

# Attitude And Perception Of Students During Pandemic Times: A Cross-Sectional Study

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## Abstract

### Background:

During COVID-19, a lot of changes have been seen by students, whether it is their studies, livelihood or the way of life, which has affected them emotionally. They had to see a lot of changes academically and socially too. Due to the lack of training in conducting online classes, the faculty also has to face a lot of problems. Most importantly, internet connectivity was a big challenge to conduct online classes. To make themselves engaged, most of the students go online to watch videos, play games and interact with their friends. They have almost lost connectivity with the nature and the greens.

### Methodology:

A cross-sectional study was conducted for 20 days (18 September 2021 to 7 October 2021). The study location was Rajiv Gandhi University of Knowledge Technologies (RGUKT), IIIT Nuzvid, Krishna District, Andhra Pradesh. The population for the study was the students (63.4% female; 36.6% male) of the RGUKT, IIIT Nuzvid. For maximum variability in population  $p = q = 0.5$ , where  $q = 1 - p$ , margin of error  $e = 4.8\% = 0.048$ ,  $N = 6544$  as per the students' strength in RGUKT IIIT Nuzvid in 2021, and at 96% of confidence level and with an error margin of 4.8%, and with  $z$  value = 2.05 at 4% of significance, the sample size is  $n = 478$ . Snowball sampling technique was used for the study. As the margin of error is 4.8%, all the percentages of findings in the study will be varied by  $\pm 4.8\%$ .

A Google Form was developed for the study to collect responses from the students regarding their attitude and perception during pandemic times and platforms like email and WhatsApp were used to send its link to the students to opt for the study. Statistical testing tools used were Cronbach alpha for reliability, chi-square test for association/relation, Kruskal-Wallis H test for testing the significant difference between the medians of samples, and Cramer's V for the measure of association between the samples. IBM SPSS 25 was used for statistical analysis.

### Conclusion:

Those students having COVID-19 recovered relations are well informed of the COVID-19 symptoms, medications and precautions (SMP). It is found from the study that awareness and information will help the students to tackle the pandemic situation. Those who are aware of the COVID-19 also have global awareness due to the information they get worldwide. 84.2% of the students who do not have the fear of getting jobs also do not have the fear of getting COVID-19. 58.2% of the students who are having the fear of not getting jobs are mostly online to play games, listen to music, interact with friends and watch movies. Of the students, 82.9% said in-person communication is better and they miss the interactions with the greens and the casual walk outside. 42.9% of the female students opined the country has to cope with health crisis. 33.7% of the male students felt that the country has to cope with employment crisis.

**Keywords:** attitude; perception; emotions; social interactions; online education; pandemic.

## 1. Introduction

During COVID-19, a lot of changes have been seen by students, whether it is their studies, livelihood or the way of life, which has affected them emotionally. They had to see a lot of changes academically and socially

too. Online classes, which are yet to be used broadly, were launched hurriedly in March 2020. The technology and tools for online classrooms, which are not yet in use academically, are also imposed on the students due to the pandemic. Lacking the training in conducting online classes, the faculty also faced a lot of problems. Most importantly, internet connectivity became a big challenge to conduct online classes.

Due to the pandemic and resultant lockdowns, students of the age group 17-21, who generally enjoy interactions with friends, were forced to stay home and with the family. They missed the interactions with their friends and faculty very badly. To make themselves engaged, most of them went online to watch videos, play games and interact with their friends and as a result they almost lost connectivity with the nature. So, some of them felt depressed and lonely. There is health crisis, employment crisis, financial and emotional crisis globally due to pandemic. Under these circumstances, the study is carried out to analyse the attitude and perception of students during pandemic times.

## 2. Review of Literature

According to Elsayed et al. (2021), while there exists no difference in the knowledge, attitude, and practices between genders among medical students in Egypt, female students are more optimistic when it comes to faith in Egypt's ability to overcome the pandemic situation.

Deblina et al. (2020) identified conditions like high anxiety levels, sleep difficulties, paranoia about acquiring COVID-19 infection and distress in the Indian population and suggested that awareness programmes on mental health issues of people during COVID-19 need to be intensified.

Mohammed et al. (2020) found that the knowledge of Saudi residents concerning safe practices during the pandemic was high. Their knowledge score was associated with their attitude and practices scores.

Majority of Pakistanis learnt about COVID-19 through social media and they thought that everyone was susceptible to the virus (Sammina Mohamed et al., 2020). Most of the Pakistani students felt that e-learning had little impact on their learning. They also preferred face to face teaching. Mobile was mostly used for e-learning (Abbasi et al., 2020).

Due to compulsory lockdowns, most Nigerians and Egyptians adapted the social media platforms and the internet was the main source of information (Hager et al., 2020).

Alireza et al. (2020) stated, "Despite the pandemic crisis, students showed enthusiasm towards learning in schools. They suggest that a strategic plan should be designed to find the weak points of the educational systems."

In a study conducted among Polish students by Michal Baczek et al. (2021), the following were found as the key benefits of online learning: the opportunity to stay at home; constant access to online information; learning at their speed; and comfortable surroundings. Regarding the different learning methods, there was no statistical difference between face-to-face and online learning. In terms of increasing skills and social competencies, e-learning was found to be less effective than face-to-face learning. When compared to traditional classes, students felt that online classes were less lively even though e-learning was described as enjoyable.

In a study by Mohammed Arshad et al. (2021), the popularity of e-learning among Indian students was seen. They were inclined towards online learning tools to interact with each other and the educators as well. However, Muthuprasad et al. (2021) state that "Broadband connectivity issues in rural areas makes [sic] it a challenge for students to make use of online learning initiatives."

In a study, Yassine (2021) observed that there is an immense potential future for e-learning platforms in higher education institutions. Serhan (2020), in a study found that the use of Zoom was viewed negatively by students, who believed that it had a detrimental impact on their learning experience and motivation to learn.

Ryan Michael and Gil (2021) in their study stated that e-learning was perceived by nursing students to be impersonal and lacking in emotion; it also allowed fewer student-teacher interactions. Maison (2021), in a study found that the students with a steady internet connection appeared to have a positive attitude toward e-learning.

E-learning activities are extremely adaptable because they may be accessed and completed at any time and from any location. E-learning allows the instructor to give students access to additional resources linked to the learning subject. It is quite beneficial in terms of improving the learning quality.

The utility of Google Meet is governed by its simplicity of use, and schools and universities have been encouraged to focus on these qualities (Al-Marroof et al., 2020). The relation between total scores of attitudes and the need for training on how to receive online courses was marginally statistically significant (Mohammad et al., 2020).

Olum et al. (2020) stated that high internet charges, inadequate internet connectivity, lack of technical abilities in using e-learning platforms, and difficulties in accessing electricity are all typical impediments to students' access to e-learning.

Hina (2020) suggested that health care personnel can use social media campaigns to teach students and populations about disease prevention and rapid transmission since these efforts have proven to be an effective source of information. It was advised that increased emphasis be placed on using social media resources to promote public health education.

