over 37 percent suffering from a type of psychiatric disorder. The most common disorders are anxiety and specific phobias; other disorders include depression, conduct disorder, ADHD, and separation anxiety disorder (WHO g).

Switzerland

Switzerland was selected for the WHO Europe region. Far smaller than Thailand's population, Switzerland has just over seven million people. Switzerland, unlike the other countries chosen, is one of the richest countries in the world with a per capita GDP of $40,840 (CIA Fact Book 2010: Switzerland). Despite Switzerland's wealth, it has a similar life expectancy, 71 for males and 75 for females, and the percentage of GDP spent on health, which is 11.3, is similar to the other countries chosen for this study (WHO h). Furthermore, Switzerland is an interesting example due to absence of both a national mental health policy and a national mental health program, unlike every other country selected (WHO i). Despite its wealth, absence of national mental health policies and programs provide insight into the mental health situation in this highly developed European country.

Switzerland's people are mainly Christian, 41 percent Roman Catholic and 35 percent Protestant, as well as 99 percent literate for both males and females (CIA Fact Book 2010: Switzerland). The unemployment rate in Switzerland is also quite low at 3.7 percent, the second lowest in the selected countries after Thailand. Switzerland's infant mortality rate is also extremely low, at only 4.18 deaths per 1000 live births, indicating a fairly physically healthy population in regards to maternal and child health, as well as proper healthcare and sanitary conditions needed to raise a healthy infant (CIA Fact Book 2010: Switzerland).

As discussed earlier, a mental health policy and national mental health program are both absent in Switzerland. The only mental health policy available is a substance abuse program, but it does not provide adequate psychological services. To this end, there is no portion of the national GDP allocated towards mental health funding, and the most common source of financial funding for mental health comes from taxes, insurance, as well as out of pocket expenditure

(WHO i). Despite the lack of mental health funding and programs, mental health is still considered to be a part of primary healthcare, and if a patient needs physical treatment for critical mental health conditions, this is still considered to be care available on a primary level. However, most insurance companies will not cover mental health therapy with a licensed psychologist or social worker unless under direct supervision and in conjunction with a medical doctor, limiting access to mental health therapy only to people who can financially afford it (WHO i). Mental health disorders are considered to be a disability in Switzerland and the government provides disability services to those who have mental health disorders and require assistance.

Considering the wealth and development of Switzerland, the number of psychiatric beds per every 10,000 people is strikingly low at only 13.2 beds. Psychiatric nurses are more available in Switzerland, with 46 available per 100,000 people. The number of psychiatrists available per 100,000 people is better than the previous countries selected, but is still small, at only 23 psychiatrists. Out of these psychiatrists, two-thirds work in a private practice, making it difficult for those who cannot afford private psychiatric care. The number of social workers and psychologists are higher, indicating more available for psychotherapy, with 106 social workers and 40.8 psychologists per 100,000 people. It is important to note that of these social workers, two-thirds are only employed part-time, lessening the effectiveness of their services. Despite the availability for psychotherapy from psychologists, many people cannot afford it due to lack of public funding and insurance coverage. Interestingly, the number of neurosurgeons in Switzerland is even lower than the number in Argentina, at only 0.8 per 100,000 people – surprising for such a rich country (WHO i). These numbers indicate that despite its economic wealth and development and its prestigious stature throughout the world, Switzerland lacks sufficient mental healthcare.

Jordan

The country selected for the Eastern Mediterranean region is Jordan, with a population of over 6 million. The majority of Jordan's people are Sunni Muslim and next to Botswana, Jordan is the second smallest country in this study. Jordan's literacy rate of 89.9 percent is lower than all the selected countries besides Botswana. Jordan's unemployment rate is quite high at 12.9 percent – it is higher than any other country selected in this study (CIA Fact Book 2010: Jordan). According to Jordan's Ministry of Health, 99 percent of its citizens receive healthcare access (Jordan Ministry of Health 2010). However, despite the majority of Jordanians with access to healthcare, Jordan's infant mortality rate is still quite high, equal only to Thailand, at 17.38 deaths per 1,000 live births. Furthermore, Jordan's GDP per capita is the smallest out of all selected countries at $4,820. Despite Jordan's lower GDP per capita, and higher unemployment and infant mortality rates, it is still a predominately healthy country with a life expectancy of 79.9. Jordan spends 9.9 percent of its GDP on healthcare (WHO j).

