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Psychological impact of COVID – 19 pandemic Lockdown on college students: An exploratory research

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Abstract

The purpose of the present research was to investigate the impact of COVID-19 lockdown on college students during third week of lockdown 1. For this purpose 190 students (100 female and 90 male) from Patna town were selected. The Depression Anxiety Stress Scale (DASS-42) was employed to assess symptoms of depression, anxiety and stress. An online survey was fulfilled by the students. Mild to extremely severe scores of stress, anxiety, and depression were reported by 46.84%, 53.16% and 60% of the respondents, respectively. It was found that female students were under more stress, anxiety and depression than male students.

Introduction

COVID-19 pandemic, also known as the coronavirus pandemic, is a new disease, and many of the details of its spread are under investigation. It spreads from person to person, via several different modes, mainly when people are in close proximity to one another. It spreads very easily and sustainably, with one infected person generally infecting between 2 and 3 others. This is more infectious than influenza, but less so than measles. It can transmit when people are symptomatic, also for up to two days prior to developing symptoms, and even if a person never shows symptoms (asymptomatic transmission), but it is unclear how often this happens. A recent systematic review estimated that the proportion of truly asymptomatic cases ranges from 6% to 41%, with some limitations ("asymptomatic" was not very well defined).

The first confirmed case of COVID-19 has been traced back to 1 December 2019 in Wuhan; initial genetic testing of patient samples on 27 December 2019 indicated the presence of a SARS-like coronavirus. On 20 January, the Chinese National Health Commission confirmed human-to-human transmission of the virus.

The Government of India confirmed India's first case of Coronavirus disease 2019 on 30 January 2020 in the state of Kerala, when a university student from Wuhan travelled back to the state. As the number of confirmed COVID-19 positive cases closed 500, Modi on 19 March, asked all citizens to observe 'Janata Curfew' (people's curfew) on Sunday, 22 March. At the end of the curfew, Modi stated: "Janata Curfew is just the beginning of a long battle against COVID-19". Following this, while addressing the nation second time on 24 March, he announced the nationwide lockdown from midnight of that day, for a period of 21 days. He said that the only solution to control the spread of coronavirus was to break the cycle of transmission through social distancing.

As the coronavirus crisis deepens across the world, countries are using lockdown as one of the prime quarantine strategies to control the spread. By 26 March, 1.7 billion people worldwide were under some form of lockdown, which increased to 3.9 billion people by the first week of April-more than half the world's population. By late April, around 300 million people were under lockdown in nations of Europe, including but not limited to Italy, Spain, France, and the United Kingdom, while around 200 million people were under lockdown in Latin America. Nearly 300 million people, or about 90 percent of the population, were under some form of lockdown in the United States, around 100 million

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people in the Philippines, about 59 million people in South Africa, and 1.3 billion people have been under lockdown in India. On 21 May 100,000 new infections occurred worldwide, the most since the start of the pandemic, while overall 5 million cases were surpassed.

A lockdown can be defined as an emergency protocol implemented by the authorities that prevents people from leaving a given area. A full lockdown will mean that the people in the given area must stay where they are and must not exit or enter a building or given area The nature of a lockdown situation depends on the condition that necessitated it. A lockdown usually allows essential supplies, grocery stores, pharmacies and banks to continue to serve the people. During the COVID-19 pandemic, the term lockdown was used for actions related to mass quarantines or stay at home orders.

Historical events
In the wake of the September 11 attacks (2001), a three day lockdown of American civilian airspace was initiated.
At the University of British Columbia (UBC) on January 30, 2008, an unknown threat was made, and the Royal Canadian Mounted Police (RCMP) issued a lockdown order on one of the buildings on campus for six hours, cordoning off the area. A campus alert was sent via email to everyone affiliated with UBC, while those in the building remained locked in it.
On April 10, 2008, two Canadian secondary schools were locked down due to suspected firearm threats. George S. Henry Academy was locked down in Toronto, Ontario at approximately 2:00 p.m. The Emergency Task Force (TPS) were contacted and the lockdown lasted for more than two hours. New Westminster Secondary School was locked down in New Westminster, British Columbia at approximately 1:40 p.m. The Emergency Response Team (ERT) was called, and the school was under lockdown until 4:30 p.m. Due to the size of the school some students were not able to leave until 7:00 p.m.
On 19 April 2013, the entire city of Boston, US was locked down and all public transportation stopped during the manhunt for terrorists Dzhokhar and Tamerlan Tsarnaev, the perpetrators of the Boston Marathon bombing, while the town of Watertown was under heavily-armed police and SWAT surveillance, and systematic house-to-house searches were carried out.
Brussels, Belgium, was locked down in 2015; the city was locked down for days while security services sought suspects involved with the November 2015 Paris attacks. Later in 2015, a terror threat caused the 2015 Los Angeles Unified School District closure.
In August 2019, the Indian government imposed a lockdown on Jammu and Kashmir after the revocation of the special status of the state stating that the lockdown was to curb terrorism.
The social distancing and lockdown have led to several changes in day-to-day activities, redistribution of home chores, extensive working from home and greater time spent with those living together. Notwithstanding the importance of social distancing (although many prefer to use the term physical distancing), such a requirement has meant long separation from families (for those working away from their home towns), financial stress and interpersonal strain. Reactions can range from boredom and moodiness to anger, irritation, and frustration. Another maladaptive coping is

