

# **RESEARCH ARTICLE**

## ASSESSMENT OF INSOMNIA AND PSYCHO-SOCIAL HEALTH STATUS OF INDIAN CITIZENS DURING COVID-19 PANDEMIC LOCKDOWN PERIOD

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# Manuscript Info

#### Abstract

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#### Keywords:-

COVID 19 Pandemic, Mental Health, Psychology, Psycho-Social Health, India, Insomnia, Lockdown The Pandemic lockdown period in India had created changes in various health aspects of the general population. One of the common anticipated responses is Insomnia. A National level online survey using a non-probability snowball sampling technique was conducted and 1007 responses were received from people within the range of 18 to 70 years. This cross-sectional study attempted to assess the Psycho-social health status of the general population of India during the Pandemic Lockdown period and provides an overview of evidence regarding relevant information like availability status of essential requirements, distress levels when facing the shortage of those; preventive medications that were being taken by participants, degree of worry on appearance of minor symptoms, changes in perception towards people belonging to other countries; It also reports the fraction of participants who faced ostracism due to being infected or having minor symptoms or due to profession. Insomnia prevalence during the period was assessed by using ISI scores of participants. The questionnaire also included open-ended questions to record the Major challenges faced by people during lockdown( like Psychological, Behavioural, Physical, Social and Economic), their perception about safety measures that can protect them, and aspects of the current Pandemic management system that they believe must be improved.

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#### Introduction:-

COVID-19 started in December 2019 as a viral outbreak in Wuhan city of central Hubei province of China.<sup>19</sup> Looking at the stretch of countries this outbreak spread to, WHO declared it a Public Health Emergency of International Concern on 30th January 2020.<sup>20</sup>

Pandemics are not just a medical phenomenon, they affect individuals and society on many levels, causing disruptions.<sup>1</sup> It is anticipated that this pandemic will have rippling effects, especially based on current public reactions.<sup>2</sup>

**Corresponding Author: - Arya Bisen** Address: - Undergraduate Medical Student, Bharati Vidyapeeth Deemed to be University Medical College (BVDTUMC) Pune. On 24 March 2020, the Government of India under Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India.

It was ordered after a 14-hour voluntary public curfew on 22 March, followed by enforcement of a series of regulations in the country's COVID-19 affected regions 2<sup>nd</sup> phase of lockdown started from 15<sup>th</sup> April 2020 to 3<sup>rd</sup> May 2020 i.e. for 19 days 3<sup>rd</sup> phase from 4<sup>th</sup> May 2020 to 17<sup>th</sup> May 2020 for 14 days 4<sup>th</sup> and the final phase started on 18<sup>th</sup> May 2020 till 31<sup>st</sup> May 2020 for 14 days These were followed by Unlock 1.0 from 1<sup>st</sup> June 2020 to 30<sup>th</sup> June 2020 (30 days) and unlock 2.0 scheduled to happen from 1<sup>st</sup> July 2020 to 31<sup>st</sup> July 2020.

On 30th March 2020, a total of 693,224 confirmed cases were reported from 204 countries of the world; there were 33,106 confirmed deaths across the globe, as reported by the WHO <sup>21.</sup>

The state of lock-down in many parts of the world, which are contributing largely to the global economy has led to the halting of services and products. Lockdown with social distancing is essential to contain the pandemic. It has been found successful in many countries. Lock-down with social distancing is believed to flatten the epidemic curve so that the health system can handle the cases without being overwhelmed. <sup>3,4</sup> This period of lockdown is used for containment of the infection i.e. test, detect, contact tracing, and isolation.

