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## DEPRESSION: EFFECT OF PANDEMIC (COVID- 19) ON MENTAL HEALTH

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**Abstract:** Depression is mental health disorder; it can be severe and life threatening which affect the life style and happiness. Depression always been a focus of attention of researchers. Mainly stress and anxiety are responsible for depression. In January 2020, outburst of corona virus has declared by the World Health Organisation (WHO). Government put down stringent action in March 2020 to control spread of corona virus by enforcing social distancing, restrictions of movement and complete lockdown. Since, the individuals are experience psychological distress. Fear and stress are either of them which severely affect mental health of person. Theses review paper mainly focuses on Depression and impact of pandemic. Various impacts are studied by small scale survey.

**Keywords:** Stress, Anxiety, Depression, COVID-19, Burnout, Risk factors, social distancing.

**Introduction:** *Clinical depression: "Depression is common mental health disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration".*

Neurotransmitters are chemical messengers basically made up of neurons which transmit a signal from a neuron across the synapse to target cell. There are no of neurotransmitters in body which regulate each other's release. As the balance of neurotransmitter's altered causes temperament in healthy person. Depression is common but serious illness which remains unclear due to limited understanding of the biological systems involved in MDD. Some study admits that it's because of imbalance of neurotransmitters in brain. Neurotransmitters regulates in the body, as the imbalances occurs in regulation it affected to personality of healthy people. Strong imbalances in neurotransmitter systems are linked with many mental disease and disorders. like, Parkinson's, Insomnia, Anxiety, Memory loss, Depression.

Depression is marked by mental health disorder (changes in mood or depressed mood). Otherwise known as major depressive disorder. Everyone occasionally feels sad but these feelings are usually for short time and they pass within few days. This is normal part of human being. But, when you have depression, it stands in the way of daily life. Depression identifies by continuous low mood or lack of interest in activities, causing serious disability in life, feeling blamable or low self-respect or self-confidence, low energy and poor concentration. Depression is can happen in human being in any age group and background. But if we talking about gender it's more common in female than any genders with a continuous acceleration researches recommended that these factors can changes in Brain function, also modify activity of some neural circuits in brain. Depression is always the centre of attention for the morbidity and also attention of researchers or authors to study its risk factors with its life events, disability, symptoms, prevention, treatment & its outcome in every age group. Depression can occur at any point in person's life.

According to WHO, Depression is common mental health disorder exist with depressed mood, loss of interest in pleasure, feelings of guilt, low self-worth, disturbed sleep or appetite, low energy, and poor concentration. It's a second largest illness in terms of morbidity by another decade in the World". Now a days, Mental and substance use disorders are more widespread in all the world. Depression is leading condition covered by WHO. WHO arranges mental health gap action programme (MH GAP) which has aim to help mental, neurological and substance use disorders by health workers in low and middle-income countries. The program stands up for genuine care, psychosocial counselling and medication of person suffering from disorder. They treated the person suffering from depression, schizophrenia and prevented from suicide because of proper counselling and begin to lead ordinary lives. Suicide is a major risk in depressive persons, and the global suicide mortality rate amounts to 1.4% of all deaths worldwide. Most of suicide reasons are related to mental health disorders, stress, Depression, substance use disorders and psychosis are most relevant risk factors (S, 2018 July) (Brådvik, 2018 Sep).

Thinking of suicide (Suicidal ideation), is a first step in the suicidal process and then attempt of suicide.

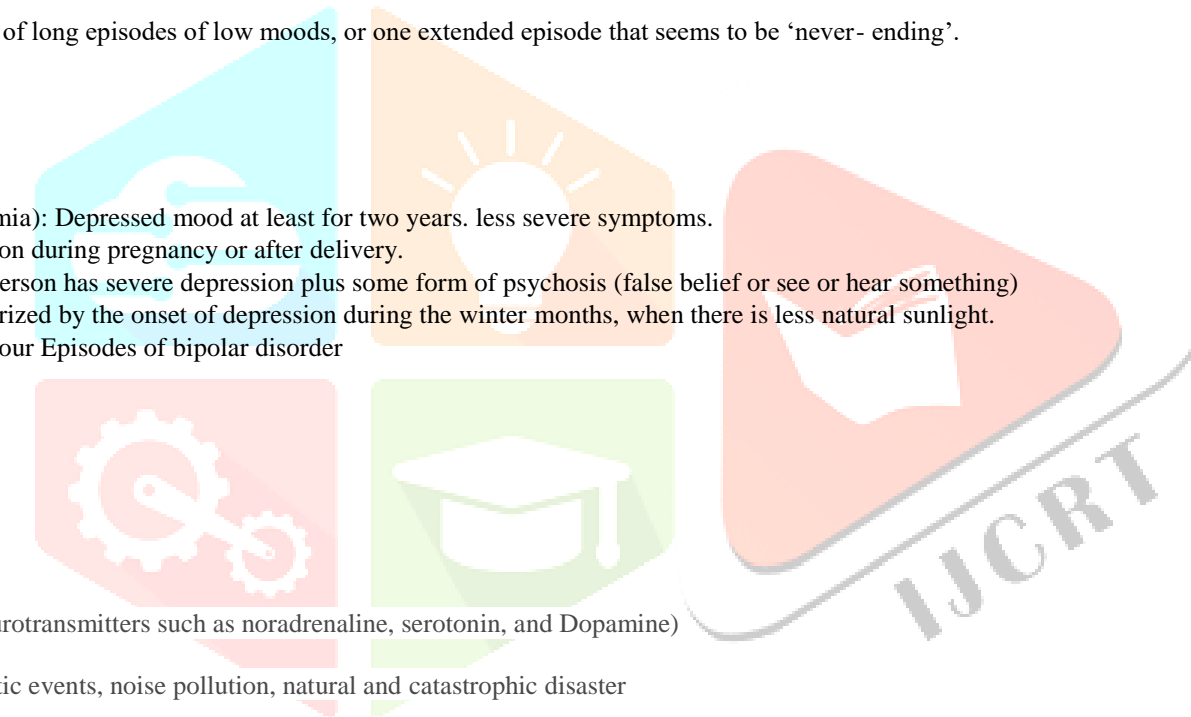
“For these reviews refer Books, internet search is also done, some searching websites like googles, apps, media, Review papers and hand search was also done. Additionally, online small-scale survey was done in community”.