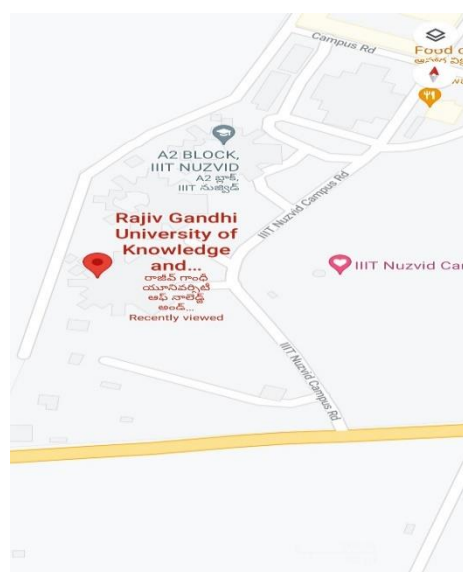
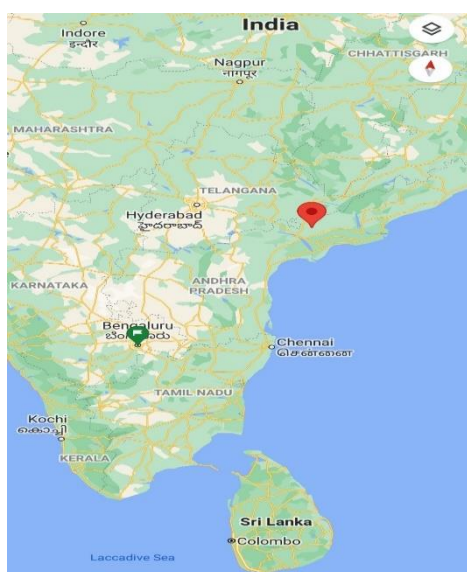
According to Erick et al. (2020), students supported the COVID-19 vaccine. Due to technological and financial constraints, students were hesitant to utilise online classes.

### 3. Research Methodology

This cross-sectional study was conducted for 20 days (18 September 2021 to 7 October 2021) at Rajiv Gandhi University of Knowledge Technologies (RGUKT), IIIT Nuzvid, Krishna District, Andhra Pradesh, India. Students of the RGUKT, IIIT Nuzvid, formed the population for the study. The sample size was determined by using Cochran's formula

$$n = n_0 / (1 + ((n_0 - 1) / N)) \text{ where, } n_0 = \left( \frac{z^2 pq}{e^2} \right)$$

For maximum variability in population  $p = q = 0.5$ , where  $q = 1 - p$ , margin of error  $e = 4.8\% = 0.048$ ,  $N = 6544$  as per the students' strength in RGUKT, IIIT Nuzvid in 2021, and at 96% of confidence level and with an error margin of 4.8%, and with  $z$  value = 2.05 at 4% of significance, the sample size ( $n$ ) is 478. Snowball sampling technique was used for the study.



The Snowball sampling technique is used for the study to carry out statistical testing.

**SOURCE:** Google map for the location

RGUKT, IIIT Nuzvid, India.

**SOURCE:** Google map depicting premises of

RGUKT, IIIT Nuzvid, India.

A Google Form was developed for the study to analyse the attitude and perception of the students during pandemic times. and platforms like email and WhatsApp were used to send its link to the students to opt for the study. Statistical testing tools used were Cronbach alpha for reliability, chi-square test for association/relation, Kruskal-Wallis H test for testing the significant difference between the medians of samples, and Cramer's V for the measure of association between the samples.

After conducting the pilot study, it was realized that the five-point Likert scale (1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, and 5: strongly agree) that was developed to assess how the students felt during the lockdown needed to be converted into a nominal scale (yes, no and maybe). As the technique used was snowball sampling, the effective response rate could not be calculated. The statistical testing tools that are used include: Cronbach alpha for reliability (the internal consistency for  $\alpha > 0.9$  is excellent, between 0.8 and 0.9 is good, 0.7 and 0.8 is acceptable, between 0.6 and 0.7 is questionable, between 0.5 and 0.6 is poor and  $< 0.5$  is unacceptable), chi-square test for association/relation, Kruskal-Wallis H test for the significant difference between the medians of sample of 478, Cramer's V for measuring the association between the participants ( $V > 0.25$  is very strong,  $> 0.15$  is strong,  $> 0.1$  is moderate,  $> 0.05$  is weak and  $> 0$  is very weak, according to the study by Haldun (2018). The maximum accepted probability of a Type II error should be  $\beta = 0.2$  (Cohen, 1988). IBM SPSS 25 was used for statistical analysis.

#### 4. Objectives of the Study

The study was mainly conducted to find out the attitude and perception of students by using a four-factor approach. COVID-19 The following objectives are considered as the factors studied.

- i. To assess the socio-economic condition of the students of RGUKT, IIIT Nuzvid.
- ii. To analyze the general information regarding the COVID-19 pandemic given by the students of RGUKT, IIIT Nuzvid.
- iii. To analyze the attitude of the students of RGUKT, IIIT Nuzvid, towards online education during the pandemic.
- iv. To find out how the students of RGUKT, IIIT Nuzvid, interacted socially and with whom during the pandemic.
- v. To analyze the emotions of the students of the RGUKT, IIIT Nuzvid.

#### 5. Problem Statement and Hypotheses

As the study has been conducted to analyze the attitude and perception of students by using the four factors mentioned above, the following null hypotheses are tested statistically.

H<sub>01</sub>: There is no association between being informed about the COVID-19 SMP (SMP) and COVID-19 recovery among relatives.

H<sub>02</sub>: There is no significant difference between being informed about the COVID-19 SMP and feeling that COVID-19 can be tackled with informed precautions.

H<sub>03</sub>: There is no significant difference between being informed about the COVID-19 SMP and the feeling that COVID-19 has made us aware of the necessity of following hygiene and focus on health.

H<sub>04</sub>: There is no significant difference between being informed about the COVID-19 SMP and the feeling that COVID-19 has changed the world as a whole.

H<sub>05</sub>: There is no relation between the fear of getting COVID-19 and the fear of not getting a job.

H<sub>06</sub>: There is no relation between fear of not getting jobs and being mostly online during the lockdown period to

play games, listen to music, interact with friends, and watch movies.

H<sub>07</sub>: There is no relation between the feeling about virtual communication and missing interacting with the nature and the casual walk outside.

H<sub>08</sub>: There is no difference between genders regarding the crisis our country has to cope with.

## 6. Research Findings

### • SOCIO-ECONOMIC CONDITIONS OF THE STUDENTS UNDER STUDY

**TABLE 1:** Gender of the students under study and its central tendency

Q1. Gender		Central tendency
Gender	Frequency	Mode
Female	303 (63.4%)	Female
Male	175 (36.6%)	
<b>Total</b>	<b>478 (100%)</b>	

**SOURCE:** Author.

**TABLE 2:** Age of the students under study, and its central tendency and dispersion

Q2. Age (in years)		Central tendency	Dispersion
Age	Frequency	Mean	Standard deviation
17	51 (10.7%)	18.73	1.111
18	155 (32.4%)		
19	173 (36.2%)		
20	76 (15.9%)		
21	23 (4.8%)		
Total	478 (100%)		

