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## A study on Nomophobia and sleep deprivation amidst Corona pandemic

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### Abstract

*The outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus which caused coronavirus disease (COVID-19, also known as 2019-nCov), was first reported in Wuhan, China in December 2019, and was identified as a novel coronavirus in January 2020.<sup>23</sup>. Since then the lockdown has limited the essential movement of people. The effects of lockdown had a massive impact on everyday life, including health, social sector, education sector, health sector along with the increase rate of unemployment problems, economic decline, to be precise every part of the normalness was taken a bit hit by the covid 19 scenario. The social distancing is still in ascend, and people are relying mostly on smart phones and smart devices to stay connected with family members and friends. The work from home too has limited outdoor activities, thereby making an individual completely secluded from the outdoor environment. Smartphone addiction is known as nomophobia(NMP) which is a fear of not using smart phone.*

*Objective: The phobia of not being able to stay without smart phone is a dangerous non drug addiction. This leads to behavioural changes in everyday habits and actions. There are researches available on Nomophobia, however to the best of author's knowledge, there is no literature available on the prevalence of NMP during covid 19 pandemic.*

*Methods: it was a cross-sectional study. Subjects were selected online through social networking platforms from India. Non probability convenient sampling technique was used to select 200 people of both genders from 18 to 25. A cross sectional survey was conducted online by online mail questionnaire. Questionnaire was set taking some questions from the NOMOPHOBIA QUESTIONNAIRE(NMP-Q) and other socio demographic questions to prepare the survey questions. The NMP- Q is a self – reported questionnaire, regarding demographic data and information related to smartphones. It is the most widely used measurement instrument, proposed by Yildirim and Correia. A total of 13 questions were asked to understand the effect of Nomophobia on sleep pattern during the long pandemic crisis. The added stress, change in behaviour due to constant home isolation, work from home, social connectivity through social networking sites were also evaluated to understand the issue of sleep deprivation during pandemic.*

*Results: Out of 200 subjects a total of 140 were found to be having sleeping problem during lockdown. Subjects reported that, they could not stay away from their smartphones. There have*

*been cases where they cannot sleep without having their smartphones beside them. The subjects prone highly to be nomophobic reported they never turned off their smart phone and always kept it charged. Long hours on screen time made the subjects sleep deprived. The subject also reported to constantly check on their phones for Covid related information. Most of the subjects used smartphones for getting Covid information, watching movies or series, social networking (WhatsApp, twitter, Facebook, Instagram, Tiktok) and some for virtual gaming activities.*

*Conclusion: During the lockdown phase higher prevalence of Nomobhobia was found. Due to the pandemic, students have become much dependent on smartphones for their learning as well as leisure. the online classes and online assignment system have made them hooked to their smart phones for longer hours in pandemic. The working group is also not left out of it. The lockdown and work from home have also created longer hours for working groups in their onscreen activities. Even though the screen time is associated with obesity, hypertension, type 2 diabetes, myopia, depression, sleep disorders, and many other non-communicable diseases. During pandemic people are being more addicted to their phones than never before. Hence, it is critical to assess the adverse health outcomes that may appear as long-term consequences of nomobhobic behaviour.*

### **Introduction**

The outbreak of coronavirus 2 (SARS-CoV-2), the virus which caused coronavirus disease (COVID-19, also known as 2019-nCov), was first reported in Wuhan, China in December 2019, and was identified as a novel coronavirus in January 2020. Within a span of few months COVID-19 was responsible for over 200,000 deaths and 3,000,000 confirmed cases worldwide<sup>1</sup>. In addition to the millions of individuals from across the world who have been infected with the disease, there has been a significant change in the living condition of every human being leading to various kinds of changes, especially in their behavioral patterns. The new realities of working from home, temporary unemployment, home-schooling of children, and lack of physical activity and social contact with other family members, friends and colleagues have brought a shift in the normal lifestyle patterns. The new kind of lifestyle changes are challenging for everyone irrespective of any age and gender. The fear of contracting the virus to learning new ways to cope with the fear of covid 19 has created a drastic toll to the emotional as well as psychological aspect of humankind. With the mutated forms of the virus the fear among people have grown more and more. While the psychological support is being given to patients and healthcare workers, the general masses requires significant attention as well to dwell with the arrays of mental issues involved.

