



## EFFECT OF USE OF INTERNET ON ADOLESCENTS MENTAL HEALTH DURING COVID-19

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### ABSTRACT

**Background** - Covid-19 has caused profound changes in the way people communicate and interact. It is unclear, however, whether some of these changes may affect certain normal aspects of human behavior and cause Mental health problem. Several studies have indicated that the prolonged use of Internet usage such as surfing internet, gaming, social media is related to signs and symptoms of depression, anxiety and stress. In addition, some authors have indicated that Internet usage can be associated with low self-esteem and life satisfaction especially in children and adolescents. The relationship between internet use and mental problems to this day remains controversial, and research on this issue is faced with numerous challenges.

**Objective** - The objective of this study was to 1. assess how Internet usage is associated with Mental health during covid-19 in adolescents and 2. what is the effect of excessive internet usage on mental health during covid-19, when people are socially connected and are taking classes and spending their time surfing internet and gaming via internet.

**Methods** - A Qualitative study was conducted, online due to covid-19 circumstances with the help of questionnaire, among the adolescents. Total number of 100 adolescents were randomly selected. Internet Usage in covid-19 and Mental Health and covid-19 Questionnaire were used to measure Internet usage and the mental health correlates, respectively. Correlation was applied using SPSS software for testing the association of internet usage and the mental health issues.

**Results** - The response on Mental Health and covid-19 Questionnaire depicts that that on average most respondents have moderate effect on their mental health during covid-19. The mean and standard deviation was found to be 84.71 and 18.88 respectively. The response on Internet Usage in covid-19 Questionnaire depicts that on average respondents have high internet usage in covid-19. The mean and standard deviation was found to be 35.27 and 7.77 respectively. The correlation analysis was conducted using SPSS software and it was found that there is a positive correlation between internet usage and its effect on mental health in covid-19. The correlation is significant at the 0.001 level (2 tailed).

**Conclusion** - we can conclude from the above results that there is a association between internet usage in covid-19 and its effect on mental health among adolescents in covid-19 and excessive internet usage is thus, correlated with mental health problems. This means that Internet usage such as surfing internet, social media use, gaming etc. is correlated with psychological, social and emotional effect on mental health leading to depression, anxiety, stress, low self-esteem, low life satisfaction and less happiness in adolescent's life. Thus, it is very important for all of us to use internet wisely in order to make sure that it doesn't have a bad impact on mental health.

**KEYWORDS:** Internet usage, Mental health, Covid-19, Adolescents

### 1. INTRODUCTION

Mental health issues following the COVID-19 pandemic stem from 'normal' people being exposed to 'extraordinary situations'. The presentations are myriad, and include emotional difficulties like anxiety, depression, biological effects like sleep, appetite

disturbances as well as severe mental illness and substance misuse. For most, these symptoms are mild and transitory, but a minority may develop severe mental health issues that require additional mental health support. Children, elderly, pregnant women, people with pre-existing mental illness, people living alone and families of those who have died in the



COVID-19 pandemic may belong to this group.

Another important aspect is the psychological impact of the pandemic on the first response teams. The long hours working in potentially dangerous situations makes them particularly vulnerable. The widespread social and economic disruption of the pandemic has produced a psychosocial impact unheard of in modern times. All these have been further fueled by information overloads of new generation media platforms that have relentlessly spread a mix of accurate as well as inaccurate information and even conspiracy theories which in turn have had a psychological impact on the community. The mental health and psychosocial impact of COVID-19 has thus been far reaching (NIMHANS,2020).