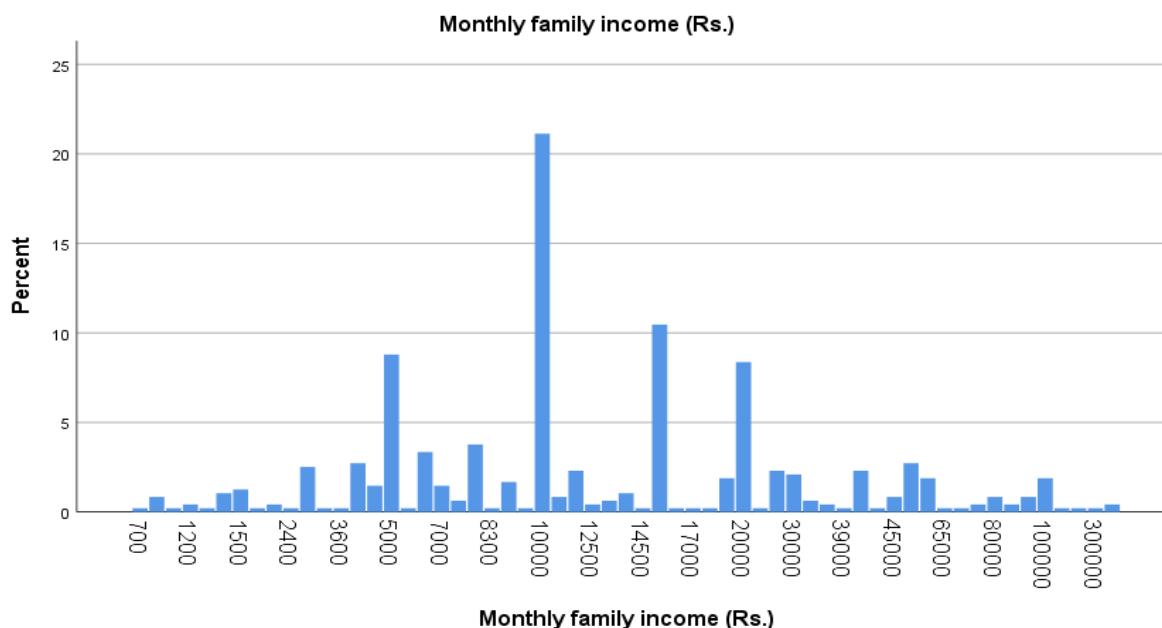
**SOURCE:** Author.

**TABLE 3:** Educational level of the students under study.

Q3. Education		Central tendency
Education	Frequency	Mode
B. Tech	332 (69.5%)	B. Tech
Inter	146 (30.5%)	
Total	478 (100%)	

**SOURCE:** Author.

**CHART 1:** Monthly family income of the students under study



**SOURCE:** Author.

For conducting statistical analysis at 96% confidence level and 4.8% of error margin, 478 samples of students were taken in RGUKT, IIIT Nuzvid, which comprises 63.4% female and 36.6% male students (Table 1). Their age was between 17 and 21 years with 36.2% of the students 19 years old and 32.4% students 18 years old (Table 2). 69.5% of the students were studying B. Tech and the rest were in the Intermediate (Table 3). The monthly family income of 21.1% of the students was Rs.10,000 (Chart 1).

**TABLE 4:** Monthly family income of the students under study, and its central tendency and dispersion.

Q4. Monthly family income (Rs.)	Central tendency	Dispersion
	Mean	Std. Deviation
Monthly family income (Rs.)	21,455.89	40,628.583

**SOURCE:** Author.

**FACTOR 1: General information relating to COVID-19**

**TABLE 5:** general information relating to COVID-19 given by the students under study, and its central tendency

FACTORS	ITEMS	Frequency (%)	Central tendency
<b>S1. Are you well informed about the COVID-19-SMP?</b>	Yes	348 (72.8%)	Yes
	No	67 (14%)	
	Maybe	63 (13.2%)	
<b>S2. Are you COVID-19 recovered one?</b>	Yes	47 (9.8%)	No
	No	431 (90.2%)	
<b>S3. Do you have any COVID-19 death among</b>	Yes	86 (18%)	No

relations?	No	361 (75.5%)	
	Don't know	31 (6.5%)	
<b>S4. Do you have any relative who recovered from COVID-19?</b>	Yes	215 (45%)	No
	No	243 (50.8%)	
	Don't know	20 (4.2%)	
<b>S5. Do you have the fear of getting COVID-19?</b>	Yes	64 (13.4%)	No
	No	309 (64.6%)	
	Maybe	105 (22%)	
<b>S6. Do you have the fear of not getting a job during/after the pandemic?</b>	Yes	213 (44.6%)	No
	No	158 (33.1%)	
	Maybe	107 (22.4%)	
<b>S7. What is the crisis do you think that our country needs to cope with after the pandemic?</b>	Financial crisis	149 (31.2%)	Health crisis
	Employment crisis	125 (26.2%)	
	Emotional crisis	27 (5.6%)	
	Health crisis	177 (37%)	

**SOURCE:** Author.

In terms of general information relating to COVID-19, 72.8% of the students are well informed about COVID-19 SMP; 9.8% of them are COVID-19 recovered ones; 18% of them have had a COVID-19 death among relations; 45% of them have a COVID-19 recovered relative; 64.6% do not have the fear of getting COVID-19 while 13.4% have the fear of getting COVID-19; 44.6% have the fear of not getting a job during/after the pandemic; 37% of them think that our country needs to cope with health crisis while 31.2% of them think it is the financial crisis that is to be coped up with (Table 5).

**TABLE 6:** Attribute ratings on a Likert scale given by the students under study, and its central tendency and dispersion.

<b>S8. Attributes</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>	<b>Central tendency</b>	<b>Dispersion</b>	
<b>Five-point Likert scale</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Median</b>	<b>Percentiles</b>	
<b>I feel the media should report news on COVID-19 responsibly</b>	34 (7.1%)	27 (5.6%)	101 (21.1%)	218 (45.6%)	98 (28.5%)	4.00 (agree)	25	3.00 (neither agree nor disagree)
							50	4.00 (agree)
							75	4.00 (agree)
<b>I feel COVID-19 disturbed our lives</b>	44 (9.2%)	18 (3.8%)	56 (11.7%)	118 (24.7%)	242 (50.6%)	5.00 (strongly agree)	25	4.00 (agree)
							50	5.00 (strongly agree)
							75	5.00 (strongly agree)
<b>I feel COVID-19 could be tackled with informed precautions</b>	34 (7.1%)	30 (6.3%)	105 (22%)	223 (46.7%)	86 (18%)	4.00 (agree)	25	3.00 (neither agree nor disagree)
							50	4.00 (agree)
							75	4.00 (agree)
<b>I feel COVID-19 taught us hygiene and</b>	40 (8.4%)	24 (5.0%)	58 (12.1%)	165 (34.5%)	191 (40.0%)	4.00 (agree)	25	3.00 (neither agree nor disagree)

<b>made us to focus on health</b>						50	4.00 (agree)	
						75	5.00 (strongly agree)	
<b>I feel COVID-19 changed the world as a whole</b>	41 (8.6%)	20 (4.2%)	70 (14.6%)	120 (25.1%)	227 (47.5%)	4.00 (agree)	25	3.00 (neither agree nor disagree)
						50	4.00 (agree)	
						75	5.00 (strongly agree)	

**SOURCE:** Author.

In terms of the what the students feel about the COVID-19 situation, 45.6% of the students agree that the media should report news on COVID-19 responsibly while 28.5% strongly agree with it; 50.6% strongly agree that COVID-19 has disturbed their lives while 24.7% agree for it; 46.7% agree that COVID-19 could be tackled with informed precautions while 22% neither agree nor disagree; 40% strongly agree that COVID-19 taught us hygiene and made us focus on health while 34.5% agree for it; 47.5% strongly agree that COVID-19 changed the world as a whole while 25.1% agree with it (Table 6).

