

Original Research Article

Internet addiction and its association with academic performances and lifestyle pattern among students of selected colleges of Kolkata

Sriparna Dey^{1*}, Moitreyee Choudhuri², Jhuma Ray¹

¹College of Nursing, Medical College and Hospital, Kolkata, West Bengal, India

²Government College of Nursing, Rampurhat Government Medical College and Hospital, Birbhum, West Bengal, India

Received: 20 January 2025

Revised: 04 March 2025

Accepted: 07 March 2025

*Correspondence:

Sriparna Dey,

E-mail: sriparna191196@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Internet addiction (IA) refers to excessive and compulsive use of internet. This behavioral disorder is a growing concern worldwide. In this context objectives of the study are to determine the level of IA and find out its association with academic performances and lifestyle pattern of college students.

Methods: Descriptive survey research design was adopted. Disproportionate stratified random sampling technique was used to select 270 students from various colleges. Young's 'IA test' was used to measure level of IA, for self-rated academic performances 'Academic performance scale' by Birchmeier et al and for lifestyle pattern 'structured questionnaire on lifestyle pattern' were used.

Results: Among participants 79.63% were between 18-20 years of age, 66.3% started using internet <15 years of age, 52.22% surfed internet for 2-5 hours/day. Among them 35.93% and 1.11% had moderate and severe IA respectively. Among internet-addicted students 54% self-rated academic performance as moderate, 51% slept <6 hrs/day, 32% ate junk food nearly every day, 59% did not perform exercise in last 1 month, 26% and 11% had nicotine and alcohol addiction respectively. IA was found negatively correlated with academic performance of internet-addicted students. IA was found statistically associated with duration of sleep, eating junk food, skipping meal, performing exercise and also statistically associated with educational stream, internet surfing time and devices for surfing internet.

Conclusions: IA is affecting academic performance and various lifestyle patterns. As a growing problem early identification is needed for developing awareness among students and parents.

Keywords: Internet addiction, Academic performances, Lifestyle pattern

INTRODUCTION

The internet is a worldwide system of networks accessible to millions of people worldwide through various devices. Over a period of time, it served an excellent service bringing positive effect on human life. Along with that internet certainly offers a lot of potentially addictive activities like shopping, gambling, social media, gaming, and pornography viewing etc. The term IA was first used by psychiatrist Dr. Ivan Goldberg in 1995. IA showed significant

impacts on academic achievement, social life, relationships, occupation and finances.¹ It has become growing issue causing neurological complications, psychological disturbance and social problems.²

A survey done by Pew research centre in 2023 showed that 46% US teenagers use internet 'almost constantly' which is roughly doubled the 24% according to survey in 2014-2015 done by the same research centre.³ A systematic review and meta-analysis on global prevalence of digital addiction in general population studies which

included reports on prevalence of various subtypes of digital addiction published before October 31, 2021 showed that 14.22% (95% CI, 12.90-15.65) global population were having IA.⁴ A systemic review and meta-analysis on prevalence of IA among college students in India that includes studies from 2010 to December, 2020 estimated that overall prevalence of IA was 19.9% and 40.7% based on the Y-IAT cut-off scores of 50 and 40, respectively. The study concluded that about 20% to 40% college students are at risk of developing IA in India.⁵

According to a study by Mukand among college students' in Chandigarh showed that academic performance is significantly negatively correlated with IA ($r=-0.410$, $p<0.05$).⁶ A weak negative correlation (Spearman's rho value of -0.167) was found between IA and academic scores in the study conducted by the Nagarajappa et al among undergraduate dental students of Bhubaneswar, India.⁷

Hassan and Ahmed conducted a study in four government secondary schools in Assiut city, Egypt which shows a statistical significant difference between levels of IA and lifestyle pattern ($p<0.001$) as regard bedtime, sleep disturbance, and tobacco use ($\chi^2=182.96$, $\chi^2=194.66$, $\chi^2=31.12$ respectively).⁸ A study by Sahin and Lok among 100 adult in Konya, Turkey showed a moderate negative relation between physical activity and level of internet dependency, ($p<0.05$, $r=-0.429$).⁹

Objectives

Objectives were to determine the level of IA among students of selected colleges, to find out the academic performances of internet addicted students of selected colleges, to find out the lifestyle pattern of internet addicted students of selected colleges, to determine the association of IA with academic performances among the internet addicted students of selected colleges, to find the association of IA with lifestyle pattern among internet addicted students of selected colleges and to find out the association between IA and selected demographic variables of students of college.