### USE OF INTERNET DURING COVID-19 LOCKDOWN

We think that the psychological impact of this pandemic like stress and anxiety among the general population is also a grave concern. The fear resulting from the disease, and the consequences of lockdowns, stress and anxiety have been mounting, and these affect individuals, families and society as a whole. Especially vulnerable are individuals with pre-existing mental and physical health conditions, those lacking social support, and first responders and healthcare workers. In extreme cases, fear may contribute to fatal outcomes and suicide, including among individuals who thought they had contracted the virus even though autopsies showed they did not. Time spent at home has increased considerably for most individuals, which may lead to a reduction or loss of daily routine and structure. Psychoactive substance uses 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. Although these behaviors typically constitute non-problematic (or perhaps even healthy) coping strategies, for a minority of individuals they can lead to reduced engagement in usual social interactions and other activities of daily living. 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.

## 2. REVIEW OF LITERATURE

### A. *Social Effect On Adolescents Mental Health*

Social media could play an even more important role during the lockdown. They enable socialization and communication and they are learning opportunities, including for adolescents' access to information about their health (O'Keeffe et al. 2011). Social media use could be a positive factor in helping adolescents to maintain social interaction during lockdown. However, social media also are associated with adverse outcomes. According to a recent systematic literature review, time spent and investment in social media correlate with levels of depression, anxiety, and psychological distress (Keles et al., 2020). They may be associated with sleep problems (Barry et al., 2017). The use of ICT carries risks. While considered healthy when pursued in moderation and for meaningful purposes, excessive engagement in specific online activities such as gambling, viewing of pornography, video gaming, social media use, shopping may lead to severe problems and elevate the risk of disordered or addictive use. Disordered use of the internet generates marked distress and/or significant impairment in personal, family, social, educational, occupational, or other important areas of functioning. Therefore, keeping involvement in these behaviors at moderate and controlled levels, especially during the pandemic, is imperative. This is also important because the respective industries (e.g., gambling, gaming, pornography) may encourage their customers to spend longer periods of time engaging in these activities, such as by launching opportunistic marketing campaigns. Social media is known to be a source of social reinforcement and validation. This platform provides people with an opportunity to share ideas, interact socially, form relationships, draw attention of others and create social image (Kietzmann et al., 2011). During the current global crises when ‘social distancing’ has become a norm, over-engagement in social media has become a ‘psychological necessity’ thereby helping people to address their needs of human interaction and coping with the pandemic. Therefore, despite the precautionary guidelines of social distancing, it provides people a platform to remain socially connected and universalize distress caused by the current crisis. Apart from socialization, social media is also being used for academic and work-related purposes like conducting online lectures, webinars, meetings and ensuring work from home. One of the major advantages of social media is that it facilitates awareness and provides mental health support by making resources available to those facing distress caused by lockdown and to those who are



isolated as a result of being quarantined. With the help of this platform, data scientists and healthcare professionals have recently surfaced as social media influencers with the aim to mobilize people for taking proactive steps to deal with the crisis (The Economic Times, 2020). In the ongoing scenario, social media has become one of the major sources for updating information on COVID-19 for people. However, its irresponsible use poses the challenge of 'infodemics' i.e. a situation when 'misinformation' spreads rapidly thereby affecting thinking and subsequent behavior of people. Recently WHO had cautioned people against social media rumors which lead to panic, stigma and irrational behavior (WHO, 2020). Given the rise in usage of this media, it becomes necessary to address its association with mental health. The relationship between social media disorder and mental disorders becomes controversial which is attributable to diagnostic complications (Pantic, 2014). Research in the past has shown that compulsive usage of social media impacts physical and mental health including cardio metabolic health, sleep, affect, self-esteem, well-being and functioning, especially in adolescents (Turel et al., 2016; Cheng and Li, 2014; Van Rooij and Schoenmakers, 2013). In light of the present pandemic, mental health conditions are found to be associated with the amount of social media exposure. Sharing endless selfies and all your innermost thoughts on social media can create an unhealthy self-centeredness and distance you from real-life connections. A study at the University of Pennsylvania found that high usage of Facebook, Snapchat, and Instagram increases rather decreases feelings of loneliness. Conversely, the study found that reducing social media usage can actually make you feel less lonely and isolated and improve your overall wellbeing.