- **Reliability test**

The attributes regarding feelings of students towards the pandemic are studied with a five-point Likert scale (1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, and 5: strongly agree). From the reliability test conducted on these attributes, Cronbach's alpha is 0.908 (> 0.7), which shows that the scale is reliable.

In response to item S9, What measures do you think should our country take post-pandemic to curb unemployment, some of the measures suggested by students include providing skill-based training, employment opportunities, support for self-employment, schemes for the unemployed, no layoffs, starting new companies to create employment opportunities, new notifications and corruption-free recruitments, online interviews and work-from-home jobs.

## Factor 2. Online education

**TABLE 7:** Responses to the factor 'online education' given by the students under study, and its central tendency

FACTORS	ITEMS	Frequency (%)	Central tendency
			Mode
<b>T1. Which device do you use for online classes?</b>	Mobile phone	334 (69.9%)	Mobile phone
	Laptop	20 (4.2%)	
	Tablet	4 (0.8%)	
	Mobile phone and laptop	113 (23.6%)	
	Other combinations	7 (1.5%)	
<b>T2. Which platform is used for taking the classes?</b>	Google Classrooms	442 (92.5%)	Google Classrooms
	Microsoft Teams	2 (0.4%)	
	Google Classrooms and Zoom	29 (6.1%)	
	Google Classrooms and Microsoft Teams	3 (0.6%)	
	Other combinations	2 (0.4%)	
<b>T3. How do you feel about online classes?</b>	happy, can attend classes from anywhere	44 (9.2%)	Not good, unable to understand the classes due to virtual teaching

not good, network issues	116 (24.3%)
not good, unable to understand due to virtual teaching	208 (43.5%)
sad, miss interacting with friends and faculty	110 (23%)

**SOURCE:** Author.

With regard to the factor ‘online education’, 69.9% of the students use mobile phones for online classes while 23.6% use both mobile phones and laptops. 92.5% informed that Google Classrooms are used by their faculty to teach online while 6.1% said Google Classrooms and Zoom were the platforms. 43.5% feel that online classes are not good as they are unable to understand the content due to virtual teaching while 24.3% face network issues (Table 7).

### FACTOR 3: Social interactions

**TABLE 8:** Responses to the factor ‘social interactions’ given by the students under study, and its central tendency

FACTORS	ITEMS	Frequency (%)	Central tendency
<b>U1. Which social media do you use for social interactions?</b>	Email	10 (2.1%)	WhatsApp
	WhatsApp	304 (63.6%)	
	E-mail, LinkedIn, WhatsApp	13 (2.7%)	
	Facebook, WhatsApp	23 (4.8%)	
	E-mail, WhatsApp	81 (16.9%)	
	Facebook, E-mail, WhatsApp	10 (2.1%)	
	Other combinations	37 (7.8%)	
<b>U2. Do you think virtual communication is better than in-person communication?</b>	Yes	54 (11.3%)	No
	No	357 (74.7%)	
	Maybe	67 (14%)	
<b>U3. With whom do you mostly interact using social media?</b>	Friends	411 (86%)	Friends
	Parents	30 (6.3%)	
	Relatives	19 (4%)	
	Strangers	18 (3.8%)	
<b>U4. Do you use the internet more during the pandemic?</b>	Yes	367 (76.8%)	Yes
	No	59 (12.3%)	
	Maybe	52 (10.9%)	

**U5. Do you miss interactions with the nature and the casual walk outside?**

Yes	377 (78.9%)	Yes
No	61 (12.8%)	
Maybe	40 (8.4%)	

**SOURCE:** Author.

With regard to the factor ‘social interactions’, 63.6% of the students use WhatsApp for social interactions while 16.9% use email and WhatsApp. 74.7% feel in-person communication is better. 86% interact with friends using social media while 6.3% interact with their parents. 76.8% use the internet more during the pandemic. 78.95 miss the interactions with the nature (Table 8).

#### **FACTOR 4: Emotions**

**TABLE 9:** Responses to the factor ‘emotions’ given by the students under study, and its central tendency

<b>FACTORS</b>	<b>ITEMS</b>	<b>Frequency (%)</b>	<b>Central tendency</b>
<b>V1. How do you feel during the pandemic?</b>	Happy, got free time to explore various things	118 (24.7%)	Feeling lonely, can't meet anyone as to maintain social distance
	Feeling lonely, can't meet anyone as to maintain social distance	185 (38.7%)	
	Sad, for the restricted lives	175 (36.6%)	
<b>V2. Do you feel that if we lock our fellow creatures up, mother nature will lock us down?</b>	no	31 (6.5%)	Yes
	maybe	32 (6.7%)	
	yes	415 (86.8%)	
<b>V3. Are you happy that you can spend more time with your family?</b>	yes	0 (0%)	Maybe
	no	139 (29.1%)	
	maybe	339 (70.9%)	
<b>V4. Did you invest the time of lockdown to learn something new?</b>	no	171 (35.8%)	No
	maybe	145 (30.3%)	
	yes	162 (33.9%)	
<b>V5. Do you feel depressed due to immobility?</b>	No	183 (38.3%)	No

**V6. Are you mostly online during the lockdown period to play games, listen to music, interact with friends and watch movies?**

maybe	146 (30.5%)	
Yes	149 (31.2%)	
no	103 (21.5%)	Yes
maybe	127 (26.6%)	
yes	248 (51.9%)	

**SOURCE:** Author.

With regard to the factor ‘emotions’, 38.7% of the students feel lonely as they cannot meet with anyone to maintain social distance while 36.6% are sad for their restricted lives. 86.8% feel that if we lock our fellow creatures up, mother nature will lock us down. It is surprising to see that no one felt happy that they for to spend more time with the family with 70/9% not certain about it. 33.9% invested the time of lockdown to learn new things. 31.2% felt depressed due to the imposed immobility. 51.9% have been mostly online during the lockdown to play games, listen to music, interact with friends or to watch movies (Table 9).

**7. Hypothesis testing**

a)  $H_{01}$ : There is no association between being informed about the COVID-19 SMP, and COVID-19 recovery among the relations.