METHODS

Study design, settings and sample

Descriptive survey research was conducted from 27/02/2024 to 23/03/2024 among 270 students of five selected colleges of Kolkata. Disproportionate stratified random sampling technique was adopted where strata was based on students' educational streams (Science, arts and commerce) and sampling fraction was $\frac{1}{2}$, $\frac{1}{2}$ and $\frac{3}{4}$ for science, arts and commerce strata respectively.

Measurement tools and validity

Tools were divided into four sections which were validated by seven experts.

Tool I: 'Semi structured questionnaire on demographic profile' was used to collect data regarding demographic characteristic and pattern of internet use through self-reporting. Bio-physical proforma was used to calculate BMI.

Tool II: 'IA test' by Dr. Kimberly Young was adopted to assess level of IA through self-reporting.

Tool III: 'Academic performance scale' by Christopher McGregory was used to collect data regarding self-rated academic performance.

Tool IV: 'Structured questionnaire on lifestyle pattern' was used to collect data regarding life style pattern in four domains; those are sleeping pattern, nutritional pattern, activity pattern and substance abuse.

Inclusion criteria

Students who were under graduate and were willing to participate in the study were included.

Exclusion criteria

Students who were absent at the time of data collection were excluded.

Ethical approval and informed consent

Approval from the ethical committee of medical college, Kolkata was taken and informed consent from the students were obtained.

Data collection procedure

Sampling frame from each Strata (Arts, science, and commerce) prepared from their attendance register and by lottery method subject teachers helped to pick up desired number of samples. Data collection procedure took 20-30 min. At first data collected through self-reporting questionnaire. Then height, weight was checked.

Statistical analysis

The data was organized, tabulated, analysed and interpreted by using descriptive and inferential statistics. The data were computed using MS excel and SPSS version 23. Pearson's correlation was used to find out relation between IA and academic performance. Chi square was computed to determine association of IA with lifestyle variables and demographic variables.

RESULTS

Table 1 shows that among 270 sample 79.63% students were between age group of 18-20 years, 54.07% were male and 45.93% were female. Most of the students (87.78%) were coming from home. More than half students (60.73%) had healthy weight. 66.3% students

started using internet before 15 years of age and 52.22% of them used internet for 2-5 hrs daily. Among them 68.52% were using only mobile phone for surfing internet and 76.67% students surfed internet for both education and entertainment purposes (includes social media, watching and downloading video, movies).

Based on the total score of IAT, depicted in Table 2, respondents were categorized into 4 categories: normal users who use internet at normal level, mild level of internet addicts surf internet bit too long at times but have control over internet usage and so they are not considered as internet addicted. Moderate and severe internet addict students may be considered as internet addicted as they are experiencing occasional and frequent problems because of internet use which had full impact on their life. This means among them 100 students (37.04%) were having IA.

Data depicted in Table 3 shows that among internet addicted students 34% had self-rated them as a good academic performer, 54% had self-rated them as moderate academic performer and 12% had poor academic performance and none of them self-rated them as an excellent or failing academic performer.

Thus, hypothesis can be generated from the above finding in Table 4. H_1 there is statistically significant association between level of IA and self-rated academic performance of internet addicted students at 0.05 level of significance.

So, from the findings in Table 5 a hypothesis can be generated: H_2 there is statistically significant negative

correlation between IA score and self-rated academic performance score of internet addicted students at 0.05 level of significance.

It suggests that the students who had higher levels of internet addiction tends to have lower academic performance and vice versa.

Data presented in Table 6 shows that 51% students slept less than 6 hrs/day, 48% felt sleepiness several days in a week in last 1 month. Findings in nutritional pattern showed that among internet addicted students 32% students ate junk food nearly every day, 24% students skipped their meal more than half days and 20% of students skipped their meal nearly every day in past one month. Most of the internet addicted students (60%) had healthy weight. Among them 9% never performed any kind of exercise during past 1 month and 29% internet addicted students never spend time with their hobbies during last 1 month. It also shows that among internet addicted students 26% had nicotine addiction and 11% had alcohol addiction during past 1 year.

Thus, hypothesis can be generated from the findings of Table 7: H_3 there is statistically significant association between level of IA and duration of sleep (hours per day), eating junk food, skipping meal, performing exercise (days per week) among internet addicted students at 0.05 level of significance.

