

A CROSS-SECTIONAL STUDY: EFFECTS OF THE COVID-19 EPIDEMIC ON RATIONAL HEALTH AND QUALITY OF LIFE BETWEEN LOCAL RESIDENTS IN NAVI MUMBAI, INDIA

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ABSTRACT

We conducted this study to ascertain the direct impacts of the COVID-19 epidemic on the rational health and general wellbeing of residents of Navi Mumbai under the age of 18. A social media platform was used to distribute an online poll from March to June 2020. Through the completion of a modified validated questionnaire, the respondents assessed the Impact of Event Scale (IES), indicators of adverse effects on rational health, social and familial support, and lifestyle modifications related to rational health. The poll was completed by 100 respondents in total (53 women and 47 men). 38% of the interviewees had a college degree or higher, and their average age was $29.60 + 8.97$. The mean IES number for the respondents was $28.09 + 10.26$, which denotes a mild impairment.

Keywords: Coronavirus; rational health; epidemic, IES; SARS

Introduction

The Corona single-stranded RNA virus has been around for nearly 60 years since it was discovered in the late 1960s. Coronaviruses are members of the corona viridae subgroup of the Nidovirales order. The name "Corona virus" originated from the exterior of the viral structure's crown-shaped spikes. The virus has affected pigs and poultry, but no major human infections have been reported. Earlier, the associated viruses of identical family like severe acute respiratory syndrome coronavirus SARS-COV in 2003. Human coronavirus HCoV NL63 in 2004. HKU1 in 2005, Middle east respiratory (MERS) in 2012 have shown their outbreaks and now, the novel version of this virus has presented a risk of life. Previously designated as SARS-CoV-2. Every few weeks, new information is released about the virus's method of transmission and other pertinent details, which increases uncertainty. The majority of the study conducted during this time has been on problems related to global governance, treatment options, and understanding and preventing transmission. However, we believe that this epidemic's psychological effects, such as worry and anxiety in the general population, are also very serious. Understanding how the populace, particularly those in the severely affected nations like China, have been handling with such a significant catastrophe is crucial during the COVID-19 epidemic. It's possible that the destruction brought on by COVID-19 will be on level with the 2003 SARS epidemic. More than 8000 people became infected with SARS, and 800 people died. (in 26 countries). Within eight months, the SARS epidemic was under control (by July 2003). During these epidemics, the populations may have been exposed to some recognized hazard factors for depression and anxiety, such as a high mortality rate, a lack of resources and access to sustenance, discrimination, and contact with infected and ill people. Contrarily, COVID-19 has caused over 82,000 instances and over 2800 fatalities so far.

SARS CoV-2 or COVID-19 in India

New coronavirus illness In Maharashtra, COVID-19 is rife and nearly 10,498 instances have been identified as COVID-19 as of 30 April 2020. 8,266 of them were still active, and 1,773 of those cases had been effectively recovered. 459 deaths have been reported up to this point. On January 30, 2020, a female patient from the Thrissur district of Kerala, India, who had previously visited Wuhan State, China, reported the first instance. SARS-CoV-2 was first transmitted when it was in its early stages, primarily through interaction with people who had previously travelled abroad. 43 days after the first case was recorded, the first 100 cases were found. i.e. on 14th March 2020 but from that the doubling time was estimated on a regular 2-4 days i.e. 20th March 2020 (>200 cases), 22th March 2020 (>400 cases), 27th March 2020 (>800 cases), 31st March 2020 (>1600 cases), 4th April 2020 (>3200 cases) and 9th April 2020 (6729 cases).

There hasn't been much research done on how the COVID-19 epidemic is affecting people's rational health or quality of life. The objective of the research was to investigate whether the COVID-19 epidemic had an immediate influence on adults' rational health, lifestyle decisions, and quality of life in Navi Mumbai, India.

Literature Review

Philip (2020) studied Ravi in his study "COVID-19 and Rational Health: A Review of the Existing Literature," Philip Rajkumar (2020) came to the conclusion that subsyndromal rational health issues are a prevalent reaction to the COVID-19 epidemic. More comprehensive studies from other affected nations are required, especially on groups that are more vulnerable.

Joseph (2006) studied "Positive rational health-related impacts of the SARS epidemic on the general public in Hong Kong and their associations with other negative impacts". His findings indicate that SARS had some beneficial effects on family and social support, rational health consciousness, and lifestyle modifications. These positive effects were linked to further pertinent negative effects and may serve as significant buffers against the negative effects.

Lu Dong (2020) studied "Public Rational Health Crisis during COVID-19 Epidemic, China". His research shows that there are still challenges even though China has been implementing emergency psychological crisis intervention to lessen the negative psychosocial influence on public rational health. Public rational health interventions should be formally included in plans for public health readiness and emergency action.

Haider (2020) studied "Impact of the COVID-19 Epidemic on Adult Rational Health". His research suggests that the epidemic will have an impact on everyone, including the general public, COVID-19 patients, their families, friends, and individuals who have pre-existing rational health conditions.

Zhang & Feei (2020) studied "Impact of the COVID-19 Epidemic on Rational Health and Quality of Life among Local Residents in Liaoning Province, China :- A Cross-Sectional Study" his results shows that the contestants characteristics, other indicators of negative rational health influence there was a noteworthy association between different age groups and some of the responses including "feel horrified due to the COVID-19 epidemic" impact on social and family support and there was a alterations in lifestyles also owing to epidemic.

