# A Study to Assess the Psychological Problems among College Students with Internet Addiction

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## ABSTRACT
Internet addiction is defined as the excessive use of internet, any online-related, compulsive behavior which interferes with normal living and causes severe stress on family, friends, loved ones and one's work environment.In this era of information, internet has made a tremendous impact on the academic activities on the faculty members, researchers and students. The internet has become one of the most important information resources for students. However, addiction to the internet can also have a negative impact on academic performance, family relationships and emotional state among them. Though there is no criterion for classifying it as a disorder, internet addiction is a problematic behavioral addiction among the youth that has led to severally proposed negative bio-psychosocial outcomes for them. Among the various negative outcomes – increased levels of stress and higher rates of depression and anxiety have been found and confirmed by several studies and mental health professionals across the globe.

**Objective:**
**Primary objective:**
- A Study to assess the psychological problems among college students with internet addiction.

**Secondary objective:**
- To determine the prevalence of internet addiction among college students.
- To assess the level of internet addiction among students.
- To assess the level of psychological problems among students with internet addiction.
- To find out the correlation between the internet addiction and selected psychological problems among students with internet addiction.

**Materials and Methods:**A prospective observational study conducted in students among S J M Institution Chitradurga. Out of 250 participants, 135 were pharmacy students, 74 were medical and 41 were dental students. Samples are randomly selected and self-designed questionnaire has been filled.

**Results:**In a total of 250 students, the mean age of participants was 22.76 (SD±2.143) years. Females constituted 144 (57.6%) while males constituted 106 (42.4%) of study population. Prevalence of internet addiction was found to be 83.6%. Among them 110 students (44%) had mild, 89 (35.6%) had moderate and 10(4%) had severe addiction. There was a significant association between internet addiction and depression($r=0.531$), stress ($r=0.508$), and anxiety ($r=0.472$).

**Conclusion:**The present study highlights the vulnerability of professional college students to internet addiction. Internet addiction also seems to be associated with increasing prevalence of depression, anxiety and stress. Internet addiction is a growing problem among students of professional courses, so it is necessary to develop strategies for prevention of internet addiction as well as therapeutic interventions, which is vital for promoting healthy and safe use of the internet.

**Key words:**Internet addiction, Depression, Anxiety, Stress, Depression Anxiety Stress Scales 21, Young's Internet Scale.

## I. INTRODUCTION

In this era of information, Internet has made tremendous impact on the academic activities of the faculty members, researchers and the students.[1] The Internet has become one of the most important information resources for students. However, addiction to the Internet can also have a negative impact on academic performance, family relationships, and emotional state among them.

There has been an enormous growth in the internet usage worldwide particularly in the last decade.[2]

Internet is now one of the most important sources of information for students in institutions of higher learning throughout the world. The development of the Internet has made instantaneous access to much of the entire body of medical information an exciting possibility. It has evolved as a popular medium for delivering educational materials. The Internet has been used for medical education in diverse ways including teaching, diagnosis of diseases, conduct of medical examinations and for research activities. More than half of the respondents in a survey conducted by Podichetty and colleagues claimed that web information influenced their health care decisions. Addictive use of internet is fast becoming significant problem worldwide and university students are particularly vulnerable for the reason that internet use is an integral part of student life.[3]

IA is defined as a pathological pattern of internet use, which is also described as internet dependence, compulsive internet use, problematic internet use, internet abuse, and pathological internet use. The user cannot self-control the use of internet, resulting in significant impairments at school, home, work, health or interpersonal relationships. They may find it difficult to stop using the internet due to its anonymity, convenience and accessibility and may use it as a way to escape reality. The types of activity involved in IA include online gaming, social networking, online gambling, online shopping, virtual sex and information overload.[4]

Dr. Ivan Goldberg suggested the term "internet addiction" in 1995 for pathological compulsive internet use. Excessive internet use was closely linked to pathological gambling by Young who adapted the DSM IV criteria to relate to internet use in the internet addiction test (IAT) developed by her.[5] Social pathologists, psychologists and education experts are aware of the potential negative impacts of excessive Internet usage and the related physical and psychological problems. People who lose control over their actions in life, and in general, spend more than 38 hours a week online, are considered to have an Internet addiction.[6]

India is ranked as the second largest online market in the world, behind China with over 560 million internet users. By 2021, it is predicted there will be over 600 million internet users in India. The use of internet is both beneficial and detrimental to the user's health. Internet addiction hassled to an increase in mental health disorders. Internet addiction is not only affecting the quality and duration of sleep, it is also leading to a higher incidence of insomnia, psychiatric disorders such as depression, anxiety, alcohol addiction, and attention deficit in college students. It has also negatively influenced the duration of bedtime sleep, caused daytime fatigue, and impaired work performance. Internet addiction is a major contributor to anxiety and stress, impaired quality of life, lack of physical activity, trouble in communication and interaction with others in a healthy, positive, and meaningful way.[7]

College students are especially vulnerable to developing dependence on the Internet, more than most other segments of the society. This can be attributed to several factors including the following: Availability of time; ease of use; unlimited access to the Internet; the psychological and developmental characteristics of young adulthood; limited or no parental supervision; an expectation of Internet/computer use implicitly if not explicitly, as some courses are Internet-dependent, from assignments and projects to communication with peers and mentors; the Internet offering a route of escape from exam stress, all of which make Internet overuse a significant cause of concern for parents and faculty.[8]

Due to the lack of parental control and the feeling of independence, adolescents and young adults are at high risk of behavioral addictions. A study reported that college students are a group that may be particularly vulnerable to internet addiction.[9]

## II.  MATERIALS AND METHODS

**Study Design**:
This was a questionnaire based prospective observational study.

**Study Site**:
This study was conducted among students of selected SJM Institutes (Medical, Pharmacy, and Dental) in Chitradurga, Karnataka.

