

Research Paper

## Relationship between Internet Addiction and Academic Stress among High School Students with Attention Deficit Hyper Activity Disorder

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### ABSTRACT

The present study assesses the relationship between the academic stress and internet addiction among Children with ADHD studying in schools in Kollam district. Conner's Parent Rating Scales-Revised Short, Young's Internet Addiction Test and Scale for Assessing Academic Stress (SAAS) were administered to a sample of 120 adolescents with ADHD studying in High schools. Academic stress of students was measured in 5 domains and internet addiction in 6 domains. Data were subjected to product moment correlation and stepwise multiple regression to find out the relationship between stress and addiction, including the domains of internet addiction which predict stress. Results revealed that a large majority of the students had moderate to high levels of internet addiction and academic stress. Almost all the domains of internet addiction were significantly and positively correlated with the domains of stress. Further, stepwise multiple regression revealed that out of the five domains of stress, only Cognitive indicators was the major predictor of stress. Strategies for decreasing the extent of stress and addiction among students have been delineated.

**Keywords:** *Internet Addiction, Academic Stress, Adolescents with ADHD*

In today's digital world the internet has become an essential part of daily life offering instant access to information, communication, entertainment and education, However the convenience and constant connectivity have also led to significant rise in internet addiction. ADHD is not a new condition and has been called different names throughout history. It was labeled as 'minimal brain dysfunction' in the 1930s and has ever since changed names to ADD and ADHD, respectively (Matas M, 2006). High school is a crucial developmental stage marked by increasing academic demands, social pressure and identity formation for students with Attention-Deficit /Hyperactivity disorder (ADHD), these challenges can be particularly difficult to navigate due to symptoms such as inattention, impulsivity and hyperactivity. It is important to diagnose and treat the disorder at a young age so that the symptoms do not persist into adulthood and cause other comorbid conditions. The treatment for the disorder is mostly related to stimulants and psychotherapy (Pary R & Pary R, Lewis S, Matuschka PR, Rudzinskiy P, , 2002). In recent years the growing prevalence of internet use among adolescent has introduced an additional layer of complexity. many high school students with attention deficit and hyper activity disorder

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often face unique academic challenges due to difficulties with attention, organization and impulsive control. High school student today face instance academic pressure due to high expectation from school, parents and society the constant push for academic excellence, competitive exam preparation and time consuming assignment can lead to elevated stress level These challenges can lead to increased academic stress, especially when students struggle to meet deadlines, concentrate in class or manage their work load effectively. In an attempt to cope with stress stimulation. Many students with ADHD turn to the internet. Online gaming, social media and video offer immediate gratification and a temporary escape from academic pressure. However, this reliance can develop into internet addiction, further impairing concentration, sleep and academic performance. The cycle of stress and overuse can negatively impact mental health and self-esteem.

The excessive stress could lead to psychological problems like depression and anxiety. Further, their study indicated that students from all the three fields studied were exposed to stress and academic factors were one of the most important stressors. In addition, study by (Agrawal, 2007) revealed that students studying technology are experiencing role overload, role stagnation and self-role distance.

After the covid-19 pandemic significantly altered daily routine for students with ADHD with the shift to online learning. The excessive internet use can displace valuable time that people spend with family and friends, which leads to smaller social circles and higher levels of loneliness and stress. Other conclusions of excessive usage have been documented as neglect of academic, work, and domestic responsibilities, disruption of relationships, social isolation, and financial problems (Griffiths, M. D, 2020). Adolescents who are addicted to the Internet are more likely than non-addicted teens to engage in self-injurious behaviors such as hitting themselves, pulling their own hair, or pinching or burning themselves (Whitlock JL & Powers JL, 2006).

The purpose of this study is to assess the relationship between internet addiction and academic stress among high school students with attention deficit hyperactivity disorder. Only few studies have been conducted independently on internet addiction and academic stress on adolescents. In this study an attempt is made to find out the relationship between internet addiction and academic stress and the extent of contribution contributed by internet addiction to stress among high school student with ADHD, since these issues are not explored in detail among the students with attention deficit hyper activity disorder.