through the use of mind-altering substances. Uncertainty and a sense of loss of control are undoubtedly the pathogenic agents for anxiety, panic, and depression. In any of these situations, it is important to anticipate that stress, depression, and anxiety, if not effectively recognised and handled can transform into more severe distress, even leading to negative thoughts about the future, helplessness, hopelessness and suicidal thoughts and feelings.
Lockdowns or quarantines are necessary as protective measures for physical health, but prolonged impositions can be detrimental. It is a hostile experience that can cause severe financial stress [Reger. et al. 2020, Thunstrom, et al.2020] due to loss of employment; social disorders such as social withdrawal, cyber bullying, alcohol misuse, and addiction; and mental health issues such as suicide attempts and depression [Gardner, et al.2015, Brooks, et al.2020] [7]. Even during the SARS outbreak, [Hawryluck, et al.2004] stated that quarantine was linked to high rates of depression (31.2%) and anxiety (28.9%). Similarly, high anxiety was detected throughout the 2009 H1N1 pandemic [Wheaton, et al.2012, Xiang, et al. 2020] [39, 43]; a study from China, found that those in quarantine experience monotony, aloneness, irritation, worsening anxiety, and mental distress. These authors further added that COVID-19 has been repetitively labelled a killer virus, mainly on social media, which has prolonged feelings of perceived threats and uncertainty. Compulsory 14-day quarantines and tracking as part of the public health protocols during the pandemic further increase people's anxiety based on the effects of infection and stigma. Lockdown stressors include separation from family and friends, loss of independence, doubts about the virus's spread, lockdown length, resentment, monotonous lifestyle, potential scarcity of essential goods, lack of accurate information, monetary loss, and stigma.
Limacaoco et al (Apr 2020) In a descriptive study titled Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic, March 2020 which was conducted in 41 countries, revealed that significant higher scores of perceived stress were observed among women, youth, students, and among those who expressed concern and those who perceived increased susceptibility to the COVID-19. [7]
It is found that college students were the most affected by the novel coronavirus pandemic. Early literature has documented the negative influence of pandemics on students' psychological well-being [Mosley et al.1994] [27], which has led to acute depression and anxiety [Aktekin et al.2001] [2]. Cao et al. [2020] [9] investigated the psychological impact on university students in China during the COVID-19 pandemic. Out of 7143 students studied, 0.9% had severe anxiety, 2.7% had moderate anxiety, and 21.3% had mild anxiety. The study by [Wang et al.2020] [38] on 1210 students from 194 cities in China, found 53.8% of respondents having severe to moderate psychological impact, with female students being associated with greater psychological impacts. As suggested in previous studies [Wang et al.2020, Bayram et al.2008, Bruffaerts et al.2018] [38, 5, 8] also opined that heightened uncertainty and its bearings on students' academic progress could influence students' psychological well-being.
In the light of rising concern about the current COVID-19 pandemic, a growing number of universities across the world have either postponed or cancelled all campus events such as workshops, conferences, sports (both intra and inter universities), and other activities. Universities have moved

rapidly to transition various courses and programs from face-to-face to online delivery mode [. Gewin V *et al*.2020]. Odriozola-González *et al*. [2020] [29] studied the psychological well-being of Spanish university students during the COVID-19 pandemic. It was found that the incidence of anxiety was higher among students compared to that among the general population.

