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COVID-19 ONLINE QUESTIONNAIRE BASED SURVEY ON LIFESTYLE DURING THE PERIOD OF LOCKDOWN AMONG THE GENERAL POPULATION

Prathvi k	2nd year medical student Srinivas institute of medical science and research centre,Mukka
Arundhati R Kasbag*	2nd Year Medical Student Belagavi Institute of Medical Sciences. *Corresponding Author
Ashwin Kamath K	2nd Year Medical Student, SDM College Of Medical Sciences And Hospital, Dharwad
Namratha B G	2nd year medical student- Al-ameen medical college, Vijayapura.
Praveen shenoy	Assistant professor, department of Anatomy, SIMS&RC,Mukka
Sanjay Kini	Associate Professor, Department of Community Medicine, Srinivas Institute of medical sciences and research centre, Mukka, Surathkal

ABSTRACT An analysis of the overall assessment of changes in the daily activities during lockdown caused by covid-19 using an online survey conducted with the help of a well prepared online questionnaire form .Topics of interest include, food habits, sleep and mental health, exercise pattern, hobbies, screen time and general awareness.As the Indian Government had recommended the public to avoid interaction and isolate themselves at home, potential respondents were electronically invited. They completed the questionnaire online. All the respondents filled in the forms voluntarily. No personal information was asked.Study shows that not all the population is aware of all the major symptoms and importance of itWith due knowledge, many might neglect the symptoms and become spreaders in the community.Since no efficient treatment is clinically known, the spread of the covid 19 should be kept under manageable rate, if not things may get worse than expected.

KEYWORDS :

INTRODUCTION

The COVID-19 pandemic in 2020 is a paradigm of new emerging zoonotic disaster.It has exerted a great impact over medical, psychological, and social issues all over the world[1]. COVID-19 started in December 2019, like a viral outbreak in Wuhan city of central Hubei province of China (Holshue et al., 2020). [2] The first case of COVID19 in India was reported on 30 Jan 2020. This disease is transmitted by inhalation or contact with infected droplets or fomites, and the incubation period may range from 2 to 14 days [3] The main symptoms of COVID-19 are fever, dry cough, fatigue, myalgia. Serious symptoms include difficulty in breathing, chest pain. However there is an increasing incidence of asymptomatic cases. the incidence of such transmission could be as high as 40%.[4] There is no recommended treatment currently, for the disease and vaccine might bring down this rate. Social distancing, wearing mask and sanitizing are the precautionary methods. Government of India has taken many preventive measures. Health apps are crucial in the disease containment and management during pandemics and can support health systems in disease surveillance, risk assessment, case identification, contact tracing, and situation monitoring. Arogya Setu is an Indian COVID-19-trackin app. It informs the users regarding the risks assessment and provide relevant advisories.[5]

The corona virus pandemic, and its associated lockdowns, have had a profound impact on their eating habits. Many of them, locked up in their homes and have started binge eating. It has been demonstrated that specific nutrients or nutrient combinations may affect the immune system through the activation of cells, modification in the production of signaling molecules, and gene expression.[6]Nutritional deficiencies of energy, protein, and specific micronutrients are associated with depressed immune function and increased susceptibility to infection. Therefore, the key to maintaining an effective immune system is to avoid deficiencies of the nutrients that play an essential role in immune cell triggering, interaction, differentiation, or functional expression.[7]COVID-19 world pandemic imposed a new set of challenges for the individual to maintain a healthy diet. The wrath of after effects of pandemic on the basis of the following unhealthy addictive food can be huge.

The novel corona virus disease 2019 (COVID-19) seems to be having a major impact on physical activity globally. It led to the shutting down of sporting facilities, gyms and parks all over the country. Individuals who are more physically active appear to have lower rates of all-cause mortality, probably due to a decrease in chronic diseases including coronary artery disease (CAD).[8]Hence people found different modes of physical activity in order to keep themselves fit and healthy. Some started walking or jogging in and around their neighborhood while those who had gym equipment at home exercised and used those. Mobility restrictions imposed to suppress corona virus transmission can alter physical activity (PA) and sleep patterns[9].Among different mobility restrictions, removal of habitual social cues by lockdown had the largest effect on PA and sleep[9]Sleep, which is directly related to health and quality of life, is a basic need for a human being to continue his bio-psycho-social and cultural functions[10]. Sleep pattern disruptions and disorders have been an issue for many people even in the past, making it an important subject to study.

