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Original Research Article

Problematic internet use, depression, stress and anxiety amongadolescents in an urban area in South India: a cross sectional study

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ABSTRACT

Background: Internet usage is ubiquitous, especially among young population in urban India. The present study aims to assess the burden of problematic internet use and to determine its association with depression, anxiety and stress among adolescents in urban South India. We have also assessed the role of parental/care giver factors in internet usage among the adolescents.
Methods: This was a school based cross sectional study among two high schools in urban field practice area. The students were administered validated questionnaire on sociodemographic details, parental/care giver factors, pattern of internet usage, problematic and risky internet use screening scale as well as depression, anxiety and stress scale-21.The descriptive data was analysed as proportions and associations were determined using Chi square tests.
Results: 24% of students had PIU and this was significantly associated with stress, depression and anxiety. 33% had stress and class of studying was found to be the only significant determinant. Almost half (48%) had depression and class of studying, type of family as well as mother's occupation were the significant determinants. Half (50%) had anxiety with the significant determinants being age, class of studying, type of family, type of school, religion and father's education. The only common factor found to significantly affect internet usage was parental rule setting and supervision.
Conclusions: Depression, stress and anxiety were associated with PIU. Setting and enforcing reasonable rules while maintaining trust and emotional support is essential to protect adolescents from the harmful effects of problematic internet usage.

Keywords: Problematic Internet use, Stress, Anxiety, Depression, Adolescence, DASS-21

INTRODUCTION

Internet is a worldwide interconnected network which is adopted as a readily accessible means for information, entertainment and social networking. India accounts for 462 million internet users despite 35% online penetration and ranks 2nd after China.[1] Adolescents use the internet for socializing and for leisure activities such as watching movies and television programs, reading or surfing for information, listening to music and playing online games. However, they are more prone to use the internet as a form of socialization without realising the negative impact that may carry.

The term "internet addiction" was proposed by Dr. Ivan Goldberg for pathological compulsive internet use.[2] David avoided the term internet addiction and preferred the term pathological internet use.[3] Caplan replaced the term pathological internet use with problematic internet use (PIU).[4] PIU is not listed in the latest fifth edition of the

diagnostic and statistical manual of mental disorders (DSM).[5] However, internet gaming disorder is listed in section 3, being proposed as condition requiring further study.[6] DSM-5 describes this proposed condition as a clinically significant impairment on daily life as a result of continual gaming. PIU is defined as an addictive behaviour with poorly controlled fixation, desires or actions concerning computer use and internet access that may lead to harm or anguish.[7] PIU can be classified into specific and generalised. Specific PIU refers to particular content that exists independently from the internet such as online gambling and video games. Generalised PIU refers to specific internet content including chat rooms, e-mail, online shopping and social networks.[3] Some of the clinical presentations of PIU include loss of sense of time, becoming angry, restless and moody when internet is not available, needing better and more computer equipment and software and more time online, showing negative behaviours associated with online activities such as lying and starting arguments, impaired academic performance and social relationships.[8] Symptoms of PIU are similar to those suffering from substance related addictions, including unpredictable behaviour and mood.[9] Some studies suggest that adolescents with ADHD, depression and those who are socially isolated are at higher risk of PIU.[10] PIU has been associated with depression and/or suicidal ideation and impaired social skills.[11] Keeping the above in mind, the study was done with the following.

Objectives

Objectives of current study were to determine the burden and determinants of problematic internet use and assess the pattern of stress, depression and anxiety among the selected adolescents in an urban field practice area attached to a medical college in South India and to determine the role of sociodemographic and selected parental/ caregiver factors in the internet usage.

METHODS

This was a school based cross sectional study in the two high schools (1 Government and 1 private) located at Kavoor, Mangalore which is an urban field practice area of the department of community medicine. The research will be conducted for a period of 2 months between March to April 2018. The study participants who meet the following selection criteria were interviewed.

