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2024 Global Economic Forum: Prioritizing Global Risks *Mental Health Deterioration*

“Investing in mental well-being means investing in healthy and prosperous communities.”

– Antonio Guterres, United Nations Secretary-General

Understanding The State of Mental Health

In the U.S., mental health **advocacy** has become a more pressing issue in response to the effects of the Covid-19 pandemic on people’s mental health. The Pew Research Center reported that slightly less than half of parents feel the first year of the pandemic had a negative effect on their children’s emotional wellbeing, and in other study, researchers found 37 percent of high school students said their mental health was deficient during most or all of the pandemic.ⁱⁱⁱ Predominantly, women were more impacted, with 49 percent of high school girls contending their mental health was poor throughout this period.ⁱⁱⁱ The U.S. is not alone, however, in realizing the deterioration of mental health in not only its young adults, but across virtually every age and gender.

Globally, diagnosed anxiety and depression increased by 25 percent, according to the **World Health Organization**.^{iv} Columbia University Mailman School of Public Health conducted a similar study that corroborates WHO’s work, which also yielded that the prevalence of depression and anxiety during the pandemic was 24 percent and 21 percent.^v

Within countries and across regions, the effects of the Covid-19 pandemic vary, and the following results reflect post-pandemic findings. The mentioned study from the Columbia University Mailman School of Public Health saw Asia with the lowest percentages for anxiety and depression while parts of Africa and Europe nearly doubled Asia’s numbers. Only 15 to 20 percent of people surveyed in Asia experienced depression after the pandemic, but this presents a sharp increase from pre-pandemic levels of 1.3 to 3.4 percent of people with depression.^{vi} Anxiety follows a similar trend in Asia with low levels below 5 percent, which are raised about 18 percent post-pandemic.^{vii} In Non Asian regions and Europe, the percentages for the prevalence of depression were 39 percent and 29 percent, respectively.^{viii} Looking to Ethiopia, specifically, in April of 2020 the U.N. placed the percentage of people suffering from depression at approximately 33 percent, which multiplied previous numbers by three times.^{ix}

Prior to the pandemic, the presence of mental health was a growing concern. *The Lancet* published a study on global mental health from 1990 to 2019, and in the span of almost 30 years, the quantity of healthy years lost (measured in **DALYs**, disability adjusted life years) rose from 80.8 million to 125.3 million.^x Overall, the study concluded that the tropic regions like Latin America, and high-income North America had the greatest prevalence for mental disorders.^{xi} Depressive disorders had the greatest impact on sub-Saharan Africa, North Africa, the Middle East, Latin America, and high-income North America.^{xii}



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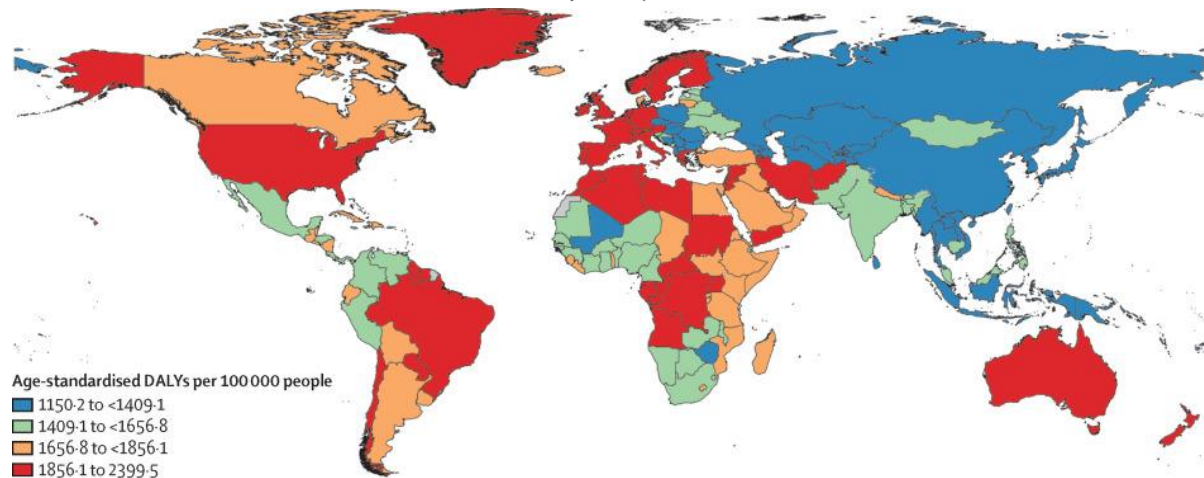


Photo Credit: The Lancet

Altogether, pre- and post-pandemic inquiries into mental health reveal a rising influence of mental health on people's well-being, succeeded by an aggravation of existing conditions during the pandemic. Nevertheless, while the conversation on mental health is vibrant, deliberate action in terms of research and development, as well as overall investment into new treatment or encouraging people to be mental health professionals, is moving more slowly.

