A Review of Studies on Major Depressive Disorder

Xintian Hong[1, †], Yingying Li[2, †], Zhichao Xue[3, *, †]

[1] *School of Health, Fujian Medical University, Fuzhou, Fujian, China*
[2] *NOIC Academy, NOIC, Toronto, Ontario, Canada*
[3] *Syracuse University, Syracuse, New York, the United States*
[*] *Corresponding author. Email: zxue03@syr.edu*
[†] *Those authors contributed equally.*

ABSTRACT
The World Health Organization ranked major depression disorder (MDD) as the third largest burden of disease globally, and it is projected to become number one by 2030. Interest in pleasurable activities, guilt or worthlessness, low energy, poor concentration, altered appetite, low intelligence or restlessness, sleep disturbances, or suicidal thoughts can be diagnosed when a person's mood is persistently low or depressed, anhedonia or declining. MDD is more common in people without close interpersonal relationships, divorce or separation, or widowhood. The prevalence of MDD did not GABA differ between race and socioeconomic status. Individuals with MDD usually have comorbid disorders, such as substance use disorder, panic disorder, social anxiety disorder, and obsessive-compulsive disorder. The presence of these comorbidities in patients diagnosed with MDD increases their risk of suicide. Among the elderly, people with comorbid diseases generally suffer from depression. Depression is more common in rural areas than in urban areas.

Keywords: *Major depressive disorder, Depression, prognostic markers, Depressive symptoms, Therapy.*

1. INTRODUCTION

Depression, also known as depressive disorder, is the most common mental disorder. The main symptoms are persistent [1]. Depression can be divided into mild depression, moderate depression, and severe depression. This classification means that for patients with different degrees of depression, the choice of treatment and the results after treatment are likely to be different. Depression itself does not involve specific parts or organs, but it can cause physical injury due to patients' self-mutilation. Generally, 60% ~ 80% of patients with depression can effectively control their symptoms, and the complete cure rate is about 30% [2]. The recurrence rate of depression is very high. The recurrence rate of patients with the first depressive episode was at least 50%, and the recurrence rate of patients with two depressive episodes was as high as 80% ~ 90% [2]. About 322 million people worldwide suffer from depression, with a prevalence rate of 4.4% [3]. Major depression is a very common mental disease. Its lifetime prevalence is about 5% to 17%, with an average of 12%. The prevalence rate of women is almost twice that of men [4]. This difference is believed to be caused by hormonal differences, childbirth effects, different psychosocial pressures between men and women, and learned helplessness behavior patterns. Although the average age of onset is about 40 years old, recent surveys show that the incidence rate of young people is increasing due to the use of alcohol and other drugs [5]. Major depression disorder (MDD) is more common in people without close interpersonal relationships, divorce or separation, or widowhood. The prevalence of MDD referring to major depression disorder did not differ between race and socioeconomic status. Individuals with MDD usually have comorbid disorders, such as substance use disorder, panic disorder, social anxiety disorder, and obsessive-compulsive disorder. The presence of these comorbidities in patients diagnosed with MDD increases their risk of suicide. Among the elderly, people with comorbid diseases generally suffer from depression. Depression is more common in rural areas than in urban areas [6].

Depressive episodes often have symptoms of depression, thinking retardation, decreased willpower, cognitive impairment, sleep disorder, fatigue, loss of appetite, and other physical discomfort lasting more than two weeks. Children and adolescents with MDD may experience irritability. Depression can also cause complications, such as anxiety, sleep disorders, and self-mutilation, and suicide.

For this activity, the diagnosis of depression is limited, because we did not conduct empirical research and the symptoms of patients with depression are not obvious, often contain but not reveal, hide and heart, so that people can not accurately identify, which adds a lot of difficulty to the diagnosis of depression. According to DSM-5, the fifth edition of the diagnostic and Statistical Manual of mental disorders, individuals must have five symptoms, including persistent depression or depression, lack of pleasure or decreased interest in happy activities, guilt or worthlessness, lack of energy, inattention, change of appetite, mental retardation or excitement, and lack of sleep, One of them must be a social or occupational disorder caused by depression or lack of pleasure to be diagnosed as MDD. To diagnose MDD, a history of manic or hypomanic episodes must be excluded [5].

This event mainly reviews the diagnosis, etiology, treatment, management, impact, and future prospects of major depression.

