AN OBSERVATIONAL STUDY ON PSYCHOLOGICAL CHANGES IN ADULTS DUE TO COVID -19

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BACKGROUND:
COVID-19 lockdown's self-isolation and limits on physical movement disrupted daily routines and impeded the capacity to meet normal duties affecting individuals' physical and emotional health.

OBJECTIVE:
The study aims to study the psychological changes of covid-19 on adults.

INTRODUCTION:
The novel Coronavirus disease 2019 (COVID-19) pandemic caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) has been causing chaos around the world.[1] Following a sharp spike in the number of cases, several nations implemented lockdowns to stem the spread of the virus.[2,3] The lockdown's self-isolation limited physical movement, disrupted daily routine, hampered normal duties, and affected persons' physical and emotional health.[2] Therefore, rapidly expanding mass hysteria and panic regarding COVID-19 may beget enduring psychological problems in public.[2]

Therefore, it is necessary to assess the public's thinking and mental health during this pandemic to alleviate their worry by giving information about the virus, its transmission, and symptoms to curtail the spread of rumours about the COVID-19 infection.[3,4] Notably patients who hospitalized in the Intensive Care Unit might experience more trauma due to the use of invasive methods and a decrease in autonomy.[5] Psychological distress is therefore an important concern to be considered in patients with COVID-19 and should not be overlooked during hospitalization and follow-up.[6] Hence, we intended to follow up recovered patients to identify any psychological distress.

COVID-19 patients were found to have significantly more anxiety, distress, and post-traumatic stress symptoms.[7] Furthermore, anxiety or depressive symptoms might persist in patients after recovery from COVID-19[4,8,9] To the best of our knowledge, very few studies in Indian context have explored the psychological sequala among patients who hospitalized for COVID-19 focusing on worry, pressure, and activities of daily living. Hence, the present study aims to study and explore the psychological levels among adults during covid-19 pandemic.

DATA COLLECTION:
Patient demographic details, signs and symptoms, and number of days spent at the hospital were recorded from the medical records. Other pertinent data that cannot be obtained from the medical records were obtained from the patients via telephonic communication utilizing Google forms, regarding psychological symptoms. The standardized questionnaire "Perceived Stress Questionnaire" (PSQ) encompassed of 20 items with responses recorded on a 4-point Likert scale with the categories "almost, never, sometimes, often, most of the time" to measure worries and pressure in patients who recovered from COVID-19[1].The numbers 0 to 4 indicate the ascending severity of worry and pressure.

METHOD:
Data is analysed using statistical software R version 4.2.1. And Microsoft Excel. Categorical variables are represented by frequency and percentage. Continuous variables given in Mean ±SD / Median (Min, Max) form. Chi-square test is used to check the dependency between categorical variables. P-value less than or equal to 0.05 indicates statistical significance.

RESULT:
The data contains measurement on 220 subjects.

Note: Two excel sheets were provided. One in Kannada (112 subjects) and one in English (108 subjects) language. Both entries were different. Hence, the data provided in both excelsheets are combined together to get the data of 220 subjects.

The following table gives the distribution of subjects according to different variables.

Table 1: Distribution of subjects according to different variables.