Inclusion criteria

Inclusion criteria for current study were; high school students and belonging to the age group of 13-17 years and students who provided signed informed assent and whose parents provided informed consent.

Exclusion criteria

- Exclusion criterion for current study was students who were absent on the day of data collection.

Sample size

The sample size was calculated to be 233 using the formula;

$$n = 4pq/L2$$

Taking a p (prevalence of moderate problematic internet users)=10.4% and absolute allowable error of 4%.[12] Taking non-response rate of 10%, a total of 256 high school adolescents were included in the study. Purposive sampling was done to select an equal sample of students from each of the selected school.

Data collection

Data collection commenced after obtaining approval from the institutional ethics committee and permission from the principals of the respective schools. One selected class of the school was visited on each day of the data collection. The questionnaire did not include the names but only roll/ registration numbers to ensure confidentiality. On the first visit, all the students who are eligible for the study, were provided with the informed assent form and informed parent consent forms. On the next day, only those who provided both the assent and parental consent; (doubts, if any, raised by the parents will be addressed by the research team as much as possible) were then administered the self-administered questionnaire. Section A of the questionnaire contained details of socio demographic factors like age, gender, class of study, religion, type of family, education and occupation of parents and contained selected questions on role of parental/caregiver's factors; modified from the European school survey project on alcohol and other drugs (ESPAD) questionnaire.[13] Section B contained internet usage details which was used to assess the pattern of internet usage among adolescents. Section C contained problematic and risky internet use screening scale (PRIUSS) which was developed for use in adolescents, and reflects a data-driven, conceptual framework of the nature of problematic internet use (PIU) as a component of adolescent and young adult health. A cut-off of 25 for the overall scale score was proposed for identifying those at risk for PIU.[14] Section D contained depression, anxiety and stress scale-21 items (DASS-21) which is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. DASS yields severity labels ranging from normal to extremely severe: each for stress, depression and anxiety based on the calculated scores.[15]

The descriptive socio demographic and internet usage data was analysed using proportions. Determinants for PIU, association between PIU and stress/anxiety or depression, association of severity categories for stress, depression and anxiety with PIU and determinants of internet usage were analysed using Chi Square test.

RESULTS

Majority of the study subjects were above 15 years or younger (96%), studying in 9th standard (75%), Hindus by religion (74%) and belonged to nuclear families (84%). With respect to education and occupation of parents, majority of students had fathers who are graduates/postgraduates (46%) and working as unskilled workers (39%) while mothers who are mostly graduates/ postgraduates (42%) and are homemakers (41%). Among those students with mothers who were farmers/agriculture based higher proportion of students had PIU (57.1%) whereas among those with mothers who were skilled/ unskilled workers lower proportion had PIU (13.8%, 14.6%). The association between mother's occupation and PIU was found to be statistically significant (p=0.010) (Table 1). 61 out of the 256 (24%) of the study subjects had problematic internet use. Higher proportion of PIU was seen in those who had mild/moderate as well as severe/extremely severe stress at 33% and 57% respectively compared to 15% among those without stress. Similarly, higher proportion of PIU was seen in those who had mild/moderate as well as severe/extremely severe depression at 34% and 61% respectively compared to 5% among those without depression. Higher proportion of PIU was seen in those who had mild/moderate as well as severe/extremely severe anxiety at 31% and 45% respectively compared to 9% among those without anxiety. There was a significant association of PIU with stress, depression and anxiety (Table 1). Comparatively higher proportions in the individual items checked as very often (score 4) in the PRIUSS scale were seen in subjective feeling that internet is used excessively (14%), feeling irritated when away from internet (9%) and losing sleep due to night time internet use (9%). 85 (33%) had stress of some degree of which 57 (22%) had mild to moderate stress and 28 (11%) had stress which was severe to extremely severe. The class of studying was found to be the only statistically significant determinant of stress among the study population. Higher proportion of those who studied in 10th standard (46%) had stress compared to by those who studied in 9th (29.3%) or 8th standard (36.4%) (Table 2).