Dhaheri (2021) studied the impact of COVID-19 on rational health and quality of life: Is there any effect? An adult population cross-sectional study of the MENA area found that the COVID-19 epidemic had only a minor psychological impact. It is necessary to increase awareness of psychological challenges during epidemics across all media channels and to stress the importance of seeking help and engaging in physical activity for the treatment of rational health disorders. Additionally, it is critical that medical workers understand the high-risk population groups that are vulnerable to developing rational health issues as well as how to recognize and target them.

Selvaraj (2020) COVID-19 epidemic's psychological effects on Indian healthcare workers cross-sectional research with multiple foci. In his research published in the Indian Journal of Medical Sciences, 72(3), the author shows that the medical workforce and the completion of psychosomatic interventions are essential for providing care and preserving the efficiency of the healthcare system.

Dawel, Shou, Smithson, Cherbuin, Banfield, CEAR, & Batterham, (2020) studied the effect of COVID-19 on rational health and wellbeing in a representative sample of Australian adults. The intervention to combat COVID-19's social, financial, and role disruption, which primarily affects people with treatable medical conditions, is about to have the biggest effect on the rational health and wellbeing of the community.

Rajkumar (2020) COVID-19 and rational health: An analysis of the research that has been done so far. There is a need to increase the availability of culturally sensitive rational health interventions that can be introduced to volunteers and healthcare professionals.

Al-Dhaheri, Bataineh, Mohamad, Ajab, Al Marzouqi, Jarrar, & Ismail (2021) A study was conducted to assess how the epidemic affected the general population's rational health and quality of life in the Middle East and North Africa (MENA) area. An online poll was completed by 6142 adults from 18 MENA countries between the months of May and June 2020. Measurement of the psychological impact as well as the effect on social and familial support was done using the Effect of Event Scale-Revised (IES-R).

Objectives

1. To determine whether the COVID-19 epidemic had an immediate effect on adults in Navi Mumbai who were at least 18 years old, their lifestyle choices, and their quality of life.
2. To determine whether the sociodemographic factors of the study's subjects are significantly correlated.

Resources and Techniques

From March to June 2020, a cross-sectional survey was conducted. The study's convenience and snowball sampling techniques were used to pick only adults in Navi Mumbai who were at least 18 years old. In the third week of March 2020, a social media site disseminated an online survey. The questionnaire's completion does not result in any financial compensation.

Effects of Event Scale (IES)

Google Forms was used to ask respondents to fill out an online socio-demographic assessment (such as their age and sex). Names and other identifying details of respondents were kept private. Moreover, a short, easily administered self-report questionnaire, the Impact of Event Scale – Revised (IES-R), with a Cronbach's alpha 0.88 was used to assess avoidance (numbing of responsiveness, avoidance of feelings, situations, and ideas), and hyperarousal (anger, irritability, hypervigilance, difficulty concentrating, heightened startle), as well as a total subjective stress IES-R score. The IES-R is not intended for medical use. Each answer received a score of 0 (not at all), 1 (a little amount), 2 (moderately), 3 (quite a bit), or 4, (Extremely). The study contained two subscales: Avoidance subscale and Hyperarousal subscale. A cut-off of the IES-R-24 was used to demonstrate the worry for PTSD and its effects on health and wellbeing.

PTSD is a clinical issue. Score interpretation (IES-R)

24-32. People with scores this high who do not have complete PTSD will at least have some of the symptoms of partial PTSD.

33-38: This range serves as the finest cut-off for a potential PTSD diagnosis.

39 and older: This is strong enough to inhibit the activity of your immune system. (even 10 years after an impact event)

Additional Indicators of Negative Rational Health Impact

Contestants were also required to respond to six revised and verified questions about the epidemic's derivational effects on their health, with a Cronbach's alpha of 0.85. (0.79). Stress from work, financial stress, home stress, horrified feelings related to the COVID-19 epidemic, nervous feelings related to the COVID-19 epidemic, and helpless feelings related to the COVID-19 epidemic were all evaluated for changes. (response for each Yes or No.)

Impact on Family and Social Support

Additionally, respondents filled out a modified and approved survey that examined how the COVID-19 epidemic affected societal and familial support (Cronbach's alpha was 0.70). The five questions in this survey measured help from friends, assistance from family, sharing feelings with other family members, sharing feelings with others, and caring about the feelings of family members. These statements had the following possible answers: increased, much increased, increased, decreased, unchanged/same as before, and decreased. A lower number meant less familial and social support.

Effect on Lifestyle Changes Related to Rational Health

Using a modified as well as validated questionnaire investigating the influence of the COVID-19 epidemic on rational health-related lifestyle modifications, respondents were asked to rate whether they were paying less or more attention to their rational health during the epidemic (much decreased, decreased, unchanged/same as before, increased and much increased. Also, respondents were questioned about how much time they were spending resting, relaxing, and exercising throughout the epidemic (response options: much decreased, decreased, unchanged/same as before, increased, and much increased; Cronbach's alpha value was 0.67). A lower score was used to suggest lifestyle changes that were less favourable.

Statistical Analysis

SPSS version 23.0 was used for the statistical study. Quantitative findings were all expressed as mean, standard deviation, or frequency (%). To determine whether there was a substantial correlation between categorical variables, a chi-square test was used. To examine the connection between categorical variables, lambda (close to 0, no relationship, less than 0.2 weak, 0.2 to 0.3 moderate, more than 0.3, strong) and Cramer's V (close to 0, no relationship, less than 0.2 weak, 0.2 to 0.3 moderate, more than 0.3, strong) are calculated. Statistical significance was defined as a P-value 0.05.