Though Jordan does not currently have a mental health policy, (it was drafted in 1986 but not implemented), Jordan does have a national mental health program. Jordan's national mental health program's goal is to raise awareness about mental health conditions and also the types of services available, in order to fully incorporate mental health into its public health program. As Jordan does not have an official mental health policy, it does not allocate specific funds towards mental health. However, because Jordan does have a national mental health program, it incorporates mental health into part of the primary health care system. Therefore, rather than the community based level, Jordan has trained healthcare professionals in primary care health centers and hospitals, and has even incorporated psychologists in schools to provide students counseling (WHO k).

Jordan has limited availability for mental health, with only 1.57 beds per 10,000 people. The number of psychiatric nurses per Jordan's population is also extremely small with only two per 100,000 people. Jordan's number of psychiatrists is astounding – only one psychiatrist for 100,000 people. Furthermore, Jordan has even less psychologists and social workers, only 0.6. psychologists and two social workers per 100,000 people. Like most of the selected countries, Jordan also has a miniscule number of neurosurgeons at only 0.2 per 100,000 people. It is important to note that many psychiatrists, psychologists, and other mental health workers seek work in either other fields or other countries with better salaries (WHO k).

A WHO General Health Questionnaire regarding the severity of mental health related illnesses in Jordan found that psychiatric disorders had a morbidity rate of 61 percent. The study revealed that particular factors in Jordan, such as high unemployment as well as the perceived severity of physical illness directly contributes to mental health disorders. Furthermore, similar to Argentina, suicide rates in Jordan are highest between 15 and 34 years of age. The majority of males who committed suicide were unemployed or had manual labor jobs, and the majority of women who committed suicide were housewives, and a small percentage were students. Finally, it is extremely interesting to note that religion did have an affect on mental health in Jordan, and during the month of Ramadan there were significantly fewer suicides (WHO k).

Japan

Japan, the selected country for the Western Pacific, is by far the most populated country selected, with over 126 million people. Japan is also the second wealthiest country chosen after Switzerland, with its GDP per capita of $32,600. Japan has a fairly low unemployment rate of 5.1 percent, behind Thailand and Switzerland. The major religions in Japan are Shintoism and Buddhism, and Japan's people have a 99 percent literacy rate. Japan's life expectancy at birth is

82.17 years, and has the lowest infant mortality rate out of all selected countries at only 2.72 deaths out of 1,000 live births (CIA Fact Book 2010: Japan). This strikingly low rate indicates a very healthy population that is able to facilitate healthy and sanitary healthcare conditions. Furthermore, Japan spends 7.9 percent of its GDP on health (WHO l).

Japan's mental health policy was instituted in 1950, the oldest policy out of the selected countries in this study. Japan spends five percent of its total health budget on mental health. Much of this funding comes from taxes, insurance companies, and privately out-of-pocket, similar to the other countries in this study. All residents of Japan are insured under the national health plan; therefore, mental healthcare falls under this umbrella, but only psychiatric emergencies are considered to be under primary health. Furthermore, a community-based approach in Japan has worked well since the 1994 law for community health centers was updated, and now supports community-based services on a local level. Despite these efforts to provide mental health as primary care in emergency situations, it is important to highlight that 89 percent of beds in psychiatric hospitals are in the private sector, making mental healthcare inaccessible to much of Japan's population (WHO m).

Japan has the largest amount of psychiatric beds than any of the other selected countries, with 28.4 psychiatric beds per 10,000 people. The number of psychiatric nurses is also unusually high at 59 per 100,000 people. Japan's rate of psychiatrists is 9.4 per 100,000 population, and only seven psychologists per 100,000 population. Higher than both the number of psychiatrists and psychologists in Japan, the number of social workers per 100,0000 people is 15.7, still grim but more than many other selected countries. Finally, the number of neurosurgeons in Japan is the highest of any other country selected, at five per 100,000 people, which illustrates Japan's cutting edge practices and policies in the modern health system (WHO m).

