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RESEARCH ARTICLE

PREVALENCE OFINTERNET ADDICTION AND ITS CORRELATION WITH DEPRESSION, ANXIETY, AND STRESS AMONG YOUTH

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Abstract

Background: Internet isanessential aspect of human life in current age. It forms an undeniablepart of educational, professional, andpersonal life. Internet addiction is currently under consideration to be included under substance abuse section of diagnostic and statistical manual of mental disorders. This study was conducted with a rationale of understanding different facets of this emerging mental health problem.Convenience sampling was done. Data was collected by means of a pre-formed, structured questionnaire. Internet addiction assessment scale and Depression, Anxiety, Stress Scale-21 (DASS21) was used.Pearson's correlation test was used to evaluate the correlation.A sample size of 170 participants was achieved. Mean age was 21.3 + 4.4 years.Prevalence of internet addiction was 45%. In this study, internet addiction test score had a positive correlation with depression, anxiety, and stress ($p<0.05$).The positive correlation between internet addiction and various psychopathologies shows that internet addiction if present increases their incidence. However, temporal causation needs further evaluation.

Introduction:-

Internet is being integrated as a part of day-to-day life.The usage of internet has been growing in all ages and regions. With the advancement in media and technologies, internet has emerged as an effective tool in eliminating geographical barriers. [1]Due to COVID-19 pandemic lockdowns, internet has gained the position of 'essentials' among the masses. It has dramatically changed the current communication and education scenario. Therefore,internet addiction has emerged as a potential problem in young people, which refers to excessive computer use that interferes with their productivity and learning abilities. [1,2] The potential use of internet is to facilitate research, interpersonal communication, and business transactions. At the same time, it can be used by some to indulge in pornography, excessive gaming, chatting for long hours, gambling, and using social media to harm self or others. [2]

"Internet Addiction," which was originally proposed as a disorder by Goldberg, [3] Griffith considered it a subset of behavioural addiction that meets the six "core components" of addiction, which are, salience, mood modification, tolerance, withdrawal, conflict, and relapse. [4,5]Based on a growing research base, the American Psychiatric

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Association vision is to include Internet use disorder in the appendix of the fifth edition of the Diagnostic and Statistical Manual for Mental Disorders. [6]

The rationale of this study was to assess the prevalence of internet addiction and the platforms associated with it among the youth. Easy availability of internet due to unlimited Wi-Fi access at home and schools for educational purpose, has however steered the students toward more internet misuse. Peer pressure leading to endless hours on instant messaging apps and gaining random instant popularity on social media platform has led to unhealthy emotional development among the youth. They derive great satisfaction from internet use and perceive it as a way of making up for their shortcomings, which, however, turns into a dependent relationship. [7] There have been theories proposed by many researchers, that this might mimic the dopamine-stimulating dependence, as seen in drug addicts. [7,8]

Methodology:-

ACommunity-based cross-sectional study was conducted among the youth form various regions of Maharashtra. Participants defined as youth according to national youth policy of India, [9] that is from the age of 15 to 29 years, who had access to electronic devices with internet service were included in the study.Those not willing to participate were excluded from the study.

A sample size of 159 was calculated by Cochran's formula (Z^2pq/e^2), with previous prevalence of internet addiction of 11.8%. However a sample size of 170 could be achieved in the given time period of data collection. Convenience sampling was done. The eligible participants were approached through schools, junior college, and coaching classes, professionals from various field, with prior information and permission to conduct the survey. Informed consent was taken before enrollment. Pre-formed, structured,and validated questionnaire was used for the survey.

Questionnaire consisted of two parts. First part included the baseline data and behavioural pattern. Behavioural pattern was assessed on the basis of four major practices- usage of internet after waking up, before going to sleep, during free time, and during meals. Second part consisted the Internet addiction assessment scale [10]and Depression, Anxiety, Stress Scale-21 (DASS21). [11] Cronbach's alpha was calculated (>0.9) to assess the reliability of the scores given by the participants to the IAA and DASS-21 scale. Pearson's correlation test, Hierarchical cluster analysis, was done using IBM SPSS v26 (trial).

