Introduction

During the Digital Age of the 20th and 21st century, technology has advanced at an astounding speed, going from computers as big as entire rooms to smartphones small enough to fit inside one’s pocket. Within less than a generation, the way we access information, communicate, and sought entertainment changed tremendously due to widespread technological progress. As a result, technological devices, ranging from laptops to smartphones and tablets, became a necessity in daily life regardless of age, culture, or job. For instance, while 96% of Americans did not own phones in 1990, 70% had smartphones and a further 20% had cell phones in 2015, bringing it from 4% to 90% just twenty-five years later.

However, despite the convenience and excitement that it comes with, technology can also have tremendous effects on mental health. People don’t even realize technology is slowly affecting them as they get used to - or even addicted to - technology. Examples of this include anxiety, depression, insecurity, isolation, and stress. All are directly associated with the devices or the applications used on those devices, such as the internet, messaging platforms, or social media. While such problems can affect people of all ages, they are especially common for teenagers and young adults.
Definition of Key Terms

Anxiety Disorders

Anxiety disorders, which can be normal at standard levels of slight distress, happen when one faces fear or reacts worried beyond the level of what is commonly expected. Types pertaining to the issue include panic disorders with frightening terror attacks and social phobia with fearing the judgment of public embarrassment.

Mental Health

According to the WHO, mental health is “a state of complete physical, mental and social well-being” when we make choices, take care of stress, and work for contributions. Disorders can come in different types, specifically anxiety, mood, and psychotic, all of which have early signs that can be seen and treatments to be taken.

Mood Disorders

While mood is an emotional feeling or state at a certain time, mood disorders are severe mood changes that don’t match up with one’s events or surroundings. These disorders can be elevation, depression, both, or other irregular combinations.

Proliferation

Proliferation means to increase in numbers and spread to a greater extent, which refers to the growing number of devices and use of technology for this issue.
Psychotic Disorders

Psychotic disorders severely affect the mind by clouding thinking processes and affecting decision-making skills. The two major symptoms are delusions and hallucinations, which means having false beliefs and feeling senses that aren’t there, respectively.

Technological Devices

Technological devices are machines that serve a specific purpose with the computing power for inputs, outputs, or both, and the ability to download additional software. For example, cell phones, desktop and laptop computers, smartphones, smart watches, tablets, etc.

Background Information

Advancement and Evolution of Technological Devices

The two major types of portable technological devices, laptops and mobile phones, were both invented around the same time. There was computer scientist Alan Kay’s “Dynabook” prototype in 1972, and Motorola senior engineer Marty Cooper’s first handheld mobile phone in 1973. Both products would go from ideas to being matured in the 1980s, where the market would develop lighter and thinner designs that provided increasingly modern features. All contribute to behaviors that might prompt mental health issues. Tablets were invented in the 1980s but made popular with the iPad in 2010. Smart watches were invented in the 2000s, but have developed enough to compensate for their small size.

#2: An infographic about the evolution of technology, which includes the development of computers as well as the trend of increasing computer power.
Patterns and Trends of Technology Use

Over the years, several statistics have shown the excessive amount of time people interact with a technological device every day, at an average of 6.5 hours for children and 8.5 hours for adults. Half of all children think they’re addicted to their devices, while adults frequent check for notifications and spend more time on their devices than sleeping. Currently, 3.8 billion people (40% of the world’s population) use the internet. At the same time, new technological innovations such as digital voice assistants, smart TVs, and virtual reality wearables, increased, indicating future trends. Technology usage is projected to rise in developing countries as those countries are still in the process of building infrastructure and gaining technology, in addition to increasing income and quality of life that closes the digital divide.

Types of Technological-Related Mental Health Issues

Mental health disorders can be divided into anxiety, mood, and psychotic, all of which can be affected by technological devices. 3.76% of the world’s population has anxiety and 3.44% more has depression, the two most common mental disorders. As technology became easily accessible, both can be caused by “modern triggers”: the accessibility of the internet, smartphones, and social media, all of which can lead to addiction and distraction. These then result in an inability to perceive reality, vulnerability, and fear of comparison and judgment in public.