#### TYPES OF DEPRESSION:

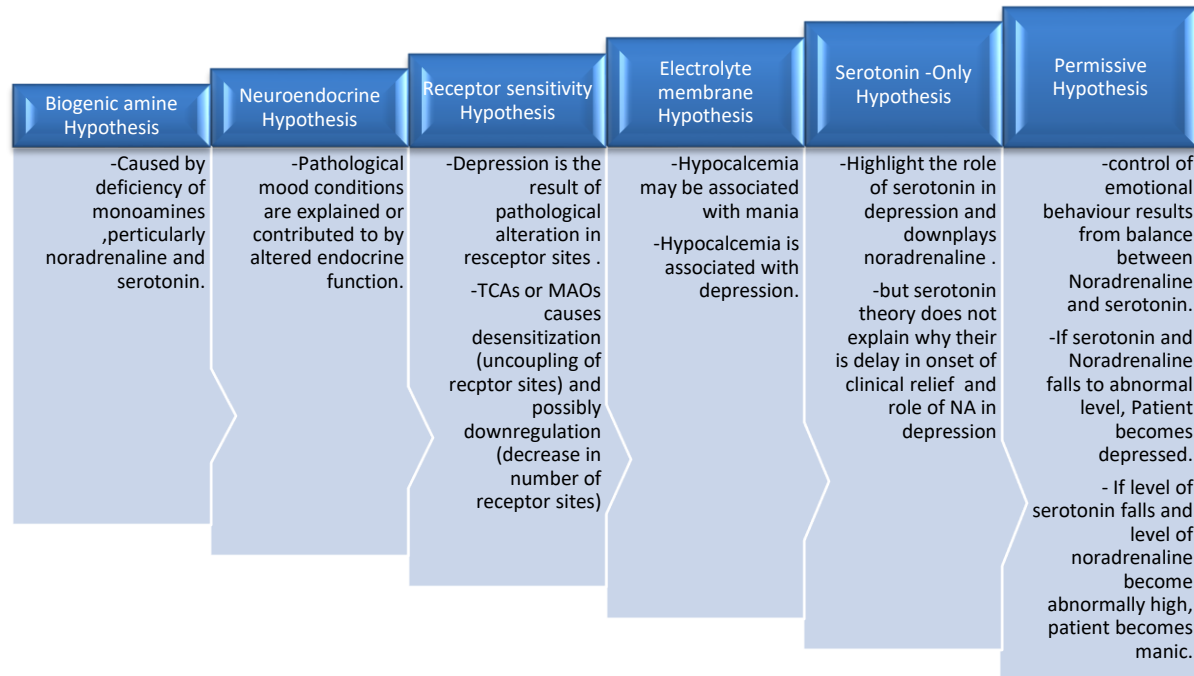
- Major depressive disorder: Recurrence of long episodes of low moods, or one extended episode that seems to be ‘never- ending’.
  - Atypical depression
  - Postpartum depression
  - catatonic depression
  - Seasonal affective depression
  - Melancholic depression
- Persistent depressive disorder (Dysthymia): Depressed mood at least for two years. less severe symptoms.
- Postpartum depression: Major depression during pregnancy or after delivery.
- Psychotic depression: Occurs when a person has severe depression plus some form of psychosis (false belief or see or hear something)
- Seasonal affective disorder: is characterized by the onset of depression during the winter months, when there is less natural sunlight.
- Bipolar disorder (Manic depression): Four Episodes of bipolar disorder
  - Depressive episode
  - Manic episodes
  - Hypomanic episodes
  - Mixed-mood states

#### ETIOLOGY

- Genetic cause
- Biochemical factors (Deficiency of neurotransmitters such as noradrenaline, serotonin, and Dopamine)
- Abuse of drugs or Alcohol
- Environmental factors -Stress, Traumatic events, noise pollution, natural and catastrophic disaster
- Hormone level changes
- Endocrine factors (Hypothyroidism, Causing’s Syndrome)
- Physical level changes



## PATHOPHYSIOLOGY



Risk factors: Factors that can contribute to depression include:

1) Age: Depression can occur at any age in person's lifetime. Even though adolescence and early adulthood has high risk for first onset. (Hankin, 2001)

-Elderly: According to age Depression increases with increasing age in elderly. (Barua A, 2007). Most of the persons are suffered from depression because of mental instability or mentally weak, physical or social life, economical condition, disability for last longer.

