

# A study on depression and sleep disturbance among youth in the age group of 20-25 years in Raipur, Noida

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**Abstract-** Depression is one of the major public health issues. Depression is considered as a major public health problem and it stand in the fourth position among the worldwide burden of diseases. And it is believed that it will rank 2nd position by 2020. 340 million people over 18 years of age go through depressive disorder that is responsible for high rate of suicide among youth. College going students are at risk for developing psychological illness, Most of the people develop depressive symptom during their college days, it is seen that most of the college students feel sadness, hopeless, irritability, lack of interest occasionally, this is a general concern but, if depression is untreated for long time it affect day to day activities of a person and affect both physical and mental health and sleep also. In view of above, the study has been conducted to assess the depression level among youth, sleep pattern among youth, association between depression and sleep disturbance among youth, gender difference between depression and sleep disturbance among youth, contributing factors (age, education, caste, family type, family income) associated with depression and sleep disturbance.

## I. INTRODUCTION

Both depression and sleep disturbance among youth is a major public health issue. Youth are the most sleep disturbed population, It is seen that most of the youth are suffering from sleep disturbance like insomnia, daytime sleepiness etc. and do not get required amount of sleep, specially college or university students are most targeted population of sleep related problems due to various academic pressure, stress etc. which affect their mental as well as physical health. Youth with sleep disturbance have serious impact on their study and health; it causes lack of concentration in study, stress, depression, weakness, anger, headache, poor mental health etc which is a serious concern for health. In 2000 a study report that in china 16.9 percent of sample had sleep disturbance (Lan et al; 2014). prevalence of sleep disturbance differ from 11.8 percent in Nigeria to 27 percent in the United States and 37 percent in France and Italy (Kidwai et al; Pakistan Association for Mental Health, Karachi, Pakistan, 2013). Sleep disturbance and sleep deficiency affect a person's mental, interpersonal, and somatic health of a person, adolescents having sleep disturbance show more symptom of depression, anxiety, anger, poor attention and behavior problems, substance use, poor learning activity, and suicidal feelings and also more fatigue, weakness, poor perceived health, and symptoms such as headaches, abdominal pain, and backache, laboratory studies found that tiredness and day time sleepiness is a outcome of sleep deficiency (Robert E. et al; 2014).

Mental health is also very important among youth, a sound mental health have good impact on entire health of a person. Poor mental health like Depression is another serious issue faced by youth. Youth suffer from depressive symptoms due to various academic related pressure, financial problems, career or job related issue, complicated relationship, inability to adjust in a new environment, etc. depression among youth have negative impact on mental and physical health and day to day activities, life style etc. person suffering from depression have tendency to suicide, alcohol and drug abuse, involve in various illegal issues to relieve depression, loss of appetite, guiltiness, etc that affect their health. If an adolescent suffer from depression in their early life it can lead to serious health problems in later life, for example depression can lead to development of various health problems it affect whole body, immunity system, causes heart problems, high glucose level, it also affect Brain, develop cardio vascular diseases, etc. one of the most serious consequence of depression and sleep disturbance is suicide or death among youngsters, which is a serious problem. College going students are at risk for developing psychological illness, Most of the people develop depressive symptom during their college days, it is seen that most of the college students feel sadness, hopeless, irritability, lack of interest occasionally, this is a general concern but, if depression is untreated for long time it affect day to day activities of a person and affect both physical and mental health. (National Institute of Mental Health, 2012)

Depression show serious health consequence. Studies conducted on depression reported that people suffering from depression are at risk of smoking, alcoholism etc (Cranford et al; 2009). And mainly women who involve in drinking due to depression frequently experience alcohol abuse, unsafe sex etc (Weitzman et al; 2004). depression is co related to substance abuse (Griswold et al; 2008). Depression is considered as a one of the leading reason for suicide among youth. (Garlow et al; 2008).

Suicide is the third leading reason of death for youth and young adults between 15 to 24 years of age (National Institute Of Mental Health; 2015). It is found that about 60% of all suicides showed a history of depression (Peng et al; 2014). Sleep disturbance has composite relations with depression; sleep disturbance which can consist of excess or lack of sleep, as well as disturbed sleep is a general physical symptom in major depressive disorder (MDD), sleep disturbance is a risk factor for the development of depressive episodes. And also considered as to be a major symptom of MDD (Maren et al; 2014). Studies conducted in adult populations reported that insufficient sleep period was indicate that the person have depressive symptoms act as risk factor for recurrence of depression. (Chang et al;

2012).depression is the major and most steady risk factors for insomnia, on the other hand, insomnia is a common symptom of depression, and it is usually considered to be a risk factor of depression (Daniel J. et al; 2008).

Many study has been conducted on depression and sleep disturbance among youth, but very few study has been conducted in India among youth, Depressive symptoms are a widespread and disabling state among youth and result in emotional distress and sleep disturbance; therefore, it is important for us to focus on this problem.

### Objectives:

#### Primary objective:

- To find out the association between depression and sleep disturbance among youth in the age group of 20-25 years in Raipur, Noida.

#### Secondary objectives:

- To determine depression level among youth between 20-25 years.
- To find out sleep pattern among youth between 20-25 years.
- To find out association between depression and sleep disturbance among youth.
- To determine gender difference between depression and sleep disturbance among youth.
- To determine contributing factors (age, education, caste, family type,family income) associated with depression and sleep disturbance.

## II. BRIEF REVIEW OF THE RESEARCH

1. A cross sectional study was conducted on “Evaluation of depressive symptoms and sleep alterations in college students” among 340 (53%) females and 298 (47%) males at the Autonomous University of Yucatan, Merida (mean age 20.2 +/- 2.6 years), where they were asked to complete questionnaire on depression and sleep habits. The result of the study reported that there is a positive relation between depression and sleep alteration. This relation was statistically significant ( $P < 0.05$ ).It was found that in comparison of without depression, students with depression had more poor sleep quality.Most of the sample shows sleep disturbance and it was severe among those with depression.(Moo-Estrella et al; 2005).
2. A longitudinal study was conducted on “Prevalence, Course, and Comorbidity of Insomnia and Depression in Young Adults” on 4547 subjects (2201 men, 2346 women) representative of the canton of Zurich in Switzerland where they are asked to complete a self reported questionnaire; they reported that increasing prevalence of insomnia was 27% for female 12% in male. It was found that insomnia was increasing with age and there is a positive relationship between depression and insomnia. (Daniel J et al; 2008).
3. A study titled“Depression among Brazilian adolescents: A cross-sectional population-based study” was conducted among 743 adolescents of 10-19 years age in

southern Brazil, where they were interviewed and asked to complete Patient Health Questionnaire. The result of the Study reported prevalence of minor depression was 17.0% and it was more prevalent among girls than boys, and among those between 14- 15 years and those who were smokers and live with person having depression (Munhoz et al; 2015).

4. cross sectional study was conducted titled “Sleep habits in adolescents of Saudi Arabia; distinct patterns and extreme sleep schedules” among 1035 high school students, between 14-23 years of age, in Jeddah, Saudi Arabia where students were asked to complete a self reported questionnaire on sleep habits, individual data, academic performance.the result of the study found that prevalence of sleep disturbance was 65% and it was more prevalent among males, and sexual category, stress, type of school, and caffeine use was contributing factors of sleep disturbance(Merdad et al; 2014).

## III. ANALYSIS AND DISCUSSION

**Methods:** A descriptive cross sectional study among 203 youths of the college in the age group 20-25 years residing as paying guest in Raipur, Noida, Uttar Pradesh studying in college has been conducted. The sampling technique adopted was convenient Sampling Technique. A structured and pretested self administered questionnaire was prepared to collect the data. The questionnaire was prepared in English language for better understanding of the questionnaire by the students.

#### Statistical analysis:

Study forms was scrutinized and coded before entering in the computer. The data was coded to ensure the confidentiality of data. Collected data was tabulated in Microsoft excel sheet and analyzed using the software ‘Statistical package for social science’ (SPSS). The entered data was verified and checked for data errors during coding and data entry. The group characteristics were presented in frequency and proportions. Chi-square test and ANOVA was used to find out association between depression and sleep disturbance. P value less than 0.05 is considered statistically significant.