With heath and financial security at stake, home schooling stress, concerned about the welfare of our family and friends and frustration at being stuck in the house ,it is fair to say most of our tolerance levels are low[11].Hobbies play an important role in mitigating some of this unavoidable stress, as they provide us with an outlet for creativity, distraction, and something to look forward to. Some are busy evolving through various online media/e-education sources and taking a step ahead in career and education with the appropriate use of technology[11]

Psychoactive substance use and other reinforcing behaviors such as gambling, video gaming, TV series watching, using social media, watching pornography, or surfing the internet are often used to reduce stress and anxiety and/or to alleviate depressed mood. These potentially addictive behaviors may help alleviate stresses of daily living (often reflected as "escapism") and avoid problems and difficult thoughts . As a result, the tendency to use such substances and engage in the aforementioned behaviors as putative coping strategies in crises like the COVID-19 pandemic increases considerably and may develop into habits that are difficult to break.[12] Citizens have to expeditiously adapt to emerging online technologies (for living needs, communication, and work/education purposes) so that they are better informed, connected, and even protected from a public health standpoint (Roy et al., 2020).[13]As people face days of isolation at home, this creates an ideal condition to engage in online activities and watch television. As recreation sources are limited at home settings and internet/television are easily accessible, readily available and of course affordable; it may result in binge-watching. People with binge-watching behavior often watch multiple episodes in a single go.[14]

The pandemic of Corona Virus (COVID-19) hit India recently; and the associated uncertainty is increasingly testing psychological resilience of the masses. When the global focus has mostly been on testing, finding a cure and preventing transmission; people are going through a myriad of psychological problems in adjusting to the current lifestyles and fear of the disease.[15]The emergence of SARS-CoV-2 has once again exposed the weaknesses of global health systems preparedness, ability to respond to an infectious threat, the rapidity of transmission of infections across international borders and the ineffectiveness of knee-jerk policy responses to emerging/re-emerging infectious disease threats. The review concludes with the key learning points from the ongoing efforts to prevent and contain COVID-19 and identifies the need to invest in health systems, community-led response mechanisms and the need for preparedness and global health security.[16]

METHODOLOGY
We adopted a cross-sectional survey design to assess the changes in the lifestyle of people during the COVID-19 pandemic by using an anonymous online questionnaire.

A snowball sampling strategy was used for recruiting the general public living in India during the pandemic of COVID-19. The online survey was first distributed to university students and they were encouraged to pass it on to others.The survey was released for the general public on 25th May and was active till 30th June. The data collection took place for 36 days.

A total of 981 people responded.The questionnaire was prepared using Google forms..It was then circulated through Whatsapp. The respondents had to just click the link to open the form and fill in their responses. Theses responses were then collected and assessed. It consisted of 9 sections in total- introduction, general awareness, food, exercise, sleep, hobbies, screen time and personal insight. Under general awareness questions were prepared regarding the symptoms of Covid19 such as fever, dry cough, myalgia; transmission via droplets, importance of use of masks and sanitizers and avoiding crowds. Regarding food , questions about number of meals, quality of food taken , whether meals were timed and changes in appetite were asked .Questions like whether they exercised daily, number of hours spent for this, time of workout, type of physical activity, if this was affected due to lockdown were asked under the exercise section. Sleep pattern, hours and quality changes were assessed under the next section. Questions regarding the hobbies they indulged in, time spent in improving , general demeanor about this leisure were asked . The questionnaire also included questions about the amount of time they spent on screen, the websites or shows they binge watched, online classes, and the effect this has had on them. The last section of personal insight was mostly to assess their personal views regarding the whole pandemic and effects it has had on them in all aspects - work, education, health both physical and mental, awareness in general.