Results

Respondents Characteristics

47 men and 53 women out of 100 responses were male and female. The individuals' average age was 29.60, and 67% of them were between the ages of 18 and 30. 38% of the contestants had a college degree or greater. 40% of

respondents were married at the time of the survey as well. 54% of people are students, 41% are working, and 5% are jobless. 84% of respondents said they practiced Hinduism, with 16% saying they practiced other religions.

Variables	All (n=100)	Females (n=53)	Males (n=47)	P-value
Age(years)	29.60 ± 8.97	28.76±8.34	30.53±9.64	0.435
Education Level, n(%)				
Under-graduate	37(37%)	21(56.8%)	16(43.2%)	
Graduate	21(21%)	8(38.1%)	13(61.9%)	
Higher qualification	38(38%)	23(60.53%)	15(39.5%)	
Others	4(4%)	1(25%)	3(75%)	0.240
Marital Status				
Single	60(60%)	33(55%)	27(45%)	0.624
Married	40(40%)	20(50%)	20(50%)	
Employment Status				
Employed	41(41%)	19(46.3%)	22(53.7%)	
Unemployed	5(5%)	2(40%)	3(60%)	
Students	54(54%)	32(59.3%)	22(40.7%)	0.383
Religion				
Hinduism	84(84%)	50(59.5%)	34(40.5%)	0.003
Others	16(14%)	3(21.4%)	13(81.3%)	

Table 1: Participant socio-demographic information

IES

Only 16% of respondents overall had an IES value of less than 24. The respondents' average Mean IES score was 28.09 10.26, indicating only a mild impact from stress. The mean scores on the avoidance and hyperarousal scales for the interviewees were 17.32 and 5.78, respectively. Only 14% of 100 respondents on the Avoidance measure scored between 24-32, indicating that 14 respondents require clinical attention. Only 2% of respondents on the Hyperarousal measure had scores between 24 and 32, indicating that these respondents had partial Posttraumatic Stress Disorder (PTSD) or at least some of the symptoms. None of the sample's respondents scored higher than 32, indicating that they don't require a likely diagnostic of posttraumatic stress disorder.

	Gender (n=100)		P-Value	Age Groups (Years)(n=100)				P-Value	Education Level (n=100)				P-Value
	Females (53)	Males (47)		18-30 (n=67)	31-40 (n=19)	41-50 (n=10)	>50 (4)		Higher Qualification (n=38)	Graduate (n=21)	Others (n=4)	Under-Graduate (n=37)	
Variable: Increased stress from work, n (%)													
Yes	24 (45.3%)	19 (40.4%)	P=0.624	24 (35.8%)	12 (63.2%)	6 (60%)	1(25%)	P=0.99	24 (63.2%)	7 (33.3%)	0	12 (32.4%)	P=0.008
			Lambda = 0.000					Lambda = 0.163					Lambda = 0.233
No	29 (54.7%)	28 (59.6%)	Cramer's V	43 (64.2%)	7 (36.8%)	4 (40%)	3(75%)	Cramer's V	14 (36.8%)	14 (66.7%)	4(100%)	25 (67.6%)	Cramer's V

	Gender (n=100)		P-Value	Age Groups (Years)(n=100)				P-Value	Education Level (n=100)				P-Value
	Females (53)	Males (47)		18-30 (n=67)	31-40 (n=19)	41-50 (n=10)	>50 (4)		Higher Qualification (n=38)	Graduate (n=21)	Others (n=4)	Under-Graduate (n=37)	
			=0.049					=0.250					=0.344
Variable: Increased Financial stress, n (%)													
Yes	36 (67.9%)	32 (68.1%)	P=0.986	47(70.1%)	14(73.7%)	6(60%)	1((25%)	P=0.249	26 (68.4%)	12(57.1%)	2(50%)	28(75.7%)	P=0.434
			Lambda=0.000					Lambda=0.063					Lambda=0.000
No	17 (32.1%)	15 (31.9%)	Cramer's V=0.002	20(29.9%)	5(26.3%)	4(40%)	3(75%)	Cramer's V=0.203	12 (31.6%)	9(42.9%)	2(50%)	9(24.3%)	Cramer's V=0.165
Variable: Increased stress from home, n (%)													
Yes	30 (56.6%)	24(51.1%)	P=0.579	38(56.7%)	10(52.6%)	5(50%)	1(25%)	P=0.652	20(52.6%)	10(47.6%)	0	24(64.9%)	P=0.078
			Lambda=0.000					Lambda=0.043					Lambda=0.109
No	23 (43.4%)	23(48.9%)	Cramer's V=0.055	29(43.3%)	9(47.4%)	5(50%)	3(75%)	Cramer's V=0.128	18(47.4%)	11(52.4%)	4(100%)	13(35.1%)	Cramer's V=0.261
Variable: Feel horrified due to the COVID-19, n (%)													
Yes	35 (66.0%)	30(63.8%)	P=0.817	49 (73.1%)	8(42.1%)	6(60%)	2(50%)	P=0.77	22(57.9%)	16(76.2%)	0	27(73%)	P=0.015
			Lambda=0.000					Lambda=0.086					Lambda=0.000

