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An SBQ-R assessment of the impact of COVID-19 pandemic on the mental health of young adults in North India

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Abstract. *Introduction:* During the COVID-19 pandemic in India, the increase in the number of suicides was observed in India. Therefore, the present study aims to explore various factors affecting the mental health of an individual and their consequences. Moreover, it has been attempted to assess the suicidal risk in the population of North India by using the Suicidal Behaviors Questionnaire-Revised (SBQ-R). *Methodology:* The young adults from the North Indian population belonging to the age group of 18 to 35 years (24.93±4.42 years) have been incorporated into the study. A total of 190 responses (102 males and 88 females) were recorded through online mode. The present questionnaire has incorporated the Suicidal Behaviors Questionnaire-Revised (SBQ-R) and some of the parameters taken from the psychology today online survey. The obtained data were processed in the Statistical Product and Service Solutions package (IBM SPSS version 20). *Results:* The demographic characteristics of the respondents were described by using frequencies and percentages, means, and standard deviations. Cronbach's alpha, Kaiser-Meyer-Olkin (KMO), and the Bartlett sphericity were calculated. The mean SBQ-R score was recorded to be 4.62±1.5. Further, during the factor analysis with the principal component method, seven factors have explained the 70.797% of the cumulative variance with an eigenvalue of 1. *Conclusions:* The SBQ-R assessment revealed a minimal risk of suicidal behavior but the frequency distribution of the parameters taken for the psychological assessment has highlighted that the anxiousness or worriedness has a significant impact on the mental health of the population at risk. Therefore, it is recommended that some precautionary measures, such as online mental health services, should be taken by the health ministry to keep the population healthy. (www.actabiomedica.it)

Key words: COVID-19 pandemic, mental health, suicidal behaviors questionnaire-revised (SBQ-R), suicidality

Introduction

According to the World Health Organization (WHO), mental health is one of the most important aspects of health. WHO has defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." Therefore, the definition clearly expresses that the non-appearance of a mental disorder does not depict that the individual is psychologically well sounded (1).

Globally, COVID-19 has influenced the overall health of a human population irrespective of infection. During the covid-19 pandemic, many individuals have lost their jobs and they were compelled to stay at home because only lockdown can control the spread of COVID-19 (2). The sudden prohibitions on the daily

routine work have brought a change in the lifestyle of an individual, which may incorporate the guidelines to stay home, limitations on traveling, taking various precautions, financial crisis, unemployment, social isolation, drop-in social interactions, fear of infection, family disputes, lack of personal space, etc. (3,4,5). The restrictions during the lockdown have not only aggravated the mental state of individuals with previous mental health problems like depression but also have affected the mental health of the population at risk (6,7). As a consequence, individuals are experiencing anxiety, stress, fear, insomnia, frustration, depression, and so on, which have further lead to an increased number of suicidal cases (8).

The group of people with a prior history of affected mental health is more vulnerable to have suicidal ideation (7). However, studies have claimed that the symptoms of affected mental health are more evident among older individuals (9). Even studies have documented that the number of affected mental health individuals is greater than infected individuals (10). According to the Deputy Commissioner of the Gurugram (Haryana, India) police, the antagonistic impact of the COVID-19 has increased the number of suicides among the population at risk (4). As per the report of Times now digital numerous economic, socio-cultural, and political reasons are responsible for the increased number of suicidal cases (5).

On 12th February 2020, India has reported the first suicide case from the Chittoor District in the State of Andhra Pradesh, India. The news of infection has disturbed the mental health of the individual in such a way that for the sake of the safety of the family, he has first quarantined himself and afterward, has attempted to attack the person whosoever have tried to approach him and finally his fear has instigated him to end his life (11,12). Similarly, the pandemic has forced the educational departments to shut down schools and colleges and to conduct online classes. For this, every student should have access to smart phones. The educational departments have started conducting online classes before checking the availability of smart phones particularly to the students lying under the below poverty line. The students who cannot afford were not able to attend the classes. This has greatly affected their academic performance. According to the World Bank report of 2012, 1 in every 5 Indians is poor (13). These circumstances have prompted many suicidal attempts among the students. India has faced the first case of COVID-19-related student suicide on 2nd June 2020. She was a brilliant student (15-years old) from 10th grade (14,15).

In August 2020, the financial crisis has constrained the five saloon owners from Nagpur city of Maharashtra to end their life (3). In September 2020, a women doctor (39-years-old) from Gurugram city of Haryana, India has ended her life after jumping off the balcony (4). On 14th August 2020, the body of a 40-years-old doctor working in the pediatrics department of AIIMS- New Delhi, India (16,17) was found dead by suicidal hanging. On 4th September 2020, the financial crisis has provoked the entire family with 5 members in New Delhi to commit suicide (18).

Moreover, 240 suicidal cases were reported in the Gurugram city of Haryana from January 1st to August 31st, 2020 (4). Similarly, the Nagpur city of Maharashtra, India has witnessed 293 suicidal cases from January 1stto August 13th, 2020 (3).

In the wake of witnessing endless instances of suicides, the Government of India should have taken some precautionary measures to combat this situation like the Chinese Government who had undertaken online mental health services during the pandemic in February 2020 (19).

The mental health of an individual is determined by a range of socio-economic, biological, and environmental factors (20). Therefore, the present study aims to explore the various factors affecting the mental health of an individual and their consequences, during the period of the COVID-19 pandemic in India. An attempt to assess the suicidal risk among the North India population by using the Suicidal Behaviors Questionnaire-Revised (SBQ-R) has been made.

Material and methods

The present study deals with primary data collection through online mode. The convenient sampling technique was used to accumulate data for the investigation. The study has incorporated young adults belonging to the age group of 18 to 35 years with a mean age of 24.93±4.42 years from the North Indian

population. A questionnaire was specially designed to assess the mental health of an individual and to check the probability of committing suicide. The responses from almost 190 individuals were recorded out of which 102 were males and 88 were females. The purpose of the study was disclosed to each individual before filling the questionnaire and prior consent was also taken. All the COVID uninfected individuals were included in the study whereas the infected individuals were not taken in the present study.

Limitation of the study: The questionnaire was designed in a single language i.e., in English only, which means only an English reader or an educated individual can fill this questionnaire.