### **METHODOLOGY**

#### ***Sample***

The sample for the study was selected diagnosed student with ADHD from various high school from Kollam district in Kerala. A total of 120 children, aged 13–16 years, who had access to Internet usage, were included in the study. This 120 children's studying high school classes from Psychiatry OPD diagnosed with ADHD according to the DSM-5 criteria, the diagnosis of ADHD was further objectively supported through Conner's' Rating Scales for ADHD. Children with any other psychiatric morbidity or chronic/unstable medical illness were excluded from the study. A written informed consent from the parents of the child and assent from the child were taken before commencing the study. Interview was conducted by a single interviewer in a single setting.

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### *Tools used*

- **Semi-structured pro forma:** To capture the demographic and pattern of Internet usage details
- **Conners' Parent Rating Scales-Revised Short (CPRS-R: S):** Conners' Parent Rating Scales-Revised Short used to assess the severity of ADHD, the CPRS-R: S was completed for the patients. CPRS-R: S which has been used in this study has 27 questions and 5 subscales including opposition, cognitive problems, inattention, hyperactivity, and ADHD index (Kumar G & Steer RA, 2003). Internal coefficients have been reported in a range of 75%–90%, and test–retest reliability coefficients with the 8-week interval have been achieved in a range of 60%–90%. (Conners CK, Sitarenios G & Parker JD, 1998).
- **Young's Internet Addiction Test (YIAT.):** Internet Addiction Test (IAT) was developed by Dr. Kimberly Young, 1998 and it consists of 20 questions was adopted to evaluate the respondents' level of internet addiction. Each item is scored using a five-point Likert's scale, a graded Response can be selected (0 = “does not apply” to 5 = “always”). It covers the degree to which internet use affect daily routine, social life, productivity, sleeping pattern, and feeling. The minimum score is 20 while the maximum is 100 and the higher the score the greater the level of internet addiction. The types of Internet-user groups were identified in accordance with the original scheme of Young and the score < 20 indicate normal users. The scores ranging from 20 to 49 indicate minimal users, while scores from 50 to 79 indicate moderate users and the scores from 80 to 100 indicate excessive users. The minimal users were classified as problematic internet users, while moderate and excessive users were categorized as internet addicts. The instrument has exhibited good psychometric properties in previous researches. The reliability for this questionnaire is 0.899 in Cronbach's Alpha (Whang LS, 2003).
- **Scale for Assessing Academic Stress–(SAAS)** was constructed by Dr. Uday Kumar Sinha (2014). There were 30 items in this full inventory. This test measures the academic stress of adolescent students. There were five components of academic stress that indicates expression of academic stress through different channels: cognitive, affective, physical, social/interpersonal and motivational. The test-retest reliability was 0.88 and split half reliability was 0.75. The correlation coefficient of SAAS with AASC was found to be 0.54 which was significant at .05 level of confidence (Sinha, 2014).

### *Procedure*

The Conners' Parent Rating Scales-Revised Short (CPRS-R: S) test was administered by clinical psychologist and the other test was administered to the school going students by asking them to fill up the relevant demographic details. Later they were requested to answer both internet addiction test and academic stress inventory. They were asked to indicate their responses in the respective sheets given to them. Once the data were collected, they were screened for completeness, scored and fed to computer.

### *Statistical analysis*

The data were analysed using Pearson's product moment correlation and stepwise multiple regression analysis.

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**RESULTS**

Socio demographic and Internet usage pattern the demographic profile and Internet usage pattern of the participants were assessed. The sample had a boy's preponderance that is 74%, More than half of them belonged to the age group of 13–14 years (49%), followed by 44% belonging to 14–15 years and rest in 15–16 years' category. Sixty-nine percent of them belonged to nuclear family. Home was the most common place of Internet usage (84%); school and friend's house were other places where children used Internet. Most of them (85%) used Internet alone without any supervision.