Some of the researches conducted during the epidemic focussing on the mental and psychological trauma caused due to lockdown and social isolation suggests that this can lead to profound behavioral and mental health changes. Understanding the behavioral and mental health implications for individuals during this unprecedented period of high stress and crisis is critical for understanding the impact and ensuring preparedness for future pandemics or any other outbreak which might lead to prolonged lockdown as observed in 2020.

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### **Social media usage during pandemic**

In modern society we already witnessed the rapid increases in the number of internet users, both mass and social media. As the general public becomes more health conscious, the popularity of social media as a means of acquiring health-related information has been growing in recent years not only in China but across the globe<sup>7-8</sup>. Social media tools are easily accessible on the internet via mobile, laptops, tablets making it a forum of transmitting information as well as acquiring facts of real time scenario.

The social media platforms, such as Twitter, Facebook and Instagram, have opened up new avenues and set up a new model of the communication channels<sup>3-4</sup>. Saud, Ida, and Mashud (2020) investigated the activities performed on social media and demonstrated that social media have a progressive impact on individuals<sup>5</sup>. Similar to all the countries, the government of India had also implemented several actions to reduce the physical interactions, such as the closure of universities, government offices, public places from public gathering, and suggested to work from home. However, to reduce the physical interaction and get awareness and keep oneself updated regarding the current situation, social media platforms have become one of the most significant tool for communication and the source of keeping track of the current situation. Physical distancing, travel restrictions, quarantine, have changed the fabric of society, leading to a complete standstill situation. The Coronona virus outbreak made people more concerned of the safety and well-being of their routine, of which the social media have taken the exclusive pivotal stage more than ever to global social networking and discussions<sup>6</sup>.

### **Psychological State during Pandemic**

The foremost survey-based research on the psychological impact of the COVID-19 outbreak in China concluded that the mental health impact was moderate to severe for the majority of respondents in the general population, with increased anxiety, depression, and stress attributed to the outbreak by the participants. The most affected group were the college going students who went through severe anxiety and depression along with self-isolation mentality throughout the lockdown<sup>2</sup>. The fear associated with the pandemic lead to suicide as well as mental issues due to lack of sleep<sup>19</sup>. The rate of Canadian suicide cases increased from 418 to 2114 due to unemployment<sup>9</sup>. India too faced the same crisis, where the suicidal, anxiety and fear mongering rates continued to reach its peak, along with other countries such as Pakistan, Germany, France during the lockdown<sup>10</sup>. The economic fallout and forecast of the “Great Lockdown” is believed to have the worst global economic crisis targeting the psychological ailment after the Covid 19 scenario<sup>11</sup>. In this research the researcher would target the issue of sleep deprivation caused due to the NOMOPHOBIA condition caused during the Lockdown in the Covid 19 Pandemic.

### **Nomobhobia**

The concept of Nomobhobia<sup>12</sup> means no mobile phobia. It is the fear of being out of mobile phone contact. A person with nomophobia get anxious if he or she is out of Mobile connectivity, which adversely affect the concentration level of that person. In the 21<sup>st</sup>-century Mobile phone provides a lot of benefit such as playing games, connecting with family and friends, working online, shopping online, taking photography and playing music. Nomophobia disorder developed due to instantaneous Communication and gratification smartphone

provides, making it a compulsive and addictive behaviour. The phobia is also regarded as a psychological condition<sup>13</sup>, various psychological factors are seen in people who overuses their mobile phones. The boarding of this problem is now increasingly seen, especially after the lockdown and the Covid 19 Pandemic. The symptoms and signs that are seen in Nomophobia cases includes anxiety, respiratory alteration, trembling, perspiration, Agitation<sup>14</sup>. Some researchers have also suggested that Nomophobia can also lead to mental disorder and sleep deprivation. A survey with 196 young adults was done to measure the daily use of mobile phones in minutes invested in SNS(Social Networking Sites), it included psychological and health variable. The results showed there is a strong association in chronic stress, low emotional stability, depression and extraversion with the use of excessive mobile phone<sup>20</sup>. It is important that we stay in the real world more than virtual world. Even though there are many benefits that we get from mobile phone but it is also important to maintain face-to-face communication and build real connection in real world.

