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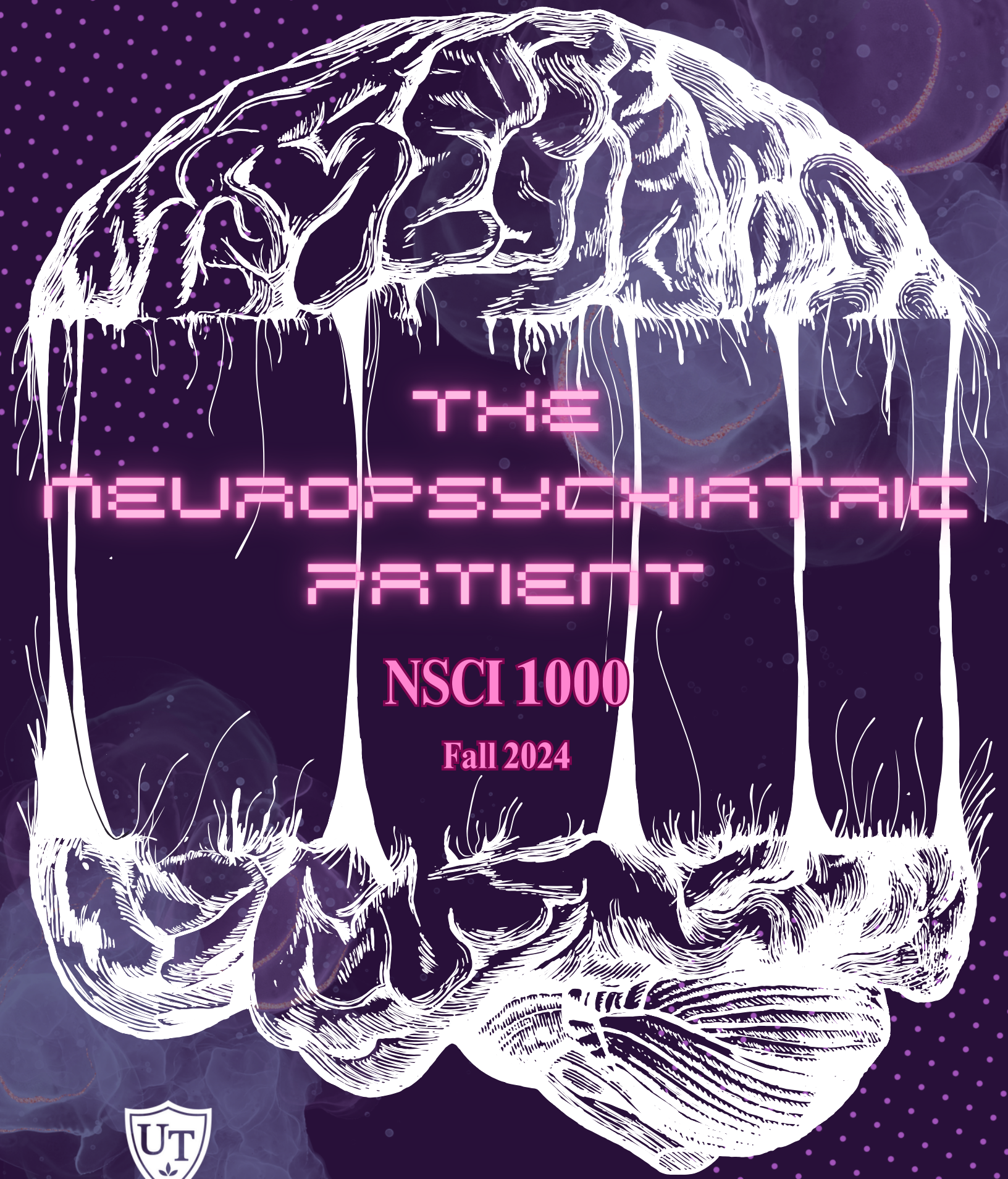

THE NEUROPSYCHIATRIC PATIENT

NSCI 1000

Fall 2024

THE UNIVERSITY OF TOLEDO

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THE NEUROPSYCHIATRIC PATIENT

THE UNIVERSITY OF TOLEDO

NSCI 1000 Spring 2024 Editorial

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A life-changing experience! The University of Toledo undergraduate course The Neuropsychiatric Patient (NSC1000) is a one credit hour course open to all students and majors focused on being "in the room where it happens" with a patient and a clinician. Each week, for two hours on Wednesday evenings, a group of motivated students who are passionate about medicine join the course director Dr. Robert Smith and a patient to learn about disorders of the brain. Each class opens with a short didactic lecture, followed by a one hour patient interview (and physical exam as indicated) where the patient courageously shares their story. The last thirty minutes of class are for questions and answers between the patient and the students. While Dr. Smith is a psychiatrist, guest lecturers include neurologists and neurosurgeons. Taught in the fall of 2023, the students in the class completed four writing assignments. Selected students were invited to revise one of their essays for publication in a special issue of the biomedical research journal Translation. This editorial serves as an introduction to their work. Nine NSC1000 students volunteered to refine an essay of their choice from the class. Gabby Vento, a PhD candidate in the Biomedical Graduate Program Bioinformatics Track, coordinated this project and led a team of graduate student mentors paired up with each of the NSC1000 students. We are very grateful for all the time and effort the student mentors put in to help move this project forward. These essays explore unique topics including meta-physical discussion on the concept of "normality," the stigma of calling a person who has an alcohol use disorder an "alcoholic," the very lasting debate of nature vs nurture, the connection between the mind and body with the self-healing, the ethical issues of clinicians being able to accept gifts, and the usage of words and labels in appropriate context. From the writing to the cover art, each student took inspiration from class discussions and incorporated them into their work. Each essay has been refined and edited over the course of the spring and summer of 2024. Every mentor, along with Gabby Vento, Dr. Margaret Hoogland, and Dr. Robert Smith, provided the undergraduate students with feedback. We are proud of the whole team in the work they put into these high-quality essays, especially of our undergraduate students who wrote these essays – since, for many of them, this will be their first time publishing. Tragically, during this project, we lost one of our graduate mentors,

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Daniella Gamboa Pabon. Dani's guidance and support for her mentee and her commitment to this project exemplified her dedication to her work and her peers. In her memory, we dedicate this special edition to Dani, with her mentee's essay leading this collection. We hope this issue honors her legacy. Finally, this special issue was expertly copyedited and assembled by two of the students from NSC1000, Laya Gokula and Annie Lei. Please enjoy these NSC1000 student essays and cover art.

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Dedication Statement to Daniella Gamboa Pabon

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Daniella (Dani) Gamboa Pabón was a fourth year PhD student in the Biomedical sciences Neuroscience and Neurological Disorders program. Growing up in the country of Colombia, Dani and came to the United States in 2016 to attend the University of Toledo. She is an Alumna with a BS in Biology and Minor in Chemistry. Dani started her PhD in 2020 with Dr. Elissar Andari in the Laboratory of Autism and Social Affective Neurosciences (ASAN), where she conducted Translational and Pharmacological research. Dani used Prairie Voles to study social learning by exploring the endocannabinoid system and its impact on social behavior.

Along with Dr. Andari, Dani worked closely with the laboratories of Drs. James Burkett and Travis Taylor on Translation Projects related to autism and virus infection research. Dani also worked closely with her fellow PhD candidates Christopher "Gabby" Vento and Nilanjana Saferin on a variety of projects and other activities. In addition to other professors and PhD students, Dani also worked with ASAN staff, including Jackson "Gwen" Hoffman, as well as several MSBS and medical students who work part time in the ASAN as part of their programs. Dani previously wrote about her work in the Toledo Blade in 2023 (1) and had tentatively involved in the Neuroscience department activates, including participating in special project teams, helping organize and attend student parties, gave departmental seminar talks, worked with the inclusion committee, and helped to mentor new graduate students and undergraduate students both within ASAN and the Neuroscience department. Finally, Dani mentored one of the Undergraduate students who took Lena Touny, in publishing her essay in this issue of Translation and helped Gabby Vento who coordinated this project with some of the administrative tasks.

Sadly, Dani passed away unexpectedly after an accident on the morning of April 16, 2024. Dani was writing several publications and was about a year away from completing her PhD. Her unexpected passing sent a shock wave of grief through the entire University of Toledo community. For those among us who worked closely with Dani, her loss was like losing a member of their own family. In a public tribute to Dani's many contributions, Gabby Vento shared, "Daniella was going to graduate before I was, and her loss left an ever-gaping hole in our entire

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intellectual family." Dr. James Burkett echoed this in his own statement: "Daniella's sudden loss has left a large hole in our hearts that may never be filled." There are simply no words for after a loss of someone like this that can adequately enumerate our feelings of sorrow and grief. Her funeral took place on April 24th, which would have been her 26th birthday.