Questionnaires used:

The questionnaire for the present study was designed according to the criteria provided by the National Health Service (NHS). They have covered different aspects of an individual's life during the assessment such as mental health symptoms and experiences, feelings, thoughts and actions, physical health and wellbeing, housing and financial circumstances, employment and training needs, social and family relationships, culture, and ethnic background, gender and sexuality, use of drugs or alcohol, past experiences, especially of similar problems, issues relevant to your or others' safety, whether there's anyone who depends on you, such as a child or elderly relative, strengths and skills, and what helps you best, and hopes and aspirations for the future (21). Similarly, physical activity has been recognized as a tool to improve mental health and well-being (22). Therefore, the present questionnaire has tried to cover all these aspects. For this purpose, the current examination has incorporated some of the parameters of the psychology today online survey (23). They have designed the screening tool to evaluate symptoms related to the mental disorder which they have taken from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (24). Substance Use Disorder, Major Depressive Disorder, Manic Episodes, Bipolar Disorder, Post-Traumatic Stress Disorder, Generalized Anxiety Disorder, Panic Disorder, and Panic Attacks, were assessed by using this screening tool.

Moreover, the study has also used the Suicidal Behaviors Questionnaire-Revised (SBQ-R). The SBQ-R is designed in such a way that it has covered the different dimensions of suicidality (25). It contains four questions or items. The lifetime suicide ideation and/or suicide attempt is evaluated in the first item. The second item assessed the frequency of suicidal ideation over the past twelve months. Whereas the threat of suicide attempts is calculated in the third item, and the self-reported likelihood of suicidal behavior in the future is measured in the fourth item (26).

Statistical analyses:

The obtained data was first entered into Microsoft excel 2010 and then processed in the Statistical Product and Service Solutions package (IBM SPSS version 20). The demographic characteristics of the respondents were described by using frequencies and percentages for the qualitative variables while in the case of the quantitative variables, the means and standard deviations were used. Cronbach's alpha was calculated to find the internal consistency of the questionnaire. Further, to check the adequacy of the sampling, the Kaiser-Meyer-Olkin (KMO) was executed and the Bartlett sphericity test was performed, to test the hypothesis that the obtained correlation matrix is not an identity matrix. The construct validity of the questionnaire was verified by using factor analysis with the principal component method.

Results

The demographic details of the studied population i.e., young adults of North India was illustrated in the figures (Figure 1 to Figure 6). Whereas, the scree plot with the eigenvalues was demonstrated in figure 7. Table 1 explains the frequency distribution of the salary details of the respondent's family and table 2 represents the frequency distribution of professional details of the population considered under study. The frequency distribution of health-related details of the respondent's population is depicted in table 3. Whereas the migration-related details of the studied population are denoted in table 4. The suicidal behaviors assessment of the studied population-based on SBQ-R is

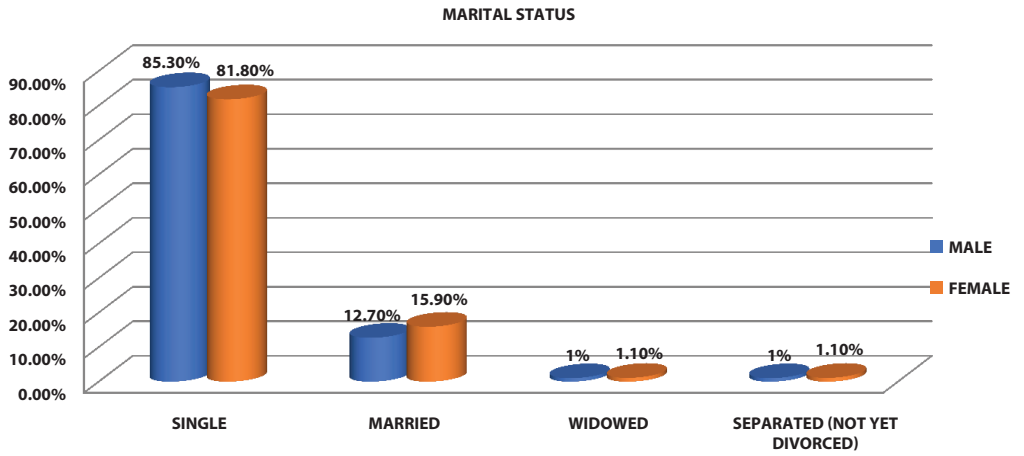

Figure 1: Frequency distribution of the marital status of the young adults of the North Indian population

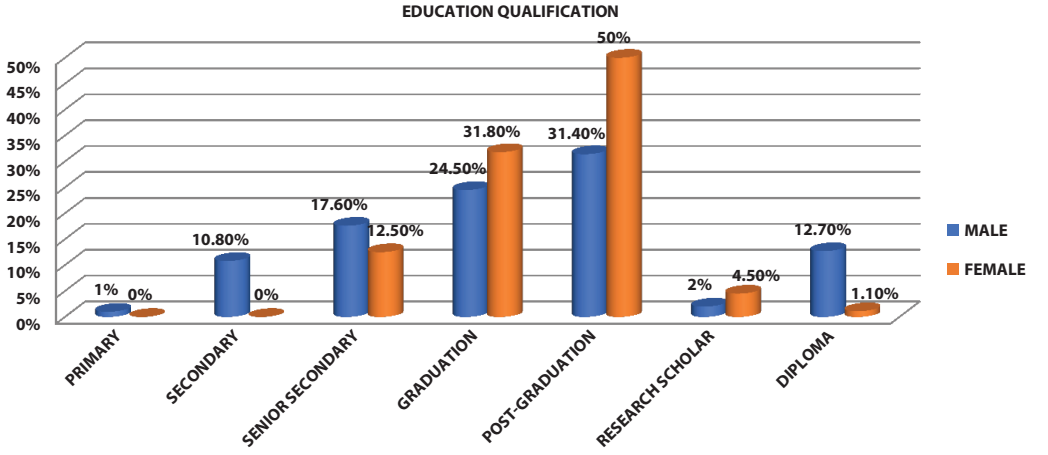

Figure 2: Frequency distribution of the educational qualification of the young adult population of North India.