2. LITERATURE REVIEW

2.1. Diagnosis

Truschel mentioned that according to DSM-5, depression is a common mood disorder. People with depression will experience sadness, hopelessness and lost interest to things that were enjoyable.[22] Feiten et. al mentioned in their article that major depressive disorder is a very heterogeneous syndrome [7]. In other words, the symptoms and causes of the disease could be very different from patients to patients. In this research, the Hamilton depression rating scale and beck depression inventory were used by clinicians or patients. There are also several rating scales for major depressive disorder, researchers found out that there is a huge difference between self-rated scales and clinician's rated scales. Doctors and patients have a different perceptions of the severity of the symptoms. These characteristics of major depressive disorder made the diagnosis and treatments more complicated. Uher et. al. stated that there were a few changes from DSM-4 to DSM-5 [8].

The major change would be that mood disorder has been split into two categories-bipolar related disorders and depressive disorders. Now major depressive disorder is under the "depressive disorders" category. This change made diagnosis more challenging because the doctor would have to decide whether it is a bipolar or depressive disorder when the symptoms are mild and unclear. Moreover, the authors also found out that major depressive disorder can coexist with "other specified bipolar and related disorders". This does not logically make sense because the DSM-5 listed them into two categories. If they think to list them into two categories is necessary, they should not coexist.

2.1.1. Patient Health Questionnaire

According to Kroenke and Spitzer, over 10 years ago, people use PHQ (patient health questionnaire) to measure depression. Now they have developed a new depression scale called PHQ-9 [9]. PHQ-9 is only half of the length when compared to another depression scale. Most importantly, this scale could also be a dual instrument that can help people with the clinical diagnosis and understanding the level of severity of the major depressive disorder. The question in this scale is not simply YES OR NO questions. The PHQ-9 provided 4 levels of frequency. These 4 levels of frequency played an important role in testing the level of severity of the major depressive disorder. PHQ-9 is a gold standard measurement as a diagnostic measure or as a measure of depression severity. Even though PHQ-9 used 4 different levels of frequency, the severity of different symptoms was still not clear. I think it would be better if doctors or patients could rate the severity of different symptoms before they do the measurement of depression. For example, if a person wants to rate his or her level of depression. She or he needed to rate nine depressive symptom criteria first. Given the score from 1-24. Patients will need to score them based on their own perspectives. The diagnostic criteria are as follows: the total score is small or 7, indicating that the individual is normal;An overall score of 7 to 17 indicates that an individual may have depression.A total score of 17 to 24 indicates that an individual has depression. In this way, I think it would help people have a better understanding of the severity of the major depressive disorder. However, further research is still needed in order to customize patient's own patient health questionnaire.

2.2. Causes

The etiology of major depression is considered to be multifactorial. A range of potential factors from biological, physiological, psychological, and social factors have been suggested.

2.2.1. Biological and Physiological Factors

The early stage of MDD is considered to be mainly due to the abnormalities of neurotransmitters, especially serotonin, norepinephrine, and dopamine. This has been confirmed by the use of different antidepressants such as selective serotonin receptor inhibitors, serotonin-norepinephrine receptor inhibitors, and dopamine norepinephrine receptor inhibitors in the treatment of depressive disorder. It has been found that people with suicidal ideation have lower levels of serotonin metabolites. However, recent theories show that it is mainly related to more complex neuroregulatory systems and neural circuits, resulting in secondary interference of the neurotransmitter system. Secondary interferences are also known as secondary neurotransmitter disorders,

which are heterogeneous neurological disorders caused by various mechanisms that are not defects in synthesis, breakdown or transport.[10]

Gamma-aminobutyric acid (GABA) and glutamate and glycine (these two main excitatory neurotransmitters) also play a role in the etiology of depression. It has been found that the levels of plasma, cerebrospinal fluid and brain GABA (an important central nervous system inhibitory neurotransmitter) in patients with depression are low. In addition, thyroid and growth hormone abnormalities are also related to the etiology of emotional disorders. For example, a variety of adverse childhood experiences and trauma are related to the development of depression in later life. Thyrotropin-releasing hormone is a homeostatic neuromodulator in depression, and its regulation of the hypothalamus results in stronger than normal dopamine receptor function when there is an abnormality in the thyroid axis.[11]

Severe early stress will lead to drastic changes in neuroendocrine and behavioral responses, which will lead to structural changes in the cerebral cortex, leading to severe depression in later life. Structural and functional brain imaging of depressed individuals showed increased hyperintensity in the subcortical region and decreased metabolism in the left forebrain. Family, adoption and twin studies have shown the role of genes in susceptibility to depression. Genetic studies have shown that the consistency rate of twins with MDD is very high, especially identical twins [12]. In addition, those with a family history of major depressive disorder, bipolar disorder, dysthymia, and personality disorders are susceptible to the disease.

