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Anxiety, perceived mental healthcare need and coping strategies regarding COVID-19 pandemic among pre-university students at Bangalore: a cross-sectional study

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ABSTRACT

Background: Although the COVID-19 pandemic has declined, cases still occur in some countries, continuing to cause concern. This situation affects not only health but also academic progress especially among students. Public health measures such as social distancing, while necessary, have contributed to isolation, stress and anxiety, thereby significantly impacting global mental health. To assess the impact of the COVID-19 pandemic on anxiety, coping strategies and perceived mental health care needs among pre-university students.

Methods: An institutional-based descriptive cross-sectional web survey was conducted in May to June 2020 among 30 pre-university students selected through non-probability convenience sampling. Students with internet access who were willing to participate were included, while those who were seriously ill or unable to cooperate were excluded. Data were collected online using Google Forms with a semi-structured questionnaire.

Results: The results showed that the majority of pre-university students, 63.3% (n=19), demonstrated a high level of coping strategies, while 36.7% (n=11) had a moderate level. The overall mean score was 52.5 with a standard deviation of 5.8. No significant association was found between the levels of anxiety, perceived mental health care needs and coping strategies related to the COVID-19 pandemic with their selected demographic variables. **Conclusions:** Our study revealed that most pre-university students experienced high anxiety, with equally high perceived mental health care needs and coping strategies. To support psychological adaptation, students should have access to programs like seminars and team-building activities. Adopting proper coping methods, stress management skills and international guidelines can help mitigate stress and anxiety.

Keywords: COVID-19, Coping strategies, Health anxiety, Lockdown, Pandemic, Perceived stress, Pre-University students

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INTRODUCTION

A novel corona virus named '2019-nCov or 2019 novel corona virus or COVID-19 by the world health organization was first found in Wuhan city, Hubei village China. On 8 January, 2020 the pathogen causing this form of pneumonia was identified as the newest member of the corona virus family confirmed to cause disease in human.1 In India Kerala marked the first case of corona virus in January 2020 with a patient who had travel history from Wuhan.² India has seen some of the highest number of confirmed cases in the world. The covid-19 pandemic has thrown natural life out of gear across the globe. This has led to wide-spread gloom and anxiety across the community. The outbreak of COVID-19 has affected the day-to-day life of people across the world and is showing down the global economy.3 The common symptoms of the Covid-19 are the cough, high fever, sore throat, fatigue and breathlessness, some of cases reported to the pneumonia also with multi-organ dysfunction. It is found that the incubation period for the infection is 2-14 days which is usually 4 days in maximum of cases.4

Along with serious health problem leading to an alarming number of deaths over a very short time, the world is also seeing a staggering rising COVID-19 linked depression, anxiety, violence and suicidal tendencies across the different community.3 It appears that in India the lockdown effects the education system differently with regards to their sex, profession, socio economic status or their residing place. Students were experiencing heightened depression and anxiety.⁵ COVID-19 has caused significant distress around the globe. Apart from the evident physical symptoms in affected cases, it has serious damage to public mental health. University student may constitute a particularly vulnerable population for mental health problem in light of challenges commonly associated with transitions to adulthood and the frequent economic and material difficulties of this population.

The anxiety can lead to social and behavioral problems poor performance and learning, neglected hygiene, poor self-care practices and low self-esteem. It was reported that around 15% of the students reportedly had moderately severe depression, whereas 18.1% were severely suffering from anxiety.⁶ Mental health is an important part of overall health and well-being. It affects how student think, feel and act, it may also affect how student handle stress related to COVID-19 pandemic state and make choices during emergency. Therefore, this study aimed to assess the level of anxiety, perceived mental health care and coping strategies among preuniversity students.

METHODS

An institutional based cross-sectional online survey was undertaken. A total of 30 pre-university students between the age group of 16 to 18 years were selected using non-

probability convenience sampling technique who were willing to participate in the study. Data collection instrument was developed by the investigator and validity and reliability of the tools were done by the help of nursing professors and statistician. The demographic data consists of thirteen items such as age in years, Gender, Residence, Religion, Monthly family income, Selfperceived health status, Health problems, Risk factors (responsible for your health problems), Current psychiatric illness, Previous psychiatric illness, Live with an individual aged above 60 years and Which situation do you think COVID-19 mostly affects and Source of information about COVID-19. Furthermore, anxiety related questions contained 20 items, perceived mental health care need contained 5 items and coping strategies contained 15 items.

