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Original Research Article

Internet usage among young population and its relation with anxiety, depression, stress and self-esteem

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ABSTRACT

Background: Excessive use of internet brings change in mood, associate inability to regulate the amount of time spent with the Internet, withdrawal symptoms once not engaged, a affecting social life and adverse work or academic consequences which suggests symptoms related to depression, anxiety and stress and along with that it also affects self-esteem of the students. Aim of this study is to identify association of internet addiction with anxiety, depression, stress and self-esteem.

Materials and Methods: A cross-sectional study of 200 students, resident of urban and rural population in the locality of Sangli district Maharashtra India were selected by simple random sampling having an access to the internet. The association of Young's Internet addiction scale was used along with DASS-21, Rosenberg self-esteem scale for comparison in both urban and rural population.

Result: The prevalence of depression, anxiety and stress in both urban and rural area is 56%, 82% and 84% respectively. After we compared the internet addiction with psychological variables, we have found that 83.33% students in rural area exhibit signs of depression. Apart from that, 91% and 89% students from urban and rural area respectively have self-esteem within normal range.

Conclusions: Internet usage has a robust impact on young population. Multi-sectoral approach plays an important role to promote healthy use of internet among urban and rural youth population.

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1. Introduction

The risk of “internet addiction” is emerging as a significant behavioural addiction pandemic to be tackled worldwide, in tandem with the splurge in access Internet globally and rise of new generation gadgets.¹ IA was introduced as a disorder by Young in her seminal paper “Internet Addiction: The emergence of a new clinical disorder” in 1996.² It is known that addictions activate a combination of sites in the brain associated with pleasure, which is known as

the “reward centre” or “pleasure pathway” of the brain.³ When pleasure pathway is activated, dopamine release is increased, along with opiates and other neurochemicals. The tolerance may be developed due to affection to the associated receptors over the period of time or to avoid withdrawal, the need for increase in stimulation produce a “high” and which may lead to the subsequent characteristic behaviour patterns. Hence, the dopamine may get released in the nucleus accumbens due to internet use.⁴ Internet overuse may result in preoccupation, changes in mood, the inability to control the amount of time spent interfacing with digital technology, the need for more time or a new game

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to achieve a desired mood. Further withdrawal symptoms can be seen when the person is not engaged with families, a diminishing social life, adverse work conditions and poor academic consequences.^{2,5}

The criteria adapted in the Internet Addiction Test developed by Young, linked excessive internet use most closely to pathological gambling which is a disorder of impulse control in DSM IV.² Surveys conducted online revealed that 4-10% of the users meet the criteria for internet addiction.⁶ Sharma, et al. (2014) conducted a survey on 391 and found that male students were more addicted to the internet use than female.⁷ Akin and Iskender (2011) did a study on university students to examine the relationships between internet addiction and depression, anxiety, and stress.⁸ Along with this, Niemi, Griffiths, & Banyard, 2005 suggested a link between excessive Internet use and personality dimensions like self-esteem.⁹ The aim of the study to Assess the prevalence of Internet addiction and its association with anxiety, depression, stress & self-esteem in urban and rural area.

2. Materials and Methods

2.1. Study design and study population

A cross-sectional study was carried out among young population between age group 15 to 24 years residing at urban and rural population in the locality of Sangli district, Maharashtra which is adopted population at our institute. The subjects included under study were using internet in the past 1-year selected by using simple random sampling method, with 100 selected randomly from urban and rural area each. The participants who gave informed consent were included in the study with assurance that the information given by them would be anonymous and confidential to avoid reporting bias.

The questionnaire was distributed to the participants in the classroom settings at a predetermined time and was collected on site after 30 min. The questionnaires were anonymous, self-administered and in their vernacular language. Institutional Ethical Committee clearance was obtained.

2.2. Sample size

With 50% considered to be internet addict and 10% with non-response rate.

The calculated sample size comes out to be 194 which was rounded up 200 out of which was selected 100 for each Rural and urban study population for the study.

2.3. Data collection tool

Data was collected by using a self-administered standardized tool based on three internationally validated and reliable questionnaires, namely

1. The Depression Anxiety Stress Scales (DASS 21), and
2. The Rosenberg Self Esteem Scale.
3. Young's Scale of Internet addiction

2.3.1. Anxiety, depression and stress^{10,11}

The DASS 21 is a short version of the 42-item original scale. It is a 21-item scale measured on a 4-point Likert scale (0–3), “0” denoting “did not apply to me at all” and “3” denoting “applied to me very much, or most of the time”. The following cut-off scores were for each subscale: depression: normal 0–4, mild 5–6, moderate 7–10, severe 11–13 and extremely severe 14+; anxiety: normal 0–3, mild 4–5, moderate 7–10, severe 11–13 and extremely severe 10+; stress: normal 0–7, mild 8–9, moderate 10–12, severe 13–16 and extremely severe 17+.

2.3.2. Self-esteem^{12,13}

The Rosenberg Self Esteem Scale (RSES) is commonly used for many studies for validating Self-esteem which comprises 10 statements. Participants rate the statement on a four-point Likert scale to the extent to which they agree, includes (0) strongly disagree to (3) strongly agree for items 1, 2, 4, 6 and 7 and opposite rating for items 3, 5, 8, 9 and 10. A total score is obtained by summing all responses and may range from 0 to 30, with higher scores indicating higher self-esteem and low scores indicating low self-esteem.