Technological devices have also become a “mood regulator” as they can be used anytime and anywhere. Studies have shown that our mood changes in a circadian cycle that rotates every twenty-four hours; however, technological devices can bring in outside variables capable of modifying emotions such as anger, fatigue, sadness, etc.. One of the causes of psychotic disorders are hormones and sleep. Electronic screens on these devices increase dopamine levels when causing the brain to be excited with pleasure and staying up late to use devices, which leads to less sleep.

Specific Effects on Teenagers and Young Adults

According to the Organization for Economic Cooperation and Development (OECD), “with half of all mental illnesses beginning by age 14 it is critical to intervene early to minimize its effects on development, education, employment, and health.” Teenagers and young adults are most affected by the issue, with one-fourth of those who live in developed countries having a mental disorder. Almost all teenagers, especially those in developed countries, use at least one type of technological device on a daily basis. Some scientists have argued that screen time causes problems, while others say increased screen time leads to less less anxiety and depression, and that the only ones at risk are those who already have mental disorders.

While limited technology use can be positive, too much would bring negative impacts—digital platforms with cyber-bullying and exclusion, long hours with poor sleep, and social media with body
image insecurity and FOMO. This generation experiences less interpersonal contact and turns to technology instead, causing symptoms that can soon have severe consequences if not properly treated. Technology can directly affect youth development and physical health, and indirectly contribute to a poorer education and higher unemployment.

#3: A graph comparing the percentage of teenagers using social media in 2012 and 2018, where there are huge increases and the majority checks it multiple times per day.

Major Countries and Organizations Involved

China

As found through China’s first national study of its kind, mental health issues became more of a problem today than how it was thirty years ago, before its economic development, with over 170 million people having a disorder. Similar to many other countries, people are hesitant to seek treatment because of cultural and religious beliefs, as well as the desire to maintain their public image. Because mental health is now the country’s top health issue, China passed its first set of mental health laws in 2013 that requires the consent of patients before treatment can begin, making treatment completely voluntary. China has 1.7 psychiatrists per 100,000 people, and there is a significant lack of professionals in rural areas. However, China does have a lower percentage of the population suffering from mental disorders when being compared to similar countries.

European Union (EU)

In the EU, fighting the issue of mental health occurs both at the individual member state’s medical services and the Union’s priorities in its public health agenda. The EU has identified that mental
disorders will be the largest health issue Europe will face in the 21st century, and that the most important step is to improve research. In 2013, the Joint Action for Mental Health and Well-being was launched across EU member states and organizations to deal with mental health and issues related to it, targeting issues prevalent in communities, schools, and workplaces. It issued the European Framework for Action on Mental Health and Wellbeing for countries to work together on their experiences and policies, as well as the Compass for Action that assists in the framework’s implementation.

Less Economically Developed Countries (LEDCs)

Though not specifically a country or an organization, LEDCs, or developing countries, typically receive less focus and funding on mental illness as they can be seen as “invisible” with more pressing issues such as HIV/AIDS, malaria, and other infectious diseases. The WHO found that the largest problems are depression and poverty since they serve as barriers from properly seeking treatment in already difficult environments, with an inadequate number of hospitals and a low physicians-to-population ratio. About 40% of developing countries have no mental health policy or treatment facilities, while 25% have no relevant legislation or separate funding. In 2001, India spent less than 1% of its total health budget on mental health. Just three years later, in 2014, it became the first LEDC to publish a mental health policy, which called for hiring more professional medical staff and increasing funding for treatment programs. Since then, with the assistance and recommendations of many international organizations such as the WHO, many more countries followed India and began providing accessible solutions to their citizens.

#4: A map for the ratio of mental health psychiatrists to the population, illustrating a divide between developed countries with more psychiatrists and developing countries with less.

United States (US)
The US is a developed country where much of the research, development, and implementation of technological devices take place, hence meaning that people’s lives are heavily dependent on technology and mental health is an important concern. 43 million Americans have a mental health disorder, yet 24.5 million of them, about 57%, are not receiving the necessary treatment. The problem is worsened by the availability of addictive substances such as alcohol and drugs, causing millions to have addiction and mental health disorders occurring simultaneously. Even with the creation of organizations like the Mental Health America (MHA), groups with low economic status, veterans, and young adults are the groups at the highest risks in the US.