### **Sleep deprivation during Pandemic**

The effect of Covid 19 have created a huge negative impact in all phase of life for an individual. Many researches conducted clears that the lockdown have lead to increase in psychological problems for many across the world. The increase was particularly striking among young adults, with the increased risks of anxiety symptoms, depression, sleep deprivation<sup>15</sup>. Sleep is regarded to be essential for proper mental and physical health. Poor quality of sleep and less sleep can damage the brain functioning as well as create many hazardous effect such as lower immunity, frequent mood swings, hallucinations, decision making problems, chances of high accidents<sup>16</sup>. the effect of changes in lifestyle behaviors during constact lockdown and agitated social isolation,travel restrictions and depression, anxiety and stress associated during pandemic, may have significant negative impacts on sleep<sup>21</sup>. The meta -analysis conducted by Jahrami H. was entirely on the impact of the pandemic on the prevalence of sleeping disorder, engulfed three major themes, importance on Insomnia during lockdown, the role of melatonin in sleep- awake pattern and impact of Covid 19 on the practice of sleep medicine.<sup>17</sup> In their research they found that the global pooled prevalence rate of sleep problems among all populations is 35.7%, Second, patients with COVID-19 appeared to be the most affected group, with a rate of 74.8%, Thirdly, health care workers and the general population had comparative rates of sleep problems with rates of 36.0% and 32.3% respectively<sup>17</sup>. The sleep deprivation rate is significantly higher in the Covid 19 patients. However, the finding of another research with a sample size of 1310 Italians suggested that sleep problems were greater among people with high level of depression, anxiety and stress<sup>18</sup>.

### **Methods**

The researcher has opted for purposive sampling method, with survey questionnaire technique. Amidst the covid situation which started from 2020 onwards, and the national lockdown as the preventive way to curtail the spread of the pandemic, the researcher found it difficult to collect the data directly from the respondent by physically handing over the questionnaire; instead the researcher had to find alternative such as telephonic survey method and mail questionnaire technique to collect the data from the respondents. The selection of the respondent was directly from social media platforms, such as Facebook, Twitter, and Instagram. The respondents were

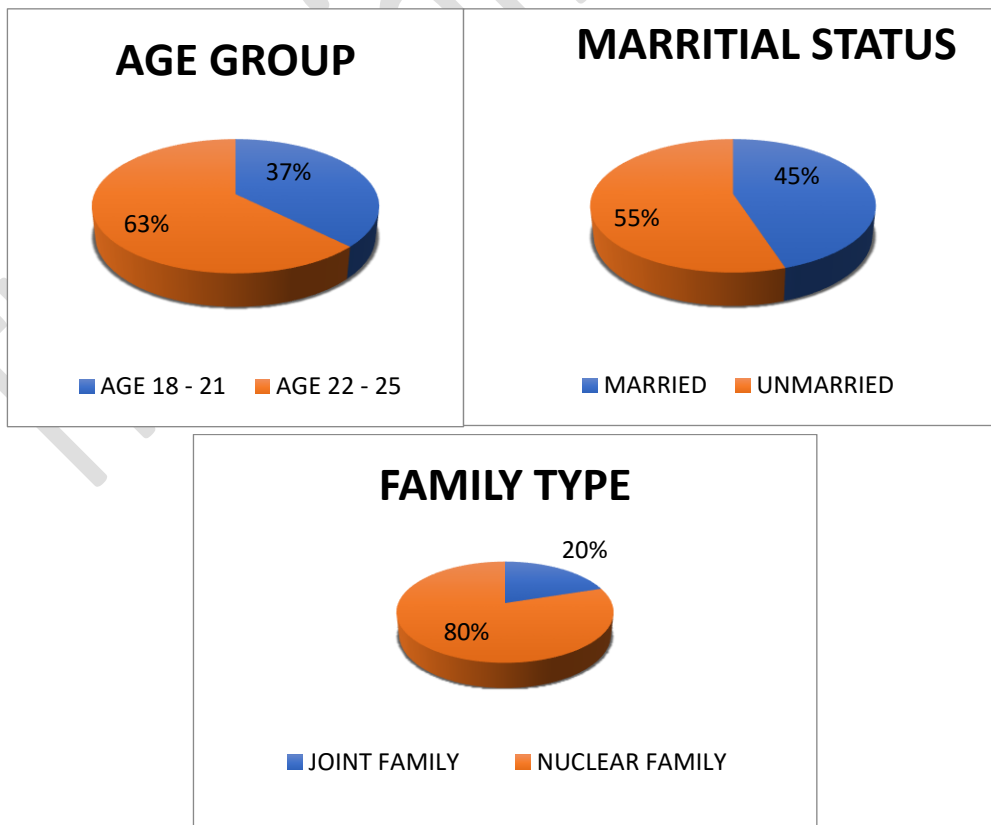
firstly asked about their age, those who fit the age gap from 18 to 25 were told about the topic of the study. Out of 200, 170 respondents answered the questionnaire through social media platforms. Only 30 respondents gave their response through telephonic conversation.