2.3.3. Young's internet addiction²

Young's internet addiction scale is validated for adult and young population. It is 20 item self-report scale assessing respondent's productivity at work, school, or home (3 questions), social behaviour (3 questions), emotional connection to and response from using the internet (7 questions), and general pattern of internet use (7 questions). Participants responded to the 20 Young's Internet Addiction Test (YIAT) items on a 6-point Likert measure (“does not apply” to “always”).

2.4. Statistical analysis

Data were analysed using SPSS INC.21.0 software. Nominal and ordinal measures were analysed using the suitable statistical methods such as frequency and percentage. Frequency and percentages (descriptive statistics) were calculated. Pearson's Chi-square was used as a test of significance with P-value < 0.05.

3. Observation and Results

In Table 1, after considering mild, moderate, severe and extremely severe level values, in urban area, the prevalence of depression, anxiety and stress is 52%, 80% and 78% respectively while in rural area they are 60%, 84% and 90% respectively. The total prevalence of depression anxiety and stress in both urban and rural area is 56%, 82% and 84%

Table 1: Prevalence of DAS scale in urban and rural population

DASS	Urban			Rural			Total Frequency		
	D	A	S	D	A	S	D	A	S
Normal	48	20	22	40	16	10	88	36	32
Mild	24	16	48	27	7	36	51	23	84
Moderate	22	28	20	25	25	36	47	53	56
Severe	5	22	9	4	18	14	9	40	23
Extremely severe	1	14	1	4	34	4	5	48	5
Total	100	100	100	100	100	100	200	200	200

Table 2: Comparison of internet addiction and psychological variables in urban and rural population

DAS Scale	Frequency (n)	Internet Addiction	Urban (%)	Frequency	Rural (%)	X ² (P)
Depression	52	IA	36 (69.23)	60	50 (83.33)	3.108 (0.080)
		INA	16 (30.77)		10 (16.67)	
Anxiety	80	IA	54 (67.5)	84	64 (76.19)	1.533 (0.216)
		INA	26 (32.5)		20 (23.81)	
Stress	78	IA	56 (71.79)	90	68 (75.56)	0.306 (0.580)
		INA	22 (28.21)		22 (24.44)	

IA - Internet Addicts, INA – Internet Non-Addicts

respectively.

In Table 2 internet addiction is compared with psychological variables among urban and rural area. After considering the p-values, we found no statistical significance in internet addiction and depression, anxiety, stress. In rural area 83.33% internet addicts are suffering from depression than urban area.

Table 3: Rosenberg self-esteem scale

Self-esteem	Urban	Rural	X ² (P)
Average	91	89	0.22 (0.637)
Not Average	9	11	

As depicted in Table 3 91% students from urban population and 89% students from rural population had self-esteem score within normal range. The table indicates the relation between prevalence of self-esteem in urban and rural area, which is statistically insignificant (p=0.637).

Table 4: Comparison between self-esteem and internet addiction

Self-esteem	Internet Addiction	Average	Not-Average	X ² (P)
Urban	IA	58	7	0.710 (0.400)
	INA	33	2	
Rural	IA	62	8	0.04378 (0.8343)
	INA	27	3	

There are 58% and 62% internet addicts present in urban and rural area that has average self-esteem. In both urban and rural area, internet addiction is statistically insignificant with self-esteem.

4. Discussion

According to Shaikh et al,¹⁴ shows the prevalence of depression, anxiety and stress in urban and rural area which was, 52.1%, 60.3% and 54.1% in urban area while 56.2%, 58.9% and 32.0% in rural area. Compared to this we found 52%, 80%, and 78% depression, anxiety and stress in urban area respectively accompanied with this 60%, 84% and 90% in rural area. We can see that the prevalence of especially anxiety and stress is slightly increased. The association of these psychological problem A - Internet Addict, INA – Internet Non-Addicts with internet addiction can be due to permanent logged in status, preference of virtual interaction with friends, peer group availability.

Referring to the data collected, we couldn't find the statistical significance between internet addiction and self-esteem in both urban and rural area. But studies given by Armstrong et al, Niemz et al already provided supportive data on the link between IA and (explicit) self-esteem.^{9,15} Self-esteem itself has been related not only to IA but also to personality disorders, anxiety disorders, eating disorders, etc., according O'Brien et al.¹⁶ Therefore, it may suggest that the link between low self-esteem and IA underlines the psychopathological character of this new emerging disorder.

5. Conclusion

According to our study, psychological variables in urban and rural area suggests depression, anxiety and stress as well as self-esteem among young population that does not differ on the basis of locale may be due to internet availability. This and study imply the need to bring awareness among Primary Care Physicians and parents to screen for excessive use of internet. Preventive Care of the problem can be

addressed evidence-based treatment program, Motivational interviewing technique, Family counselling and education, cognitive behavioural therapy, Health education methods for planned educational use of internet. Primary physicians can play important role in screening and counselling for life style changes for promotion of healthy use of internet among youth in Urban and Rural settings.

The study also has some limitations. No specific tool has been used to exclude any previous psychopathology apart from the information gathered through the socio-demographic data sheet may create a vulnerability to Internet addiction. Hence further research is needed on this important topic.

6. Source of Funding

None.

7. Conflict of Interest

None.

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