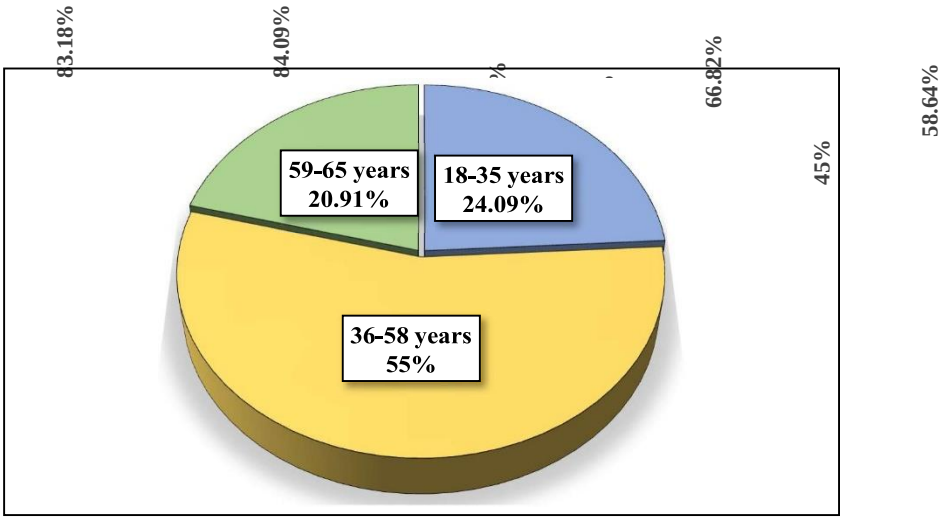
Variables	Sub Category	Number of subjects (%)
Have you heard about covid-19 outbreaks	No	3 (1.36%)
	Yes	217 (98.64%)
Age (years)	18-35 years	53 (24.09%)
	36-58 years	121 (55%)
	59-65 years	46 (20.91%)
Symptoms	Cough	183 (83.18%)
	Shortness of breath	105 (47.73%)
	Fever	185 (84.09%)
	Muscle pain	98 (44.55%)
	Sore throat	130 (59.09%)
	Chills	122 (55.45%)
	Weakness	147 (66.82%)
	Loss of taste or smell	99 (45%)
	Headache	129 (58.64%)
Were you afraid to take covid-19 test	No	100 (45.45%)
	Maybe	3 (1.36%)
	Yes	117 (53.18%)
Where were you quarantined?	Home	30 (13.64%)
	Hospital	190 (86.36%)
What are your thoughts oncovid-19?	Life threatening	33 (15%)
	Non-fatal	8 (3.64%)
	Pandemic	138 (62.73%)
	Scam	41 (18.64%)
Feeling during quarantine	Fear	152 (69.09%)
	Anxiety	85 (38.64%)
	Loneliness	37 (16.82%)
	Suicidal	13 (5.91%)
	Depression	30 (13.64%)
How badly your daily life isaffected	Not at all	60 (27.27%)
	Bad	94 (42.73%)
	Very bad	41 (18.64%)

	Worse	25 (11.36%)
Do you believe treatment ishelpful in covid-19?	God will help	20 (9.09%)
	No	28 (12.73%)
	Self-healing (immune system will help)	20 (9.09%)
	Yes	152 (69.09%)
Did you feel rested and calmduring pandemic?	0 (never)	10 (4.55%)
	1(almost)	102 (46.36%)
	2 (sometimes)	54 (24.55%)
	3(often)	28 (12.73%)
	4(usually)	26 (11.82%)
Did you feel worried during pandemic?	0(never)	30 (13.64%)
	1(almost)	39 (17.73%)
	2(sometimes)	55 (25%)
	3(often)	60 (27.27%)
	4(usually)	36 (16.36%)
Did you feel highly pressurized during pandemic?	0(never)	48 (21.82%)
	1(almost)	51 (23.18%)
	2(sometimes)	47 (21.36%)
	3(often)	42 (19.09%)
	4(usually)	32 (14.55%)
During pandemic, have you been bothered by the followingproblems?	Feeling nervous	58 (26.36%)
	Anxious or on edge	58 (26.36%)
	Not being able to stop or control worrying	47 (21.36%)
	Feeling down or depressed or hopeless	46 (20.91%)
	Little interest or pleasure in doing things	89 (40.45%)

Majority (55%) subjects belonged to 36-58 years of age. The most common symptoms werefever (84.09%), cough (83.18%), weakness (66.82%), sore throat (59.09%) and headache (58.64%).

Out of 220 subjects, 53.18% were afraid of taking COVID-19 test. Majority subjects (86.36%) were quarantined in hospital. 18.64% subjects opine that COVID-19 is just a scam. During quarantine 69.09% subjects were scared, 38.64% were anxious, 16.82% subjects felt loneliness, 13.64% felt depressed and 5.91% subjects were suicidal. Many subjects reported that COVID-19 pandemic badly affected their daily life. More than 50% subjects believe that the treatment is helpful in covid-19. During pandemic 40.45% subjects had little interest or pleasure in doing things, 26.36% subjects were feeling nervous, 21.36% subjects were unableto stop or control worries and 20.91% subjects were feeling down or depressed or hopeless.

