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The Effect of Internet Addiction on the Attention Span of University Students

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Abstract: With the increasing presence of the Internet in our daily lives, comes the problem of dependency. Teens and young adults form the largest user base for it, and as a result, have the highest risk of being diagnosed with Internet Addiction. The study was conducted on 127 university students who were asked to complete a questionnaire comprising the Internet Addiction Test (IAT) and Attention Control Scale (ACS). A total of 127 university students participated in this study, of which 64 were male, and 63 females. Correlation and t-test techniques were used for statistical analysis. As per the results of this study, Internet addiction had a strong negative correlation with attention span in university students. There was no significant difference found between the attention spans of internet addicted males and females.

Keywords: *Internet Addiction, Attention, Attention span, University students, Male, Female*

1. Introduction

Technology has been advancing at an exponential rate during the last few decades. Digital technologies are becoming more and more prevalent, and they are now present in almost every facet of daily life. The extensive use of the Internet fits this mould. Although there is little to no debate about the usefulness of modern technology, it has become quite evident that there

are certain drawbacks attached to the excessive usage of the internet, social media, and online entertainment. 'Internet Gaming Disorder' was added to The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) as a result of the rising number of people suffering from non-chemical addictions. Studies demonstrating that behavioural addictions like IA have comparable familial characteristics with drug dependence provide more evidence for the potentially addictive nature of some actions.

Contrary to drug dependency, the Internet is a technical breakthrough that directly helps our society and should not be charged as being "addictive" (Levy, 1996). Chemical dependency, in contrast, neither directly contributes to our professional life nor provides any tangible benefits.

Many researchers have claimed that the term "addiction" should only be used to describe situations when a substance has been ingested (Walker, 1989). However, the definition of addiction has expanded beyond this to encompass a range of actions that do not include alcohol or other intoxicants, such as obsessive betting (Griffiths, 1990); gaming (Keepers, 1990); and watching television (Winn, 2002). Even with the interest that Internet addiction has managed to attract, academic understanding of it has lagged, largely in part due to the fact that there is no universal definition or clear terminology.

The usage of the internet has multiplied over the past decade to the point that there is an increasing real risk that pupils will develop internet addiction. It was found that a minimum of 24.6% of teenagers in India were dependent on the Internet (Preksha & Maheshwari, 2018; Sharma, et al. 2016). Internet use was also found to have a negative impact on students' academic achievement (Shambare, Rugimbana, & Zhoua, 2012).

The attention span of an individual refers to their ability to sustain their attention on a stimuli or object for an extended period of time, or the capacity to stay focused for an extended period. Sustaining attention for a reasonable period of time requires both patience and motivation. Therefore, individuals with shorter attention spans may appear to not give things their full effort or give up pretty quickly. The notion that increasing Internet usage plays a major role in the decreasing attention span of the younger generation has become quite common. Studies report that ADHD and Internet Addiction in teenagers and young adults have a positive association. Internet addiction was reportedly more prevalent among teenagers with ADHD than with other psychiatric symptoms including hostility and social phobia, as per a two-year long exploratory research (Yen et al. 2007).

Even so, there have been very few explorations into the different factors such as gender or different demographics that may affect the levels of Internet dependency or Attention spans of individuals in the past years.

The objective of this research paper was thus to understand the relationship between Internet addiction and the Attention span of university-age students. along with studying the gender differences in Attention span levels of Internet Addicted students.

2. Methodology

2.1 Research Objectives

- a) To study the relationship between Internet Addiction and the Attention span of university students.
- b) To investigate the difference between the Attention spans of Internet-addicted male and female students.

2.2 Hypotheses

H1: There will be a significant correlation between Internet Addiction and Attention Span in University students

H2: There will be a significant difference in the Attention Span between Male and Female University students who are addicted to the Internet.

2.3 Research Design

This study was conducted as per a correlational research design which uses a self-report questionnaire consisting of the Internet Addiction Test (IAT) and the Attention Control Scale (ACS). The correlation was studied between the variables Internet Addiction and Attention span in university-age students. A comparison was made between the Attention Spans of Internet Addicted male and female students.

2.4 Sample

The study was conducted on a population of 127 university-level students. 64 male and 63 female students made up the sample population. As per the results of the Internet Addiction test, 48 male and 43 female students from the sample population were found to be internet addicted. All participants were students from different Universities in Delhi/NCR region.