*Table 1 represent results of Pearson's product moment correlations between various domains of academic stress and Table 2 shows results of stepwise multiple regression for total academic stress.*

Level		Internet addiction	Academic Stress
LOW	Frequency	13	8
	Percent	10.8%	6.7%
Moderate	Frequency	72	69
	Percent	60%	57.5%
High	Frequency	35	43
	Percent	29.2%	35.8%
Total	Frequency	120	120
	Percent	100%	100%
Test statistics		<b>Chi-Square =20.15; p=.001</b>	<b>Chi-Square=49.25; p=.001</b>

As far as internet addiction is considered, a majority of the selected sample of 72 (60%) students with attention deficit hyper activity disorder had moderate levels of internet addiction, followed by 29.2% of them had high levels of internet addiction and remaining 10.8% of them had low levels of addiction. When chi-square test was applied, a significant difference between these frequencies (Chi-Square =20.15; p=.001) confirming that majority of the sample selected had moderate levels of internet addiction. On the whole we find 89.2% of the selected sample had moderate to high levels of internet addiction. In the case of academic stress, on the whole we find that out of 120 selected students with attention deficit hyper activity disorder, majority of 69 (57.5%) them of them had moderate levels of academic stress and, 43 (35.8%) of them experienced high levels of academic stress. Further, chi-square test revealed significant difference between these frequencies (Chi-Square =49.25; p=.001) confirming that majority of the sample selected had moderate to high levels of academic stress, and none of them had low levels of academic stress.

*Table 2, Results of product moment correlations between factors of academic stress and internet addiction*

Variable 1 Factors of academic stress	Variable 2	Correlation coefficient	Significance
Cognitive	Internet addiction	0.284	.002
Affective	Internet addiction	0.258	.005
Physical	Internet addiction	0.263	.004
Social/Interpersonal	Internet addiction	0.234	.011
Motivational	Internet addiction	0.257	.005
Total academic stress	Internet addiction	0.349	.001

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From the above table it is clear that internet addiction scores were significantly and positively related to most of the factors of academic stress. Internet addiction was found to be significantly and positively related to stress from Cognitive indicators (difficult to concentrate and forget easily etc.) ( $r=0.284$ ;  $p=.002$ ), Stress from Affective (lack confidence and feel failure, etc.) ( $r=0.258$ ;  $p=.005$ ), Stress from Physical ( $r=0.263$ ;  $p=.004$ ), Social/Interpersonal stress ( $r=0.234$ ;  $p=.011$ ), and Motivational ( $r=0.257$ ;  $p=.005$ ), and total academic stress scores ( $r=0.349$ ;  $p=.001$ ). In other words, as the academic stress both in individual dimensions (except for self-inflicted stress) and total scores increased, internet addiction also increased linearly and significantly.

**Table 3. Summary results of stepwise multiple regression or prediction of academic stress due to internet addiction**

Model	Variables Entered	Variables Removed	R	R Square	Adjusted R Square
1	Cognitive indicators	-	.284	.082	.074
Beta coefficients					
			Step 1	Step 2	
1	Cognitive indicators		.284	-	

Regression analysis: When all the scores of 5 factors of academic stress scale were regressed on the internet addiction scores, stepwise multiple regressions revealed that only one factor of academic stress was found to be the best predictors of internet addiction. The first factor entered into the equation was Cognitive indicators with correlation coefficient of .284, squared R value of .082 and variance of .074. In other words, peer stress contributed to 7.4% of the internet addiction among the present sample. The beta coefficient for the first predicted model peer stress at steps was 0.284.

## DISCUSSION

This study results shows that Internet addiction and academic stress was higher in children who had ADHD studying high schools. Students with ADHD have lack of self-control and require instant gratification, which is provided by Internet through option to surf multiple participants simultaneously. Furthermore, Internet and social media temporarily provide an emotionally and socially safe platform to children to escape from their daily hassles and obligations, becoming a faulty coping mechanism for their stress and fears its reducing their academic performance.

### Major findings of the study

1. Internet addiction and academic stress is higher in children with ADHD.
2. The majority of the high school students with ADHD had moderate to high levels of internet addiction and academic stress.
3. The academic stress increased, internet addiction also increased linearly and significantly.
4. The Cognitive factor of academic stress was found to be the major predictor of internet addiction.

