

## COVID-19: A study of stress and depression among young adults

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### ABSTRACT

It is quite natural and understandable to experience stress and depression during any contagious outbreak. Axiomatically, the unrelenting spread of COVID-19 has drastically impacted the public mental health and has led to an unprecedented upsurge in psychological issues such as stress, depression, and anxiety, etc. among a large proportion of people across the globe. India, notwithstanding the nationwide lockdown accompanied by rapid testing, has reported the highest spike in the COVID-19 cases in Asia. It is quite understandable that the health care system of India, in this acute phase of pandemic, has been focused on the containment of virus, screening, prevention, expeditious testing, and critical patient care but on the side of the spectrum imposition of unfamiliar public health measures such as social distancing and self-quarantining, massive pecuniary losses, conflicting information from various portals, job-loss, unemployment coupled with uncertain prognosis has undoubtedly been contributing to emotional distress, making people more vulnerable to psychological and psychiatric illness associated with COVID-19. The present paper aimed to assess the level of stress and depression, in view of COVID-19, among males and females. The study was administered to 66 young adults (32 males & 34 females) in the age range of 18-30 years. Standardized measures were administered to participants. The result revealed that there is no significant difference between males and females regarding perceived stress and depression. There is a positive relationship between perceived stress and depression. Recorded percentage of males and females suffering from high perceived stress and extreme depression calls for urgent attention of health policymakers to address such psychological issues. Mental health care needs to be involved in the broad framework of COVID-19 health care response.

**Keywords:** *Perceived Stress, Depression, Males, Females, Young Adults, SARS-CoV-2, COVID-19*

*"Hey you, keep living. It won't always be this overwhelming." - Jacqueline Whitney*

As humans evolve, so did pandemics. Since the dawn of human civilization, a crucial role has been played by pandemics in shaping humans' history. History is enriched with adequate pieces of evidence and suffice records which gives an intimate look that since the year dot, neither any natural disaster nor any war has carnage so many lives as claimed by any deadly pandemic. For clarity, it is imperative to comprehend the meaning of

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pandemic. A Pandemic can be defined as “A pandemic is the worldwide spread of a new disease” (World Health Organization, 2010).

Today the world is grappling with the sudden outbreak of novel coronavirus 2019 (2019-nCoV) which has paralyzed the whole world. The disease was first identified in late December 2019 in Wuhan city, Hubei province of China (Petrosillo et al., 2020; Wang et al., 2020). On 31 December 2019 WHO China office has conveyed the information about the cases of pneumonia of unknown etiology detected in Wuhan of China (World Health Organization, 2020). Surprisingly, the majority of patients, who were exposed to the pneumonia of unknown cause, had visited the Huanan Seafood Wholesale Market of Wuhan where the wild animals such as bats, snakes, marmots, and other live animals were sold (Lu et. al., 2020; Mackenzie & Smith, 2020) although the actual source of spread of the virus is not cleared yet. As per the Situation Report 1 of World Health Organization (2020) Chinese scientists identified the strain of novel coronavirus, which was isolated on January 7, 2020. WHO declared the 2019-nCoV outbreak to be a Public Health Emergency (PHEC) on 30 January 2020 when the virus spread exponentially within and beyond Wuhan and a pandemic on March 11, 2020 (World Health Organization, 2020) after it spread to 114 countries and the death toll reached 4,291 and the number of infected cases standing at more than 118,000 cases across the globe according to the figures of 51st report of World Health Organization (2020). It was lately named on 11 February 2020 by World Health Organization (2020) as Coronavirus Disease 2019 “COVID-19”.

The Coronaviridae Study Group (CSG) of the International Committee on Taxonomy of Viruses based on phylogeny, taxonomy, and practice found this virus, tentatively named 2019-nCoV, forming a sister clade to the prototype of severe acute respiratory diseases (SARS-CoV) of the species severe acute respiratory syndrome-related coronavirus; hence it was named SARS-Cov-2 (Gorbalenya et al., 2020). Genome analysis shows that SARS-CoV-2 belongs to the cluster of beta *coronavirus*, which includes Bat-SARS-like (SL)-ZC45, Bat-SL ZCC21, SARS-CoV, and MERS-CoV (Chen et al., 2020).