-Adult: Because of interpersonal relationships, personal burdens, adult at risk depression having poor economic status, than adult who works in government sector.

-children: Major depression in childhood and adolescence has strong familial basis. Being the child of a depressed parent, especially depressed mother, is a strong risk factor for depression in children

2)Female: women are more suffered from depression than men it means women are at the risk of depression. These increases due to variation between hormonal variation. since, these is more common in female who continuously affected due to hormonal changes during period of menstrual cycle. (Neiane de Souza Duarte, 2017), pregnancy, childbirth, and perimenopause, during reproductive periods and those who are divorced or widowed. (Poongothai S, . 2009 Sep 28)

Oestrogen and corticosteroids are the female sexual hormones responsible for sexual development and menstrual cycle. But, in recent years evidence has suggest that estrogen is play an important role in central nervous system, which not only affect to hypothalamus but also hippocampus and cerebellum

3 )flawed Family :There is proof that depressed adults, every Age group prone to depression and those at risk due to family issues . Mainly in childrens because of parental dysfunction, divorced parents, widowed mother. Those residing in nuclear families.(Sethi BB, 1980 Jan)

4) Patients who are suffering from Chronic disease at risk of depression it includes:

If Physical health is disturbed it affect mental health they are interconnected to each other so, the person suffering from any physical health problem such as chronic pain, diabetes, multiple sclerosis, attack. Parkinson's, Autoimmune diseases, Stroke, Diabetes, Arthritis, Multiple sclerosis, Alzheimer's disease, Dementia, Parkinson's disease, Huntington's disease also affect mental health and high at risk of depression.

5) Brain chemistry :One of the cause of depression [imbalance in the neurotransmitters](#) which mainly involves in regulation of mood. Such as Dopamine, Serotonin, and Norepinephrine. According to theory of Depression that decreased or increased concentration of neurotransmitters responsible for Depression.

6)Stress: Stress is main cause of Depression. During stress secreats high level cortisol which affect concentration of neurotransmitters. Stressful life events, affect a person's ability to survive can also be a cause of Depression.

7) Substance Use: Usually, substance abuse and depression are coincide. Substance abuse may lead to chemical changes in the brain that raise the risk for Depression. Some people use substance when they having lower mood and overuse of it may causes Depression. Drugs and alcohol may cause Depressive disorders. But, even some prescription drugs have been linked to Depression include Anticonvulsants, Statins, Stimulants, Benzodiazepines, Corticosteroids, and Beta-blockers, sleeping pills, Sedative, prescription Painkillers.

8) **Others:** People from poor economic background, (36B73) (E, 2009 Jul-Sep) and people with poor nutritional status, (E, 2009 Jul-Sep) according to cast in Muslims, (Nandi DN B. G., 1979 March)

### Symptomatology:

The detection of symptoms can be understood with respect to somatic symptoms, guilt and, suicidal behaviour, illusion and sleep structure. Some studies report that somatic symptoms are frequent of Depression in India. (Gautam SK, 1977; Saxena S, DSM-III axis I diagnoses of Indian psychiatric patients with somatic symptoms., 1988 August) (K, 2005).Some study investigate the variation between the prevalence of negative symptoms in schizophrenia and Major depression and it diagnosed by numerous parameters. The results indicate that negative symptoms be that as it may commonly see in depressives patients, and also more frequent in schizophrenic patients. (Chaturvedi SK, 1985 July).

“Depression can modify level of performance of life by disturbing no of aspects”. Like there sleep, appetite, concentration, mood, energy level, physical health, impairment in daily life and may lead to suicidal intension. Because of Stress and anxiety patient is more prone towards Depression.

Not everyone who is depressed experience every symptom. Some may experience a few symptoms. Also, the severity of symptoms alter with every person to person.

Symptoms of Depression were assessed in 12 out of the 19 studies (J. Gao, 15 ( ) (C. González-Sanguino, (2020)) (Y. Huang, 288 ) (L. Lei, (2020)) (C. Mazza, 2020) (Moghanibashi-Mansourieh, 2020) (N. Ozamiz-Etxebarria, 2020 april) (S. Özdin, 2020) (C. Wang, 2020) (Y. Wang, 2020) symptoms of Depression were evaluated no of studies.