The general population use social media for updates during lockdown period they are exposed to conflicting information and that may lead to stress. Fear of unknown lead to higher anxiety levels in healthy as well as those individuals with pre-existing mental health ailments. <sup>4</sup> The feeling of loneliness, due to reduced social interactions is a challenge for several psychological disorders such as; anxiety, drug abuse, insomnia, major depression etc. <sup>5</sup> Fear of losing livelihood due to isolation, constant sense of insecurity for oneself and loved once, affect in the availability of basic supplies can add to change in an individual's mental health status. <sup>6</sup> Authors in China have found insomnia is highly prevalent and associated with COVID-19.<sup>7</sup> Stigma towards people with symptoms such as cold, cough or sneezing, which might just be a simple flu or people working for essential services and xenophobia are other two observed aspects of the societal impact of pandemic infectious outbreaks. <sup>8</sup>

In healthcare workers, paramedics, volunteers, virologists, management workers and staff at isolation wards or media persons at the frontline of the COVID-19 control are believed to be facing issues like coverage fatigue, burnout, frustration and the fear of getting infected or guilt of transmitting infection, affecting their mental and social well-being and sense of safety and satisfaction at workplace.<sup>8,9</sup>

# **Objective:-**

To assess the prevalence of insomnia and other psychological effects of lockdown period during COVID-19 Pandemic and to estimate proportion of individuals facing social stigma due to workplace commitments and those facing the difficulties in getting essential commodities in the lockdown period.

# Material and Methods:-

**Study design:** Descriptive, cross-sectional

**Study participants:** Individuals above the age of 18 years

#### Inclusion criteria:

Participants residing in India using android phones and who can understand English.

#### Sample size:

Considering the prevalence of insomnia to be 33.7 %<sup>7</sup> and absolute error of 3%. The estimated sample size was 993.

#### Sampling technique:

A non-probability snowball sampling strategy with focus on the general population was used. The identified study subjects recruited future subjects from among their acquaintances.

# **Related Works:**

It is already evident that the direct and indirect psychological and social effects of the coronavirus disease 2019 (COVID-19) pandemic are pervasive and could affect mental health now and in the future.<sup>10</sup>

Deploying a mental health science perspective<sup>3</sup> to the pandemic will also inform population-level behaviour change initiatives aimed at reducing the spread of the virus.

Studies have suggested that public health emergencies can have many psychological effects on college students, which can be expressed as anxiety, fear, and worry, among others<sup>23,24</sup>

Furthermore, the significant shortage of masks and disinfectants, the overwhelming and sensational news headlines, and erroneous news reports have also added to anxiety and fear <sup>25</sup>.

# Method of Data Collection:-

Since Indian Government recommended the public to minimize face-to-face interaction by staying at home, responses were collected using the Online Google Forms platform. Circulation of the Online Survey forms was done by using Social Media sources like WhatsApp, Instagram, Facebook, Telegram and E-mails. All respondents were requested for voluntary informed consent.

### **Study Duration:**

Two months (1<sup>st</sup> April 2020 - 31<sup>st</sup> May 2020) including data collection period 15<sup>th</sup> April 2020 to 5<sup>th</sup> May 2020

### Tool of data collection:

The study tool was pretested and included a validated Insomnia Severity assessment tool. Additionally, information on their change in perception towards people working for essential services or towards people belonging to other countries and their exposure to any form of stigma was taken. Inquiry about level of availability of basic essential supplies i.e. Groceries, Medicines, Fruits, Vegetables and Milk and the level of distress faced by them due to the availability status if any was done. Their level of Satisfaction and sense of safety at workplace (for essential service workers) and Satisfaction levels towards Government's role towards managing the Pandemic was also recorded. Few open-ended questions inquiring about the Major challenges faced by them, their opinions on what they believe can be improved to make their workplace safer and their suggestions on measures that can be used by them or their workplace to maintain mental and social health status during Pandemic.

Evaluation of Insomnia Severity was done by assigning score 0, 1, 2, 3, 4 to each response category None=0, Mild=1, Moderate =2, Severe=3, Very Severe=4; and adding the scores of each item (question 1+2+3+4+5+6+7) = total score. Interpretation of the insomnia score: 0-7: No clinically significant insomnia ;8-14: Subthreshold insomnia ;15-21: Clinical Insomnia (Moderate severity) ;22-28: Clinical Insomnia (Severe)

#### Data analysis:

It was performed using SPSS statistical software Version 25.0. and R software. Descriptive statistics was calculated for sociodemographic characteristics, the scores of the scales were expressed as mean and standard deviation. Linear regressions were performed to calculate the univariate associations between sociodemographic characteristics and the 7-item Insomnia Severity Index score. All tests were two-tailed, with a significance level of p < 0.05. The openended questions were analyzed using item analysis for qualitative research.