Figure 1: Distribution of subjects according to age.



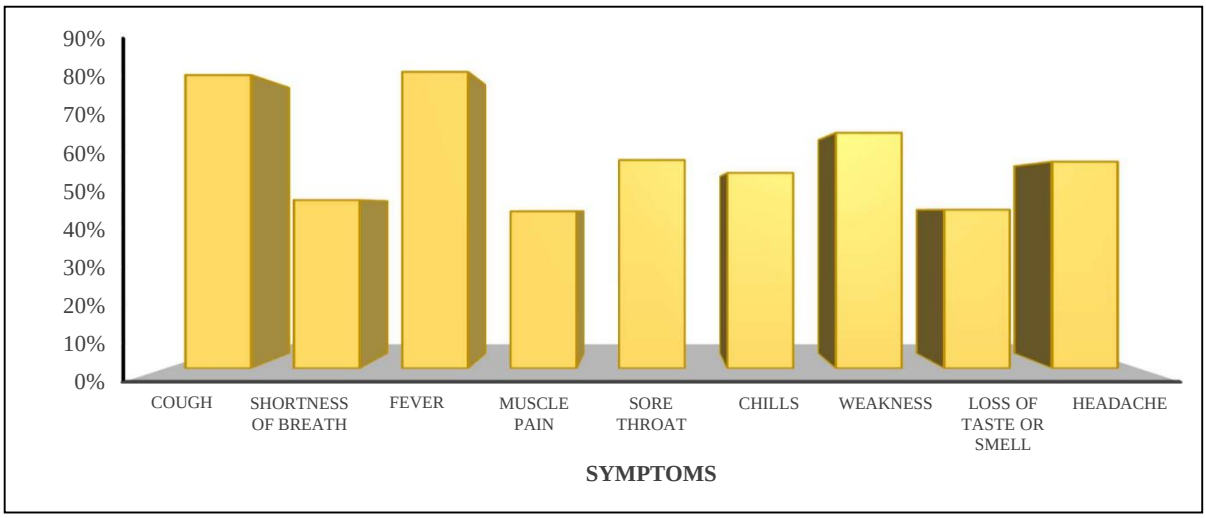


Figure 2: Distribution of subjects according to symptoms.

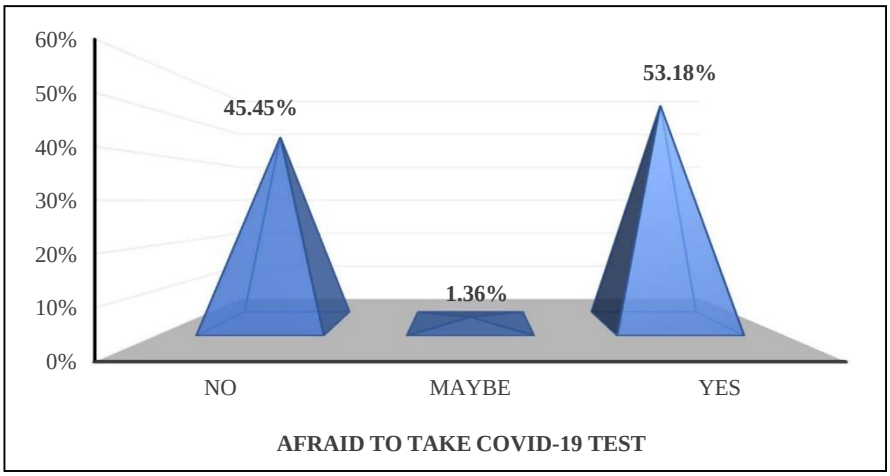


Figure 3: Distribution of subjects according to whether they are to take covid-19 test.

