

Prevalence of Internet addiction and its impact on the physiological balance of mental health

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ABSTRACT

Background: Internet usage beyond normal limit becomes problematic, leading to various comorbidities. A new alarming disorder known as the FoMO (fear of missing out) has been identified as one such comorbidity. So, it is important to assess the prevalence of problematic Internet usage (PIU) and the associated comorbidities in this study population. **Aims and Objective:** To study the demography of Internet addiction (IA) (PIU) in Pondicherry and its comorbidity with FoMO. **Materials and Methods:** A total of 150 subjects were recruited after getting informed consent. They were asked to fill out a pro forma that contains vital demographical information, Young's Internet Addiction Test (IAT) Questionnaire, and Andrew Przybylski's FoMO Scale. These are validated questionnaires to determine the presence of IA and FoMO, respectively. The results were analyzed for the prevalence of IA and its association with FoMO. **Result:** From our study, the following results were obtained: IA is widely prevalent among adolescents (40%) with male preponderance (53.5%) and it is strongly associated with FoMO. Among the Internet addicts, 37% have FoMO whereas in 24% of the subjects, FoMO exists alone without IA. **Conclusion:** The results point to the theory that IA and FoMO coexist. FoMO sets up the IA among the Internet users rather than the other way around, which was the expected result when compared with similar works.

KEY WORDS: Internet Addiction; Fear of Missing Out; Problematic Internet Use


INTRODUCTION

Internet addiction (IA) or otherwise termed as problematic Internet usage (PIU) is defined as the uncontrollable use of the Internet, which leads to significant psychosocial and functional impairments and this pattern of use is not accounted for by a primary psychiatric disorder such as mania or psychological effect of a substance.^[1] Though there is a controversy about its validity, as either behavioral syndrome or mental disorder

existed,^[1,2] recently it has been acknowledged as a diagnosable behavioral condition under *Diagnostic and Statistical Manual (DSM-V)*.^[3,4]

Case series have noted high comorbidity rates with other impulse-control disorders^[5,6] and some empirical studies have found that adolescents with PIU might have higher impulsivity than controls on psychometric testing.^[7,8] A study in Chinese students showed that the prolonged use of this technological detox ends in many haphazard psychological disorders.^[9,10] Recent activities among the same ended up in the discovery of a new alarming disorder known as the FoMO (fear of missing out).^[11]

FoMO is defined as the form of social anxiety—a compulsive concern when one might miss an opportunity for social interaction, novel experience, profitable investment, or other satisfying event.^[12,13] This is most commonly seen in people with unsatisfied psychological needs such as to be loved or respected and is often shown out through modern technologies such as mobile phones and social networks,

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which provide constant opportunity for comparison of one's status.^[14,15] Certain target populations such as the high school and the college students may have much higher prevalence rates, up to 10%–20%.^[16–20] As IA and FoMO are growing alarmingly in adolescent age groups, the study is aimed to assess the prevalence of IA and FoMO and to analyze the comorbidity pattern between IA and FoMO among healthy adolescents.

MATERIALS AND METHODS

It is a cross-sectional study that involved healthy adolescents with an age ranging from 17 to 20 years selected randomly and was conducted at Mahatma Gandhi Medical College and Research Institute, Pondicherry, after getting the approval of the Institutional Human Ethical Committee. Healthy adolescents, college students who have easy access to Internet were included after getting informed consent. Subjects with known psychiatric illness and subjects with already detected mood swings were excluded. The recruits were provided with questionnaires to obtain vital demographic information. Prevalence of IA and the prevalence of FoMO were assessed by Young's Internet Addiction Test (IAT) Questionnaire^[21,22] and by Przybylski's^[23] Questionnaire, respectively.

Statistical Analysis

All data were entered into a data collection pro forma sheet and entered into Excel (MS Excel 2011). Privacy and confidentiality were maintained. All patient's identifiable numbers and information were stripped and replaced by anonymous numbers. The association between IA and demographic factors was evaluated. Chi-square analyses were also performed to investigate the relationships between IA and FoMO.

RESULT

Analyzing the data of the study, we arrive at the following results. There are various modes of access to Internet namely personal computer, smartphone, and Internet cafe. Majority of the subjects (>50%), both men and women prefer using smartphones to access Internet as shown in Figure 1.

From the Young's IAT score (Questionnaire 1), the prevalence of IA was estimated among the participants, which is shown in Table 1. We observed a marked predominance of IA among urban subjects (86%) compared with rural subjects (14%).

Among the subjects aged 17–20 years, maximum prevalence of IA is seen in the age group of 18 years (88%) as shown in Table 2

The analysis of gender-based specificity of IA prevalence shows male predominance of 53.5% compared with 27.8% of female. This is shown in Figure 2.