**Study Period**:
Study was conducted for a period of six months.

**Study Subject**:
Healthcare students from selected SJM Institutes (Medical, Pharmacy, Dental) Chitradurga, Karnataka who met the following criteria:

**Inclusion Criteria**:
- Random healthcare students from Medical Pharmacy, Dental courses of SJM Institutes.
- Both male and female students.

- Age ≥ 18 years.
- Students who have been using internet at least for a period of 6 months.

**Exclusion Criteria:**
- Students who were not willing to participate in the study.

**Ethical Approval:**
The study was approved by the Institutional Ethical Committee of SJM College of Pharmacy, Chitradurga.
Ref. No: SJMCP/682/2021-2022

**Sources of Data:**
- Data was collected using questionnaire based on online survey.

**Study Procedure:**
- A six month prospective observational study was carried out in Dental, Pharmacy and Medical Colleges of SJM Institutes in Chitradurga.
- A Pre-tested, validated, self-administered, structured questionnaire was used for data collection. The questionnaire was in English, containing questions to record socio-demographic characteristics such as name,age,gender. Data pertaining to internet addiction and depressive symptoms were also collected using 2 validated and reliable questionnaires, namely(1) Young Internet Addiction Test (YIAT) and

(2) Depression Anxiety Stress Scale 21(DASS-21)
- A semi-structured questionnaire was distributed among the students and informed consent was given.

Approval for this study was granted by the institutional Ethics Committee (IEC).
- Data is collected and entered in Microsoft Excel sheet which is analyzed using appropriate statistical methods.

**Statistical Evaluation of Data:**
Descriptive statistical analysis has been carried out in the present study. Data are presented as mean± standard deviation (SD) and as frequency distribution. The statistical analysis was performed using the IBM SPSS Data Analysis Version 22.0. Chi-square test and Pearson correlation test was applied.

## III.    RESULTS
A total number of 250 responses were recorded, where the questionnaire was designed to assess the psychological problems among college students with internet addiction. The objectives of the study were to assess the prevalence of internet addiction, level of internet addiction, level of psychological problems and to find out the correlation between the internet addiction and psychological problems among students of selected SJM Institutes. Therefore, the following are study results bases on objectives of the study.

**DEMOGRAPHICS**
**3.1. Age wise Distribution**
Regarding age, majority 61.6(61.6%) of students were in the age group of 18-23 years, and 38.4(38.4%) were in the age group 24-29 years. The mean age of the students was 22.76 (±2.143) years. The results are shown in

**Table 1: Details of age group distribution (n=250)**

| Sl. No | Age  Group (Yrs.) | Frequency | Percent |
|--------|-------------------|-----------|---------|
| 1 | 18-23 | 154 | 61.6 |
| 2 | 24-29 | 96 | 38.4 |
| **TOTAL** | | **250** | **100** |

**Table 2: Details of mean scores on age**

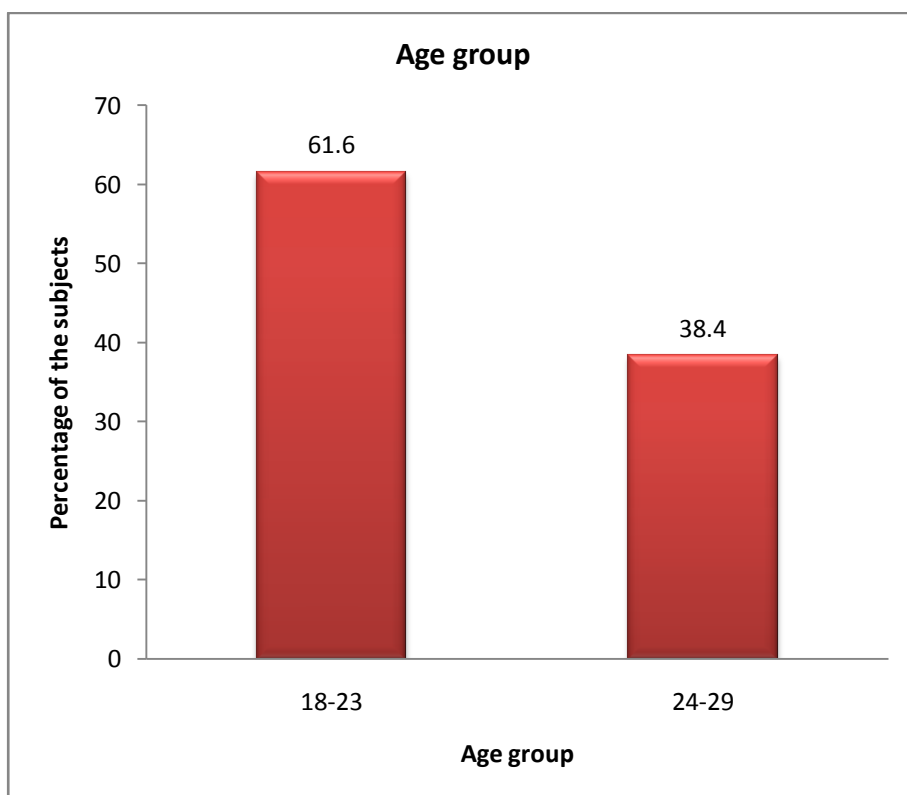| Level of internet addiction | Mean | N | Standard deviation |
|-----------------------------|------|---|--------------------|
| Mild | 22.88 | 110 | 2.071 |
| Moderate | 22.71 | 89 | 2.222 |
| Normal | 22.39 | 41 | 1.948 |
| Severe | 23.50 | 10 | 2.915 |
| **Total** | **22.76** | **250** | **2.143** |

**Fig 1: Graph shows details of age group distribution**

### 3.2. Gender wise Distribution

Out of 250 subjects 144 (57.6%) were females and 106 (42.4%) were males. The result are shown in table no.3 followed by graphically represented in figure no.2

