

## Impact of Internet Addiction and Parental Education on Depression among Adolescents

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### ABSTRACT

The aim of the present study was to analyze the relationship between internet addiction and depression among adolescents ranging from 16-20 years of age from foothills districts of U.P. and U.K. The sample includes 240 adolescents (M= 120, F= 120) selected from 1000 participants from various intermediate colleges. The tools used for measuring these variables include Internet Addiction Test (IAT) and Eight State Questionnaire (Indian adaptation, 1990). An adequate research paradigm was drawn as per the need of research design. In the compliance of statistical analysis procedure “2×2×2 Ex-post facto” research design was employed, in which three independent variables (Internet Addiction, Parental Education, and Gender) and one dependent variable (Depression) was examined. The obtained data was analysed through descriptive statistics followed by t-Test and two-way ANOVA. The findings of this study showed that addicted adolescents had more depression in comparison to non-addicted adolescents. Further findings revealed that low parental education promotes depression in addicted male adolescents whereas high parental education promotes depression in addicted female adolescents. Gender is not found to have a direct impact on internet addiction, but it plays a vital role in interactional effects. Addicted male and female have higher depression in comparison to their non-addicted male and female counterparts.

**Keywords:** *Internet Addiction, Parental Education, Depression, Adolescents, Gender*

Adolescence is a period wherein adolescents are highly attracted to electronic, technological, and more sophisticated gadgets (Kim et al., 2010). Among many such internet usages get top priority. Many literature reviews suggested that it is the adolescent group that is highly vulnerable to problematic internet use. Scherer (1997) in his study identified that nearly 73% of college-going adolescents make use of the internet at least once in a day and approximately on average they spend 8.1 hours a week on the internet. Depression is a mood disorder, characterized by sadness and dejection, decreased motivation and interest in life, negative thoughts, with such physical symptoms as sleep disturbances, loss of appetite, and fatigue. The onset of depression is occurring earlier in life today compared to that in past decades (NIMH, 2005). Early-onset depression often reoccurs and continues into adulthood. Depression is a type of mood disorder defined in the DSM-IV-TR (American Psychiatric Association, 2000). Depression is one of the many psychological

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problems that have plagued mankind throughout recorded history. It has long been considered to be the leading mental health problem with high economic and emotional costs. A passion adds value to one's life, an addiction takes away value. The term 'internet addiction' came into light in 1996 when a research paper on internet addiction was presented at American Psychological Association. This study was about 600 cases of individuals using internet heavily and showing clinical signs of addiction as measured through an adapted version of the DSM IV Criteria for pathological gambling (Young, 1998a). Internet addiction can be explained as preoccupation, behaviors, and various urges that are very poorly controlled by any individual in terms of internet usages that further leads to a confounding psychological state. According to Young (2004), internet addiction is an umbrella term including different type of deviant behavior and impulse control. Internet addiction can be further divided into cyber sexual addiction, cyber relational addiction, net compulsion, and information overload and computer addiction (Young, 1999). A perfect definition of internet addiction is still debatable. DSM V has not included internet addiction as a disorder yet, but have kept it to be considered for any future debate. Krishnamurthy et al. (2015) performed a cross sectional study and estimated patterns of behaviors and risk factors level, as a results of internet addiction among students. This study included sample of students 16 to 26 in age. Obtained results showed that gender is associated with internet addiction and males were more addicted than girls.

Internet addiction has often been defined as a lack of ability to control the use of the Internet, causing psychological, social, family, school as well as work impairment (Davis, 2001; Young & Rogers, 1998). A psychological dependence on the Internet is characterized by increasing investment of resources on internet-related activities, unpleasant feelings when offline, increasing tolerance to the effects of being online, and denial of the problematic behaviors (Kandell, 1998). American Psychological Association (Caplan, 2002) has defined internet addiction as a method to the utilization of the internet that brings functional disorders that come along with an internal unpleasant state for two months. Though internet addiction disorder is recognized as a disorder it is not included in DSM-5, nonetheless, Internet Gaming Disorder is included in the DSM-5. These addictions might be considered a model for behavioral addiction.