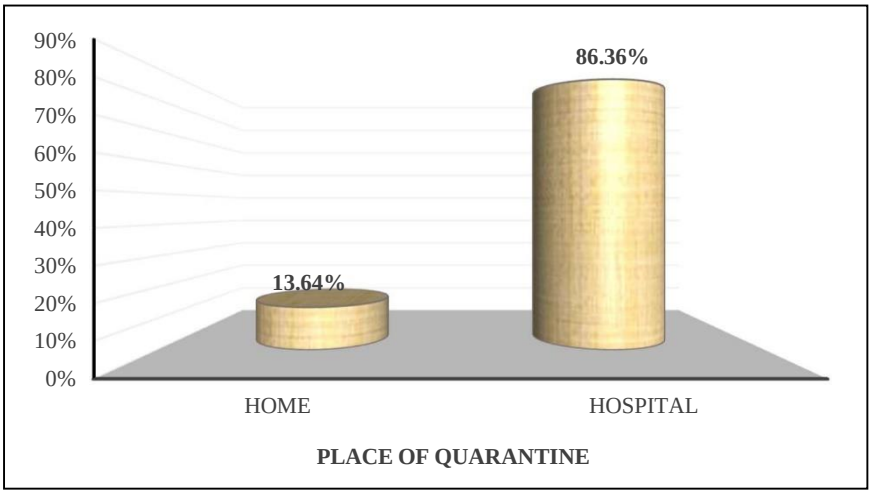


Figure 4: Distribution of subjects according to place of quarantine.

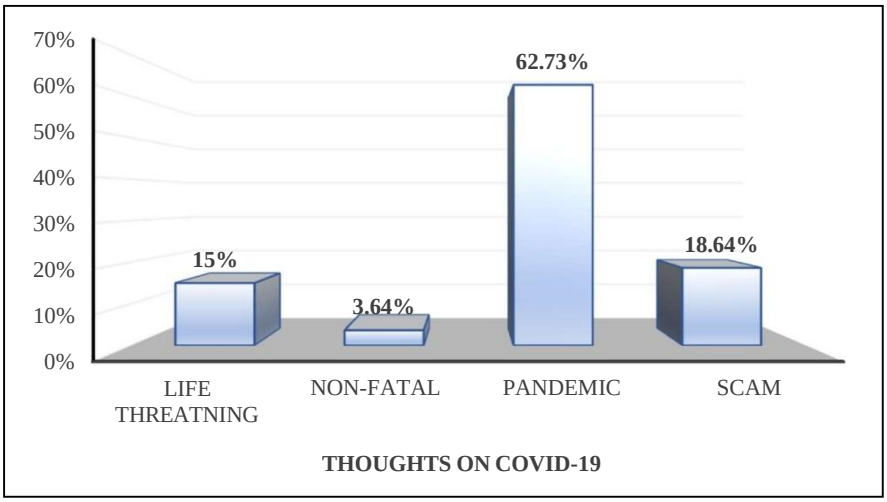


Figure 5: Distribution of subjects according to thoughts on COVID-19.

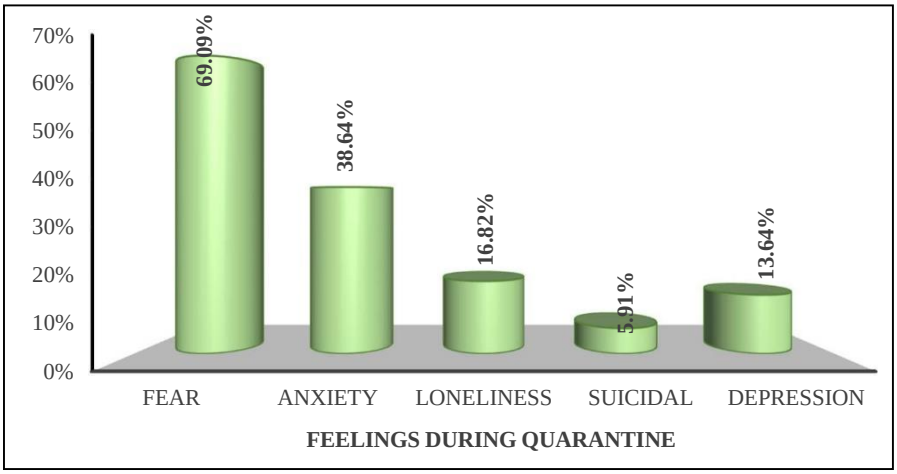


Figure 6: Distribution of subjects according to feelings during quarantine.