No statistically significant association was found between level of IA and nicotine and alcohol abuse of internet addicted students at 0.05 level of significance.

Table 1: Frequency and percentage distribution showing socio-demographic characteristics and pattern of daily internet use of students of colleges (n=270).

Variables	N	Percentage (%)
Age (in years)		
18-20	215	79.63
21-23	49	18.15
≥24	06	2.22
Gender		
Male	146	54.07
Female	124	45.93
Currently staying at		
Home	237	87.78
Hostel	10	3.7
Mess	7	2.59
Paying guest	16	5.93
BMI (kg/m²)		
Under weight (<18.5)	52	19.26
Healthy weight (18.5-24.9)	163	60.37
Over weight (25-29.9)	38	14.07
Obesity (≥30)	17	6.3
Age of starting using internet (in years)		
<15	179	66.3
≥15	91	33.7

Continued.

Variables	N	Percentage (%)
Time spend by surfing internet (hours/day)		
<2	25	9.26
2-5	141	52.22
5-10	76	28.15
>10	28	10.37
Device used for surfing internet		
Phone	185	68.52
Phone and laptop	74	27.41
Phone and personal computer	09	3.33
Phone and tablet	02	0.74
Purpose of using internet		
Education	38	14.07
Entertainment	25	9.26
Education and entertainment	207	76.67

Table 2: Frequency percentage distribution showing level of IA of students of colleges (n=270).

IA	Score range	Frequency	Percentage (%)
Normal level	00-30	51	18.89
Mild level	31-49	119	44.07
Moderate level	50-79	97*	35.93
Severe dependence	80-100	03*	1.11

*Moderate level and severe level of IA indicate IA.

Table 3: Frequency and percentage distribution showing self-rated academic performance of internet addicted students of colleges (n=100).

Academic performance	Score (%)	Frequency (%)
Excellent	33-40 (83-100)	Nil
Good	25-32 (63-82)	34 (34)
Moderate	17-24 (43-62)	54 (54)
Poor	9-16 (23-42)	12 (12)
Failing	00-08 (0-22)	Nil

Table 4: Association between IA and academic performance of internet addicted college students (n=100).

Level of IA	Academic performance		Chi -square value	P value
	<Median	≥Median		
<Median	40	21	4.84	0.027
≥Median	26	13		

Table 5: Correlation coefficient between IA score and academic performance score of internet addicted students of colleges (n=100).

Variables	Mean score	R value	T value	P value
IA score	59.18	-0.43	8.34	0.02
Academic performance score	22.3			

Table 6: Frequency and percentage distribution showing lifestyle pattern of internet addicted students of colleges in last one month (n=100).

Life style pattern	Frequency (%)
Sleep (hours/day)	
>9	05 (05)
6-8	44 (44)
<6	51 (51)

Continued.

Life style pattern	Frequency (%)
Sleepiness during daytime	
Never	16 (16)
Several days	48 (48)
More than half days	19 (19)
Nearly every day	17 (17)
Eating junk food	
Never	09 (09)
Several days	35 (35)
More than half days	24 (24)
Nearly every day	32 (32)
Skipping meals	
Never	31 (31)
Several days	25 (25)
More than half days	24 (24)
Nearly every day	20 (20)
BMI (kg/m²)	
Under weight (<18.5)	22 (22)
Healthy weight (18.5-24.9)	60 (60)
Over weight (25-29.9)	13 (13)
Obesity (≥30)	05 (05)
Performing exercise (days/ per week)	
Never	59 (59)
1-2	13 (13)
3-4	16 (16)
≥5	12 (12)
Enjoying hobbies (days/ per week)	
Daily	19 (19)
4-6	15 (15)
≤3	37 (37)
Never	29 (29)
Addiction (past 1 year)	
Nicotine	26 (26)
Alcohol	11 (11)
Marijuana	Nil
Other drugs (cocaine, heroin)	Nil

Table 7: Association between level of IA and lifestyle pattern of internet addicted college students (n=100).

Lifestyle pattern	Level of IA		Chi-square value	P value
	<Median	≥Median		
Sleeping pattern				
Duration of sleep (hr/day)				
<8	25	25	3.89	0.04
≥8	30	20		
Sleepiness during day time				
<15 days	41	23	1.82	0.17
≥15 days	23	13		
Nutritional pattern				
Eating junk foods				
<15 days	15	25	9.87	0.002
≥15 days	5	55		
Skipping meals				
<15 days	25	15	4.67	0.032
≥15 days	35	25		
Performing exercise (days/per week)				
<3	35	15	8.76	0.02
≥3	20	30		

Continued.

