



## Social Anxiety and Impulsivity Amongst Internet Addicts and Substance Users

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### ABSTRACT

Research has demonstrated that social anxiety and impulsivity is high among those with substance abuse and internet addiction but there is a dearth of studies that compare the two groups. The aim of the study was to compare impulsivity and social anxiety in Internet Addicts and Substance Users who are adolescents. The sample size was 20 adolescent participants from various educational background residing in Mumbai for each group. This was the first of its kind pilot study. It was noted that adolescents who are Substance Users score higher on impulsivity and social anxiety in comparison to adolescents who are Internet Addicts ( $p < 0.001$ ). Further research among larger populations of adolescents in this area is warranted to validate the findings.

### KEYWORDS

adolescents, social anxiety, impulsivity, internet addiction

### Introduction

People can become addicted to many things like tobacco, drugs, alcohol and even to different forms of mass media that we use every day [1]. Substance use disorders (SUDS) among adolescents remain a critical public health problem and prevalence ranges from 12% to 84% [2]. Adolescents are more vulnerable to pathologic Internet use as they have less ability to control their enthusiasm for something that awakens their interests, like Internet or computer games. Continuously escaping from real life into cyberspace is often associated with serious problems in daily life for adolescents [3]. Lower self esteem and loneliness are related with internet addiction. It is not clear whether psychiatric illness like depression and anxiety lead to internet addiction or vice versa [4]. Recent research such as that conducted has noted that the brain activity in internet addicts and substance users is similar [5]. Various studies have suggested that out-of-control gambling, eating, sexuality, and Internet use may share the same neurobiological mechanism with substance dependence and can be termed "behavioural addiction" [6].

As per the Diagnostic and Statistical Manual social anxiety disorder or social phobia is defined as "A persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others...The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine".<sup>[7]</sup> Impulsivity is a tendency to place immediate gain ahead of long-term consequences, quickly responding to stimuli without adequate forethought and failure to inhibit a prepotent response [8-9]. Impulsivity has been posited as a predisposing factor linking substance abuse with aggression, pathological gambling[10]. Studies have shown relationship between social anxiety and internet addiction and substance use disorders [11].

These finding has sparked curiosity globally and led us to investigate in a pilot study the impulsivity and social anxiety in internet addicts and substance users, as it was noted that substance users are more likely to be impulsive.

### Methodology

20 adolescents in each group (i.e. only internet addiction and only substance use) were identified by using the Chen Addiction Scale and the Adolescent Drug Involvement Scale given to sample of 80 adolescents between the age range of 14 to 16 years. Then these selected subjects were asked to fill in the Barratt Impulsivity Scale and the Social Anxiety Scale – Adolescents to look for impulsivity and social anxiety.

The Chen Internet Addiction Scale (CIAS) consists of 26 items, scored on a 4-point Likert scale, that assess 5 dimensions of symptoms of compulsive use, withdrawal, tolerance, and problems of interpersonal relationships, health and time management. The total scores of the CIAS range from 26 to 104 [12]. The Adolescent Drug Involvement Scale (ADIS) was developed as a research and evaluation tool to measure level of drug involvement in adolescents. The scale is an adaptation of Mayer and Filstead's Adolescent Alcohol Involvement Scale. For purposes of interpretation, drug involvement considered as a continuum ranging from no use to severe dependence [13]. The Barratt Impulsiveness Scale (BIS-11) is a questionnaire designed to assess the personality/behavioural construct of impulsiveness. It is the most widely cited instrument for the assessment of impulsiveness and has been used to advance our understanding of this construct and its relationship to other clinical phenomena for 50 years [14]. The Social Anxiety Scale for Adolescents (SAS-A) consists of 22 items, of which 18 pertain to social anxiety and four are filler items. The items are rated on a 5 point scale with responses from not at all to all the time [15].

Data analysis was done with the help of computerised software. The differences among the variables were compared using the "t" Test and score of  $p \leq 0.05$  was considered as statistically significant.

### Results

The study was conducted on adolescents between the age range of 14 to 16 years, the participants were both male and female (equal in number) and their educational background

varied between 9<sup>th</sup> grade to 12<sup>th</sup> grade. All the participants are currently studying in Mumbai.

The sample consisted of 20 participants in each group. The mean scores calculated for 'Impulsivity in Internet Addicts' and 'Impulsivity in Substance Users' were 71.25 units and 77.81 units respectively (Table 1). This shows that there is a difference of 6.55 units in the mean scores and difference was statistically significant ( $t=2.498$ ,  $p=0.01$ ). Thus it was noted that adolescents who were Substance Users were likely to be more impulsive than adolescents who were Internet Addicts.

The mean scores calculated for 'Social Anxiety in Internet Addicts' and 'Social Anxiety in Substance Users' were 45.30 units and 59.00 units respectively and difference was statistically significant ( $t= 3.896$ ,  $p<0.01$ ) (Table 1). Thus it was noted that adolescents who were Substance Users were more likely to be socially anxious than adolescents who were Internet Addicts.

## Discussion

Our study showed presence of more impulsivity and social anxiety amongst substance users than in internet addicts. Studies have revealed the existence of impulsivity, deficiencies in executive function and working memory in an Internet Addict and an Alcohol Dependent patients particularly Internet addictive individuals shared impulsivity and executive dysfunction with alcohol-dependent patients [16-17]. The cause for this impulsivity is known to be due to impaired prefrontal impulse inhibition function or it can be trait of that person [18]. Social anxiety also has been found in various studies along with internet addiction and substance abuse [19]. Excessive internet use displaces valuable time that people spend with family and friends leading to smaller social circles and higher levels of loneliness and stress [20]. Also found are avoidance of academic, work and domestic responsibilities, disruption of relationships, social isolation, and financial problems [21-22]. Thus based on the above results, it was noted that participants, adolescents, who are substance users are more likely to be impulsive than participants who are internet addicts. The sample size is very small and not sufficiently representative of the population. There was no instrument developed for the specific Indian population for Internet Addiction and hence the instrument used for the Asian population as a whole was used. Relying on subjective data when interpreting results, in other words, presuming that participants responded truthfully to the questionnaires was another constraint.

**Table 1 – Differences in social anxiety and impulsivity scores across both groups.**

Variable	Internet Addiction Group (n = 20)	Substance Abuse Group (n = 20)	Statistics
Impulsivity	71.25 (10.28)	77.8 (5.64)	$t=2.498$ $p=0.01^*$
Social Anxiety	45.3 (11.55)	59.0 (10.7)	$t= 3.896$ $p < 0.01^*$

All scores in Mean (SD) format. \* significant.

Statistics done using the independent t test.

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