In a recent study focusing on Chinese medical college students, higher levels of anxiety were associated with factors strongly related to COVID-19, such as acquaintance with a COVID-19 diagnosed patient (Cao *et al*., 2020) [9]. Likewise, data from international students have shown an increase in concerns not only for their education, but also for the well-being of their families in case of their return home because of suspended in-person classes (Zhai and Du, 2020) [38].

The unprecedented experience of 'home quarantine' under lockdown with the uncertainty of academic and professional career has multifaceted impacts on the mental health of student

So, with this background the present study has been planned with following objectives which are to evaluate Depression, Anxiety and Stress among college students of Patna town during COVID-19 lockdown, using DASS-42 and to analyse the prevalence of Depression, Anxiety and Stress among the college students.

Methods
Sample - In the present study sample consisted of one hundred and ninety (N=190) college students (90 males and 100 females) of Patna town, were contacted on mobile and online questionnaire were sent to them.

Study Tools
The study questionnaire has two sections each of demographics and DASS-42 scale. A section of

demographic profile (Age, Gender etc.) was added in the questionnaire and in the second section of study "Depression Anxiety and Stress Scale (DASS- 42) was administered. DASS-42 is a reliable tool to assess psychological distress in clinical and non-clinical populations. (Lovibond PF, 1995) [24]. It is based on three subscales: depression, stress, and anxiety, and each subscale consists of 14 questions each.

The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia, the anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect and the stress scale is sensitive to levels of chronic nonspecific arousal. The rating of DASS sub items such as depression, anxiety, and stress can be rated as normal, mild, moderate, severe and extremely severe.

Subjects were asked to use 4-point severity/frequency scales to rate extent to which they had experienced each state over the past week. Scores for depression, anxiety and stress were calculated by summing the scores for the relevant items.

Procedure
Questionnaires were administered online by using WhatsApp and Google mail individually during COVID – 19 lockdown 1(last week) on the sample to obtain the data. Subjects were assured that the information provided by them on each items of the scale will be kept strictly confidential and will be used for research purposes only.

Statistical Analysis
To analyse the obtained data, histogram, mean, standard deviation and t-ratio were employed.

Results

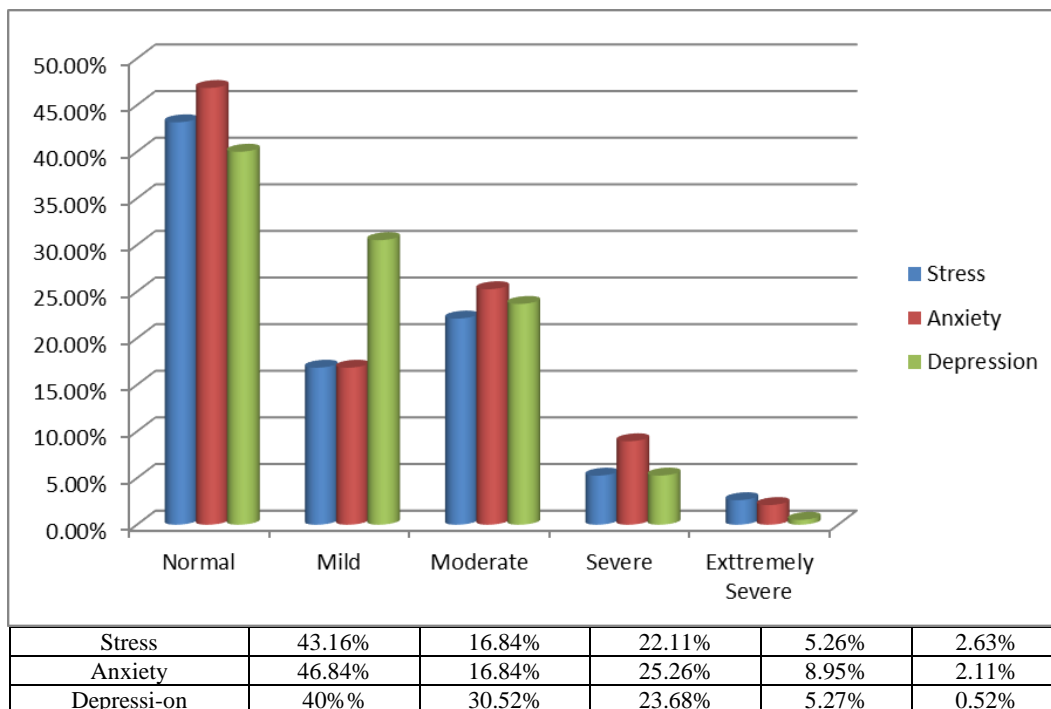|	Normal	Mild	Moderate	Severe	Exttremely Severe
Stress	43.16%	16.84%	22.11%	5.26%	2.63%
Anxiety	46.84%	16.84%	25.26%	8.95%	2.11%
Depressi-on	40%%	30.52%	23.68%	5.27%	0.52%

Fig 1: Overall mental status of respondents (N=190).