The IAA is a 20-item 5-point Likert scale that measures the severity of self-reported compulsive use of the internet. According to Young's criteria, total IAT scores 20–39 represent average users with complete control of their internet use, scores 40–69 represent over-users with frequent problems caused by their internet use, and scores 70–100 represent the internet addicts with significant problems caused by their internet use. [10]

Results:-

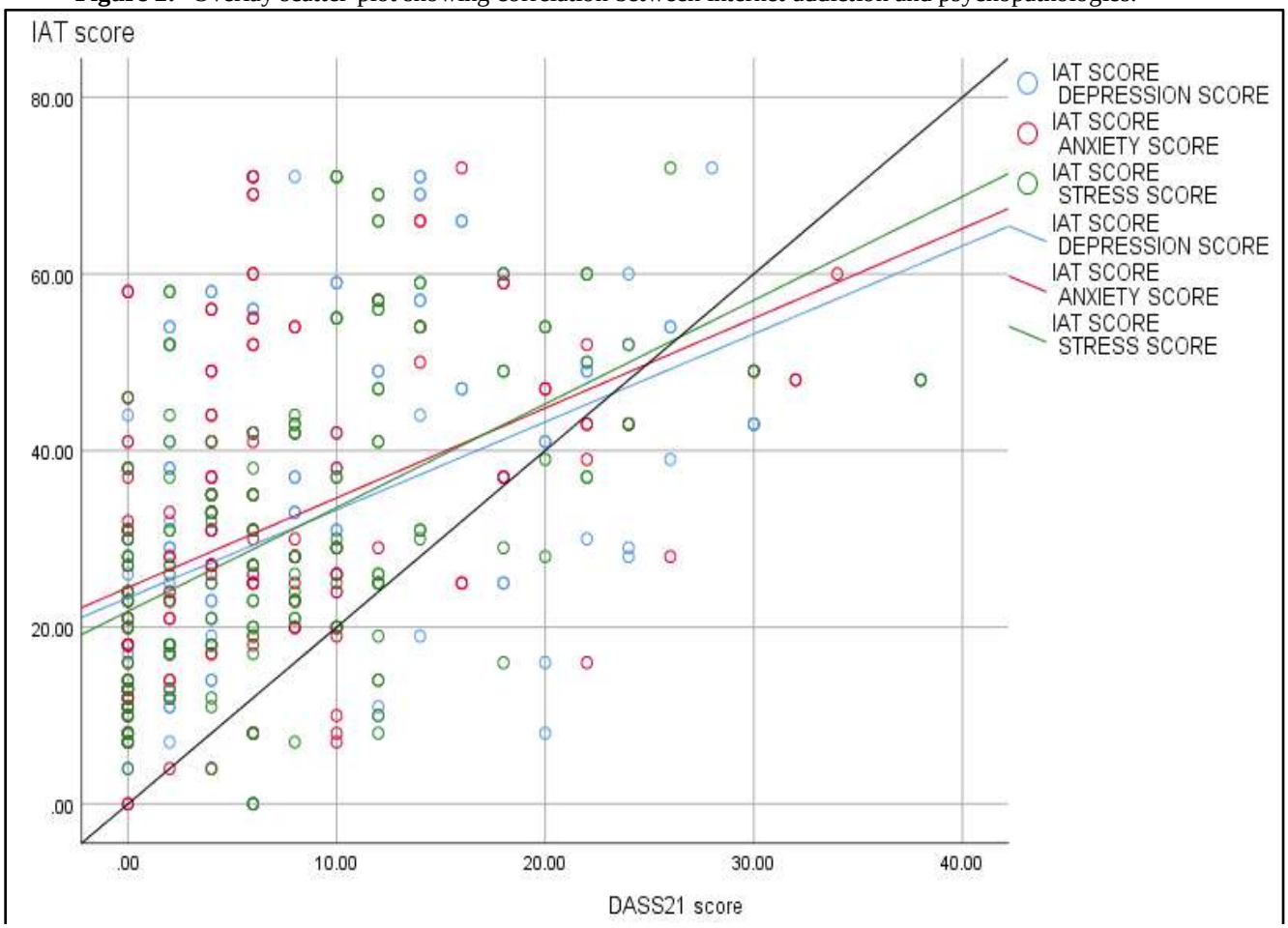
170 participants wereincluded in the study. Mean age of the participantswas 21.3 + 4.4 years, with 79 (46.5%) males and 91 (53.5%) females. 25 (14.7%) and 145 (85.3%) participants resided in rural and urban areas respectively.