### ***B. Psychological Effect On Adolescents Mental Health***

The present consensus guidance focuses on the engagement with information and communications technology (ICT) in the time of the COVID-19 crisis. ICT is a "savior"; it contributes vitally to disseminating knowledge about the outbreak to wide sectors of the global population, to an extent not possible without such technology. Information flow is a key factor in fighting the pandemic (enabling individuals to have instant access to reliable information, while granting researcher with means for collaboration on a global scale in the race to develop a vaccine and efficient treatment strategies, for example). Working and studying remotely is possible due to the use of ICT. Keeping social contact remotely with friends/families

to reduce psychological impacts of isolation, providing access to entertainment and even materials guiding physical exercise (e.g., live streaming home fitness sessions) are realized through ICT and represent strategies recommended by the WHO.

However, the current period of pandemic and lockdown brings together several factors related to internet addiction. Internet addiction is characterized by excessive or poorly controlled preoccupations, urges, or behaviors regarding computer use and internet access that lead to impairment or distress (Shaw and Black, 2008). Among the explanatory models of internet addiction, studies suggest that internet addiction may be influenced by stressful and traumatic experiences (Cerniglia et al., 2017). Internet addiction is believed to be associated with online games and social applications (Kuss et al., 2013). Internet addiction is also associated with depression (Ha et al., 2007). Furthermore, adolescents receive a lot of information through social media, which are sometimes more direct and less contextualized than traditional media. During the COVID-19 pandemic, a lot of adolescents are monitoring the news (Oosterhoff and Palmer, 2020). However, they do not have the same skills as adults, their brain is still maturing towards adulthood (Murty et al., 2016). They have access in real-time to videos, photos, stories on all current topics, and related controversies. Adult guidance would be necessary to acquire analytical skills on this information.

It is well known to us and also resonated by research that 'internet addiction' is predominantly linked to increased social media or gaming activities (Van Rooij and Schoenmakers, 2013; Van Rooij and Prause, 2014). While DSM-5 (APA, 2013) and the stable version of ICD-11 (WHO, 2018) have identified 'Internet gaming disorder' (IGD) as a provisional disorder, social media disorder is still not acknowledged. Increasing research is advocating that social media disorder should be considered an addictive disorder just like IGD (Pantic, 2014; Ryan et al., 2014). According to the DSM-5, a person is diagnosed as having IGD if there is fulfilment of 5 (or more) of the 9 criteria (preoccupation, tolerance, withdrawal, persistence, escape, problems, deception, displacement, and conflict) during a period of 12 months. Since social media disorder and IGD both relate to internet use, researchers refer to nine IGD criterion of DSM-5 for constructing diagnostic tools and establishing internet / social media addiction (Regina et al., 2016; Van den Eijnden, 2016). Since COVID-19 outbreak began from end of 2019 and crossed international borders from the beginning of 2020, undeniably '12 months DSM 5 criterion' is not applicable. But it is difficult to say if five or more IGD



DSM-5 criteria are fulfilled by the excessive social media users. It comes with a word of caution that excessive social media usage is known to be highly addictive due to its psychological, social and neurobiological basis. During current pandemic, like many other uncertainties, it is unclear whether this compulsive use of social media is just a 'phase' and a coping mechanism or an indication of addictive behaviour having mental health implications. Hence, in terms of current research implications and management, it is imperative to keep the contextual issue of global pandemic in mind and differentiate between addictive and extremely involved behaviour. A study done at Duke University found that, on days they use technology more, at-risk adolescents experienced more conduct problems and higher ADHD symptoms compared to days they used technology less. On the flip side, the study also found that those same adolescents experienced less depression and anxiety on days they used technology more. Research coming out of the University of Gothenburg in Sweden found a link between heavy cell phone use in young adults and depressive symptoms. A team of Australian researchers conducted two studies and found that compulsive internet use by adolescents leads to poorer mental health. A Swansea University study found that heavy internet users experience psychological symptoms of withdrawal when they stop using. Human beings need face-to-face contact to be mentally healthy. Nothing reduces stress and boosts your mood faster or more effectively than eye-to-eye contact with someone who cares about you. The more you prioritize social media interaction over in person relationships, the more you're at risk for developing or exacerbating mood disorders such as anxiety and depression.