As per statistical data rendered by Worldometer (2020) the worldwide cases of COVID-19 by October 28, 2020, are 44,251,983 out of which 32,446,970 have recovered and the death toll has reached the limit of 1,171,476. India consecutively implemented a nationwide lockdown on 24 March 2020 for 21 days to confine the movement of 1.3 billion population of the country, followed by 14 hours voluntary “Janta curfew” on March 22, 2020 (UN News, 2020). It subsequently imposed lockdown in another 4 phases to contain the spread of SARS-CoV-2. By October 28, 2020, active cases of COVID-19 in India are 7,990,322 and the virus has caused 120,054 deaths (Worldometer, 2020). As per the statistics of World meter (2020) India is the second most affected nation in World and has secured the first rank in Asia.

Situation report 73 of World Health Organization (2020) states that on an average incubation period of COVID-19 is 5-6 days, but it can be up to 14 days. The most common symptoms found in patients of COVID-19 in China are fever, cough, sore throat, rhinorrhea, chest pain, diarrhea, nausea, vomiting, muscle pain, shortness of breath, fatigue, and lymphopenia (Chen et al., 2020; Guan et al., 2020; Huang et al., 2020; Wang et al., 2020) and these are same as clinical features reported in patients of SARS-CoV (lee et al., 2003) and MERS-CoV (Assiri et al., 2013) but situation report 73 of World Health Organization (2020) and several other studies have documented asymptomatic and pre-symptomatic proportion of the disease (Kimball et al., 2020; Pan et al., 2020; Wang et al., 2020; Wei et al., 2020) which

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may pose a challenge in controlling the spread of COVID-19. Human to Human transmission (Chan et al., 2020) is making the situation hard to control. SARS-CoV-2 virus transmit to other people via droplets left by infected people on surfaces and objects when they sneeze, cough, or touch any surface and other people come in the contact with the same (World Health Organization, 2020).

Hundreds of millions of people across the world are on the verge of losing their job according to the International Labour Organization (2020) and the Director-General of the International Labour Organization extended a statement, “There is no longer only a worldwide health crisis; it is also a major labour market and economic distress that is having its gigantic effect on the masses.” As per the findings of a business and financial organization named, Bloomberg Quint (2020), as much as 4 Million Young adults in India have been retrenched from their job owing to COVID-19. Various studies have proclaimed that there is a strong association between physical and mental illness (Jin et al., 1995) and long-term unemployment gives rise to mental health problems such as depression (Stankunas et al., 2006).

Similar to factors such as uncertain prognosis, unemployment, rapid human to human factors have given rise to stress and depression. WHO stated that measures such as self-isolation and quarantine have affected the usual day to day activities and lifestyle of people which has led to an increase in mental health issues such as stress, loneliness, depression, anxiety, harmful drug use, self-harm and suicidal tendency (World Health Organization, 2020) In the similar way studies have revealed that mental health problems such as are positively associated with social media exposure (Gao et al., 2020). WHO Director-General Tedros Adhanom Ghebreyesus to aware and sensitize people about the dissemination of misinformation on social media said that we all are not merely fighting a pandemic; we are also fighting an “infodemic”.

Huang and Zhang (2020), revealed that younger respondents as compared to older respondents reported a higher prevalence of General Anxiety Disorder and Depression symptoms ( $P < 0.001$ ), and the overall prevalence of GAD, depressive symptoms, and sleep quality were 35.1%, 20.1%, and 18.2% respectively. In another study by Hyland et al., (2020) GAD (20%), depression (22.8%), and GAD or depression were common. Another review study has also claimed the outbreak of COVID-19 is leading to additional health issues such as stress, anxiety, depression, fear, anger, denial, and insomnia among individuals. (Torales et al., 2020). Recent studies have suggested that psychological issues such as stress, anxiety, depression are burgeoning in medical workers as well as in the common public owing to escalating numbers of COVID-19 cases (Kang, et al., 2020; Liu, et al., 2020; Xiand, et al., 2020).

Verma and Mishra (2020) in their study in India, found that in total 25%, 28%, and 11.6% of the respondents were moderate to extremely severely depressed, anxious, or stressed. Depression, anxiety, and stress level were reported 45%, 47%, and 18% in another study by (Kamal & Othman, 2020). Detachment, having a family member infected with COVID-19, a history of medical illness, and being young the need to leave domicile in order to work is likely to increase stress, depression, anxiety among people (Mazza et al., 2020). In another cross-sectional study, 40.4% of the youth sample was found to vulnerable to psychological problems and 14.4% of sampled youth showed a tendency to have Post-traumatic stress disorder (PTSD) during COVID-19 (Liang et al., 2020).