The day after Dani's passing, there was a rainbow over campus, which many thinks may be her way of telling us that she was okay. As Dani's father said - she may no longer be physically with us, but she is forever watching over us and lives in our hearts. Each of us had a different and unique relationship with Dani, and her loss affected all of us in profoundly different ways, as do the ways we continue to remember and honor her legacy. Forever with love from your scholarly family.

Forever with love from your scholarly family,

Chris "Gabby" Vento, MS – PHD Candidate – Bioinformatics, Department of Neurosciences and Psychiatry

Dr. Elissar Andari, PHD – Assistant Professor, Department Psychiatry

References

1. Daniella Gamboa Pabon. UT researchers explore autism spectrum disorder [Newspaper]. The Blade. (2023, August 7). https://www.toledoblade.com/a-e/living/2023/08/07/socialbarriers-the-hidden-struggle-in-autism-spectrum-disorder/stories/20230807002

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Should Clinicians be Allowed to Accept Gifts/Honoraria/Consulting Fees From Anyone?

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Essay Prompt

Should clinicians be allowed to accept gifts/honoraria/consulting fees from anyone? What would be lost if physicians could not work with such companies? What would be gained? Please write an essay focused on this dilemma. Be sure to consider the patient we saw in class with a DBS device who was doing very well, as well as the patient with opiate use disorder who had suffered considerably (keep in mind Big Pharma made the opiate epidemic worse with Oxycontin).

Keywords: NSCI 1000

A gift is an object or service given to another person without compensation. Many pharmaceutical companies will provide gifts to physicians so that they can prescribe or promote their drug. Some patients may give a fruit basket or coffee to their doctors in gratitude for treating their condition. If physicians could not accept gifts, there may be a loss in the relationship between consumers and physicians. At the same time, it is also possible that the quality of care could increase. Clinicians should be allowed to accept gifts, to an extent.

Modern interactions between clinicians and pharmaceutical companies include representative interactions, gifts, and dinners to convince a clinician to prescribe their drug. These incentives are normal interactions. There are often cases where clinicians did not know a drug existed, and it can help dozens of patients that they see. However, there are people who abuse this power. There are clinicians who are being influenced by pharmaceutical companies to only prescribe their drug. The situation may occur when a patient no longer had the ability to see their options. When a patient goes to the doctor, they should be able to find something that helps, not be pushed to try a medication that is the most beneficial to their doctor's wallet. If clinicians were no longer able to accept gifts, there would be less bias towards a certain drug. This means that if a clinician were to

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prefer one drug over another, it would be because it has actual benefits rather than it being the one that gives them the most money. As patients would not be constricted by their doctors preferred medication paths, there could be an increase in the quality of care.

One example of the gift dilemma having a negative impact is the opioid crisis. Opioids are synthetically produced pain relievers. They are prescribed to treat pain from injury or surgery (1). Initially, this new class of drug was promoted as a new pain killer with little side effects. Physicians were often encouraged by pharmaceutical companies to prescribe opioids. However, time has shown that opioids are highly addictive. Opioids can cross the blood brain barrier, a selectively permeable membrane between the brain and the blood vessels surrounding it, which changes the chemistry within the brain (2). More and more people have become addicted to these drugs, creating what is now called the opioid crisis. Now, physicians must screen patients for family history of substance use disorders before prescribing opioids. However, those who do not pass the screening turn to opioids' natural counterparts. Drugs such as opium and heroin come from plants and are often sold illegally to people who cannot receive opioids through the medical system (3). The modern opioid crisis stems from the original encouragement of prescribing opioids (4). If pharmaceutical companies had not rushed to give doctors rewards for prescribing their new drug, there is a large possibility that the very high chance of overdose would have been discovered sooner. Research takes time, and it should not be rushed when a reward is presented.

Doctors swear an oath to not harm their patients. Whether or not they abide by their oath is up to their moral and ethical character. Sometimes, helping people is not enough motivation for clinicians. Without motivation, clinicians could grow indifferent to providing care to their patients. There is no way to predict what could occur if clinicians could no longer accept gifts unless it truly happens. Ultimately, a medical provider must be ethical and stand by their oath to do no harm, and to provide medication based upon need, not a gift from a company.

References

1. Center for Disease Control. Overdose Prevention. 2024. https://www.cdc.gov/overdose-prevention/index.html

2. Catarina Chaves, F. R., Salvatore Cisternino, Xavier Decleves. *Opioids and the Blood-Brain Barrier: A Dynamic Interaction with Consequences on Drug Disposition in Brain*. Current Neuropharmacology, 2017. **15**(8): 18.

3. "Alcohol and Drug Policy Commission: Opiates or Opioids — What's the Difference?: State of Oregon." 2024. Available from https://www.oregon.gov/adpc/pages/opiateopioid.aspx

4. Center for Disease Control. Understanding the Opioid Overdose Epidemic. Updated 2024, November 1. https://www.cdc.gov/overdose-prevention/about/understanding-the-opioid-overdose-epidemic.html

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Nature Versus Nurture: Nature's Genetic Code Predisposes Psychiatric Disorder Onset

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Essay Prompt

The grand question of Nature (genes and DNA) versus Nurture (environment, parenting) has been debated for a long time. Historically, psychiatrists used to think that schizophrenia was caused by "bad" mothering (1). If generalized, one might conclude that any or all mental disorders may be caused by "nurture." In class, so far, you have seen three different patients with three different disorders (depression, schizophrenia, and addiction). Choose either "nature" or "nurture" as your stance and write an essay persuading the reader that one is more important than the other in terms of causing mental illness. Using examples from *Whatever became of the schizophrenogenic mother?*, class interviews, optional reading, and/or your own experiences would be much appreciated!

Keywords: NSCI 1000

What shapes an individual? A question that has plagued philosophers, scientists, and thinkers since the inception of humanity's curiosity with its own self. This simple question has led to an impasse between the question; is it nature or nurture that are the largest influences in creating one's identity and perception of the world? Regarding the genesis of an array of mental illnesses, most cases such as schizophrenia, attention deficit hyperactivity disorder (ADHD), and mood disorders seem to result from an interplay between genetic and environmental factors. Recent advancements in the field of neuroscience have allowed further understanding of how genetics influence one's health and resilience to environmental stress. Subsequently, it is argued that nurture is dependent upon nature as the primary contributor to an individual's development of identity and behavior.

Many psychiatric disorders are long known for their hereditary prevalence, for example, in the case of schizophrenia, it is widely known that having a direct family member with schizophrenia can increase the probability of onset (2). Recent advances in characterizing the human genome have led to the understanding of the mechanisms by which genetic predisposition is prevalent to the onset of many additional psychiatric disorders such as obsessive-compulsive disorder (OCD),

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anxiety disorders, ADHD, and mood disorders. Interestingly, genetic components appear to also play a role in psychiatric disorders that are thought to stem from purely environmental circumstances, such as major depressive disorder (MDD) and post-traumatic stress disorder (PTSD) (3, 4). In addition, new understandings of cellular mechanisms within neural networks allows us to look at the potential genetic factors that could influence onset and severity of diseases thought to previously be attributed solely to the influence of nurture. For instance, emerging hypotheses concerning the etiology of schizophrenia implicate the glutamatergic N-methyl-D-aspartate (NMDA) receptor dysfunction in the cerebral cortex (5). As a consequence, there is a downstream dysregulation of the ventral tegmental area (VTA), which ultimately engenders disruption of the mesocortical and mesolimbic pathways resulting in the classical presentation of schizophrenia (5). The origin of the possible NMDA receptor dysfunction is unknown, however, genetics and environmental factors such as perinatal infections have been suspected (5). What is known are the mechanisms by which receptor modulation occurs, which is dictated by cellular cascades dependent upon specific genes, regardless of genetic or environmental causes. Receptor modulation is crucial in neuronal functions, especially, neuroplasticity.