2.5 Tools of Assessment

Data was collected through a self-report questionnaire consisting of two psychometric scales, the Internet Addiction Test (IAT) (Young, 2009) and the Attention Control Scale (ACS) (Fajkowska & Derryberry, 2010).

The Internet Addiction Test (IAT): There are 20 questions on the IAT, and the answers are on a Likert scale, ranging from 1 (rarely) to 5 (always) and assesses the degree of excessive use, behavioural issues, emotional changes, along with impact on life due to Internet use. IAT scores range from 20 to 100. The internal consistency of IAT is adequate with ($\alpha = 0.90-0.93$), while also showing a high test-retest value of ($r = 0.85$).

Attention Control Scale (ACS): Similar to the IAT, the ACS also consists of 20 questions. It assesses attentional control and attention shifting. Every item is graded on a 4-point Likert scale, with 1 (almost never) to 4 (always). The test-retest reliability of the ACS items ranges from 0.45 to 0.73, and it is 0.61 for the overall score. The internal consistency is stated to be ($\alpha = 0.88$).

2.6 Procedure

This study was conducted on 127 university students, of which 64 were male and 63 were female, all acquired through the Convenient sampling method. The study was conducted in the months of January to March 2025. All participants were students between the ages of 18-23 studying in various universities in the Delhi-NCR region.

Data was collected through both online and offline methods using a self-report survey consisting of two psychological scales measuring the variables Internet Addiction (IAT) and Attention Span (ATC). The questionnaire included a consent form stating the participants rights to confidentiality and anonymity along with the right to leave the study at any time. The collected data was then statistically analysed in two steps.

- a) Correlation test was done between the two variables to determine the relationship between them.
- b) Internet Addicted individuals were identified in both male and female groups. t-test was conducted on the Attention spans of both groups in order to determine if there was any statistically significant difference between them.

2.7 Statistical Analysis

JAMOV, an open-source statistical analysis software was used to perform the statistical analyses necessary for this study. Correlation test was conducted on the scores obtained by the two groups for the variables; Internet Addiction and Attention span. Pearson's rho was used with statistical significance set at p value <0.01 . Furthermore, independent sample

t-test was performed on the Attention Span scores of the Internet Addicted in both groups to find a significant difference between them. Statistical significance was set at p value <0.05.

3. Results

Descriptive Statistics

Table 1: *Mean and Standard Deviations of Internet Addiction scores*

Variable	Group	Mean	SD
Internet Addiction	Male	49.5	19.3
	Female	46.3	19.5

The mean score for Internet Addiction in males was 49.5, and SD was 19.3. For females, the mean score was 46.3 and SD was 19.5.

Table 2: *Mean and Standard Deviations of Attention span scores*

Variable	Group	Mean	SD
Attention Span	Male	44.2	16.2
	Female	47.3	14.8

The mean score for Attention Span in males was 44.2, SD was 16.2. The mean score for females was 47.3 and SD was 14.8.

Correlation and t-test

Table 3: *Correlation between Internet Addiction and Attention span*

	Group	Attention Span
Internet Addiction	Male	-0.806
	Female	-0.817

The correlation test performed on the variables Internet Addiction and Attention Span gave values of -0.806 for males and -0.817 for females. Both values show a strong negative correlation between them, significant at the 0.01 level.

Table 4: *Independent Sample t-test on Attention spans of Internet Addicted individuals*

Dimension	Groups	p- value
Attention Span	Male	0.269
	Female	

The Independent sample t-test conducted on the Attention spans of Internet-addicted Male and Female students gave the value of 0.269, revealing a non-significant difference between

both groups. This shows there is no real difference between the Attention spans of Internet Addicted male and female students.

4. Discussion

With the ever-increasing connectivity of the Internet, as well as the constantly emerging new online activities that draw in youths, Internet use, and engagement are at an all-time high. This leads us to the problem discussed in this study- Internet Addiction. This study was conducted with the aim to assess the relation between the variables of Internet Addiction and Attention span, in the population of university students. Also, the gender differences in the Attention spans of users who are addicted to the Internet were assessed.