Almost half, i.e., 124 (48%) had some degree of depression of which 80 (31%) had mild to moderate depression and 44 (17%) had severe to extremely severe depression. The class of studying, type of family and mother's occupation were the statistically significant determinants of depression among the study population. Higher proportion of those who studied in 10th standard (68.5%) had depression compared to those in 9th (43.4%) or 8th standard (36.4%). Higher proportion of those from joint/ extended families (65%) had depression than those from nuclear families (45.4%). Higher proportion of students with mothers who were farmers/agriculture-based workers had depression (100%) followed by those whose mothers who were home makers (54%) (Table 3).

Half, i.e., 129 (50%) had some degree of anxiety of which 58 (23%) had mild to moderate anxiety whereas 71 (28%) had severe to extremely severe anxiety. The statistically significant determinants of anxiety were age, class of studying and type of family (highly significant, p<0.01) as well as type of school, religion and father's education (significant, p<0.05). Higher proportion of the students who studied in government school (57.8%), above 15 years (90%), in 10th standard (82%), belonging to Hindu religion (56%), from joint/extended families (78%) and with fathers educated between class 1 to 7 (67%) had some degree of anxiety (Table 4). With respect to internet usage last week, daily usage of internet was in higher proportions for the purpose of social media (26%) followed by streaming/downloading music/ videos (20%) and reading/surfing/searching for information (17%). With respect to internet usage for the last month, similar pattern existed with highest proportion (31%) responding that they were on social media for at least 7 days followed by 22% who used internet for reading/surfing/searching for information. The proportion of study subjects who did not do the particular activity even for a single day was highest for playing online games that win money (91% in the past week and 87% reported in past 1 month). Majority of the study subjects said that parents set definite rules about what they can do at home (55%), can easily get warmth and caring from mother and/or father (90%), can easily get emotional support from mother and/or father (80%), can easily ask for money from mother and/or father (48%), can easily get warmth and caring from friends (77%) and can easily get emotional support from friends (74%). With respect to hours of internet usage of a typical weekday, 49 (19%) used internet for more than an hour while this proportion was much higher on a typical weekend (85, 33%). The caregiver factors that were associated with typical weekday internet usage were "parents/caregivers setting definite rules about what the study subject can do at home" and "can easily ask for money from the friends". Similarly, the caregiver factors that were associated with typical weekend internet usage were "parents/caregivers setting definite rules about what the study subject can do at home" and "can easily ask for money from the mother/father". Higher proportion of the students whose parents almost always set definite rules reported no internet usage on both week day (29.3%) and weekend (21.4%) compared to the other groups (Table 5).

DISCUSSION

The proportion of study subjects with PIU in the current study is 24% which is similar to a meta-analysis on emergence of problematic internet use among adolescents in India that found the overall pooled prevalence of "problematic internet use" to be 21.6%.[16] In our study there was no difference in the proportion of PIU with respect to gender.

Table 1: Determinants of problematic internet use and association with stress, anxiety and depression.