Results:

#### Profile of the respondents

**Table 1: Frequency and percentage of sample characteristics of the respondents**

Sample characteristics	Frequency(N=203)	Percentage (%)
Gender of respondent		
Male	110	54.19
Female	93	45.81
Age of respondent		
20 years	86	42.36
21 years	20	9.85
22 years	10	4.93
23 years	50	24.63
24 years	24	11.82
25 years	13	6.40

Education of the respondent		
Graduate	155	76.35
Post graduate	48	23.65
Family type		
Nuclear	167	82.27
Joint	33	16.26
Missing	3	1.48
Caste of the respondent		
General	180	88.67
OBC	16	7.88
ST	4	1.97
SC	3	1.48
Family income		
10- 59k	99	48.76
60- 99k	48	23.64
1-> 3 lakh	42	20.68
Missing	14	6.90

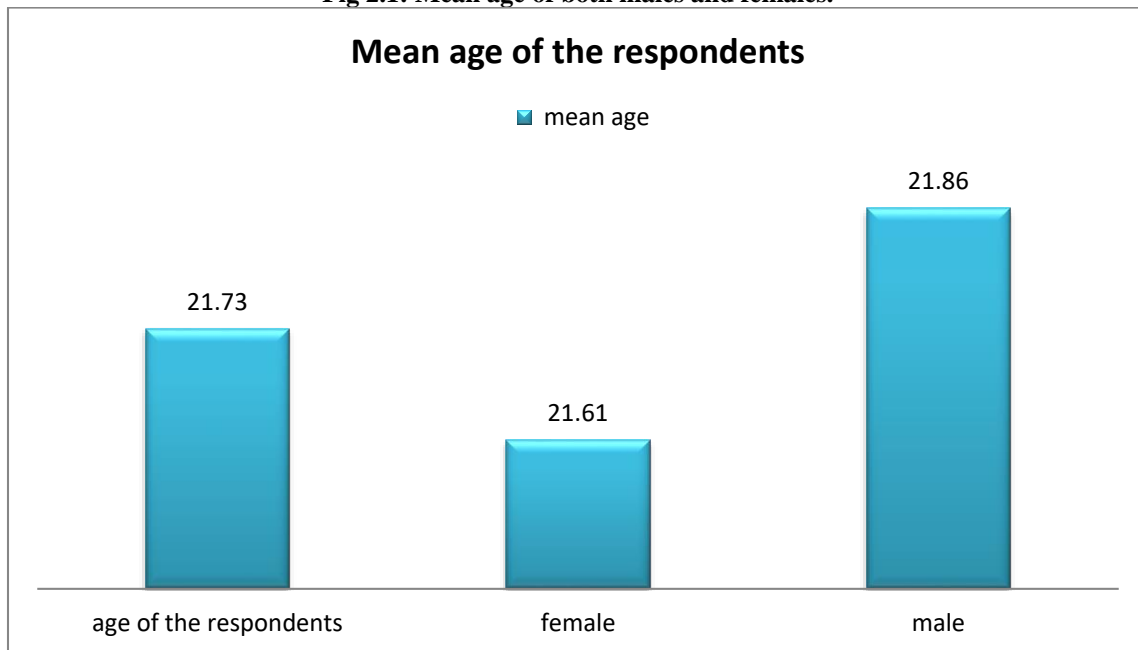
**2) Mean age of the respondents**

Table 2 shows that the mean age of the respondents is 21.73 ± 1.74, among which mean age of the female respondent is 21.61 and those of male respondent is 21.86.

**Table 2: Mean age of both male and female respondents.**

Variable	Mean
Age of the respondents	21.73 ± 1.74
gender	
female	21.61
male	21.86

**Fig 2.1: Mean age of both males and females.**



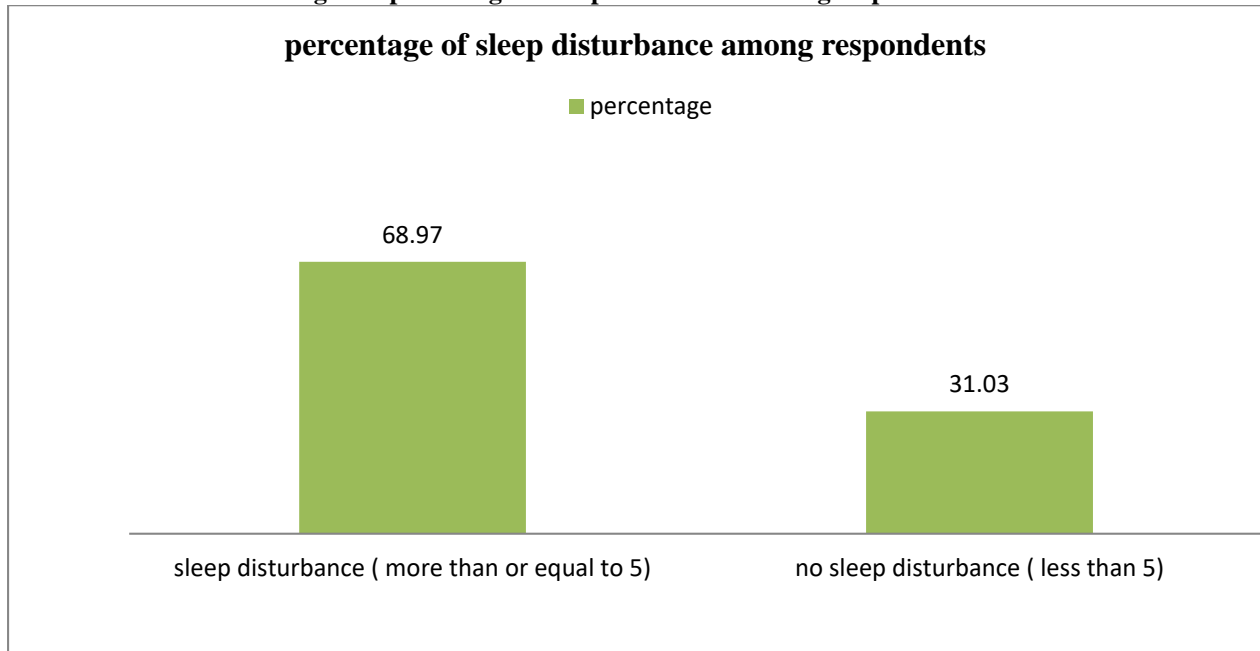
**3). Sleep disturbance among respondents**

Table no.3 shows frequency and percentage of respondents sleep disturbance among total population, out of which most of the respondents showing sleep disturbance i.e.140(68.97%) sample showing sleep disturbance (PSQI score more than or equal to 5)and 63 (31.03%) do not show any sleep disturbance(PSQI score <5) based on PSQI scale.

**Table 3: frequency and percentage of sleep disturbance among respondents based onPittsburgh Sleep Quality Index(PSQI) score**

variable	Frequency(N=203)	Percentage (%)
Sleep disturbance More than or equal to 5) (sleep disturbance	140	68.97
Less than 5 (no sleep disturbance)	63	31.03