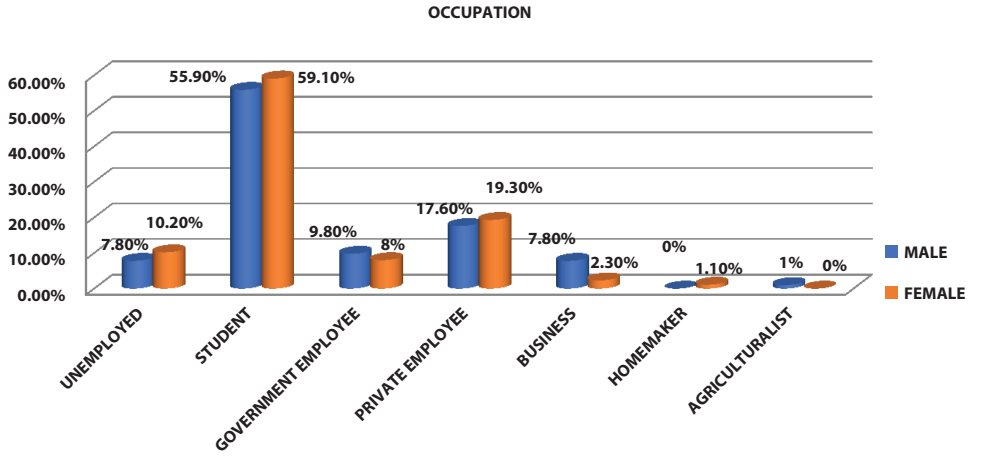

Figure 3: Frequency distribution of the occupation of the respondents from young adults of the North Indian population.

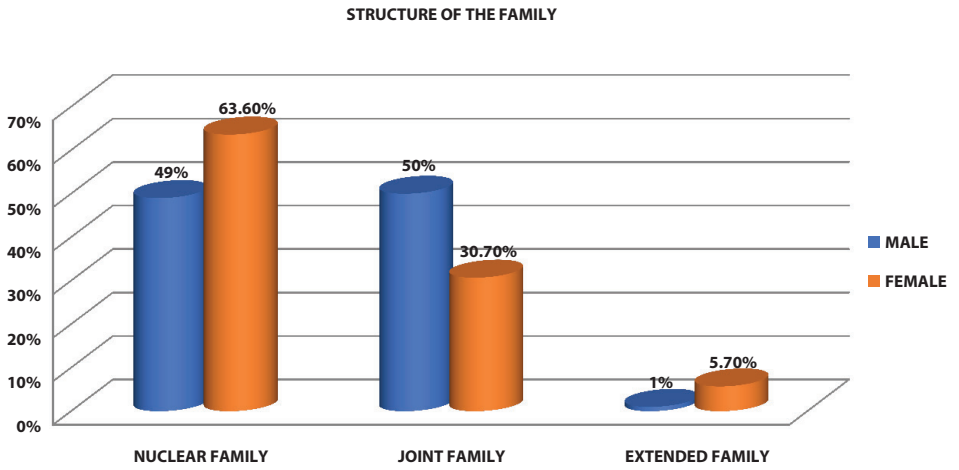

Figure 4: Frequency distribution of the family structure of the respondents from young adults of the North Indian population.

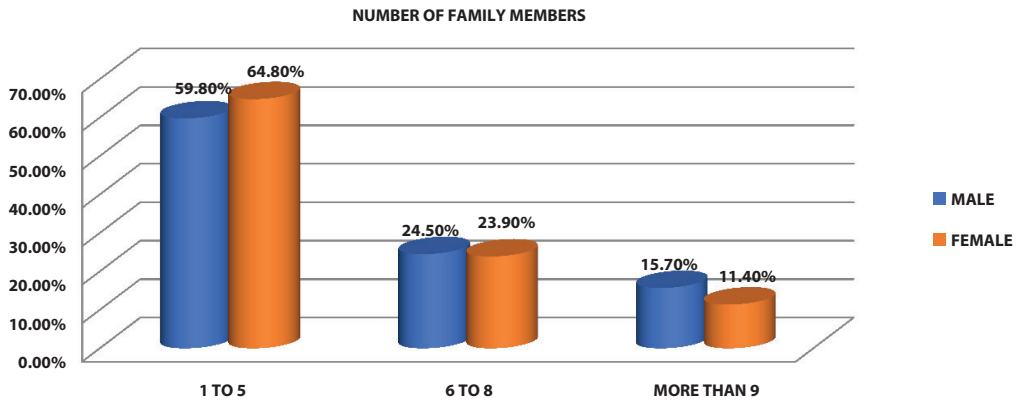

Figure 5: Frequency distribution of the number of family members of the young adults of the North Indian population.

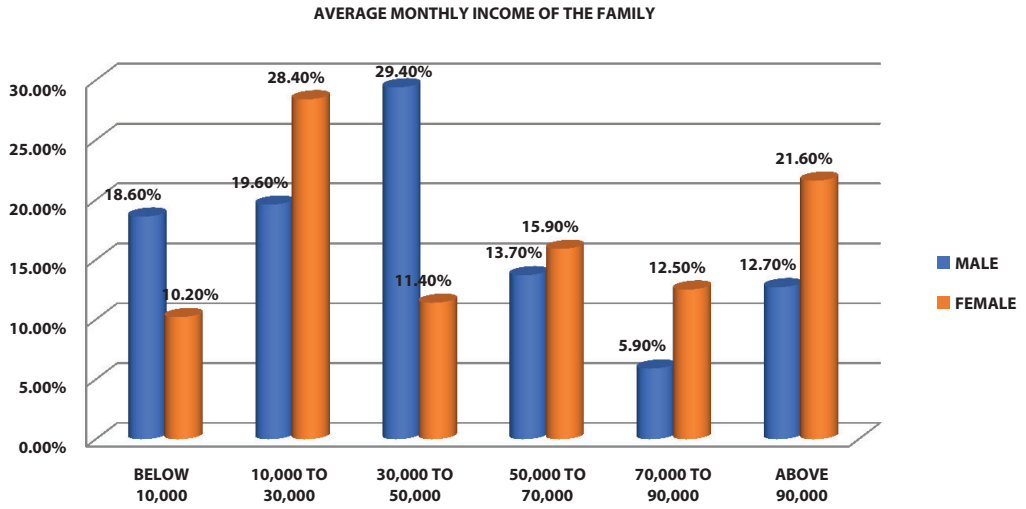

Figure 6: Frequency distribution of the average monthly income of the young adults of the North Indian population.