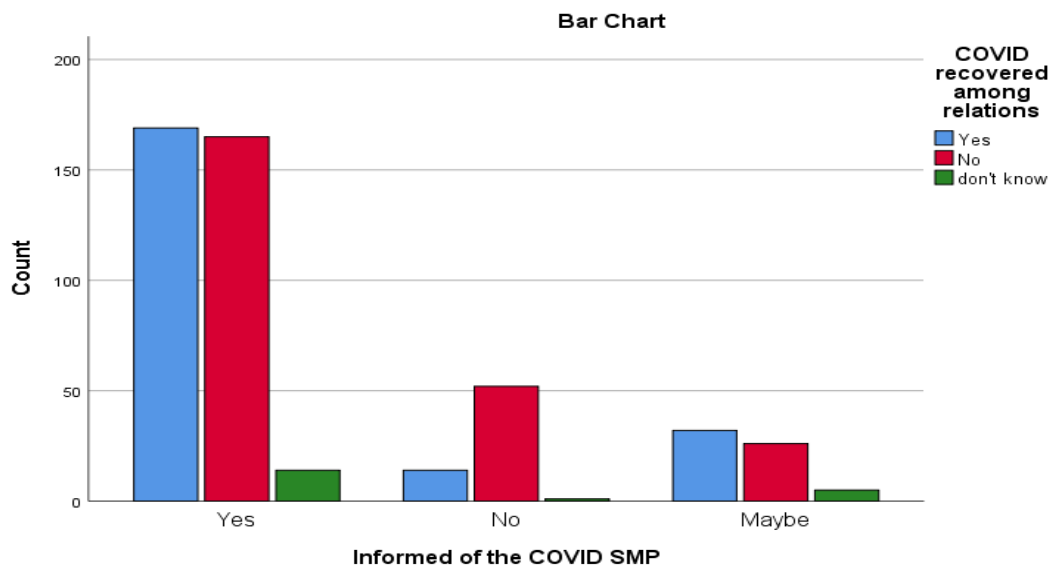
**TABLE 10:** Chi-square test for the variables, informed of the COVID-19 SMP and COVID-19 recovery among the relations

	Value	df	Asymptotic Significance (2-sided)	Cramer’s V Measure of association
Pearson Chi-Square	24.794 <sup>a</sup>	4	.000	0.161
Likelihood Ratio	25.626	4	.000	
Linear-by-Linear Association	1.753	1	.186	
N of Valid Cases	478			

a. 2 cells (22.2%) have expected count less than 5. The minimum expected count is 2.64.

**SOURCE:** Author.

**CHART 2:** Bar chart for informed of the COVID-19 SMP and COVID-19 recovery among relations



**SOURCE:** Author.

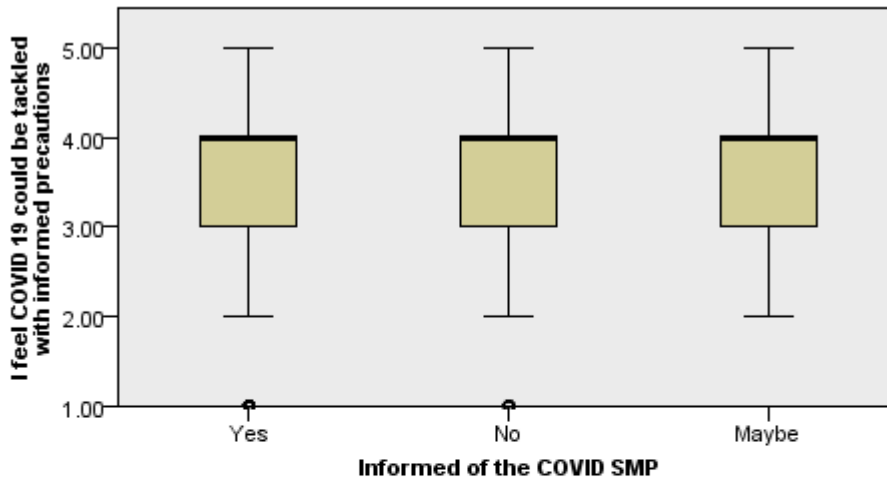
A chi-square test with four degrees of freedom was performed that gave the test statistic of 24.794, giving an asymptotic p-value of 0.000, which is less than 0.04 and therefore we have substantial evidence to reject  $H_{01}$  and we accept that there is an association between being informed about the COVID-19 SMP and COVID-19 recovery among the relations. The observed power is 83.5% . Type II error is 0.165. Cramer's V value is 0.161, which is strong (Table 10).

48.6% of those who are informed about the COVID-19 SMP have a relative who had recovered from COVID-19 while 77.6% of those who are not informed about the COVID-19 SMP do not have a relative recovered from COVID-19 (Chart 2). Hence, it can be inferred that students who had a relative recovered from COVID-19 are well informed of the COVID-19 SMP.

b)  $H_{02}$ : There is no significant difference between being informed about the COVID-19 SMP and feeling that COVID-19 can be tackled with informed precautions.

**CHART 3:** Kruskal-Wallis H test on variables being informed of the COVID-19 SMP and the feeling that COVID-19 could be tackled with informed precautions.

### Independent-Samples Kruskal-Wallis Test



<b>Total N</b>	478
<b>Test Statistic</b>	10.264
<b>Degrees of Freedom</b>	2
<b>Asymptotic Sig. (2-sided test)</b>	.006

1. The test statistic is adjusted for ties.

4

**NOTE:** Axis X: being informed of the COVID-19 SMP. Axis Y: 1: strongly disagree, 2:disagree, 3: neither agree nor disagree, 4: agree, and 5: strongly agree.

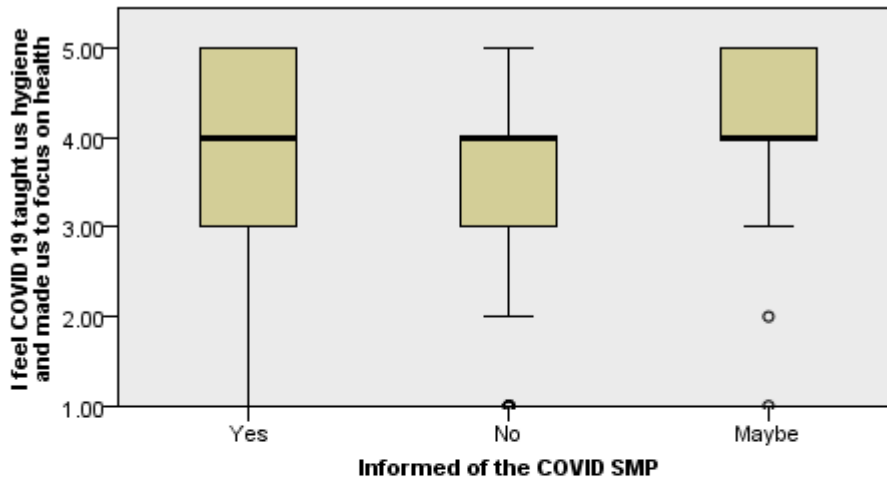
**SOURCE:** Author.

The p-value for the independent samples Kruskal-Wallis test of test statistic of 10.264 of 2 degrees of freedom is 0.006, which is less than 0.04, for the distribution of the feeling that COVID-19 can be tackled with informed precautions, which is a strong evidence to reject the null hypothesis. Hence, we accept the alternative hypothesis that there is a significant difference in the median scores of the feeling that COVID-19 can be tackled with informed precautions. The observed power is 81.5%. Type II error is 0.185 (Chart 3). Hence, it can be inferred that awareness and information will help to tackle the pandemic situation.

c)  $H_{03}$ : There is no significant difference between being informed about the COVID-19 SMP, and feeling that COVID-19 has taught us hygiene and made us focus on health.

**CHART 4:** Kruskal-Wallis H test on the variables informed about the COVID-19 SMP and the feeling that COVID-19 has taught us hygiene and made us focus on health.