**Table 3: Details of gender wise distribution (n=250)**

| Sl. No | Gender | Frequency | Percent |
|--------|--------|-----------|---------|
| 1 | Males | 106 | 42.4 |
| 2 | Females | 144 | 57.6 |
| **TOTAL** | | **250** | **100** |
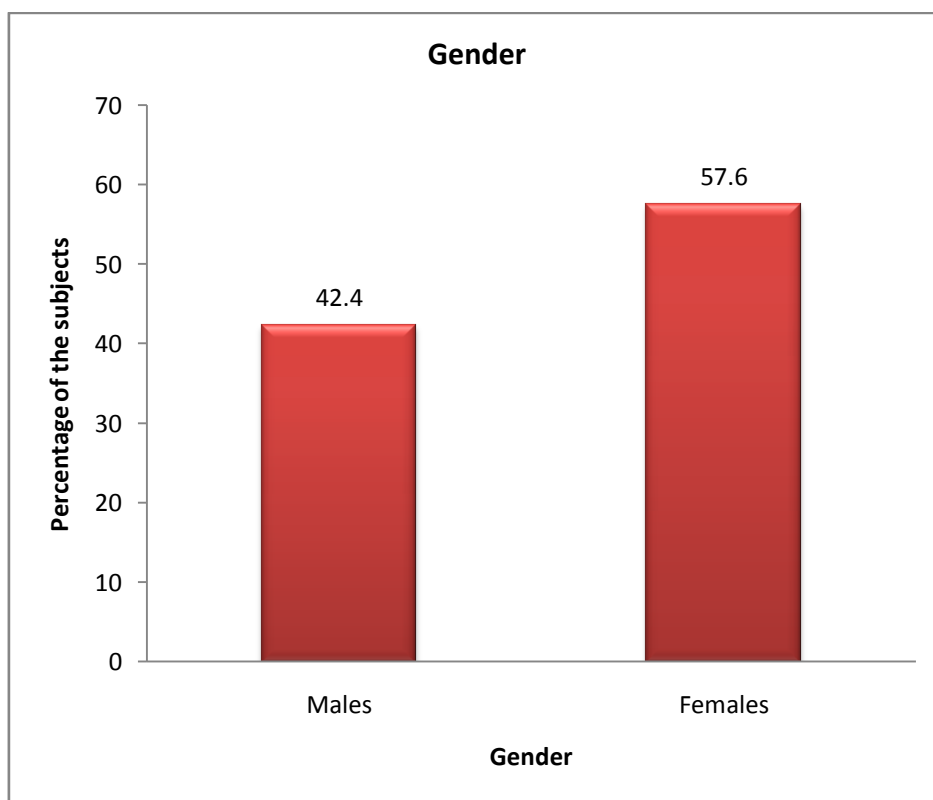
**Fig 2: Graph shows details of gender wise distribution**

**3.3.Details of categorization of age group v/s gender**

Out of 144 females, 96 (66.7%) were in the age group between 18-23 years and 48 (33.3%) were in the age group between 24-29 years. In 106 males, 58 (54.7%) were in the age group between 18-23 years and 48 (4.52%) were in the age group between 24-29 years.

**Table 4: Details of categorization of age group v/s gender distribution**

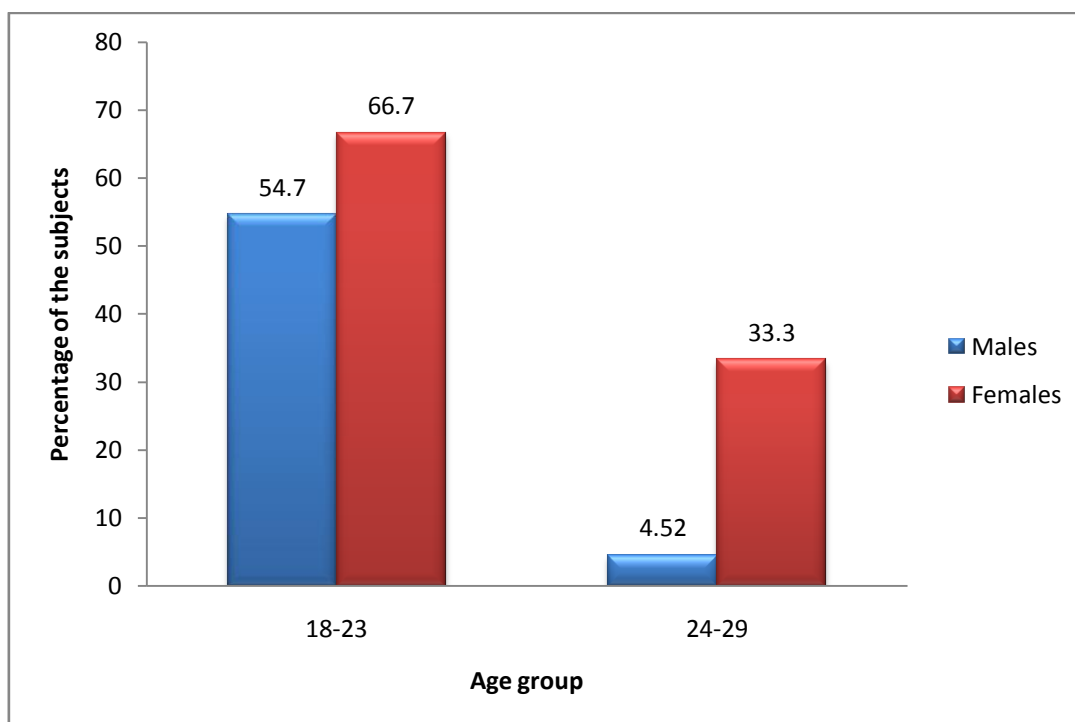| Age Group | Males | | Females | |
|---|---|---|---|---|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| 18-23 | 58 | 54.7 | 96 | 66.7 |
| 24-29 | 48 | 4.52 | 48 | 33.3 |
| **TOTAL** | **106** | **100** | **144** | **100** |

