Perception of General Public Regarding Pros and Cons of Technological Advancements During Lockdown Due to COVID 19 Pandemic - An Online Survey

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ABSTRACT

Introduction: The outbreak of the coronavirus (COVID-19) has created a global health crisis that has a deep impact on the way we perceive our world. Media and technology have long been recognized as powerful sources that tend to mould our views and experiences, but how does it influence the different dynamics ranging from work, education and interpersonal relationships is the study about and its advantages and disadvantages.

Aim: The aim of the research is to study the Pros and Cons of technological advancement during this pandemic and global lockdown.

Materials and Methods: An online survey link was circulated among 105 residents of Chennai and the results were studied, analyzed and graphically interpreted using SPSS software.

Results: 80% of the participants agreed that technology was advantageous during the lockdown and 19% said that it was disadvantageous. The Chi-square test was done associating the age of the participants and the perception of the Pros and Cons of technological advancements during this lockdown.

Conclusion: There was a significant association between the age of the participant and the various purposes of using electronics during the lockdown. The majority of the participants belonging to all the age groups use electronics mainly for entertainment and education/work. The Chi-square test was done and it was found to be statistically significant, implying that there is much awareness among the age group of 10-20, and the majority of the participants agree that technology is advantageous during the lockdown.

Key Words: Coronavirus, Global health crisis, Media and technology, Interpersonal relationships, Influence of media and technology

INTRODUCTION

Families are using technology to keep things “normal” during the pandemic, social distancing measures and the subsequent shift to remote working, socializing, and school led to the questions about the technologies available to us. The entire world is practicing social distancing due to the COVID-19 spread on the rise all over the world causing an epidemic, endangering the public health which may potentially harm democratic value¹. The spike in technologies used during the quarantine for reading the news and mainly social media platforms. It was reported that the virtual connectivity

of people had increased by 46%. People were found to spend time on news channels and apps like “Zoom” and “Skype”². Video interaction has been on the rise and even social events are streamed online such as business conferences, parties, classes, shows as they become the only means of interaction. It is the time for various brands to connect easily with the audiences to build relationships as people are very desperate for new content.

There has been a steep increase mainly, streaming platforms like Netflix and Amazon as they are the only source of entertainment for the people. Famous apps like Instagram and

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TikTok are highly in the trend currently. Live videos and various challenges and games take the stage on social media. Very high advertising and the celebrities were also seen to be very active on their social media pages engaging the audiences. Apart from entertainment, online lecture classes and notes are also being shared among students in schools and colleges. In fact, it was also reported that students who were active during the online classes showed high performance³.

But, why was this increase being seen during this lockdown? Self-isolation, missing friends, and family therefore communication was required to still stay in touch with the outside world. People feel anxious looking for support on the ongoing uncertainty, the need to connect and interact is very high than before. But the major disadvantage of social media and the technology during these times is the increase in the spread of rumors and hence lack of accuracy in the information that is being passed on very easily under your fingertips. "WhatsApp forwards" brings unwanted confusion leading the people to distress⁴. Relation with one another and the effect on relationships are also on the toll⁵.

Previously we have done so many morphological and morphometrical studies⁶⁻¹³, *in vivo* animal experimental studies¹⁴, biometric studies^{15,16}, online survey analysis¹⁷⁻²⁰, and few others in various fields of research which led us to conduct this research on the pros and cons of advancements in technology. Therefore, the aim of the research is to study the pros and cons of technological advancements during this pandemic and lockdown.

MATERIALS AND METHODS

An online cross-sectional survey was conducted among the residents of Chennai.

(<https://forms.gle/C2aur4ZZojDnZeFd8>) The survey was taken up by 105 people. Similar research was also done by various researchers, Katherine M Hertlein with 410 participants⁵. Gurmak Singh conducted with 200 participants²¹, Katherine Lynn Deweese with 41 participants²², Samar Alsaqqa with 298 participants²³, and Mohammed M Elsobehli with 100 participants²⁴. The sampling method used was convenience sampling. Most of the questions were close-ended, the data was obtained from Google form and exported to Microsoft Excel. The data was represented graphically through bar charts. The independent variables were age and gender whereas the dependent variables were knowledge and awareness.