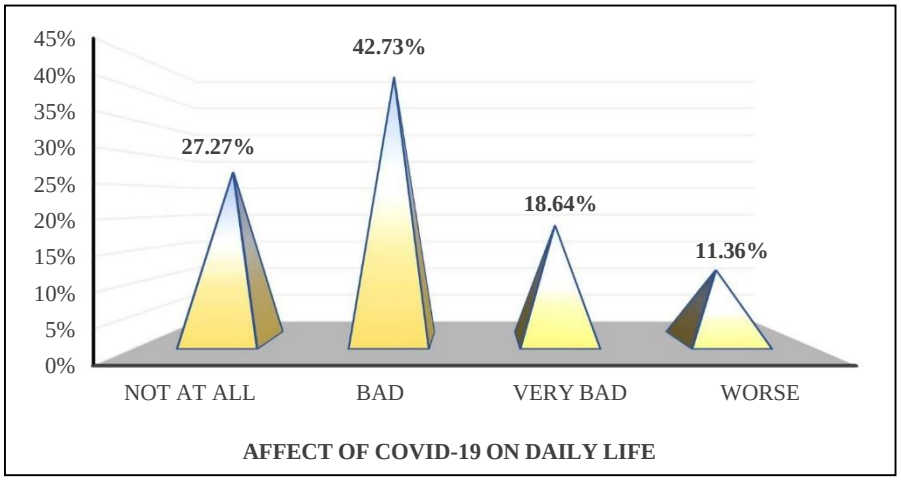


Figure 7: Distribution of subjects according to effect of COVID-19 on daily life.

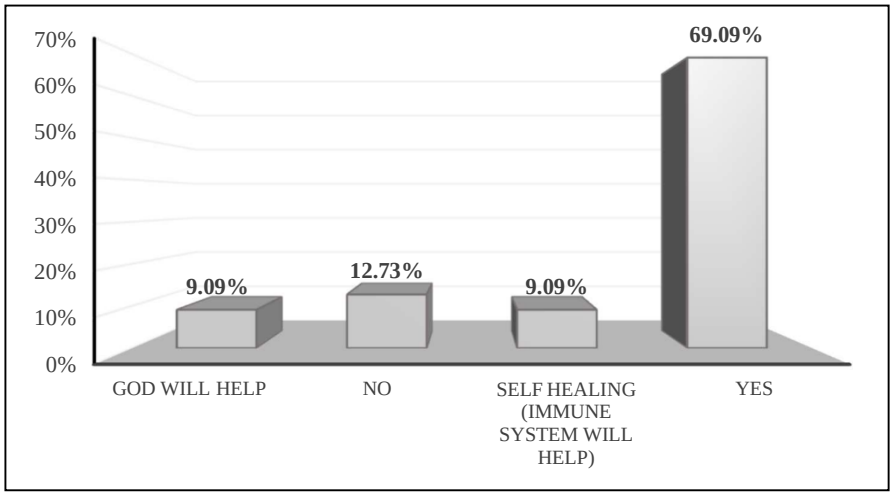


Figure 8: Distribution of subjects according to belief on treatment of COVID-19.