**Fig 3: Graph shows details of age group v/s gender distribution**

### 3.4.Details of course wise distribution

Out of 250 subjectsmajority 135 (54%) were pharmacy students, 74 (29.6%) were medical students and 41 (16.4%) were dental students. The results are shown in table no.5 followed by graphically represented in figure no.4

**Table 5:Details of course wise distribution (n=250)**

| Sl. No | Course | Frequency | Percent |
|--------|--------|-----------|---------|
| 1 | Dental | 41 | 16.4 |
| 2 | Medical | 74 | 29.6 |
| 3 | Pharmacy | 135 | 54.0 |
| **Total** | | **250** | **100** |
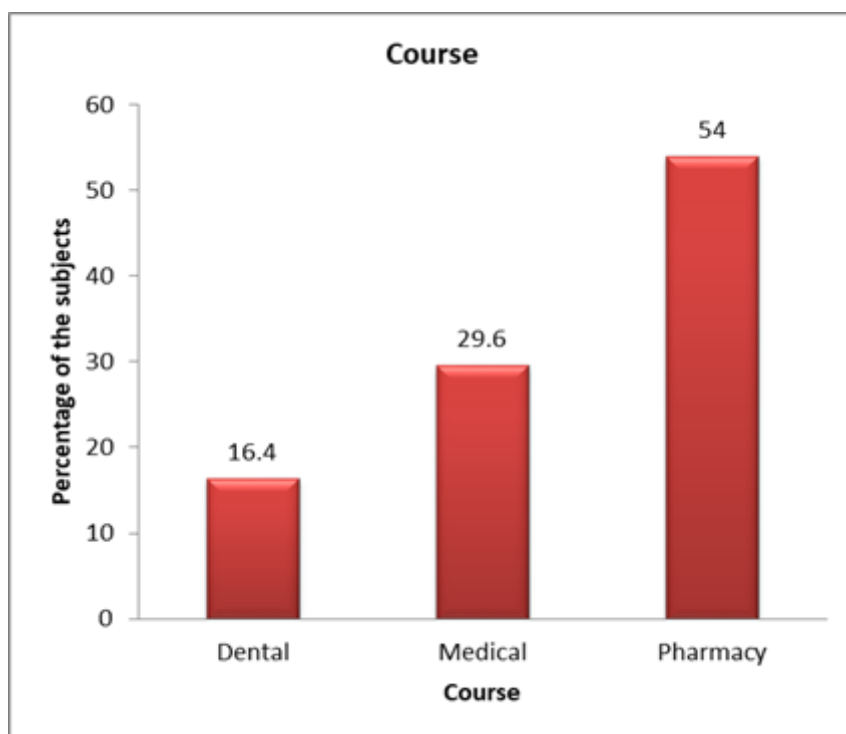
**Fig 4: Graph shows details of course wise distribution**

### 3.5. Details of course v/s gender distribution

Out of 41 dental students 15(14.2%) belongs to male and 26(18%) belongs to female. Out of 74 medical students 34(32%) belongs to male and 40(27.8) belongs to female. And out of 135 pharmacy students 57(53.8%) belongs to male and 78(54.2%) belongs to female category. The results are shown in table no.6 followed by graphically represented in figure no.5

**Table 6: Details of course v/s gender distribution**

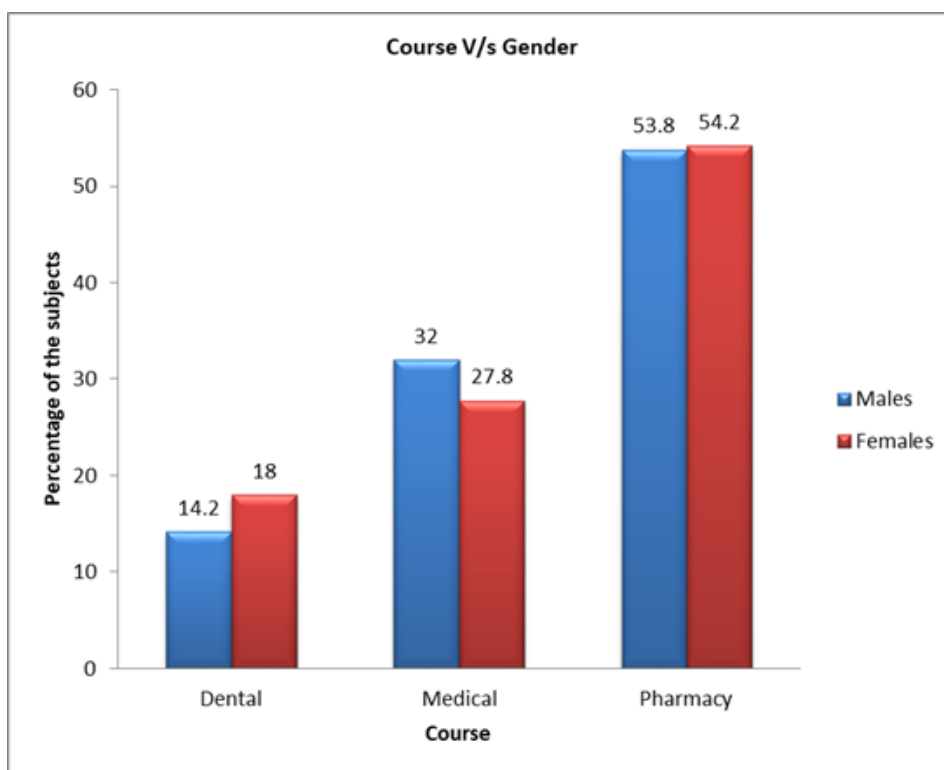| Age group (Yrs.) | Males | | Females | |
|---|---|---|---|---|
| | Freq. | (%) | Freq. | (%) |
| Dental | 15 | 14.2 | 26 | 18.0 |
| Medical | 34 | 32.0 | 40 | 27.8 |
| Pharmacy | 57 | 53.8 | 78 | 54.2 |
| Total | 106 | 100 | 144 | 100 |