The method by which neural networks respond to environmental influences is dependent upon mechanisms regulating neuroplasticity. Broadly, neuroplasticity is the method by which neurons can change their excitability, and in turn functionality, to tailor the overall circuitry of a network. Commonly, neuroplasticity is the basis for learning and memory functions within neuronal systems. One of the major mechanisms often featured in synaptic plasticity is long term potentiation (LTP), which relies upon receptor modulation. The growth factor, brain-derived neurotrophic factor (BDNF), is heavily implicated in regulating neuroplasticity, synaptogenesis, and altering excitability within neurons (6). BDNF expression is regulated by multiple genetic transcription factors, including the cAMP response element-binding protein (CREB) and the nuclear factor of activated T-cells (NFAT), which are dependent upon the activation of cellular signaling cascades by external stimulation of neurons (7-9). Further, disturbance of promoter IV of the BDNF gene—which requires NFAT for proper expression—has revealed depression analogous behavior in mice models (7, 10). Both the transcription factors and the proteins involved in the cellular cascades are produced via the expression of a multitude of genes. The regulation of BDNF expression is essential for neuronal responses to environmental stimuli, however, environmental stimuli are dependent upon pre-existing cellular cascades and transcription factors to induce change in neural networks. Another factor that is widely known to correlate with the onset of neuropsychiatric disorders is the maintenance of serotonergic signaling between neural circuits. Common treatments for many neuropsychiatric disorders such as depression, schizophrenia, and PTSD involve the administration of selective serotonin reuptake inhibitors (SSRIs). Interestingly, alterations in BDNF expression are tied to alterations in serotonergic gene expression (11).

Genes are responsible for the construction and formation of nervous tissue and cells. Thus, how the brain reacts to inputs is dependent upon its architecture derived from genetic material. For instance, if environmental influences were thought to engender certain mental illnesses, then an individual would first have to have the neural architecture to generate the output of a mental disorder. Any diminishment of “stress resiliency” is based upon dysregulation of the genes that are meant to help neurons function during times of high environmental stress (12). Oftentimes, changes in brain structure due to environmental influences are only possible because of the ability to respond. Nature must be present to allow for nurture to induce change. Moreover, the discussion of whether nature or nurture impacts the development of an individual should be rephrased in a more nuanced context. Specifically,

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the extent to which genetics responds to environmental influences should be of greater focus.

References

1. Neill, J. *Whatever became of the schizophrenogenic mother?* American journal of psychotherapy, Oct. 1990. **44**(4): 499–505. doi:10.1176/appi.psychotherapy.1990.44.4.499

2. Trifu, S.C., Kohn, B., Vlasie, A., Patrichi, B.E. *Genetics of Schizophrenia (Review)*. Experimental and Therapeutic Medicine, 7 July 2020. **20**(4). doi:10.3892/etm.2020.8973

3. Kim, H.D., Hesterman, J., Call, T., Magazu, S., Keeley, E., Armenta, K., Kronman, H., Neve, R.L., Nestler, E.J., Ferguson, D. *SIRT1 Mediates Depression-like Behaviors in the Nucleus Accumbens*. Journal of Neuroscience, 10 Aug. 2016. **36**(32):8441–8452. doi:10.1523/JNEUROSCI.0212-16.2016

4. Adamec, Robert, et al. *Activation Patterns of Cells in Selected Brain Stem Nuclei of More and Less Stress Responsive Rats in Two Animal Models of PTSD – Predator Exposure and Submersion Stress*. Neuropharmacology, Feb. 2012. **62**(2):725–736. Accessed 11 Apr. 2022. doi:10.1016/j.neuropharm.2010.11.018

5. Nakazawa, K., Sapkota, K. *The Origin of NMDA Receptor Hypofunction in Schizophrenia*. Pharmacology & Therapeutics, Oct. 2019. **205**(1):107426. doi:10.1016/j.pharmthera.2019.107426

6. Pearson-Fuhrhop, K.M., Kleim, J.A., Cramer, S.C. *Brain Plasticity and Genetic Factors*. Topics in Stroke Rehabilitation, 2009. **16**(4):282–299. doi:10.1310/tsr1604-282.

7. Arévalo, J.C., Deogracias, R. *Mechanisms Controlling the Expression and Secretion of BDNF*. Biomolecules, 2 May 2023. **13**(5):789. doi:10.3390/biom13050789

8. Lipsky, R.H., Xu, K., Zhu, D., Kelly, C., Terhakopian, A., Novelli, A. and Marini, A.M. *Nuclear Factor KB Is a Critical Determinant in N-Methyld-Aspartate Receptor-Mediated Neuroprotection*. Journal of Neurochemistry, 15 July 2001. **78**(2):254–264. Accessed 1 May 2023. doi:10.1046/j.1471-4159.2001.00386.x

9. Tao, X., West, A.E., Chen, W.G., Corfas, G., Greenberg, M.E. *A Calcium-Responsive Transcription Factor, CaRF, That Regulates Neuronal Activity-Dependent Expression of BDNF*. Neuron, Jan. 2002. **33**(3):383–395. Accessed 12 June 2019. doi:10.1016/s0896-6273(01)00561-x

10. Sakata, K., Woo, N.H., Martinowich, K., Greene, J.S., Schloesser, R.J., Shen, L., Lu B. *Critical Role of Promoter IV-Driven BDNF Transcription in GABAergic Transmission and Synaptic Plasticity in the Prefrontal Cortex*. Proceedings of the National Academy of Sciences, 17 Mar. 2009. **106**(14):5942–5947. Accessed 10 Apr. 2021. doi:10.1073/pnas.0811431106

11. Homberg, J. R., Molteni, R., Calabrese, F., Riva, M.A. *The Serotonin–BDNF Duo: Developmental Implications for the Vulnerability to Psychopathology*. Neuroscience & Biobehavioral Reviews, 2014. **43**: 35–47. Accessed 19 May 2019. doi:10.1016/j.neubiorev.2014.03.012.

12. Favoretto, C.R., Pagliusi, M. Jr., Morais-Silva, G. *Involvement of Brain Cell Phenotypes in Stress-Vulnerability and Resilience*. Frontiers in Neuroscience, July 5, 2023. **17**:1175514. Accessed 15 Nov. 2023. doi:10.3389/fnins.2023.1175514.

Understanding Nurture's Influence on the Development of Mental Disorders

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Essay Prompt

The grand question of Nature (genes and DNA) versus Nurture (environment, parenting) has been debated for a long time. Psychiatrists used to think that schizophrenia was caused by "bad" mothering. If generalized, one might conclude that any or all mental disorders may be caused by "nurture (1)." In class, so far, you have seen three different patients with three different disorders (depression, schizophrenia, and addiction). Choose either "nature" or "nurture" as your stance and write an essay persuading the reader that one is more important than the other in terms of causing mental illness. Using examples from the citation, class interviews, optional reading, and/or your own experiences would be much appreciated!

A child's upbringing may be influenced by their parents or guardians, teachers, classmates, friends, living situation, financial hardships, as well as their environment. Children learn about the world through experience, relying on those around them to help them through obstacles. Importantly, children pick up on the cues adults give. Object relations theory states that our early childhood relationships and interactions with those close to us ultimately shape our behaviors and future relationships (1). For example, during my high school years, I was an instructor for a martial arts dojo, where I would teach students ranging from four to thirteen years old. As I guided the students, I noticed the effect that my opinions and actions had on my students. These same students, who depended on me as their instructor to guide them, also latched onto how I thought and processed information. Nurture is a parallel process independent of the psyche.

Bethany Yeiser, a schizophrenia advocate living in full recovery, often shares what she thought many years back, while in the throes of psychosis: "My personality is the opposite of a schizophrenic person's. I am emotionally strong," Yeiser was unaware that schizophrenia is in fact a brain disorder that can affect people of all personalities (2). Bethany Yeiser recounts her delusions from 2003-2007, which were not an overnight event, but rather a buildup of fixed, false beliefs that

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seemed entirely real. In 1999, as a student at the University of Southern California, Yeiser became obsessed with research and then travel, so much so that she lost interest in relationships and became isolated. Specifically, the environment in Yeiser's case, a competitive university, may leave a more profound psychological impact on students, as students who are genuinely motivated and determined toward their goal will analyze the minor interactions they have with their environment. At the same time, those not as stubborn to succeed may even forget about the whole situation. Yeiser falls into the category of the first type of student. As an excellent student throughout her high school years, Yeiser's determination to do well was not a sudden event; however, Yeiser dedicated even more time to her research regardless of the effects of distancing from other interests that also gave her satisfaction. Being a naturally ambitious student and yearning for a competitive edge against her peers, Yeiser's buildup of constantly dedicating her time and effort to only one task formed a false sense of reality, where she lost her grasp on the actuality of the situation. Yeiser was unable to realize her extreme obsession with her work, as her personality of being a high achiever masked the obsession.