Table 1:- Severity according to DASS21 and IAA test scores.

Severity	Depression N (%)	Anxiety N (%)	Stress N (%)	Internet Addiction N (%)
Normal	113 (66.5)	116 (68.2)	148 (87)	95 (55.9)
Mild	17 (10)	11 (6.5)	5 (2.9)	46 (27.1)
Moderate	22 (12.9)	21 (12.4)	12 (7.1)	29 (17)
Severe	11 (6.5)	7 (4.1)	3 (1.8)	-
Extremely Severe	7 (4.1)	15 (8.8)	2 (1.2)	-

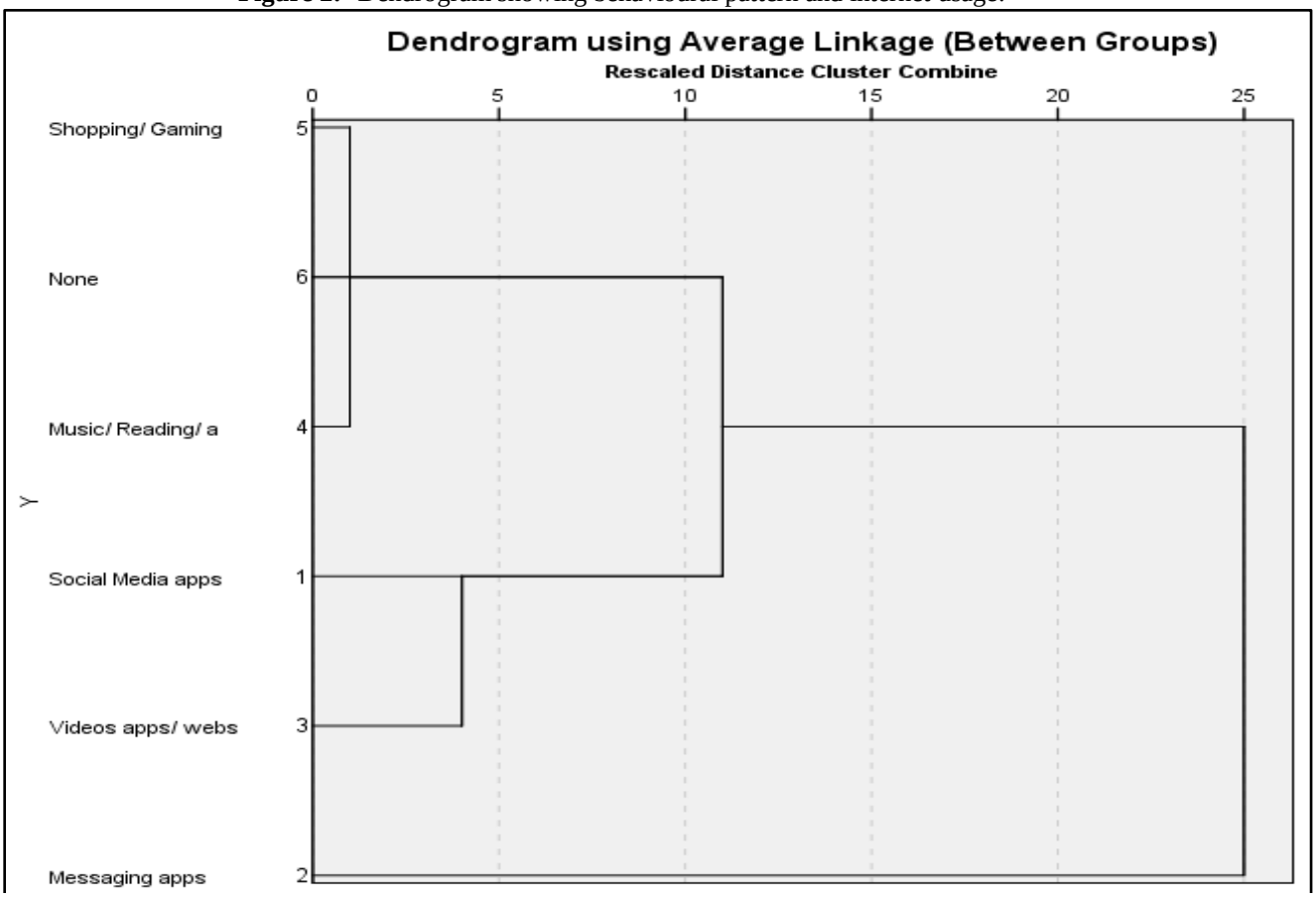
Overall Prevalence of internet addiction was 44.1%, of which 27.1% had mild and 17% had moderate internet addiction. According to the scores reported by DASS-21 scale, 57 (33.53%) participants reported depression, 54 (31.76%) reported presence of anxiety, and 22 (12.94%) confirmed presence of stress in the last seven days. [Table 1]. The overlay scatter-plot, shows the linear correlation of DASS-21 scores with IAA scores. [fig. 1] To study strength of this correlation, Pearson's correlation test was used.IAA test score had a positive correlation with depression (0.502), anxiety (0.447) and stress (0.523) ($p<0.05$).