From the above findings it is clear that the prevalence of internet addiction and stress is slowly spreading amongst the high school students with ADHD as there is a significant

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association between Academic stress and Internet addiction in this present study. Further, Cognitive factor was found to be the micro level predictors of the internet addiction. Peer pressure may be defined as the insistence and encouragement of the same age group individuals to make individual to do something (Kusumakar, 2020) Also a relationship between peer pressure and drug and alcohol addiction, and smoking was observed. The studies related with the internet addiction pointed out that addict adolescents interact less with peers and have incompetent relationship quality (Harman&Cochran, 2015). It may be concluded according to the results of these studies that internet addiction and Cognitive indicators are related variables.

Studies have revealed that academic stress and internet addiction are common among children with ADHD and are a main concern of parents. Academic Stress is an important factor accounting for variation in academic achievement. It also contributes to major mental health hazards, problems both physical and mental stress related diseases. Stress makes a significant contribution to the prediction of subsequent school performance and act as a negative predictor of academic performance in school.

The results show that academic stress prospectively predicted internet addiction in students with ADHD. Anxiety and stress are potent cause of internet addiction. The findings of this study are consistent with suggestion in other studies which linked internet addiction positively to anxiety and stress. Study by (Chen, 2005), revealed that depression, anxiety, and stress were predicted positively internet addiction. Recent studies on internet addiction demonstrated that internet addiction related positively to decrease in social interactions, depression, loneliness, and lower self-esteem. The implication of the finding is that the more stress and anxiety a student with ADHD has the more he/she will be addicted to the internet. Studies have shown significant relationship between Problematic Internet Use and procrastination. It has important implications. It means that the internet is being used as a coping mechanism to stress. Specifically, involves avoidance of cognitive task so as to participate in activities that could distract an individual from the things that he/she supposed to do. General procrastination is also believed to be related to negative affect and cognitive imbalance with signs and symptoms of depression and high level of perceived stress. This adversely affects academic performance which results in academic stress and their impulsive behaviour.

the present research when they observed that moderate and Problematic Internet Use was evenly engaged-in by both males and females with ADHD. Moreover, the result of this study implies that children with high levels of academic stress were more likely to display more hyperactivity and depressive symptoms. The indication of this is that children's that are preoccupied with academic stress are most likely to be prone to internet addiction. Academic achievements of high school students with ADHD with excessive internet use are also negatively affected. It follows therefore that high school students with ADHD addicted to internet are more involved in it than their studies. Due to excessive internet use they perform poorly in their academic pursuits, performance and other problematic behaviour.

Studies have shown that adolescents used Internet as a means of relieving their stress, (Velezmoro, 2010) and regulating their negative moods. Many empirical findings have revealed significant relationship between high levels of academic stress and Internet addiction among adolescents. For example, adolescents with tremendous levels of stress are reported to be more addicted to Internet gaming. Internet addiction played a mediating role

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in the relationship between academic stress and school maladjustment among adolescents. In addition, high levels of academic stress were associated with high levels of Internet addiction despite social support.

Thus, taking into prior consideration of ADHD features increasing Internet addiction and later consideration of prolonged hours of Internet use consolidating inclination to impulsive, rapid, and hyper focused reactivity, it could be inferred that ADHD features and Internet addiction and academic pressure may share a bidirectional relationship.

### CONCLUSIONS AND IMPLICATION

It is apparent that Internet addiction and academic stress is higher in children with ADHD. Thus, it seems imperative to watch out for Internet use and possible addiction in ADHD children. The high school students often struggle with concentration, time management, organization and completing talk all of which are critical to academic success. When facing the high academic pressure, these students may experience increased stress, frustration and feeling inadequacy. they often require more time and support to complete their task or assignment. This academic stress and pressure can lead to poor academic performance.

The converse is also true that if a parent complains of excessive Internet use, then it should alert a clinician to probe for comorbid ADHD. However, longitudinal studies with larger sample involving multiple sites including the possibility of constructive Internet use in ADHD children to understand complex tasks and social cues could be explored and would give more generalizable results. Furthermore, studies on limit setting, as far as time is concerned, may help understand their specific needs.

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### ***Conflict of Interest***

The author(s) declared no conflict of interest.

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