**Fig 3.1: percentage of sleep disturbance among respondents.**



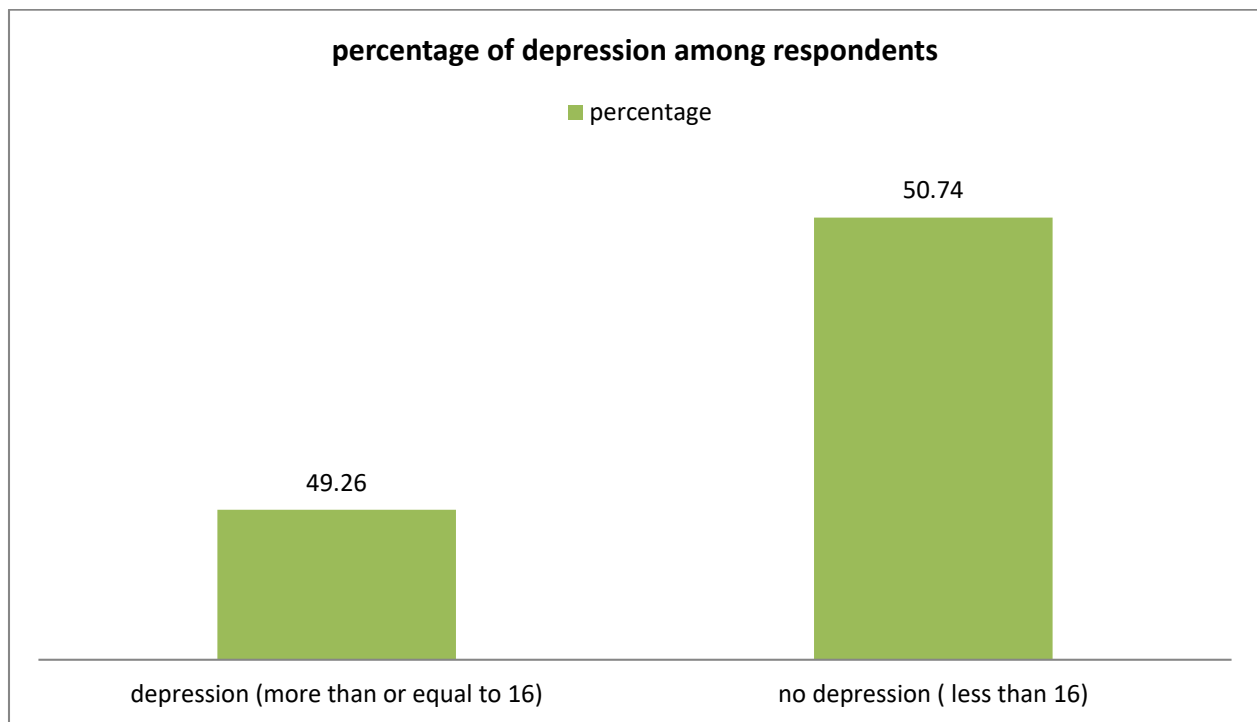
**4) Depression among respondents**

Table no.4 shows frequency and percentage of depression of respondents among total population, out of total respondents 100(49.26%) showing depression (CES-D score more than or equal to 16) and 103 (50.74%) do not show any depression (CES-D score <16) based on CES- D scale.

**Table 4: frequency and percentage of depression among respondents on the basis of Center for epidemiologic studies depression (CES-D) score**

Variable	Frequency (N=203)	Percentage (%)
depression More than or equal to 16 (depression)	100	49.26
Less than 16 (no depression)	103	50.74

**Fig 4.1: percentage of depression among respondents**



**5) Association between depression and sleep disturbance**

Table no. 5 shows comparison of depression and sleep disturbance among respondents. This relation is statistically significant ( $P < 0.05$ ). It is seen that among total respondents with no sleep disturbance sleep 82.54% do not show any depression only 17.46% show depression likewise among total respondents

with sleep disturbance most of the respondents show depression i.e. 63.57% show depression, only 36.43% do not show any depression. So it is clear that most of the respondents with sleep disturbance have depression, both depression and sleep disturbance is correlated.

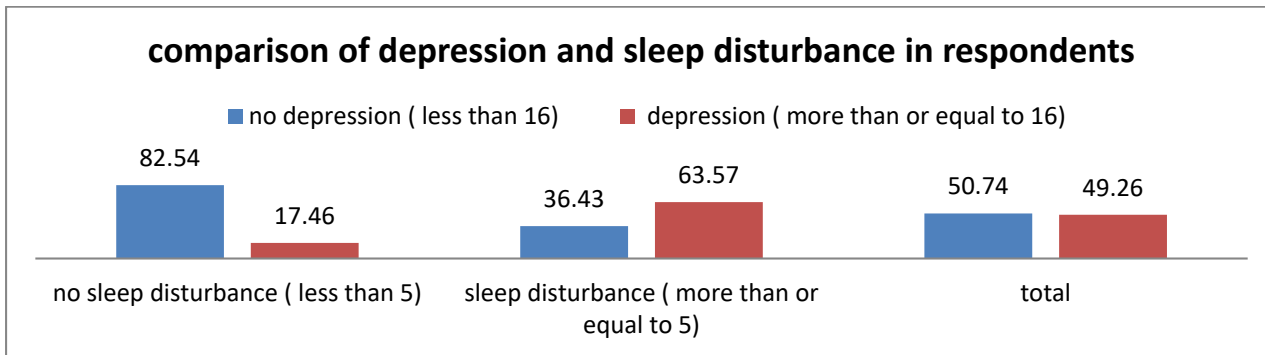
**Table 5: comparison of depression and sleep disturbance of respondents based on (PSQI) and (CES-D) score**

Depression range	PSQI range		Total
	No sleep disturbance (less than 5)	Sleep disturbance (more than or equal to 5)	
No depression (less than 16)	52 (82.54)	51 (36.43)	103 (50.74)
Depression (more than or equal to 16)	11 (17.46)	89 (63.57)	100 (49.26)
total	63 (100%)	140 (100%)	203 (100%)

**Pearson chi-square (2 tailed)  $df=1, sig=0.00$  ( statistically significant  $p < 0.05$ )**

**ANOVA  $df=16, f=7.01, significance=0.00$  ( statistically significant  $p < 0.05$ )**

**Fig5.1: comparison of depression and sleep disturbance among respondents**



**6) Mean of Pittsburgh Sleep Quality Index(PSQI) score, depression score and sleep hours**

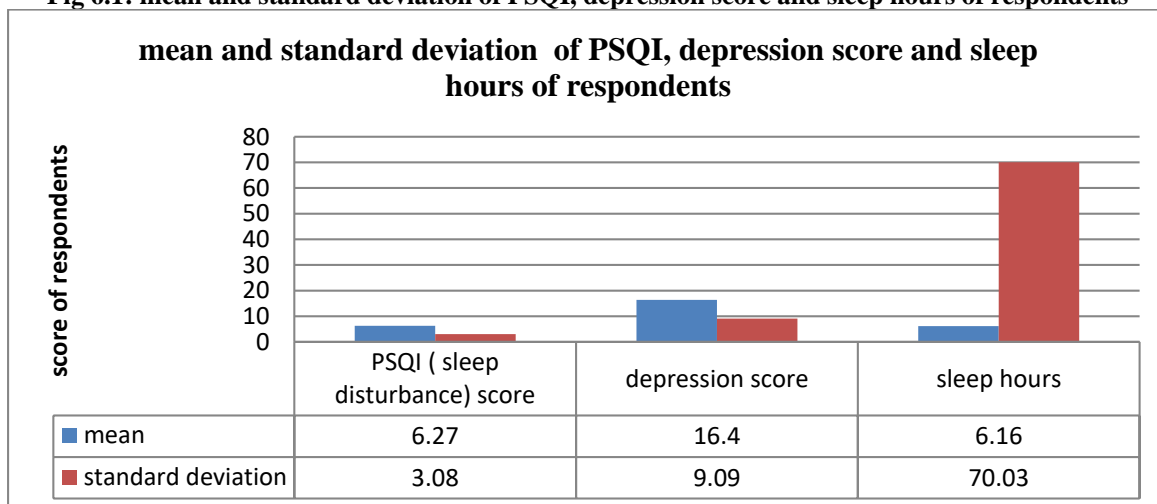
Table no.6 shows that mean of PSQI score (sleep disturbance score) is 6.27 and standard deviation is ±3.08, mean of depression score 16.40 and standard deviation is ±9.09, and mean of sleep hours is 6.16 and standard deviation is ±70.03.