### Independent-Samples Kruskal-Wallis Test



<b>Total N</b>	478
<b>Test Statistic</b>	16.575
<b>Degrees of Freedom</b>	2
<b>Asymptotic Sig. (2-sided test)</b>	.000

1. The test statistic is adjusted for ties.

**NOTE:** Axis X: informed about the COVID-19 SMP. Axis Y: 1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, and 5: strongly agree.

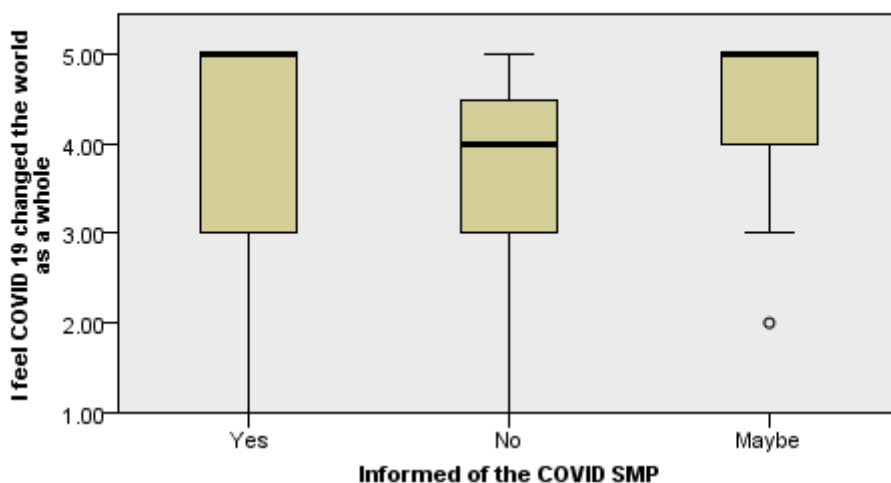
**SOURCE:** Author.

The p-value for the independent samples Kruskal-Wallis test of test statistic of 16.575 of 2 degrees of freedom is 0.000, which is less than 0.04, for the distribution of the feeling that COVID-19 has taught us hygiene and made us focus on health, which is a strong evidence to reject the null hypothesis. Hence, we accept the alternative hypothesis that there is a significant difference in the median scores of the feeling that COVID-19 has taught us hygiene and made us focus on health. The observed power is 87.2%. The type II error is 0.128 (Chart 4).

d)  $H_{04}$ : There is no significant difference between being informed about the COVID-19 SMP and feeling that COVID-19 changed the world as a whole.

**CHART 5:** Kruskal-Wallis H test on the variables, informed of the COVID-19 SMP and the feeling that COVID-19 has changed the world as a whole.

### Independent-Samples Kruskal-Wallis Test



<b>Total N</b>	478
<b>Test Statistic</b>	15.305
<b>Degrees of Freedom</b>	2
<b>Asymptotic Sig. (2-sided test)</b>	.000

1. The test statistic is adjusted for ties.

**NOTE:** Axis X:informed of the COVID-19 SMP. Axis Y: 1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, and 5: strongly agree.

**SOURCE:** Author.

The p-value for the independent samples Kruskal-Wallis test of test statistic of 15.305 of 2 degrees of freedom is 0.000, which is less than 0.04, for the distribution of the feeling that COVID-19 has changed the world as a whole, which is a strong evidence to reject the null hypothesis. Hence, we accept the alternative hypothesis that there is a significant difference in the median scores of the feeling that COVID-19 has changed the world as a whole. The observed power is 88.8%. Type II error is 0.112 (Chart 5). Hence, it can be inferred that those who are aware of the COVID-19 SMP also are aware of the change COVID-19 brought in the world as a whole.

e)  $H_{05}$ : There is no relation between the fear of getting COVID-19 and the fear of not getting a job.

**TABLE 11:** Chi-square test for the variables fear of not getting a job and the fear of getting COVID-19.

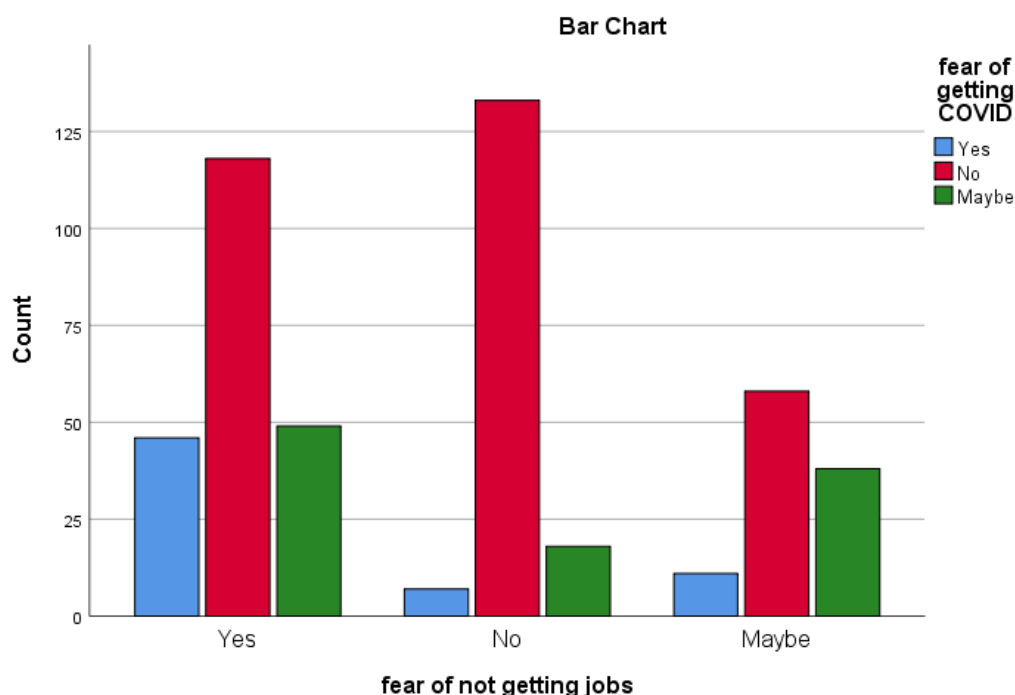
	Value	df	Asymptotic Significance (2-sided)	Cramer's V Measure of association
Pearson Chi-Square	51.991 <sup>a</sup>	4	.000	0.233

Likelihood Ratio	53.464	4	.000
Linear-by-Linear Association	10.646	1	.001
N of Valid Cases	478		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.33.

SOURCE: Author.

CHART 6: Bar chart for the fear of not getting a job and the fear of getting COVID-19.



SOURCE: Author.

A chi-square test with 4 degrees of freedom was performed that gave the test statistic of 51.991, giving an asymptotic p-value of 0.000, which is less than 0.04 and therefore we have substantial evidence to reject the null hypothesis. Hence, we accept that there is a relation between the fear of getting COVID-19 and the fear of not getting a job. The observed power is 91.1 percent. Type II error is 0.089. Cramer's V value is 0.233, which is strong (Table 11).

84.2 % of the students who do not have the fear of getting a job also do not have the fear of getting COVID-19 (Chart 6).

f)  $H_{06}$ : There is no relation between fear of not a getting job and being mostly online during the lockdown to play games, listen to music, interact with friends, and watch movies.

TABLE 12: Chi-square test for the variables fear of not getting a job and being mostly online during the lockdown to play games, listen to music, interact with friends, and watch movies.