What are Countries Doing Now?

Three years ago, Dr. Tedros Adhanom Ghebreyesus, the Director-General of the World Health Organization, said, "It is extremely concerning that, despite the evident and increasing need for mental health services, which has become even more acute during the COVID-19 pandemic, good intentions are not being met with investment."^{xiii}

Dr. Ghebreyesus's remarks remain true as quantitative findings in the 2022 WHO Mental Health Report, whose researchers discovered that in many countries, most funds for mental health are allocated to **psychiatric** hospitals even though few people qualify for such treatment or can travel to one.^{xiv} Another U.N. report had comparable results, noting that on average, countries spend around 2 percent of their health budgets on mental health.^{xv} In the same year these numbers were published, 51% of WHO's 194 member states had mental health policy that adhered to international and human rights standards; that year's target was 80 percent of member states.^{xvi} Roughly 52 percent of them also met the requirements for promoting public mental health awareness, still short of that 80 percent goal.^{xvii}

Despite the slow progress countries are making on mental health policy, it is not uncommon for these same countries that spend little on mental health to face a shortage of mental health professionals to carry out their policies. Because of the lack of people who can provide treatment, e.g., psychiatrists, therapists, counselors, or case managers, mental health policy is difficult to make a reality.^{xviii}



Nevertheless, as mentioned, slow progress does not mean that no progress has been made. Early adopters of the **WHO Special Initiative for Mental Health** include Bangladesh, the Philippines, Ghana, Jordan, Nepal, and Argentina—to name a few. Bangladesh has already passed mental health policies that seeks to address gaps in treatment, such as investigating **telehealth**. They also tailored a new mental health policy specific to substance abuse.^{xix} In the Philippines, the government has taken action to fix access issues with the **Medicine Access Programme for Mental Health** (created by the Philippine legislature), as well as to strengthen systems for referrals and the capacity of providers in secondary care.^{xx} Meanwhile, another WHO Special Initiative country, Paraguay, has made laws to enhance existing mental health and psychiatric units as well as to develop a **deinstitutionalization** plan for long term patients of the National Psychiatric Hospital in addition to keeping careful record of outcomes of these policies. Note that these countries, while they did not initially have domestic funding, received funding from WHO so they were able to have people develop and implement plans, monitor, and detect mental health issues, and staff relevant offices. However, aid policies or fiscal policy would increase domestic budgets in countries and make domestic efforts attainable i.e., making infrastructure spending a possibility.

Breakthroughs in Identifying the Problem

As countries grapple with producing legislation that addresses mental health and the issue of too few trained individuals to provide treatment, there has been an effort to define the problem and identify challenges surrounding mental health. Data collection is the first step, and the United States and the listed WHO Special Initiative countries have begun to conduct studies and/or compile more information regarding the frequency of patients with mental health disorders.^{xxixxxii} However, studying impact of and treatment of different mental health disorders is not a priority for many countries. Research on the number of major depressive disorder studies per country by scholars from Addis Ababa University in Ethiopia and a satellite campus of King's College in Ethiopia concluded that the vast majority of countries had yet to produce one or two studies on the matter.^{xxiii} The leading place of origin for such information collecting came from the North America, Brazil, Europe, China, and Australia.^{xxiv}

Across global evaluations of mental health treatment, developing countries struggle the most to provide access and professionals to patients. However, it is important to take note that while formal mental health systems may not be advanced, informal networks people rely on are stronger, and this emerges in part