V. Discussion

Through an examination of six countries, this study provides a clear look into the status of mental health policies and programs around the world. The major factors surrounding mental health disorders in each particular country were researched, as well as the possible correlation of physical health conditions and mental health services. A major factor to mental health access is location and access. A look at Botswana, Argentina, Thailand, Switzerland, Jordan, and Japan provided a comprehensive study of mental health across regions. Based on this research, all six countries showed that the areas where mental health disorders were most prevalent were rural areas within countries, where less mental health treatment facilities were available. In Botswana, mental health disorders were most rampant in remote areas, specifically in six remote villages where schizophrenia rates ran high (WHO d). In Argentina, the rural parts of the Greater Buenos Aires region demonstrated a high prevalence of mental health disorders. In Thailand many rural areas were found to have a higher concentration of mental health disorders. This is in part due to the fact that the majority of Thailand's psychiatrists practice in Bangkok where they are paid better salaries, whereas others leave the country in search for more money elsewhere. This leaves the rural parts of Thailand with social workers and psychologists, but without psychiatrists who are needed to prescribe medications to treat many mental disorders. Switzerland has less of an issue regarding rural regions due to the fact that Switzerland is a highly developed country with a prevalence of facilities, resources, etc. As Jordan is such a geographically small country and 99 percent of its population has access to healthcare, location was also less of an issue. However, only specific hospitals and health centers provided adequate mental health care, so unless a patient sought out these locations, the quality of mental health care was far less. Japan's primary

mental healthcare system is highly advanced, and has the oldest system in place, with its policy dating back over 50 years. Due to these factors, location is not an issue in receiving mental healthcare in Japan, especially since its 1994 law for improving community-based mental healthcare was created, which allowed for more localized treatment options.

Other major factors that result in problems of mental health treatment include gender and age, which are particularly pertinent regarding suicide rates. This was prevalent in Argentina, where the most common ages for suicide were between 15 and 24. Furthermore, similar to Argentina, Thailand also had high rates of suicide at 7.1 percent, with the majority involving young people. Switzerland has one of the highest rates of suicide in Europe, which is most prevalent among adolescents. Suicide at a young age also is rampant in Jordan, and highest between ages 15 and 34. Age did not seem to be a contributing factor to any other mental health disorders, except in Thailand, where it was found that 37 percent of Thai children suffer from mental health disorders. Gender was not found to be a major contributor to mental health factors in any of the countries. Although, in some instances, difference could be seen in regards to gender, such as in Jordan where the majority of males who committed suicide were unemployed and the majority of women who committed suicide were housewives. However, there were still fairly equal suicide rates for both genders.

The original hypothesis that unemployment would be a major factor for mental health disorders across each country did not prove true everywhere. In Thailand, unemployment was not a significant factor for mental health disorders, especially due to Thailand's extremely low unemployment rate at only 1.5 percent. It was also less of a factor in Switzerland, which also had a low unemployment rate of 3.7 percent. Japan did not provide significant data to prove that unemployment was a contributor to mental health problems, and considering that Japan's

unemployment rate is 5.1 percent, it is unlikely that this is a significant factor for mental health such as depression or suicide. In Argentina, high unemployment rates of 8.7 percent were factors that greatly contributed to substance abuse, which was then a major factor to depression and suicide. In Jordan unemployment was the highest of any other country in this study at 12.9 percent, and also proved to be a major cause for depression and suicide rates. While Botswana's unemployment rate is 7.5 percent and could be a significant factor for mental health problems, there was no data available that directly correlated unemployment to suicide or depression. Thus, this analysis concludes that unemployment is only a significant factor to mental health disorders if it is extremely high, such as in Jordan or Argentina, and even if it is significant it does not necessarily have a direct impact on mental health.