**Table 6: mean of PSQI score, depression score and sleep hours of respondents**

variable	Mean	Standard deviation
PSQI score	6.27	±3.08
Depression score	16.40	±9.09
Sleep hours	6.16	±70.03

ANOVA df=16 f= 7.01 sig= 0.00 ( statistically significant P< 0.05)

**Fig 6.1: mean and standard deviation of PSQI, depression score and sleep hours of respondents**



**7) Sleep disturbance and age of the respondents**

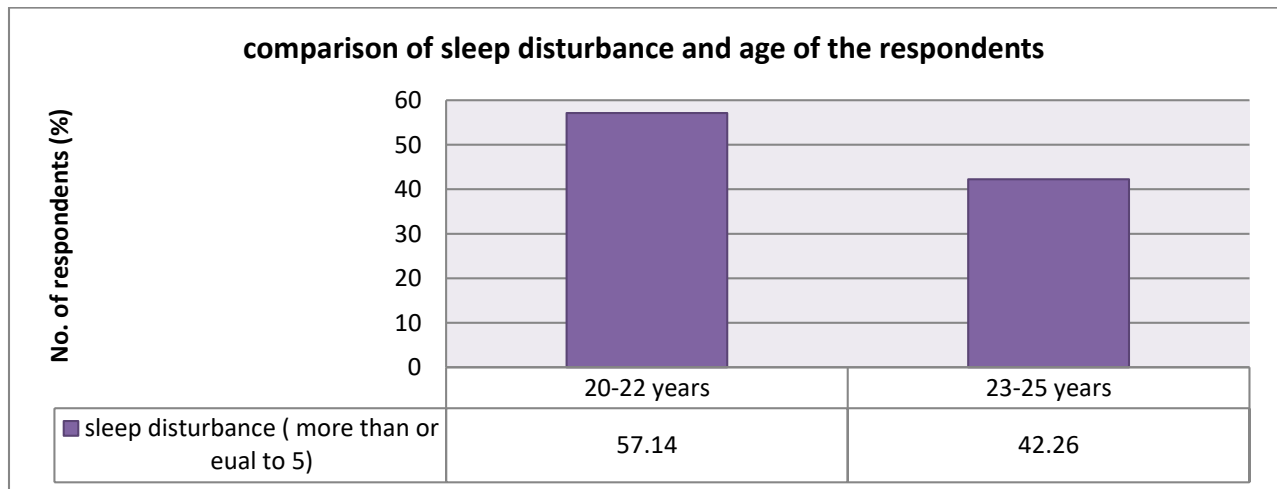
Table no.7 shows comparison of sleep disturbance with age of the respondents. Though relation is not statistically significant due to small sample size it is found that there is a relation between sleep disturbance and age of the respondents. It is seen that among total respondents with sleep disturbance more sleep disturbance is seen among individual between 20- 22 years of age i.e. 57.14% as compared to individual between 23-25 years of age i.e. 42.86%.

**Table 7: comparison of frequency of respondents' age with sleep disturbance based on (PSQI)score**

PSQI range	Frequency distribution of respondent on the basis of age		Total
	20-22 years	23-25 years	
No sleep disturbance ( less than 5)	36 (57.14)	27 ( 42.86)	63 (100.00)
Sleep disturbance ( more than or equal to 5)	80 ( 57.14)	60 (42.86)	140 ( 100.00)
<b>Total</b>	<b>116 (57.14)</b>	<b>87 (42.86)</b>	<b>203 ( 100.00)</b>

**Pearson chi- square (2 tailed)df= 5 sig = 0.5 ( non significant P> 0.05)**

**Fig 7.1: comparison of sleep disturbance with age of the respondents**



(Respondents with sleep disturbance are considered for this graph)

**8) Depression and age of the respondents**

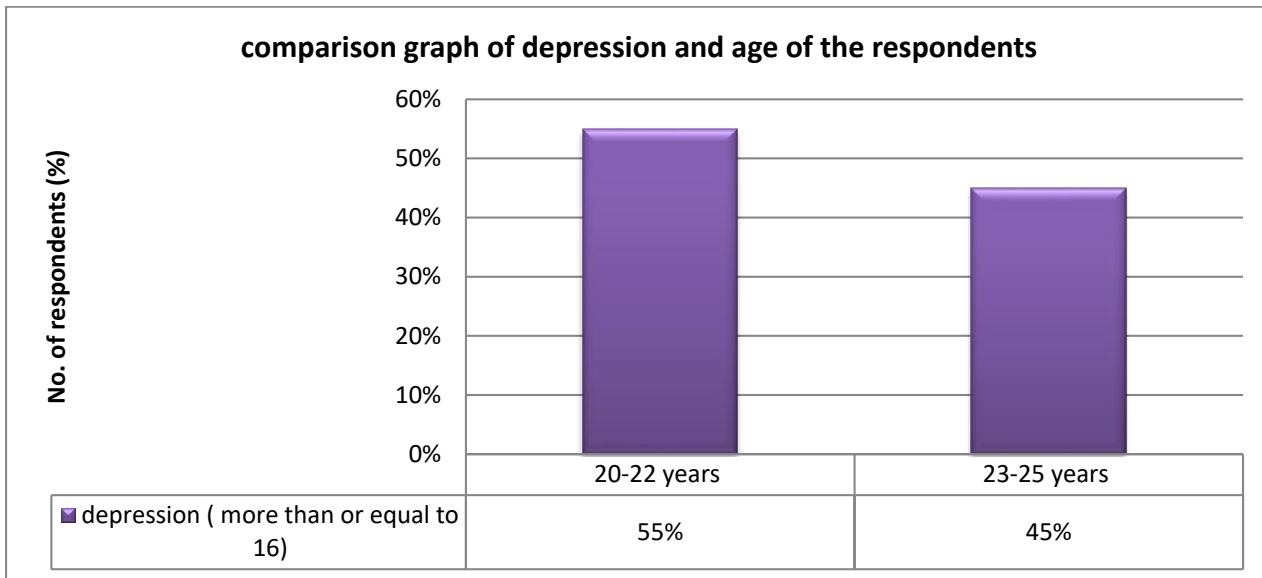
Table no. 8 shows comparison of depression with age of the respondents. Though relation is not statistically significant due to small sample size it is found that there is a relation between depression and age of the respondents. It is seen that among total respondents with depression more depression is seen among individual between 20- 22 years of age i.e. 55% as compared to individual between 23- 25 years of age i.e. 45%.

**Table 8: comparison of frequency of respondents age with depression based on depression score**

Depression range	Frequency distribution of respondent on the basis of age		Total
	20-22 years	23-25 years	
No depression ( less than 16)	61 ( 59.22)	42 (40.78)	103 ( 100.00)
Depression ( more than or equal to 16)	55 (55.00)	45 (45.00)	100 (100.00)
<b>total</b>	<b>116 (57.14)</b>	<b>87 (42.86)</b>	<b>203 (100.00)</b>

**Pearson chi- square (2 tailed)df= 5 sig = 0.7 ( non significant P> 0.05)**

**Fig 8.1: comparison of depression with age of the respondents**



(Respondents with depression are considered for this graph)

### 9) Sleep disturbance and gender of respondents

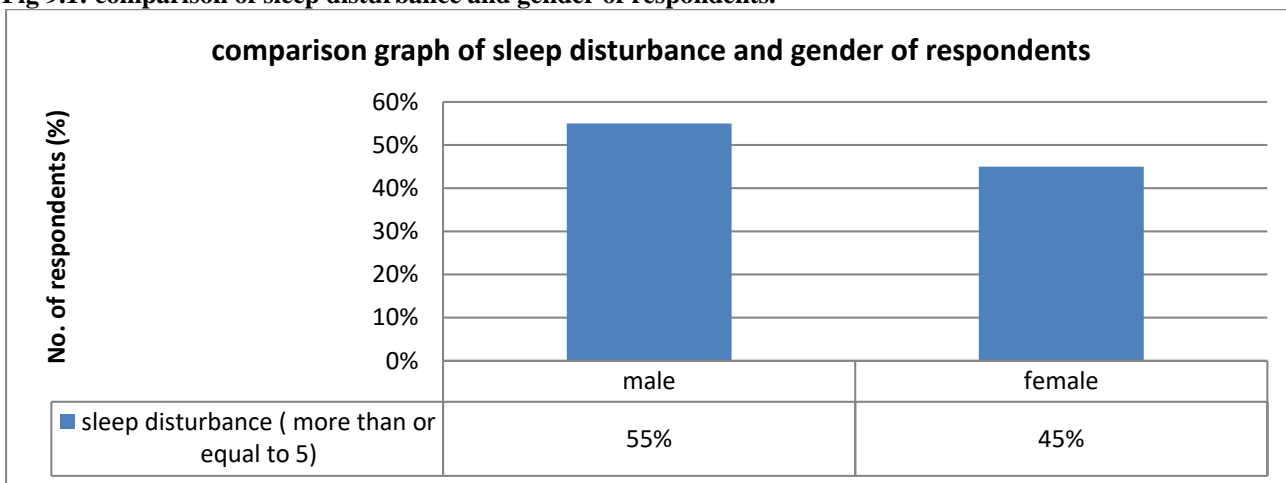
Table no. 9 shows comparison of sleep disturbance and gender of respondents, it is found that there is a relation between sleep disturbance and gender of respondents. It is shown that among total population 54.19% are males and 45.81% are females. And among total respondents with sleep disturbance 55% are male which is more than females that is 45%. So, males have more sleep disturbance as compared to females.