A Community based health program in Brazil. Photo Credit: World Health Organization, Getty Images

due to the differences in culture regarding medicine. Western medical tradition, also known as **the biomedical model or paradigm**, emphasizes government-provided care and a reliance on medical institutions and specialists, whereas in a portion of developing countries, the custom is to reach out to community or spiritual leaders.^{xxv} Because of these divergent approaches, the implementation and policy recommendations of Western medical practices are sometimes harder to execute, or yield marginal improvements because individuals in some



countries are more comfortable using informal methods of addressing mental health rather than going to a psychiatric hospital. Nevertheless, funding for mental health is often directed towards establishing or improving psychiatric facilities.^{xxvi} In contrast, community-based mental health treatment is underfunded.^{xxvii} Community-based mental health is oftentimes broadly defined, but it typically includes mental services, such as community support groups, local walk-in clinics, treatment that involves the patient and their family members, and other interventions from people not exclusively identified as medical professionals. Similarly, community-based models sometimes include discussions about external factors that have contributed towards a patient's current mental health, e.g., cultural stigma or stress from a country's political climate.

There is evidence of the successes of community-based mental health models. A publication from the *Health and Human Rights Journal* cited one study from India and another from Uganda. In India, people with chronic **schizophrenia** were separated into two groups, one using community-based rehabilitation and the other using **out-patient care** rooted in the biomedical model. The community-based rehabilitation group had better outcomes, and fewer people left treatment prematurely.^{xxviii} Similarly, in Uganda, therapy groups for girls and women who experienced war and displacement saw improvements in symptoms of depression and anxiety.^{xxix} Comparable results were also seen in rural Pakistan with cognitive behavior-based therapy among mothers; intervention reduced the prevalence of major depressive episodes.^{xxx}

Designing Better Policies

Next steps in how to better design mental health policies from an *International Journal of Maternal and Child Health and AIDS* study are specific to Uganda but could potentially apply to similar regions and/or countries. The study found most Ugandans live over 5 kilometers from the nearest health facility, indicating a need for the construction of spaces dedicated to public and/or mental health treatment



Photo Credit: United Nations, Getty Images

because improved public transportation is too expensive for most people (which is another concern that could be addressed).^{xxxi} Also, primary care workers have not been integrated with mental health workers, meaning there is a lack of available mental health medicine available to general medical clinics.^{xxxii} Therefore, potential solutions include making changes to the overall infrastructure to either support public transportation and/or combining mental and public health resources.

Drawing on this information, economic policies that would benefit individual communities and the **macroeconomy** would emphasize better funding or better economic conditions for more readily available community-based treatment. With these sorts of policies in place, it would help mitigate the prevalence of mental health disorders in addition to promoting a more prosperous economy; economic disadvantage is tied to experiencing mental illness, especially when it is



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related to exclusion or discrimination.^{xxxiii} Similarly, it is imperative to encourage economic incentives for individuals to become trained in mental health treatment, and on a larger scale, countries must also recognize cost untreated mental health. The global cost of mental, **neurological** and substance use disorders totaled to \$2.5 trillion and \$8.5 trillion in 2010, respectively; the cumulative global economic impact of substance use disorders was estimated to exceed \$16 trillion between 2011 and 2030, which is higher than the impact of heart disease, respiratory disease, cancer, and diabetes.^{xxxiv}

The Charge – Create a Regional Policy Proposal Presentation

The **2024 Global Economic Forum** will simulate the international community’s fight against growing global risks. The World Bank is seeking to fund innovative solutions to this crisis and has called for interested policymakers to submit their proposals. Invited Student Delegates (that’s you!) will represent an assigned global region and committee topic related to the issue of *Mental Health Deterioration*. Each team will present their strategy for combating this evolving issue to other students in their committee representing other global regions at the very beginning of the Forum’s first committee breakout session. After hearing each region’s initial presentation, your committee will then **collaborate on a collective policy proposal** aimed at solving your committee’s topic on a global scale, while representing the needs and opportunities of each represented regional group.

During the Closing Plenary at the end of the program day, each committee will present their policy proposals. One member of each region in the committee group will present the committee’s newly-created collective policy proposal. A panel of judges representing the World Bank will hear each committee proposal, ask clarifying questions, and ultimately determine a winning committee team, awarding them fictitious funding for their policy proposal.

It is critical that you read the separate [Instructions for Creating a Regional Policy Proposal Presentations](#) for further details and expectations. Teams are encouraged to utilize the provided presentation template (in your school’s Google Drive program folder) when creating their Regional Policy Proposal presentations. Each team will have 3 minutes to present and should have no more than 5 slides in their presentation (not including the title slide). Each team should be prepared to answer 3 minutes of questions from their peers about their policy proposals.