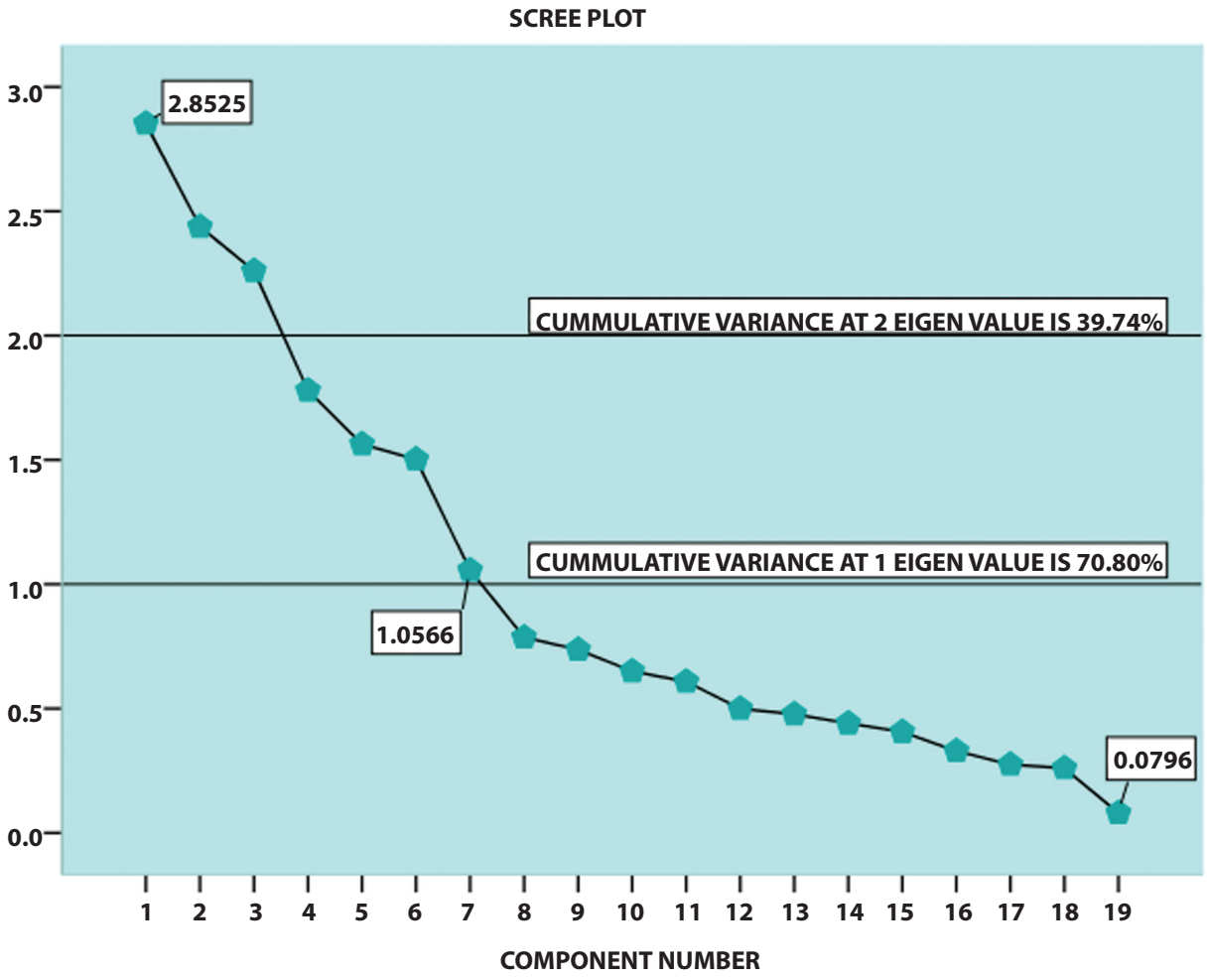

Figure 7: A Scree plot with the eigenvalues of 7 major factors out of 19.

given in table 5 while the descriptive statistics of the total score of the SBQ-R analysis are represented in table 6. However, table 7 demonstrates the frequency distribution of some other mental health testing parameters. Further, the factor analysis along with factor loadings, eigenvalue, and explanation power of the generated factors are represented in table 8.

The frequency distribution of the marital status of the respondent population is depicted in figure 1. Almost 85.30% of males and 81.80% of females were single among the participants and 12.70% of males and 15.90% of females were married. The participants from the widowed and separated categories have the least (approximately 1%) participation in the current study. Figure 2 illustrates the frequency distribution of the educational qualification of the respondent population. Most of the respondents were graduated (24.50% males and 31.80% females) and post-graduated (31.40% males and 50% females) out of the total respondents. Very few males were undergraduate i.e., 1% were primary qualified and 10.80% were secondary qualified whereas none of the female respondents were undergraduate. The rest of them belong to the higher qualification category (Figure 2). More than 50% of the respondents were students; on the other hand, some of the government (approx. 9% in both males and females), as well as private employees (Approx. 18% in both males and females), have also taken part in the present study (Figure 3). Some of them were indulged in business, homemaking, and agriculture whereas 7.8% of males and 10.2% of female respondents were unemployed (Figure 3).

Table 1: Frequency distribution of the salary details of the young adults of the North Indian population.

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
1.	Are you a working member of your family	Yes	46	45.1%	32	36.4%
		No	56	54.9%	56	63.6%
2.	The number of working members in your family	One	40	39.2%	30	34.1%
		Two	35	34.3%	35	39.8%
		Three	18	17.6%	12	13.6%
		Four	4	3.9%	8	9.1%
		More than 5	5	4.9%	3	3.4%
3.	Were all the family members getting a salary during the lockdown	Yes	56	54.9%	61	69.3%
		No	46	45.1%	27	30.7%
4.	If yes, how many of you were getting a salary during the lockdown?	No one	46	45.1%	27	30.7%
		One person	27	26.5%	28	31.8%
		Two persons	19	18.6%	21	23.9%
		Three persons	9	8.8%	8	9.1%
		Four persons	1	1.0%	4	4.5%

A total of 63.60% of the female respondents and 49% of the male respondents belong to the nuclear family structure whereas 50% of the males and 30.70% of the females were from the joint family systems. And the rest of them were from the extended family system as demonstrated in figure 4. On the other hand, approximately 59.80% of male and 64.80% of female respondents have up to 5 members in their family and approximately 24% of the respondents have 6 to 8 members in their family. While the left one (15.70% males and 11.40% of females) has more than 9 members in their family (Figure 5). Different trends of average monthly income were observed among the male and female respondents (figure 6). 21.60% female and 12.70% male respondents have above 90,000 average monthly incomes. While 18.60% male and 10.20% female respondents have below 10,000 average monthly income. However, the rest of them have an average monthly income between 10,000 and 90,000 (Figure 6).