**Table 9: comparison of sleep disturbance and gender of respondent**

PSQI range	Frequency distribution of respondent on the basis of gender		Total
	male	female	
no sleep disturbance (less than 5)	33 (52.38%)	30 (47.62%)	63 (100%)
sleep disturbance (more than or equal to 5)	77 (55%)	63 (45%)	140 (100%)
total	110 (54.19%)	93 (45.81%)	203 (100%)

Pearson chi-square (2 tailed) df= 1 sig= 0.73 (non significant p > 0.05)

**Fig 9.1: comparison of sleep disturbance and gender of respondents.**



(Respondents with sleep disturbance are considered for this graph based on PSQI score)

29.

### 10) Depression and gender of respondents



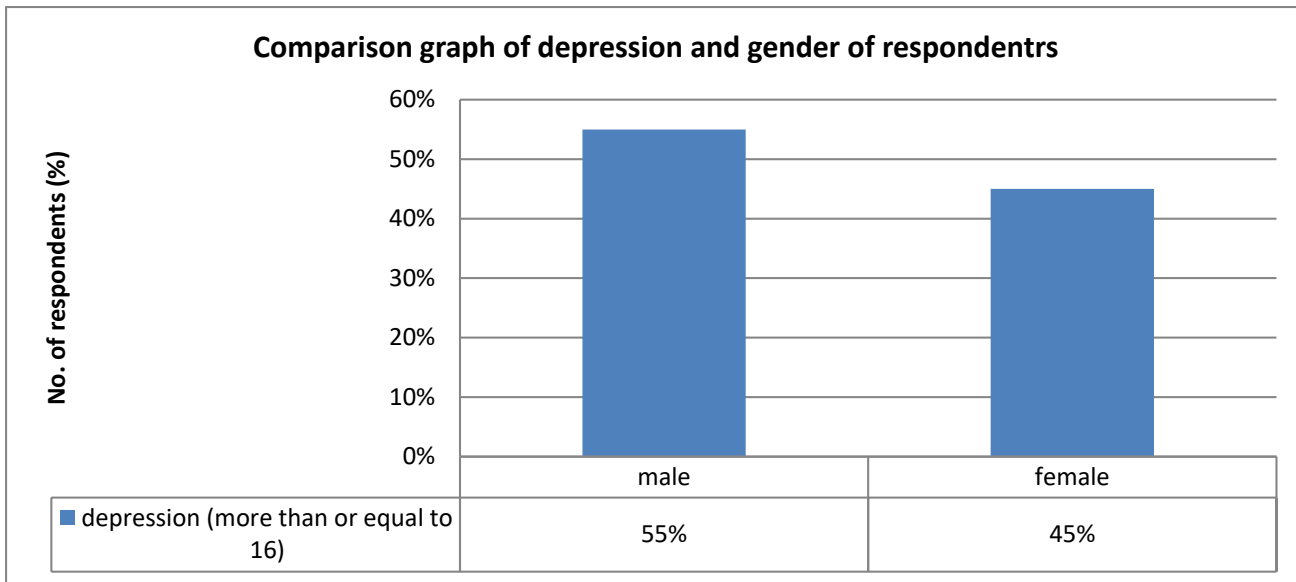
Table no. 10 shows comparison of depression and gender of respondents, though the relation is not statistically significant due to small sample size it is found that there is a relation between depression and gender of respondents. It shows that among total population 50.19% are males and 45.81% .Out of which among total respondents with depression 55% are males compared to females that is 45%. This shows that males have more depression than females.

**Table 10: comparison of depression and gender of respondents**

Depression range	Frequency distribution of respondent on the basis of gender		total
	Male	female	
no depression( Less than 16)	55 (53.40%)	48 (46.60%)	103 (100%)
Depression( More than or equal to 16)	55 (55%)	45 (45%)	100 (100%)
total	110(54.19%)	93 (45.81%)	203 (100%)

**Pearson chi- square (2 tailed) df= 1 sig= 0.82 ( non significant P> 0.05)**

**Fig 10.1: comparison of depression and gender of respondents**



(Respondents with depression are considered for this graph based on CES-D score).  
30.

**11) Sleep disturbance and education of the respondents**

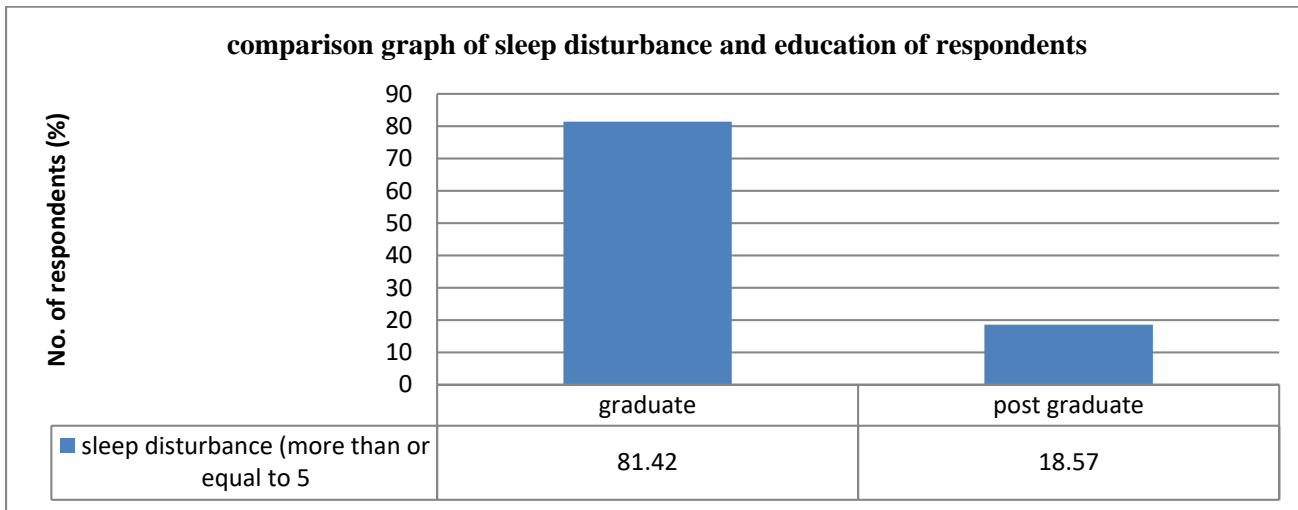
Table no.11 shows comparison of sleep disturbance and education of the respondents, this relation is statistically significant (P< 0.05).it shows that among total population 76.35% are graduate and 23.65% are post graduate and out of total respondents with sleep disturbance 81.42% are graduate as compared to post graduate that is 18.57%.this shows graduate are more sleep disturbed than post graduate.

**Table 11: comparison of sleep disturbance and education of respondents**

PSQI range	Frequency distribution of respondent on the basis of education		total
	Graduate	Post graduate	
no sleep disturbance (Less than 5)	41 (65.07%)	22 (34.92%)	63 (100.00)
sleep disturbance (More than or equal to 5)	114 (81.42%)	26 (18.57%)	140 (100.00)
total	155 (76.35%)	48 (23.65%)	203 (100.00)

**Pearson chi- square (2 tailed)df=1, sig= 0.01 (statistically significant p <0.05)**

**Fig 11.1: comparison of sleep disturbance and education of respondents**



(Respondents with sleep disturbance are considered for this graph based on PSQI score)

31.