### Signs and Symptoms of Depression:

- Persistent sad, anxious or empty mood, Stress, Anxiety.
- Feelings of Hopelessness.
- Feeling of guilt, worthlessness, helplessness,
- Loss of interest that once you enjoyed, including sex,

- Insomnia, early-morning awakening or oversleeping,
- Appetite or weight loss and weight gain because of overeating,
- Decreased energy, fatigue, being slowed down.
- Thoughts of death or suicide, suicide attempts,
- Restlessness, irritability, overeating,
- Difficulty in concentration or to Remembering things or making decisions,
- Some frequent physical symptoms that do not respond to treatment, ex: headaches, digestive disorders and chronic pain, cramps,
- Give up like tendency.

#### PREVENTION:

There is no proof that any other possible treatment or home remedy is effective in manage Depression. People with mild Depression by non- pharmacological treatment by changing lifes style such as:

-Homeopathy: It is safe and effective treatment for depressive disorder such as in MDD and PSD.

-Aromatherapy: Use essential oils which are made up of from parts of plant, essential oil stimulates smell receptor. And send message to brain which control your mood. Using Aromatherapy with pharmacological treatment increases mood and reduce stress which becomes very useful to managing depression.

-Massage therapy: Therapist massage your muscles and soft tissues to enhance their functioning and stimulate muscle relaxation. Relaxation decreases muscle tension, lower blood pressure and improve circulation as a result help to calm your mind, improve your mind, decrease physical pain and physical symptoms associated with Depression. Massage therapy not cure Depression but help to relief from it.

-Yoga: Its very powerful treatment to manage Depression. Yoga involves physical movement, Breathing, Meditation, Different body poses, which help to reduce stress level, resting heart rate, blood pressure and increases positive energy, pain tolerance, and concentration. Yoga increases serotonin production.

-Guided imagery: self-care treatment it aims to minimises negative thoughts and stress by focusing on pleasant image which improve mood, reduce stress, chronic pain, Insomnia.

-Music therapy: Effective non-pharmacological approach which reduces fear, anxiety, stress. Music can be act as natural Tranquilizer for the human soul.

-Social support: Involves to spend time with family, friends and people who care about you. It helps to build up human to manage stress and give strength to tolerate it.

-Aspects for prevention of Depression is increases social networking, proper counselling, to depressed persons (motivational or Inspirational).

-Arrange the program to educate or aware the people regarding Depression, In India there is a need to educate and aware the people about Depression and how manage and deal with stress, and how it is helpful for good mental health.

-Cognitive behavioural therapy: Type of psychotherapy it alters mood and behaviour. Therapist identify behavioural and negative thoughts pattern to challenge stressful situation.

- Minimum use of social media, because it contributes to low self-esteem, addiction.

-Stay away from negative thinkers.

-Stop substances which are responsible to depress your brain.

- Alcohol, Drug abuse, smoking

-improve your mental health live in good people, break the monotony.

-Treat yourself with kindness, as worthful you are,

-Avoid self-criticism

There is medication used in depression but, instead of that medicated treatments and there side effects. we have to give priority to these following things. Because,” PREVENTION IS ALWAYS BETTER THAN CURE”.

#### Epidemiology

- According epidemiological report More than 350 million peoples are going through depression worldwide. (World Health Organization, 2020). Depression is the leading disorder in the world. (World Health Organization, 2020).
- Many studies have determined the prevalence of depression in community samples and the prevalence rates have varied from 1.7 to 74 per thousand population (Reddy MV, 1998) (Nandi DN B. G., 2000)
- Women are nearly twice as likely to suffer from major depressive disorder than men .
- About 30% of people with depressive illness attempt suicide .

#### Impact of COVID 19:

First corona virus (COVID-19) infected person observed in Wuhan, china, in December 2019. In January 2020 outbreak of a new coronavirus disease, and by March 2020, it had progressed rapidly across several continents. World Health Organisation declared COVID-19 is global pandemic. In March 2020, every Government passed emergency legislation, to restrict or prohibit events and gatherings pandemic any place, marriages, functions, transportation, govt. and private vehicles, train, aircraft or any moveable structure. To overcome spread of COVID by enforcing social distancing, travel restrictions, and complete lockdown. In India Narendra Modi asked for Junta curfew on 22 March from 7am to 9 pm. And on 24 March 2020, Prime Minister announced a nationwide lockdown to control spreading of infection. The pandemic COVID-19 will have various impact on physical and mental health. According to (American Psychological Association, 2006) stress level is increases during holidays for 38% people. Worldwide outbreaks of infectious disease, such as COVID-19, are associated with psychological distress and symptoms of mental illness (Bao Y., 2020 feb) Meanwhile, COVID-19 itself can lead to neurological and mental complications, such as stress, Anxiety, Delirium, Agitation, and Stroke as result of physical health, social factor, loss of jobs eventually loss of income. In three psychiatry case-control cohorts analyse the depressive symptoms anxiety, worry, and loneliness during the COVID-19 (kaun-yu, December 08, 2020).