This briefing paper should serve as a starting point for understanding the overall challenges of your assigned committee topic, however, you will also need to conduct additional research. Please see the Council’s Global Economic Forum resources [webpage](#) for suggested additional resources. The purpose of this Forum is not only for Delegates to gain a holistic understanding of the social, political, and economic implications and consequences of the digital divide, but also for Delegates to also gain experience in the policymaking process as it relates to critical international issues. Best of luck!

Quick Facts



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Find at least five quick facts from this briefing paper or in reputable online sources that will be useful in creating your Regional Policy Proposal. Quick facts should be about one sentence long and provide useful information on your assigned committee topic.

1. On average, UN member states spend approximately 2% of their health budgets dedicated to mental health.
- 2.
- 3.
- 4.
- 5.

Questions to Consider

1. What mental health issues/challenges affect your assigned region the most?
2. What was the overall impact of the Covid-19 pandemic on your assigned region regarding mental health? How does that compare to the global statistics of Covid-19's impact on mental health?
3. Have any countries in your region adopted the WHO Initiative for Mental Health? If so which ones? If not, is there a benefit to your region adopting this initiative?
4. Does your region primarily utilize the biomedical model/paradigm or the community-based model in addressing mental health? Please provide some examples



Glossary of Terms

Term	Definition
Advocacy	This is public support for a cause or policy.
World Health Organization (WHO)	The World Health Organization is an agency of the United Nations, and WHO is helps promote global health through funding projects and educating people.
DALYs	These refer to disability adjusted years, and one DALY is one equivalent to one year lost of healthy living.
Psychiatric (hospital)	Psychiatric hospitals are hospitals that specialize in treating mental disorders, and the patients there are usually there for an extended period for treatment.
WHO Special Initiative for Mental Health	This was started in 2019, and it was created with the intention of promoting the provision of mental health services in countries, as well as generating awareness about mental health.
Telehealth	This is when doctor's visits or counseling happen over online video platforms or by phone.
Medicine Access Programme for Mental Health	This is a program in the Philippines that has sought to increase access to mental health treatment, both in psychiatric hospitals and community-based resources. It would give people greater access to consultations, education, support, and referrals to psychiatric hospitals.
Deinstitutionalization	This is the process or act of releasing a long-term patient from a psychiatric hospital or prison.
The Biomedical Model or Paradigm (of Medicine)	This refers to the attitudes, behaviors, and ideas related to Western medicine, which is what is used in the United States.
Schizophrenia	A mental disorder that can give people a false impression of reality, seeing or hearing things that are not there. People may also experience having thoughts that impact their ability to judge their surroundings or certain situations. People may also have some or all of these symptoms, and they may experience them a little bit or very strongly.
Out-patient Care	This is when mental healthcare or treatment is provided to people through a series of appointments or visits with professionals outside of a hospital like a doctor's office or clinic.
Macroeconomy	The macroeconomy refers to larger economy that smaller economies make up like the American economy (what is bought and sold in America) is part of the global economy that is made up of the American, Canadian, French, Chinese, and Moroccan economies etc.
Neurological	This refers to disorders or things happening with the brain.

Resources



[COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide \(who.int\)](#)

[COVID-19 Pandemic Impacts Mental Health Worldwide | Columbia University Mailman School of Public Health](#)

[UN-Policy-Brief-COVID-19-and-mental-health.pdf](#)

[Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019 - The Lancet Psychiatry](#)

[Global Mental Health: Where We Are and Where We Are Going - PMC \(nih.gov\)](#)

[The global gap in treatment coverage for major depressive disorder in 84 countries from 2000–2019: A systematic review and Bayesian meta-regression analysis | PLOS Medicine](#)

[Mental Health Service Provision in Low- and Middle-Income Countries - PMC \(nih.gov\)](#)

[Addressing the Problem of Severe Underinvestment in Mental Health and Well-Being from a Human Rights Perspective - PMC \(nih.gov\)](#)

[Interventions for depression symptoms among adolescent survivors of war and displacement in northern Uganda: a randomized controlled trial - PubMed \(nih.gov\)](#)

[Evaluation of a community-based rehabilitation model for chronic schizophrenia in rural India - PubMed \(nih.gov\)](#)

[Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial - PMC \(nih.gov\)](#)

[Economics and mental health: the current scenario - PMC \(nih.gov\)](#)

ⁱ Dana Braga and Kim Parker, “Most K-12 parents say first year of pandemic had a negative effect on their children’s education,” *Pew Research Center*, <<https://www.pewresearch.org/short-reads/2022/10/26/most-k-12-parents-say-first-year-of-pandemic-had-a-negative-effect-on-their-childrens-education/>> (26 October 2022).