**12) Depression and education of respondents**

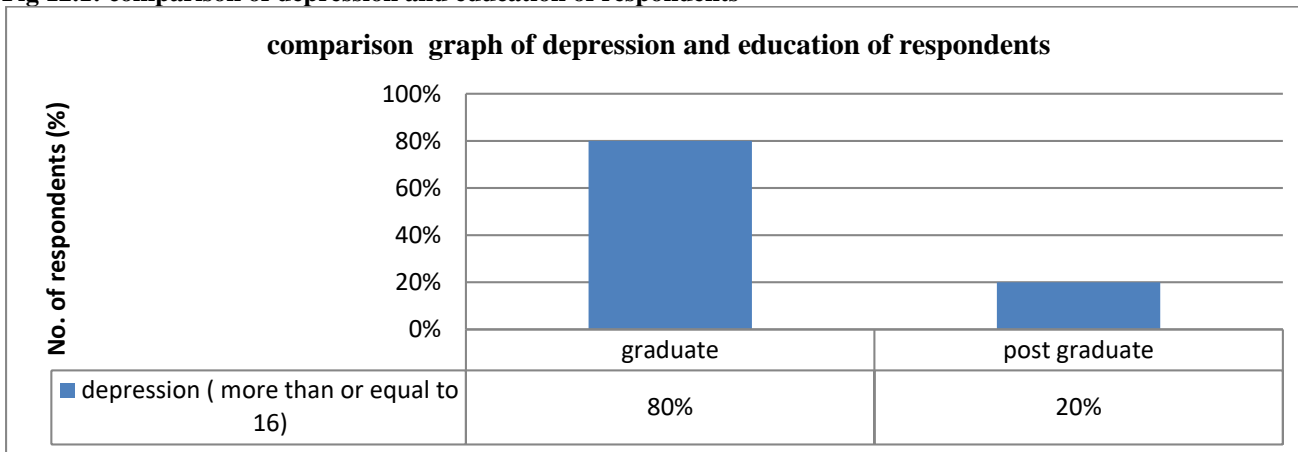
Table no. 12 shows comparison of depression and education of respondents, though the relation is not statistically significant due to small sample a relation is found between depression and education of respondents. it shows that among total respondents with depression 80% are graduate and 20% are post graduate likewise among total respondents with no depression 72.81% are graduate and 27.18% are post graduate, it shows that graduates show more depression than post graduate.

**Table 12: comparison of depression and education of respondents**

Depression range	Frequency distribution of respondent on the basis of education		total
	Graduate	Post graduate	
no depression (Less than 16)	75 (72.81%)	28 (27.18%)	103 (100.00)
Depression ( More than or equal to 16)	80 (80%)	20 (20%)	100 (100.00)
Total	155(76.35%)	48(23.65%)	203 (100.00)

**Pearson chi- square (2 tailed) df= 1 sig= 0.23( non significant P> 0.05)**

**Fig 12.1: comparison of depression and education of respondents**



(Respondents with depression are considered for this graph based on CES-D score)

32.

**13) Sleep disturbance and caste of the respondents**

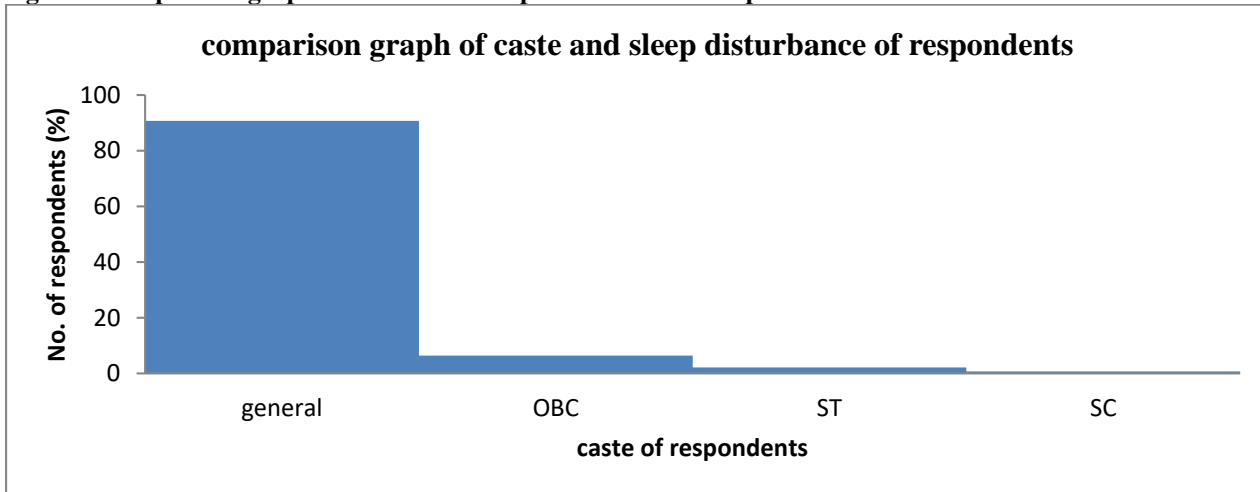
Table no.13 shows comparison of respondent’s caste with sleep disturbance. It is seen that highest sleep disturbance is present among general category (90.71%) as compared to other caste of respondents and then it is slightly decreasing in OBC category (6.42%) and further decrease in ST that is 2.14% and then SC that is 0.71% among total respondents with depression.

**Table 13: comparison of sleep disturbance and caste of respondents**

PSQI range	Frequency distribution of respondent on the basis of caste				total
	general	OBC	ST	SC	
no sleep disturbance( Less than 5)	53 (84.12)	7 (11.11)	1 (1.58)	2 (3.17)	63 (100.00)
sleep disturbance( More than or equal to 5)	127 (90.71)	9 (6.42)	3 (2.14)	1 (0.71)	140 (100.00)
<b>TOTAL</b>	<b>180 (88.67)</b>	<b>16 ( 7.88)</b>	<b>4 ( 1.97)</b>	<b>3 (1.47)</b>	<b>203 (100.00)</b>

**Pearson chi- square (2 tailed)df= 3 sig= 0.35 ( non significant P> 0.05)**

**Fig 13.1: comparison graph of caste with sleep disturbance of respondents**



(Respondents with sleep disturbance are considered for this graph based onPSQI score)  
33.

**14) Depression and caste of respondents**

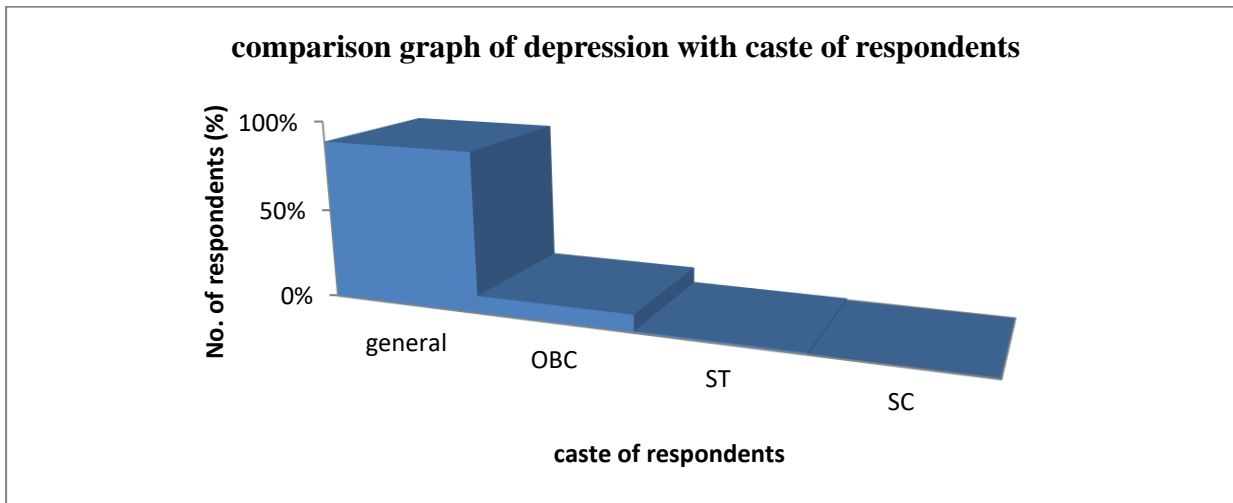
Table no.14 shows comparison of caste with depression of respondents. It is seen that highest level of depression is present among general category(89%) as compared to other caste of respondents, then it is decreasing in OBC (10%) and further decrease in ST (1%) and then in SC (0%) among total respondents with depression.