### C. *Emotional Effect On Adolescents Mental Health*

A University of Michigan study found that Facebook use led to a decrease in happiness and overall life satisfaction. One can feel Inadequacy about their life or appearance. Even if you know that images you're viewing on social media are manipulated, they can still make you feel insecure about how you look or what's going on in your own life. Similarly, we're all aware that other people tend to share just the highlights of their lives, rarely the low points that everyone experiences. But that doesn't lessen those feelings of envy and dissatisfaction when you're scrolling through a friend's airbrushed photos of their tropical beach holiday or reading about their exciting new promotion at work. FOMO has been around far longer than social media, sites such as Facebook and Instagram seem to exacerbate feelings that others are having more fun or

living better lives than you are. The idea that you're missing out on certain things can impact your self-esteem, trigger anxiety, and fuel even greater social media use. FOMO can compel you to pick up your phone every few minutes to check for updates, or compulsively respond to each and every alert—even if that means taking risks while you're driving, missing out on sleep at night, or prioritizing social media interaction over real world relationships. About 10 percent of teens report being bullied on social media and many other users are subjected to offensive comments. Socialmedia platforms such as Twitter can be hotspots for spreading hurtful rumors, lies, and abuse that can leave lasting emotional scars. Researchers found that teens who spent a lot of time in front of screen devices -- playing computer games, using more social media, texting and video chatting -- were less happy than those who invested time in non-screen activities like sports, reading newspapers and magazines, and face-to-face social interaction. The happiest teens used digital media for less than an hour per day. But after a daily hour of screen time, unhappiness rises steadily along with increasing screen time.

Happiness is not a warm phone, according to a new study exploring the link between adolescent life satisfaction and screen time. Life satisfaction is one of the several aspects of positive mental health. It refers to a cognitive, judgmental process. It is not a direct, verifiable experience, nor a known personal fact, but a cognitive product that involves a comparative process between the individual's current life situation and internalized standards, allowing respondents to use the information they subjectively deem relevant when evaluating their own lives. According to Diener, subjective well-being covers two main components: one affective including negative and positive emotions, and one cognitive; namely life satisfaction. Teens whose eyes are habitually glued to their smartphones are markedly unhappier, said study lead author and San Diego State University and professor of psychology Jean M. Twenge. W. Keith Campbell at the University of Georgia, crunched data from the Monitoring the Future (MtF) longitudinal study, a nationally representative survey of more than a million U.S. 8th-, 10th-, and 12thgraders. The survey asked students questions about how often they spent time on their phones, tablets and computers, as well as questions about their in-the-flesh social interactions and their overall happiness. On average, they found that teens who spent more time in front of screen devices -- playing computer games, using social media, texting and video chatting -- were less happy than those who



invested more time in non-screen activities like sports, reading newspapers and magazines, and face-to-face social interaction. Twenge believes this screen time is driving unhappiness rather than the other way around. "Although this study can't show causation, several other studies have shown that more social media use leads to unhappiness, but unhappiness does not lead to more social media use," said Twenge, author of "iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy -- And Completely Unprepared for Adulthood." Total screen abstinence doesn't lead to happiness either, Twenge found. The happiest teens used digital media a little less than an hour per day. But after a daily hour of screen time, unhappiness rises steadily along with increasing screen time, the researchers report today in the journal *Emotion*. "The key to digital media use and happiness is limited use," Twenge said. "Aim to spend no more than two hours a day on digital media, and try to increase the amount of time you spend seeing friends face-to-face and exercising --two activities reliably linked to greater happiness."

### 3. RESEARCH METHODOLOGY OBJECTIVES

The present study has been conducted to fulfil the following objectives:

1. To know the effect of use of internet on mental health during covid -19 in India.
2. To explore the relationship between the internet usage and Mental Health in covid-19.