Likewise, later, Yeiser mentioned that she became obsessed with solely doing good for the world or becoming "Mother Theresa," a desire which built up over time with experiences of doing good. With this in mind, Yeiser may have also been greatly influenced by her church's beliefs and thoughts about community service, an ideology embedded into her as a child due to her family's commitment to religion. This continuous exposure to beliefs held most likely by parents, elders, and church members led Yeiser again to obsession with the ideology of only doing good, regardless of her situation. Nurture, in this sense, may have contributed to the onset of schizophrenia because of the deliberate actions of the patient that correlate to the ideas and beliefs that others held. In the sense that the opinions of those with whom you surround yourself ultimately affect the psyche. Yeiser's experience demonstrates the deep impact of influential figure's actions and behaviors on our beliefs and perceptions, along with the thought that the accumulation of certain events and experiences can lead to a more apparent display of a disorder.

Similarly, in the case of another patient struggling with a different central nervous system disorder, environment also significantly impacted her decision-making process and outcomes. Kari, now an advocate for substance use disorders and a support system for the youth in her area, mentioned that when she was a child, her father dealt cocaine, and that she was always surrounded by friends and family who utilized drugs openly. For Kari, the chance of utilizing drugs was always present. Kari, who was young at the time of being exposed, may have even taken these signs as encouragement to utilize drugs. These circumstances set the individual up to act in specific ways, even if they are naturally predisposed to act in another. For instance, identical twins are born with the same genome, yet they may differ in personality and habits. Even though they carry the same predisposed conditions, the feature that differs most would be their versions of normality. Nurture revolves around following those around us and depending on them to guide us/show us what a "normal" life looks like. For Kari, regardless of her genes or predisposition to addiction, she was always surrounded by various drugs, and it became part of her daily life to see and watch others do them. In fact, there was likely pressure for Kari to start taking drugs because of her constant indirect involvement with them due to her environment and community. Kari realized that her place of upbringing and the people she was surrounded by were driving her addiction. For this reason, Kari

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rarely returns home to avoid falling into the same habits as before.

Both Yeiser and Kari demonstrated a remarkable ability to bounce back given challenges faced in their disorder. A study conducted to understand motivational interviewing as an intervention for patients with schizophrenia stated that "[a]bout 75% of patients with schizophrenia discontinue their antipsychotic drug treatment within 18 months (3)." Initially, Yeiser struggled with finding medications that suited her best, leading to an ongoing battle with committing to her medication. This changed, however, when Yeiser finally found a doctor who understood her and listened to her struggle. The effect of this simple interaction motivated Yeiser to both continue her medication and find techniques to manage her schizophrenia. Likewise, Kari continued to return to old habits; however, her eagerness to stop using was not necessarily attenuated. Another study conducted revealed that "relapse rates [were] as high as 65% to 70% in the 90 days following treatment (4)." Regardless of her past failures in ending her drug use, she managed to return with a headstrong mentality to cease her addiction for the last time.

If the relapse rates are elevated, and the environment is a significant factor regarding these individual's responses to situations, how can these individuals be pushed forward? My belief is that both patients share a unique trait: resilience. Their resilience ultimately developed through their recovery and their ability to fall and rise again after their challenges. An individual is not necessarily born with the characteristics of being courageous or determined; instead, the experiences one undergoes allow one to genuinely shine. As one experiences a downfall, they learn to build themselves to prevent the next challenge. However, as the cycle continues and the individual continues to learn, their mindset to handle challenges changes. Instead of dreading the challenge, the individual adapts, just like Yeiser and Kari did. Nurture may not be just learning from others in the environment but may also be learning from one's own past experiences.

The effects of nature are often hard to disregard, however, with recent studies into epigenetics, the interactions of nurture on nature may be explained at a biological level. Epigenetics is the study of gene activity without modification to the primary sequences. These modifications primarily occur due to environmental events that cause the individual's genes to produce more or less of a protein. For instance, smoking can cause DNA methylation, a process in which a methyl group is added onto a carbon, activating, or repressing certain gene expressions. In a study conducted to review the epigenetic alterations caused by smoking, researchers concluded that due to various genetic variants that mediate DNA methylation, it displays those genes, and the environment works together to showcase a disease (5). Even though this may hold true, smoking, for instance, is a habit picked from one's environment, displaying that the environment does heavily influence and may even increase the cause for a mental disorder.

Ultimately, nurture more heavily influences mental disorders, as nurture builds our experiences, our thoughts, ideologies, and, most importantly, our mindset. As kids, when we experience our environment and get to know those in our environment, we feel obliged to follow in their footsteps. Even if we disagree, we are still influenced by the opinions and actions of others. Genetics may give us the possibility to be a certain way, but our environment and those around us give us the ability to be that way.

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References

1. Fritscher, L., *How early attachments set the stage for future relationships*. Verywell Mind, 2023. https://www.verywellmind.com/what-is-object-relations-theory-2671995#:~:text=Object%20relations%20theory%20is%20all,significant%20people%20in%20your%20life
2. Yeiser, B., *Chapter One,* in *Mind Estranged: My Journey from Schizophrenia and Homelessness to Recovery,* G. Dietz, Editor. 2014, Bethany Yeiser. p.13.
3. Dobber, J., Latour, C., de Haan, L., op Reimer, W., Peters, R., Barkhof, E., and van Meijel, B., *Medication adherence in patients with schizophrenia: a qualitative study of the patient process in motivational interviewing*. BMC Psychiatry, 2018. **18**(135). https://doi.org/10.1186/s12888-018-1724-9
4. Sinha, R., *New Findings on Biological Factors Predicting Addiction Relapse Vulnerability.* Curr Psychiatry Rep, 2011. 13: p. 398-405. https://doi.org/10.1007/s11920-011-0224-0.
5. Kaur, G., Begum, R., Thota, S., and Batra, S., *A systematic review of smoking-related epigenetic alterations.* Arch Toxicol, 2019. 93: p. 2715–2740. https://doi.org/10.1007/s00204-019-02562-y.

Balancing Reality and Spirituality

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Essay Prompt: In his publication "Principles of Inner Work: Psychological and Spiritual," John Welwood coined the term "spiritual bypass" (1). It can refer to using faith or religion to avoid the reality of difficult or intense emotions. Did any of the patients that were interviewed in the NSCI 1000 class display this psychological defense? Can you think of an example from the media or your personal experiences where this process was at play? In the space below, please 1) briefly describe one example of spiritual bypass from one of these sources, and 2) discuss how spiritual bypass may be harmful or helpful depending on the situation.

Keywords: NSCI 1000

Spiritual bypass is a term coined for setting aside reality and giving into escapism. Spiritual beliefs and practices are often biased in terms of giving into emotions and certain beliefs that may offer comfort to a difficult situation. In the case of the need for guidance, spiritual bypass is used to provide a solution to an unknown and unresolved challenge (1).

Hunter Eby, a patient with epilepsy who was interviewed in our NSCI 1000 class, mentioned that when he first received his diagnosis, he felt that he did something entirely wrong. Hunter believed that God gave him a brain he couldn't control. He felt that he unknowingly committed a sin which is why he was diagnosed with epilepsy.

In some cultures, epilepsy (or any similar condition) is believed to be a spiritual calling. From personal experience, my family always tells anyone with such medical conditions that they are blessed by God because they spend "moments" in the spiritual world. However, the medical reality is quite different from the spiritual reality. Scientific evidence shows that epilepsy causes an electrical instability in the brain (2). Epilepsy can be very damaging to brain health and can hinder the lives of many patients with such a condition.

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Ignoring the reality by being caught in spiritual bypass can lead to false realizations. In Hunter's situation, his spiritual bypass perspective was more negative. Thus, his mental health was impacted as he believed in the spirituality of his condition. On the other hand, since my family has a more positive belief, they ignore reality, which is just as harmful. Although it is good to be positive, acceptance and treatment is also important. Using spirituality to escape reality is part of being a human. However, embracing a more balanced approach that integrates spirituality while also accepting reality is the way to authentically live through certain circumstances. Relying solely on spiritual bypass can be detrimental as it may distance individuals from reality and contribute to a decline in mental health.