Parameters		Problematic internet use N (%)		Total N (%)	P value
		Present	Absent		
Sociodemographic characteristics					
Type of school	Private	33 (25.8)	95 (74.2)	128 (50)	0.558
	Government	28 (21.8)	100 (78.1)	128 (50)	
Age (years)	≤15	56 (22.8)	190 (77.2)	246 (96)	0.061
	15	5 (50)	5 (50)	10 (4)	
Gender	Male	33 (23.7)	106 (76.3)	139 (54.3)	1.000
	Female	28 (23.9)	89 (76.1)	117 (45.7)	
Class of studying	8th	4 (36.4)	7 (63.6)	11 (4.3)	0.596
	9th	45 (23.6)	146 (76.4)	191 (74.6)	
	10th	12 (22.2)	42 (77.8)	54 (21.1)	
Religion	Hindu	47 (24.7)	143 (75.3)	190 (74.2)	0.735
	Muslim	3 (16.7)	15 (83.3)	18 (7.2)	
	Christian	11 (24.1)	37 (77.1)	48 (18.6)	
Type of family	Nuclear	52 (24.1)	164 (75.9)	216 (84.4)	0.505
	Joint/extended/ others	9 (22.5)	31 (77.5)	40 (15.6)	
Father's education	Illiterate/no formal education	7 (23.3)	23 (76.7)	30 (11.8)	0.694
	Class 1-7	10 (19.6)	41 (80.4)	51 (20)	
	High school and post education	12 (21.1)	45 (78.9)	57 (22.2)	
	Graduate and post graduate	32 (27.1)	86 (72.9)	118 (46)	
Mother's education	Illiterate/no formal education	9 (22.5)	31 (77.5)	40 (15.7)	0.682
	Class 1-7	13 (21)	49 (79)	62 (24.3)	
	High school and post education	9 (20)	36 (80)	45 (17.5)	
	Graduate and post graduate	30 (27.5)	79 (72.4)	109 (42.5)	
Father's occupation	Farmer/agriculture based	7 (35)	13 (65)	20 (7.8)	0.058
	Skilled/clerical worker	22 (34.9)	41 (65.1)	63 (24.6)	
	Unskilled worker	19 (19)	81 (81)	100 (39)	
	Professional (doctor, engineer, lawyer)	13 (18.8)	56 (81.2)	69 (27)	
	Unemployed	0	4 (100)	4 (1.6)	
Mother's occupation	Farmer/agriculture based	4 (57.1)	3 (42.9)	7 (2.7)	0.010
	Skilled/clerical worker	4 (13.8)	25 (86.2)	29 (11.4)	
	Unskilled worker	13 (14.6)	76 (85.4)	89 (34.7)	
	Professional (doctor, engineer, lawyer)	8 (30.8)	18 (69.2)	26 (10.2)	
	Homemaker	32 (30.5)	73 (69.5)	105 (41)	
Psychological illness					
Stress	Normal	26 (15.2)	145 (84.8)	171 (66.7)	0.000
	Mild to moderate	19 (33.3)	38 (66.7)	57 (22.3)	
	Severe to Extremely severe	16 (57.1)	12 (42.9)	28 (10.9)	
Depression	Normal	7 (5.3)	125 (94.7)	132 (51.6)	0.000
	Mild to moderate	27 (33.8)	53 (66.2)	80 (31.2)	
	Severe to Extremely severe	27 (61.4)	17 (38.6)	44 (17.2)	
Anxiety	Normal	11 (8.7)	116 (91.3)	127 (49.6)	0.000
	Mild to moderate	18 (31)	40 (69)	58 (22.6)	
	Severe to Extremely severe	32 (45.1)	39 (54.9)	71 (27.7)	

Previous evidence on this aspect is mixed with some studies on internet addiction supporting gender differences (males having higher prepond-erance).[17,18] Some other studies finding no such gender differences.[19] Our study found that there was a highly significant association of PIU with stress, depression and anxiety. This association has been established in several other studies.[20-23] The proportion of students who experienced depression in our study was high at 48% which is corroborated in some other studies across India, a study on depression among in an urban area of Patna, Bihar and another study in a boarding school in North Kerala found similar proportion of students to have depression.[24,25] In the current study, 33% had stress of some degree which is comparable to the proportion of stress in a study from Tirunelveli district, Tamil Nadu.[26]

Table 2: Determinants of stress in the study population.