Ethical committee approval was taken from the concerned authority. To get the data a Google forms were established containing all the tools with a consent form included to it. The link of the questionnaire was sent through e-mail and What's App and investigator used the telephone calls to reach the samples. Frequency, Percentage, mean, mean percentage and standard deviation was used to explain the demographic variables and compute the scores. Paired' test was used to compare the scores and Chi-square (χ 2) test was used to study the association between scores with selected demographic variables. The significant findings are expressed in the form of tables and figures.

RESULTS

The Table 1 depicts the demographic and perceptual profile of 30 respondents regarding their background and perspectives related to health and the COVID-19 pandemic. The majority of the participants (60%) fall within the 18–19 age group, while 40% are aged 16–17. Males slightly outnumber females, accounting for 53.3% of the sample. Regarding their place of residence, 46.7% live in rural areas, 33.3% in urban settings and 20% in semi-urban regions.

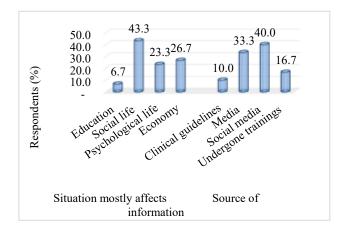


Figure 1: Classification of respondents by situation mostly affects and source of information.

All respondents identified as Hindu, with no representation from other religious groups. In terms of economic background, nearly half (46.7%) of the participants report a monthly family income of Rs. 20,000 or less, while 43.3% fall in the Rs. 20,001–35,000 range and only 10% earn between Rs. 35,001–50,000. All respondents rated their health as "healthy," with none identifying as "very healthy" or suffering from chronic illnesses such as diabetes or hypertension.

However, all reported having some unspecified health problems. Importantly, none of the respondents reported having current or past psychiatric illnesses. When considering risk factors for these health issues, a sedentary lifestyle was the most cited cause (70%), followed by family history (23.3%) and alcoholism (6.7%). A significant proportion (63.3%) reported living with individuals aged over 60, which could influence their health perceptions and behavior during the pandemic. The respondents were also asked about which aspect of life they believed COVID-19 had impacted most. Social life topped the list at 43.3%, followed by economic impact (26.7%), psychological effects (23.3%) and disruptions to education (6.7%).

As for the sources of information about COVID-19, the most common was social media (40%), followed by media (33.3%), training sessions (16.7%) and clinical guidelines (10%). This indicates a heavy reliance on informal or non-academic sources for information, which may affect the accuracy of their knowledge and their behavior during health crises. The Table 2 depicts the anxiety levels among the 30 respondents reveals that over half (56.7%) experienced a high level of anxiety, scoring above 68% on the anxiety scale. Meanwhile, 43.3% reported moderate anxiety levels, scoring between 34-67%. Notably, none of the participants fell into the low anxiety category (≤33%). This indicates that all respondents experienced some degree of anxiety, with a significant portion experiencing it at a high level, suggesting a notable mental health concern within the group.

The Table 3 reflects respondents' psychological and behavioral responses to the COVID-19 pandemic across a variety of situations. A significant portion of participants reported moderate to strong emotional and behavioral reactions. For instance, nearly 40% frequently thought about the pandemic and 36.6% showed a somewhat neutral stance, while only a few (3.3%) felt strongly about it. Paranoia about contracting the virus was evident, with over 36% feeling moderately to highly paranoid. Preventive behaviors were widely adopted: 56.7% avoided partying, 40% avoided social contact and 46.7% avoided large gatherings. Similar caution was observed in daily habits, with 46.7% avoiding food purchases in public spaces. Social interaction around COVID-19 was mixed 43.3% occasionally discussed it with friends, while 33.3% rarely or never did. Sleep disturbances were common, with 80% experiencing difficulty sleeping due to COVID-related worries. Media and social media significantly impacted emotions, with 66.7% affected by content on news platforms and 66.7% by social media posts. Fear-driven behaviors like hoarding essentials (46.7%), using masks without symptoms (70%) and frequent hand hygiene (70%) were prevalent. About half the respondents (46.7%) expressed concern for themselves and loved ones. While 43.3% reported feeling insecure about their education, 43.3% also believed they adjusted well to the situation. Notably, 60% considered themselves emotionally strong, suggesting a degree of resilience amidst the stressors of the pandemic. Overall, the data reveals a population that is cautious, emotionally reactive and highly influenced by the media, yet showing signs of adaptability and strength.