45.1% of the male respondents and 36.4% of female respondents were working members of their families. Even most of the respondent's families have one (39.2% males and 34.1% females) or two (34.3% males and 39.8% females) working members. Out of which 54.9% male and 69.3% female respondent's families were getting salary during the lockdown (Table 1). 84.3% male and 86.4% female respondents were not engaged in any kind of governmental activities during the lockdown. While approximately 10% of the respondents were involved in the health care system and very few of them i.e., around 3% were espoused in the Indian police service and administration (Table 2). 62.7% of males and 65.9% of female respondents were involved in online classes. Out of which approximately 20% were engaged in taking online classes, and 58.44% males and 50.69% females were attending the online classes and on an average 25% of respondents were indirectly involved in online classes i.e., helping their child, siblings, etc. to attend online classes (Table 2). Whereas 39.2% male and 50% female respondents were working from home during the lockdown i.e., they were also using the internet network for their professional work. Approximately 42% of respondents were facing network issues during their working hours and online classes. And on average 24% were not able to manage their time for work or classes while locked at home and were facing social disturbances during classes and work from home (Table 2). 35.3% of males and 27.3% of females were working 4 to 6 hours from home during the lockdown while approximately 17%

Table 2: Frequency distribution of professional details of the young adults of the North Indian population.

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
1.	**Were you engaged in the following activities during the lockdown?**	Health care system	10	9.8%	9	10.2%
		Indian Police service	2	2.0%	1	1.1%
		Administration	4	3.9%	2	2.3%
		None of the above	86	84.3%	76	86.4%
2.	**Were you involved in online classes?**	Yes	64	62.7%	58	65.9%
		No	46	45.1%	36	40.9%
3.	**If yes, what kind of roles you were playing during online classes?**	Taking the online classes	15	19.48%	16	21.92%
		Attending the online classes	45	58.44%	37	50.69%
		Helping others (your child, your siblings, etc.) to attend the online classes	17	22.08%	20	27.40%
4.	**Did you work from home during the lockdown?**	Yes	40	39.2%	44	50.0%
		No	62	60.8%	44	50.0%
5.	**What were your working hours during a lockdown?**	Not working	26	25.5%	18	20.5%
		1 to 3 hours	9	8.8%	21	23.9%
		4 to 6 hours	36	35.3%	24	27.3%
		7 to 9 hours	18	17.6%	15	17.0%
		10 to 12 hours	10	9.8%	6	6.8%
		Not fixed	3	2.9%	4	4.5%
6.	**What kind of problems you were facing during online classes or work from home?**	Network issues	56	42.11%	56	43.08%
		Social disturbance	28	21.05%	32	24.62%
		Time management	32	24.06%	32	24.62%
		Not involved	8	6.02%	4	3.08%
		No issues	6	4.51%	4	3.08%
		Have no proper device for online classes because of financial problems	2	1.50%	0	0%
		Communication gap	1	0.75%	2	1.54%
		Stress	0	0%	0	0%
7.	**How many hours you were spending with your family?**	1 to 3 hours	8	7.8%	4	4.5%
		4 to 6 hours	12	11.8%	15	17.0%
		7 to 9 hours	15	14.7%	10	11.4%
		10 to 12 hours	30	29.4%	25	28.4%
		Whole day (i.e., almost 24 hours)	37	36.3%	34	38.6%

were working for 7 to 8 hours. However, very few of them were working for more than 10 hours per day (9.8% males and 6.8% females) and less than 3 hours (8.8% and 23.9% males and females respectively) as illustrated in Table 2. 36.3% of male and 38.6% female respondents have spent almost 24 hours with their families during the lockdown period. About 29% have spent 10 to 12 hours with their families. Whereas

Table 3: Frequency distribution of health-related details of the young adults of the North Indian population.

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
1.	Which of the following physical activities you were practicing during the lockdown?	Exercise	66	33.85%	42	22.95%
		Yoga	22	11.28%	25	13.66%
		Meditation	24	12.31%	11	6.01%
		Morning or evening walk	42	21.54%	43	23.50%
		Household chores	30	15.38%	57	31.15%
		None	11	5.64%	5	2.73%
2.	Are you taking medicine for any chronic disease	Yes	3	2.9%	10	11.4%
		No	99	97.1%	78	88.6%
3.	Do you smoke?	Yes	5	4.9%	1	1.1%
		No	97	95.1%	87	98.9%
4.	If yes, how frequently do you smoke?	Never	97	95.1%	87	98.9%
		Once a day	2	2.0%	1	1.1%
		Twice a day	2	2.0%	0	0%
		3 to 4 times a day	1	1.0%	0	0%
		More than 5 times a day	0	0%	0	0%
5.	Do you consume alcohol?	Never	79	77.5%	78	88.6%
		A few times a year	6	5.9%	8	9.1%
		A few times a month	14	13.7%	1	1.1%
		A few times a week	3	2.9%	1	1.1%
		Daily	0	0%	0	0%
6.	Do you consume any drugs like cannabis, LSD, PCP, Opioids, etc.?	Never	100	98.0%	87	98.9%
		A few times a year	0	0%	0	0%
		A few times a month	0	0%	0	0%
		A few times a week	1	1.0%	1	1.1%
		Daily	1	1.0%	0	0%
7.	During the lockdown, did you face any difficulty in procuring?	Alcohol	5	4.67%	0	0%
		Drugs	2	1.87%	0	0%
		Smoke	2	1.87%	0	0%
		None	98	91.59%	88	100%

14.7% of males and 11.4% of females have spent 7 to 9 hours with their families and 4 to 6 hours were spent by 11.8% males and 17% females. Very few respondents (i.e., 7.8% males and 4.5% females) have spent 1 to 3 hours with their families (Table 2).

During the lockdown, most people have utilized their time for health and physical activities. 33.85% of males and 22.95% of females have opted for exercise whereas 21.54% of males and 23.5% of females have started morning or evening walks. Yoga was chosen by approximately 12% of the respondent population and 12.31% of males and 6.01% of females have started meditation to distract themselves from the pandemic situation. 15.38% of males have started involving in the household chores as depicted in the table (Table 3). Only 2.9% of male and 11.4% female respondents

Table 4: Frequency distribution of the migration-related details of the young adults of the North Indian population.