Figure 2:- Overlay scatter-plot showing correlation between internet addiction and psychopathologies.



Behavioural pattern related to internet usagereported by participants were: 134 (78.82%) participants used messaging app and 23 (13.52%) used social media apps immediately after waking up. 52 (30.58%) participants used social media apps, 47 (27.64%) used messaging app, 39 (22.94%) streamed videos and 10 (7.14%) participants listened to music or reading online, before going to sleep. During free time, 85 (50%) participants preferred on being social media, 51 (30%) participants watched videos, 19 (11.17%) participants caught up with the mails or messages, and 15 (8.82%) participants listened to music or continued reading online. While having meals, 66 (38.82%) participants reported to stream videos online or watch television, 41 (24.11%) participants used social media apps, and 29 (17.16%) participants use messaging apps. Only 13 (7.64%) participants reported to have meals with their friends or family. Usage of internet for shopping or gaming was reported by 5 (2.9%) patients. Hierarchical cluster analysis was done to study the major habit-forming internet platforms. The dendrogram plotted showed that the closest clusters were formed by social media and video streaming. [fig 2].Messaging was a separate cluster and formed the major internet usage platform. The participants who reported none to moderate internet use were clustered farthest from the cluster of messaging, social media, and video streaming.

Figure 2:- Dendrogram showing behavioural pattern and internet usage.



Discussion:-

A number of studies have been conducted across the world among adults with respect to internet addiction. Therefore, this study was conducted among the special group- youth, that is the highest consumer of internet.There has been an extensive growth in the use of Internet in India. Reports reveal that there were about 137 million Internet users in India in 2013 and further suggest India as the world's second largest Internet user.[3]

The results of the present study show that Internet use have shown significant correlation with psychopathological symptoms of depression, stress, and anxiety. Similar findings were reported by a study, which studied the growing internet usage during the COVID-19 pandemic. The linear regression analysis showed depression (β=0.257, $p<0.001$), and stress (β=0.323, $p<0.001$) were significantly correlated with the IAA total scores (R=0.539, R2 = 0.291, $p<0.001$). [12]

With regard to internet addiction, it has been suggested that people become addicted to the platform or content of the Internet. [13]The Internet and Mobile Association of India and Indian Market Research Bureau, reported that out of 80 million active Internet users in urban India, 420 million individuals have accessed some form of social networking in June 2017.[3] According to the study, various types of internet addiction are cyber-sexual addiction, cyber-relationship addiction, net compulsions, information overload, excessive gaming, online sexual preoccupation, and e-mailing/textingand computer addiction. [14]The present study also reported that messaging, social media scrolling and video streaming was a separate cluster and formed the major internet usage platform.

Conclusion:-

The prevalence of internet addiction among youth reported in this study is high. Presence of internet addiction increases the incidence of depression, anxiety, and stress. However, the temporal causation of these psychopathologies with internet addiction requires further studies.

Recommendations:-

Internet being an essential aspect, the usage is high. However, it has to be directed towards productivity and creativity. Also, the major routines of the day should not be governed by social media. Health education and promotion or rational intern use is essential. Internet addiction is an emerging mental health disease and requires more research to address the further progression into various psychopathologies.

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