The Table 4 depicts the perceived stress levels during the COVID-19 pandemic shows that a majority of respondents (60%) experienced a high level of perceived stress, scoring above 68% on the assessment scale. Another 40% reported moderate stress levels, while none of the participants fell into the low-stress category (≤33%). This indicates that all respondents experienced some degree of stress, with a significant portion experiencing it at a high intensity. These findings highlight a considerable psychological impact of the pandemic, reflecting widespread emotional strain and the need for mental health support among the group.

The data on coping strategy levels indicates that a majority of the respondents (63.3%) demonstrated a high level of coping, scoring above 68% on the coping assessment scale. Another 36.7% showed a moderate level of coping ability, while none were categorized under low coping (≤33%). This suggests that despite the high levels of anxiety and stress reported among the participants, most were able to manage their emotional and psychological responses effectively through strong coping mechanisms. The presence of moderate coping in the remaining participants' further highlights that all respondents had at least some capacity to deal with the challenges posed by the COVID-19 pandemic.

The chi-square analysis shows no significant relationship between age, gender and coping strategy levels. Among age groups, 16-17 years old had more high coping levels, while 18-19 years old had more moderate coping, but the results were not statistically significant (p>0.05). For gender, both males and females showed a mix of moderate and high coping levels, with no significant association found (p>0.05). Thus, age and gender do not significantly influence coping strategies in this sample. The chi-square analysis shows no significant relationship between age, gender and coping strategy levels. Among 16-17 years old, most had high coping, while 18-19 years old had a mix of moderate and high coping, but the results were not significant (p>0.05). For gender, males had more high coping levels, while females had more moderate coping, but again, there was no significant association (p>0.05). Thus, age and gender do not significantly affect coping strategies. The chi-square analysis shows no significant relationship between age, gender and coping strategy levels. Among 16-17 years old, most had high coping, while 18-19 years old had a mix of moderate and high coping, with no significant

association (p>0.05). For gender, males had higher coping, while females had a balanced mix of moderate and high coping, but again, no significant difference (p>0.05). Thus, age and gender do not significantly affect coping strategies.

Table 1: Socio demographic characteristics and its frequency and percentage of pre-university students (n=30).

G	Characteristics	Catagoriu	Respondents	
S. no.	Characteristics	Category	N	%
1.	Age group (in years)	16-17	12	40.0
1.	Age group (iii years)	18-19	18	60.0
2.	Gender	Male	16	53.3
۷.	Gender	Female	14	46.7
		Rural	14	46.7
3.	Residence	Semi urban	6	20.0
		Urban	10	33.3
		Hindu	30	100.0
4.	Religion	Muslim	0	0.0
4.	Kengion	Christian	0	0.0
		Others (Buddhist, Parsi etc)	0	0.0
		≤Rs.20,000	14	46.7
5.	Family income/month	Rs.20,001-35,000	13	43.3
		Rs.35,001-50,000	3	10.0
6.	Calf managing d has 1th status	Very healthy	0	0.0
0.	Self-perceived health status	Healthy	30	100.0
		Diabetes Mellitus	0	0.0
7.	Health problems	Hypertension	0	0.0
		Others	30	100.0
8.	Current psychiatric illness	Yes	0	0.0
0.	Current psychiatric finiess	No	30	100.0
9.	Previous psychiatric illness	Yes	0	0.0
9.	Previous psychiatric filmess	No	30	100.0
	Risk factors (Responsible for	Family history	7	23.3
10.	health problems)	Alcoholism	2	6.7
	nearth problems)	Sedentary lifestyle	21	70.0
11.	Live with individual aged above	Yes	19	63.3
11.	60 years	No	11	36.7
		Education	2	6.7
12.	Situation do you think COVID-19	Social life	13	43.3
14.	mostly affects	Psychological life	7	23.3
		Economy	8	26.7
		Clinical guidelines	3	10.0
13.	Source of information about	Media	10	33.3
13.	COVID-19	Social media	12	40.0
		Undergone trainings	5	16.7

Table 2: Classification of respondents based on anxiety level.

A my intro loved	Catagory		Respondents	
Anxiety level	Category	N	0/0	
Low	≤33% Score	0	0.0	
Moderate	34-67% Score	13	43.3	
High	>68% Score	17	56.7	
Total		30	100.0	

Table 3: Statement wise responses on anxiety aspects of respondents (n=30).