### *Hypotheses*

- H<sub>0</sub>1. Internet addiction and parental education will not have a significant impact on Depression.
- H<sub>0</sub>2. Gender will not have a significant impact on Depression.
- H<sub>0</sub>3. Gender × Internet addiction, Gender × Parental Education and Internet Addiction × Parental Education will not have a significant impact on Depression.
- H<sub>0</sub>4. Gender × Internet Addiction × Parental Education will not influence Depression significantly.

### *Objectives of the Study*

- To assess the impact of Internet Addiction on Depression.
- To enumerate the effect of Gender in relation to Internet Addiction and Depression.
- To understand the interactional effects among Internet Addiction, Gender, and Parental Education on Depression.

## METHODOLOGY

### Sample

Out of randomly selected 1000 subjects, a final sample of 240 adolescents was drawn on the basis of their willingness to participate in the study. This sample comprised 120 males and 120 females studying in various schools of adjoining districts of Uttar Pradesh and Uttarakhand within the age range of 16-20 years. To ensure the demographic variability in sample, subjects were taken from different religions, caste, culture and economic status.

### Research Design

The present investigation is an ex-post facto design in 2 (Gender) × 2 (Parental Education) × 2 (Internet Addiction) factorial setting. And Depression as dependent variable was used. Thus, three independent and one dependent variable were used.

### Statistical Analysis

The obtained data was analysed with the help descriptive statistics, t-Test and two-way ANOVA. The statistical analysis was carried out by using the Statistical Package for Social Sciences (SPSS) version 21.

### Measures for Data Collection

- Personal data sheet
- Internet Addiction Test (IAT) (Young, 1998b)
- 8 ESQ (Indian adaptation) (Kapoor and Bhargava, 1990)

### Procedure

The study is based on the responses of a purposively selected sample of 240 adolescents. Adolescents were selected through randomly for the ex-post facto experimental studies adopting the tri-variate factorial design. An appointment was fixed with the respondents and they were told about the study. A formal consent was taken from the respondents. At the time of administering the test, the investigator established a good rapport with the respondents and cleared all their doubts regarding the study. The respondents were made aware about confidentiality of their responses and all test related instructions were given.

**Table 1: Research Paradigm**

	Male		Female		Σ
	High PE	Low PE	High PE	Low PE	
Addicted	ΣX-638 M-21.26 N-30	ΣX-730 M-24.33 N-30	ΣX-683 M-22.76 N-30	ΣX-668 M-22.93 N-30	2719
Non-addicted	ΣX-392 M-13.06 N-30	ΣX-496 M-16.53 N-30	ΣX-383 M-12.76 N-30	ΣX-492 M-16.4 N-30	1763
Σ	1030	1226	1066	1160	4482

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**Table 2: ANOVA SUMMARY ( $P < 0.05$ )**

*Depression: Gender  $\times$  Internet Addiction  $\times$  Parental Education*

Source of Variance	SS	df	MS	F	P
Gender	0.42	1	0.42	0.12	NS
Internet addiction	3969.07	1	3969.07	1090.4	0.01
Parental education	400.42	1	400.42	110.01	0.01
Gender $\times$ Internet addiction	1.07	1	1.07	0.29	NS
Gender $\times$ Parental education	28.02	1	28.02	7.7	0.01
Internet addiction $\times$ Parental education	56.07	1	56.07	15.4	0.01
Gender $\times$ Internet Addiction $\times$ Parental education	35.25	1	35.25	9.68	0.01
Error	843.66	232	3.64		
Total SS	5333.98	239			

\*NS- Not Significant,  $F_{.05}=3.89$ ,  $F_{0.1}=6.76$

### **Details of significant results**

The retained  $H_{02}$  show that the main effect of gender is not significant.