ⁱⁱ Katherine Schaeffer, “In CDC survey, 37% of U.S. high school students report regular mental health struggles during COVID-19 pandemic,” *Pew Research Center*, <<https://www.pewresearch.org/short-reads/2022/04/25/in-cdc-survey-37-of-u-s-high-school-students-report-regular-mental-health-struggles-during-covid-19/>> (25 April 2022).

ⁱⁱⁱ Katherine Schaeffer, “In CDC survey, 37% of U.S. high school students report regular mental health struggles during COVID-19 pandemic,” *Pew Research Center*, <<https://www.pewresearch.org/short-reads/2022/04/25/in-cdc-survey-37-of-u-s-high-school-students-report-regular-mental-health-struggles-during-covid-19/>> (25 April 2022).

^{iv} “COVID-19 pandemic triggers 25% increase in prevalence of anxiety and depression worldwide,” *World Health Organization*, <<https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide>> (2 March 2022).

^v Megan Marziali and Ziyin Lum, “COVID-19 Pandemic Impacts Mental Health Worldwide,” *Columbia University Mailman School of Public Health*, <<https://www.publichealth.columbia.edu/news/covid-19-pandemic-impacts-mental-health-worldwide>> (18 March 2022).



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- ^{vi} Megan Marziali and Ziyin Lum, “COVID-19 Pandemic Impacts Mental Health Worldwide,” *Columbia University Mailman School of Public Health*, <<https://www.publichealth.columbia.edu/news/covid-19-pandemic-impacts-mental-health-worldwide>> (18 March 2022).
- ^{vii} Megan Marziali and Ziyin Lum, “COVID-19 Pandemic Impacts Mental Health Worldwide,” *Columbia University Mailman School of Public Health*, <<https://www.publichealth.columbia.edu/news/covid-19-pandemic-impacts-mental-health-worldwide>> (18 March 2022).
- ^{viii} Megan Marziali and Ziyin Lum, “COVID-19 Pandemic Impacts Mental Health Worldwide,” *Columbia University Mailman School of Public Health*, <<https://www.publichealth.columbia.edu/news/covid-19-pandemic-impacts-mental-health-worldwide>> (18 March 2022).
- ^{ix} United Nations, *Policy Brief: COVID-19 and the Need for Action on Mental Health*. (United Nations, 2020), <<https://unsdg.un.org/sites/default/files/2020-05/UN-Policy-Brief-COVID-19-and-mental-health.pdf>>.
- ^x F.J. Charleson et al., “Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019,” *The Lancet* 9 (February 2022): 137,144.
- ^{xi} F.J. Charleson et al., “Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019,” *The Lancet* 9 (February 2022): 137,144.
- ^{xii} F.J. Charleson et al., “Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019,” *The Lancet* 9 (February 2022): 137,144.
- ^{xiii} Emily Henderson, “WHO report reveals the worldwide failure to provide people with required mental health services,” *World Health Organization*, <<https://www.news-medical.net/news/20211011/WHO-report-reveals-the-worldwide-failure-to-provide-people-with-required-mental-health-services.aspx>> (11 October 2021).
- ^{xiv} “World Mental Health Report: transforming mental health for all,” World Health Organization, <<https://iris.who.int/bitstream/handle/10665/356119/9789240049338-eng.pdf?sequence=1>> (2022).
- ^{xv} “Policy Brief: COVID-19 and the Need for Action on Mental Health,” *United Nations*, <<https://unsdg.un.org/sites/default/files/2020-05/UN-Policy-Brief-COVID-19-and-mental-health.pdf>> (13 May 2020).
- ^{xvi} “WHO report highlights global shortfall in investment in mental health,” *World Health Organization*, <<https://www.who.int/news/item/08-10-2021-who-report-highlights-global-shortfall-in-investment-in-mental-health>> (8 October 2021).
- ^{xvii} “WHO report highlights global shortfall in investment in mental health,” *World Health Organization*, <<https://www.who.int/news/item/08-10-2021-who-report-highlights-global-shortfall-in-investment-in-mental-health>> (8 October 2021).
- ^{xviii} Moitra Modhurima et al., “Global Mental Health: Where We Are and Where We Are Going,” *Current psychiatry reports vol. 25,7* <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10230139/>> (31 May 2023).
- ^{xix} “Bangladesh WHO Special Initiative for Mental Health,” *World Health Organization*, <<https://www.who.int/initiatives/who-special-initiative-for-mental-health/bangladesh>> (2023).
- ^{xx} “Philippines WHO Special Initiative for Mental Health,” *World Health Organization*, <<https://www.who.int/initiatives/who-special-initiative-for-mental-health/philippines>> (2023)
- ^{xxi} “The global gap in treatment coverage for major depressive disorder in 84 countries from 2000–2019: Asystematic review and Bayesian meta-regression analysis,” *PLoS Med*, <<https://doi.org/10.1371/journal.pmed.1003901>> (15 February 2022).
- ^{xxii} “WHO Special Initiative for Mental Health,” *WHO*, <<https://www.who.int/initiatives/who-special-initiative-for-mental-health>>.
- ^{xxiii} “The global gap in treatment coverage for major depressive disorder in 84 countries from 2000–2019: Asystematic review and Bayesian meta-regression analysis,” *PLoS Med*, <<https://doi.org/10.1371/journal.pmed.1003901>> (15 February 2022).