S.	Stataments	Resp	onse			
no.	Statements	N	0	ST	0	A
1	Think about COVID-19 Pandemic	20.0	33.3	36.6	6.6	3.3
2	Feel paranoid about contacting the novel Corona Virus infection?	20.0	20.0	23.3	23.3	13.4
3	Avoid partying	6.6	1.0	13.3	13.3	56.7
4	Avoid social contact	0.0	10.0	26.7	23.3	40.0
5	Avoid large meetings and gatherings?	3.3	10.0	30.0	10.0	46.7
6	Avoid ordering food online and avoided. Buying food in public markets and food service establishments?	6.7	13.3	20	13.3	46.7
7	You have talked to your friends about the COVID-19 Pandemic	3.3	26.7	43.3	20.0	6.7
8	You have had difficulty sleeping by being worried about the COVID-19 pandemic?	33.3	46.7	6.7	10.0	3.3
9	Feel affected by the posts on social media about corona Virus infection	20.0	13.3	36.7	26.7	3.3
10	Feel affected by the talks of COVID-19 Pandemic on the newspaper and news channels	6.6	16.7	43.3	16.7	16.7
11	Feel the need to buy and stock all essentials at home?	3.3	6.7	43.3	26.7	20.0
12	Get afraid if anyone in your social circle reports of being sick?	3.3	6.7	43.3	26.7	20.0
13	Use a mask without any apparent signs and symptoms of the infection?	3.3	6.7	20.0	36.7	33.3
14	Feel the need to use the sanitizer and gloves?	0.0	0.0	36.7	30.0	33.3
15	Feel the need to constantly wash your hands?	0.0	3.3	26.7	26.7	43.3
16	Feel worried about yourself and close ones regarding the spread of Novel COVID-19 Viral Infection?	13.3	10.0	30.0	26.7	20.0
17	Does the idea of novel corona viral infection. Freak you out leading to inappropriate behaviors with anyone?	16.6	10.0	30.0	26.7	16.7
18	Often you feel insecure about your education due to COVID-19?	6.7	16.7	43.3	23.3	10.0
19	Often you adjust to the COVID-19 pandemic situation and deal with the change?	0.0	16.7	40.0	26.6	16.7
20	Often you believe yourself as a strong personality?	0.0	13.3	26.7	26.7	33.3

Table 4: Classification of respondents on level of perceived mental health care need (n=30).

Donasiyad layal	Catagoni	Respondents	
Perceived level	Category	N	%
Low	≤33% score	0	0.0
Moderate	34-67% score	12	40.0
High	>68% score	18	60.0
Total		30	100.0

Table 5: Classification of respondent on coping strategy level (n=30).

Coning stuatogy lovel	Cotogowy	Respondents	
Coping strategy level	Category	Number	%
Low	≤33% score	0	0.0
Moderate	34-67% score	11	36.7
High	>68% score	19	63.3
Total		30	100.0

Table 6: Association score between age, gender and anxiety level of pre-university students (n=30).

Demographic variables	Categories	Low	Moderate	High	Chi-square value	Degree of freedom	P value	Inference
Age (years)	16-17	0	3	9	2.74	1	>0.05	NS
	18-19	0	10	8				IND
Gender	Male	0	7	7	0.49	1	>0.05	NC
	Female	0	6	10 0.48	1	~0.03	NS	

NS=not significant.

Table 7: Association scores between age, gender and perceived mental care need of pre-university students (n=30).

Demographic variables	Categories	Low	Moderate	High	Chi-square value	Degree of freedom	P value	Inference
A 50 (20020)	16-17	0	4	8	0.37	1	>0.05	NS
Age (years)	18-19	0	8	10				
Gender	Male	0	4	12	3.21	1	>0.05	NC
	Female	0	8	6		1	>0.05	NS

NS=not significant.

Table 8: Association scores between age, gender and coping strategy level pre-university students (n=30).

Demographic variables	Categories	Low	Moderate	High	Chi-square value	Degree of freedom	P value	Inference
A ()	16-17	0	4	8	0.10	1	>0.05	NS
Age (years)	18-19	0	7	11				
Gender	Male	0	4	12	2.01	1	>0.05	NC
	Female	0	7	7		1	>0.05 N	NS

NS=not significant.