The rejected  $H_{0s}$  may be detailed as given below:

- $H_{01}$  Internet Addiction and parental education is rejected at 0.01 L. S: Addicted adolescents are more depressed as compare to non-addicted adolescents and adolescents with low parental education are more depressed in comparison to adolescents with high parental education.
- $H_{03}$  Gender  $\times$  Internet addiction, Gender  $\times$  Parental Education and Internet Addiction  $\times$  Parental Education is rejected partially: Adolescents having low parental education are more depressed independent of gender. Adolescents having low parental education are more depressed in comparison to adolescents having high parental education whereas addicted adolescents are more depressed as compare of non-addicted adolescents independent of parental education.
- $H_{04}$  Gender  $\times$  Internet Addiction  $\times$  Parental Education is rejected at 0.01 L.S: Addicted male adolescents with low parental education have more depression in comparison to addicted female adolescents with high parental education.

Furthermore, the result is interpreted in the light of breakup of this tri-variate interaction.

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**Table. 3 Breakup of Tri-variate (2×2×2) interaction among gender, internet addiction, parental education on Depression**

Source of Variance	SS	df	MS	F	P
Male: Addiction × Parental Education	1.2	1	1.2	0.32	NS
Female: Addiction × Parental Education	128.13	1	128.13	35.20	0.01
Addiction: Gender × Parental Education	95.40	1	95.40	26.20	0.01
Non-Addiction: Gender × Parental Education	0.20	1	0.20	0.05	NS
High P.E: Addiction × Gender	24.3	1	24.3	6.67	0.05
Low P.E: Addiction × Gender	28	1	28	7.69	0.01
Error	843.66	232	3.64		

\*NS- Not Significant, F.05=3.89, F 0.01=6.76

**Table. 4 Breakup of Significant results of tri-variate interaction by t-test**

S. No.	Condition	Interaction	Means Between	Mean	N	SD	df	t	L.S
1.	Female Addicted	Addiction × P.E	High P.E	22.76	30	2.02	58	0.35	NS
			Low P.E	22.93	30	1.57			
2.	Female Non-Addicted	Addition × P.E	High P.E	12.76	30	1.5	58	7.24	0.01
			Low P.E	16.4	30	2.29			
3.	Female High P.E	Addiction × P.E	Addicted	22.76	30	2.02	58	21.70	0.01
			Non-Addicted	12.76	30	1.5			
4.	Female Low P.E	Addiction × P.E	Addicted	22.93	30	1.57	58	12.84	0.01
			Non-Addicted	16.4	30	2.29			

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S. No.	Condition	Interaction	Means Between	Mean	N	SD	df	t	L.S
5.	Male Addicted	Gender × P.E	High P.E	21.26	30	2.47	58	5.78	0.01
			Low P.E	24.33	30	1.51			
6.	High P.E. Addicted	Gender × P.E	Male	21.26	30	2.47	58	2.56	0.05
			Female	22.76	30	2.02			
7.	High P.E Non-Addicted	Addiction × Gender	Male	13.06	30	1.89	58	0.68	NS
			Female	12.76	30	1.5			
8.	High P.E Male Addicted	Addiction × Gender	Addicted	21.26	30	2.47	58	14.40	0.01
			Non-Addicted	13.06	30	1.89			
9.	Addicted Low P.E	Addiction × Gender	Male	24.33	30	1.51	58	3.50	0.01
			Female	22.93	30	1.57			
10.	Non-Addicted Low P.E	Addiction × Gender	Male	16.53	30	1.71	58	0.25	NS
			Female	16.4	30	2.29			
11.	Male Low P.E	Addiction × Gender	Addicted	24.33	30	1.51	58	18.65	0.01
			Non-Addicted	16.53	30	1.71			

\*N. S= Not Significant, LS= Level of significance ( $t_{-0.01} = 2.66$ ,  $t_{-0.05} = 2$ )

**Interpretation of significant results of 2×2×2 tri-variate interactions:**

- Non addicted female adolescents with low parental education have high depression in comparison to non-addicted female with high parental education.
- Addicted female adolescents with high parental education have a higher level of depression in comparison to non-addicted female with high parental education.
- Addicted female adolescents with low parental education have a higher level of depression in comparison to non-addicted female with low parental education.
- Addicted male adolescents with low parental education have more depression in comparison to addicted male with high parental education.
- Addicted female adolescents with high parental education have more depression in comparison to their male counterparts.
- Addicted male adolescents with high parental education have higher depression in comparison to their non-addicted counterparts.
- Addicted male adolescents with low parental education have high depression in comparison to their female counterparts.