Statistical analysis of the data collected was done. Percentage of people who selected each of the options was calculated by dividing the number of responses by the total number of responses.

RESULT
Total of 981 individuals responded to the survey conducted. Out of the responded population, 54.9% were female, 43.7% were male, and 1.2% don't prefer to tell. (table:1.1) Maximum of the responded population were aged between 16 to 26. About 6.6% of population were aged between 27-37, and 9.2% were aged from 38 to48. The least population responded were from the age group above 49. 3.4% were from 49 to 59 and only 0.8% were aged above 60.summing up to 969 responses. out of 969 About 16.9% were students, 58.8% were undergraduate summing up majority of the responders.   While 9.6% were graduates, and 14.7% of responders were post graduated. The population of 962 being distributed across all the zones, but most of them lived in orange zone area. While 30% lived in red zones, and 28% of them lived in green zone.

Table1.1: age group of responses

Age group	Number	Percentage
16-26	775	80%
27-37	64	6.60%
38-48	89	9.20%
49-59	33	3.40%
60and above	8	0.80%

General awareness(fig2.1) : When asked about symptoms of covid19, many (94.7%) agreed that fever, cough, fatigue, and myalgia are the main symptoms.   While 2.6% responses said false and 2.7% said they don't know. For the question asked about spread of covid19, many(94.5%) responses stated that virus spread through respiratory droplets, but 2% didn't agree upon that. And 3.4% responded that they don't know. 96.4% accounted to agree that there is currently no effective cure for covid19 but early symptomatic and supportive treatment can help most patients to recover from the infection. While 1.1% didn't agree on this and 2.5% stated that they don't know
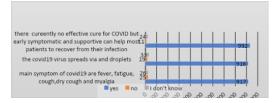

Fig2.1: the responses about knowledge on symptoms, spread, and treatment

About 97.4% of 968 of responders have avoided going to the crowded places but 2.6% are still being exposed in the crowded places are in greater risk of infection. About 95.5% of 969 of the responded population are taking basic care are using masks and sanitizers whenever necessary. 3.8% follow the basic care sometimes, but not regularly and 0.7% don't follow it and have more probability of getting infection and spreading it. (fig2.2) majority of the population are aware of the Arogya setu app out of 966 many (52.9%) don't use it, while 41.8% of the responders use it and make it easy to access the history and contacts.   And still 5.3% of responders are not aware of the app.

(fig2.3)When asked about the India's improvement in self manufacturing of medical equipments. out of 968 responders 62.3% agreed , 7.6% didn't agree and 21.8% responeded neutral. While 8.3% stated that they don't have any idea on it.
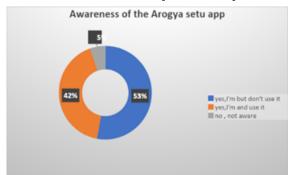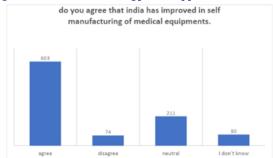

Fig2.2: awareness of the Arogya setu app.

fig2.3: about improved self manufacturing of medical equipment

Food:(fig3.1) Of 968 responses, 69.9% have 3 meals per day. while 13.2% have more and 16.8% have less than 3 meals per day. Out of 966 people,71.6% have timed meals but 28.4% don't. Out of 968 people,52.6% of the population don't skip meals while 44.6% skip sometimes, but 2.6% skip meals regularly.

(fig3.2) Out of 968 people, while 59.9% have 1-3cups of tea/coffee in a day, 33.4% don't have tea/coffee at all. But 6.7% have more than 3 cups of them Out of 956 respondants,63.4% don't have change in appetite. But 12.3% have decreased and 24.3% have increased appetite in this lockdown. 64.2% of the responders agree that they have been eating healthy in lockdown. While 24.6% have healthy food sometimes, 11.1% don't.(out of 962 people)
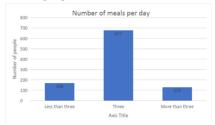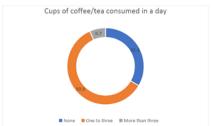