	Gender (n=100)		P-Value	Age Groups (Years)(n=100)				P-Value	Education Level (n=100)				P-Value
	Females (53)	Males (47)		18-30 (n=67)	31-40 (n=19)	41-50 (n=10)	>50 (4)		Higher Qualification (n=38)	Graduate (n=21)	Others (n=4)	Under-Graduate (n=37)	
No	18 (34%)	17(36.2%)	Cramer's V =0.023	18(26.9%)	11(57.9%)	4(40%)	2(50%)	Cramer's V =0.261	16(42.1%)	5(23.8%)	4(100%)	10(27%)	.114
Variable: Feel apprehensive due to the COVID-19, n (%)													
Yes	32 (60.4%)	21(44.7%)	P=0.121 Lambda=0.067	42(62.7%)	7(36.8%)	6(60%)	0	P=0.028 Lambda=0.200	19(50%)	13(61.9%)	0	23(62.2%)	P=0.092 Lambda=0.089
No	21(39.6%)	26(55.3%)	Cramer's V =0.155	25(37.3%)	12(63.2%)	4(40%)	4(100%)	Cramer's V =0.302	19(50%)	8(38.1%)	4(100%)	14(37.8%)	Cramer's V =0.254
Variable: Feel helpless due to the COVID-19, n (%)													
Yes	29 (54.7%)	27(57.5%)	P=0.952 Lambda=0.000	39(58.2%)	8(42.1%)	7(70%)	1(25%)	P=0.270 Lambda=0.111	18(47.4%)	12(57.1%)	4(100%)	21(56.8%)	P=0.36 Lambda=0.044
No	24 (45.3%)	20(42.5%)	Cramer's V =0.006	28(41.8%)	11(57.9%)	3(30%)	3(75%)	Cramer's V =0.198	20(52.6%)	9(42.9%)	0	16(43.2%)	Cramer's V =0.206

Table 2: Health-related negative impacts by demographic variables.

Additional Signs of Harm to Rational Health:

Hypothesis H1: Age, gender, and educational status are significantly correlated with respondents' negative rational health, as are other sociodemographic factors.

More than half of the respondents (57%) stated there was no rise in work-related stress after the epidemic. (Table 12). Additionally, (68%) stated that the epidemic has caused them to feel more financially stressed. A total of (54%) respondents said that their tension levels are higher at home. The COVID-19 epidemic, however, caused the majority of subjects (65%) to report feeling horrified and (53%) to feel apprehensive. The COVID-19 epidemic makes the majority of respondents (56%) feel powerless.

The data gathered for study supports each of the chi-square test's presumptions. Given that Pearson's chi-square value is greater than 0.05 and that there is no significant relationship between gender and other indicators of poor rational health, the alternative hypothesis can be rejected with adequate evidence under the decision rule. Therefore, the null hypothesis, or H0, is adopted. (Table 2)

Different age categories and responses, including "feel anxious because of the COVID-19 epidemic," were significantly correlated. The chi-square statistic for Pearson is 0.0280.05. Lambda (near 0, no relationship, 0.2 to 0.3 moderate, more than 0.3 strong), from weak to powerful: Since the lambda number is 0.200, the relationship is moderate. Close to 0, no association; less than 0.2; 0.2 to 0.3; moderate; more than 0.3; strong); Cramer's V: The moderate association is indicated by the Cramer's V value of 0.302. Other negative rational health surveys and age do not significantly correlate. (Table 3, 4, 5)

Different educational backgrounds were significantly correlated with some of the answers, including:

1. "Increased work-related stress," with a Pearson chi-square value of 0.0080.05. Since the lambda number is 0.233, the relationship is moderate. The strong connection is indicated by the Cramer's V. value of 0.344. (Table 6, 7, 8)
2. "Feel horrified because of the COVID-19 epidemic," with a Pearson chi-square value of 0.015 to 0.05. The relationship is weak, as indicated by the lambda number of 0.114. The strong connection is indicated by the Cramer's V value of 0.323. (Table 9, 10, 11)
- 3.

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.120 ^a	3	.028
Likelihood Ratio	10.639	3	.014
Linear-by-Linear Association	4.749	1	.029
N of Valid Cases	100		

Table 3: Chi-Square Tests (Age)

Interpretation: There was a strong correlation between responses, including "feel anxious because of the COVID-19 epidemic," and age groups. The chi-square statistic for Pearson is 0.0280<0.05.

			Value
Nominal by Nominal	Lambda	Symmetric	.115
		Age Dependent	.000
		Feel apprehensive due to the COVID-19. Dependent	.200
	Goodman and Kruskal tau	Age Dependent	.035
Feel apprehensive due to the COVID-19. Dependent		.091	

Table 4: Directional Measures (Age)

Interpretation: Lambda (close to 0, no association, less than 0.2 weak, 0.2 to 0.3 moderate, more than 0.3 strong): Since the lambda number is 0.200, the relationship is moderate.

		Value	Approximate Significance
Nominal by Nominal	Phi	.302	.028
	Cramer's V	.302	.028
	Contingency Coefficient	.289	.028
N of Valid Cases		100	

Table 5: Symmetric Measures (Age)

Interpretation: There is a moderate connection because the Cramer's V value is 0.302. Other negative rational health surveys and age do not significantly correlate.

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	11.804 ^a	3	.008
Likelihood Ratio	13.287	3	.004
Linear-by-Linear Association	6.868	1	.009
N of Valid Cases	100		

Table 6: Chi-Square Tests (Educational background)

Interpretation: As the Pearson's chi-square value is less than the P value, there was a significant correlation between various educational backgrounds and some of the answers, such as "Increased stress from work" (Pearson's chi-square value is 0.0080.05).

			Value
Nominal by Nominal	Lambda	Symmetric	.200
		Educational Background Dependent	.177
		Increased stress from work Dependent	.233
Goodman and Kruskal tau		Educational Background Dependent	.049
		Increased stress from work Dependent	.118

Table 7: Directional Measures (Educational background)

Interpretation: The moderate relationship between educational background and increased job stress is indicated by the Lambda value of 0.233.