#### **Ethics approval:**

The study was approved by the institutional ethics committee DCGI Reg. No. ECR518/ Inst /MH/2014/RR-17

# **Results:-**

There were 1007 participants across different states of India who completed the online questionnaire, they were asked to respond to the insomnia severity index and some open-ended questions related to availability of the essential and workplace safety and challenges they faced during the lockdown period. The mean age of the participants was 29.1(SD=11.4 years),56.7% were males, the majority passed Higher Secondary Certificate (HSC) examination and were students. Out of 484 who were involved in some form of occupation ,126 participants were physically going to work since they were involved in essential services.

**Demographic characteristics of the participants: Table 1:-** Demographic characteristics of the participants.

Characteristic	No. (%)
Age group	
18-20	225(22.3)
20-30	449(44.6)
30-40	157 (15.6)
40-50	104 (10.3)
50-60	59 (5.9)
>60	13 (1.3)
Sex	
Male	571 (56.7)
Female	436 (43.3)
Education category	
Postgraduate	252 (25.0)
Graduate	316 (31.4)
Higher Sec certificate	439 (43.6)
Occupation category	
Professional	369 (36.8)
Semi Professional	83 (8.1)
Arithmetic Skill Job	17 (1.7)
Student	485 (48.3)
Unemployed	04 (0.5)
Self Employed	17(1.5)
Homemaker	25 (2.5)
Retired	7 (0.6)



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Individuals. Details are shown for State. Fig. 1:- Statewise distribution of Participants: Map of India.

## Prophylactic medication for COVID-19:

Hydroxychloroquine (HCQ) was reported to be taken mostly by those who were in the medical profession. Out of total, 72 participants were known to be taking Homeopathic medicine like ARS:ALB:30, Byonia Alba 30, or Ayurvedic medications. While some took multivitamins and vitamin C tablets.

#### Mental health medication:

26 participants were already taking specific medication for mental health i.e Antidepressants, anti-anxiety pills like Escitalopram, Alprazolam, Fluoxetine, Amitriptyline, Alprazolam, Etizolam and for insomnia like Meloset (Melatonin) and antipsychotics, mood stabiliser, lithium.

148 participants reported that they follow methods to prevent the COVID 19 infection like wearing a face mask, frequent use of sanitizer, avoid stepping out of the house unless mandatory, follow social distancing, consumption of hot water, mediation, yoga and regular exercise.

### Availability of essential items to participants:

More than 50% of the participants had access to sufficient and convenient availability of essential items enlisted:

Availability	Not at all	Not easily available	Most of the times	Sufficient and
				convenient
Grocery	45(4.5)	95(9.4)	314(31.2)	553(54.9)
Medicines	40(4.0)	59(5.9)	263(26.1)	645(64.0)
Vegetables	27(2.7)	101(10.0)	321(31.9)	558(55.4)
Fruits	45(4.5)	166(16.5)	303(30.1)	493(48.9)
Milk	31(3.1)	43(4.3)	226(22.4)	707(70.2)

Table 2:- Availability of essential items to participants.

# Distress on shortage of availability of essential items (basics):

Total 1003 participants responded as follows:

#### **Table 3:-** Distress on shortage of availability of essential items(basics).

Distress on shortage of basics	Number (%)
Not at all	367(36.6)
A little	237(23.6)
Mild	156(15.5)
Moderate	142(14.2)
Severe	78(7.8)
Extremely worried all the time	23(2.3)

63.4% individuals faced some degree of shortage of availability of essential requirements.

One third of the participants were not worried about shortage of availability of the essentials while one fourth were little worried (Table 3).

# Distribution of participants based on degree of worry on appearance of minor symptoms:

Table 4:- Distribution of participants based on degree of worry on appearance of minor symptoms.