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- Addicted male adolescents with low parental education have higher depression in comparison to their non-addicted counterparts.

### DISCUSSION

The findings of the present investigation regarding depression are not only very important but very alarming also. Addiction and parental education have a significant impact on depression independently and interactively both. Addicted adolescents are more depressed as compare to non-addicted adolescents. Addicted adolescents with low parental education are more depressed in comparison to adolescents with high parental education. Gender is not found to have significant impact on depression independently, but in interaction with internet addiction and parental education gender also affects the depression. When it comes to the interactive effects, we observe two comparisons. The first one is addicted female adolescents with high parental education are more depressed in comparison to male adolescents with high parental education, and the second one is that addicted male adolescents with low parental education are more depressed in comparison to addicted female adolescents with low parental education. Depression is a feeling of low mood and aversion to activities that can have a damaging effect on personal thoughts, behavior, feelings, world view, and physical well-being. Depressed people may have sensations of sadness, anxiousness, emptiness, hopelessness, helplessness, worthlessness, guilty, irritability, hurt, restlessness. They may be unable to find interest in activities that once were enjoyable, they may feel unable in decision making. The problems described earlier are frequently felt by addicted adolescents.

The depression in addicted adolescents can occur due to various reasons. It may be withdrawal symptoms of internet addiction, or it may be a mood modification, lack of good interpersonal relations, and loneliness. Using the internet to cope with depression may increase depression. Sometimes adolescents lose the track of time after making internet connection, they feel euphoric when using the internet. These causes also contribute to making the adolescent depressed when they are not online. Various studies in the support of the results of the present study had been done, some of them are presented here. Jain et al. (2020) conducted a study to discover the relationship between depression and insomnia with internet addiction. In this study, 954 subjects were selected, the mean age of the youth was 23.81. The results showed that depression and insomnia were more common among internet-addicted and over-users. Goel et al. (2013) also reported that excessive users of the internet had a high score on the depression scale. Wang et al. (2013) conducted a study on a sample of 10,988 adolescents from nine different cities in China. The mean age of the total sample was 17.2 years. Results showed that increased symptoms of problematic internet use were related to decreased self-esteem, satisfaction with life, and increased depression.

Belanger et al. (2011) also reported that addicted users of the internet have depression, whereas occasionally users also were found at increased risk of higher depression score. Lam (2010) conducted a study aimed to assess the pathological internet use in connection to teen depression. 1,041 Chinese adolescents with an average age of 15 years took part in this study. Results of the study confirmed that those who had been identified as having pathological internet use were at about two and a half times more risk of having developed depression than those who had not exhibited pathological use. Koch et al. (2008) also reported that there was a significant positive correlation between internet addiction and depression. Kim et al. (2006) explored the relationship between internet addiction to depression in Korean students. Findings suggest that level of depression was highest in the

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internet-addicted group. Kraut et al. (1998) reported that excessive use of the internet was related to a decline in the size of social circles, depression.

### **Limitations of the Study:**

- The study was conducted with a sample size of 240 adolescents.
- The study was limited to the geographical location of U. P. and U.K.
- The age range was exclusive to 16 to 20 years old adolescents.
- The study was conducted only on intermediate college adolescents.

### **Implication of the Study:**

This study has wide implications in the field of social and clinical psychology, as clinicians and society can know the effect of internet addiction on depression. They can get insight into how this addiction is making adolescents depressive and deteriorating their performance in various spheres of life. Thus, on the basis of the current research findings, people will get to understand the negative effects of internet addiction and use it in a healthy manner. Also, the study will provide idea for further research in this emerging area.

## **CONCLUSION**

The study concluded that there are increasing trends of depression due to internet addiction. This rising trend is creating several mental health issues. Parental education is also an important variable in determining depression in adolescents. Low parental education promotes depression in adolescents irrespective of gender. Users need to be educated on the mental health problems which occur due to internet addiction and advised to use internet in a healthy manner. It is suggested that similar studies can be undertaken with larger sample size. Different age group could be taken for generalize the findings. We can safely say that internet is good slave but bad master.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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