2.2.2. Psychological and Social Factors

Life events and personality traits also play an important role. It is more likely to develop MDD, serious events in childhood, and stressful life events, such as loss of a partner or serious illness. However, psychological may not be the factor that directly causes MDD, but there must be correlations [13].

Social factors also should not be neglected. Researchers had discovered surprising findings associated with social factors. It is shown that there are some socioeconomic status differences in the prevalence of MDD. Depressive disorders are more prevalent in high-income countries than in low- and middle-income countries. In addition, women and unmarried people have a higher risk of developing the disease [14].

Therefore, it can be assumed that genetic or pathological factors contribute to the biological susceptibility of the patient. Based on this, the patient gradually develops psychological susceptibility under the influence of social factors such as family and school education. Meanwhile, under the stimulation of stressful life events, the relevant neurotransmitters (e.g. serotonin, norepinephrine, and dopamine) in the patient's body are affected. Patients make negative attributions about negative life events, develop feelings of despair, and form negative schemas. In addition, some patients face interpersonal problems, lack of social support. Eventually, they were diagnosed with MDD.

2.3. Impacts

Depression is a chronic mental health issue. For individuals, MDD patients tend to live on government subsidies. Their emotional and physical reasons have severely impaired their social functions and they are therefore unable to work full-time. Suicidal thoughts appear frequently in a patient's mind when they first appear during a depressive episode. Suicidal ideation was high among people with MDD. The demographic characteristics in the study showed that almost half of the people were between the ages of 30 and 44. People belonging to this group are known to be highly vulnerable to depression due to many stressors in their lives, which may include marital conflict, unemployment, and health problems. 23.1% of people in the 40 to 49 age group had MDD.A high lifetime prevalence of suicidal ideation (84% compared to 3.5%), planning (42% compared to 0.6%) and attempt (35% compared to 0.3%) among people with MDD. In the current study, suicidal ideation was more frequent among women, unmarried people, and those belonging to nuclear families [15].

MDD is one of the main causes of disability worldwide. It will not only lead to serious dysfunction but also harm interpersonal relationships, thus reducing the quality of life. People with MDD are at high risk of comorbid anxiety and substance use disorders, which further increases their risk of suicide. Depression can aggravate complications such as diabetes, hypertension, chronic obstructive pulmonary disease, and coronary artery disease. Depressed people are likely to develop self-destructive behavior as a coping mechanism. MDD is usually very weak if not treated in time [5].

Depression is a serious disease that will bring terrible losses to people and people’s families. Without treatment, depression usually gets worse, leading to emotional, behavioral, and health problems that affect all aspects of your life. Dutch act: it can cause many complications, including examples of complications associated with depression: overweight or obesity, which can lead to heart disease and diabetes, pain or physical illness, alcohol or drug abuse, anxiety, panic attacks or social phobia, family conflict, interpersonal difficulties, work or school problems, social isolation, Dutch act, suicide attempt or suicide, and self-mutilation, such as cutting and so on [16].

Vancampfort et. al found that people with severe mental disorders such as major depressive disorder

usually spend most of the team sitting still while they were awake. People with a severe mental disorder is less physically active compared to a healthy person [17]. The authors also mentioned that low physical activity is also associated with antidepressant medication. As the research mentioned the association between major depressive disorder and physical activity, and physical activity is linked to physical health; I think further research about the relationship between major depressive disorder and physical activity is necessary.

Schuch et. al researched with 2901 people with major depressive disorder. They found out 67.8% of participants did not meet the recommended physical activity requirement. Compared to normal healthy people, people with major depressive disorder were less likely to meet the daily recommendation of physical activity requirement [18]. This finding might be one of the reasons for premature mortality in patients who vehave major depressive disorder.