Statistical analysis

It was statistically analyzed using SPSS software version 22. The Chi-square test was performed to check the association between variables and p-value < 0.05 was said to be statistically significant.

QUESTIONNAIRE

1. Age:
2. Sex:
3. Occupation:
4. Do you regularly use electronic gadgets during the lockdown?
 - a. Yes
 - b. No
 - c. Maybe
5. How completely do you depend upon electronics during the lockdown?
 - a. Everyday
 - b. Frequently
 - c. Rarely
6. How often do you communicate with others through different online platforms?
 - a. Everyday
 - b. Frequently
 - c. Rarely
7. Does everyone in your family own a Gadget?
 - a. Yes
 - b. No
8. Do you feel that there has been an increase in the use and exposure to electronics during the lockdown?
 - a. Yes
 - b. No
9. Are you aware of the ill effects due to over exposure to electronics and gadgets?
 - a. Yes
 - b. No
10. For what purpose do you mainly use electronics?
 - a. Entertainment
 - b. Education
 - c. Groceries/Essentials
 - d. New
 - e. All of the above
11. Do you feel that you completely rely upon gadgets during the lockdown?
 - a. Yes
 - b. No
12. Has your interaction with your family and friends increased or decreased during the lockdown?
 - a. Increased
 - b. Decreased
 - c. It's the same
13. Do you think use of electronic gadgets were advantageous or disadvantageous?
 - a. Advantageous
 - b. Disadvantageous

RESULTS AND DISCUSSION

The survey was conducted among 105 residents of Chennai. 51.43%, the majority of the participants were from the age group of 10-20 years (Figure 1). The number of male

participants, 50.48% and female participants, 49.52% was almost equal (Figure 2). 67.62% of the participants used electronic gadgets regularly during the lockdown (Figure 3). 61.90% of the participants depend upon electronics every day and 32.38% frequently (Figure 4). 50.48% of participants communicate every day, 36.29% frequently, and 13.33% rarely using online platforms (Figure 5). 77.14% of the participants said that everyone in the family owns a gadget and 22.86% do not (Figure 6). 78.10% of the participants feel an increase in exposure to electronics during the lockdown (Figure 7). 77.14% of the participants are aware of the ill-effects caused due to overexposure to electronics and 22.86% of them are not aware (Figure 8). 30.48% of the participants use technology for education and work followed by 23.81% for entertainment and 21.90% for all of the above (Figure 9). 75.24% of the participants completely rely upon gadgets during the lockdown and 24.76% of them do not (Figure 10). 57.14% of the participants agreed that there is an increase in the interaction with family, 25.71% of the participants disagreed and 17.14% of them said that it was the same (Figure 11). 80% of the participants agreed that technology was advantageous during the lockdown and 20% said that it was disadvantageous (Figure 12).

The Chi-square test was done associating the age of the participants and the perception of the Pros and Cons of technological advancements during this lockdown. There was a significant association between the age of the participant and the frequency of communication with others through online platforms. The participants from the age group of 10-20 communicated almost every day compared to the other groups. The Chi-square test was done and the P-value was found to be statistically significant (Figure 13). There was a significant association between the age of the participant and the various purposes of using electronics during the lockdown. The majority of the participants belonging to all the age groups use electronics mainly for entertainment and education/work. The Chi-square test was done and the P-value was 0.002 which was statistically significant (Figure 14). There was an association between different age groups and the awareness of the ill effects caused due to overexposure to electronics and gadgets. The majority of the participants belonged to the age group 10-20 and 21-30 and all the participants of the age group 61-70 were aware of the ill effects caused due to overexposure to electronics. The Chi-square test was done and the P-value was 0.877, which was statistically insignificant (Figure 15).

In the association between different age groups and the increase or decrease in the use and exposure to electronic gadgets during the lockdown. The majority of the participants of all the age groups feel that there has been an increase in the exposure to electronics during the lockdown. The Chi-square test was done and the P-value was 0.725, which is statistically insignificant (Figure 16). In the association be-

tween different age groups and whether the use of technology was advantageous or disadvantageous during the lockdown, the majority of the participants of all the age groups agreed that the use of technology was advantageous during the lockdown. The Chi-square test was done and the P-value was 0.555, which was statistically insignificant (Figure 17).

