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Mental health during COVID-19 pandemic among secondary school students in relation to mobile phone usage

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Abstract--The mental health and well-being of pupils have been regarded as one of the growing concerns of Twenty-first-century life. The year 2020 has witnessed how the Covid-19 pandemic can make huge changes in our lifestyle, be it academic, professional, social, or even personal life. The principal goal of this research is to study the mental health of secondary school pupils during the covid19 pandemic in relation to the usage of mobile phones. This is a descriptive survey study that attempts to understand the association between the frequencies of mobile phone usage and the mental health of the pupils during the pandemic situation. 100 students of 9th standard from two schools of West Bengal are selected as the samples of the study. Research information are gathered through a Mobile Phone Problem Use Scale and Mental Health – Checklist. The findings of the study uncover that there is no huge distinction in the mean score of psychological well-being of students on the basis of gender. Results likewise proclaim that there is no critical contrast in the mean score of psychological wellness or mental health between pupils from metropolitan regions and pupils from the provincial region. One of the major findings of this research study is that a significant relationship (Moderate Positive Correlation) has been found between mental health and mobile phone usage of the secondary school students.

Keywords---mental health, mobile phone usage, excessive use, secondary school students, COVID-19 pandemic.

Introduction

Because of the flare-up of Covid 19 the world has to encounter a global crisis along with lots of hurdles, challenges and uncertainty (Fisher, J et al., 2020). On February 11, 2020, the World Health Organization (WHO) declared Corona Virus, commonly known as COVID-19, to be a disease; a respiratory condition that has a broad impact on an individual's overall health. In March 2020, the World Health Organization announced the novel Corona Virus as a pandemic disease indicating that the new virus is speedily spreading throughout countries of the world (Singh, J et al., 2020). In this context of Covid19, in India, lockdowns were strictly made obligatory from March 24, 2020 and slowly it started to be extended since September. It caused many changes in people's academic, professional, social as well as personal life. Major shifts in the education system of India occurred in terms of the delivery of learning content, nature of the learning activities, and the teacher-student relationship too. Schools remained closed, and the traditional classroom teaching got replaced by online classes (S.Patra et al. 2020). In such deplorable conditions which was marked by school closure and social distancing, suddenly human life became largely dependent on increased internet use. There is no doubt that use of smartphones during these tough time period may have some constructive beneficial sides but at the same time, it should be kept in mind that the extreme usage of smart phones may cause undesirable impacts on the mental health of the pupils and also their academic life. Recognizably, expanded chance for web utilization makes it more hard for guardians to control this access; the overuse of internet is related with self-harm and self-destructive conduct in youths with mental danger issues. The disruption of daily routine, home confinement, no access to peers, friends, teachers, neighbors, and lack of outdoor physical activities-all these factors are enough for causing a lotting of mental trouble in children as well as adolescents.

The mental health of children is very important for the proper development of personality. Mental health has been characterized by The World Health Organization (WHO) as a condition of psychological well-being that includes the individual's capacity to recognize his or her own potentialities, to cope up with the typical burdens and stresses one needs to face in normal life, and the ability to work beneficially, adding to society. Every student should possess a peaceful balanced mental state of well-being so that he or she can carry out his or her academic as well as non academic activities in an organized and systematic manner. When the whole world is grappling with the pandemic Covid 19, children are bound to encounter psychological issues leading to mental ill-health, then it is the need of great importance to address the mental wellbeingness of the pupils in India. Thereby, an urgent need was felt by the researchers to find out the relationship between the use of mobile phone and the mental well beingness of the pupils so as poor mental health issues like depression, anxiety, and self-harm behaviors, sleep disturbances, excessive anger, and difficulty in concentrating, etc. can be overcome with the help of required preventive strategies.

Objectives of the study

This study aims at accomplishing the determined research objectives which are as follows-

- To study the nature of the distribution of mental health score among secondary school students.
- To study the nature of the distribution of mobile phone usage score among secondary school students
- To study and compare gender-wise mental health among secondary school students
- To study and compare locality-wise mental health among secondary level school students
- To find out the relationship between mental health and mobile phone usage among secondary school students.

In view of the above research objectives, the following hypothesis were formulated to be tested. They are as follows-1. There exists no significant difference in mental health among secondary school students on the basis of gender 2. There exists no significant difference in mental health among secondary school students on the basis of locality. 3. There exists no significant relationship between mental health and mobile phone usage among secondary school students. This study makes an endeavour to probe into the issue of excessive use of smart phone during Covid - 19 pandemic, while determining its association with the mental well beingness of the students.