2.4. Treatments

MDD treatment methods are generally divided into three categories: drug therapy, psychotherapy, physical therapy, and magnetic stimulation therapy.

Firstly, there are three kinds of drugs commonly used in drug therapy: the first kind is serotonin reuptake inhibitor, which plays a role in maintaining the level of serotonin neurotransmitters. The commonly used drugs of this kind of inhibitor include fluoxetine, paroxetine, sertraline, fluvoxamine, citalopram, escitalopram. The second kind is the dual-channel reuptake inhibitor of serotonin and noradrenaline, which is used to control symptoms. The commonly used drugs of this kind of inhibitor are venlafaxine and duloxetine. The third type is a dual-channel regulator of serotonin and nor adenosine, which is used to control symptoms. The commonly used drug of this kind of regulator is mirtazapine [19].

The second treatment is psychotherapy. Cognitive therapy is usually utilized in psychotherapy. Its purpose is to relieve patients' depression and assist drug treatment through psychological counseling. In the process of psychological counseling, family members should try their best to accompany and care for patients. Patients also need to strive to maintain a good attitude and engage in more outdoor sports. In addition, patients also need to actively communicate with the people around them and attend more social activities that make them feel comfortable [20].

Finally, physical therapy, especially Nerve Stimulation Therapy. It includes modified nonconvulsive electroconvulsive therapy, vagus nerve stimulation, transcranial magnetic stimulation, and so on. The purpose is to improve brain function and assist drug treatment [5].

In addition, patients should eat foods containing high protein and vitamins to ensure adequate nutrient supply, such as fresh vegetables and fruits, shrimp, fish, and chicken. It should also be noted that smoking and alcohol should be prohibited, and a good sleep environment should be created to ensure adequate sleep.

Nowadays, there is a new way to treat MDD. It's Magnetic stimulation therapy. In 2017, a modified magnetic stimulation therapy cured most patients with refractory or severe depression for the first time. In 2020, relevant research was published in the American Journal of Psychiatry, a top journal in the field of psychiatry, revealing its magical curative effect. The study came from the Nolan Williams team at Stanford University in the United States. The researchers recruited a group of patients with refractory severe depression. Because almost all existing therapies are ineffective for them, these patients are unable to resist the invasion of depression for many years. After 5 consecutive days of high-dose ITBs TMS treatment (a special FDA-approved magnetic stimulation therapy that allows patients to wear magnetic coils to generate magnetic fields to stimulate the brain), 19 of the 21 patients were cured The cure rate is as high as 90%. This miraculous curative effect benefits almost all patients with refractory severe diseases. It can be achieved in an average of 3 days, and the fastest is 1 day. When magnetic stimulation is given to the patient's head for just 5 days, the curative effect can last for several months to a year. In contrast, almost all existing drugs or therapies need continuous treatment It takes a few weeks to cure 30% of depressed patients. This treatment technology is ready-made (FDA approved), low-cost, non-invasive, high success rate, rapid onset, extremely low side effects, only fatigue, and some discomfort in the treatment process. At present, the randomized quadruple blind clinical trial has been completed (started in 2017) [21].

3. LIMITATIONS AND FUTURE IMPLICATION

The obvious limitation of this study is that no actual data is supporting our study. However, this article should point out the direction of future implications. The first aspect that people should pay attention in the future is that DSM-5 values the criteria the same. It needed to be improved because insomnia and suicide are not the same things. In the future, people should value the criteria differently based on the severity of the disorder.

Secondly, there was still a controversy about the treatment of MDD. Should people be treated the same? In other words, should people with mild symptoms be treated with medical treatment, too? The current aspect is that doctors tend to provide therapeutic treatment for people with mild symptoms, and doctors tend to give medical support for people who are suffering from severe

symptoms. Should people with mild symptoms receive medical support as well?

Moreover, the study found out that individuals with major depression usually have comorbidities such as substance use disorder, panic disorder, social anxiety disorder, and obsessive-compulsive disorder. In patients diagnosed with major depression, the presence of these comorbidities increases their risk of suicide. In the elderly, depression is common in people with coexisting diseases. Depression is more common in rural areas than in cities. The causes of when people with major depression usually suffer from comorbidities as well were not fully understood, and I think it is really important to find out the causal relationship between these comorbidities. Figuring out the orders of the disease would be extremely difficult but important. If we could figure out the orders of the disease, we might be able to provide more specific help or support for those people who are suffering from a major depressive disorder.