Fig 5: Graph shows details of course v/s gender distribution

### 3.6. Details of course v/s age group distribution

Among dental students 19(12.3%) were in the age group between 18-23 years and 22 (23%) of the students were in the age group between 24-29 years. Among medical students 39 (25.4%) were in the age group between 18-23 years and 35 (36.4%) were in the age group between 24-29 years. And 96 (62.3%) of pharmacy students were in the age group between 18-23 years and 39 (40.6%) were in the age group between 24-29 years. The results are shown in table no.7 followed by graphically represented in figure no.6

### Table 7: Details of course v/s age group distribution

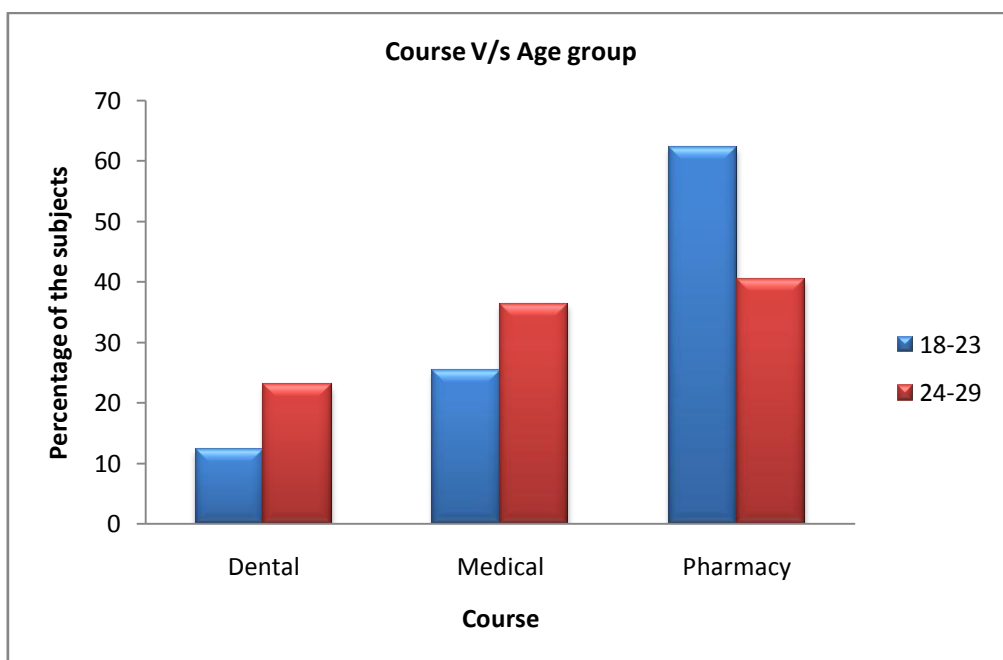| Age group (Yrs.) | 18-23 Yrs. | | 24-29 Yrs. | |
|---|---|---|---|---|
| | Freq. | (%) | Freq. | (%) |
| **Dental** | 19 | 12.3 | 22 | 23.0 |
| **Medical** | 39 | 25.4 | 35 | 36.4 |
| **Pharmacy** | 96 | 62.3 | 39 | 40.6 |
| **Total** | **154** | **100** | **96** | **100** |

**Fig 6: Graph shows details of course v/s age group distribution**

### 3.7.Objective-1:
**To determine the prevalence of internet addiction among college students**
The total population=250
Subjects with internet addiction (Mild, moderate and severe) is =209.
For correlation statistics we can assess only to 209 rather than 250
Prevalence: Cases/total population*100
=209/250*100
=83.6%
Conclusion: Every 1 in 3 individuals who use internet has HIGH chances to get addicted.

### 3.8.Objective-2:
**To assess the level of internet addiction among students**
**Internet addiction:**
The result shows that out of 250 students,16.4(16.4%) students were normal internet user, majority of students 44(44%) had mild internet addiction, 35.6(35.6%) had moderate internet addiction, and 4(4%) had severe internet addiction.
(All the scores of subjects with respect to questionnaire are combined and calculated)
Test scores: (n=250)