Worry on appearance of minor symptom	Number (%)
None	371(36.8)
Mild	393(39.0)
Moderate	142(14.1)
Severe to very severe	101(10.1)
Total	1007(100.0)

63.1% individuals faced some degree of worry on appearance of even minor symptoms

# Social stigma:

Out of total, 235(23.3%) faced stigma in some or the other form due to being shunned by others on appearance of minor symptoms or because of their profession. Total 989 individuals responded to this question as follows:

**Table 5:-** Response to question about their change in perception towards people belonging to other countries(N=989).

Change in perception towards people belonging to other countries	Number (%)
Not at all	355(35.9)
Very few changes in perception	205(20.7)
Various changes	159(16.1)
Minor dislike towards them	160(16.2)
Significant dislike towards them	77(7.8)
Noticing a constant sense of hate	33(3.3)
Total	989(100.0)

The increasing rate of infection and import of infection from people of other countries led to significant dislike or constant hate towards them in 100 participants (11%). (Table 5).

# Satisfaction with Government's action with regards to control of COVID Pandemic:

This question was made optional and 927 individuals responded to it as follows:

Table 6:- Satisfaction with Government's action with regards to control of COVID Pandemic.

Satisfaction with Government's action	Number (%)
Not at all	37(4.0)
A little	70(7.5)
Somewhat	116(12.6)
Much	197(21.2)
Very Satisfied	299(32.2)
Extremely Satisfied	208(22.5)
Total Participants	927(100)

#### Assessment of Insomnia:

The mean insomnia score among 1007 participants was 6.26 (SD=5.848). Majority of the participants 637(66.8%) were having normal sleep while 12.6% were having moderate to severe insomnia. (Table 8), subthreshold insomnia and moderate insomnia was more common in the age group 20-30 years (P<0.001). The insomnia grades were similar in both the sexes and the occupation categories while it varied with education categories (p<0.05). For analysis of occupation and insomnia scores, no insomnia and subthreshold were combined and moderate to severe was combined. (Table 7)

Table 7:- Grades of insomnia and demographic characteristics.

	Grades of insomnia					p-value	
	No insomnia	Subthreshold insomnia	Moderate Insomnia	Severe insomnia	Total	Chi- Square Value	
Age –group							
18-20	132	55	33	5	225	53.15	< 0.05
20-30	270	112	61	6	449		
30-40	123	24	10	0	157		
40-50	86	10	6	2	104		
50-60	51	5	3	0	59		

<u>&gt;60-70</u>	11	1	1	0	13		
>00-70	11	1	1	0	15		
<b>Sex</b>	276	00	52	0	126	6.01	> 0.05
remaie	270	98	35	9	430	0.84	>0.03
Male	397	109	61	4	571		
Total	673(66.8)	207(20.6)	114(11.4)	13(1.2)	1007		
<b>Education Cate</b>	gory						
Higher sec	257	108	67	7	439	33.83	< 0.05
certificate							
Graduate	216	63	32	5	316		
Postgraduate	200	36	15	1	252		
	673	207	114	13	1007		
Occupation	•			•	•		
Professional	267	63	35	04	369	12.919	>0.05
Semi	64	12	06	01	83	df=7	
Professional							
Arithmetic	12	04	01	00	17		
Skill Job							
Student	290	120	68	07	485		
Unemployed	00	04	00	00	04		
Self Employed	00	17	00	00	17		
Homemaker	19	05	01	00	25		
Retired	00	07	00	00	07		

**Linear Regression analysis**: It was performed in R software and it was found that the prevalence of insomnia is negatively correlated with Age groups. Below are the linear regression equations for each breakout category:

- 1. No insomnia= 262.6 3.963 Age groups
- 2. Subthreshold=96.8893-1.6028 Age groups
- 3. Moderate= 53.4476 -0.8848 Age groups
- 4. Severe=53.4476-0.8848 Age groups

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	R Square	p-value	Comment
No insomnia	0.6978	0.01195	P value < 0.05. Hypothesis cannot be rejected
Subthreshold	0.5356	0.03735	P value < 0.05. Hypothesis cannot be rejected
moderate	0.5341	0.03768	P value < 0.05. Hypothesis cannot be rejected
Severe	0.5341	0.03768	P value < 0.05. Hypothesis cannot be rejected

 Table 8:- Linear regression analysis values.