Next, researchers should do further research may be to add more details or categories under major depressive disorder since the disorder is a very heterogeneous syndrome. More details or categories are needed to help doctors diagnose patients while the symptoms might not be clear. Then, the relationship between major depressive disorder and "other specified bipolar and related disorders" is unclear because they can coexist. Future research might need to give a clear definition of this relationship.

4. CONCLUSION

This study provides a systematic review of the research on major depressive disorder. First, we introduced the basic symptoms and diagnostic criteria of major depressive disorder. In terms of diagnosis, the PHQ-9, a new depression scale, plays an important role in testing the severity of the major depressive disorder. The causes of major depression are presented in several biological, physiological, and social aspects. The major depressive disorder affects the social and physical functioning of patients, leading to functional impairment and triggering risky behaviors such as self-injury and suicide. Abnormal secretion of neurotransmitters such as 5-serotonin, norepinephrine, and dopamine is the main physiological cause of the major depressive disorder. For the treatment of major depression, medication is mentioned first, while psychotherapy and physical therapy have also made great progress in recent years. Finally, there are still limitations to the study of major depression, for example, the obvious limitation is that DSM-5 values the criteria the same. Pharmacological treatment of major depression is controversial. Future research could be directed towards the causal relationship between comorbidities.

REFERENCES

[1] Gin S Malhi, J John Mann, Depression, 2018, 24, DOI: https://doi.org/10.1016/S0140-6736(18)31948-2

[2] Wei Qu, Shanshan Gu. New progress in the treatment of depression. Journal of the Third Military Medical University, 2014, 36(11), pp. 1113-1117. DOI:http://doi.org/10.16016/j.1000-5404.2014.11.022

[3] Kaufmann FN, Costa AP, Ghisleni G, Diaz AP, Rodrigues ALS, Peluffo H, Kaster MP. NLRP3 inflammasome-driven pathways in depression: Clinical and preclinical findings. Brain Behav Immun. 2017, 64, pp. 367-383. DOI: http://doi.org/10.1016/j.bbi.2017.03.002

[4] Pedersen CB, Mors O, Bertelsen A, Waltoft BL, Agerbo E, McGrath JJ, Mortensen PB, Eaton WW. A comprehensive nationwide study of the incidence rate and lifetime risk for treated mental disorders. JAMA Psychiatry. 2014. DOI: https://doi.org/10.1001/jamapsychiatry.2014.16

[5] Bains N, Abdijadid S. Major Depressive Disorder. [Updated 2021 Apr 20]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK559078/, DOI: https://doi.org/10.1007/springerreference_116852

[6] Lyness JM, Niculescu A, Tu X, Reynolds CF, Caine ED. The relationship of medical comorbidity and depression in older, primary care patients. Psychosomatics. DOI: https://doi.org/10.1176/appi.psy.47.5.435

[7] Feiten, J. G., Mosqueiro, B. P., Uequed, M., Passos, I. C., Fleck, M. P., & Caldieraro, M. A. Evaluation of major depression symptom networks using clinician-rated and patient-rated data. Journal of Affective Disorders, 2021, 292, pp. 583-591. DOI: https://doi.org.libezproxy2.syr.edu/10.1016/j.jad.2021.05.102

[8] Uher, R., Payne, J. L., Pavlova, B., & Perlis, R. H. Major depressive disorder in DSM-5: Implications for clinical practice and research of changes from DSM-IV. Depression and Anxiety, 2014, 31(6), pp. 459-471. DOI: http://doi.org/10.1002/da.22217

[9] Kroenke, K., M.D., & Spitzer, R. L., M.D. The PHQ-9: A new depression diagnostic and severity measure. Psychiatric Annals, 2002, 32(9), 509-515. https://libezproxy.syr.edu/login?url=https://www.proquest.com/scholarly-journals/phq-9-new-depression-diagnostic-severity-

measure/docview/217052580/se-2?accountid=14214

[10]Kaye WH, Weltzin TE. Neurochemistry of bulimia nervosa. J Clin Psychiatry. 1991 Oct;52 Suppl:21-8. PMID: 1682306.