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References

1. Welwood, J. Principles of Inner Work: Psychological and Spiritual. The Journal of Transpersonal Psychology, 1984. https://www.atpweb.org/jtparchive/trps-16-84-01-063.pdf#:~:text=These%20are%20three%20main%20traps%20we%20face:,of%20what%20is%20involved%20in%20being%20human.
2. Tedesco, S. A Less Obvious Problem: Spirituality as Bypass. Embodied Philosophy, May 23, 2022. https://www.embodiedphilosophy.com/as-less-obvious-problem-spirituality-as-bypass/
3. *Epilepsy: What it is, causes, symptoms, diagnosis & treatment.* Cleveland Clinic. April 11, 2022. https://my.clevelandclinic.org/health/diseases/17636-epilepsy

How can we define normal? And how would you describe mental illness to someone who knew nothing about the topic?

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Essay Prompt: An alien ship drops out of the sky from another planet. Unfortunately (or fortunately, depending on your viewpoint), they have been watching YouTube videos of the Kardashians and other reality shows while traveling to our planet, and they are very confused about what is a “normal” human being. So far in class we have interviewed three different patients with three different mental illnesses. If we follow through with this logic, then persons without a “diagnosis” are apparently “normal.” How would you explain mental illness to an alien who has no biases or knowledge of what it is like to have a mental illness? How would you decide what is normal and what is abnormal? Who should decide what is normal? In the citation provided, leading psychiatrists were the ones deciding normal versus abnormal for the world (1). Please write an essay considering one or more of the questions detailed here in this prompt (or ask and answer your own question!), drawing on the citation provided, class interviews, optional reading, and/or your own experiences (1).

The term “normal” has long been used as a generic word of description, often being used in conversation, or written without much thought or worry behind what the word truly means. Many often assume the word has a standard definition and application, but there is a substantial variability in the meaning of the term that is highly subjective based on an individual. To some, normal may be used to describe the unchanged or unaltered natural condition of a subject, while to others, the term may be used as a label put on the most commonly occurring variety of any given subject. Using the word "normal" can be efficient and useful, but it also has its shortcomings and potential for harm. The use of the term “normal” can enhance efficiency within industries, but it also perpetuates a long-standing, often unknowingly judgmental ideology. This can lead to unnecessary compartmentalization of people,

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imposing limitations, and expectations on these divisions.

Perhaps the most relevant topic of discussion regarding normalcy is how the term is applied to describe people. Specifically pertaining to the discussion of mental illness, it has become commonplace in society to label those without mental illness as normal, and to use other, potentially offensive, or demeaning terms, to describe those who do have a mental illness. There are numerous ways in which mental illness has been defined, varying depending on the setting. A more general definition describes mental illnesses as conditions with changes to emotion, thinking, or behavior (4). This description provides the broad strokes of what mental illness is but lacks what is needed to apply the definition in a useful way. In a more medical setting, mental illnesses can be defined as a mental, behavioral, or emotional disorder, with a wide range of severity and varying levels of impairment (2). This definition provides a better framework for applying the term, as it clarifies that each case may be different and unique under the wide umbrella of "normalcy." It is undeniably important to distinguish who needs medical assistance or treatment and to what extent they need it. This is especially true regarding the brain, which does not always reflect issues through physical appearance. However, it is unfortunate that, in many cases, labeling people is not used for medical or professional purposes but instead to diminish the abilities of others. This is the major pitfall of using the term “normal.” Often, those labeled as "normal" are unaffected, while those labeled with other terms may suffer. This can include limitations being placed upon them, as people might feel compelled to act differently toward them.

There are many examples that highlight the diversity and perseverance of those who may be affected. Neurodivergence is a term commonly associated with autism spectrum disorder and related conditions. Neurodivergence, and the related term of neurodiversity, promotes inclusivity, respect, and understanding of all people (3). Numerous people with a wide variety of neurodivergence have made it clear that they should rightfully be treated with the same level of respect and dignity as any other person. People should not feel the need to act differently towards those with some form of neurodivergence.

Outside of professional or medical industries, using normal as a means by which to divide people is not a very useful or moral practice. Normal is very subjective and should only be used in practical settings when it is necessary to have defined groupings. The otherwise trivial uses of normal, more often than not, causes harm by belittling and underestimating the abilities of others. When considering the term "normal," it is important to recognize its origins and who is responsible for defining what it means. Often, this duty is entrusted to professionals. They are tasked to define what normal is in their respective fields, and what variables need to change to lose the label of normal. Many institutions have provided definitions for normal that are mostly along the lines of conforming to a type, standard, or regular pattern (5). It is clear there may be a great degree of ambiguity when it comes to the interpretation and application of these definitions. To tie this back to the discussion of mental illness, medical professionals and researchers are allotted with specifying criteria for certain mental conditions so they can be defined based upon reliable data, symptoms, and behaviors. This clarification is important and necessary to ensure proper help and treatment. There is a high responsibility placed upon those who define normal within the medical field, and this highlights how normal can be a useful tool.

As described above, defining normal can be necessary in medical settings. The functions and

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operations of specific body parts between people show little to no variation, so it is important to have a defined baseline to determine if there is an issue that needs to be addressed. This is true when describing mental illness as well. In describing mental illness to someone who previously knew nothing about the topic, it would be important to first explain the different regions and parts of the brain, defining the functions of these systems and how they relate to the body as a whole. It is key to explain what part of consciousness, behaviors, thoughts, and actions each part of the brain contributes to. The next step in the process would be to explain what can impact each of these systems. This could include explaining chemical, electrical, or physical changes to the brain. It would also be critical to explain what could be brought about due to an alteration in each of the parts or systems. There are many symptoms and conditions that can have a varying impact on people's lives, and it would be necessary to describe the multitude of cases that could arise. The most paramount part of the process would be to confirm the understanding that mental illnesses are similar to many other medical conditions, in that they are often completely out of the person's control, and that those with mental illnesses should not be thought of as less than those with conditions that do not affect thought or behavior.

The issue of defining normal is a very thought-provoking discussion which impacts many people on a daily basis. Each person is unique, so the topic is very heterogenous by nature. While there are some negative side effects of the usage of the term "normal," it would be ignorant to completely overlook the benefits associated with being able to know who may need treatment or help.

To conclude the discussion, it should be recognized that "normal" is highly dependent on perspective and is a very subjective term that should be used cautiously. Defining normal is important in certain industries to ensure proper procedures and necessary actions are taken when needed. Similarly, defining mental illness requires a careful approach, treating it with the same rigor as any other medical condition, with clear definitions of critical areas and thorough explanations of symptoms and necessary actions. Defining normal is a responsibility that should be entrusted to those who use it solely for the purpose of good and helping others.

References

1. Neill, John. Whatever Became of the Schizophrenogenic Mother American Journal of Psychotherapy, vol. 44, no. 4, American Psychiatric Publishing, Oct. 1990, pp. 499–505, doi:10.1176/appi.psychotherapy.1990.44.4.499. 1990, pp. 467–625.

2. *Mental illness*. Published 2023. Updated September 2024. National Institute of Mental Health. https://www.nimh.nih.gov/health/statistics/mental-illness

3. Baumer, N., Frueh, J. *What is neurodiversity?* Harvard Health. 2021a, November 23. https://www.health.harvard.edu/blog/what-is-neurodiversity202111232645

4. Njoku, I. (2022). *What is mental illness?*. Psychiatry.org - What is Mental Illness? https://www.psychiatry.org/patients-families/what-is-mentalillness#:~:text=Mental%20illnesses%20are%20health%20conditions,social%2C%20wor k%20or%20family%20activities.

5. Webster, M. *Normal definition & meaning*. Published 2024. Updated November 27, 2024. Merriam-Webster. https://www.merriam-webster.com/dictionary/normal

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Do you agree or disagree with the assertion that calling a person with alcohol use disorder an "alcoholic" is detrimental for their care and engagement with treatment systems?

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Essay Prompt: The passage describes stigma as a major problem in the mental health field (1). Do you agree or disagree with the assertion that calling a person with alcohol use disorder an "alcoholic" is detrimental for their care and engagement with treatment systems? Please clearly state whether you agree or disagree and provide justification for your answer. Please limit your response to the space provided below.

Yes, I agree with the assertion that calling a person with alcohol use disorder an "alcoholic" is detrimental for their care and engagement with treatment systems.

A substance use disorder (SUD) is known as "a treatable mental disorder that affects a person's brain and behavior, leading to their inability to control their use of substances like legal or illegal drugs, alcohol, or medications (2)." There is a substantial difference between labeling someone as a "substance abuser" or "alcoholic" versus recognizing them as having "substance use disorder (1)." When one refers to individuals as "substance abusers" or "alcoholics," they reduce those individuals to their condition and imply a sense of personal choice and fault in their

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situation. However, this fails to recognize the complexity of addiction or substance use. The difference between terms like “substance abuser” and “alcoholic” versus “substance use disorder” is that one identifies the person as merely the disorder they have (substance abuser and alcoholic), while the other allows for that person to not be caged into this box where they are only seen to have a substance use disorder (3).