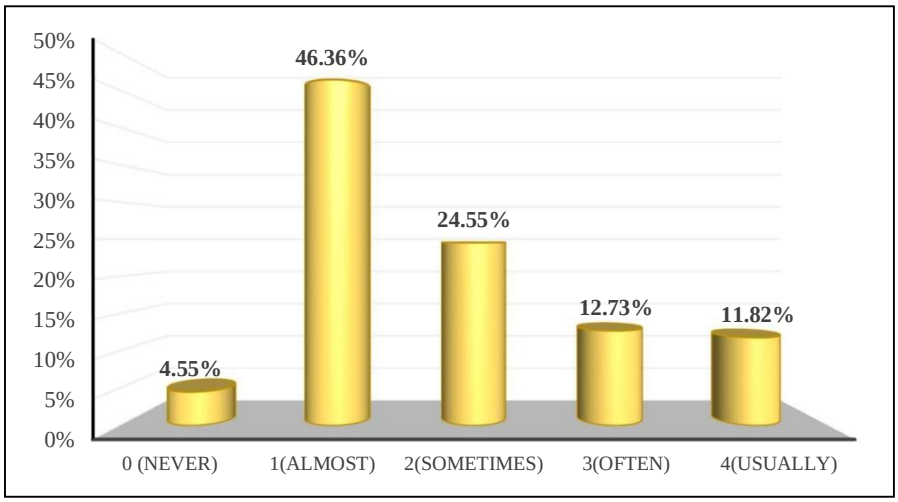


Figure 9: Distribution according to whether they felt rested and calm during pandemic.

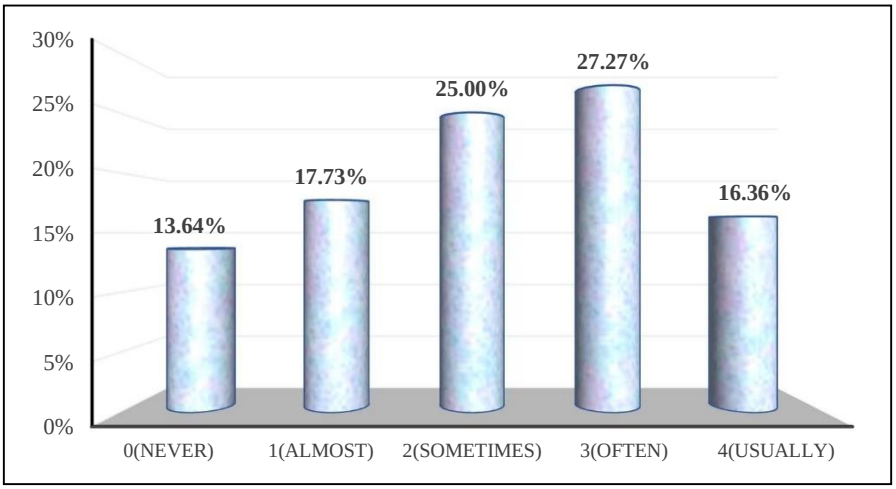


Figure 10: Distribution according to whether they felt worried during pandemic.

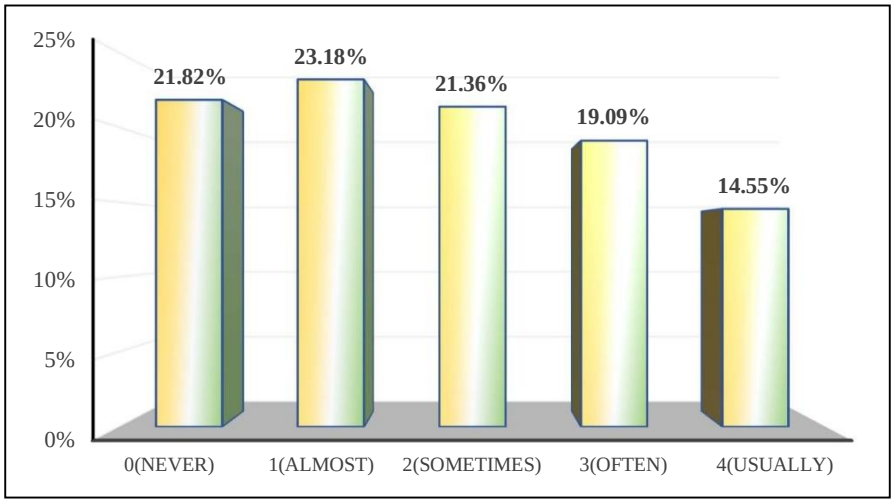


Figure 11: Distribution according to whether they felt highly pressurized during pandemic.