It creates degree of fear in population and these fear is giving to feels Anxiety. Fear about possibility of exposure to COVID-19 infection may cause risk of psychological distress or Depression and COVID -19 is an emerging, rapid evolving situation which is responsible for Depression ultimately suicidality may increase. If we observe In the population-based study, females, being a student, in youngstar, having symbolic of COVID-19, and poor health condition were associated with higher rates of anxiety and Depression. The COVID-19 affected to many people's mentally and physically and the condition becomes more worst for the people's who already suffering from mental illness and substance use disorders (Nirmita Panchal, 2020). Mental health is negatively impacted due to the stress and worry. Many of countrie's Govt. restrict to follow guidelines for preventive purpose of social distancing or quarantine, wearing mask, for preventive purpose and it affect psychological impact as a result of, elevated stress level or Anxiety, irritation, people feels loneliness hopelessness, less exposure, they becomes house arrested, self-harm are also increased. Getting stressed and emotional at extent level those in family persons are died during these time and people with mental illness 64% reports their symptoms worse. ( National alliance on mental illness 2014). 2/3<sup>rd</sup> or more of them fight financially stressed and /or lonely (National alliance on mental illness 2014). In India thousands of peoples cannot go at their own home they pass miles of distance by walking with their family, during these many peoples are died because of dehydration, hunger, walk all over. Peoples are burnout. According to global web Index, after lockdown 197.3 million people are going through mental health problem, 45.7 million are suffered from Depression and 44.9 million people are suffered from Anxiety. Stress is one of the major risk factors for Depression which may cause various physicochemical changes in human body. In 2020 COVID-19 is one of the reasons to take the person towards Depression. Many ailment or conditions exists with Depression as a result of stress (increases blood pressure, headache). If we mainly focus the morbidity rate of patients in covid-19, it is more in the patients which are suffering from heart disease, asthmatic patients, patients having less immunity, because of their poor physical health condition. Stress increases the risk of some of these diseases. In pandemic due to COVID-19 mostly the heart patients are died, because of stress. People with already mental, neurological or substance use disorders are also more vulnerable COVID-19 infection—they may stand a higher risk of severe outcomes and even death.

#### Survey: Effect of COVID-19 on mental health

Background: As many countries restrict their own population as preventive measure to minimise the number of infected people with COVID-19 by strict lockdown, Self-quarantine and restriction of movement, social distancing with friends, colleagues and even with family members also, work from home, online classes and exams, provisional unemployment, more the changes come to our daily life and even on mental health also. To accept these sudden changes, managing the problems like job, fear or worry about to protect ourself and family from corona virus are the challenges for every human being. Quarantine is a very disagreeable event for those who are suffered form it because to be separated from loved once, loss of freedom, weariness and these circumstances are somewhere responsible to affect mental health. Also create breath taking effect like, attempt to be suicide or suicide.



Research Methodology: Between 1 November to 15 November 2020, online questionnaires were distributed over 200 people among the Maharashtra Study of effect of mental health in pandemic out of which 116 people are responded. The questionnaire contained questions on perceived mental health impact, challenges you faced during, interest in things to do, validated scales assessing loss of concentration, anxiety, worry, bipolar, any personality disorder and loneliness used in previously diagnosed. Also, we obtained information about gender, age, and education, employment Side by side survey also focusing, in which participants able to positively handle with the situation during COVID-19 pandemic on mental health. Also, symptoms of depression, anxiety, worry, and loneliness from before to during the COVID-19 pandemic or suffering from any disorder. In order to assess Depression, Anxiety and Stress among the Maharashtra. A google forms was created and it was randomly circulated among 200 resident of Maharashtra state of India.

Results and Discussion:

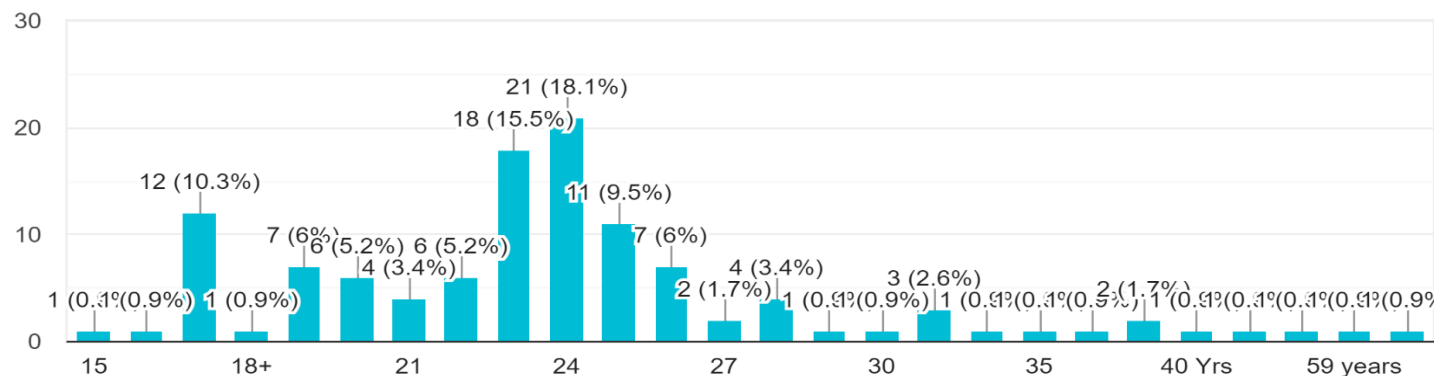


Fig:1 shows the participants in % against participants age group. We can see variety of datapoints in a graph. Each one representing the age of participants. as we see good graph representing 24 age participants are more (18.1%). If make age group and their participants, In 15-18 age group (21.2%) participants, 19-20 age group (14.6%) participants, 21 – 24 age group (38.8%) participants, 25 -27 age group (17.2%) participants, 28-30 age group (4.3%) participants, 31 -35 age group (2.8%) participants, 36-40 age group (2.7%) participants, 41 – 59 age group (1.2%) participants.