It is critical that society and medicine acknowledges the importance of language and the stigma that harmful language can create. A stigma is “any negative attitude, prejudice, or false belief associated with specific traits, circumstances, or health symptoms (4).” In the case of substance use disorders, a stigma is constructed with insensitive language like “alcoholic” and “substance abuser.” The term “abuser” insinuates that the person who used the drugs or consumed the alcohol had a fault or moral lapse. However, this can be presumptuous. Many factors such as upbringing, social environment, and coping mechanisms, can contribute to causing or worsening a substance use disorder. For instance, parents that experienced or are experiencing, a substance use disorder or condone the use of drugs may raise children to share similar beliefs or expose them to a similar environment in early childhood. Moreover, it is said that when “kids or teens use drugs, it affects how their bodies and brains finish growing,” which increases their likelihood to continue to use drugs into adulthood (5). Thus, a cycle of substance use disorders can be perpetuated: a child who grew up surrounded by the influence of substances may affect their own children, peers, or family in the same way they were impacted. Additionally, once an individual has a substance use disorder, they are now dependent on the substance they are intaking. Specifically with drugs, thorough and extensive brain tests and studies show that once an individual is reliant upon drugs, there are “physical changes in parts of the brain that are very important for judgment, making decisions, learning and memory, and controlling behavior (5).” This strongly indicates why it is so difficult for individuals who have a substance use disorder to maintain a healthy lifestyle (6). One of the patients interviewed in the Neuropsychiatric Patient class, Ms. Kari, an individual who has a substance use disorder and was exposed to drugs in early childhood. She described how the compulsion to use substances can become overpowering, similar to a basic human need like water. She highlighted the involuntary nature of addiction.

There is still stigma and continuous misused language surrounding substance use disorders. Many individuals with substance use disorders shy away from medical aid. Stigma is a major contributor as to why “nearly 90% of people with substance use disorders [in the U.S] do not receive treatment (1).” Due to this, it is imperative that individuals receive the proper care that they require and deserve. It can a pivotal change if society and medical professionals utilize respectful and uplifting practices and language when addressing and treating individuals with substance use disorders. This number could be reduced if the power of the term “substance use disorder” was further understood. Substance use disorder contains an empathetic undertone that empowers individuals with substance use disorders to feel comfortable, safe, and free of judgement in the spaces they occupy. The term "substance use disorder" reframes “substance abuse” as a medical condition-something to empathize with-rather than a moral flaw. The connotation of “disorder” calls for greater measures, such as medical help. Doctors are more likely to treat a patient when described to them as having a “substance use disorder,” while recommending jail for those that are presented as a “substance abuser (1).” Furthermore, when terms like “substance abuser” get used in the hospital setting, this translates to medical literature. Published research and medical journal articles are open to the public, so the language that these platforms use guides society’s views on substance use disorders. Consequently, society develops a negative connotation and avoids accepting a medical and psychiatric field (substance use disorders) that needs the appropriate attention and care.

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Another significant consequence of the stigma surrounding substance use disorders is that the societal stigma can quickly turn into "self-stigma (1)." Self-stigma is a stigma that is "internalized" by an individual, as a result of societal beliefs (1). Stigmas can penetrate an individual's mind and alter the way they think, treat, and present themselves to those around them. It is harmful for an individual to assimilate stigmas within themselves and attribute who they are to stigma because stigmas are inherently incorrect, discriminatory, and antagonistic. If a stigma is used by society to mistreat certain individuals, and in turn these individuals start believing what society is saying about them is true, this can be extremely harmful for an individual's sense of self-worth. Consequently, their "interest in seeking help" and "hope for recovery" will be diminished, which can impact "their social relationships" and exacerbate "their psychiatric symptoms (1)." Regarding how self-stigma can detrimentally affect the way an individual treats themselves, "studies also suggest that self-stigma increases avoidant coping and suicide risk (1)." Avoidant coping is the act of someone utilizing "cognitive and behavioral efforts" to "[avoid] dealing with stressful demands (7)." Self-stigma can also negatively impact "treatment adherence and vocational functioning (1)." Avoidance coping, higher suicide risk, lack of adherence to treatment plans, and a lack of job-related abilities adversely affect an individual's lifestyle. If someone is unable to complete everyday tasks, their tasks can continually build up and cause them to become overwhelmed. If someone is experiencing suicidal ideologies, their mindset can substantially be impacted. If someone is not complying with a treatment plan that could potentially help them, their disorder can worsen. Lastly, if someone is not able to obtain and maintain a job, this can hurt them financially but also stop them from learning career skills that are important for everyday life and interacting with others. It is extremely crucial that society discontinues presumptuous and insensitive ideologies towards individuals who have substance use disorders, constructing a comfortable environment. Similarly, it is crucial that medical professionals are trained to employ compassionate and nonjudgmental language when attending to individuals with substance use disorders, developing optimal and fair medical treatment.

In general, when language like "alcoholic" and "substance abuser" is utilized in a medical setting, it influences the public perception and societal attitude towards substance use disorders. The stigma furthers in a negative light, which may hinder individuals from requesting or receiving the care they need. If language acknowledging the complexity of the situation was adopted, then society and the medical field can foster a more supportive and inclusive environment, resulting in suitable care for all.

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References

1. Volkow, N.D., Gordon, J.A. & Koob, G.F., *Choosing appropriate language to reduce the stigma around mental illness and substance use disorders.* Neuropsychopharmacology, 2021. **46**: p. 2230–2232. https://doi.org/10.1038/s41386-021-01069-4.
2. *Substance Use and Co-Occurring Mental Disorders.* National Institute of Mental Health, 2024. https://www.nimh.nih.gov/health/topics/substance-use-and-mental-health
3. *Words Matter: Reporting on Mental Health Conditions.* American Psychiatric Association. https://www.psychiatry.org/news-room/reporting-on-mental-health-conditions
4. Swaim, E. *Types of Stigma and Steps to Stamping It Out*. Healthline, 2023. https://www.healthline.com/health/what-is-stigma
5. *The Science of Drug Use: A Resource for the Justice Sector.* National Institutes of Health, 2022. https://nida.nih.gov/research-topics/criminal-justice/science-drug-use-resource-justice-sector.
6. *What Is a Substance Use Disorder?* American Psychiatric Association. https://www.psychiatry.org/patients-families/addiction-substance-use-disorders/what-is-a-substance-use-disorder
7. Holahan, C. J., Moos, R. H., Holahan, C. K., Brennan, P. L., Schutte, K. K. *Stress generation, avoidance coping, and depressive symptoms: a 10-year model.* Journal of consulting and clinical psychology, 2005. **73**(4): p. 658–666. https://doi.org/10.1037/0022-006X.73.4.658.

Placebo Effect: A Surprising Link Between Mind and Body

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Essay Prompt

The graph on the following page describes a study of 80 patients with irritable bowel syndrome (IBS). Patients either got no treatment or were given a placebo pill (1). When given the pill they were told “Placebo pills are made of an inert substance, like sugar pills, and have been shown in clinical studies to produce significant improvement in IBS symptoms through mind-body self-healing processes” (2). The information provided comes from an excerpt of *Curiosities of the Mind,* which details the phenomenon where belief in a supplied treatment can lead to symptom relief, leading to occurrence of the placebo effect. The graph clearly shows that patients getting the pill did better than those without. How is this possible? In the space below, 1) speculate how the mind-body connection could lead to such an improvement in symptoms, and 2) discuss how this process might be at play in the pharmacological treatment of brain diseases?

Keywords: NSCI 1000

Abstract

The placebo effect explains how a patient's symptoms can show positive therapeutic effect after receiving a placebo treatment through psychological processes of the mind and body. The placebo is defined as a harmless drug, medicine, or operation provided primarily for the patient's psychological benefit rather than any reaction and the physiological consequence. The idea of the "mind-body connection" is crucial since even the presumption that a treatment will be beneficial, and its intrinsic efficacy have a variety of physiological impacts on the body. A multitude of naturally mental-physical changes are brought about by the placebo effect, such as decreased stress or pain relief, which has shown to have an increase in endorphin production, a reduction in brain reaction and the creation of expectations, all of which result in increased activity in certain brain regions (3). This

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essay discusses the placebo effect's impact on the human mind-body relationship. The research conducted in this prompt used an experimental approach to determine how the mind and body are connected. In this study, the conclusions derived from the effects of placebos are firmly rooted in how patients psychologically react to an undergoing treatment. Compared to IBS patients who did not get placebos, those who received the pills demonstrated more improvement. It is important to acknowledge that the patients' expectations are a significant factor in determining the course of a placebo effect, as they have a direct impact on the psychological and physiological reactions to the treatment plan.