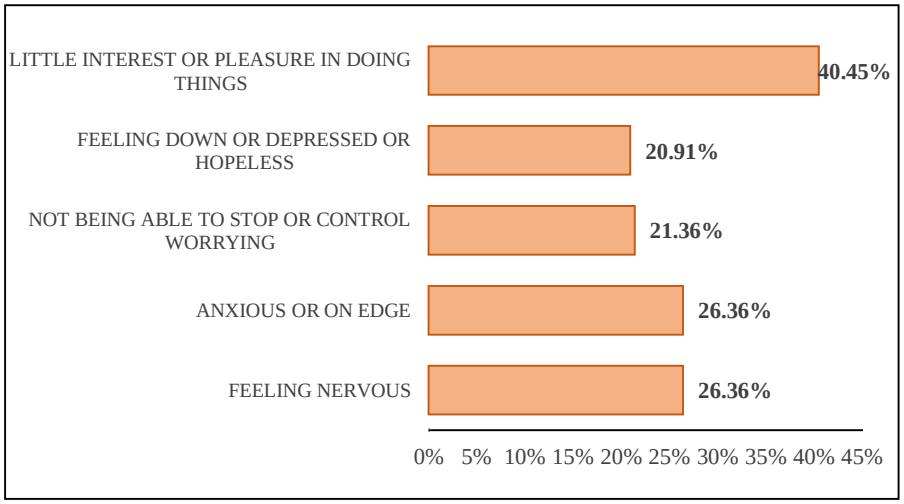


Figure 12: Distribution of subjects according to the problems faced during pandemic.

The following table gives the comparison of different variables with age. Table 2: Comparison of different variables with age.

Variables	Sub Category	Age (years)			p-value
		18-35	36-58	59-65	
Symptoms	Cough	45 (24.59%)	100 (54.64%)	38 (20.77%)	0.9285[C]
	Shortness of breath	23 (21.9%)	55 (52.38%)	27 (25.71%)	0.2384[C]
	Fever	44 (23.78%)	102 (55.14%)	39 (21.08%)	0.9676[C]
	Muscle pain	31 (31.63%)	47 (47.96%)	20 (20.41%)	0.0554[C]
	Sore throat	21 (16.15%)	77 (59.23%)	32 (24.62%)	**0.0033[C]***
	Chills	29 (23.77%)	70 (57.38%)	23 (18.85%)	0.6547[C]
	Weakness	37 (25.17%)	80 (54.42%)	30 (20.41%)	0.8632[C]
	Loss of taste or smell	23 (23.23%)	54 (54.55%)	22 (22.22%)	0.9002[C]
	Headache	28 (21.71%)	74 (57.36%)	27 (20.93%)	0.5905[C]
Were you afraidto take covid-19 test	Maybe	0	2 (66.67%)	1 (33.33%)	0.7266[MC]
	No	27 (27%)	55 (55%)	18 (18%)	
	Yes	26 (22.22%)	64 (54.7%)	27 (23.08%)	
Where were you quarantined?	Home	10 (33.33%)	17 (56.67%)	3 (10%)	0.1993[C]
	Hospital	43 (22.63%)	104 (54.74%)	43 (22.63%)	
What are yourthoughts on covid-19?	Life threating	9 (27.27%)	16 (48.48%)	8 (24.24%)	**0.0185[MC]***
	Non-fatal	3 (37.5%)	2 (25%)	3 (37.5%)	
	Pandemic	37 (26.81%)	70 (50.72%)	31 (22.46%)	
	Scam	4 (9.76%)	33 (80.49%)	4 (9.76%)	
Feeling during quarantine	Fear	39 (25.66%)	79 (51.97%)	34 (22.37%)	0.4023[C]
	Anxiety	10 (11.76%)	55 (64.71%)	20 (23.53%)	**0.0031[C]***
	Loneliness	14 (37.84%)	16 (43.24%)	7 (18.92%)	0.0958[C]
	Suicidal	5 (38.46%)	5 (38.46%)	3 (23.08%)	0.4118[MC]
	Depression	6 (20%)	17 (56.67%)	7 (23.33%)	0.8367[C]
How badly your daily life is affected	Bad	22 (23.4%)	48 (51.06%)	24 (25.53%)	0.7387[C]
	Not at all	16 (26.67%)	33 (55%)	11 (18.33%)	
	Very bad	10 (24.39%)	23 (56.1%)	8 (19.51%)	
	Worse	5 (20%)	17 (68%)	3 (12%)	
Do you believe treatment is helpful in covid-19?	God will help	3 (15%)	10 (50%)	7 (35%)	0.1839[MC]
	No	5 (17.86%)	14 (50%)	9 (32.14%)	
	Self-healing (immune system will help)	8 (40%)	10 (50%)	2 (10%)	
	Yes	37 (24.34%)	87 (57.24%)	28 (18.42%)	
Did you feel rested and calm during	0 (never)	2 (20%)	8 (80%)	0	0.4638[MC]
	1(almost)	29 (28.43%)	54 (52.94%)	19 (18.63%)	