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
1.	Are you a migrant/ staying away from your hometown for work?	Yes	20	19.6%	13	14.8%
		No	82	80.4%	75	85.2%
2.	Is your family staying with you?	Yes	83	81.4%	80	90.9%
		No	19	18.6%	8	9.1%
3.	Did you migrate back to your hometown during the lockdown?	Yes	35	34.3%	19	21.6%
		No	67	65.7%	69	78.4%
4.	Difficulties faced by you during your journey to your hometown?	Transportation	30	17.75%	8	7.55%
		Problems faced during the Quarantine period	17	10.06%	4	3.77%
		Fear of infection	23	13.61%	15	14.15%
		Permissions/Movement pass	18	10.65%	11	10.38%
		Lack of money	28	16.57%	6	5.66%
		None	53	31.36%	62	58.49%
5.	Were you concerned about the financial security of the family during the lockdown?	Yes	55	53.9%	54	61.4%
		Not at all	47	46.1%	34	38.6%

were taking medicine for chronic disease. And very few of the respondents (4.9% males and 1.1% females) were smokers. 22.5% of male respondents and 11.4% of female respondents were consuming alcohol. And drugs such as cannabis, LSD, PCP, opioids, etc., were consumed by 2% males and 1.1% females. 91.59% of males and 100% of females did not face any difficulty in procuring alcohol, drugs, etc. during the lockdown (Table 3). Very few of the studied population (19.6% males and 14.8% females) were staying away from their families. And 18.6% of males and 9.1% of females' families' were staying with them. Out of the migrant population, 34.3% of males and 21.6% of females were migrated back to their hometown during the lockdown. During the reverse migration at the time of the pandemic, many difficulties were faced by the respondents during transportation, in getting movement passes, lack of money, fear of infection, etc. The frequencies of these factors are illustrated in the table (Table 4). Approximately 14% of the migrants have fear of infection and around 10% have faced difficulties in getting the movement pass. The quarantine period was also stressful for the respondents (10% males and 3.77% females). 16.57% of males and 5.66% of females did not have enough money for the reverse migration. However, 53.9% of male and 61.4% of female respondents were also concerned about the financial security of the family during the lockdown (Table 4).

The suicidal behaviors assessment of the studied population is represented in Table 5. 90.9% of females and 88.2% of males have never thought about or attempted suicide in the last four months. Similarly, 94.1% of males and 86.4% of females have never told anyone that they were going to commit suicide or that they might do it whereas 93.1% of male and 89.8% of female respondents claimed that they will never be going to commit suicide in future (Table 5). Whereas, the mean SBQ-R score was recorded to be 4.62±1.5. For males, the value of total scores was found to be 4.41±1.21 whereas a 4.86±1.76 value was reported in the case of females as depicted in Table 6.

A total of 55.9% of males and 65.9% of females were anxious, worried, or scared as if something awful

Table 5: Suicidal behaviors assessment of the studied population based on Suicidal Behaviors Questionnaire-Revised (SBQ-R).

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
1.	Have you ever have suicidal thoughts about or attempted to commit suicide in the last four months?	Never	90	88.2%	80	90.9%
		It was just a brief passing thought	9	8.8%	7	8.0%
		I have had a plan at least once to kill myself but did not try to do it	3	2.9%	1	1.1%
		I have had a plan at least once to kill myself and really wanted to die	0	0%	0	0%
		I have attempted to kill myself but did not want to die	0	0%	0	0%
		I have attempted to kill myself, and really hoped to die	0	0%	0	0%
2.	How often have you thought about killing yourself in the past four months?	Never	90	88.2%	76	86.4%
		Rarely (1 times)	6	5.9%	5	5.7%
		Sometimes (2 times)	4	3.9%	5	5.7%
		Often (3-4 times)	1	1.0%	1	1.1%
		Very often (5 or more times)	1	1.0%	1	1.1%
3.	Have you ever told someone that you were going to commit suicide, or that you might do it?	No	96	94.1%	76	86.4%
		Yes, once, but did not really want to die	5	4.9%	6	6.8%
		Yes, once, and really wanted to die	0	0%	2	2.3%
		Yes, more than once, but did not want to do it	1	1.0%	3	3.4%
		Yes, more than once, and really wanted to do it	0	0%	1	1.1%
4.	How likely is it that you will attempt suicide someday?	Never	95	93.1%	79	89.8%
		No chance at all	0	0%	0	0%
		Rather unlikely	0	0%	0	0%
		Unlikely	7	6.9%	6	6.8%
		Likely	0	0%	3	3.4%
		Rather likely	0	0%	0	0%
		Very likely	0	0%	0	0%

might happen to them or their loved ones. And nearly 50% of males and 44.3% of females have lost interest in activities that they used to enjoy. Similarly, people have faced problems of sleeplessness during the lockdown (51% males and 54.5% females). Lockdowns have made people irritable in such a way that they get enraged on minor issues. The irritable nature was found to be more in the case of females (59.1%) than males (41.2%). Likewise, the news related to COVID-19 has affected females (90.9%) more than males (65.7%). Out of the many factors, lockdown (~24%) and fear of COVID-19 (~20%) have affected them more as given in the table (Table 7). 63.7% of males and 84.1% of females share their thoughts and feelings like what is happening in their life with someone. Out of which 58.33% males and 47.37% females feel more comfortable in sharing it with their friends. During the period of lockdown, individuals have experienced mood

Table 6: Descriptive statistics of the Total score of the SBQ-R analysis.

Statistics	Total data (N=190)	Males (N=102)	Females (N=88)
Mean	4.62	4.41	4.86
Median	4.00	4.00	4.00
Mode	4.00	4.00	4.00
Standard deviation	1.50	1.21	1.76
Minimum	4.00	4.00	4.00
Maximum	11.00	11.00	11.00
Range	7.00	7.00	7.00

swings that have been classified as mild, moderate, and severe. Only 4.9% of males and 18.2% of females have experienced severe mood swings while 27.5% of males and 31.8% of females have experienced mild mood swings. On the other hand, moderate mood swings have been experienced by 16.7% of males and 28.4% of females (Table 7). Similarly, very few people have faced panic attacks during the lockdown and the frequency of this may vary per day, per week, and month (Table 7). Only 11.8% of male respondents and 6.8% of female respondents known have attempted suicide because of the COVID-19 pandemic. 38.2% of males and 61.4% of females believed that the number of suicides has been increased during the COVID-19 pandemic. Out of which the most dominant reason was financial uncertainties and unemployment among both males and females (Table 7).

Factor analysis for assessing the major factors responsible for determining the mental health during the COVID-19 pandemic

Cronbach's alpha was used to measure the internal consistency of the parameters utilized in the questionnaire. The value of Cronbach's alpha was found to be 0.6. Before applying the factor analysis with the principal component method, the repeated Cronbach's alpha analysis was conducted and the variables which are responsible for the lowering down of the value of Cronbach's alpha were removed from the factor analysis and after that, the applicability of the method was confirmed. For the final model, the value of reproduced correlation was reported to be 23.0%, which should be less than 50%. This indicates that the data supports the questionnaire and the factor analysis can be easily performed on the data. Further, all the diagonal values in the anti-image table and the commonality table were greater than 0.5. They also assist with the factor analysis process.