As the study focussed primarily on only a specific age group, it was important to know the socio demographic details of the respondents, as the use of mobile phone varies between old and young age groups<sup>22</sup>.

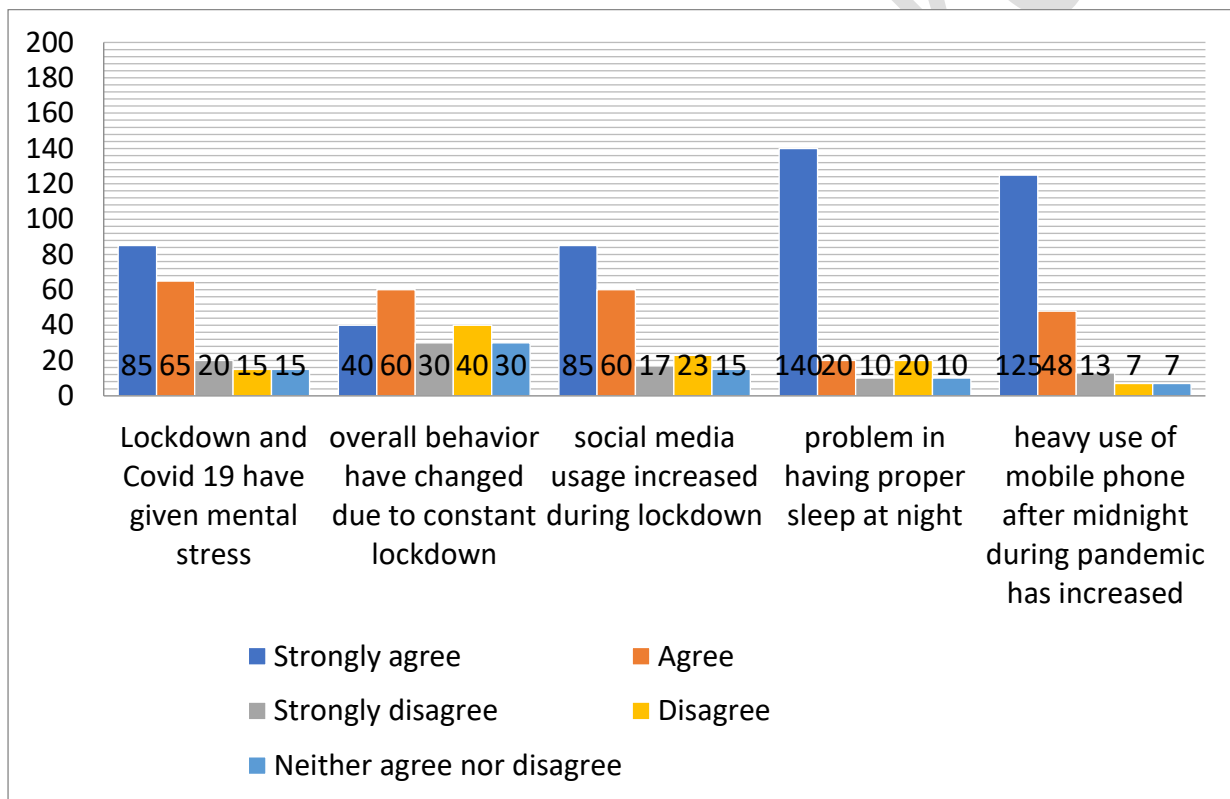
**Findings of the study**

Social network sites (SNS) have become an important social milieu that enables interpersonal communication by allowing users to share and create information even in the critical period such as Covid-19 . The objective of the study was to assess the effect of sleep deprivation and Nomobhobia during the pandemic period. The descriptive analysis of the responses on three questionnaires revealed that the average family type, with 40 in joint families(20%) and 160 in nuclear family(80%). This reflects how majority of the respondents were closer to a nuclear setup. Majority of respondents belonged to nuclear families. Insufficient mental and emotional support during the lockdown contributed excessive use of mobile phones among those who belonged to nuclear setup. The nature of family seemed to play an important part in stayed hooked up with the mobile phone for maximum hours, having stress and sleep deprivation.