Fig3.1: number of meals per day

Fig3.2; consumption of tea/ coffee in a day

Exercise: Of the 967 respondants, only 33.6% of toral exercise everyday, 26.3% don't and 39.9% of them exercise few days.(table4.1) Out of 963 people, majority(65.8%) of the responses spend less than one hour of physical activity. While 31.2% spend 1-3 hours of the day in physical activity. 2.8% of them spend more than 3 hours. Of which 41.3% have no change in duration of the physical activity. But 32.4% have increased and 25.7% have decreased in the duration.(out of 952 responses)

(fig4.1)Out of 964,27.4% of responders prefer to exercise in the morning , 34.8% do exercise in the evening and 15.6% do exercise both the times., while 22.3% don't exercise. When asked to describe the recreational physical activity 47% responded that they would walk or jog. And 31.5% said that they have seated activity. And 21.5% have edurance/ strength training.(out of 943 responders)

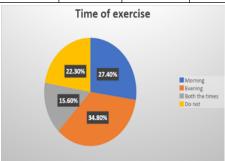| NUMBER OF HOURS	NUMBER OF PEOPLE	CHANGE IN DURATION	NUMBER OF PEOPLE
Less than one hour	634	No change	393
One to three hours	300	Increase in duration	308
More than three hours	29	Decrease in duration	245

Fig4.1:time of exercise

Sleeping Patterns: While sleeping patterns were evaluated 56.4% people were sleeping more post lockdown,33% people didn't find any change in duration of sleep while 10.7% people were sleeping less than before.75% people said that they slept for 6-8 hours,16.8% of them slept for more than 8 hours while only 8.2% slept for less than 6 hours a day(Fig 5.1).

When asked about the time they go to sleep at night,84.6% slept after 10pm,11.4% of them slept at 10pm and only 4% people slept before 10pm.Once in bed 35.8% people fell asleep in 10-20 minutes,25% fell asleep within 10 minutes,20.6% fell asleep in half an hour and 18.6% people fell asleep after more than half an hour in bed.

When asked if people slept during day time 22.8% said yes,37% said no and 40.2% slept in the day but only sometimes. Regarding the quality of sleep, 41.2% of the people felt that there was no change in the quality of sleep whereas 39.3% felt that sleep had been more peaceful and 19.5% felt that their sleep was disturbed.(Fig 5.2)
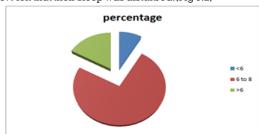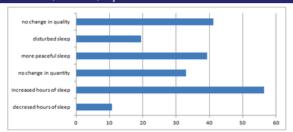

Fig 5.1 Sleep hours

Fig 5.2 Comparison between sleep quality and quantity

Hobbies and Freetime: When asked about how much of leisure time people got in a day during the lockdown 45.2% said that they got more than 5 hours of freetime,38.9% said they had 2-5 hours of free time and 15.9% seemed to have less than 2 hours.55.7% people said they spent their spare time watching TV and using mobile,14.4% used this time for cooking,9.2% did artistic work,6.4% sang or danced during their freetime and 3.8% slept or lanced around.(Fig 6.1).51.8% of the people were happy that they were able to perceive new hobbies during the lockdown,11.9% of the people were excited while 36.3% people felt nothing special about it. When asked about how they felt about spending more time with family,64.7% people were joyful,24.2% didn't find any difference,5.1% felt irritated and 3.8% were depressed.
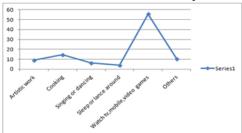

Fig 6.1 Activities people did in their spare time.

Screen time; When asked about how much time people spent on watching screens, out of 948 responses 43.2% said 1-3 hours,34.7% said 3-6 hours and 21.9% spent more than 6 hours a day on TV, mobile, pc, video games etc. The sites on which they spent most of their time were, out of 945 responses, 36.3% on social media sites,14% on netflix,7.2% on amazon prime while 15.8% said online classes and 6.7% said educational sites. On being asked what they thought about online classes and assignments, out of 939 responses,45.4% felt it was not beneficial,33% found it informative and helpful,13% said they couldn't decide and 8.6% were not interested in online classes(Fig 7.1).out of 944 responses, 45.2% people thought that lancing around screens was affecting their daily routine,16% said no,33.4% felt that it may be affecting and 5.4% said they didn't know.