- ^{xxiv} “The global gap in treatment coverage for major depressive disorder in 84 countries from 2000–2019: A systematic review and Bayesian meta-regression analysis,” *PLoS Med*, <<https://doi.org/10.1371/journal.pmed.1003901>> (15 February 2022).
- ^{xxv} Shanaya Rathod et al., “Mental Health Service Provision in Low- and Middle-Income Countries,” *Health services insights* vol. 10 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5398308/>> (28 March 2017).
- ^{xxvi} Faraaz Mahomed, “Addressing the Problem of Severe Underinvestment in Mental Health and Well-Being from a Human Rights Perspective.” *Health and Human Rights Journal* vol. 22,1, <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7348439/>> (June 2022).
- ^{xxvii} Faraaz Mahomed, “Addressing the Problem of Severe Underinvestment in Mental Health and Well-Being from a Human Rights Perspective.” *Health and Human Rights Journal* vol. 22,1, <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7348439/>> (June 2022).
- ^{xxviii} Sudipto Chatterjee et al., “Evaluation of a community-based rehabilitation model for chronic schizophrenia in rural India.” *The British journal of Psychiatry: the Journal of Mental Science* vol. 182 <<https://pubmed.ncbi.nlm.nih.gov/12509319/>> (January 2003).
- ^{xxix} Paul Bolton et al., “Interventions for depression symptoms among adolescent survivors of war and displacement in northern Uganda: a randomized controlled trial.” *JAMA* vol. 298,5 <<https://pubmed.ncbi.nlm.nih.gov/17666672/>> (7 August 2007).
- ^{xxx} Atif Rahman et al., “Cognitive behaviour therapy-based intervention by community health workers for mothers with depression and their infants in rural Pakistan: a cluster-randomised controlled trial.” *Lancet (London, England)* vol. 372,9642 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2603063/>> (13 September 2008).
- ^{xxxi} Janice Katherine Kopinak, “Mental Health in Developing Countries: Challenges and Opportunities in Introducing Western Mental Health System in Uganda.” *International Journal of MCH and AIDS* vol. 3,1 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4948168/>> (2015).
- ^{xxxii} Janice Katherine Kopinak, “Mental Health in Developing Countries: Challenges and Opportunities in Introducing Western Mental Health System in Uganda.” *International Journal of MCH and AIDS* vol. 3,1 <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4948168/>> (2015).
- ^{xxxiii} Martin Knapp and Gloria Wong, “Economics and mental health: the current scenario.” *World psychiatry : official journal of the World Psychiatric Association (WPA)* vol. 19,1, <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6953559/>> (10 January 2020).
- ^{xxxiv} Martin Knapp and Gloria Wong, “Economics and mental health: the current scenario.” *World psychiatry : official journal of the World Psychiatric Association (WPA)* vol. 19,1, <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6953559/>> (10 January 2020).