Lifestyle pattern	Level of IA		Chi-square value	P value
	<Median	≥Median		
Substance abuse				
Nicotine				
Present	17	9	0.85	0.36
Not present	49	25		
Alcohol				
Present	7	04	0.23	0.63
Not present	59	30		

Table 8: Association between level of IA and selected demographic variables of college students (n=270).

Demographic variables	Level of IA		Chi -square value	Df	P value
	<Median	≥Median			
Age (in years)					
<20	126	78	0.77	1	0.380
≥20	41	25			
Educational stream					
Arts	56	34	7.49	2	0.02
Science	67	23			
Commerce	74	16			
Internet surfing time (hrs/day)					
<5	30	60	16.67	1	0.001
≥5	80	100			
Device used					
Phone	70	90	7.71	1	0.01
Phone and computer/laptop/tab	60	50			
BMI (kg/m²)					
Under weight (<18.5)	14	8	1.6	3	0.66
Healthy weight (18.5-24.9)	38	22			
Over weight (25-29.9)	8	5			
Obesity (>30)	3	2			

Thus of Table 8, hypothesis can be generated from the above findings: H₄ there is statistically significant association between level of IA and educational streams of students, internet surfing time (hours/day) and device used for surfing internet at 0.05 level of significance.

DISCUSSION

The findings of the current study showed that 18.89% of students did normal level of internet use, 44.07% had mild level of IA, 35.93% had moderate level of IA and 1.11% had severe dependency on internet.

The current study findings were supported by the study conducted by Jain et al on IA among undergraduate students of a medical college in North India in 2020 where 38.6%, 29.6% and 2.6% students were found mildly, moderately and severely internet addicted.¹⁰

The present study findings showed that the mean of self-rated academic performance score was 22.3 with standard deviation of 5.18.

The finding of the current study is partially supported by a study conducted by Mukand on college students in 2023

where the findings showed that mean of academic performance score was 30.3 with standard deviation of 6.34.⁶

The findings of the current study showed that there is a statistically significant association between level of IA and self-rated academic performance of internet addicted students of colleges at 0.05 level of significance. It also showed that there is statistically significant negative correlation between IA score and self-rated academic performance score of internet addicted students at 0.05 level of significance.

The finding of the current study was fully supported by a study of Mukand among college student in 2023 which showed that academic performance is significantly negatively correlated with IA ($r=-0.410$, $p<0.05$).⁶

A study by Nagarajappa et al in 2023 on ‘impact of IA on academic performance of undergraduate dental students of Bhubaneswar, India’ showed that a weak negative correlation (Spearman’s rho value of -0.167) exists between IA and academic scores (at $p=0.001$ level of significance).⁷ This study finding partially supported the current study.

The findings of the current study showed that among internet addicted student, 51% slept less than 6 hours per day and 48% felt sleepiness several days in last one month, 32% ate junk food nearly every day, 20% of students skipped meal nearly every day in past 1 month, 59% never performed any kind of exercise in last 1 month. Among internet addicted students who performed exercise, 41.46% students performed exercise 60 minutes or more than that per day over past 1 month. Among internet addicted students 37% students enjoyed hobby 3 or more than 3 times per week. It was also found that 26% of students had nicotine addiction and 11% students had alcohol addiction during past 1 year.

A study conducted by Kamran et al 'effect of IA on dietary behavior and lifestyle characteristics among university students' in 2016 showed that among internet addicted students 34.94% students sleep less than 6 hours/day, 9.65% students ate junk food nearly every day, 29.52% students skipped breakfast every day, 37.95% students never performed any of exercise and 13.85% had habit of smoking.¹¹ This study finding partially supported the current study.

The present study revealed that there is a statistically significant association between level of IA and duration of sleep (hrs per day), eating junk food, skipping meals, performing exercise (days/week) among internet addicted students of colleges at 0.05 level of significance.

The findings of the current study were partially supported by a study conducted by Kamran et al.¹¹ A significant association was there between IA and skipping breakfast ($p=0.021$), eating fast food and fried items ($p=0.016$ and 0.025 respectively), not involving in physical activity ($p=0.038$) and between levels of IA and hours of sleep per day ($p=0.038$) at 0.05 level of significance. Smoking was not associated with IA ($p=0.885$) at 0.05 level of significance.