**Table 8: Frequency and percentage distribution among students with level of internet addiction**

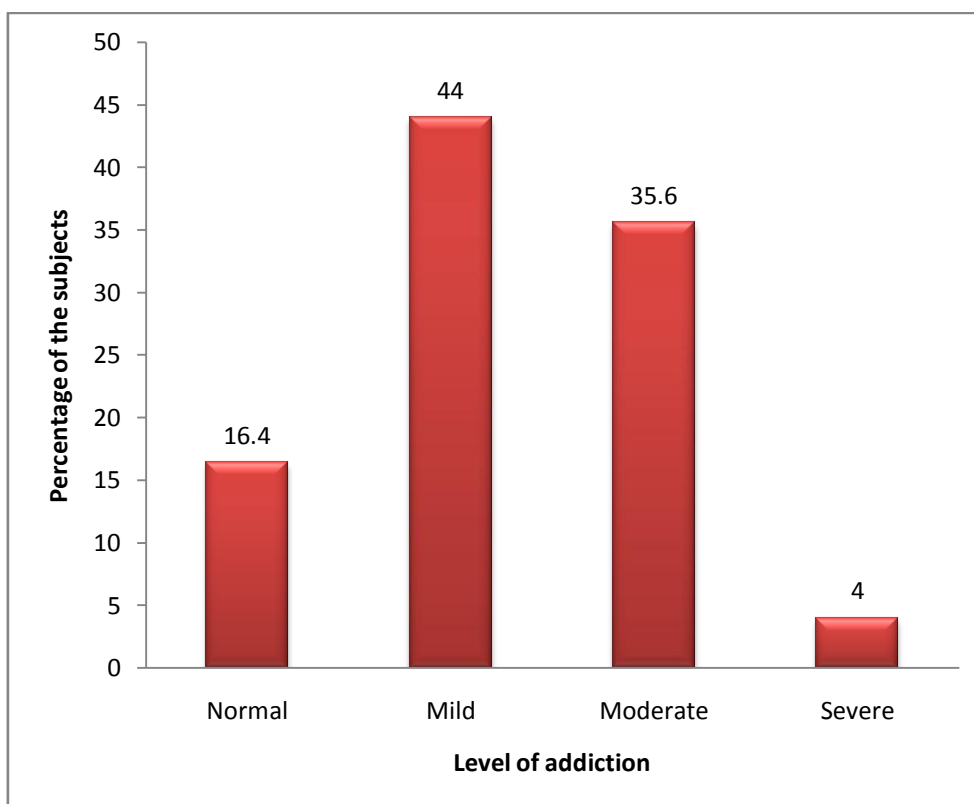| Level of addiction | Frequency | Percentage |
|---|---|---|
| **Normal** | **41** | **16.4** |
| **Mild** | **110** | **44.0** |
| **Moderate** | **89** | **35.6** |
| **Severe** | **10** | **4.0** |
| **TOTAL** | **250** | **100** |

**Fig 7: Graph shows level of internet addiction of the participants**

### 3.9. Objective-3:
**To assess the level of psychological problems among students with internet addiction**
**Depression interpretation:**

Regarding frequency and percentage of level of depression among students with the level of internet addiction, in mild level of internet addiction 29(29%) were normal, 16(16%) had mild depression, 22(22%) had moderate depression, 8(8%) had severe depression and 5(5%) had extremely severe depression. In moderate level of internet addiction 18(18%) were normal, 18(18%) had mild depression, 59(59%) had moderate depression, 11(11%) had severe depression and 13(13%) had extremely severe depression. In severe level of internet addiction 1(1%) had severe depression and 9(9%) had extremely severe depression.

It was inferred that majority 59(59%) had moderate depression in moderate level of internet addiction and least 1(1%) had severe depression in severe level of internet addiction. It was inferred that as the level of internet addiction increases, the severity of depression also increases.
(All the scores of subjects with respect to questionnaire are combined and calculated)
Test scores: (n=209)

**Table 9: Frequency and percentage distribution of depression with level of internet addiction among students**

| Level of depression | Level of Internet Addiction | | |
|---|---|---|---|
| | **Mild** | **Moderate** | **Severe** |
| | | | |

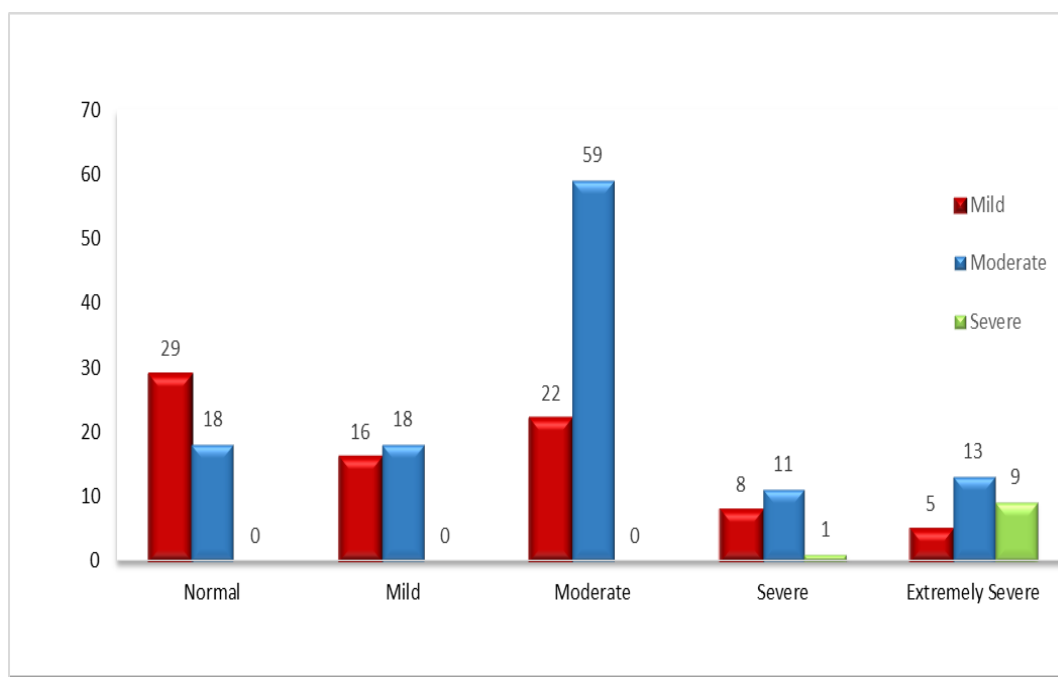|  | f | % | f | % | f | % |
|---|---|---|---|---|---|---|
| **Normal** | 29 | 29 | 18 | 18 | 0 | 0 |
| **Mild** | 16 | 16 | 18 | 18 | 0 | 0 |
| **Moderate** | 22 | 22 | 59 | 59 | 0 | 0 |
| **Severe** | 8 | 8 | 11 | 11 | 1 | 1 |
| **Extremely Severe** | 5 | 5 | 13 | 13 | 9 | 9 |



**Fig 8: Level of depression among students with internet addiction**

**Anxiety interpretation:**
Regarding frequency and percentage of level of anxiety among students with level of internet addiction, in mild level of internet addiction 8(8%) were normal, 10(10%) had mild anxiety, 19(19%) had moderate anxiety, 63(63%) had severe anxiety and 13(13%) had extremely severe anxiety. In moderate level of internet addiction 29(29%) were normal, 9(9%) had mild anxiety, 25(25%) had moderate anxiety, 8(8%) had severe anxiety and 18(18%) had extremely severe anxiety. In severe level of internet addiction 7(7%) all had mild anxiety.