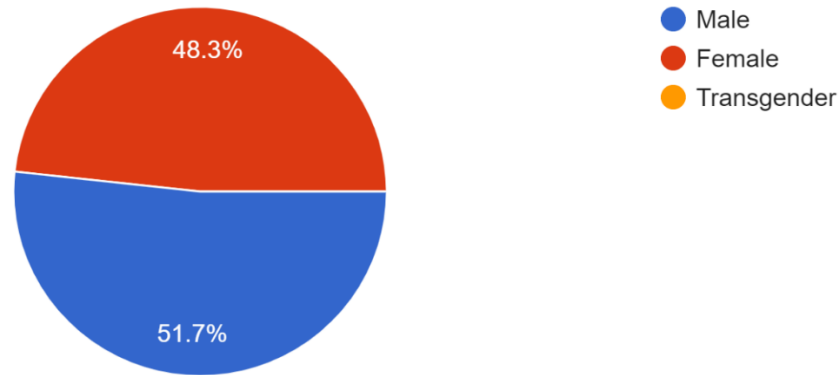


Fig :2. As we see in the chart, it deals with genders of participants. you can see that male participant are 51.7%. while female participants are 48.3% (less compare to male).

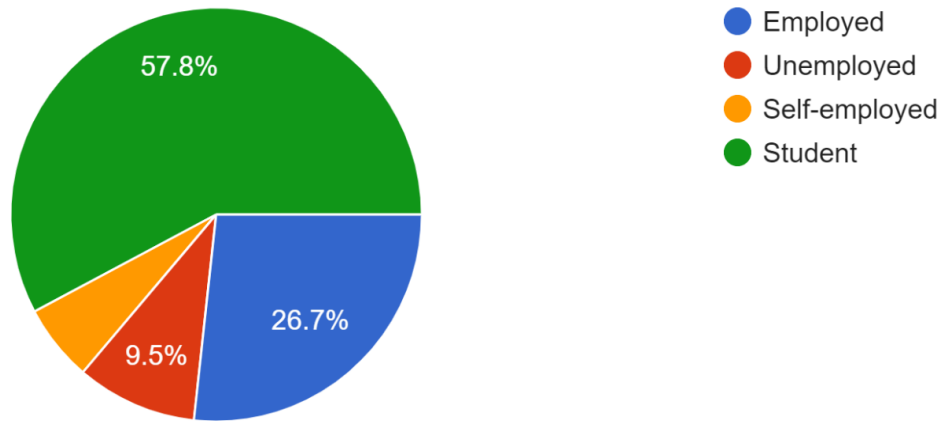


Fig :3. These pie chart shows the result of survey in which majority of participants are students (57.8%). Nearly, 26.7% are employed on other hand 7% of them are self-employed. And the remaining 9.5% are unemployed .