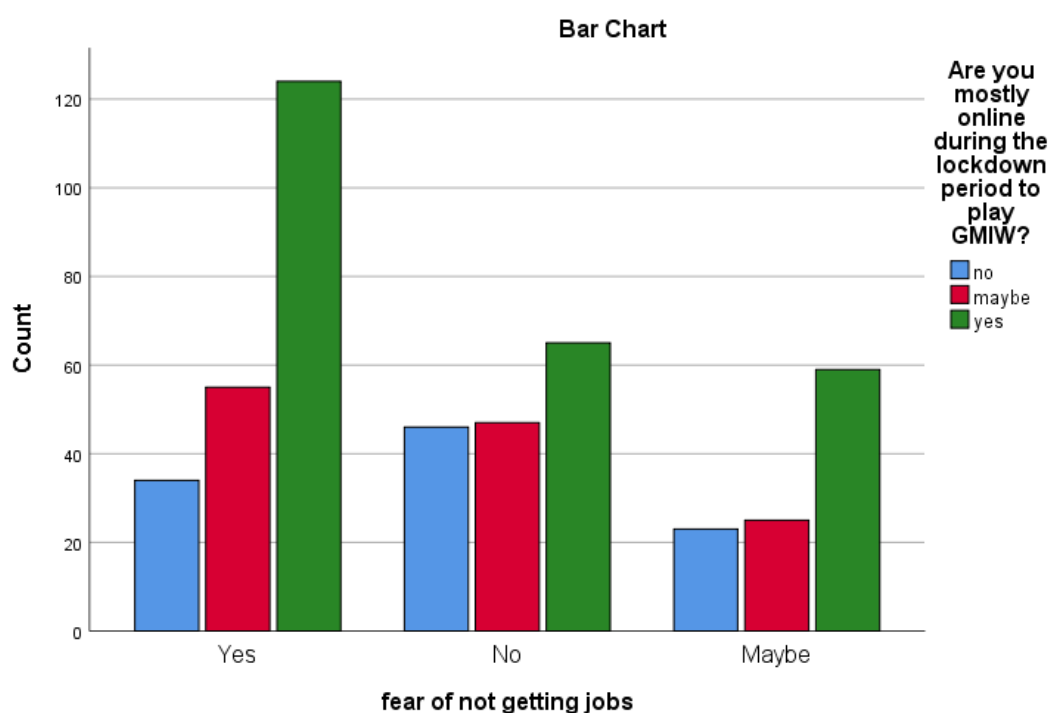
	Value	df	Asymptotic Significance (2-sided)	Cramer's V Measure of association
Pearson Chi-Square	13.721 <sup>a</sup>	4	.008	0.120

Likelihood Ratio	13.808	4	.008
Linear-by-Linear Association	2.501	1	.114
N of Valid Cases	478		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 23.06.

**SOURCE:** Author.

**CHART 7:** Bar chart for fear of not getting jobs and being mostly online during the lockdown period to play games, listen to music, interact with friends, and watch movies.



**SOURCE:** Author.

A chi-square test with 4 degrees of freedom was performed that gave the test statistic of 13.721, giving an asymptotic p-value of 0.008, which is less than 0.04, and therefore we have substantial evidence to reject the null hypothesis. Hence, we accept that there is a relation between fear of not getting a job and being mostly online during the lockdown period to play games, listen to music, interact with friends, and watch movies. The observed power is 90 percent. Type II error is 0.10. Cramer's V value is 0.120, which is moderate (Table 12).

58.2% of the students who have the fear of not getting a job are mostly online to play games, listen to music, interact with friends, and watch movies, while 55.1% of them who said they may be having the fear are also online to play games, listen to music, interact with friends, and watch movies (Chart 7).

g)  $H_{07}$ : There is no relation between the feeling about virtual communication and missing interacting with the nature and the casual walk outside.

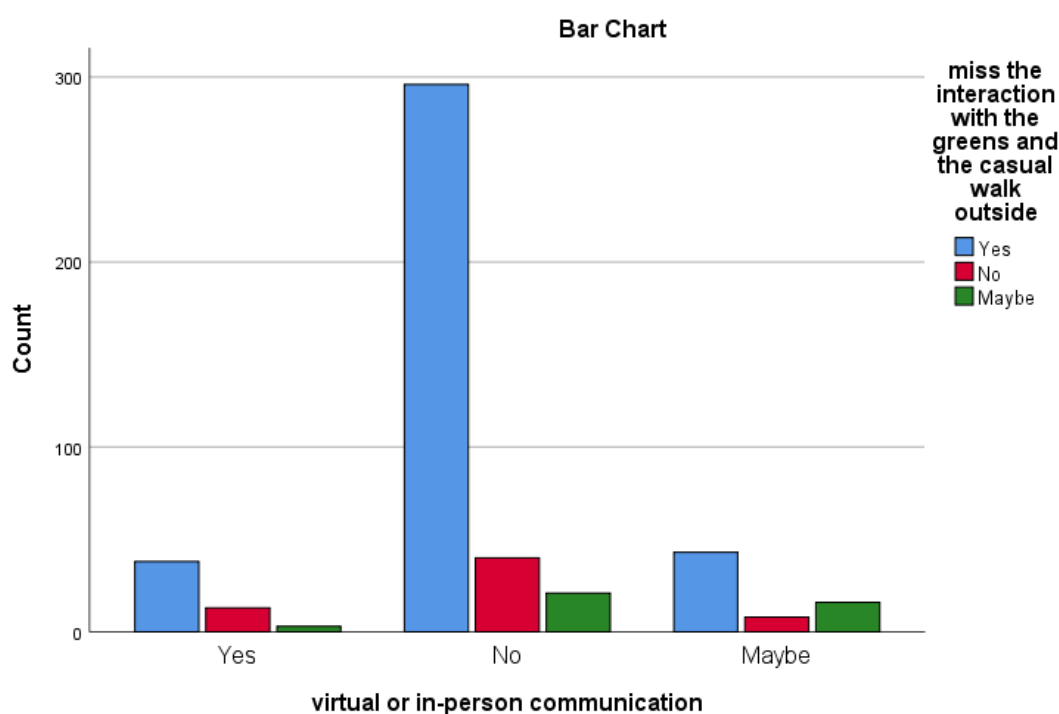
**TABLE 13:** Chi-square test for the variables, virtual or in-person communication and missing interacting with the nature and the casual walk outside.

	Value	df	Asymptotic Significance (2-sided)	Cramer's V (2-Measure of association)
Pearson Chi-Square	31.610 <sup>a</sup>	4	.000	0.182
Likelihood Ratio	24.523	4	.000	
Linear-by-Linear Association	6.493	1	.011	
N of Valid Cases	478			

a. 1 cell (11.1%) has expected count less than 5. The minimum expected count is 4.52.

**SOURCE:** Author.

**CHART 8:** Bar chart for the virtual or in-person communication and missing interacting with the nature and the casual walk outside.



**SOURCE:** Author.

A chi-square test with 4 degrees of freedom was performed that gave the test statistic of 31.610, giving an asymptotic p-value of 0.000, which is less than 0.04, and therefore we have substantial evidence to reject the null hypothesis. Hence, we accept that there is a relation between the feeling about virtual communication and missing interacting with the nature and the casual walk outside. The observed power is 98.8%. Type II error is 0.012. Cramer's V value is 0.182, strong which is (Table 13).