For the linear regression analysis, we took Hypothesis (Ho) as- "Age group and prevalence of Insomnia are related". P-value is less than 0.05 in the above table, we have statistically significant evidence that Age group has a negative correlation with insomnia for COVID situation. This means higher the age, lower the prevalence of insomnia.

# **Open-ended Response Results:-**

# Major Challenges:

Table 9:- Major challenges faced by participants during lockdown.

Major challenges	Number (%)
Economic Issues	190(18.9)
Unstable earning, job insecurity, unemployment, non-payment to employees, Price increment of	
basic amenities, and loss in business	

Psychological and Behavioral challenges	602(59.8)
Disruption of daily routine, sleep, increased irritability or overwhelming emotions like anger.	
stress due to an uncertain education system, feeling of being unproductive, anxiety, overthinking,	
restlessness laziness boredom excessive need to stay protected and keen things clean worry for	
basic requirements and salf protection fealing of being transad unraliable source of information	
base requirements and sen protection, reeing or other trapped, unternate source of monitation,	
lear of going to nospital for regular check and any other disease. Difficulty in staying positive and	
motivated, nicotine addiction getting worse.	
Physical challenge	252(25.0)
Low physical activity, weight gain, lethargy, household workload, inability to pursue regular	
habits, Increased use of technology and screen time, unusual menstrual cycle	
Social challenges	194(19.3)
Not being able to go to hometown/country, worry of staying away from family and not being able	
to take care of them, social issues like disagreement, incompatibility within the home, Loneliness,	
No time for self-due to household work, Communication gap between people who used to	
physically meet daily, irresponsible attitude of people towards measures taken by Government,	
health workers, doctors, police, communalism and racism.	

# Their perception of the safety Measures to be taken:

Total 317 responded to the open-ended question for below:

**Table 10:-** Perception of safety measures that can make them feel protected.

	Individuals
Safety Measures	(%)
Proper sanitation and infection control measures at public places and residential areas	115(36.2)
Improving the availability of protective gear and masks	103(32.5)
Increase duration of lockdown and maintaining social distancing	76(23.9)
More availability of corona testing kit, Increased number of sample screening	60(18.9)
Right information circulation through media and Positivity on news channels	54(17.0)
Testing for every medical resident and Personal availability	31(9.7
shopkeepers and vendors using sanitizers or washing hand, wearing gloves and masks	23(7.2)
Developing a vaccine	21(6.6)
Action against violators of lockdown rules of social distancing like standing on long	13(4.1)
queue in front of liquor shops	
Government support to immigrants	8(2.5)
Rental policy flexibility	5(1.5)

# Response to the question about lack in the current management of situation in country:

On being asked about the lack in the current management of situation in country, 321 people responded as below:

Table 11:- Response to the question about lack in the current management of situation in country.

Response	Individuals (%)
Shortage of hospital and medical facilities	116(36.1)
Care for the migrant workers and daily wage workers with adequate rations	27(8.4)
Security and facilities to health care worker	56(17.4)
Availability of PPE and testing kits	89(27.7)
Transparency and clarity in government orders to avoid confusion and spread of wrong information	35(10.9)
Post arrival management of immigrants	46(14.3)
Awareness on mental health management	23(7.1)
Daily positive briefing on the happenings through media	3(0.9)
Action against violators of lockdown and social distancing rules	76(23.6)
Protection for violence against health care workers	48(14.9)
Awareness	108(33.6)
Control of information spread via media like fake news or rumours	64(19.9)

Testing for international travel history individuals.

54(16.8)

# Response to measures to maintain their mental and social health during such critical times:

Total 281 Individuals gave their suggestions as follows:

Table 12:- Response to measures to maintain their mental and social health during such critical times.