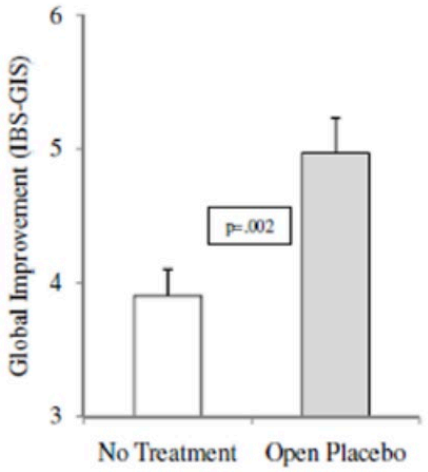

Figure 1: Results of the Treatment Group at the 21-day Mark.

The graph displays a greater perceived improvement in symptoms for the open placebo group, compared to the no treatment group after 21 days (1).

Introduction

Despite the basic nature of placebos as generally being substances such as sugar pills devoid of active ingredients, it has a significant psychological aspect attached to the belief that a pill can treat or alleviate symptoms, and this emphasizes on the intriguing connection between the mind and body. By lowering the formation of stress hormones and chemicals like adrenaline, taking a placebo pill (with the belief that it is truly effective) can cause the body's natural painkillers to be released. Furthermore, placebos can reduce reactions connected to pain by activating conditioned responses and expectations. More specifically, placebo itself is a conditioned stimulus and placebo effects are conditioned responses (4). Additionally, there is a therapeutic benefit to placebo tablets since they reflect greater activity in particular brain regions associated with emotional reactions and self-awareness including the amygdala, medial prefrontal cortex, and the insular cortex (5). The neurobiological psychological processes linked to treatment beliefs are responsible for all these symptom changes (6). This eventually results in a notable improvement in the symptoms and sometimes decreases their intensity. Strong placebo responses do that by triggering the release of dopamine (a neurotransmitter involved in reward and motivation pathways in the brain) or other endorphins, improving sleep quality and thus reducing stress hormones like adrenaline. One study found that participants who believed in placebos expressed less anxiety and lower cortisol responses related to stress than participants who did not (7). Placebos are often ineffective pharmacologically and lack any active ingredients. However, a person's belief in treatments might be sufficient to alter the course of their bodily illness. Studies revealed placebo treatment helps patients ameliorate pains such as a headache or neuropathic pain, they can improve Parkinson's disease, reduce seizure frequency and epilepsy, and help with MS symptoms. This may be helpful in the pharmacological treatment of neurological conditions or brain diseases. The exact mechanism of action of placebos is still unknown, but it is known to be a complex neurobiological response involving everything from an increase in feel-good neurotransmitters like dopamine and endorphin to increased activity in brain areas related to mood, emotional responses, and self-awareness.

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References

1. Kaptchuk, T. J., et al., (n.d.). *Placebos without deception: A randomized controlled trial in irritable bowel syndrome*. PLOS ONE. https://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0015591
2. Bektas, M. (n.d.). Placebo effect. Metin's Media & Math. Retrieved April 6, 2025, from https://metinmediamath.wordpress.com/tag/placebo-effect/
3. 4. Wager, T. D., Atlas, L. Y. *The neuroscience of placebo effects: connecting context, learning and health*. Nature reviews. Neuroscience, 2015. 16(7), 403–418. doi:10.1038/nrn3976
4. Bąbel, P. *Classical Conditioning as a Distinct Mechanism of Placebo Effects*. Frontiers in psychiatry, 2019. 10:449. doi:10.3389/fpsyt.2019.00449
5. The power of the placebo effect. Harvard Health. 2021, December 13. https://www.health.harvard.edu/mental-health/the-power-of-the-placeboeffect#:~:text=How%20placebos%20work%20is%20still,reactions%2C%20and%20self% 2Dawareness
6. Pinch, B. 2016, September 14. More than just a sugar pill: Why the placebo effect is real. Science in the News. https://sitn.hms.harvard.edu/flash/2016/just-sugar-pill-placebo-effectreal/#:~:text=While%20placebos%20are%20grounded%20in,trials%20for%20new%20pai n%20medications.
7. Schaefer, M., Hellmann-Regen, J., Enge, S. *Effects of Open-Label Placebos on State Anxiety and Glucocorticoid Stress Responses*. Brain sciences, 2021. 11(4), 508. doi:10.3390/brainsci11040508

How can we define normal? And how would you describe mental illness to someone who knew nothing about the topic?

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Essay Prompt: An alien ship drops out of the sky from another planet. Unfortunately (or fortunately, depending on your viewpoint), they have been watching YouTube videos of the Kardashians and other reality shows while traveling to our planet, and they are very confused about what is a “normal” human being. So far in class we have interviewed three different patients with three different mental illnesses. If we follow through with this logic, then persons without a “diagnosis” are apparently “normal.” How would you explain mental illness to an alien who has no biases or knowledge of what it is like to have a mental illness? How would you decide what is normal and what is abnormal? Who should decide what is normal? In the citation provided, leading psychiatrists were the ones deciding normal versus abnormal for the world (1). Please write an essay considering one or more of the questions detailed here in this prompt (or ask and answer your own question!), drawing on the citation provided, class interviews, optional reading, and/or your own experiences (1).

The term “normal” has long been used as a generic word of description, often being used in conversation, or written without much thought or worry behind what the word truly means. Many often assume the word has a standard definition and application, but there is a substantial variability in the meaning of the term that is highly subjective based on an individual. To some, normal may be used to describe the unchanged or unaltered natural condition of a subject, while to others, the term may be used as a label put on the most commonly occurring variety of any given subject. Using the word "normal" can be efficient and useful, but it also has its shortcomings and potential for harm. The use of the term “normal” can enhance efficiency within industries, but it also perpetuates a long-standing, often unknowingly judgmental ideology. This can lead to unnecessary compartmentalization of people,

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imposing limitations, and expectations on these divisions.

Perhaps the most relevant topic of discussion regarding normalcy is how the term is applied to describe people. Specifically pertaining to the discussion of mental illness, it has become commonplace in society to label those without mental illness as normal, and to use other, potentially offensive, or demeaning terms, to describe those who do have a mental illness. There are numerous ways in which mental illness has been defined, varying depending on the setting. A more general definition describes mental illnesses as conditions with changes to emotion, thinking, or behavior (4). This description provides the broad strokes of what mental illness is but lacks what is needed to apply the definition in a useful way. In a more medical setting, mental illnesses can be defined as a mental, behavioral, or emotional disorder, with a wide range of severity and varying levels of impairment (2). This definition provides a better framework for applying the term, as it clarifies that each case may be different and unique under the wide umbrella of "normalcy." It is undeniably important to distinguish who needs medical assistance or treatment and to what extent they need it. This is especially true regarding the brain, which does not always reflect issues through physical appearance. However, it is unfortunate that, in many cases, labeling people is not used for medical or professional purposes but instead to diminish the abilities of others. This is the major pitfall of using the term “normal.” Often, those labeled as "normal" are unaffected, while those labeled with other terms may suffer. This can include limitations being placed upon them, as people might feel compelled to act differently toward them.

There are many examples that highlight the diversity and perseverance of those who may be affected. Neurodivergence is a term commonly associated with autism spectrum disorder and related conditions. Neurodivergence, and the related term of neurodiversity, promotes inclusivity, respect, and understanding of all people (3). Numerous people with a wide variety of neurodivergence have made it clear that they should rightfully be treated with the same level of respect and dignity as any other person. People should not feel the need to act differently towards those with some form of neurodivergence.