### PARTICIPANTS

A total number of 100 participants between age group of 16-22 were randomly selected. Out of 100 participants 76.4 % participants were females and 23.6% participants were males. Among these, 78 responses that is 63.4 % were from students. The criteria for the selection of the samples was as follows: sample should be between age group of 16-22. It should be a adolescent who uses internet daily. It should be the one who is willing to participate in this study and is ready to give their few minutes out of their valuable time for the purpose of filling the questionnaire.

### PROCEDURE

A Qualitative study was conducted among adolescents. Online test was conducted using google forms due to covid-19 pandemic. Two tools were used for the same purpose. The tool is a written device that a researcher assesses to collect the data. After careful and detailed review of literature the researcher prepared and

developed an Internet usage in covid-19 questionnaire and Mental health and covid-19 questionnaire as a tool for the present study. Content validity has been done by experts and modification was done based on suggestions. Reliability and validity of the tool was tested prior to the study. Thus, A structured and validated questionnaire, was used for data collection.

### RESEARCH HYPOTHESIS

1. There is significant relationship between Mental Health and Internet Usage during pandemic situation
2. There is a significant relationship between Internet Usage and Mental Health among adolescents in covid-19.
3. There is a significant relationship between excessive internet usage in covid-19 and mental health among adolescents in covid-19.

### DESCRIPTION OF TOOL INTERNET USAGE IN COVID-19 QUESTIONNAIRE

#### SECTION A - Demographic Variables

It comprised of 3 items such as Gender, Age and Occupation.

#### SECTION B - QUESTIONNAIRE

It is a 10 item Questionnaire which was used to assess the use of internet in covid-19. The responses are based on 5 point Likert scale. The respondents were categorized in the following ways: - Respondents who scored above 30 were considered HIGH ON INTERNET USAGE that is these respondents higher scores indicate more Internet usage in covid-19. Respondents who scored above 20 and below 30 were considered MEDIUM ON INTERNET USAGE that is these respondents scores indicate moderate level of internet usage in covid -19. Respondents who scored above 10 and below 20 were considered LOW ON INTERNET USAGE that is these respondents low scores indicate low internet usage in covid-19.

### MENTAL HEALTH AND COVID-19 QUESTIONNAIRE

#### SECTION A - Demographic Variables

It comprised of 3 items such as Gender, Age and Occupation.

#### SECTION B - QUESTIONNAIRE

It is a 30 item Questionnaire which was used to assess the Mental Health in covid-19. The responses



are based on 5 point Likert scale. In "Mental Health and Covid-19 Questionnaire", the respondents were categorized in the following ways: - Respondents who scored between 150-101 that is above 100 were considered severe that is these respondents higher scores indicate more mental health problems in covid-19. Respondents who scored between 100-51 that is above 50 were considered moderate that is these respondents scores indicate moderate level of mental health problems in covid -19. Respondents who scored between 50-30 were considered mild that is these respondents low scores indicate less mental health problems in covid-19.

### STATISTICAL ANALYSIS

The data were entered in a computer-based spreadsheet. It was checked for errors and cleaned before being analyzed. SPSS software was used for statistical computations. Descriptive statistics in the forms of means, median and standard deviations (SDs) have been presented. The continuous variables such as age, gender and occupation were used. Pearson correlation coefficient for calculating correlations was used in order to assess the statistical significance of any differences & relationships between parameters of the research in question.

The two variables internet usage and mental health were correlated.

### 4. RESULT

Scores were calculated for 100 participants. Out of 100 participants 76.4 % participants were females and 23.6% participants were males. Among these, 78 responses that is 63.4 % were from students. online test was conducted using google forms on people between age group of 16-22. Two questionnaire were used for the same purpose that is "Mental health and covid-19" and other is "Internet usage in covid-19"QUESTIONNARIE.