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### *Stress*

According to Hans Selye (1936), “Stress is the non-specific response of the body to any demand for change.” Lazarus and Folkman (1984) proposed that stress arises when individuals perceive the demands from the external environment beyond their coping capacity or threatening to their well-being. In a meta-analysis based on 293 independent studies, it is inferred that stress alters immunity. It is revealed that short-term stress lifts the immunity but long-term or chronic stress which people find beyond their control poses a detrimental effect on immunity. It was also found that older people are more vulnerable to stress-induced changes in immunity (Segerstrom & Miller, 2004).

Besides studies on the common public, several researches have been done on Health Care Workers to examine the psychological impact of COVID-19 outbreak on them as they are more vulnerable to being exposed by SARS-CoV-2. Bai et al., (2004) found in their survey of assessing stress that 5% of staff members, which include doctors, physicians, assistants, and nurses staff members met the criteria for an acute stress disorder, and all staff members as compared to administrative members reported more exhaustion, insomnia, etc. Chan and Huak (2004) in their research aimed at studying the psychological impact of 2003 severe acute respiratory syndrome, found that in a medium-size regional general hospital, about 20% of doctors and nurses indicates the presence of PTSD. During the MERS outbreak in Saudi Arabia, research by Bukhari et al., (2016) indicated that nurses were having a relatively significant level of distress.

In a meta-analytic review, representing 118,696 participants, high perceived stress was found to be associated with incident Coronary Heart Disease (CHD) with a risk ratio of 1.27 (Richardson et al., 2012). Stress is likely to impact cognitive functioning (Sandi, 2013).

### *Depression*

World Health Organization (2017) has defined depression as a state in which a person experience lack of interest and pleasure in day-to-day activities, insomnia or excessive sleeping, lack of energy, weight gain or loss, feel difficulty in concentrating, a sense of worthlessness and guilt and frequent thoughts of suicide or death. Depression can lead to the development of suicidal tendencies in people.

Depression has found to be a common symptom and its high prevalence rate has been seen in the studies done on subjects with chronic obstructive pulmonary disease (Marco et al., 2006), in patients with cancer (Singer et al., 2009), in alcohol-dependent subjects (Singh et al., 2005), in Urban Hemodialysis patients (Cukor et al., 2007), in women suffering from breast-cancer (Burges et al., 2005).

Wang et al., (2020) conducted a research during the early phase of the COVID-19 outbreak in China to explore the psychological impact of the outbreak and found that 53.8% of respondents reported the psychological impact of the outbreak as moderate to severe; 16.5% of respondents said that they had moderate to severe level of depressive symptoms; 28.8% reported moderate to severe anxiety symptoms, and 8.1% respondents reported moderate to severe stress levels and females were found to be more psychologically impacted by the COVID-19 outbreak; they reported higher level of stress, anxiety, and depression. Similarly, in another study by Qiu et al., (2020) found the psychological distress (stress, anxiety, depression) among Chinese nationals and it was more common in females.

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More than 264 million people across the globe are impacted by this common mental disorder (World Health Organization, 2020). The report on the Global Burden of Disease-2017 has postulated depression among the leading causes of disability.

### *Stress and Depression*

Stress is often like feeling too much mental and emotional pressure and it is most often triggered by any event whereas depression is a comparatively long-term mental state which can either be triggered by any difficult experience or most often based on old, repressed emotion. Most often stress goes away if the triggering events resolve but depression can last for years.

Studies have tried to prove that there is a link between stress and depression. Stressful events early in life or throughout adults make people susceptible to depression (Gold, 2014). Subjecting children to adverse events are likely to increase the chances of developing depression among them (Heim & Nemeroff, 2001).

### *Purpose*

The purpose of the present study is to assess the level of stress and depression among young adults amid the coronavirus crisis.

### *Hypothesis*

1. There will be no significant difference between males and females regarding perceived stress.
2. There will be no significant difference between males and females regarding depression.
3. There is no significant relationship between perceived stress and depression.

## **METHODOLOGY**

### *Sample*

A total of 66 individuals participated from across Haryana in the study out of which 32 were males and 34 were females. The age of subjects ranges from 18 to 30 years.

### *Measures*

1. **Perceived Stress Scale (PSS)** developed by Cohen et al., (1983) is a 10 item self-report measure which measures the degree to which a situation in one's life is appraised as stressful, on a 5 point scale that ranges from 0= "never" to 4= "very often".
2. **Beck Depression Inventory-II (BDI-II)** developed by Beck et al., (1996) is a 21-question multiple-choice self-report inventory for measuring the severity of depression.

### *Procedure*

The participants were apprised of the research objective before making them fill the questionnaires through google forms. The participants were made assured of the confidentiality to elicit their honest responses without any fear of inhibition. Standardized psychological measures were administered on participants.