		Value	Approximate Significance
Nominal by Nominal	Phi	.344	.008
	Cramer's V	.344	.008
	Contingency Coefficient	.325	.008
N of Valid Cases		100	

Table 8: Symmetric Measures (Educational background)

Interpretation: The Cramer's V value is 0.344, which means there is a strong relationship.

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	10.462 ^a	3	.015
Likelihood Ratio	11.528	3	.009
Linear-by-Linear Association	.900	1	.343
N of Valid Cases	100		

Table 9: Chi-Square Tests (Educational Background)

Interpretation: As Pearson's chi-square value is less than the P value, there was a substantial correlation between various educational backgrounds and some responses, such as "Feel horrified due to the COVID-19 epidemic" (Pearson's chi-square value is 0.015<0.05).

			Value	
Nominal by Nominal	Lambda	Symmetric	.093	
		Educational Background Dependent	.081	
		Feel horrified due to the COVID-19. Dependent	.114	
	Goodman and Kruskal tau		Educational Background Dependent	.018
			Feel horrified due to the COVID-19. Dependent	.105

Table 10: Directional Measures (Educational background)

Interpretation: The Lambda value is 0.114, which means there is a weak relationship.

		Value	Approximate Significance
Nominal by Nominal	Phi	.323	.015
	Cramer's V	.323	.015
	Contingency Coefficient	.308	.015
N of Valid Cases		100	

Table 11: Symmetric Measures (Educational background)

Interpretation: The Cramer's V value is 0.323, which means there is a strong relationship.

	Gender(n=100)		Value	Age Group(n=100)				Value	Education Level(n=100)				Value
	Female (n=53)	Male (47)		18-30 (n=67)	31-40 (n=19)	41-50 (n=10)	>50 (4)		Higher Qualification (n=38)	Graduate (n=21)	Others (n=4)	Under-Graduate (n=37)	
Variable: Getting Support from friends, n(%)													
Decreased	14(26.4%)	14(29.8%)	P=0.72	19(28.4%)	5(26.3%)	4(40%)	0	P=0.423	12(31.6%)	8(38.1%)	1(25%)	7(18.9%)	P=0.560
Same as before	27(50.9%)	26(55.3%)	Lambda=0.000	34(50.7%)	11(57.9%)	3(30%)	4(100%)	Lambda=0.021	20(52.6%)	9(42.9%)	3(75%)	20(54.1%)	Lambda=0.000
Increased	12(22.6%)	7(14.9%)	Cramer's V=0.072	14(20.9%)	3(15.8%)	3(30%)	0	Cramer's V=0.173	6(15.8%)	4(19.0%)	0	10(27.0%)	Cramer's V=0.156
Variable: Getting Support from family members, n(%)													
Decreased	5(9.4%)	5(10.6%)	P=0.974	4(5.9%)	2(10.5%)	4(40%)	0	P=0.001	7(18.4%)	1(4.8%)	0	2(5.4%)	P=0.089
Same as before	28(52.8%)	26(55.3%)	Lambda=0.000	34(50.7%)	14(73.7%)	1(10%)	4(100%)	Lambda=0.085	23(60.5%)	8(38.1%)	2(50%)	20(54.1%)	Lambda=0.085

	Gender(n=100)		Value	Age Group(n=100)				Value	Education Level(n=100)				Value
Increased	20(37.7%)	16(34%)	Cramer'sV =0.023	29(43.3%)	3(15.8%)	5(50%)	0	Cramer'sV = 0.333	8(21.1%)	12(57.1%)	2(50%)	15(40.5%)	Cramer'sV =0.234
Variable: Shared feeling with family members, n(%)													
Decreased	2(3.8%)	6(12.8%)	P=0.040	5(7.5%)	2(10.5%)	1(10%)	0	P = 0.062	3(7.9%)	1(4.8%)	1(25%)	3(8.1%)	P=0.161
Same as before	22(41.5%)	26(55.3%)	Lambda=0.135	36(53.7%)	9(47.4%)	0	3(75%)	Lambda= 0.173	14(36.8%)	13(61.9%)	0	21(56.8%)	Lambda= 0.192
Increased	29(54.7%)	15(31.9%)	Cramer'sV =0.254	26(38.8%)	8(42.1%)	9(90%)	1(25%)	Cramer'sV = 0.245	21(55.3%)	7(33.3%)	3(75%)	13(35.1%)	Cramer'sV =0.215
Variable: Shared feeling with others when in blue, n(%)													
Decreased	11(20.8%)	9(19.1%)	P=0.979	12(17.9%)	2(10.5%)	6(60%)	0	P = 0.001	9(23.7%)	2(9.5%)	2(50%)	7(18.9%)	P=0.374
Same as before	33(62.3%)	31(66%)	Lambda=0.000	47(70.1%)	12(63.2%)	0	4(100%)	Lambda= 0.162	21(55.3%)	15(71.4%)	1(25%)	26(70.3%)	Lambda= 0.027
Increased	9(16.9%)	7(14.9%)	Cramer'sV =0.020	8(11.9%)	5(26.3%)	4(40%)	0	Cramer'sV = 0.	8(21.1%)	4(19%)	1(25%)	4(10.8%)	Cramer'sV =0.180

	Gender(n=100)		Value	Age Group(n=100)				Value	Education Level(n=100)				Value
								341					
Variable: Caring for family members feelings, n (%)													
Decreased	0	3(6.38%)	P=0.075	2(2.9%)	0	1(1.0%)	0	P=0.232	2(5.3%)	0	0	1(2.7%)	P=0.917
Same as before	15(28.3%)	18(38.3%)	Lambda=0.000	21(31.3%)	8(42.1%)	1(1.0%)	3(7.5%)	Lambda=0.056	13(34.2%)	6(28.6%)	1(2.5%)	13(35.1%)	Lambda=0.000
Increased	38(71.7%)	26(55.3%)	Cramer's V =0.228	44(65.7%)	11(57.9%)	8(8.0%)	1(2.5%)	Cramer's V =0.201	23(60.5%)	15(71.4%)	3(7.5%)	23(62.2%)	Cramer's V =0.101

Table 12: showing variations in family and social support according to demographic factors.