In the present study, 67.9% of the participants used gadgets regularly during the lockdown, similarly to the research done by Aravind K Kumar, 90.5% of the participants were found to be using smartphones regularly²⁵. In a study done by Satyabrat Banerjee, 56.8% of respondents stated that they are dependent on electronic devices, since there are many forms of electronic devices present with an individual. One electronic device can be substituted for another for which reason there is a dependency on electronic devices at any given point of time. The use of mobile is exponentially increasing in relation to other electronic gadgets. There is a higher frequency for checking mobile during incoming notification (34.7%); Checking mobile every 5- 15 minutes is mainly due to the ease of using mobile phones in our daily lives. Compared with laptop or desktop computer users; mobile phone users are more dependent and possessive towards their mobile as compared to other electronic devices²⁶. This was relevant to the present study as the use and dependency on electronic gadgets mainly smartphones have taken a toll in the current scenario.

The need and urge to use mobile phones and gadgets among the population has been increasing steadily over the decade. Nathan and Zeitzer found that there is a need for teenagers to keep their mobile access all the time. Withdrawing the use of mobile phones awakened mobile users often at night. It was evident that there was a constant struggle between mobile users and their daily routine. The constant use of the mobile made them unaware of the time, be it daytime or midnight, checking the mobile phone became a priority²⁷.

Their usage of electronics and gadgets was found to be very high during the lockdown. In the present study, 78.3% of the participants feel an increase in exposure to electronics during the lockdown. Similar findings were obtained by Esther Jennifer, 48% of the participants were found to use gadgets excessively²⁸. In the present study, 75.5% of the participants were aware of the ill-effects caused due to overexposure to electronics, similar findings were done by Katherine De Wellis where they reported that overexposure to screen time has a major effect on brain growth, and development²². Overexposure to screen time leads to eyesight damage, brain growth, and development defects in children. A similar study by Acharya JP, it was stated among college students that headache (51.47%) was found to be the commonest symptom followed by anger and irritability (50.79%) while using cell phones. Other common mental symptoms included lack of concentration and poor academic performance, insomnia,

anxiety, etc. Among physical symptoms found frequent were –body aches, eye strain, digital thumb. In the present study, 57.5% of the participants said that there has been an increase in the interaction with their family, 25.5% of them said that it has decreased and 17% of the participants said that it's the same. Similar findings were done by Katherine M Hertlein, the role of technology created and mediates interpersonal relationships between the family⁵. But, on the work done by John O'Donohue, the risk of isolation was found to be higher when the dependency on technology increased²¹.

The interaction with family and friends has moderately increased during the lockdown. In the present study, 80.2% of the participants agreed that technologies were advantageous and 19.8% of the participants disagreed. Similar findings were found by Radhika Kapoor, the effectiveness of technology was advantageous and majorly benefits in education and jobs. It helps to overcome challenges and enhances connectivity and bonding²⁹. Therefore, technology is advantageous during the lockdown as it enhances interactions and is very useful in education and entertainment during the lockdown. The limitations of this study were the small study population and an equal number of participants can be included from different age groups. During the further study on this topic, a wide range of participants can be studied to improve and explore awareness and knowledge on the advantages and disadvantages of technology during the lockdown.

Figure 1: Pie chart showing the age of the participants. 51.43% (blue) of the participants belonged to the age group of 10-20, 33.33% (green) for 21-30 years, 7.62% (beige) for 31-40 years, 2.86% (violet) for 41-50 years, 2.86% (yellow) for 51-60 years, and 1.90% (orange) or 61-70 years.

Figure 2: Pie chart showing the gender of the participants. 50.48% (blue) of the participants were male and 49.52% (green) were females.

Figure 3: Pie chart showing the use of electronic gadgets during the lockdown. 67.62% (blue) of them said Yes, 4.76% (green) of them said No, and 27.62% (beige) for maybe.

Figure 4: Pie chart showing the dependency on electronics during the lockdown. 61.90% (blue) of them said everyday, 32.38% (green) for frequently, and 5.71% (beige) for rarely.