**World Health Organization (WHO)**

Though most people associate the WHO as dealing with diseases and widespread epidemics, it is also a UN specialized agency which is primarily responsible for dealing with mental disorders, regarded as an international health issue. WHO estimates that half of the world’s population have mental health issues of various intensities, which have directly and indirectly cost the global community 2.5 trillion in 2010. To address this, the WHO created the World Mental Health survey initiative with Harvard University and the University of Michigan, which estimates current mental disorders and predicts statistics of what might happen to them in the future.

**Timeline of Events**

<table>
<thead>
<tr>
<th>Date</th>
<th>Description of event</th>
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<tr>
<td>July 3rd, 1946</td>
<td>Partially due to disorders found in war veterans, the US established the National Mental Health Act to establish a national institute and make mental health a priority to solve. The WHO includes mental disorders in the International Classification of Diseases, and the World Federation for Mental Health (WFMA) was founded as an NGO to promote, prevent, and treat mental health. Vint Cerf and Bob Khan produced the TCP/IP Protocols that would soon become the internet, at approximately the same time as laptops and mobile phones that would transform technological devices. Six Degrees was launched as the first social media site, which allowed users to create profiles, add friends, and interact with people online, which influenced future examples and would contribute to mental health issues due to its features.</td>
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<td>August 11th, 1948</td>
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<td>May 5th, 1974</td>
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<td>May 1st, 1997</td>
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June 29th, 2007

The first iPhone was launched by Apple and Steve Jobs, which revolutionized technological devices because of its app store and touchscreen and would lead to significantly different uses.

May 20th, 2013

The Mental Health Action Plan 2013-2020 was passed during the 66th World Health Assembly, which called for attention and changes mental health in terms of four areas – governance, information, prevention, and response - as well as the human rights problems it comes with.

Relevant UN Treaties and Events

- **International Classification of Diseases, 6th Revision (ICD-6), 1 May 1948**

  Published and released by the WHA, this revision was the first to mental health illnesses as part of the classification, allowing the international community to recognize it as a disease.


  The resolution, adopted by the General Assembly, consists of twenty-five rights and standards that should be met when dealing with mental health treatment.

- **Mental Health: Responding to the Call for Action, 18 May 2002, (A/WHA/RES/55/10)**

  As both previous resolutions and the WHO’s global action program promoted steps to be taken towards mental health, this resolution recommended further support, increased funding, and strengthened protection.

- **Convention on the Rights of Persons with Disabilities, 30 March 2006**

  This international treaty ensures that people with disabilities will be regarded as legally equal, both treated with human rights and respected with dignity. It prevents discrimination of any kind in fields like the family and workplace, as well as ensures their accessibility and opportunities in society.

- **Global Plan of Action on Worker’s Health (2008-2017), 14 May 2007**

  The WHO plan tackles government policies, performances, and promotions in its member states for a far greater percentage of workers to have access to health services, including those of mental health, that are important for the economy and workplace productivity.

- **Comprehensive Mental Health Action Plan 2013-2020, 20 May 2013**
As mental health has been a long-neglected issue, the action plan brings international attention and change to improve human rights, increase efficiency, and lower discrimination through its objectives and targets.

- Resolution on Mental Health and Human Rights, 1 July 2016 (A/HRC/RES/32/18)

  The first of similar resolutions, this set the framework for the future in terms of member states integrating human rights and mental health, as well as the United Nations High Commissioner for Human Rights to provide reports and seek views.

- Resolution on Mental Health and Human Rights, 28 September 2017 (A/HRC/RES/36/13)

  The resolution, adding onto the previous in 2016, appreciates the work done by the Special Rapporteur while continues to focus on providing concrete steps of consultation, services, and support to patients.

**Previous Attempts to Solve the Issue**

As countries and organizations failed to acknowledge the importance of mental health disorders for a prolonged period of time, limited actions have been taken for their success to be measured. Only in the past seventy years have they been classified as illnesses through the International Classification of Diseases, 6th Revision, and even more recently has the Principle and Call for Action been passed in 1991 and 2002, respectively. As disorders are relating to the brain and can’t be easily seen on the physical outside, it is difficult to measure statistics and treatment rates for patients— the system relies solely on one’s reporting of their own feelings. This method creates a barrier for many to receive proper treatment as they are unsure of whether or not they have an illness, afraid of reporting due to peer or self-pressure or state their illness as different than what it actually is. Mental disorders can be complicated as everyone’s causes and symptoms are unique to themselves, making it difficult to achieve desired results through general treatment.