## RESULTS

*Table 1 shows the percentage of males and females experiencing stress with respect to the category with the help of the Perceived Stress Scale (PSS)*

Males Percentage	Females Percentage	Interpretation
9.4	-	Low Stress
53.1	61.8	Moderate Stress
37.5	38.2	High Perceived Stress

*Table 2 shows the percentage of males and females experiencing depression with respect to the category with the help of the Beck Depression Inventory-II (BDI-II)*

Males Percentage	Females Percentage	Interpretation
15.6	17.6	Normal
21.9	14.7	Mild Mood Disturbance
3.1	5.9	Borderline Clinical Depression
28.1	23.5	Moderate Depression
9.4	11.8	Severe Depression
21.9	26.5	Extreme Depression

*Table 3 shows the Perceived Stress and Depression between individuals on the basis of Gender*

Whitney U	Gender	N	Mean Rank	Mann
Perceived Stress	Male	32	32.33	503.500
	Female	34	34.69	
Depression	Male	32	32.08	498.500
	Female	34	34.84	

*Table 4 Exhibits the correlation between perceived stress and depression*

	Perceived Stress
Depression	.782**

Note. \* $p < .05$ . \*\* $p < .01$ .

Table 4 shows that there is a significant positive relation between Perceived Stress and Depression.

## DISCUSSION

The study aims to assess the stress and depression level of young adults during COVID-19. The study traverses the impact of gender also. The study reveals that the majority of males and females (males=53.1%, females= 61.8%) are experiencing moderate stress (Table 1). 21.5% of males and 26.5% of females are going through extreme depression (Table 2).

All-inclusive, statistically there is no significant difference between males and females regarding perceived stress (Table 3). Hence, the null hypothesis is accepted as males and females both are experiencing stress as both are being affected by this ongoing pandemic irrespective of gender. Similarly, the null hypothesis that there is no significant difference between males and females regarding depression is also accepted as no such difference has been found between sampled males and females (Table 3). Rehman et al., (2020) in their study which was also conducted in India, found no difference, pertaining to the psychological impact of COVID-19, in both the genders.

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However, the study reveals the positive relation between Perceived Stress and Depression ( $p=.01$ ,  $r=.782$ ) as shown in Table 4. This leads to the conclusion that if stress level increases, depression level also escalates and vice-versa. The researches aimed at studying the psychological impact of the ongoing Coronavirus crisis in India found the stress, depression, and anxiety to be positively correlated with each other (Grover et al., 2020; Rehman et al., 2020). A strong positive correlation between stress and depression was also found by Killinger et al., (2017) in their study on Veterinary medical students.

### CONCLUSION

The sudden outbreak of Coronavirus has impacted the physical and mental health of individuals worldwide. The present research study assessed the Stress and Depression level among males and females. The Stress level was found similar to both the genders. The Level of Depression was also found to be equal for both genders. The study also reveals the positive correlation between perceived stress and depression. Similar stress and depression levels in both the genders, in view of the pandemic, indicate that both males and females are going through psychological upheaval. By means of this study, it is found that higher numbers of males and females are going through stress and depression in this pandemic and the recorded percentage of males and females experiencing high perceived stress and depression level is an issue of concern which calls for certain measures to be taken by individuals on their part and also by health policymakers and higher authorities in order to assist people in maintaining their mental health. The higher levels in males and females can be the result of unemployment, worry about the health of self and family members, having limited resources at their disposal, deteriorated social life, uncertainty about the situation, stepping outside to make both the ends meet, negative news, misleading information from various resources and so on. Various techniques such as indoor and breathing exercises, taking proper rest, maintaining proper hygiene, meditation, etc. can go a long way in succoring people to relieve stress and in alleviating the depression induced by the current pandemic. It is also suggested that people should make efforts to strike a work-life balance and to steer away from negative news. Government officials and health care department along with working on issues pertaining to screening, treatment, prevention, and containment of COVID-19, should also take adequate and appropriate measures to take care of people, irrespective of their gender, who are psychologically disturbed following the current pandemic. The study encompasses a relatively small size so the findings of the study can not be generalized on large scale. Also, the geographical area covered in the study is limited which is another downside of the study. Participants included in this study were broadly from the middle socio-economic background only. In the study, respondents are only from Urban areas. It is suggested to include a large sample in order to generalize and validate the findings. Furthermore, samples from all socio-economic backgrounds and regions should be included to maintain the heterogeneity of the sample.

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The author declared no conflict of interest.

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