Literature Review

Leighton, S., & Dogra, N. (2009) carried out a theoretical study titled “Defining Mental Health and Mental Illness”. It focused on individual suffering caused by mental health issues among youngsters. This study also highlighted the universal cliché of stigmatization of mental illness, the way people look at it with profound disgrace and shame. It proposed evidences concerning various interventions so that stigma generally associated with mental ill-health and the misconceptions regarding it can be reduced.

Nair (2017) conducted a crosssectional research study on the mental wellbeingness of adolescent school students of Gujarat. Sample for the study consisted of 693 school students selected from six high schools of Gujarat. This study utilised a standardised tool for data collection namely, Strengths and difficulties questioner (SDQ) for assessing the status of the mental health of the pupils. The discoveries of the study uncovered that the 15 % boys students had a high score on SDQ. Girls students were having more emotional issues, while the others mental health issues were seen as more prevailing among the male students. It was also found that the children from rural area, having more mental health problems in comparison to the children from urban area. The study showed that how a large part of student pupolation of today are effected by mental health problems.

Joël Billieux (2018) carried out a review study about problematic and

dysfunctional usage of the mobile Phone. This research article documented various validated instruments designed for assessing the excessive use of the mobile phone. Then it highlighted on the evidences from the existing literature regarding the the risk factors due to the dysfunctional usage of mobile phones. The study concluded with the assumption that opines that usage of mobile phone in dysfunctional way falls under the gamut of cyber addictions which covers different kinds of dysfunctional behaviours of students i.e. engaging themselves in some particular online activities like addictive video games, gambling, over use of social networks, excessive visit to sex-related websites etc. Thus, the study explored the negative and disadvantageous sides of excessive or abnormal usage of mobile phones reviewing the existing literature on this specific variable.

Son et al. (2020) conducted an interview survey research in which the impact of COVID-19 on the mental health of college going students of the United States was studied. Data were collected from participants of 195 students of a public university Interview surveys with 195 in the United States was to fulfill the main purpose of the study which was to acquire sound understanding regarding the effect of the covid19 on the mental well-being of those undergraduates. Both quantitative as well as qualitative methods were utilized to analyse the data. The results of the research declared that out of the 195 college students, majority of the participants i.e 138 (71%) showed symptoms of heightened stress and anxiety because of the COVID-19 flare-up.

Patra et al.(2020) conducted a study which was about the effect of Coronavirus on the mental health of adolescents in India. This study presented how children and adolescents were at high danger of psychological issues during pandemic. The study recommended for taking initiative as much as possible to identify children who are at risk of mental disorders during the COVID-19 situation. For achieving this purpose it was also recommended that a team to be formed for community screening so that detect recent changes in behaviour of the children and adolescents can be detected. It also suggested for the provision of training for teachers and parents so that they are able to identify signs indicating mental health problems like sleep disorders, extreme anger, and low level concentration etc. Most importantly, if anykind of emergency or very serious mental health needs appear, it can be solved by mental health professionals.

Roy et al. (2020) conducted a study titled “Mental health implications of COVID-19 pandemic and its response in India” which made a sincere endeavour for reviewing the prevalent issues of mental well beingness mental well beingness for the time of the COVID-19 pandemic, and also various responsive strategies that were set and promoted in mental health care with its extraordinary spotlight on the Indian setting. Findings of the study revealed certain major prevailing mental health issues like fear, depression, anxiety, stress, denial, outrage, and sleep deprivation which put individuals with existing mental health issues in a truly weak deplorable condition. Infact the results of the study showed how suicides during the COVID-19 pandemic had also been increasingly so common.

Wang et al.(2020) conducted a cross- sectional survey study in order to investigate the status of the mental health of College Students of the United States at the time of COVID-19 Pandemic. The primary aim of the study was to

survey the status of mental wellbeingness and the level of depression and anxiety of university- level college students in the U.S during the outbreak of coronavirus. The study used online survey among the college students of Texas A&M University via email. Data collection was done with the help of two normalized scales previously approved—the Patient Health Questionnaire-9 and the General Anxiety Disorder-7—in order to assess the level of anxiety as well as the level of depression, furthermore multiple-choice and open-ended questions regarding the stressors and defense mechanisms related with COVID-19. Most of the participants (n=1443, 71.26%) showed their highly increased level of stress/anxiety levels and suicidal thoughts during the pandemic, while 43.25% of the total participants showed their capacity for adapting up to the stress and pressure connected with the Coronavirus circumstance.

Harris B. et al (2020) carried out a review study on the problematic usage of mobile phone while reviewing different types of scales meant for smartphone use. This review paper attempted to study 78 existing scales which were prepared for measuring and identifying extreme or problematic usage of smartphones along with determining their theoretical orientations and their psychometric properties. This study found out that though there existed lots of self-report scales for investigating about the construct, still many of them were marked by clear absence of adequate internal consistency. The other findings of the study also showed that there is an absence of research studies that can support theoretical foundation of many of the scales. Thereby, it emphasized on the urgent need for future research in this particular area so that better tools can be developed to characterize and to assess the problematic smartphone use in a very sincere way and efficient manner.