Parameters		Stress severity rating N (%)			P value
		Normal	Mild to moderate	Severe to extremely severe	
Type of school	Private	85 (66.4)	31 (24.2)	12 (9.4)	0.602
	Government	86 (67.2)	26 (20.3)	16 (12.5)	
Age (years)	≤15	167 (67.9)	53 (21.5)	26 (10.6)	0.185
	>15	4 (40)	4 (40)	2 (20)	
Gender	Male	93 (66.9)	29 (20.9)	17 (12.2)	0.693
	Female	78 (66.7)	28 (23.9)	11 (9.4)	
Class of studying	8th	7 (63.6)	1 (9.1)	3 (27.3)	0.048
	9th	135 (70.7)	40 (20.9)	16 (8.4)	
	10th	29 (53.7)	16 (29.6)	9 (16.7)	
Religion	Hindu	124 (65.3)	44 (23.1)	22 (11.6)	
	Muslim	10 (55.5)	5 (27.8)	3 (16.7)	
	Christian	37 (77.1)	8 (16.7%)	3 (6.2)	
Type of family	Nuclear	147 (68.1)	45 (20.8)	24 (11.1)	0.441
	Joint/extended or others	24 (60)	12 (30)	4 (10)	
Father's education	Illiterate/no formal education	19 (63.3)	7 (23.3)	4 (13.4)	0.984
	Class 1-7	33 (64.7)	12 (23.5)	6 (11.8%)	
	High school and post education	41 (71.9)	11 (19.3)	5 (8.8)	
	Graduate and post graduate	78 (66.1)	27 (22.9)	13 (11)	
Mother's education	Illiterate/no formal education	29 (72.5)	7 (17.5)	4 (10)	0.793
	Class 1-7	39 (62.9)	14 (22.6)	9 (14.5)	
	High school and post education	33 (73.3)	8 (17.7)	4 (9)	
	Graduate and post graduate	70 (64.2)	28 (25.7)	11 (10.1)	
Father's occupation	Farmer/agriculture based	15 (75)	2 (10)	3 (15)	0.063
	Skilled/ clerical worker	46 (73)	8 (12.7)	9 (14.3)	
	Unskilled worker	67 (67)	23 (23)	10 (10)	
	Professional (doctor, engineer, lawyer)	42 (60.9)	21 (30.4)	6 (8.7)	
	Unemployed	1 (25)	3 (75)	0	
Mother's occupation	Farmer/agriculture based	3 (42.8)	2 (28.6)	2 (28.6)	0.640
	Skilled/clerical worker	21 (72.4)	7 (24.1)	1 (3.5)	
	Unskilled worker	63 (70.8)	18 (20.2)	8 (9)	
	Professional (doctor, engineer, lawyer)	16 (61.5)	7 (26.9)	3 (11.6)	
	Homemaker	68 (64.8)	23 (21.9)	14 (13.3)	

In the current study 50% of the students had some degree of anxiety. This is much higher than that is reported in a study conducted in Kolkata.[27] However, the Kolkata study found that more boys were anxious than girls which is corroborated by our study which showed higher proportions of stress among boys than girls though it was not statistically significant.

The study from Tamil Nadu showed that stress, depression and anxiety was highest among the 10th standard students. This finding is also seen in our study where class of studying (10th standard) was a significant factor in all 3 conditions. Type of family (nuclear families) and mother's occupation were also seen to be the determinants of depression in the current study. However, gender differences were not seen. These results are similar to above study done in Tamil Nadu which showed absence of statistically significant difference observed between males and females related to depression and anxiety.[26]

With respect to internet usage last week, daily usage of internet was in higher proportions for the purpose of social media (26%) followed by streaming/downloading music/ videos (20%) and reading/surfing/searching for information (24%). This is corroborated by studies both in India and abroad where it is shown that the most common and frequent activities performed by adolescents continue to be information seeking (search engines/websites), social media (face book, snapchat, twitter etc) followed by streaming/downloading of music/videos (YouTube).[1] The caregiver factors that were associated with typical weekday internet usage were "parents/caregivers setting definite rules about what the study subject can do at home" and "can easily ask for money from the friends".

Table 3: Determinants of depression in the study population.