Finally, religion was also considered in this study as a possible factor for contributing to mental health, such as mental health stigmas and refusal to seek treatment due to one's religion. As previously stated, in Botswana, the major religion is Christianity, Argentina's major religion is Roman Catholic, the majority of Thailand's people are Buddhist, Switzerland has a mix between Roman Catholic and Protestant people, and Japan has a mix between Shintoism and Buddhism. Though it was hypothesized that religion would be a negative aspect for mental health, such as the belief that mental health treatment was wrong or against one's religion, religion proved to be a positive aspect in mental health in Jordan. It was found that during the month of Ramadan, suicide rates were significantly lower, indicating that religion, at least during this month, had a strong correlation to lower mental health problems. However, though this was found in Jordan, the only country selected where the major religion is Sunni Muslim, there was not sufficient data available on the correlation between religion and mental health or suicide rates in any of the other countries.

It was originally hypothesized that there would be a direct correlation between the health of each country and how advanced each country's mental health programs were. Japan, which has the lowest infant mortality rate of 2.72 deaths per 1,000 live births and the highest life expectancy of 82.17, also has the oldest mental health system in place. Japan has both an extensive mental health policy as well as national mental health program both formulated in 1950, while most of the other selected countries have programs formulated in the 1990's and are still new and constantly changing. Though it is highly possible that Japan's extensive mental health system attributes to the physical health of Japan's population, Switzerland also has extremely good physical health statistics and does not have a mental health policy nor a mental health program. Switzerland's infant mortality rate is nearly as low as Japan's, with 4.18 deaths per 1,000 live births, and its life expectancy is quite high at 80.97, the highest after Japan. It is very possible that these positive health statistics in Switzerland and Japan are due more to the fact that they have robust economies and developed countries, rather than the fact that they have mental health systems, as mental health policies are absent from Switzerland.

In addition, the correlation between physical and mental health is less apparent in the other selected countries as well. Botswana has both a mental health policy and a national mental health program in place, but has the lowest life expectancy out of all the countries at only 52 years. This is most likely due to the fact that Botswana is in a region where there are still many hardships, especially economic. Argentina's mental health policy and mental health program are nearly as old as Japan's, with its policy formulated in 1957. Despite this, however, Argentina's life expectancy is lower than many of the other selected countries at 62 years for males and 68 years for females, and its infant mortality rate is 11.44 deaths of 1,000 live births. Thailand has both new mental health policies and programs, instituted in the 1990's, and has an even higher

life expectancy than Argentina. Jordan's mental health program was implemented in 1994, and Jordan does not have a mental health policy. Jordan's lower life expectancy and higher infant mortality rates could be attributed to Jordan's lack of a mental health policy, but it is Argentina, with its more developed health policy that has a similar life expectancy and infant mortality rate, showing that a mental health system does not necessarily correlate to the physical health of a country.

VI. Conclusion

Through this research on a global look at mental health, it is clear that international rules and regulations regarding mental healthcare standards need to be established. It was originally hypothesized that five specific factors, including gender, age, religion, unemployment, and mental healthcare access, were all significant in contributing to mental health conditions across the world. The results of this study showed that not all of these predictions were accurate. It was found that part of the hypothesis was correct – access and location did play a major part in Botswana, Argentina, and Thailand, where people in rural areas had less access to mental healthcare and where mental health conditions ran rampant. However, Switzerland, Jordan, and Japan had less of a location and access problem for mental health. Gender did not prove to be a major factor, only in Jordan did gender have any significant contributing factor to depression and suicide rates. It had also been predicted that age would contribute to mental health conditions, particularly that suicide rates would be higher among adolescents. This prediction was correct in Argentina, Thailand, Switzerland, and Jordan, but hard data on this topic were unavailable for Botswana and Japan. While it had been hypothesized that religion would have a negative affect

on mental health, such as increasing mental problems or mental health stigmas, it was found that it had the opposite effect, and that during the month of Ramadan in Jordan suicide rates were significantly decreased. However, religion did not appear to be a significant factor in any of the other countries. Finally, unemployment rates were expected to contribute to depression and suicide throughout the world, but only seemed to largely affect Argentina and Jordan, contributing to suicide and depression in these locations.