The present study revealed that there is a statistically significant association between level of IA and educational stream of students, duration of internet surfing (hours/day), device used for surfing internet at 0.05 level of significance.

The finding of the current study was partially supported by a study conducted by Jain et al.¹⁰ The study results interpreted that there was association between IA and average Internet use per day ($p=0.001$) at 0.05 level of significance. But in contrast to the current study significant association was also been found between level of IA and gender ($p=0.042$), purpose of internet use ($p=0.005$) and place of living ($p=0.042$) at 0.05 level of significance.

Limitations

The study had following limitations-As the study was conducted only within colleges of Kolkata so the study

findings cannot be generalized beyond this district. The answers were based on recall by participants which leads to recall biasness that may limit generalizability. As structured categorical questionnaire was used to collect the data, so it restricts the use of different statistical methods.

CONCLUSION

On the basis of the study findings, it could be concluded that maximum number of students of colleges were having mild IA. Level of IA was found to be significantly associated with self-rated academic performance of internet addicted students at 0.05 level of significance. The study revealed a statistically significant negative correlation between IA score and self-rated academic performance score. The findings also showed that duration of sleep (hours/day), eating junk foods, skipping meals, performing exercise (days/week) were statistically associated with level of IA among internet addicted students. There were evidences of significant association between IA and educational streams of students, duration of internet use (hours/day), device used for surfing internet.

Recommendations

On the basis of the present study the following recommendations have been made for further study. A similar study may be replicated on secondary and higher secondary school students. A similar study may be replicated on students from different professional courses. A descriptive study may be conducted to assess IA and its relationships with depression, anxiety, stress. A descriptive study may be conducted to assess IA and relationships with self-esteem. A descriptive study may be conducted to determine IA and related clinical problems.

ACKNOWLEDGEMENTS

Authors would like to thank to principal and other faculty members of college of nursing, medical college and hospital, Kolkata.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Young KS. Internet addiction, a case that breaks the stereotype. *Psychol Rep*. 1996;79:899-902.
2. Cash H, Rae DC, Steel HA, Winkler A. Internet addiction: A brief summary of research and practice. *Curr Psychiatry Rev*. 2012;8(4):292-8.
3. Anderson M, Faverio M, Gottfried J. Teens, Social Media and Technology 2023. Pew Research Center. 2023. Available at: <http://www.pewresearch.org/?p=92522>. Accessed on 12 December 2024.

4. Meng S-Q, Cheng J-L, Li Y-Y, Yang X-Q, Zheng J-W, Chang X-W, et al. Global prevalence of digital addiction in general population: A systematic review and meta-analysis. *Clin Psychol Rev*. 2022;92(102128):102128.
5. Joseph J, Varghese A, Vr V, Dhandapani M, Grover S, Sharma S, et al. Prevalence of internet addiction among college students in the Indian setting: a systematic review and meta-analysis. *Gen Psychiatr*. 2021;34(4):e100496.
6. Mukand A. A Study on Internet Addiction, Social Media Addiction and Academic Performance among College Students. *Int J Indian Psychol*. 2023;11(4):755-61.
7. Nagarajappa R, Dhar U, Satyarup D, Jena M. Impact of internet addiction on academic performance of undergraduate dental students of Bhubaneswar, India. *Pesqui Bras Odontopediatria Clin Integr*. 2023;23.
8. Hassan AM, Ahmed ES. Impact of Internet Addiction on Lifestyle and Dietary Habits of Secondary School Adolescents. *Am J Nursing Res*. 2020;8(2):263-8.
9. Sahin M, Lok S. Relationship between physical activity levels and internet addiction of adults. *J Depression Anxiety*. 2018;07:02.
10. Jain S, Agarwal V, Garg SK. Internet Addiction among Undergraduate Students of a Medical College in North India. *J Med Academ*. 2020;3(1):14-6.
11. Kamran H, Afreen A, Ahmed Z. Effect of Internet Addiction on dietary behavior and lifestyle characteristics among university students. *Ann King Edw Med Univ*. 2018;24(S):836-41.

Cite this article as: Dey S, Choudhuri M, Ray J. Internet addiction and its association with academic performances and lifestyle pattern among students of selected colleges of Kolkata. *Int J Community Med Public Health* 2025;12:1801-8.