Parameters		Depression severity rating N (%)			P value
		Normal	Mild to moderate	Severe to extremely severe	
Type of school	Private	65 (50.8)	35 (27.3)	28 (21.9)	0.103
	Government	67 (52.3)	45 (35.2)	16 (12.5)	
Age (years)	≤15	129 (52.4)	74 (30.1)	43 (17.5)	0.135
	>15	3 (30)	6 (60)	1 (10)	
Gender	Male	66 (47.5)	51 (36.7)	22 (15.8)	0.123
	Female	66 (56.4)	29 (24.8)	22 (18.8)	
Class of studying	8th	7 (63.6)	1 (9.1)	3 (27.3)	0.000
	9th	108 (56.6)	48 (25.1)	35 (18.3)	
	10th	17 (31.5)	31 (57.4)	6 (11.1)	
Religion	Hindu	92 (48.4)	63 (33.2)	35 (18.4)	0.550
	Muslim	11 (61.1)	5 (27.8)	2 (11.1)	
	Christian	29 (60.4)	12 (25)	7 (14.6)	
Type of family	Nuclear	118 (54.6)	58 (26.9)	40 (18.5)	0.002
	Joint/extended or others	14 (35)	22 (55)	4 (10)	
Father's education	Illiterate/no formal education	15 (50)	11 (36.7)	4 (13.3)	0.109
	Class 1-7	25 (49)	22 (43.2)	4 (7.8)	
	High school and post education	33 (57.9)	16 (28.1)	8 (14)	
	Graduate and post graduate	59 (50)	31 (26.3)	28 (23.7)	
Mother's education	Illiterate/no formal education	22 (55)	15 (37.5)	3 (7.5)	0.234
	Class 1-7	31 (23.5)	21 (26.3)	10 (22.8)	
	High school and post education	27 (60)	13 (28.9)	5 (11.1)	
	Graduate and post graduate	52 (47.7)	31 (28.4)	26 (23.9)	
Father's occupation	Farmer/agriculture based	7 (35)	10 (50)	3 (15)	0.424
	Skilled/ clerical worker	33 (52.4)	18 (28.6)	12 (19)	
	Unskilled worker	55 (55)	32 (32)	13 (13)	
	Professional (doctor, engineer, lawyer)	35 (50.7)	18 (26.1)	16 (23.2)	
	Unemployed	2 (50)	2 (50)	0	
Mother's occupation	Farmer/agriculture based	0	6 (85.7)	1 (14.3)	0.003
	Skilled/clerical worker	16 (55.2)	9 (31)	4 (13.8)	
	Unskilled worker	55 (61.8)	25 (28.1)	9 (10.1)	
	Professional (doctor, engineer, lawyer)	13 (50)	4 (15.4)	9 (34.6)	
	Homemaker	48 (45.7)	36 (34.3)	21 (20)	

Parental monitoring rules like "knowing about whereabouts at night, the places they often go to after school, how they spend their pocket money, and how they spent their leisure time" was found to be major inhibitor of Internet addiction in high schools across Taiwan.[28] However, we did not explore whether there were any specific rules regarding internet usage and how it had an impact on internet use.

Evidence of risk-taking behaviours was higher among adolescents those who were in lack of parental supervision in a study in Vadodara, India through semi-structured interview schedule.[29]

However, overall risk-taking behaviours in the current study (playing games involving betting/ gambling) was quite low in our study.

Majority of the study population responded that they can easily get emotional support from their parents (80%) and friends (74%) although we did not find any association with internet usage.

Studies have revealed that a positive parent-child attachment and trust in parents can reduce children's Internet usage/exposure to negative content.[30]

Table 4: Determinants of anxiety in the study population.