Table 1.0 Scores in Mental Health during COVID 19

The Scatter chart 1.1 above depicts Mental Health in covid-19. The chart is based on total score of respondents on the test that is "MENTAL HEALTH AND COVID-19 Questionnaire. The result shows that there are 18 respondents who scored above 100 which means that these respondents are facing severe effect on mental health in covid-19. There are 78 respondents that scored between 51-100 which depicts moderate level of effect on mental health in covid-19. There are 4 respondents who scored between 30-50 that depicts mild effect on mental health in covid-19.

Thus, the result depicts that on average most respondents between age group of 16-22 seems to have MODERATE

EFFECT ON THEIR MENTAL HEALTH IN COVID-19.

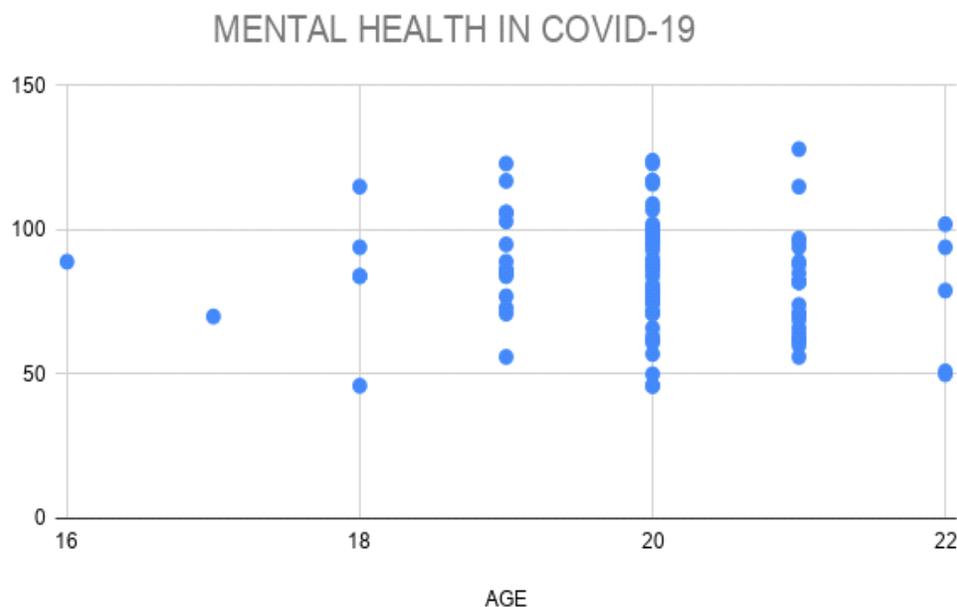
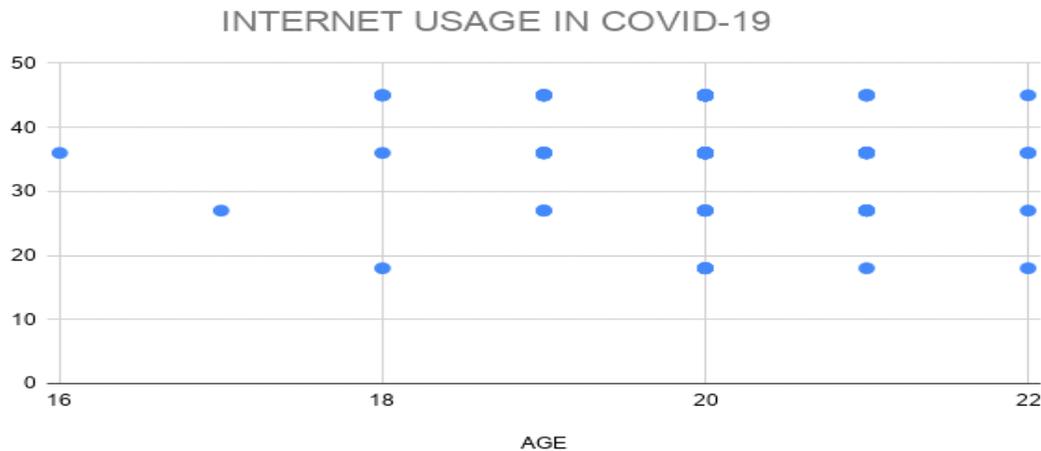