Thus, evidences gathered from the review of existing related literature provides the researchers with sufficient knowledge and idea regarding the topic under study. For example, they show that early researches on usage of mobile phone were used to focus on its positive consequences like strengthening the communication where physical proximity needs not to be taken care of, or as a medium of enriching oneself with more knowledges and ideas etc. But in course of time the researches started to show the change in thought and change in current situation specially the period of covid -19 pandemic. Now, a large corpus of research studies has found out that despite of its various positive sides, the use of cellular phones can be linked with its harmful imapcts. They have concluded that when the use of mobile phone use is uncontrolled then it can generate disturbing behaviour, sometimes anti-social one, causing lots of mental health problems, thus making a negative impact on daily lives. Thus, researches to spread awareness regarding mental health issues and also the appropriate usage of mobile phones need to be conducted.

Research Methodolgy

Research Method: Descriptive Survey method was adopted in this study to have an understanding of the effect of the pandemic Covid 19 on pupils' mental health. Descriptive research had been utilized in order to provide a description of the traits and the characteristics of desired population.

Research Sampling and Participants : All students studying in 9th standard with a mean age of fifteen in the government schools of West Bengal had been regarded as the desired population. Purposive sampling was employed to select the two schools for the study, and simple random sampling was used to choose 100 students of 9th standard as the participants of the study. The sample of this study was comprised of 100 pupils of class IX, selected from two Governmental schools in Birbhum, West Bengal. One school located in a rural area, was named Barah Sri Gouranga Vidyalaya, whereas the other school, located in urban area, was named Kendriya Vidyalaya, Birbhum. Quantitative data were collected through administering certain tools to the sample under study.

Description of the Tool Used for the Study: In the present investigation data were collected through two standardised tools. They are- Mental Health -Checklist (MHC) by Pramod Kumar (1992) and Mobile Phone Problem Use Scale (MPPUS) developed by Bianchi and Phillips. Mental Health Check-list (MHC) in 4-point rating scale is consisted of 11 items which are connected with symptoms of two different kinds: mental domain(six items) and somatic domain (five items). Noticeably, The entire score of this scale on mental health status ranges starting from the lowest score 11 to the maximum or the highest score 44. On the other hand, Mobile Phone Problem Use Scale (MPPUS) constructed by Bianchi and Phillips was used to assess an individual's mobile phone usage. This tool concentrates on the assessment process considering three different dimensions of a person's usage of a smart phone. These three emphasised aspects are – the profile of the user, actual use and finally the problematic use. The MPPUS is in a questionnaire form consisted of 27 items presented in a 10-point Likert scale encompassing various dimensions like escapist attitude, tendency of withdrawal forbearance, negative consequences on regular life. The MPPUS is recognised as an effective tool for the assessment of the score of mobile phone usage by any individual.

Procedure for Data Collection: The researchers, first of all, conveyed her research purpose to the respective Heads of schools over the phone and took their permission for administering the data collection tools for her investigation via online mode. She used google forms to collect the required data. For data collection, the above-mentioned checklist and the scale were distributed to the samples under study via online mode. The researchers then gathered all their responses and did the scoring as per the norms of the manual.

Statistical Techniques Adopted: The researchers analyzed and interpreted the quantitative data with the help of certain appropriate statistical techniques depending on its need and relevancy to the study. They were as follows- 1. Descriptive statistics like mean, median, mode, standard deviation, skewness, and kurtosis were used in order to study distribution of scores of secondary students. 2. T-test was employed to study the difference between boys and girls, urban and rural students to assess their mental health. 3. Pearson product-moment correlation was utilized to study the relationship between mental health and mobile phone usage.

Delimitations : The study was delimited to only Birbhum district in the state of West Bengal. The study was delimited to students studying under the West

Bengal Board of Secondary Education. This study was restricted to only the 9th standard students of session 2020-21.

Data Analysis and Findings

As per the objectives of the study, obtained data were analysed and interpreted. The observed results have been analytically presented in the study in which researchers has determined mental health in relation to mobile phone usage among students.

The nature of Distribution of Mental Health Scores of Secondary School Students

In order to verify the normality of distribution of mental health of students, values of the mean, median, mode and standard deviation, skewness and kurtosis were determined and presented in the following table.