Impact on Family and Social Support

Hypothesis H1: The following hypothesis (H1) states that there is a substantial correlation between the respondents' social and family support and sociodemographic factors (age, gender, and educational background). Following the start of the epidemic, the majority of contestants (53%) and families (54%) said they got the same support as they had before the epidemic. The majority also felt the same way and shared it with family members (48%), felt the same way and shared it with others when they were blue (64%), and showed more concern for the emotions of family members (64%) (Table 12).

The data gathered for study supports each of the chi-square test's presumptions. Given that the Pearson's chi-square value of $0.040 < 0.05$ indicates a significant link between gender and answers like "Shared feeling with family members," the null hypothesis can be rejected according to the decision rule. H1, or the alternative hypothesis, is therefore adopted. The lambda value of 0.135 indicates a weak association (close to 0, no relationship, less than 0.2, moderate, more than 0.3, strong). The Cramer's V value is 0.254, which indicates that there is a Strong connection (close to 0, no relationship, less than 0.2 weak, 0.2 to 0.3 moderate, more than 0.3, strong). There is no noteworthy association between gender and other responses of social and family support. (Table 13, 14, 15)

There is a strong correlation between various age categories and certain responses, including:

1. "Having family support" (Pearson's Chi-square value: $0.001 < 0.05$). When the lambda number is 0.85, a strong relationship exists. Having a Cramer's V Value of 0.333 indicates a strong connection. (Table 16, 17, 18)
2. "Shared feeling" (Pearson's Chi-square value is $0.001 < 0.05$) with others when they were feeling down. Since the lambda number is 0.162, the relationship is moderate. With a Cramer's V value of 0.341, a strong connection is present. Age and other social and familial support reactions are not significantly correlated. Other sociodemographic factors, like educational attainment, had no discernible correlation with the questionnaire questions. (Table 19, 20, 21)

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.451 ^a	2	.040
Likelihood Ratio	6.599	2	.037
Linear-by-Linear Association	6.386	1	.012
N of Valid Cases	100		

Table 13: Chi-Square Tests (Gender)

Interpretation: There is significant association between **Gender** and responses like "Shared feeling with family members" as **Pearson's chi-square** is $0.040 < 0.05$.

		Value	Approximate Significance
Nominal by Nominal	Phi	.254	.040
	Cramer's V	.254	.040
	Contingency Coefficient	.246	.040
N of Valid Cases		100	

Table 14: Symmetric Measures (Gender)

Interpretation: **Cramer's V** (close to 0, no relationship, less than 0.2 weak, 0.2 to 0.3 moderate, more than 0.3, strong): 0.3; strong) When a relationship has a Cramer's V rating of 0.254, it is considered to be strong.

			Value
Nominal by Nominal	Lambda	Symmetric	.152
		Gender Dependent	.170
		Shared feeling with family members Dependent	.135
	Goodman and Kruskal tau	Gender Dependent	.065
		Shared feeling with family members Dependent	.035

Table 15: Directional Measures (Gender)

Interpretation: **Lambda** (close to 0, no relationship, less than 0.2 weak, 0.2 to 0.3 moderate, more than 0.3, strong): There is a weak connection because the lambda value is 0.135.

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	22.209 ^a	6	.001
Likelihood Ratio	22.183	6	.001
Linear-by-Linear Association	4.192	1	.041
N of Valid Cases	100		

Table 16: Chi-Square Tests (Age)

Interpretation: The answer "Getting support from family members" has a significant correlation with various age groups (**Pearson's Chi-square** value is $0.001 < 0.05$).

			Value
Nominal by Nominal	Lambda	Symmetric	.050
		Age Dependent	.000
		Getting support from family members Dependent	.085
	Goodman and Kruskal tau	Age Dependent	.068
		Getting support from family members Dependent	.113

Table 17: Directional Measures (Age)

Interpretation: When the lambda number is 0.85, a strong relationship exists.

		Value	Approximate Significance
Nominal by Nominal	Phi	.471	.001
	Cramer's V	.333	.001
	Contingency Coefficient	.426	.001
N of Valid Cases		100	

Table 18: Symmetric Measures (Age)

Interpretation: The Cramer's V value is 0.333, which indicates a strong connection, according to the table above.

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	23.282 ^a	6	.001
Likelihood Ratio	27.390	6	.000
Linear-by-Linear Association	.011	1	.917
N of Valid Cases	100		

Table 19: Chi-Square Tests (Age)

Interpretation: Age and "Shared feeling with others when they felt blue" have a substantial relationship (Pearson's Chi-square value is 0.001<0.05). With a Cramer's V value of 0.341, a strong connection is present. Age and other social and familial support reactions are not significantly correlated.