Parameters		Anxiety severity rating N (%)			P value
		Normal	Mild to moderate	Severe to extremely severe	
Type of school	Private	73 (57)	28 (21.9)	27 (21.1)	0.030
	Government	54 (42.2)	30 (23.4)	44 (34.4)	
Age (years)	≤15	126 (51.2)	52 (21.1)	68 (27.6)	0.008
	>15	1 (10)	6 (60)	3 (30)	
Gender	Male	68 (48.9)	31 (22.3)	40 (28.8)	0.921
	Female	59 (50.4)	27 (23.1)	31 (26.5)	
Class of studying	8th	7 (63.6)	0	4 (36.4)	0.000
	9th	110 (57.6)	40 (20.9)	41 (21.5)	
	10th	10 (18.5)	18 (33.3)	26 (48.2)	
Religion	Hindu	84 (44.2)	50 (26.3)	56 (29.5)	0.018
	Muslim	9 (50)	3 (16.7)	6 (33.3)	
	Christian	34 (70.8)	5 (10.4)	9 (18.8)	
Type of family	Nuclear	118 (54.6)	41 (19)	57 (26.4)	0.000
	Joint/extended or others	9 (22.5)	17 (42.5)	14 (35)	
Father's education	Illiterate/no formal education	14 (46.7)	3 (10)	13 (43.3)	0.017
	Class 1-7	17 (33.3)	19 (37.3)	15 (29.4)	
	High school and post education	29 (50.9)	11 (19.3)	17 (29.8)	
	Graduate and post graduate	67 (56.8)	25 (21.2)	26 (22)	
Mother's education	Illiterate/no formal education	20 (50)	6 (15)	14 (35)	0.314
	Class 1-7	24 (38.7)	17 (27.4)	21 (33.9)	
	High school and post education	24 (53.3)	12 (26.7)	9 (20)	
	Graduate and post graduate	59 (54.1)	23 (21.1)	27 (24.8)	
Father's occupation	Farmer/agriculture based	9 (45)	5 (25)	6 (30)	0.480
	Skilled/ clerical worker	38 (60.3)	10 (15.9)	15 (23.8)	
	Unskilled worker	42 (42)	26 (26)	32 (32)	
	Professional (doctor, engineer, lawyer)	37 (53.6)	16 (23.2)	16 (23.2)	
	Unemployed	1 (25)	1 (25)	2 (50)	
Mother's occupation	Farmer/agriculture based	0	2 (28.6)	5 (71.4)	0.082
	Skilled/clerical worker	20 (69)	3 (33.3)	6 (20.7)	
	Unskilled worker	44 (49.4)	22 (24.8)	23 (25.8)	
	Professional (doctor, engineer, lawyer)	14 (53.8)	6 (23.1)	6 (23.1)	
	Homemaker	49 (46.7)	25 (23.8)	31 (29.5)	

Table 5: Determinants of internet usage (in hours) in the study population.

Care-giver factors		Number of hours (on a typical weekday) N (%)				Number of hours (on a typical weekend) N (%)				Total N (%)
		None	≤ 1	>1	P value	None	≤ 1	>1	P value	
My parent (s) set definite rules about what I can do at home	Almost always	41 (29.3)	84 (60)	15 (10.7)	0.000	30 (21.4)	84 (60)	26 (18.6)	0.000	140 (54.7)
	Sometimes	7 (8.8)	53 (66.2)	20 (25)		3 (3.8)	40 (50)	37 (74)		80 (31.2)
	Almost never	3 (8.3)	19 (52.8)	14 (38.9)		0	14 (38.9)	22 (61.1)		36 (14.1)
I can easily get warmth and caring from my mother and/or father	Almost always	48 (20.9)	141 (61.3)	41 (17.8)	0.130	31 (13.5)	125 (54.3)	74 (32.2)	0.130	230 (89.8)
	Sometimes	2 (12.5)	11 (68.7)	3 (18.8)		2 (12.5)	10 (62.5)	4 (25)		16 (6.2)
	Almost never	1 (10)	4 (40)	5 (50)		0	3 (30)	7 (70)		10 (4)

Continued.