In factor analysis, eigenvalues are used to condense the variance in the correlation matrix where the factor with the largest eigenvalue has the most variance or vice-versa. For instance, if the eigenvalue is 2, it suggests the information of 2 variables or more than 2 variables are covered. The factors having an eigenvalue greater than '1' have been accounting for generating valuable factors. This is because a factor with an eigenvalue of '1' accounts for as much variance as a single variable. Therefore, it is worth keeping them only. Additionally, the valuable factors can be easily identified based on the scree plots (Figure 7). The eigenvalues are depicted on the y-axis in a scree plot and all the factors generated (or principal components) from the analysis are represented on the x-axis. It has a downward slope to it. The number of valuable factors that were generated by the analysis is indicated by the point where the slope of the curve is clearly leveling off.

In the present study, Bartlett's test of sphericity was statistically significant with an approximated chi-square value of 1212.474 ($df = 171$, $p < 0.001$). This indicates that a significant correlation exists, allowing the factor analysis to the performed. The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy yielded positive results, with a score of 0.606. It indicates that the sample size is adequate to run the factory analysis. Further, seven factors were generated during the factor analysis from 19 factors with more than 1 eigen value that explained a total of 70.797% variance, as illustrated in the scree plot (Figure 7) as well as in Table

Table 7: Frequency distribution of some other mental health testing parameters.

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
1.	**Were you anxious, worried, or scared, as if something awful might happen?**	Yes	57	55.9%	58	65.9%
		No	45	44.1%	30	34.1%
2.	**Have you lost interest in activities that you used to enjoy?**	Yes	51	50.0%	39	44.3%
		No	51	50.0%	49	55.7%
3.	**Did you face the problem of sleeplessness, and/or did not feel well-rested when you woke up during the lockdown?**	Yes	52	51.0%	48	54.5%
		No	50	49.0%	40	45.5%
4.	**Do you feel that you have become irritable or get enraged on minor issues**	Yes	42	41.2%	52	59.1%
		No	60	58.8%	36	40.9%
5.	**Did you feel sad or worried after listening to the news related to the COVID-19 pandemic?**	Yes	67	65.7%	80	90.9%
		No	35	34.3%	8	9.1%
6.	**If yes, which of the following circumstances was annoying you most?**	Lockdown	25	23.15%	21	24.14%
		Financial uncertainties	21	19.44%	17	19.54%
		Unemployment	19	17.59%	10	11.49%
		Fear of COVID-19	20	18.52%	19	21.84%
		Limits on Social gatherings	3	2.78%	10	11.49%
		Social distancing	11	10.19%	6	6.90%
		Use of preventive measures like masks, sanitizers, etc. in public settings	5	4.63%	2	2.30%
		Reverse migration	4	3.70%	2	2.30%
7.	**Do you share your thoughts and feelings like what is happening in your life with someone?**	Yes	65	63.7%	74	84.1%
		No	37	36.3%	14	15.9%

(continued)

Sr. No.	Variables		Male (N = 102)		Female (N = 88)	
			Frequency	Frequency percent	Frequency	Frequency percent
8.	**With whom do you share your emotions and thoughts?**	Father	5	6.94%	5	6.57%
		Mother	13	18.06%	14	18.42%
		Partner	7	9.72%	11	14.47%
		Siblings	5	6.94%	10	13.16%
		Friends	42	58.33%	36	47.37%
9.	**Have you experienced mood swings during the last four months?**	Not at all	52	51.0%	19	21.6%
		Mild	28	27.5%	28	31.8%
		Moderate	17	16.7%	25	28.4%
		Severe	5	4.9%	16	18.2%
10.	**Did you face any panic attacks during the lockdown, and if yes, how frequently?**	Never	90	88.2%	66	75.0%
		Several times a day	2	2.0%	1	1.1%
		Once or twice a day	2	2.0%	1	1.1%
		A few times a week	5	4.9%	4	4.5%
		Less than a few times a week	0	0%	1	1.1%
		Less than a few times a month	3	2.9%	15	17.0%
11.	**Did anybody known to you attempt suicide because of the COVID-19 pandemic?**	Yes	12	11.8%	6	6.8%
		No	90	88.2%	82	93.2%
12.	**Do you think that there is an increase in the number of suicides during the COVID-19 pandemic?**	Yes	39	38.2%	54	61.4%
		No idea	63	61.8%	34	38.6%
13.	**If yes, what were the major reasons behind the suicidal attempts?**	Lockdown	33	19.41%	17	11.18%
		Financial uncertainties	44	25.88%	54	35.53%
		Unemployment	37	21.76%	42	27.63%
		Fear of COVID-19	23	13.53%	21	13.82%
		Limits on Social gatherings	8	4.71%	8	5.26%
		Social distancing	6	3.53%	6	3.95%
		Use of preventive measures like masks, sanitizers, etc. in public settings	3	1.76%	0	0%
		Reverse migration	16	9.41%	4	2.63%

Table 8: Table representing the factor analysis along with factor loadings, eigenvalue, and explanation power of the generated factors.

Number of the factors	Name of the factors	Variables cover under the factors	Factor loadings	Eigenvalue	Percentage of Variance	Cumulative percentage
Factor 1	**Addictive behavior**	Do you smoke?	-0.943	2.853	15.013	15.013
		If yes, how frequently do you smoke?	0.916			
		Do you consume any drugs like cannabis, LSD, PCP, Opioids, etc.?	0.740			
Factor 2	**Psychological assessment**	Did you face the problem of sleeplessness, and/or did not feel well-rested when you woke up during the lockdown?	0.801	2.438	12.830	27.843
		Do you feel that you have become irritable or get enraged on minor issues	0.720			
		Did you feel sad or worried after listening to the news related to the COVID-19 pandemic?	0.717			
		Have you lost interest in activities that you used to enjoy?	0.617			
Factor 3	**The financial status of the family**	Monthly income of the family (average)	0.857	2.260	11.897	39.740
		If yes, how many of you were getting a salary during the lockdown?	0.775			
		The number of working members in your family	0.637			
Factor 4	**Suicidal behavioral assessment**	How often have you thought about killing yourself in the past four months?	0.886	1.779	9.363	49.103
		Have you ever told someone that you were thinking of or wanted to commit suicide?	0.721			
		Did you have suicidal thoughts or attempted to commit suicide in the last four months?	0.681			
Factor 5	**Family structure**	The number of family members	0.894	1.563	8.226	57.329
		Structure of the family	0.842			
Factor 6	**The financial contribution of the respondent**	Occupation of the respondent	0.859	1.502	7.907	65.236
		Are you a working member of your family	-0.857			
Factor 7	**Sharing of thoughts**	With whom do you share your emotions and thoughts?	-0.879	1.057	5.561	70.797
		Do you share your thoughts and feelings like what is happening in your life with someone?	0.857			

8. It suggests that these 7 factors can improve the explanation power of the model. Addictive behavior, psychological assessment, the financial status of the family, suicidal behavioral assessment, family structure, the financial contribution of the respondent, and sharing of thoughts are among the seven factors. Table 8 illustrates the factor loadings as well as the percentage variance explained by the factors.