			Value
Nominal by Nominal	Lambda	Symmetric	.086
		Age Dependent	.000
		Shared feeling with others when in blue Dependent	.162
	Goodman and Kruskal tau	Age Dependent	.066
		Shared feeling with others when in blue Dependent	.146

Table 20: Directional Measures (Age)

Interpretation: Since the lambda number is 0.162, the relationship is moderate.

		Value	Approximate Significance
Nominal by Nominal	Phi	.483	.001
	Cramer's V	.341	.001
	Contingency Coefficient	.435	.001
N of Valid Cases		100	

Table 21: Symmetric Measures (Age)

Interpretation: With a Cramer's V value of 0.341, a strong connection is present.

Variables	Gender (n=100)		Value	Age Group(n=100)				Value	Education Level(n=100)				Value
	Female (n=53)	Male (47)		18-30 (n=67)	31-40 (n=19)	41-50 (n=10)	>50 (4)		Higher Qualification (n=38)	Graduate (n=21)	Others (n=4)	Under Graduate (n=37)	
Variable: Pay attention to rational health (%)													
Decreased	9 (16.9%)	8 (17%)	P=0.891	13 (19.4%)	3 (15.8%)	1 (10%)	0	P=0.057	5 (13.2%)	4 (19%)	0	8 (21.6%)	P=0.726
Same as before	18 (33.9%)	18 (38.3%)	Lambda=0.000	21 (31.3%)	11(57.9%)	1 (10%)	3(75%)	Lambda=0.151	16 (42.1%)	5 (23.8%)	2 (50%)	13 (35.1%)	Lambda=0.000
Increased	26 (49.1%)	21 (44.7%)	Cramer'sV	33 (49.3%)	5 (26.3%)	8 (80%)	1 (25%)	Cramer'sV	17 (44.7%)	12 (57.1%)	2 (50%)	16 (43.2%)	Cramer'sV

	Gender (n=100)		Val ue	Age Group(n=100)				V al ue	Education Level(n=100)				V al ue
			=0. 048					=0. 247					=0. 135
Variable: Time spent to resting, n(%)													
Decre ased	10 (18.9 %)	8 (17 %)	P=0 .824	14 (20.9 %)	2 (10.5%)	2 (20 %)	0	P=0 .008	6 (15.8 %)	3 (14.3%)	1 (25 %)	8 (21.6 %)	P=0 .144
Same as befor e	15 (28.3 %)	23 (48. 9%)	La mb da= 0.00 0	15 (22.4 %)	12 (63.2%)	1 (10 %)	3 (75 %)	La mb da= 0.18 4	18 (47.4 %)	6 (28.6%)	0	7 (18.9 %)	La mb da= 0.08 2
Incre ased	28 (52.8 %)	16 (34 %)	Cra mer 'sV =0. 062	38 (56.7 %)	5 (26.3%)	7 (70 %)	1 (25 %)	Cra mer 'sV =0. 295	14 (36.8 %)	12 (57.1%)	3 (75 %)	22 (59.5 %)	Cra mer 'sV =0. 219
Variable: Time spent to relax, n(%)													
Decre ased	15 (28.3 %)	5 (10. 6%)	P=0 .087	13 (19.4 %)	4 (21.1%)	2 (20 %)	1 (25 %)	P=0 .579	10 (26.3 %)	3 (14.3%)	0	7 (18.9 %)	P=0 .223
Same as befor e	15 (28.3 %)	15 (31. 9%)	La mb da= 0.00 0	20 (29.9 %)	8 (4.1 %)	1 (10 %)	2 (50 %)	La mb da= 0.03 9	13 (34.2 %)	9 (42.9%)	0	9 (24.3 %)	La mb da= 0.00 0
Incre ased	23 (43.4 %)	27 (57. 4%)	Cra mer 'sV =0. 221	34 (50.7 %)	7 (36.8%)	7 (70 %)	1 (25 %)	Cra mer 'sV =0. 154	15 (39.5 %)	9 (42.9%)	4 (100 %)	21 (56.8 %)	Cra mer 'sV =0. 203
Variable: Time Spent to exercise, n (%)													
Decre ased	16 (30.2 %)	13 (27. 7%)	P=0 .768	20 (29.9 %)	2 (10.5%)	6 (60 %)	0	P=0 .036	10 (26.3 %)		0	12 (32.4 %)	P=0 .088
Same as befor e	20 (37.7 %)	20 (42. 6%)	La mb da= 0.00 0	28 (41.8 %)	10 (52.6%)	0	3 (75 %)	La mb da= 0.10 2	19 (50%)	9 (42.9%)	0	13 (35.1 %)	La mb da= 0.06 8
Incre ased	17 (32.1 %)	14 (29. 8%)	Cra mer 'sV =0. 073	19 (28.4 %)	7 (36.8%)	4 (40 %)	1 (25 %)	Cra mer 'sV =0. 259	9 (23.7 %)	6 (28.6%)	4 (100 %)	12 (32.4 %)	Cra mer 'sV =0. 235

Table 22: Lifestyle and Awareness by Demographic Factors

Impact on Lifestyle Changes Related to Rational Health:

Hypothesis H1: There is a significant correlation between socio-demographic factors (age, gender, and educational attainment) and changes in respondents' lifestyles linked to their rational health.

Following the epidemic, 47% of respondents said they were giving more attention to their rational health. (Table 22). Furthermore, 44% of respondents said they were spending more time sleeping. The majority of respondents—50%—said they were spending more time unwinding. Additionally, 31% of respondents said they were moving more frequently.