Common mental health treatments include diagnosis, hospitalization, medication, residential treatment, and therapy, all of which can take place under different settings and involve a team of medical professionals. However, as there is such a wide variety, patients find it hard to get a response and have to cycle through multiple treatments before finding one suitable for their conditions. Current methods of treatment are extremely inefficient; oftentimes when treatment takes up long periods of the patient’s time, many choose to opt-out thinking that no treatment is successful when they haven’t yet found the right one. It is further worsened by the lack of professionals in the field, which creates barriers for everyone but especially for minorities, such as asylum seekers, refugees, low-income groups, and
women (83% of developed countries have established mental health organizations, compared to only 49% for developing countries). Attempts of previous actions have also been taken at certain groups of people, including people with disabilities and in the workforce. It further increases the number of people mental health issues affect, allowing solutions to also be targeted in terms of benefiting them.

![Mental Health Treatment Pathways](image)

**#5: An infographic of mental health treatment pathways about the visits of individuals, showing how the majority seeks primary care only or no visit and percentages for treatments are low.**

Previous attempts have also been taken towards the technological aspect of the issue, hoping to target the mental health disorders caused by it. Disorders such as addiction, anxiety, and depression can result from an imbalance of chemicals inside the brain due to the use of technological devices or social media. Both technological devices and social media create dependence, similar to the effects of gambling. As a result, some developed countries like China, South Korea, and the US purposely build technology rehabilitation centers for internet gaming disorders. Teenagers and young adults from these countries are sent to these rehabilitation centers by their parents as their addiction is severely affecting academics and family life. These camps can even be essentially built and conducted similar to military bases or prisons. Treatment can be expensive and far away, often last for months, and hard to achieve results if patients are uncooperative or unwilling.

### Possible Solutions

**Awareness, Communication, and Reporting**

In order to effectively solve the issue at hand, it is critical to give the issue of mental health the attention it deserves and to fight the taboo, discrimination, and misunderstanding surrounding public
mental health discussions. A possible solution would be to establish communication platforms between experts, medical professionals, and patients, which would allow them to freely exchange information about their situation. This allows experts to better understand the causes and symptoms of mental health issues, as well as know to let patients know that they are not alone in fighting to cure their disorders. A better system of reporting mental health issues should also be implemented, since as previously mentioned, there has to be more done to acquire better statistics needed for policies and treatments.

**Precision and Stigma**

Another major area where solutions are needed is workplace stigma, where adults experience mental health issues due to spending huge amounts of their life at work. Research from the National Alliance on Mental Illness (NAMI) showed that mental disorders cause 62% of workdays being taken off, costing from $3,540 to $4,600 per employee annually. Therefore, solutions include referring to mental health disorders like normal illnesses by respecting them and using the right language, as well as encouraging others to respond to emergency situations and taking initiative by oneself for those with potential illnesses. Outside of the workspace, it is also important to come up with more precise subtypes for mental health illnesses, because current ones like anxiety and depression are broad. Many people can share the same type of disease yet have completely opposite triggers or symptoms, hence one-size-fits-all treatments have to be further divided for people to know what their disorder is and how they can solve it.

**Technology Utilization**

Lastly, rather than as a cause or worsening factor, technology can instead be used to provide a solution in aiding the treatment of mental health disorders. While some of these have already been developed and are used to various extents, such as apps targeting specific disorders, therapy over messaging or video calling, and treatment status tracking, they can be infrequently used or unknown to the public. These can be improved upon by making them accessible, compatible for professionals and patients, more user-friendly and sensitive to the needs of patients, as well as being kept up to date with current trends and advancements. Currently trending technology that are expected to become more popular in the future, like artificial intelligence and virtual reality, can also be used in combating illness. Artificial Intelligence can be used to analyze search engine patterns and social media interactions to find people who might potentially have an illness, while virtual reality can be used in therapy to simulate real-world situations during treatment for instant feedback and without the dangers of the real world.

**Bibliography**