Table 1 shows the values of the Mean scores for the variable of Internet Addiction. The mean score for males was 49.5. For females, the mean score was 46.3. The mean scores indicate that males reported higher scores on the Internet Addiction Test than females on average. However, it should be noted that the mean score of the male group came out to be only 3.2 points higher than that of the female group. This shows that males displayed higher levels of Internet Addiction than females, though the difference was negligible.

From Table 1, Standard deviations in the means of both groups in the domain of Internet Addiction can be observed. The value of SD for males was 19.3, and for females was 19.5. The difference in the Standard deviations of both groups is only 0.3. Standard deviation reveals the variance in the distribution of scores, therefore it is evident that the variance in levels of IA between male and female groups was negligible for the sample population.

Table 2 shows the values of Mean and SD for both groups in the domain of Attention Span. The mean score for males was 44.2, SD came out to be 16.2. For females, the mean score was 47.3 and SD was 14.8. It can be observed that the mean score of the female group is higher than that of the males by 3.1 points. This indicates slightly higher levels of Attention span in females compared to males, though the difference is insignificant. The SD for male group came out to be higher than female group but only by 1.4 points, which can be neglected. This result goes against our second hypothesis, which predicts a significant difference in the levels of Attention spans of male and female groups.

Table 3 shows the correlation values between Internet Addiction and Attention Span in the two groups male and female. The p value was put <0.01 . The correlation value for the male group came out to be around -0.806, and for females, the correlation value came out to be -0.817. Both values indicate a strong negative correlation between the two domains. The significance at the level of 0.01 shows that the correlation between Internet Addiction and

Attention Span is strong. This supports and proves our first hypothesis which predicted a significant correlation between IA and Attention span. The findings of studies conducted before are consistent with this result. The decline in the Attention span of Internet-dependent individuals may be due to access to multiple online platforms, increased access to mobile internet technology (Madden, et al., 2012), and a very large amount of data presented over short durations through apps like TikTok, Instagram, etc. Previous research also points toward online gaming as an important contributor to the occurrence of Internet Addiction among vulnerable youths, as a result of frequent engagement (Kuss & Griffiths, 2012).

The results obtained from the independent sample 2-tailed t-test on the Attention spans of Internet-addicted males and females are displayed in Table 4. The significance level was set at <0.05 . The p-value obtained from the t-test was 0.269, which would be insignificant at the level of 0.05. From the results, it is evident that the attention spans of Internet addicted individuals do not significantly differ for males and females, therefore our second hypothesis is rejected. It is expected that a number of different variables would be associated with levels of Internet Addiction in students, for example, demographic factors, socioeconomic status, age of commencement of Internet usage, and symptoms of ADHD (Hashim, Kaur & Ng, 2016). From the sample size of 127 university students taken for this study, 91 of them turned out to be addicted to the internet in varying degrees. This comes out to a very significant 71% of the sample population including both males and females. This result points to the increasing levels of Internet dependency and heavy digital usage that is prevalent in the young adult population. A specialized form of CBT called Cognitive Behavioural Therapy for Internet Addiction (CBT-IA) was developed and was effective at treating symptoms related to Internet Addiction (Young, 2013).

5. Conclusion

This research was done with the aim to explore the interrelation between Internet Addiction and Attention Span in university students. The findings of this study revealed that Internet Addiction and Attention Span are significantly and negatively correlated among university students. Additionally, the results showed that the Attention span levels of males and females who are addicted to the Internet do not significantly differ. This would suggest that both males and females who are addicted to the Internet would experience similar levels of decline in their Attention spans.

The use of validated and strong psychometric tools- The Internet Addiction test and the Attention Control Scale to measure the variables gives relevance to the results of this study

despite its smaller sample size. This study provides useful and quite relevant points to be considered by students, young adults and educators. The comparison on the basis of gender is a new avenue in expanding the research available on the variables- attention span and internet addiction.

However, despite the strengths of this study, there were some limitations in the conduction of this study. The sample size for this study was relatively small. For a topic that has such a wide range, the sample size could have been much larger. The sample population was from only one city due to time and cost limitations; future studies can increase the scale of research by incorporating samples from different cities and demographics. There may have been different factors that may have influenced the variables in this study such as cultural background, economic status, academic background etc. Still, despite the limitations of this study, it opens up new avenues for research to be conducted on related topics.

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