AGE 18 - 21	75	UNMARRIED	110	JOINT FAMILY	40
AGE 22 - 25	125	MARRIED	90	NUCLEAR FAMILY	160
TOTAL(N)	200		200		200

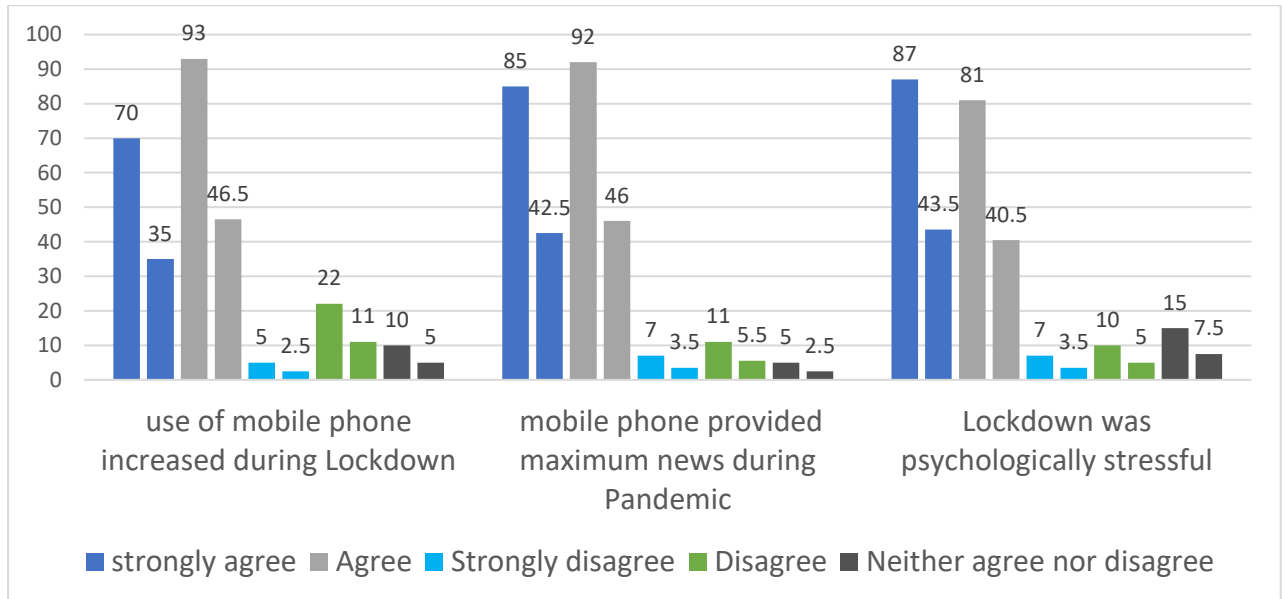


It was found that during the pandemic, those who were in joint family, spend their time with the family members doing various new things which was trending in social networking sites, such as cooking, crafting, inventing new ways to spend time with their family members. Thus even though there was boredom and stress within the family due to Covid-19, people found out various ways to stay connected with their family and stay positive. The use of mobile phone however was not lessened during this time, as the importance of news and world affairs was of vital importance. There was a significant difference in the usage of mobile phones by the married and unmarried people. Those married spent a significantly less time in mobile phones, but due to lockdown stress faced anxiety, boredom, sleeplessness. the unmarried respondents who gave their time maximum in mobile phone activities, clearly showed an added stress and insomniac conditions. Time of mobile phone usage was one significant variable, which revealed that 35% of the participants used mobile phone many times in one hour.