[11]Duval F, Mokrani MC, Erb A, Danila V, Lopera FG, Foucher JR, Jeanjean LC. Thyroid axis activity and dopamine function in depression. Psychoneuroendocrinology. 2021 Jun;128:105219. doi: 10.1016/j.psyneuen.2021.105219. Epub 2021 Apr 3. PMID: 33839430.

[12]Zhang Luheng,Zhang Ran,Han Shaoqiang,Womer Fay Y,Wei Yange,Duan Jia,Chang Miao,Li Chao,Feng Ruiqi,Liu Juan,Zhao Pengfei,Jiang Xiaowei,Wei Shengnan,Yin Zhiyang,Zhang Yifan,Zhang Yanbo,Zhang Xizhe,Tang Yanqing, Wang Fei..Three major psychiatric disorders share specific dynamic alterations of intrinsic brain activity.. Schizophrenia research 2021, DOI: https://doi.org/10.1016/J.SCHRES.2021.06.014.

[13]Adu Medard Kofi,Wallace Lauren J.,Lartey Kwabena F.,Arthur Joshua,Oteng Kenneth Fosu,Dwomoh Samuel... & Agyapong Vincent I. O.. Prevalence and Correlates of Likely Major Depressive Disorder among the Adult Population in Ghana during the COVID-19 Pandemic. International Journal of Environmental Research and Public Health, 2021, 13, DOI:https://doi.org/10.3390/IJERPH18137106.

[14] Shubham Mehta,,Pankaj Kumar Mittal & Mukesh Kumar Swami. Psychosocial Functioning in Depressive Patients: A Comparative Study between Major Depressive Disorder and Bipolar Affective Disorder. Depression Research and Treatment 2014, DOI: https://doi.org/10.1155/2014/302741.

[15] Ralte Lalthankimi,Padmavathi Nagarajan,Vikas Menon & Jeby Jose Olickal. Predictors of Suicidal Ideation and Attempt among Patients with Major Depressive Disorder at a Tertiary Care Hospital, Puducherry. Journal of Neurosciences in Rural Practice 2021, 12(01), pp. 122-128. DOI:https://doi.org/10.1055/S-0040-1721558

[16] Depression, Major Depressive Disorder. (n.d.). Encyclopedia of Pain, 54-543. DOI: http://doi.org/10.1007/978-3-540-29805-2_1043

[17] Vancampfort, D., Firth, J., Schuch, F. B., Rosenbaum, S., Mugisha, J., Hallgren, M., Probst, M., Ward, P. B., Gaughran, F., De Hert, M., Carvalho, A. F., & Stubbs, B. Sedentary behavior and physical activity levels in people with schizophrenia, bipolar disorder and major depressive disorder: A global systematic review and meta-analysis. World Psychiatry, 2017, 16(3), 30-315. DOI: http://doi.org/10.1002/wps.20458

[18] Schuch, F., Vancampfort, D., Firth, J., Rosenbaum, S., Ward, P., Reichert, T., Bagatini, N. C., Bgeginski, R., & Stubbs, B. Physical activity and sedentary behavior in people with major depressive disorder: A systematic review and meta-analysis. Journal of Affective Disorders, 2017, 210, pp. 139-150. DOI: http://doi.org/10.1016/j.jad.2016.10.050

[19] Joshua D. Rosenblat, Roger S. McIntyre, Pharmacological Treatment of Major Depressive Disorder. Major Depressive Disorder, 2020, pp. 103-119. DOI: http://doi.org/10.1016/b978-0-323-58131-8.00008-2

[20] Dandan Liu, Effect of family centered psychological education intervention on outpatients with adolescent depression. Huzhou Teachers College, 2021. DOI: http://doi.org/10.27946/d.cnki.ghzsf.2021.000038.

[21] Qi Han, Jufeng Shi, Jun Ma, Yanfei Zhang, Jun Wu, xuning Zheng, Cognitive behavioral therapy combined with repetitive transcranial magnetic stimulation improves sleep, anxiety and depression in stroke patients. Nerve injury and functional reconstruction, 2021, 16(11), pp. 669-671.DOI: http://doi.org/10.16780/j.cnki.sjssgncj.20201123

[22] Truschel, Jessica. Depression definition and DSM-5 diagnostic criteria. (n.d.). Retrieved January 22, 2022, from https://www.psycom.net/depression-definition-dsm-5-diagnostic-criteria/