Discussion

The impact of COVID-19 on mental health has been extensively studied (3-8). The COVID-19 has affected the daily routine of the individual which may include the instructions to stay home, limitations on traveling, financial crisis, unemployment, social isolation, drop-in social interactions, fear of infection, family disputes, lack of personal space, etc. And resulted in anxiety, stress, fear, insomnia, frustration, depression, etc. which have further lead to an increased number of suicides.

The current examination has incorporated the Suicidal Behaviors Questionnaire-Revised (SBQ-R). The reliability and validity of SBQ-R and its use in general population samples have been explored by various authors (26-28). Since it is a self-reported instrument, therefore the normal range for the mean SBQ-R score was given on the questionnaire itself and it was documented to be ranged as 3-18 (25). Further, Osman et al. (26) have validated the questionnaire and have provided the mean SBQ-R cut-off scores. They have given 7 cut-off mean SBQ-R scores in the case of non-suicidal samples (with 93% sensitivity and 95% specificity) and 8 for the clinical (suicidal) samples (with 80% sensitivity and 91% specificity). Similarly, Aloba et al. (27) have given the mean SBQ-R cut-off score of 8 (with 88.2% sensitivity and 87.5% specificity) in the case of students at high risk of suicide while working on the Nigerian population. 4.62±1.5 value of the mean (SD) SBQ-R score was recorded in the present study and the value of total mean (SD) SBQ-R scores for males and females were found to be 4.41±1.21 and 4.86±1.76 respectively. Moreover, Osman et al. (26) have documented higher mean (SD) SBQ-R scores in the case of suicidal groups i.e., 11.18±3.99, and low mean SBQ-R scores for the non-suicidal groups i.e., 5.19±2.20. Whereas, 4.60±3.1 mean (SD) SBQ-R scores were reported by Fitzpatrick et al. (29) and 5.01±3.01 was documented in the case of the Nigerian population (27). The Iranian population has found significantly higher mean (SD) SBQ-R scores in the case of females with 5.79±3.55 mean (SD) SBQ-R scores for the total population (30). Further 10.1±3.6 mean (SD) SBQ-R score was recorded in the case of the Spanish population which is somewhat higher than the other populations and the males and females mean (SD) SBQ-R scores were also found to be higher (9.5±3.6 in males and 10.5±3.6 in females) in the Spanish population (31). Cassidy et al., (32) have provided the mean (SD) SBQ-R scores independently for every item of the SBQ-R while the present study has recorded the frequency percentages of each response of the SBQ-R.

Further, the SBQ-R questionnaire has been utilized in several studies (27, 29, 31), and the internal consistency of the items used in the SBQ-R has been determined using Cronbach's alpha. However, the present study has calculated the value of Cronbach's alpha for the whole questionnaire, including the SBQ-R parameters. Out of the seven generated principal factors, the suicidal behavior assessment is the important factor. It has incorporated three items of the SBQ-R questionnaire. The literature does not have a similar study conducted using similar parameters. Therefore, the results of the factor analysis are not comparable with any of the studies. Bartlett's test of sphericity was calculated in the present study to check whether the variables are unrelated or not and whether the factor analysis applies to the present data or not. The statistically significant chi-square value (chi-sq=1212.474, $p < 0.001$) indicated good results. Moreover, the value of the Kaiser-Meyer-Olkin (KMO) test has also indicated the same results and the value recorded in the present study was 0.606. Similarly, the value of KMO and Bartlett's test generated based onthe specially designed questionnaire is not comparable. Based on the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity, the factor analysis was performed on the present data. The total of 70.797% variance with an eigenvalue of 1 was explained only by the seven factors

out of 19 factors including the three-item of SBQ-R. Similarly, the results are not comparable.

Moreover, the present study has taken some of the parameters of the psychology today online survey (23). The parameters taken have covered different aspects of an individual's life during assessment such as mental health symptoms and experiences, feelings, thoughts and actions, physical health and wellbeing, housing and financial circumstances, employment and training needs, social and family relationships, culture, and ethnic background, gender and sexuality, use of drugs or alcohol, past experiences (especially of similar problems), issues relevant to own or others' safety, whether there's anyone who depends on you (such as a child or elderly relative), strengths and skills, and what helps you best, and hopes and aspirations for the future (21,23). Although the SBQ-R assessment shows a low risk of suicidal behavior in the case of the present study but the frequency distribution of some other parameters taken for the psychological assessment has shown how the COVID-19 has affected the mental health of the studied population. The Morbidity and Mortality Weekly Report presented by Czeisler et al. (33) has reported that 24.7% of the US population at risk has started or increased substance use to cope with pandemic-related stress or emotions. Whereas only 4.9% of males and 1.1% of females have smoked and 22.5% of males and 11.3% of females have consumed alcohol to cope with the pandemic-related stress among the present population. However, 25.5% US population have seriously considered suicide in the past 30 days (33) whereas 11.8% of males and 9.1% of females have suicidal thoughts or have attempted suicide in the last four months among the present population. Moreover, anxiety disorder (49.1%), depressive disorder (52.3%), COVID-19 related TSRD (46%), was also quite high among the US population (33). Therefore, the anxiousness or worriedness because of many factors has affected the mental health of the population at risk in a drastic way.

The constant hammering of COVID-19 pandemic news in the news channels, social media, and many other platforms had created nuisance rather than comfort to the mental integrity of the population. Changing trends of the treatment protocol, speed of spread of infection, helplessness for getting timely help had all added fuel to disturb the mindset of an individual. Self-isolation, no physical-social interaction, no travel or leisure activities worsen the already feeble-minded person to succumb to the pressure of such a situation.

Conclusion

The current study has explored the various factors affecting the mental health of an individual during the period of the COVID-19 pandemic. Although, a low risk of suicidal behavior was observed during the SBQ-R assessment. The frequency distribution of the parameters taken for the psychological assessment has shown that the anxiousness or worriedness because of many factors has affected the mental health of the population at risk in a drastic way. Therefore, it is essential to assess the mental health of the population due to situations like the COVID pandemic or any other future such events affecting the population. Similarly, some precautionary measures like online mental health services should be taken by the health ministry to make the population not only physically healthy but also mentally sound and fit.

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