The analysis of questionnaire 2 by Przybylski estimates the presence of FoMO. Our results show that 54% of subjects do not

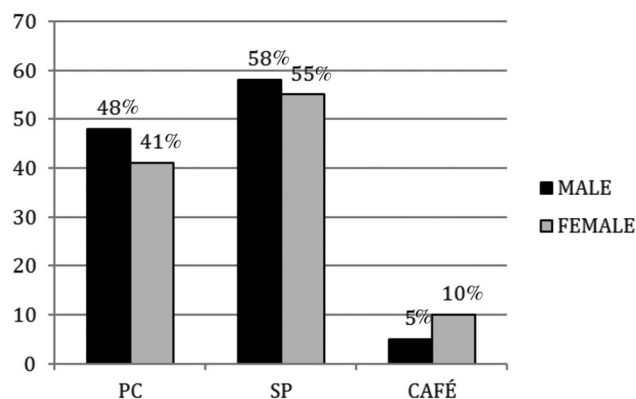


Figure 1: Source of internet access versus gender.

IA present	Frequency	Percent
Rural	21	14.0
Urban	129	86.0
Total	150	100.0

IA, Internet addiction.

have IA and FoMO. A total of 36% are positive for FoMO, 4% are positive for IA alone, and 56% have both IA and FoMo. This is shown in Figure 3. The association between IA and FoMO was analyzed using chi-square test. The comorbidity pattern between these two shows high significance with *p* value < 0.001.

DISCUSSION

We observe from our study results that smartphones are the preferred mode of Internet access for both men and women. IA is more prevalent among urban subjects especially teenage boys in the age group of 18 years. Our results are concurrent with the earlier results that showed 68% of 11- to 14-year-old adolescents and 77% of 15- to 17-year-old adolescents use the Internet, Internet usage among 18- to 42-year-old subjects is above 90% and the usage rate does not drop sharply until the age of 62.^[24] Even though DSM-V criteria are the screening tools

Age in years	Frequency	Percent
17	12	8.0%
18	132	88.0%
19	5	3.3%
20	1	0.7%
Total	150	100.0%

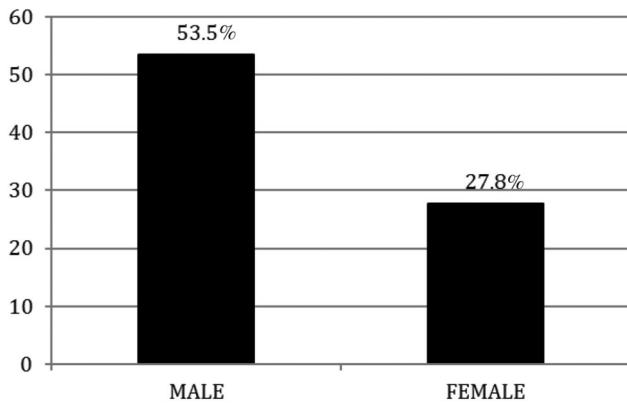


Figure 2: Internet addiction versus gender.

used in western population,^[25] IAT scale by Young is the appropriate tool for Asian population and so we used it to assess the prevalence of IA.^[26] Earlier studies of college students and adults by Morahan-Martin and Schumacher typically found that IA is more common among male students or adults,^[27] there is a similar pattern in our result (53.5% of male subjects and 27.8% of female subjects were noted with IA). Jang KS et al. documented significant association between depression and IA in college students and adolescents.^[28]

Studies conducted in Asian countries concluded that IA is strongly associated with comorbidities notably depression, aggressive behaviors, and substance use in adolescents.^[29,30]

Further references to FoMO showed that though a social condition, FoMO tends to blast out through social-networking sites that are more access prone to problematic Internet users.

There is a significant association between IA and FoMO as shown by a score of p value < 0.001 . A total of 56% subjects had both IA and FoMO whereas only 4% had IA alone.

Our data analysis shows that very few people (2.67%) are Internet addicted without FoMO whereas FoMO exists alone without IA among 24% of the subjects. This point toward the theory that FoMO is more likely to set the IA among the

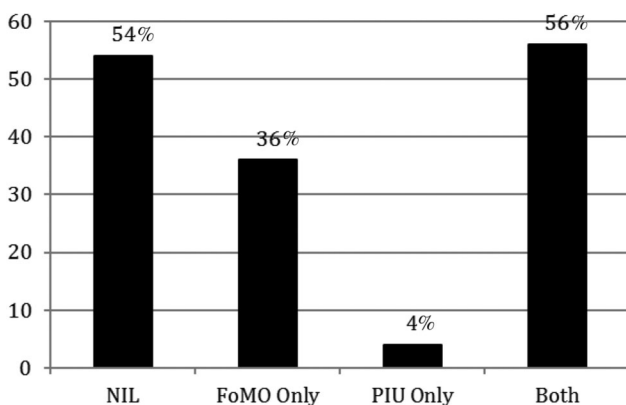


Figure 3: Comorbidity pattern between Internet addiction and FoMO.

subjects, rather than the other way around. About 37% shows both FoMO and IA but these people have more intense FoMO than the people only with FoMO. Small sample size is the limitation of our study. Further, long-term study with larger sample size can be taken up to have a greater insight into the depth of the problem.

CONCLUSION

From this study, it is concluded that FoMO is a socio-psychological syndrome that is more prone to come of Internet usage. This may lead to IA (PIU). On the contrary, it is also possible to hypothesize that IA induces FoMO, though the data support the former. This comorbidity remains a vicious circle, and is synergistic in nature. This hypothesis may be sustained with a larger group and more narrowed down criteria.

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