Outside of professional or medical industries, using normal as a means by which to divide people is not a very useful or moral practice. Normal is very subjective and should only be used in practical settings when it is necessary to have defined groupings. The otherwise trivial uses of normal, more often than not, causes harm by belittling and underestimating the abilities of others. When considering the term "normal," it is important to recognize its origins and who is responsible for defining what it means. Often, this duty is entrusted to professionals. They are tasked to define what normal is in their respective fields, and what variables need to change to lose the label of normal. Many institutions have provided definitions for normal that are mostly along the lines of conforming to a type, standard, or regular pattern (5). It is clear there may be a great degree of ambiguity when it comes to the interpretation and application of these definitions. To tie this back to the discussion of mental illness, medical professionals and researchers are allotted with specifying criteria for certain mental conditions so they can be defined based upon reliable data, symptoms, and behaviors. This clarification is important and necessary to ensure proper help and treatment. There is a high responsibility placed upon those who define normal within the medical field, and this highlights how normal can be a useful tool.

As described above, defining normal can be necessary in medical settings. The functions and

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operations of specific body parts between people show little to no variation, so it is important to have a defined baseline to determine if there is an issue that needs to be addressed. This is true when describing mental illness as well. In describing mental illness to someone who previously knew nothing about the topic, it would be important to first explain the different regions and parts of the brain, defining the functions of these systems and how they relate to the body as a whole. It is key to explain what part of consciousness, behaviors, thoughts, and actions each part of the brain contributes to. The next step in the process would be to explain what can impact each of these systems. This could include explaining chemical, electrical, or physical changes to the brain. It would also be critical to explain what could be brought about due to an alteration in each of the parts or systems. There are many symptoms and conditions that can have a varying impact on people's lives, and it would be necessary to describe the multitude of cases that could arise. The most paramount part of the process would be to confirm the understanding that mental illnesses are similar to many other medical conditions, in that they are often completely out of the person's control, and that those with mental illnesses should not be thought of as less than those with conditions that do not affect thought or behavior.

The issue of defining normal is a very thought-provoking discussion which impacts many people on a daily basis. Each person is unique, so the topic is very heterogenous by nature. While there are some negative side effects of the usage of the term "normal," it would be ignorant to completely overlook the benefits associated with being able to know who may need treatment or help.

To conclude the discussion, it should be recognized that "normal" is highly dependent on perspective and is a very subjective term that should be used cautiously. Defining normal is important in certain industries to ensure proper procedures and necessary actions are taken when needed. Similarly, defining mental illness requires a careful approach, treating it with the same rigor as any other medical condition, with clear definitions of critical areas and thorough explanations of symptoms and necessary actions. Defining normal is a responsibility that should be entrusted to those who use it solely for the purpose of good and helping others.

References

1. Neill, John. Whatever Became of the Schizophrenogenic Mother American Journal of Psychotherapy, vol. 44, no. 4, American Psychiatric Publishing, Oct. 1990, pp. 499–505, doi:10.1176/appi.psychotherapy.1990.44.4.499. 1990, pp. 467–625.

2. *Mental illness*. Published 2023. Updated September 2024. National Institute of Mental Health. https://www.nimh.nih.gov/health/statistics/mental-illness

3. Baumer, N., Frueh, J. *What is neurodiversity?* Harvard Health. 2021a, November 23. https://www.health.harvard.edu/blog/what-is-neurodiversity202111232645

4. Njoku, I. (2022). *What is mental illness?*. Psychiatry.org - What is Mental Illness? https://www.psychiatry.org/patients-families/what-is-mentalillness#:~:text=Mental%20illnesses%20are%20health%20conditions,social%2C%20wor k%20or%20family%20activities.

5. Webster, M. *Normal definition & meaning*. Published 2024. Updated November 27, 2024. Merriam-Webster. https://www.merriam-webster.com/dictionary/normal

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Sexism in Psychiatry: A Persistent Concern

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Essay Prompt: In the year 2023, the historical impact of bias and sexism on the perception of mental illness is still present in our culture in the United States and world-wide. The citation provided may be viewed through that lens, in that Freud and other early psychiatrists tended to blame everything on the mother/woman (1). Using examples from the citation provided, class interviews, optional reading, and/or your own experiences, please write an essay focused on some type of bias (gender, racial, economic, etc) in mental health (1). Ideas for areas of interest to discuss may be beliefs, perceptions, access to treatment, or consequences of such bias.

Hysteria, a term coined by Freud, often connotes madness, insanity, and irrationality. Its etymology traces back to the Greek word 'hystera,' meaning uterus, reflecting a historical association with women. It has always been viewed through different lenses throughout history, with tangible repercussions evident across history and contemporary society. Prominent examples come from ancient myths like the Maenads, female followers of Bacchus the god of madness; Oizys the goddess of depression, anxiety, and misery; and the three fates of death.

The passage emphasizes the trend of children with schizophrenia having an overprotective mother and a distant father. The question arises: why is the 'schizophrenogenic' label primarily affixed to the overprotective mother and not the absent father? This bias exemplifies the pervasive gender biases within the field of schizophrenia research.

In the passage provided, the main point is that the "schizophrenogenic mother" is the cause of her child's mental illness. Psychologists of that era seemed convinced that a mother's coldness or overprotectiveness could trigger schizophrenia in their offspring, ignoring the myriad of other potential factors such as genetics and other sources of trauma. An example of schizophrenia not stemming from childhood trauma is a patient with schizophrenia who we met in the first week of the Neuropsychiatric Patient course; she emphasized her happy upbringing and the idiopathic nature of her specific case.

In 1908, Sigmund Freud, the father of psychology, introduced the concept of "penis envy," a stage in adolescent girls where they'd experience distress for not having a penis. To Freud, women had the inferior womb instead of the superior penis, a misogynistic concept that has been thoroughly disproved. Additionally, the 1950s saw the widespread popularity of lobotomies, a procedure involving the division of the frontal lobe using an ice pick inserted through the nose. A study done nationally revealed that almost 60% of the lobotomies performed during the 1950s were

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done on women showcasing that this procedure was disproportionately performed on women (2). Particularly, lobotomies were performed on women who were labeled as "disobedient" or "promiscuous" as a means to punish them for non-conformity (3). A notorious example is John F. Kennedy's youngest sister Rosemary Kennedy, who was lobotomized due to her autism and challenges with behavior regulation, leading to lifelong institutionalism. The perception of women as inferior to men facilitated these unethical procedures that punished women throughout the 20th century. Although modern society has made progressive strides, gender biases persist in contemporary psychiatry, leading to ongoing disparities in the treatment of women.

Since males were traditionally the default subjects in medical research, there is a research gap that affects the quality of care for women as their symptoms may differ from those typically observed in men. It also leads to more frequent misdiagnoses in female patients, whose concerns may be dismissed, not just in psychiatry but in all of healthcare. Negligence towards women's health is largely attributed to the sexist notion that women are inherently more emotional and fragile than men. The consequences of these actions lead to women suffering from higher rates of internalizing disorders like depression and anxiety (4). Furthermore, females show a significantly greater delay in referral to mental health services and a considerably higher age at diagnosis of autism spectrum disorder (ASD), compared to males (5). Instances like these contribute to a systemic pattern of women being mis or undiagnosed, ultimately preventing them from receiving the mental health treatment they urgently require.

Sexism has long permeated the field of psychiatry, as evidenced by historical accounts, theories posited by psychologists in the passage, and their enduring repercussions in modern times. Despite these challenges, progress is underway to address gender bias within the field. Initiatives such as conducting research with more diverse test subjects, fostering inclusivity towards women in research, and challenging gender stereotypes among professionals are all steps toward positive change, which we must continue.

References

1. Neill, John. *Whatever Became of the Schizophrenogenic Mother*. American Journal of Psychotherapy, vol. 44, no. 4, American Psychiatric Publishing, Oct. 1990, pp. 499–505, 1990.44.4.49.1990, pp. 467–625.

2. Amir A. Afkhami, Javad J. Fatollahi, Melissa A. Peace, Ramsin J. Yadgar. *Spinning lobotomy: A conventional content analysis of articles by the pioneers of the procedure in the United States.* SSM - Mental Health, Volume 2, 2022, 100123, ISSN 2666-5603.

3. Mansur, S., Rodrigues, K. *In a psychiatric hospital in São Paulo, women were the preferred target of lobotomies.* Casa de Oswaldo Cruz, 2022.

4. Rosenfield, S., & Smith, D. *Gender and Mental Health: Do Men and Women Have Different Amounts or Types of Problems?* 2009, Cambridge: Cambridge University Press. p. 256–267.

5. Gesi, C., Migliarese, G., Torriero, S., Capellazzi, M., Omboni, A. C., Cerveri, G., & Mencacci, C. *Gender Differences in Misdiagnosis and Delayed Diagnosis among Adults with Autism Spectrum Disorder with No Language or Intellectual Disability.* Brain sciences, 2021. **11**(7): 912.