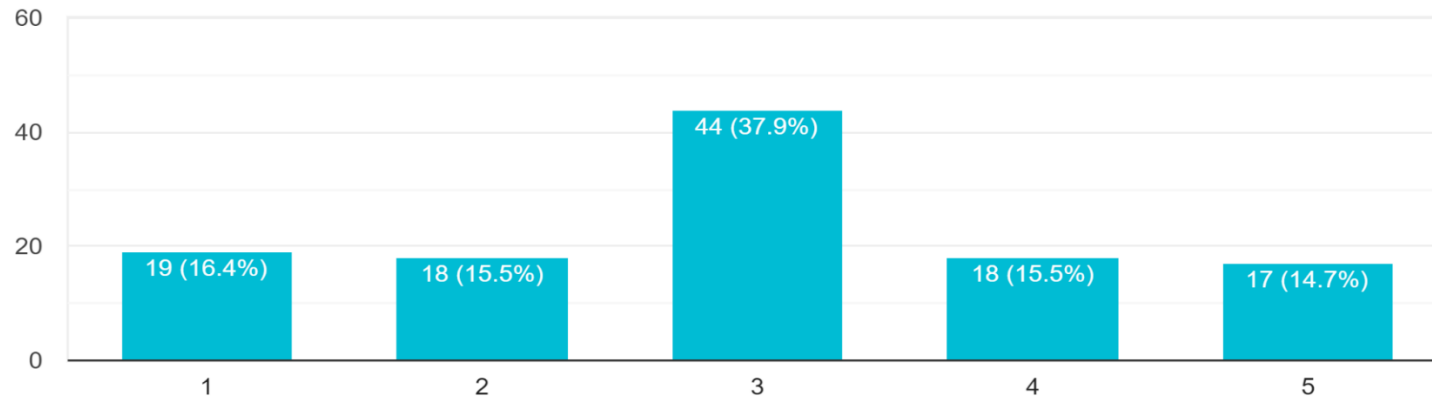


Fig:4. Shows the trouble of concentrating the things (on numerical scale) vs people in (%). 20% of people haven't any trouble of concentrating on things means they are focused ones (scale 1). 18% of them have less difficulty (scale 2). 44% of people having trouble in concentrating on things, column of intensity is more in trouble of contracting on things (scale 3) .in column level of trouble is increases in 18% of people (scale 4). While in 17% of people have more trouble to concentrating the things (scale 5).

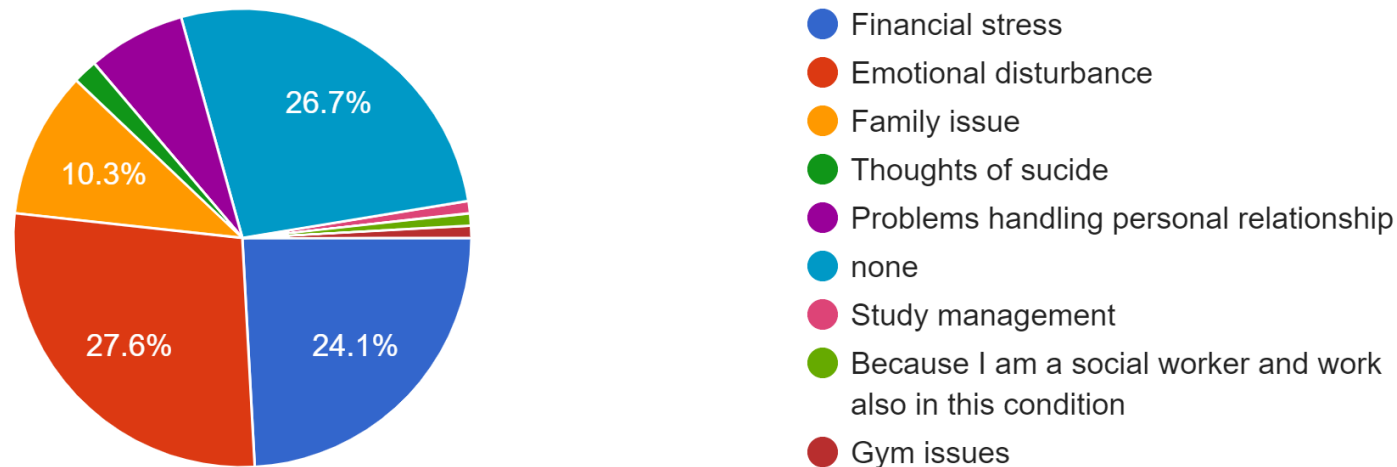


Fig :5. pie chart express in pandemic covid-19 impact on mental health 24.1% of adults who sayssuffering from financial stress, and 27.6% are feeling they are emotionally disturbed. 10.3% had their family issues. Some of them are suffered because of handling of personal relationships. Thankfully, there are 24.1% peoples who are not suffered during these times.