Of the students, 82.9% said in-person communication is better and they miss the interactions with the greens and the casual walk outside (Chart 8).

h)  $H_{08}$ : There is no difference between genders regarding the crisis our country has to cope with.

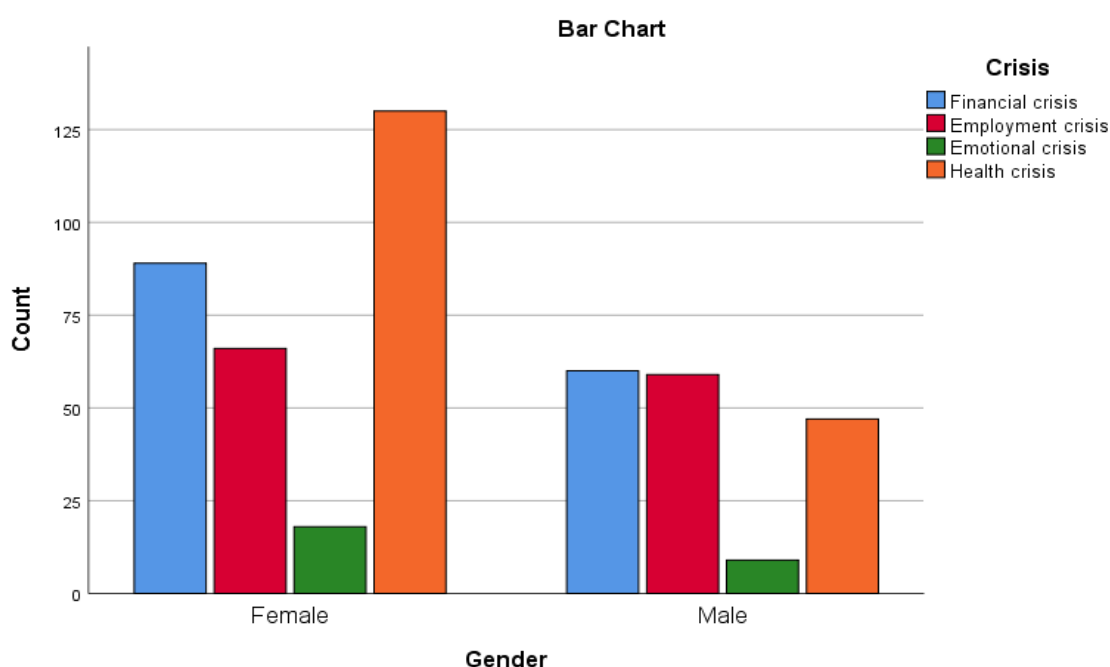
**TABLE 14:** Chi-square test for the variables difference between genders and the crisis.

	Value	df	Asymptotic Significance (2-sided)	Cramer's V Measure of association
Pearson Chi-Square	14.738 <sup>a</sup>	3	.002	0.176
Likelihood Ratio	14.923	3	.002	
Linear-by-Linear Association	9.804	1	.002	
N of Valid Cases	478			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 9.88.

**SOURCE:** Author.

**CHART 9:** Bar chart for the variables difference between genders and the crisis.



**SOURCE:** Author.

A chi-square test with 3 degrees of freedom was performed that gave the test statistic of 14.738, giving an asymptotic p-value of 0.002, which is less than 0.04, and therefore we have substantial evidence to reject the null hypothesis. Hence, we accept that there is a difference between genders regarding the crisis our country has to cope with. The observed power is 86.4 percent. Type II error is 0.136. Cramer's V value is 0.176, which is strong (Table 14).

42.9% of the female students opined that biggest crisis the country has to cope with is health crisis whereas 33.7% of the male students consider employment crisis as the biggest crisis (Chart 9).

### 8. Limitations of the Study

The results of the study cannot be generalized as the study was conducted in just one institution. The research is carried out only on the attitude and perception of the students by considering four factors general information relating to COVID-19, online education, emotions and social interactions.

### 9. Conclusion

The study reveals that students who have a COVID-19 recovered relative are well informed about the COVID-19 SMP. There is a significant difference in the median scores of their feeling that COVID-19 can be tackled with informed precautions, that it has changed the world as a whole, that it has taught us hygiene and made us focus on health. There is a relation between fear of getting COVID-19 and the fear of not getting a job. 84.2 % of the students who do not have the fear of not getting a job also do not have the fear of getting COVID-19. There is a relation between the fear of not getting a job and mostly being online during the lockdown to play games, listen to music, interact with friends, and watch movies. 58.2% of the students who have the fear of not getting a job are also mostly online to play games, listen to music, interact with friends, and watch movies, while 55.1% who said that they may have the fear of it are also online to play games, listen to music, interact with friends, and watch movies. There is a relation between the feeling about virtual communication and missing interacting with the nature and the casual walk outside. 82.9% of the students who said in-person communication is better missed interacting with the nature and the casual walk outside. There is a difference between genders regarding the biggest crisis our country has to cope with: 42.9% of female students opined the biggest crisis the country has to cope with is health crisis whereas 33.7% of male students consider employment crisis as one. 69.9% of the students use mobile phones for online classes while 23.6% use mobile phones and laptops. 92.5% students informed that Google Classrooms are used by their faculty to teach online while 6.1% also have Zoom as another platform. 43.5% feel that online classes are not good as they are unable to understand the content due to virtual teaching while 24.3% face network issues.

Majority of the students feel that online classes are effective when the classes are well-structured and interactive with a flexible curriculum and when there is a good internet connectivity and a competent instructor. Majority of the students preferred quizzes and assignments at the end of every class for effective learning (Muthuprasad et al., 2021).

Some of the measures suggested by the students to curb unemployment include providing skill-based training, employment opportunities, support for self-employment, schemes for the unemployed, no layoffs, starting new companies to create employment opportunities, new notifications and corruption-free recruitments, online interviews and work-from-home jobs.

## **10. Future Work**

The future work could be on students' perception towards work-from-home job opportunities and their attitude towards reduced pay and layoffs during the pandemic.

## **12. Acknowledgement**

The administration, heads of various departments, faculty members, office staff and the students of Rajiv Gandhi University of Knowledge Technologies, IIIT Nuzvid, provided the necessary support and cooperation in carrying out the research. Without them the study could not have been undertaken. My sincere thanks to the Assistant Registrar Office staff for providing the data of students on the campus, for the year 2021. My special thanks to Dr Deepti Sahoo, Head of the Management Department, for her welcoming gesture to carry out this research. I am thankful to Mr Machara Verriyya Naidu, Associate Controller of Examinations (Engineering), for his assistance in conducting this research. I am also grateful to Dr Jakka Mastan, PUC coordinator, Mr Sk. Irfan Ali, Head of the Department (ECE), and Mr T. Siva Kumar Prudhvi Raj, In-charge Head of the MME Department, for their initiation and action in intimating students to respond to the Google Form I sent out.

## **13. Declaration of Interest**

There exists no conflict of interest. The right to privacy of respondents was safeguarded by taking responses anonymously.

## **14. Contribution Statement**

The study contributes to the area of the students' psychology by considering their emotions, social interactions and feelings during the pandemic. It also gives a brief picture of the attitude of students towards online classes. It also investigated various factors by testing them statistically.

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