It was inferred that majority 63(63%) had severe anxiety in mild level of internet addiction and least 7(7%) had mild anxiety in severe level of internet addiction. It was inferred that as the level of internet addiction increases, the severity of anxiety also increases

(All the scores of subjects with respect to questionnaire are combined and calculated)
Test scores: (n=209)

**Table 10: Frequency and percentage distribution of anxiety with level of internet addiction among students**

| LEVEL OF ANXIETY | LEVEL OF INTERNET ADDICTION | | | | | |
|---|---|---|---|---|---|---|
| | MILD | | MODERATE | | SEVERE | |
| | f | % | f | % | f | % |
| NORMAL | 8 | 8 | 29 | 29 | 0 | 0 |
| MILD | 10 | 10 | 9 | 9 | 7 | 7 |
| MODERATE | 19 | 19 | 25 | 25 | 0 | 0 |
| SEVERE | 63 | 63 | 8 | 8 | 0 | 0 |
| EXTREMELY SEVERE | 13 | 13 | 18 | 18 | 0 | 0 |
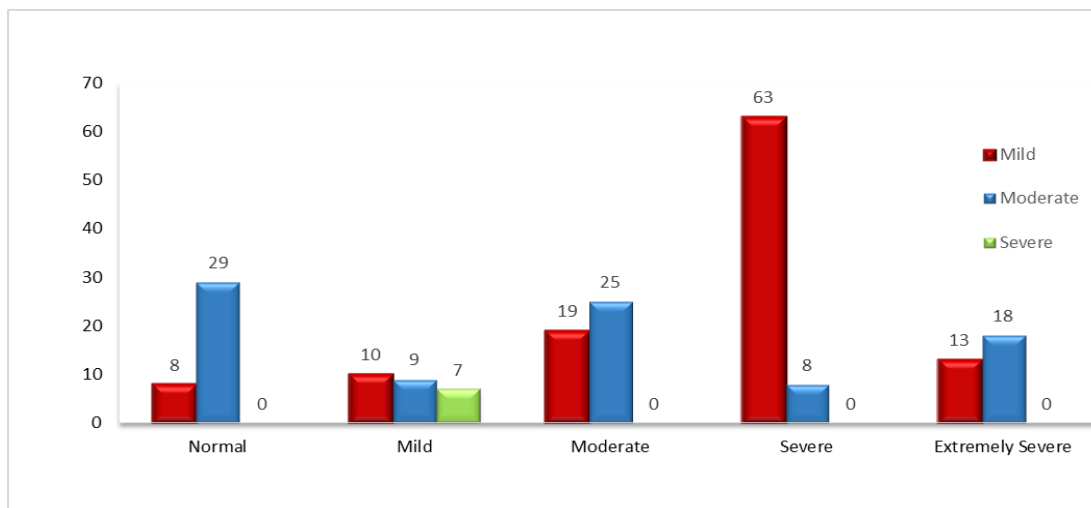


**Fig 9: Level of anxiety among students with internet addiction**

**Stress interpretation:**
Regarding frequency and percentage of level of stress among students with level of internet addiction, in mild level of internet addiction 14(14%) were normal, 7(7%) had mild stress, 16(16%) had moderate stress, 2(2%) had severe stress and 2(2%) had extremely stress. In moderate level of internet addiction 47(47%) were normal, 83(83%) had mild stress, 15(15%) had moderate stress, 10(10%) had severe stress and 3(3%) had extremely severe stress. In severe level of internet addiction 1(1%) had mild stress, 4(4%) had severe stress and 5(5%) had extremely severe stress.

It was inferred that majority 83(83%) had mild stress in moderate level of internet addiction and least 1(1%) had mild stress in severe level of internet addiction. It was inferred that as the level of internet addiction increases, the severity of stress also increases.

(All the scores of subjects with respect to questionnaire are combined and calculated)

Test scores: (n=209)

**Table 11: Frequency and percentage distribution of stress with level of internet addiction among students**

| LEVEL OF STRESS | LEVEL OF INTERNET ADDICTION | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | MILD | | MODERATE | | SEVERE | |
| | f | % | f | % | f | % |
| NORMAL | 14 | 14 | 47 | 47 | 0 | 0 |
| MILD | 7 | 7 | 83 | 83 | 1 | 1 |
| MODERATE | 16 | 16 | 15 | 15 | 0 | 0 |
| SEVERE | 2 | 2 | 10 | 10 | 4 | 4 |
| EXTREMELY SEVERE | 2 | 2 | 3 | 3 | 5 | 5 |
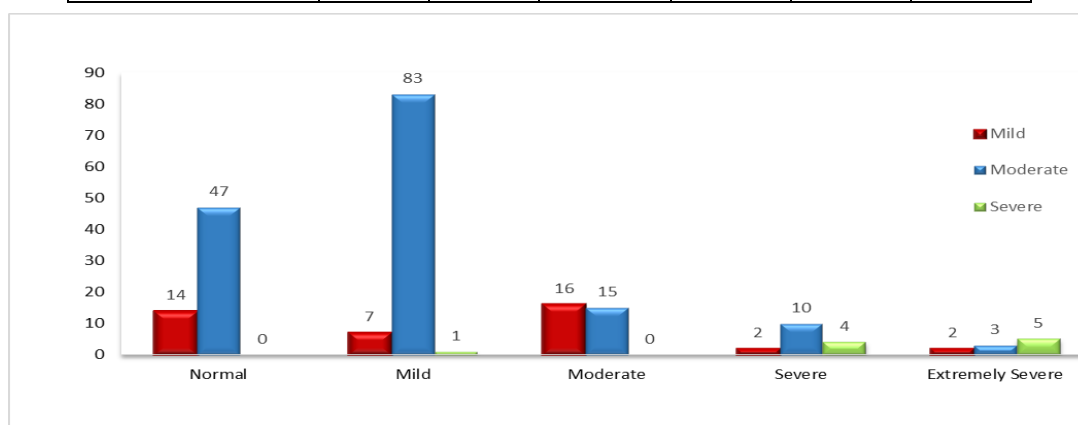