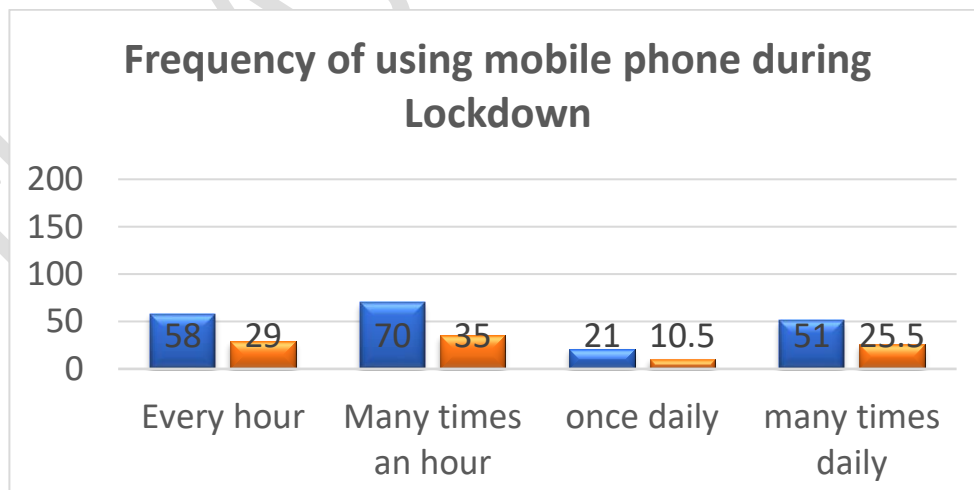


- With the overall data which was collected, 85 respondents clearly agreed that lockdown and the pandemic gave them a mental anxiety. Only those who belonged to joint family disagreed to the concept of mental stress.
- 85 respondents strongly agreed that social media usage increased during lockdown, those married and belonged to joint families had a neutral response or disagreed to the fact of using excessive social media.
- It was observed that 125 respondents strongly agreed with heavy use of mobile phones after midnight during pandemic and respondents who used mobile after midnight faced sleeping problem at night. The data shows 140 respondents strongly agreed in having sleep related issue during the ongoing pandemic.

- Overall, 60 respondents agreed to feel an overall change in their behaviour and 40 respondents strongly agreed to see a vital change in their behaviour.