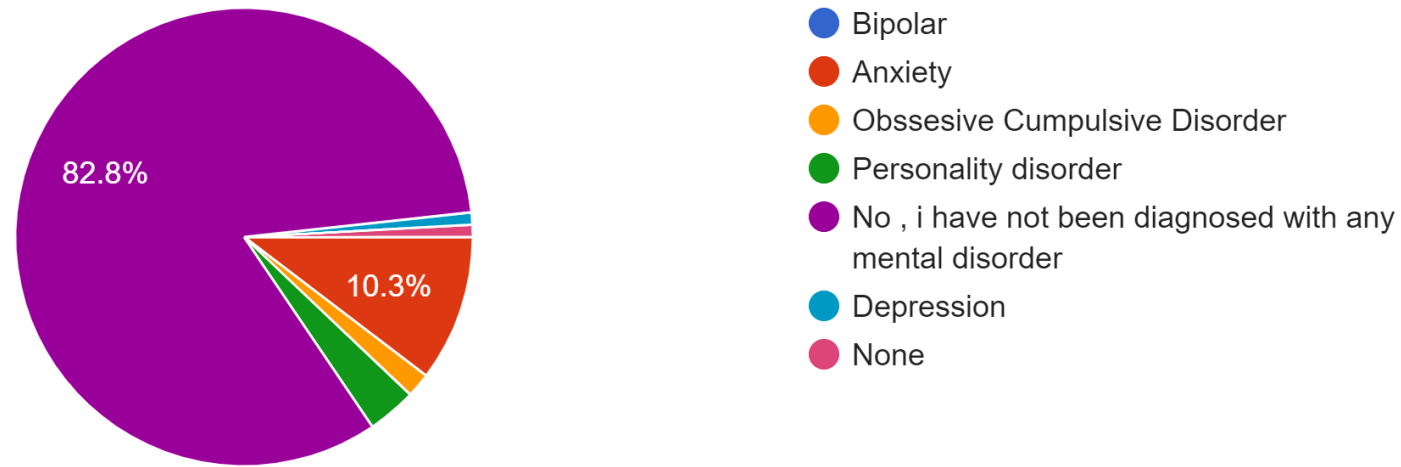


Fig :6. Above pie chart explain the participants suffered from any symptoms or disorder during the pandemic period. 82.8% of peoples have feeling nothing like they are suffering from symptom of any mental disorder .10.3% peoples are felt anxiety. 4% of them are felt like they have personality disorder and 1.7% of them felt obsessive compulsive disorder may be due to the self-hygiene or washing hands repeatedly. And very few 0.9 % of peoples feeling like to be depressed.

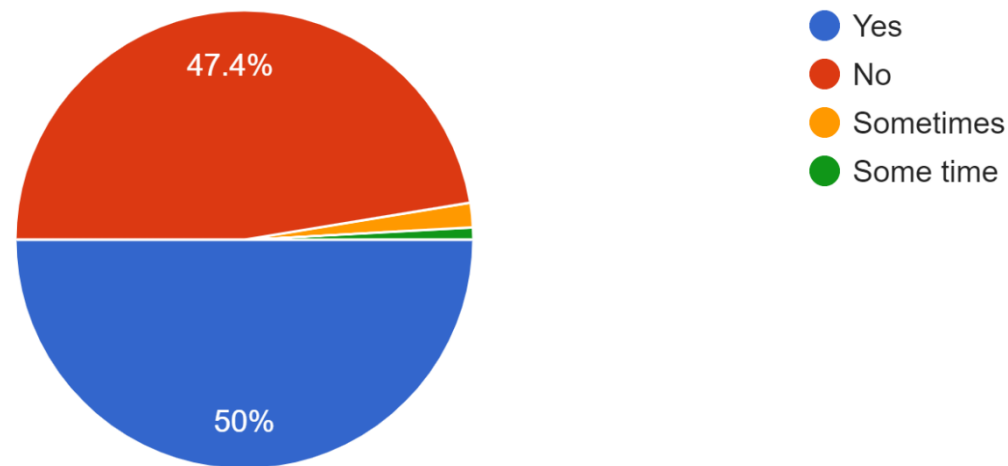


Fig :7. Above pie chart express in % that trouble concentrating in things. About 47.4% of peoples don't have any confusion with taking any decision. While ,50% of them are confused to take any decision. and 3% of them are confused but, sometimes.

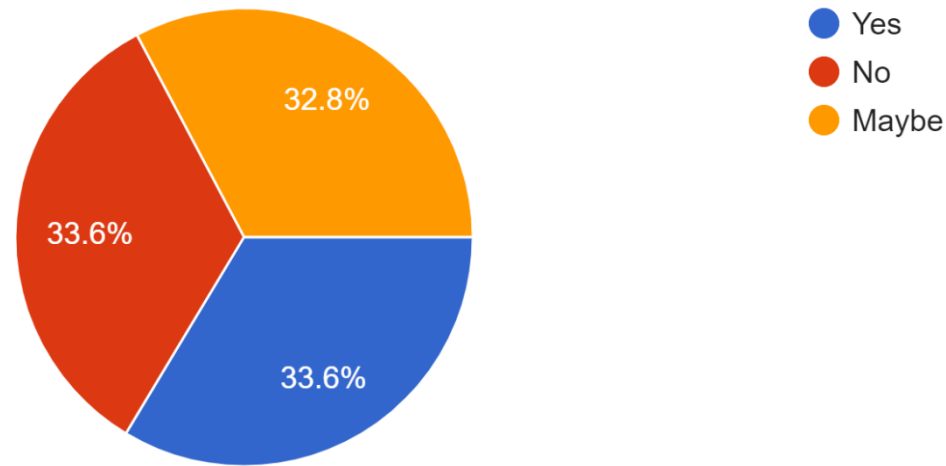


Fig: 8. Pie chart express loss of interest in the things which are loved once. It's one of the symptoms of depression or mentally unhealthy. 33.6% peoples haven't lost any interest in the things they do before. 33.6% of them lost the interest. While 32.8% peoples are can't surely tell that they are still interested in the thing before the do with or not, in other words we can say they are confused.

#### Conclusion:

Depression is the most common mental health disorder reported in community it is common in everyone but, disorder is identified depending upon the level of severity in every individual. This review scrutinizes the mental health during the COVID-19 pandemic and before the pandemic period. The COVID-19 pandemic represents an extraordinary threat to mental health in high, middle, and low-income countries. The COVID-19 pandemic is correlated with significant levels of psychological distress. The study disclose that Covid-19 causes Depression among the individuals. Because of the restriction of movements, poor economic condition, temporary loss of job, strict lockdown. Fear of getting COVID positive is creating a panic situation in individuals and increase in levels of Anxiety, Stress and Depression.

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