Table 1: Nature of Distribution of Mental Health Scores of Secondary Students

Class Interval	Frequency	Cumulative Frequency
11-15	13	100
16-20	42	87
21-25	34	45
26-30	4	11
31-35	4	7
36-40	3	3
41-45	0	0

N=100

Mean	Median	Mode	S.D	SKEWNESS	KURTOSIS
19.8800	19.5000	19.00	4.24093	.792	2.050

As the above table shows, the value of skewness was .792 that means the distribution is positively skewed and value of kurtosis was 2.050 calculated at 0.05 level, which denotes that the distribution is platykurtic.

The nature of the distribution of Mobile Phone Usage score among secondary students

In order to verify the normality of distribution of mobile phone usage, values of mean, median, and mode, standard deviation, skewness, and kurtosis were computed and are presented in the following table:

Table 2: Frequency Distribution of Mobile Phone Usage

Class Interval	Frequency	Cumulative Frequency
10-14	15	100
15-19	30	85
20-24	30	55

25-29		25		25	
N = 100					
Mean	Median	Mode	S.D	SKEWNESS	KURTOSIS
20.70000	21.5000	18.00	5.20392	-.186	-.714

The above table reveals that the value of skewness is $-.186$ which means the distribution is negatively skewed. The value of kurtosis was $-.714$ at 0.05 level which denotes that the distribution is platykurtic.

Gender wise mental health among secondary students

To test the significance of the difference between the mean scores of mental health among the male and female secondary students, their mean standard deviations and "t" values were determined.

Table 3: Gender wise mental health among secondary Students

Variable	Gender	N	Mean	S.D	SE.D	df	t- value
Mental Health	Male	48	19.2917	3.40187	.49102	98	-1.338
	Female	52	20.4231	4.86019	.67399		

It is found from the study that the calculated "t" value which is -1.338 is lesser than the table value which is 1.98 at 0.05 level of significance. Therefore it is interpreted that there is no significant difference in the mean score of mental health between boys and girls students. Thus, the null hypothesis is accepted.

Locality-wise mental health among secondary level Students

Table 4: Locality-wise mental health among secondary level Students

Variable	Locality	N	Mean	S.D	SE.D	df	t- value
Mental Health	Urban	34	19.0882	3.22272	.55269	98	-1.422
	Rural	66	20.3636	4.68594	.57680		

It is found from the study that the calculated "t" value which is -1.422 is lesser than the table "t" value which is 1.98 at 0.05 level of significance. Therefore it is interpreted that there is no significant difference in the mean score of mental health between secondary students from an urban area and students from a rural area. Thus, the null hypothesis is accepted.

Coefficient of Correlation between mental health and mobile phone usage among secondary students

Table 5: Coefficient of Correlation

Variable	N	Mean	S.D	Coefficient of Correlation	Level of Significance
Mental Health	100	19.88	4.24093	.514	0.05

Mobile Phone Usage	100	20.70	5.20396		
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The table reveals that the co-efficient of correlation between mental health and mobile phone usage of secondary students is .514. Thereby, it can be interpreted that a moderate Positive Correlation exists between the mental health and the mobile phone usage of secondary students. Therefore the hypothesis which states that there is no significant relationship between mental health and mobile phone usage was not accepted. The result shows that a moderate positive correlation exists between the two variables called mental health and mobile phone usage.

Conclusion

After analyzing and interpreting the research data with the assistance of statistical procedures it can be concluded briefly that-There is no significant difference in the mean score of mental health between boys and girls students of secondary school students. There is no significant difference in the mean score of mental health between secondary school students from the urban area and the students from the rural areas. And furthermore, a significant relationship between mental health and mobile phone usage of secondary school students has been observed in this study. A Moderate Positive Correlation is found to have existed between these two variables. The findings of this study are consistent with that of the earlier researches conducted by Joël Billieux (2018), Sohn, S. Y. et al., (2019), and Harris B. et al.,(2020).

Implications

In the adolescent period, students go through various kinds of psychological issues that may affect their mental health. One of the most Post Covid 19 challenges is to cope with the mental stress, anxiety, anger issue, frustration, isolation, etc, and to return to the normal track of life. For this purpose, parents need to be sensitive enough to monitor their children's use of the mobile phone. Excessive use of smartphones may be proven harmful for the physical health as we all as the mental health of the students. So gradually children's involvement with mobile phones needs to be taken care of by the parents in a delicate way.

Schools can organize different educational online programmes for spreading mental health awareness (Adelman, H.S. & Taylor, L. 2010), to make the students realize how important it is to be mentally healthy in this pandemic situation. Online seminars can be arranged by the teachers to promote mental health among the students. With the help of this systematic assessment regarding the mental health of the students and their excessive use of mobile phone, the study may help the educational policy makers in framing all-inclusive interventions for the affected students.

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