The data gathered for study supports each of the chi-square test's presumptions. As Pearson's value < 0.05 , sociodemographic factors like gender and educational attainment were not significantly linked with queries about lifestyle changes related to rational health.(Table 22)

There is a strong correlation between various age categories and certain responses, including:

1. "Time spent resting," with a Pearson's Chi-square score of $0.008 < 0.05$. Since the lambda number is 0.184, the relationship is moderate. With a Cramer's V value of 0.295, a moderate association exists. (Table 23, 24, 25)
2. "Time spent working out," with a Pearson's Chi-square score of $0.036 < 0.05$. When the lambda value is 0.102, a weak connection exists. With a Cramer's V value of 0.259, a moderate association exists. Age and other responses to changes in lifestyle that are linked to rational health do not significantly correlate with one another. (Table 26, 27, 28).

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	17.443 ^a	6	.008
Likelihood Ratio	.17.271	6	.008
Linear-by-Linear Association	.017	1	.896
N of Valid Cases	100		

Table 23: Chi-Square Tests (Age)

			Value
Nominal by Nominal	Lambda	Symmetric	.110
		Age Dependent	.000
		Time spent to rest Dependent	.184
	Goodman and Kruskal tau	Age Dependent	.073
		Time spent to rest Dependent	.098

Table 24: Directional measures (Age)

Interpretation: "The Pearson's Chi-square number for "time spent resting" is $0.008 < 0.05$. Given that the chi-square value is less than the p-value and that the lambda value is 0.102, there is a weak connection between the response of time spent exercising and age groups.

		Value	Approximate Significance
Nominal by Nominal	Phi	.418	.008
	Cramer's V	.295	.008
	Contingency Coefficient	.385	.008
N of Valid Cases		100	

Table 25: Symmetric Measures (Age)

Interpretation: With a Cramer's V value of 0.295, a moderate association exists.

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.464 ^a	6	.036
Likelihood Ratio	18.123	6	.006
Linear-by-Linear Association	.149	1	.700
N of Valid Cases	100		

Table 26: Chi-Square Tests (Age)

Interpretation: Age and the response "Time spent to exercise" have a significant relationship (Pearson's Chi-square value is $0.036 < 0.05$).because P value is greater than Chi-square value

			Value
Nominal by Nominal	Lambda	Symmetric	.065
		Age Dependent	.000
		Time spent to exercise Dependent	.102
	Goodman and Kruskal tau	Age Dependent	.032
		Time spent to exercise Dependent	.069

Table 27: Directional Measures (Age)

Interpretation: We can see from the output above that the lambda number is 0.102, which denotes a weak relationship. With a Cramer's V value of 0.259, a moderate association exists.

		Value	Approximate Significance
Nominal by Nominal	Phi	.367	.036
	Cramer's V	.259	.036
	Contingency Coefficient	.344	.036
N of Valid Cases		100	

Table 28: Symmetric Measures (Age)

Interpretation: According to the data in the table above, the Cramer's V number is 0.259, indicating a moderate relationship.

Discussion: Our investigation into how the COVID-19 epidemic affected the general public's rational health and quality of life in Navi Mumbai, India, was among the first, to our awareness. Additionally, the city of Navi Mumbai had been sealed off by the officials. On March 13, the Maharashtra government declared the outbreak an epidemic in Mumbai, Navi Mumbai, Pune, and Nagpur. It then forced individuals with suspected symptoms¹⁶ to be hospitalized by using the Epidemic Diseases Act of 1897.

The overall IES scores of the contestants showed a slightly stressful impact. The fact that disease outbreak was not reflected to be severe at the time the study was done may help to partially explain this result. It's also possible that the interviewees were still unaware of how dangerous the virus was. Our research also discovered that the majority of contestants had changed their lifestyles for the better in ways related to their rational health. The majority of contestants claimed that they received the same support from their family and coworkers. More than half of the contestants reported that they unwinded and slept more during the epidemic.

Most people start to become more concerned about their families. These factors may have lowered the COVID-19 epidemic's stressful effects as a consequence. To ascertain whether the study's results about the effect's limited impact on rational health are the result of knowledge gaps, a lack of interest, or other factors, more investigation is necessary. The authors also pointed out enhanced social and familial support as well as advantageous lifestyle changes linked to rational health.

Although more than half of the contestants (65%) stated that they were horrified and apprehensive due to the COVID-19 epidemic. The majority of contestants also reported that they spent more time relaxing, recovering, and exercising after the epidemic began because they were more worried about their rational health. These positive impacts on rational health may have made it simpler for the subjects to deal with negative effects, like increased stress.

Our study's conclusions were in line with those of Lau et al., who looked at Hong Kong residents' rational health and quality of life during the SARS epidemic in 2003.

Our study had several benefits. We think that because our study was conducted less than two weeks after the Indian government placed Navi Mumbai and other areas of Mumbai city under lockdown, it was one of the first to offer a unique opportunity to analyse the COVID-19 epidemic's effects. This is important because the study offers some of the first details on the impact of the COVID-19 epidemic on Navi Mumbai's rational health. However, due to the small sample size, low study adherence, and convenience sampling method, our research was limited and we

were unable to generalize our results to the complete Navi Mumbai population. Furthermore, individual memory bias might have affected our findings. We did not elicit knowledge from respondents.

Conclusion

These findings need to be confirmed and further investigated in upcoming bigger population studies because the COVID-19 epidemic is still active. In our sample, the COVID-19 epidemic was associated with a minimally stressful impact. Some of the COVID-19 epidemic's immediate beneficial and derivational effects on rational health have been documented by our study. In order to assess the COVID-19 epidemic's effects, our study also provided some critical suggestions for future research.

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Conflicts of Interest: The writers say they have none.

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