Figure 5: Pie chart showing the frequency of communication through different online platforms during the lockdown. 50.48% (blue) of them said everyday, 36.19% (green) for frequently, and 13.33% (beige) for rarely.

Figure 6: Pie chart showing whether everyone in the family owns a gadget. 77.14% (blue) of them said yes and 22.86% (green) said No.

Figure 7: Pie chart showing whether there has been an increase in the use and exposure to electronics during the lockdown. 78.10% (blue) of them said Yes and 21.90% (green) said No.

Figure 11: Pie chart showing the increase or decrease in the interaction with the family during the lockdown. 57.14% (blue) of them said it has increased, 22.86% (green) said it has decreased, and 17.14% (beige) said it's the same.

Figure 8: Pie chart showing the awareness of the ill effects caused due to overexposure to electronics and gadgets. 75.24% (blue) of them said Yes and 24.76% (green) said No.

Figure 12: Pie chart showing whether the use of electronic gadgets was advantageous or disadvantageous during the lockdown. 80% (blue) of them said it was advantageous and 20% (green) said it was disadvantageous.

Figure 9: Pie chart showing the purpose of use of the electronic gadgets during the lockdown. 30.48% (green) of them said education/work, 23.81% (blue) for entertainment, 21.90% (yellow) for all of the above, 16.19% (beige) for groceries/essentials, and 7.62% (violet) for news.

Figure 13: Bar chart showing the comparison between different age groups and the frequency of communication with others through different online platforms. X-Axis represents the age group and Y-Axis represents the number of responses obtained for every day (blue), frequently (green), and rarely (yellow). The participants from the age group of 10-20 (31.43%) communicated almost every day compared to the other groups. There is a significant difference in responses between different age groups. Chi-square Test, P-value: 0.004 (<0.05). Therefore, it is statistically significant.

Figure 10: Pie chart showing the dependency on electronic gadgets during the lockdown. 75.24% (blue) of them said Yes and 24.76% (green) said No.

Figure 14: Bar chart showing the comparison between different age groups and the various purposes of using electronics during the lockdown. X-Axis represents the age group and Y-Axis represents the number of responses obtained for entertainment (blue), education (green), groceries/essentials (light brown), news (violet), and all of the above (yellow). The majority of the participants belonging to all the age groups use electronics mainly for entertainment and education/work. There is a significant difference in responses between different age groups. Chi-square Test, P-value: 0.002 (< 0.05). Therefore, it is statistically significant.

Figure 15: Bar chart showing the comparison between different age groups and the awareness of the ill effects caused due to overexposure to electronics and gadgets. X-Axis represents the age group and Y-Axis represents the number of responses obtained for yes (blue) and no (green). The majority of the participants belonged to the age group 10-20 (40%) and 21-30 (24.76%) and all the participants of the age group 61-70 (1.90%) were aware of the ill effects caused due to overexposure to electronics. However, this is not statistically significant. Chi-square Test, P-value: 0.877 (> 0.05). Therefore, it is statistically not significant.

Figure 16: Bar chart showing the comparison between different age groups and the increase or decrease in the use and exposure to electronic gadgets during the lockdown. X-Axis represents the age group and Y-Axis represents the number of responses obtained for yes (blue) and no (green). The majority of the participants of all the age groups feel that there has been an increase in the exposure to electronics during the lockdown. However, this is not statistically significant. (Chi-square Test, P-value: 0.725 (> 0.05)). Therefore, it is statistically not significant.

Figure 17: Bar chart showing the comparison between different age groups and whether the use of technology was advantageous or disadvantageous during the lockdown. X-Axis represents the age group and Y-Axis represents the number of responses obtained for advantageous (blue) and disadvantageous (green). The majority of the participants of all the age groups agreed that the use of technology was advantageous during the lockdown. However, this is not statistically significant. Chi-square Test, P-value: 0.555 (> 0.05). Therefore, it is statistically not significant.

CONCLUSION

The advancements in technology have been very advantageous during the period of the lockdown among participants of the age group of 10 to 20 years. This group of people was the most aware of the Pros and Cons of the technological advancements during this pandemic and lockdown.

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