Out of 947 responses,53.2% graded their concentration power during screen watching as average while 35.9% said it was good and 10.9% graded it poor. When asked if they had eyesight problems, out of 949 responses,43.2% said no and they were totally fine,47.3% said they had spectacles before lockdown and 8.3% reported to have headache and eyesight problems recently.(Fig 7.2)
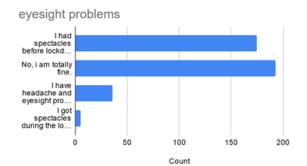

Fig 7.1 Opinion on online classes

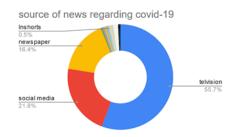Fig 7.2 Eyesight problems before and during lockdown

Fig 8.1 Pie Chart on source of news regarding covid-19

Table 7.1 comparison of concentration power
In people during studying and watching various things online

Grade of concentration	studies	screentime
poor	191	103
average	476	504
good	286	340
total	953	947

Personal Insights: We decided to ask few questions about people's personal insights. When asked how they felt seeing people do innovative things and post on social media, out of 938 responses,42.8% felt motivated,48.9% felt no difference and surprisingly 8.3% felt depressed. When asked where had they heard about COVID recent , out of 942 responses,49.4% said television,30% social media and 16.1% through newspapers(Fig 8.1). Asha workers had visited 36.6% of their homes recently and not visited 63.4% of people's homes as given by 941 responses. When asked if they were ready to volunteer in emergency conditions, out of 942 responses,52.2% said yes,29.1% weren't sure,7.3% said no and 11.3% said no due to family pressure.41.1% of the people surveyed felt that Covid can be controlled successfully,42.7% said maybe,11.6% said no and 4.5% said they didn't know out of 941 responses.

DISCUSSION
We are in an unprecedented global war, and are facing a single common enigmatic enemy, the novel corona virus. To ensure this war is won, it is imperative that there is awareness of the clear and present danger to humanity at large and that the medical staff is guaranteed sufficient resources, including training and technology.[17] The most common symptoms of covid 19 are fever, cough , fatigue, myalgia and over 95% of the responders are aware of this. While in the similar study only 18%[18] people agree that fever is the most important symptom of covid. Over 94.5% of the population know the fact that respiratory droplets is a major way of spreading covid19 virus. In the similar survey conducted it shows that only 29.5%[18]of the responders are aware of the indirect ways of the virus spread. While contrast to that, majority of population follow the basic care and use mask and sanitizer whenever necessary. Despite the worsening trends of COVID-19, no drugs are validated to have significant efficacy in clinical treatment of COVID-19 patients in large-scale studies. And

majority responders know this fact. [19] India has improved in self manufacturing of the medical equipments over the lockdown but majority of the population do not agree to this. More than 94% of the general population is aware of the Arogya setu app, but only 42% use it. This limits the role of the app in contact tracing.

Data petaining to this kind of study is very limited. In our study we found out that out of all participants, 69.9% have 3 meals per day while 13.2% have more than 3 meals and 16.8% have less than 3 meals per day. In another similar study conducted in India it was found that 59.5% consumed 3 meals per day,16.3% consumed more than 3 and 20.5% had less than 3 meals per day.[20]We found out that 63.4% don't have change in appetite but 12.3% have decreased and 24.3% have increased appetite in this lockdown whereas the other study found that 43% had no change in appetite,12.8% had decreased appetite,29.1% had increased appetite.[20]In our survey,64.2% of the people said that they have been eating healthy in lockdown while 24.6% have healthy food sometimes and 11.1% don't eat healthy but in the other study 0nly 30.7% had a healthy diet,50.5% sometimes ate healthy and 12.6% didn't eat healthy food.[20]