Figure 1 describes the overall mental status of the respondents. Out of 190 respondents 58 (30.52%) had mild

depression, 45 (23.68%) had moderate, 10 (5.27%) had severe and only 1 (0.53%) had very severe depression.

Whereas if we see on the anxiety scale 32(16.84%) had mild, 48 (25.26%) had moderate, 17(8.95) had severe and 4(2.11%) had extremely severe anxiety. According to the stress scale 32 (16.84%) students had mild, 42 (22.11%) had moderate, 10 (5.26%) had severe and 5 (2.63%) had very severe stress. But overall 76(40%) on depression scale, 89(46.84%) on anxiety and 101(43.16%) on stress scale were reported to be completely normal on DASS-42 Scale.

Table 1: Showing Difference between male and female college students in terms of stress

Group	Male Students		Female Students	
	N = 90	Percentage	N = 100	Percentage
Normal	49	54.44	52	52
Mild	21	23.33	11	11
Moderate	18	20.00	24	24
Severe	02	2.22	08	08
Extremely Severe	00	00	05	05

Table 1 shows the percentages of male and female students on the measure of stress during COVID – 19 lockdown 1 in Patna, India. It is evident from the table - 1 that 53 percent of the female students had shown normal stress whereas 64% male students had normal stress. 13% female students had mild stress and 16.7% male students had mild stress. Moderate stress had found among 21% female students and among 16.7% male students. 8% female students had severe stress whereas only 2.2% male students had severe stress. As well as 5% female students had extremely severe stress whereas not any male student had extremely severe stress.

Table 2: Showing Difference between male and female college students in terms of anxiety

Group	Male Students		Female Students	
	N=90	Percentage	N=100	Percentage
Normal	44	48.88	45	45
Mild	18	20.00	14	14
Moderate	23	25.56	25	25
Severe	05	5.56	12	12
Extremely Severe	00	00	04	04

Table 2 shows the percentages of male and female students on the measure of anxiety during COVID – 19 lockdown 1 in Patna, India. It is evident from the table - 2 that 45% of the female students had shown normal anxiety whereas 55.6% male students had normal anxiety. 12% female students had mild anxiety and 16.7% male students had mild anxiety. Moderate anxiety had found among 24% female students and among 22.2% male students. 15% female students had severe anxiety whereas only 5.6% male students had severe anxiety. As well as 4% female students had extremely severe anxiety whereas not any male student had extremely severe anxiety.

Table 3: Showing Difference between male and female college students in terms of depression

Group	Male Students		Female Students	
	N	Percentage	N	Percentage
Normal	40	44.45	36	36
Mild	35	38.89	23	23
Moderate	15	16.66	30	30
Severe	00	00	10	10
Extremely Severe	00	00	01	01

Table 3 shows the percentages of male and female students on the measure of depression during COVID – 19 lockdown 1 in Patna, India. It is evident from the table - 3 that 43 percent of the female students had shown normal depression whereas 66.7% male students had normal depression. 19% female students had mild depression and 24.4% male students had mild depression. Moderate depression had found among 27% female students and among 8.9% male students. 10% female students had severe depression and 4% female students had extremely severe depression whereas not any male student had severe or extremely severe depression.

Table 4: showing significance of difference between male and female students in terms of Stress during COVID – 19 lockdown 1.

Group	N	M	SD	t	p
Male Students	90	22	5	3.4	> .01 (df-188)
Female Students	100	25	7		

It is clear from Table 4 that Mean score of female students regarding stress (25) is greater than the Mean score of male students (22) and t-ratio between these two means (3.4) is significant at .01 level of confidence. So it can be said that female students had more stress than male students in COVID-19 pandemic lockdown 1.

Table 5: showing significance of difference between male and female students in terms of Anxiety during COVID – 19 lockdown 1.