Suggestions	Individuals (%)
Staying positive	115(40.9)
Staying at home and maintaining social distancing	112(39.8)
Yoga and meditation, spending time with nature	76(27.0)
Limiting exposure to the news, staying away from fake news on Media	73(25.9)
Trying to adapt to new lifestyle by developing a new routine	68(24.1)
Regular exercise and good nutrition	67(23.8)
Engaging in creating a positive and fun atmosphere at home	57(20.2)
Engaging in old and new hobbies or creative activities that boost positivity	48(17.0)
Keeping yourself busy with work	45(16.0)
Positive communication	43(15.3)
Not being too target oriented and just focusing on good health and safety	27(9.6)
Being calm and faithful on all services provided by Govt and other agencies	18(6.4)
Relaxing deadlines, reducing the workload, provision of work from home	15(5.3)
Assurance	6(2.1)
Supporting and understanding family and friends	4(1.4)
Creating awareness about the possible impacts of lockdown on vulnerable groups like old age	3(1.1)
people, bedridden and those already suffering from mental health ailment	
Wide accessibility of mental health counseling,	2(0.7)
Creating helplines and cells in the college to talk about mental health and academic	1(0.3)
apprehensions of students	
Utilizing schools and colleges for isolation and health care of patients	1(0.3)

# **Discussion:-**

This study helps to provide a theoretical basis for psychological interventions and can provide basis for modification of government policies for management of Pandemic. What makes this study unique is that it voices the opinions and provides an outlook into lives of general population during the initial stages of the Pandemic.

Results from the study suggest that 12.6% were having moderate to severe insomnia.

Subthreshold insomnia and moderate insomnia were more common in the age group 20-30 years (P<0.001). The insomnia grades were similar in both the sexes and the occupation categories while it varied with education categories (p<0.05)

As the linear regression analysis results indicate, age group has a negative correlation with insomnia in COVID-19 Pandemic situation. This means higher the age, lower the prevalence of insomnia.

Majority of the population that was assessed through this study was Student population i.e. 485 students.

As reflected in the open-ended responses, the COVID-19-related stressors, which include economic stressors, effects on daily-life routine, and academic delays, Shortage of hospital and medical facilities were experienced by many participants and the lockdown led to psychological impacts like loneliness, the agony of being separated from the near ones, boredom, anger and anxiety among the citizens. The main results of the present study indicate that during the peak of the COVID-19 pandemic with strict lockdown measures, insomnia prevalence was very low.

As the open-ended analysis suggests, the lockdown has resulted in deteriorating the physical and mental health of many individuals, due to stress, fear, depression, trauma, uncertainty of future, financial loses, loss of job, fear of getting infected, fear of not getting essential requirements and the restrictions surrounding the social confinement

have upset daily routines that help in maintaining the sleep-wake rhythms to remain in synchrony with the circadian rhythm.

The Psychological impact was assessed by rating the degree of worry on appearance of minor symptoms, changes in perception towards other people, distress due to shortage of essential items were not reported by the majority of the participants or very mild impact was reported by the participants spread across the country.

As reflected in the open-ended responses, during the lockdown, along with the mental health issues people also reported to be facing distress with physical health as those who already have some existing problem would worry about going to hospital, changes in lifestyle of people due to lockdown, worry about gaining weight, being bothered due to no physical activity, not having the liberty to freely go out and work from home has its own undesirable effects on physical and mental health.

Fear is the breeding ground for hatred and stigma<sup>13</sup>.Social stigma has arisen; certain populations are targeted as being the reason for this outbreak<sup>14.</sup> It is vital to avoid this stigma as it can make people hide their illness and not seek health care immediately. WHO is providing expert guidance and answers to public questions, to help people manage fear, stigma, and discrimination during COVID-19. <sup>14</sup> Although there is a strong need to spread awareness about this to make sure it reaches every corner of society by using Mass media like podcasts, radio, television, social media, and Newspapers. In the time of widespread use of social media, these myths along with fake news around corona are also spreading rapidly. These are sometimes very disturbing for certain individuals. Several sites including WHO are thus providing myth busters and authentic information <sup>14</sup>.