DISCUSSION

The purpose of our study was to narrow down the level of anxiety, perceived mental health care need and coping strategies regarding the COVID-19 pandemic among pre university students. Young adult students were chosen as the study group, because the physical and mental Health, as well as the social mood of this target group, reflects the level of well-being, social stability and degree of satisfaction with life in the greater society.

As students are distinguished and characterized by distinctiveness, a sense of in-group community and a tightly organized group and the strictness and disproportionality of the consequences of anti-pandemic measures have affected them greatly compared to other age and social groups.

A total of 30 pre-university students between the age group of 16 to 18 years were participated in the study. The study results show majority 63.3% (19) Pre university students are having high level of coping strategy and 36.7% (11) have moderate level of coping strategy. The overall findings of the study indicate that majority 56.7% (17) of students has high level of anxiety regarding COVID-19 pandemic and 43.3% (13) of students are having moderate level of anxiety. The overall mean score obtained was 67.9 with standard deviation of 6.2. Majority 60% (18) of students perceived high level of mental health care need and 40% (12) of moderate level. The overall mean score obtained was 3.67 with standard deviation of 0.8.

Regarding to level of the coping strategy, majority 63.3% (19) Pre university students are having high level of coping strategy and 36.7% (11) have moderate level of coping strategy. The overall mean score obtained was 52.5 with standard deviation of 5.8. The anxiety levels among the 30 respondents reveals that over half (56.7%)

experienced a high level of anxiety, scoring above 68% on the anxiety scale. Meanwhile, 43.3% reported moderate anxiety levels, scoring between 34–67%.

Notably, none of the participants fell into the low anxiety category (≤33%). This indicates that all respondents experienced some degree of anxiety, with a significant portion experiencing it at a high level, suggesting a notable mental health concern within the group.

Perceived stress levels during the COVID-19 pandemic shows that a majority of respondents (60%) experienced a high level of perceived stress, scoring above 68% on the assessment scale. Another 40% reported moderate stress levels, while none of the participants fell into the low-stress category (≤33%). This indicates that all respondents experienced some degree of stress, with a significant portion experiencing it at a high intensity. These findings highlight a considerable psychological impact of the pandemic, reflecting widespread emotional strain and the need for mental health support among the group.

On coping strategy levels indicates that a majority of the respondents (63.3%) demonstrated a high level of coping, scoring above 68% on the coping assessment scale. Another 36.7% showed a moderate level of coping ability, while none were categorized under low coping (≤33%). This suggests that despite the high levels of anxiety and stress reported among the participants, most were able to manage their emotional and psychological responses effectively through strong coping mechanisms.

The presence of moderate coping in the remaining participants further highlights that all respondents had at least some capacity to deal with the challenges posed by the COVID-19 pandemic. The overall mean score obtained was 52.5 with standard deviation of 5.8.

However, there was no significant association found between level of anxiety, perceived mental health care need and coping strategies regarding COVID-19 pandemic among Pre-University students with their selected demographic variables. This study has naturally certain limitations that should be acknowledged and considered. Those are typical for online surveys. The results are also limited to students and may not be applied to other groups or the general population. We collected data using self-reported questionnaires that are commonly used; however, they may not provide a complete picture of mental health. The study's findings do not represent the overall impact of COVID-19 on mental health.

CONCLUSION

The COVID-19 pandemic crisis has imposed a significant burden on the physical and psychological wellbeing of humans. On the basis of findings, the investigators concluded that most of Pre university students have high level of anxiety, their perceived mental health care needs is also high and majority of the students are having high level of coping strategy.

There was no significant association found between level of anxiety, perceived mental health care need and coping strategies regarding COVID-19 pandemic among Pre University students with their selected demographic variables. The level of anxiety and stress varies according to the duration of the disease which significantly affects the choice of coping strategies. There was a reciprocal correlation between exposure to COVID-19 among students and Anxiety, levels of perceived stress and coping activities.

To promote psychological adaptation, pre-university students should have access to programs such as seminars and team-building activities. Additionally, implementing a COVID-19 disease scale management strategy is necessary and also by following and adhering to the international recommendations, adopting proper coping methods and equipping oneself with the required coping and stress management skills, the associated high levels of perceived stress and anxiety could be mitigated. Public education initiatives should focus on coping strategies, effective disease prevention methods and practical resources for assistance.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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