The other major hypothesis was that mental and physical health were directly related, and that if a country has a more expansive mental health program, its physical health statistics would be better than if it did not have a mental health program in place. This assertion proved to be incorrect since many of the countries with mental health systems in place for a significant amount of time still had lower physical health statistics than some of the countries that did not have a mental health system in place at all. While it is possible that a correlation does exist on a small scale, the existence of mental health policies and programs do not appear to be directly correlated with improved health statistics of a country.

As mental health is a significant healthcare problem – affecting a quarter of all people in the world in their lifetime – it is imperative that more research and attention be made to mental health and the importance of implementing policies and programs to provide treatment and awareness. Statistics discussed in this paper such as high suicide and depression rates and elevated percentages of children with mental disorders, indicates a need for the immediate action of placing mental health as a top priority.

Bibliography

CIA Fact Book, “Argentina” https://www.cia.gov/library/publications/the-world-factbook/geos/ar.html (accessed October 26 2010).

CIA Fact Book, “Botswana” https://www.cia.gov/library/publications/the-world-factbook/geos/bc.html (accessed October 23 2010).

CIA Fact Book, “Japan” https://www.cia.gov/library/publications/the-world-factbook/geos/ja.html (accessed November 19 2010).

CIA Fact Book, “Jordan” https://www.cia.gov/library/publications/the-world-factbook/geos/jo.html (accessed November 4 2010).

CIA Fact Book, “Switzerland” https://www.cia.gov/library/publications/the-world-factbook/geos/sz.html (accessed October 26 2010).

CIA Fact Book, “Thailand” https://www.cia.gov/library/publications/the-world-factbook/geos/th.html (accessed November 2 2010).

Di Marco, G. “Prevalence of Mental Disorders in the Metropolitan Area of the Republic of Argentina.” *Acta Psiquiatrica y Psicologia de America Latina* 28 (1982): 93-102.

Jordan Ministry of Health, "About Ministry of Health" http://www.moh.gov.jo/MOH/En/about.php (accessed November 4 2010).

Marrianne C Kastrup, MD., Armando Baez Ramos, MD. "Global Mental Health." *Dan Med Bull* 54, no. 1 (2007): 42-43.

Mowbray, Carol T., Holter, Mark C. "Mental Health and Mental Illness: Out of the Closet?" *Social Service Review* 76, no. 1 (2002): 135-179.

Republic of Botswana Ministry of Health, "Department of Public Health" http://www.gov.bw/en/Ministries--Authorities/Ministries/MinistryofHealth-MOH/Departments-of-MOH1/MOA-Departments11111/ (accessed October 19 2010).

Sharma, Manoj and Atri, Ashutosh. *Essentials of International Health*. Sudbury, MA: Jones and Bartlett Publishers, 2010.

Thavichachart, N., Intoh, P., Thavichachart, T., et al. "Epidemiological Survey of Mental Disorders and Knowledge Attitude Practice Upon Mental Health among People in Bangkok Metropolis." *Journal of the Medical Association of Thailand* 84 (2001): 118-126.

WHO a, "Mental Health" http://www.who.int/mental_health/en/ (accessed October 8 2010).

WHO b, “Mental Health Improvement for Nations Development: The WHO Mind Project” http://www.who.int/mental_health/policy/en/ (accessed October 19 2010).

WHO c, “Botswana: Statistics” http://www.who.int/mental_health/evidence/en/ (accessed November 2 2010).

WHO d. “Mental Health Atlas: Botswana.” (2005).

WHO e. “Mental Health Atlas: Argentina.” (2005).

WHO f, “Thailand: Statistics” http://www.who.int/countries/tha/en/ (accessed November 4 2010).

WHO g. “Mental Health Atlas: Thailand.” (2005).

WHO h, “Switzerland: Statistics” http://www.who.int/countries/che/en/ (accessed November 14 2010).

WHO i. “Mental Health Atlas: Switzerland.” (2005).

WHO j, “Jordan” http://www.who.int/countries/jor/en/ (accessed November 7 2010).

WHO k. “Mental Health Atlas: Jordan.” (2005).

WHO l, “Japan: Statistics” http://www.who.int/countries/jpn/en/ (accessed November 21 2010).

WHO m. “Mental Health Atlas: Japan.” (2005).

WHO n. “Mental Health Atlas: Definitions.” (2005).