Care-giver factors		Number of hours (on a typical weekday) N (%)				Number of hours (on a typical weekend) N (%)				Total N (%)
		None	≤ 1	>1	P value	None	≤ 1	>1	P value	
I can easily get emotional support from my mother and/or father	Almost always	42 (20.6)	125 (61.3)	37 (18.1)	0.419	27 (13.2)	111 (54.4)	66 (32.4)	0.695	204 (79.6)
	Sometimes	5 (17.9)	19 (67.8)	4 (14.3)		3 (10.7)	17 (60.7)	8 (28.6)		28 (11)
	Almost never	4 (16.7)	12 (50)	8 (33.3)		3 (12.5)	10 (41.7)	11 (45.8)		24 (9.4)
I can easily ask for money from my mother and/or father	Almost always	29 (23.8)	65 (53.3)	28 (22.9)	0.071	25 (20.5)	52 (42.6)	45 (36.9)	0.001	122 (47.6)
	Sometimes	14 (18.6)	53 (70.7)	8 (10.7)		3 (4)	52 (69.3)	20 (26.7)		75 (29.3)
	Almost never	8 (13.6)	38 (64.4)	13 (22)		5 (8.5)	34 (57.6)	20 (33.9)		59 (23.1)
I am easily given money as a gift from my mother and/or father	Almost always	19 (22.3)	48 (56.5)	18 (21.2)	0.874	14 (16.5)	40 (47)	31 (36.5)	0.316	85 (33.1)
	Sometimes	11 (17.2)	41 (64.1)	12 (18.7)		10 (15.6)	34 (53.1)	20 (31.3)		64 (25)
	Almost never	21 (19.6)	67 (62.6)	19 (17.8)		9 (8.4)	64 (59.8)	34 (31.8)		107 (41.9)
I can easily ask for money from my friends	Almost always	10 (18.2)	41 (74.5)	4 (7.3)	0.016	9 (16.4)	32 (58.2)	14 (25.4)	0.307	55 (21.5)
	Sometimes	8 (15.1)	28 (52.8)	17 (32.1)		3 (5.7)	29 (54.7)	21 (39.6)		53 (20.7)
	Almost never	33 (22.3)	87 (58.8)	28 (18.9)		21 (14.2)	77 (52)	50 (33.8)		148 (57.8)
I can easily get warmth and caring from my friends	Almost always	42 (21.4)	118 (60.2)	36 (18.4)	0.710	29 (14.8)	103 (52.5)	64 (32.7)	0.601	196 (76.6)
	Sometimes	5 (17.9)	16 (57.1)	7 (25)		2 (7.1)	16 (57.1)	10 (35.8)		28 (11)
	Almost never	4 (12.5)	22 (68.7)	6 (18.8)		2 (6.3)	19 (59.4)	11 (34.3)		32 (12.4)
I can easily get emotional support from my friend	Almost always	41 (21.6)	113 (59.5)	36 (18.9)	0.791	27 (14.2)	100 (52.6)	63 (33.2)	0.778	190 (74.2)
	Sometimes	6 (18.2)	21 (63.6)	6 (18.2)		2 (6.1)	20 (60.6)	11 (33.3)		33 (13)
	Almost never	4 (12.1)	22 (66.7)	7 (21.2)		4 (12.1)	18 (54.6)	11 (33.3)		33 (12.8)

CONCLUSION

Due to the inherent limitation of the cross-sectional study design, we cannot establish the temporal association between PIU and stress/anxiety/depression. That is, we cannot confirm whether PIU led to stress or anxiety or depression or whether PIU was developed as a maladaptive coping mechanism to any of these pre-existing conditions resulting from other factors like academic/ parental pressures etc. Purposive sampling may have limited the generalizability of the results. We recommend future studies with longitudinal designs in larger samples to confirm the association between psychological distress states and problematic internet use. With current restrictions due to ongoing pandemic, internet use and its associated negative mental health impact has come to forefront. Internet use is going to increase and it is collective responsibility of parents, care givers and the teachers

to minimise problematic internet use and its ill effects.

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