Exercise has an important role in keeping us healthy. Data related to this topic was very sparse. In our study we found that only 33.6% of total exercise everyday,26.3% don't and 39.9% of them exercised only on few days. In another study done in Brazil, it was recommended that the duration of each exercise session be approximately 30 to 60 minutes daily. It suggested that total time must not be too long due to the immune system depression with longer recovery time.[21]

Adequate sleep is essential. Majority of respondents of this survey slept 6-8 hours .Those whose sleep duration was less than 6 hours and those whose sleep duration was 8 hours or more tended to be more depressed than those whose sleep duration was between 6 and 8 hours[22]. But those results were not observed in this survey. Studies on the Italian population underlined a 30% prevalence of sleep problems , with 10.3% anxiety disorders and 29.3% experiencing psychological distress.[23] Accordingly, studies conducted in China on the effect of the COVID-19 diffusion on psychological dimensions and well-being highlighted similar results [24].Additionally, studies have reported an association between poor sleep quality and high risk of falls, infections, or the cold virus as a consequence of a reduction of the immune response[25],but no such observation was made here. Previous studies have shown that the epidemic diffusion of viral diseases (eg, SARS, Ebola) can be related to anxiety, depression, distress, sleep disorders, and post-traumatic stress disorders, not only for the medical impact of the infection but also for the impact of quarantine measures aimed to reduce the outbreak [26]. Therefore, investigating sleep quality during the COVID-19 pandemic became critical to estimate the psychological well-being.

A review of 24 research studies conducted by medical journal Lancet earlier this year, on the impact of various forms of lockdowns across the world, revealed that people developed symptoms such as stress, low mood, insomnia, anxiety, depression, anger, irritability, emotional exhaustion and post-traumatic stress symptoms. This is mainly due to the amount of free time they had.84.1% respondents had 2 or more hours of leisure per day. Some people used this time creatively for self-care, picking up new hobbies and acquiring new skills. Also it is significant to notice here that majority of them didn't find the leisure time any special. On the contrary, some people may get bored and frustrated. This leads to unhealthy daily routines. These include unhealthy sleep habits, extended screen time and lack of self-efficacy activities[27].

According to the online survey conducted in China based on perceptions of Ghanian international students on online learning in higher institutions of education, students are satisfied with the online teaching and learning instituted by various educational institutions of higher learning, despite the few challenges identified. Students highly agreed to the effectiveness of online learning. A mean score of 3.77 and cumulative variance of .23 has been recorded ,which again shows that students are positively contributing to the ineffectiveness of online learning. Successful and effective-learning is mainly depended on how the contents of the course are designed, the content of the course outline, the interaction between the student and professor as well as the availability of learning materials[28]But in the survey conducted by us referring to fig 7.1, we have found out that a majority of 45.4% find that online classes and assignments are non-beneficial in India.

CONCLUSION.

Even Though the lockdown had caused some difficulty in procuring food items most people were managing to have healthy food. The lockdown hasn't lead to change in appetite in most of them. But it has indeed affected the physical activity of the people as we can see that only few people exercised everyday in the lockdown. The SARS-CoV-2 pandemic related social lockdown has helped unlock time to give more room to sleep as 91.8% people slept for 6 or more hours and 56.4 % respondents told the number of hours of sleep had increased post lockdown. Nevertheless, during home confinement, sleep timing markedly changed, with people going to bed and waking up later, and spending more time in bed, but, paradoxically almost 1/5th of them reported a lower sleep quality. For majority of them the sleep quality had not changed while almost equal number told the sleep quality had increased. Picking up new hobbies, doing fun activities, cooking or even a walk can go a long way in helping people deal with the stress. According to the data collected, majority of the respondents were either happy or excited to spend time for their hobbies.

Due to the lock down caused by covid-19, there have been various online classes and assignments that have been assigned but among the surveyed people, majority of them found it to be non-beneficial and lancing around the digital screens is affecting their daily routine. Also out of the total time spent online, it is mostly drained by social media.

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