Group	N	M	SD	t	p
Male Students	90	20	7	2.46	> .05 (df-188)
Female Students	100	22	6		

Table 5 clearly shows that Mean score of female students regarding anxiety is 22 and Mean score of male students is 20. t-ratio between these two means (2.46) is significant at .05 level of confidence. So it can be said that female students were more anxious than male students in COVID-19 pandemic lockdown 1.

Table 6: showing significance of difference between male and female students in terms of Depression during COVID – 19 lockdown 1.

Group	N	M	SD	t	p
Male Students	90	17	7	10.53	> .01 (df-188)
Female Students	100	27	6		

It is evident from Table 6 that Mean score of female students regarding depression (27) is greater than the Mean score of male students (17) and t-ratio between these two means (10.53) is significant at .01 level of confidence. So it can be said that female students were more depressed than male students in COVID-19 lockdown 1.

Discussion and Conclusion
This study examined stress, anxiety and depression amongst college students in Patna town during the COVID-19 pandemic lockdown 1 i.e. Second week of April 2020. The result indicated a 60% prevalence of depressive symptoms amongst the college students during this phase. The anxiety and stress symptoms were found to be present in 53.16% and 46.84% of college students, respectively which are much more than the normal level. The most important reason for the same was their anxiety relating to career and

due to delay in the examination conduction the academic sessions will also be delayed. Uncertainty regarding their exams, completion of their semester and graduation, and the need to juggle household chores and take care of siblings while concurrently attending online classes had a huge impact on their anxiety levels. Students, especially those graduating, were also distressed because they were helpless in their plans to launch their careers. College students' anxiety and stress about COVID-19 might have been related to the effect of the virus on their studies (Cornine *et al*., 2020) [10] and future employment (C. Wang *et al*., 2020) [38]. On the other hand, the students' anxiety and stress may have been caused by the gradually increasing distances between people resulting from the quarantine. It is known if anxiety disorders are more likely to occur and worsen in the absence of interpersonal communication (Xiao, 2020; Kmietowicz *et al*., 2020) [44, 23]. This is a testimony to the fact that the current situation has been quite disruptive in terms of emotional health of the respondents concerned and required adjustment on part of them to get acquainted to new routine during the period of lockdown. Previous studies by Cao,W. *et al*., 2020 [9], Moksh S. Khetan1 *et al*.,2020 [26],and Wang, G.;2010 [38]...also support this finding.

It is also found in this study that the percentage of female students in the prevalence of depression, anxiety and stress are 64%, 55% and 48% respectively which are higher than the male students i.e. 55.55%, 51.02% and 45.55%. Besides, the obtained scores of female students in terms of depression, anxiety and stress are greater than scores of male students and the difference between their scores are found to be significant. This finding is consistent with the many previous studies by Azad, N., *et al*., 2017, Mirza.*et al*.,2004 [25], Hawthorne *et al*. (2008) [17], Soet & Sevig, 2006 [34]. Females generally express emotions to a greater extent than males do, and the recent pandemic may have exacerbated this situation. Studies indicate that females' uncertainty tolerance threshold is lower than that of males, and crossing that threshold triggers undue stress and anxiety. Female students may further be subject to lesser coping strategies in times of uncertainty and stressful situations gical impacts.

For college students, heightened levels of psychological distress and downstream negative academic consequences are prevalent under normal circumstances (American College Health Association, 2019). As a result of physical distancing measures implemented in response to COVID-19, tertiary education institutions have shifted to an emergency online learning format, which would be expected to further exacerbate academic stressors for students. Based on insights from research examining the impact of academic disruptions on students (Wickens, 2011) [41], it is reasonable to venture that students may experience reduced motivation toward studies, increased pressures to learn independently, abandonment of daily routines, and potentially higher rates of dropout as direct consequences of these measures. Thus, by increasing academic stressors in a population with heightened pre-existing stress levels and a potentially reduced ability to rely on typical coping strategies – such as family who themselves may be experiencing heightened distress – the COVID-19 pandemic has placed an unprecedented mental health burden on students.

Conclusion
The lockdown due to COVID-19 pandemic poses an extraordinary challenge to the college students. The study showed that the college students were more depressed, anxious and stressed in this lockdown crisis. The females were under more stress, anxiety and depression. This survey was an attempt to peek into the psychological impact of the pandemic, while it was till at peak in the world. Index survey suggested that the pandemic affected the students mental status negatively.

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