**Fig 10: Level of stress among students with internet addiction**

**3.10. Objective 4: To find out the correlation between the internet addiction and selected psychological problems among students with internet addiction.**

Table no.12 shows the result from Pearson Correlation test between internet addiction with depression (r = 0.531, p =0.000), anxiety (r = 0.472, p=0.000), stress (r = 0.508, p=0.000). From these results it can be seen that there is a relationship between internet addiction with depression, anxiety and stress. This means that along with increasing of depression, anxiety and stress score, it will also increase the internet addiction score on the subject of research. On the other hand, the table also showed that depression has positive correlation with anxiety and stress with a high correlation value (anxiety r = 0.802, p=0.000, stress r = 0.832, p=0.000). This means that the higher the depression score will be followed by the high score of anxiety and stress of the subject. A positive relationship with a high correlation value was also found in anxiety with stress (r = 0.829, p=0.000) which means higher

anxiety score followed by a high-stress score on the subject.

From these results we can conclude that there is a correlation between internet addictions with three variables although the value of the relationship is varied. The correlation value of internet addiction with depression is greater than the correlation value of other variables (r = 0.531, p=0.000). On the other hand, the smallest correlation value is found in the correlation between internet addiction with anxiety (r = 0.472, p=0.000).

**Table 12: Correlation statistics between Psychological factors and Internet addiction (n=209)**

|  |  | Addiction | Depression | Anxiety | Stress |
|---|---|---|---|---|---|
| Internet Correlation Addiction | Pearson Sig.(2-tailed) N | 1 <br><br> 209 | .531** <br> .000 <br> 209 | .472** <br> .000 <br> 209 | .508** <br> .000* <br> 209 |
| Depression Correlation | Pearson Sig.(2-tailed) N | .531** <br> .000 <br> 209 | 1 <br><br> 209 | .802** <br> .000 <br> 209 | .832** <br> .000 <br> 209 |
| Anxiety Correlation | Pearson Sig.(2-tailed) N | .472** <br> .000 <br> 209 | .802** <br> .000 <br> 209 | 1 <br><br> 209 | .829** <br> .000 <br> 209 |
| Stress Correlation | Pearson Sig(2-tailed) N | .508** <br> .000 <br> 209 | .832** <br> .000 <br> 209 | .829** <br> .000 <br> 209 | 1 <br><br> 209 |

**Correlation is significant at the 0.01 level (2-tailed)

**Table 13: Test Statistics between Psychological factors and Internet addiction**

|  | Internet Addiction | Depression | Anxiety | Stress |
|---|---|---|---|---|
| Chi-Square <br> df <br> Asymp. Sig. | 85.469[a] <br> 55 <br> .003 | 87.512[b] <br> 20 <br> .000 | 121.048[c] <br> 19 <br> .000 | 93.943[d] <br> 20 <br> .000 |

a. 56 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 3.7.
b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.0.
c. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.5.

**Conclusion:**

Perfect positive correlation, suggests as internet addiction is directly proportional to psychological factors (Increase in Internet addiction increases the psychological factors Depression, Anxiety, Stress).

## IV. DISCUSSION

In this study, we tried to find the prevalence of Internet addiction and its various correlates among students of three selected colleges in Chitradurga district, Karnataka, and to find the association between this addiction to the Internet and depression, anxiety, and stress. Our study showed that 250 undergraduate students participated among whom 209 students showed addiction to internet. 57.6% were females and 42.4% were males. Prevalence of internet addiction was 83.6%.An analysis of the various grades of mild, moderate and severe addiction showed that 44% of the respondents had mild, 35.6% had moderate and 4% had severe addiction.A larger number of the study participants were girls.This could have been due to the sex ratio in the classroom that showed a higher female preponderance.

Excessive use of internet is one of the major problems in today's society.Therefore,several studies have been conducted in different age groups to determine the prevalence of internet addiction.Several studies have reported a wide range of internet addiction.The study done by Sohail M et al reported prevalence of 79% with 36% mild,41% moderate and 2% severe addiction in his study.[63]A study conducted by Ahmer Z in Karachi reports 15% normal users,65.5% mild,18.5% moderate and 0.9% severe addiction making the overall burden of addiction to about 85%.[64]A study conducted in India and Nepal reported IA prevalence of 84.6% & 56.5% respectively.[65] Not everyone has an addiction but the people in the category of moderate addiction are the vulnerable people who may fall a prey to severe IA if the environmental factors are unfavourable.

## V. CONCLUSION

Internet addiction is an emerging health issue among youth. The findings of the study showed that most of the students with internet addiction had psychological problem, majority of them were suffering with stress, depression and anxiety respectively. The psychological effects associated with internet addiction if left unattended shall definitely compromise the mental and physical well-being of the youth adding to the burden of non-communicable disease in the society. Early intervention by teaching the young on time management, self-discipline and self-control is more essential in cultivating a positive attitude towards internet use.

By this present study we can conclude that there is significant link between internet addiction and anxiety, depression and stress levels. Higher the addiction, higher the chance of emotional factors being disturbed and leading to depression, anxiety and stress.

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