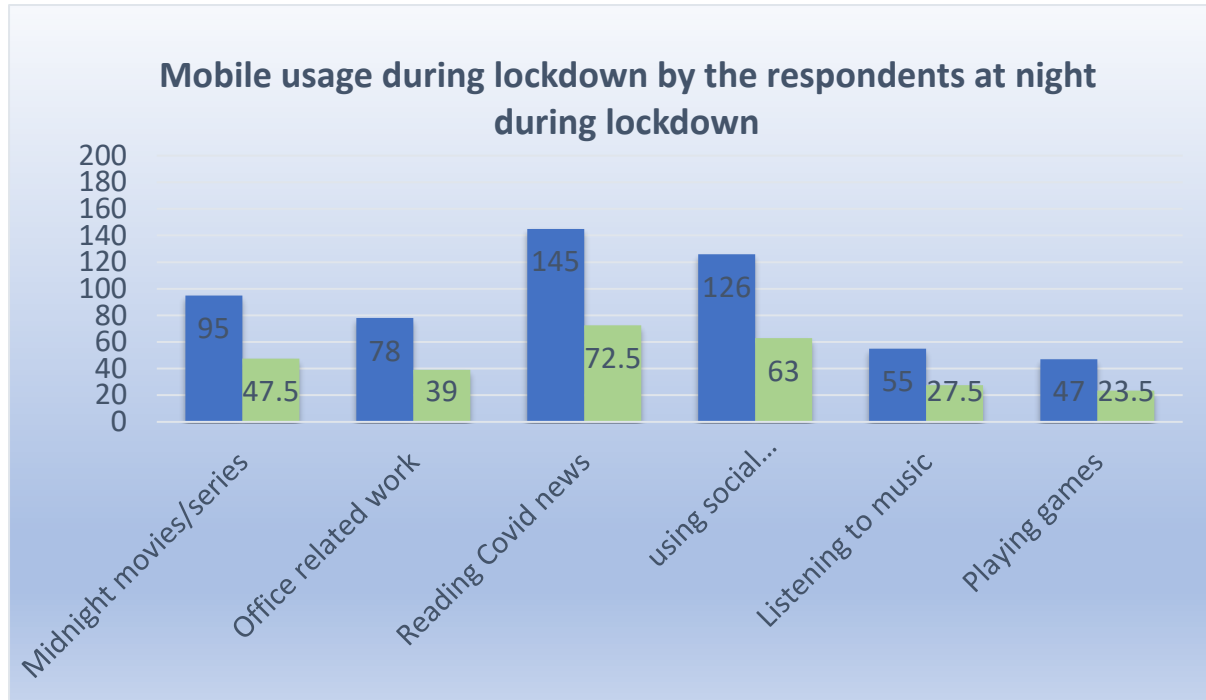


- 46.5% respondents agreed to using mobile phone excessively during lockdown and 35% respondents strongly agreed to use their mobile phone excessively during lockdown.
- The most vital reason for using mobile phone during the lockdown was keeping updated with the Covid-19 news and information. Almost 85 respondents strongly agreed and 46% respondents agreed to use mobile phones for covid related information.
- It was observed that 43.5% respondents strongly agreed and 40.5% respondents agreed to the fact that lockdown made them psychologically stressful.



- The study revealed that during the entire lockdown phase 35% of the total respondents viewed their mobile phones many times an hour. 29% of the respondents viewed their mobile phones every hour. 25.5% viewed the mobile phones many times daily. Only

10.5% who mainly belonged to joint family and married spend very less time on their phone.



- It was observed that the respondents used their phones mostly at night during lockdown. 72.5% of the respondents viewed Covid related news at night. 63% of the respondents used social networking sites. 39% of the respondents used mobile for office related work at night.
- 47.5% of respondents used the mobile phones for watching movies or series at night, 27.5% used the mobile to listen music at night and only 23.5% of the total respondents used the mobile phones for playing games.

### Discussion

The objective of the study was to see the effect of mobile phone usage and sleep disorder during the pandemic. The study found out that 35% were heavy mobile phone users, using their phones many times in an hour, which shows the presence of Nomophobia in them. 29% of the respondents uses their phone in every one hour and 25.5% uses their phones many times daily. Only 10.5% uses their phones once in a day. The age group from 18 – 25 which is categorized under unmarried and married shows a very less significant difference in the usage of mobile phones. However, the average time spend on mobile phones is subsequently less seen in married people and those belonging to joint families. The sleeping problem is seen in respondents due to the lockdown as a total of 140 respondents strongly agreed to have sleeplessness during night. The heavy mobile users which account to 35% stated that they spend their time mostly in reading news related to Covid 19(72.5%), using social networking sites(63%), watching movies or series(47.5%). The time spend daily by those mostly in



mobile phones agreed to have a psychological stress which effected in having sleep problems during the lockdown phase. 43.5% strongly agreed to have psychological stress in the lockdown. The overall study shows that those who used mobile phones excessively for various activities found themselves to have a sleeping problem, which was resulted due to psychological stress in the lockdown. The time spend on mobile phones during night also shows that people mostly watched Covid related news, which lead to increased stress and thereby causing sleeping problems.

### Conclusion

In the time, when people are uncertain about everything and there's a shift in over lifestyle it is observed that mobile phones plays a vital role in providing a increase in psychological problems for many across the world. The increase was particularly striking among adults, with the increased risks of stress symptoms, sleep deprivation. Sleep which is essential for proper mental and physical strength seems to be getting effected due to constant lockdown and social isolation. Moreover the excessive dependency on mobile phones for carrying out even the normal activities have lead in certain behavioural changes. Currently, available methods that might improve sleep quality includes social and administrative support, relaxation techniques, and disciplined working schedules to allow for better sleep pattern. The prevalence of sleep problems during the COVID-19 pandemic is high and affects people of all age groups. Further studies, particularly longitudinal studies is needed to determine trajectories of sleep problems over time in various COVID-19 impacted populations.

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