**Table 14: comparison of frequency distribution of the respondent caste with depression**

Depression Range	Frequency distribution of respondent on the basis of caste				total
	general	OBC	ST	SC	
no depression (Less than 16 )	91 (88.34)	6 (5.82)	3 (2.91)	3 ( 2.91)	103 (100.00)
depression (More than or equal to 16)	89 (89.00)	10 (10.00)	1 (1.00)	0 (0.00)	100 (100.00)
<b>total</b>	<b>180 (88.67)</b>	<b>16(7.88)</b>	<b>4 (1.97)</b>	<b>3 (1.47)</b>	<b>203 (100.00)</b>

**Pearson chi- square (2 tailed)df= 3 sig = 0.17 ( non significant P> 0.05)**

**Fig 14.1: comparison graph of depression with caste of respondents**



(Respondents with depression are considered for this graph based on CES-D score)

34.

**15. Sleep disturbance and family type of respondents**

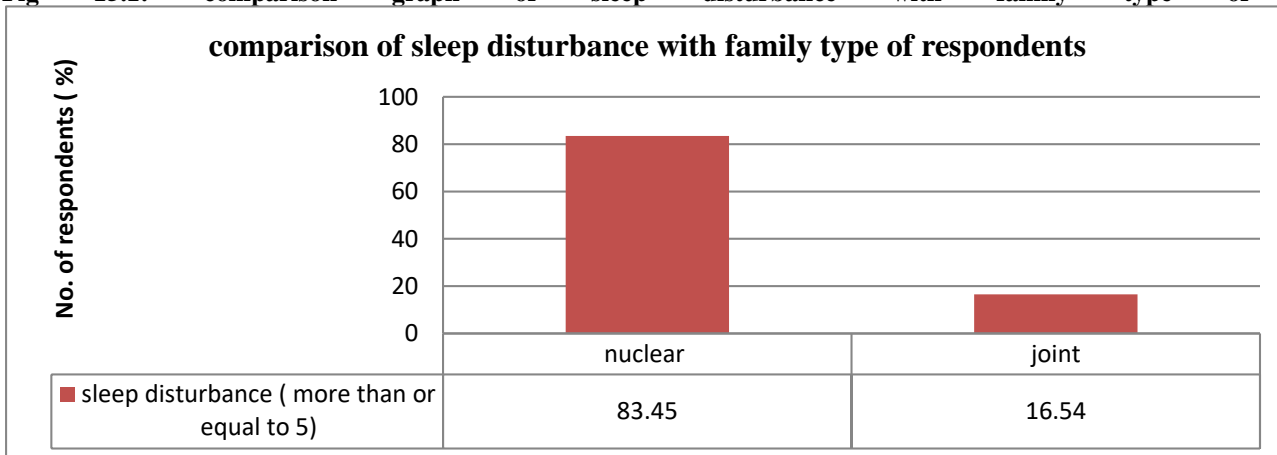
Table no.15 shows comparison of sleep disturbance with family type of respondents. Though relation is not statistically significant due to small sample size a relation is found between sleep disturbance and family type of respondents. It is seen that nuclear family show more sleep disturbance that is 83.45% as compared to joint family that is 16.54% among total respondents with sleep disturbance.

**Table 15: comparison of frequency distribution of the respondents' family type with sleep disturbance**

PSQI Range	Frequency distribution of respondent on the basis of total family type		
	nuclear	joint	total
no sleep disturbance( Less than 5)	51 (83.60)	10 (16.39)	61 (100.00)
sleep disturbance (More than or equal to 5)	116 (83.45)	23 (16.54)	139( 100.00)
total	167 (83.5)	33 (16.5)	200 (100.00)

**Pearson chi- square (2 tailed) df= 1 sig = 0.98 ( non significant P> 0.05)**

**Fig 15.1: comparison graph of sleep disturbance with family type of respondents**



(Respondents with sleep disturbance are considered for this graph based on PSQI score)

35.

**16) Depression and family type of respondents**

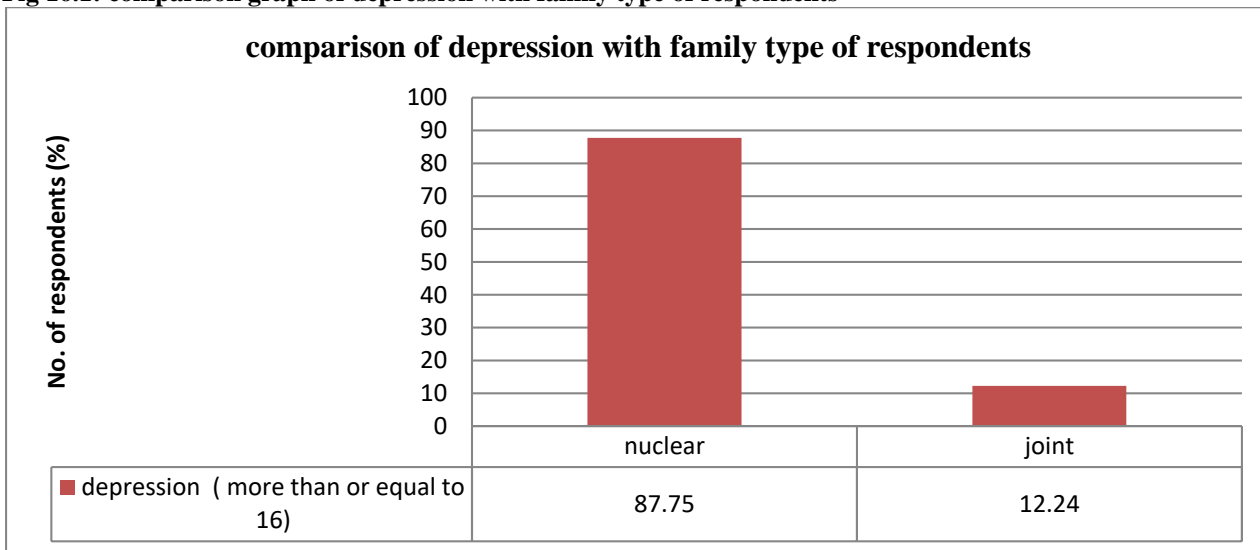
Table no.16 shows comparison of depression with family type of respondents.though the relation is not statistically significant due to small sample size there is a relation between depression and family type of respondents It is seen that nuclear family show more depression that is (87.75%) as compared to joint family that is (12.24%) among total respondents with depression.

**Table 16: comparison of frequency distribution of the respondents family type with depression**

Depression range	Frequency distribution of respondent on the basis of family type		total
	nuclear	joint	
Less than 16 ( no depression)	81 (79.41)	21 (20.58)	102 ( 100.00)
More than or equal to 16 ( depression)	86 (87.75)	12(12.24)	98 (100.00)
total	167 (83.5)	33 (16.5)	200 (100.000)

**Pearson chi- square (2 tailed) df= 1 sig = 0.11 ( non significant P> 0.05)**

**Fig 16.1: comparison graph of depression with family type of respondents**



(Respondents with depression are considered for this graph based on CES-D score)  
36.