pandemic?	2(sometimes)	10 (18.52%)	28 (51.85%)	16 (29.63%)	
	3(often)	6 (21.43%)	17 (60.71%)	5 (17.86%)	
	4(usually)	6 (23.08%)	14 (53.85%)	6 (23.08%)	
Did you feel worried duringpandemic?	0(never)	12 (40%)	13 (43.33%)	5 (16.67%)	0.4709[C]
	1(almost)	6 (15.38%)	22 (56.41%)	11 (28.21%)	
	2(sometimes)	13 (23.64%)	33 (60%)	9 (16.36%)	
	3(often)	14 (23.33%)	34 (56.67%)	12 (20%)	
	4(usually)	8 (22.22%)	19 (52.78%)	9 (25%)	
Did you feel highly pressurized during pandemic?	0(never)	20 (41.67%)	21 (43.75%)	7 (14.58%)	**0.0396[C]***
	1(almost)	12 (23.53%)	30 (58.82%)	9 (17.65%)	
	2(sometimes)	8 (17.02%)	31 (65.96%)	8 (17.02%)	
	3(often)	8 (19.05%)	20 (47.62%)	14 (33.33%)	
	4(usually)	5 (15.63%)	19 (59.38%)	8 (25%)	
During pandemic,have you been bothered by the following problems?	Feeling nervous	16 (27.59%)	33 (56.9%)	9 (15.52%)	0.4616[C]
	Anxious or on edge	16 (27.59%)	33 (56.9%)	9 (15.52%)	0.4616[C]
	Not being able to stop or control worrying	12 (25.53%)	23 (48.94%)	12 (25.53%)	0.588[C]
	Feeling down or depressed or hopeless	12 (26.09%)	26 (56.52%)	8 (17.39%)	0.7926[C]
	Little interest or pleasure in doing things	19 (21.35%)	51 (57.3%)	19 (21.35%)	0.7317[C]

*Abbreviation: C – Chi square test, MC – Chi square test with Monte Carlo simulation, *indicates statistical significance.*

From Chi square test, it is observed that, there is significant association of sore throat symptom, thought about COVID-19, anxiety during quarantine and extent of feeling highlypressurized during pandemic are associated with age.

CONCLUSION:

The study helps in understanding mental health of recovered COVID-19 individuals. The study also provided a view on psychological symptoms such as fear, anxiety, pressure, depression, suicidal thoughts, loneliness in individuals after they recovered from COVID-19. Findings suggest the impact of this pandemic that is casted on the adults should not be overlooked in any way. At most attention should be given to the public who are facing difficulties in coping up with the pandemic mentally as well as physically. Awareness should be brought about maintaining the mental health of the people by keeping themselves indulged in activities like playing games, chatting with family virtually and using social media. More preference should be given to vulnerable people like older age group. Middle-aged people seem to be highly anxious, and youngsters felt lonelier. Hence necessary interventions should be introduced and applied to improve the mental health of the public.

CONFLICTS OF INTEREST:

Nil

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