The biggest challenge in mitigating mental health consequences of the COVID 19 pandemic is the lack of mental health professionals, practitioners, counsellors, and health facilities where one can approach for such help. It is going to be a real challenge for a country like India where only 0.29 Psychiatrists, 0.07 Psychologists, and 0.36 other paid mental health workers are available per 100,000 people<sup>15</sup>. In such a situation, it is important to evolve a simple counseling package that can be delivered by givers at home or in the hospital. The package should contain several dimensions, such as being empathetic and supportive to all those who are affected. They need to be listened to with compassion and kindness. Establishing online mental health and counseling services at hospitals, community health care centres, and university departments of psychology could be an opportunity to address such a crisis<sup>16.</sup>

Sleep health education targeting the general population should be the priority to provide broad-based information about sleep health (e.g. the importance of maintaining regular sleep schedules, obtaining a daily dose of daylight exposure) even during a prolonged period of confinement. For those with chronic insomnia, cognitive behavioural therapy, the first-line therapy for insomnia disorder, should be made more widely available through digital platforms. The sleep community has a social responsibility to be visible in the media, act, and educate the public and health-care workers about the importance of sleep and about strategies to maintain healthy sleep during this pandemic.

Promoting Ancient Indian science of Yogic Psychology by spreading awareness and training the population with Yoga and meditation. Historical evidence has reflected that these practices enrich physical, mental, and spiritual wellbeing. Supported by research as studies show that these practices can provide various psychological benefits<sup>17,18</sup> by nurturing positive wellness, has potential to boost immunity in humans as well as aid in staying positive to sustain in this pandemic. Positive psychology is a branch of psychology that focuses on the positive aspects like happiness, well-being, hope, optimism, gratitude, strengths and aims to bring better out of every human being<sup>11</sup>. The goals of enhancing well-being is achieved by practicing techniques such as showing gratitude, using savouring, social interactions, various cognitive experiences; all these together are called Positive Psychological Interventions<sup>11</sup> Online Crash Courses or other ways of encouraging people towards this concept can be developed.

This approach is unique and independent as once people are trained, they can explore and practice this at their own levels thereby promoting a lifetime learning approach.

A Comprehensive approach based on digital psychiatry is proposed to address the lack of access to psychiatric services, which includes artificial intelligence, telepsychiatry and an array of new technologies, like internet-based computer-aided mental health tools and services. These tools and means should be utilized as an important part of the whole package of measures to mitigate negative mental health effects of the global coronavirus pandemic. Our

scientific and engineering experiences in the design and development of digital tools and means in mitigation of stress-related disorders and assessment of stress resilience are presented.<sup>12</sup>

Social support not only reduces the psychological pressure during the Pandemic but also changes the attitude regarding social support and help-seeking methods. Social and moral support is necessary during public health emergencies<sup>22</sup>.

## Limitations:

Responses from only those participants who can understand English were done; those belonging to the labour class and unorganized sector were not reached through this research. There was an oversampling of students, leading to selection bias. As a result, the conclusion was less generalizable to the entire population, particularly among less educated people. As we expect the participants included across India it is impossible to convert in all local languages, so the tool is prepared in English only.

The participants participating through the snowball sampling technique did not reflect the actual pattern of the general population. These self-reported levels of psychological impact may not be comparable with those assessed by mental health professionals.

# **Conclusions:-**

In the initial phase of nationwide lockdown, insomnia was not extremely prevalent, yet a variety of psycho-social and behavioural challenges was faced by the public. The statistical evidence shows that age group has a negative correlation with insomnia for COVID situation. This means higher the age, lower the prevalence of insomnia.

Our findings can be used to formulate psychological interventions to improve mental health and psychological resilience during the COVID-19 pandemic.

### **Implications:**

This study can serve as important evidence to direct the promotion of Psycho-social health and well-being among individuals during Pandemic. This study addressed the challenges faced by individuals daily. The recommendations will be useful in safeguarding the psychological wellbeing of the community.

# Acknowledgment:-

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