CHART 1.1 MENTAL HEALTH IN COVID-19

**TABLE 1.1 MENTAL HEALTH IN COVID-19**

MEAN	84.71
MEDIAN	85.5
STANDARD DEVIATION	18.88

Table 2.0 Scores in Internet Usage during COVID 19

**CHART 2.1 INTERNET USAGE IN COVID-19**

The SCATTER CHART 2 above depicts Internet usage in covid-19. The chart is based on total score of respondents on the test that is "INTERNET USAGE IN COVID-19 Questionnaires. The result shows that there are 74 respondents who scored above 30 which means that these respondents are high on internet usage in covid-19. There are 9 respondents that scored above 20

and below 30 which depicts that these respondents are medium on internet usage which is neither high nor low, in covid-19. There are 17 respondents who scored above 10 and below 20 that depicts low internet usage in covid-19. Thus, the result depicts that, on average most respondents between age group of 16-22 seems to have HIGH INTERNET USAGE IN COVID-19.

**TABLE 2.1 INTERNET USAGE IN COVID-19**

MEAN	35.27
MEDIAN	36
STANDARD DEVIATION	7.77

**COORELATION ANALYSIS**

		Internet usage in covid-19	Mental Health in covid-19
Internet usage in covid-19	Pearson Correlation	1	.851**
	Sig. (2-tailed)		.000
	N	100	100
Mental Health in covid-19	Pearson Correlation	.851**	1
	Sig. (2-tailed)	.000	
	N	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).



The correlation analysis was conducted using SPSS software. The correlation table shown above depicts there is a positive correlation between Internet usage in covid-19 and Mental health in covid-19. This means that when Internet usage increases then, Mental health issues also increases. The correlation is significant at the 0.001 level (2 tailed).

## 5. DISCUSSION

This study confirmed our first hypothesis that is internet usage has an effect on mental health. Scores were calculated for 100 participants. Out of 100 participants 76.4 % participants were females and 23.6% participants were males. Among these, 78 responses that is 63.4 % were from students. online test was conducted using google forms on people between age group of 16-22. Two questionnaire were used for the same purpose that is "Mental health and covid-19" and other is "Internet usage in covid-19" QUESTIONNAIRE. In the study it was found that on average adolescents have high internet usage in covid-19 and moderate level of mental health issues were found among these adolescents. The mean and standard deviation for internet usage and mental health in covid-19 among respondents was found to be 84.71 and 18.88 and 35.27 and 7.77 respectively. The study also confirmed the second hypothesis that using the internet daily and increased screen time has a great impact on mental health psychologically, socially as well as emotionally. Internet use frequency is thus associated with depression, stress, anxiety, low self-esteem and low life satisfaction. Thus the association that Study moderates between internet usage and mental health in covid-19 was confirmed. This association was stronger for those who are students between age group of 16-22. In the study, it was found that there is a positive correlation between internet usage and mental health. correlation is significant at the 0.001 level (2 tailed). This means as internet usage increases, mental health problem also increases. Thus, our null hypothesis is rejected that there is no association between internet usage and mental health in covid-19 and internet usage has no impact on adolescent's mental health during covid-19.

## 6. CONCLUSION

The findings of the study showed that there is an association between internet usage and mental health among adolescents in covid -19. Most of the adolescents with high internet usage had Mental Health problem. High internet usage on surfing internet, using social media, gaming etc. was thus, correlated with depression, anxiety, low self-esteem and low life satisfaction. The researcher concluded that the Mental

Health problems due to internet usage can be prevented as well as coping can be enhanced, if provided awareness and identified at earlier stage.

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