**17)Effect of family income of the respondents on their sleep disturbance**

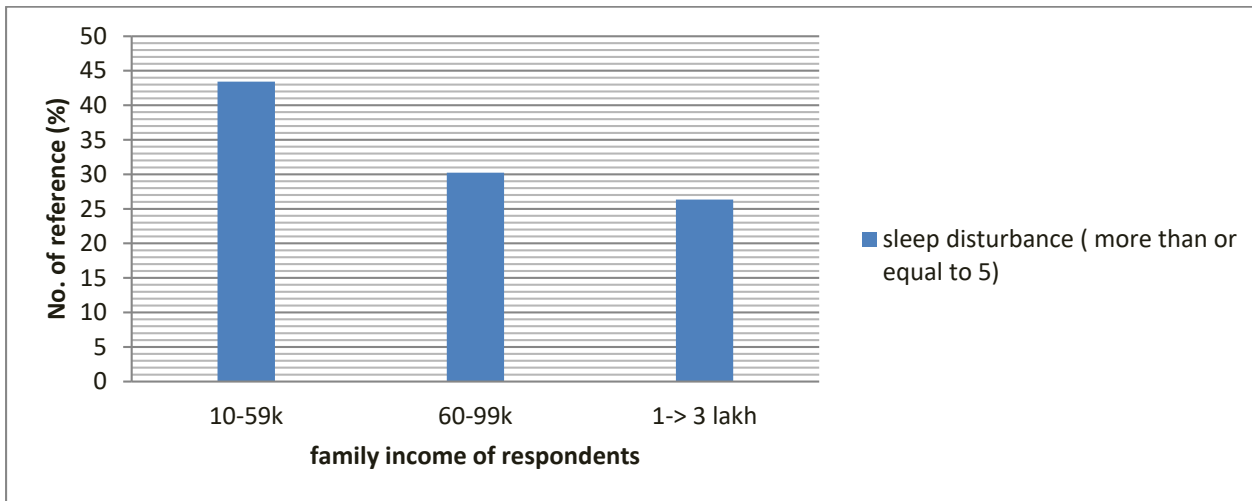
Table no.17 shows comparison of sleep disturbance with family income of respondents. This Relation is statistically significant where (P<0.05). It is seen that sleep disturbance is more in the individual having family income less than 60,000 per month among all respondents having sleep disturbance i.e. 43.41% as compared to other range of family income and it is also seen that sleep disturbance is less in individual having family income more than 3 lakh i.e. 26.35% among all respondents having sleep disturbance as compared to other range of family income.

**Table 17: comparison of frequency of respondents family income (P.M) with sleep disturbance based on PSQI score**

PSQI range	Frequency distribution of respondent on the basis of Family income			total
	10-59k	60-99k	1-more than 3 lakh	
no sleep disturbance( less than 5)	43 (71.67)	9 (15.00)	8 (13.33)	60 (100.00)
sleep disturbance (More than or equal to 5)	56 (43.41)	39 (30.23)	34 (26.35)	129 (100.00)
total	99 (52.38)	48 (25.40)	42 (22.22)	189 (100.00)

**Pearson chi- square (2 tailed)df= 10 sig = 0.03 ( statistically significant p<0.05)**

**Fig 17.1comparison of sleep disturbance with family income of respondents**



(Respondents with sleep disturbance are considered for this graph)

37.

**18)Effect of family income of the respondents on depression**

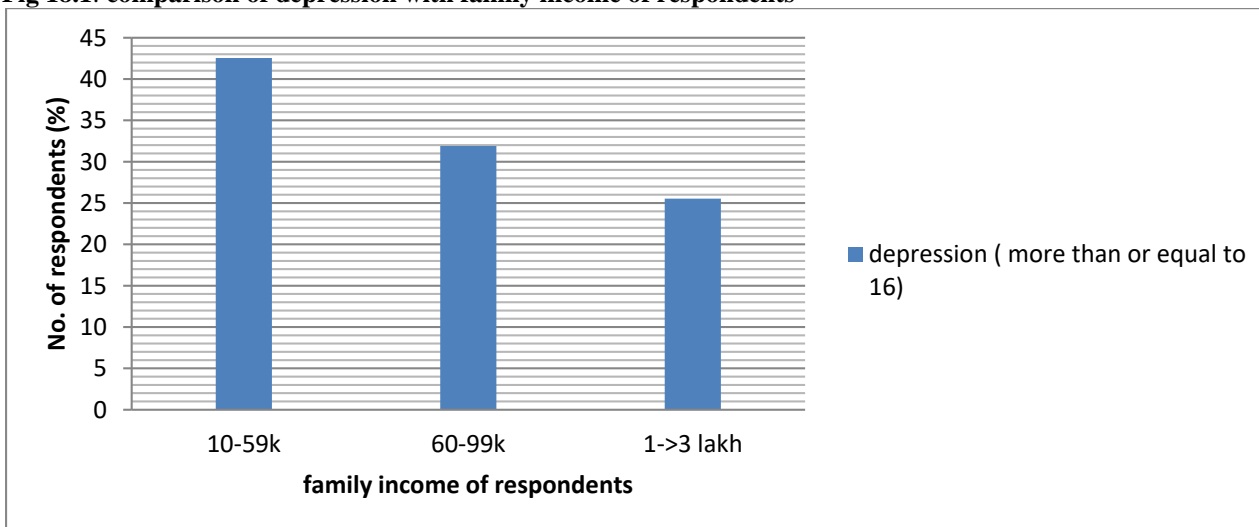
Table no.18 shows comparison depression with family income of respondents.This Relation is statistically significant where (P< 0.05).it is seen that depression is more in the individual having family income less than 60,000 per month among all respondents having depression i.e. 42.55% as compared to other range of family income and it is also seen that depression is less in individual having family income more than 3 lakh i.e. 25.53% among all respondents having depression as compared to other range of family income.

**Table 18: comparison of frequency of respondents family income (P.M) with depression based on depression score**

Depression range	Frequency distribution of respondent on the basis of Family income			total
	10-59k	60-99k	1-more than 3 lakh	
no depression (Less than 16)	59 (62.10)	18 (18.95)	18 (18.95)	95 (100.00)
depression (More than or equal to 16)	40 (42.55)	30 (31.91)	24 (25.53)	94 (100.00)
total	99 (52.38)	48 (25.40)	42 (22.22)	189 (100.00)

ANOVA df= 27.14 f= 4.39 sig= 0.04 ( statistically significant P< 0.05)

**Fig 18.1: comparison of depression with family income of respondents**



(Respondents with depression are considered for this graph)

**IV. DISCUSSION:**

In this study we found that prevalence of depression is high among youth between 20- 25 years in Raipur, Noida. Our study found that

prevalence of depression is 49.26%.this result is supported by a study conducted in three capital cities of Pakistan i.e. Karachi, Lahore and Quetta, by Amin et al; 2007, they shows that 45.98% were suffering from depression, A study conducted by Eller et al; 2006, they shows that 30.6% had symptoms of depression.Also

by A study conducted among undergraduate university students in Ethiopia by [Seblewngel](#) et al; 2012, they reported that 55.8% were suffering from depression. Another study was conducted among adolescent by [Robert E.](#) et al; 2014 shows that depression prevalence was 57.6%. This result is also supported by a study conducted among college students by [Song](#) et al; 2008, reported that 43.9% students of Hong Kong had depression.

Another result of our study is sleep disturbance is not rare among youth of Raipur, Noida. It is highly prevalent among youth of Raipur between 20-25 years of age. Our study found that prevalence of sleep disturbance is 68.97%. This result was supported by a study conducted among adolescents of Saudi Arabia, by [Merdad](#) et al; 2014, they reported that prevalence of sleep disturbance was 65%. Another study conducted among university students in Ethiopia by [Seblewngel](#) et al; 2012, reported that 50.8% of the students were suffering from sleep disturbance. Another study conducted among Chinese adolescents by [Lan](#) et al; 2014), result of the study found that 39.6% were suffering from sleep disturbance. Another study was conducted among adolescents by [Franić](#) et al; 2014; they found that 86.7% had sleep problems. The result is also supported by a study conducted among university students in Hong Kong by [Suen](#) et al; 2008; they reported sleep disturbance prevalence among university students was 57.5%.

Another finding of our result is there is a strong relation between depression and sleep disturbance, in our study Mean PSQI score is 6.27 and mean depression score is 16.40, and mean sleep hour of respondents is 6.16. Our study found that most of the individual having depression showed sleep disturbance that is 3/4<sup>th</sup> of respondents with depression have sleep disturbance, likewise most of the respondents with sleep disturbance had depressive symptoms, that is 2/4<sup>th</sup> of respondents with sleep disturbance shows depressive symptoms and this association was statistically significant where ( $P < 0.05$ ). This result was supported by a study conducted among college Students at the Autonomous University of Yucatan, Merida by [Moo-Estrella](#) et al; 2005, they reported that there is a positive relation between depression and sleep alteration, they reported that Most of the sample shows sleep disturbance and it was severe among those with depression. Another study was conducted among Estonian medical students by [Eller](#) et al; 2006, they also reported that both depression and sleep disturbance is correlated; sleep problem was associated with symptoms of both anxiety and depression. A study conducted by [Daniel J.](#) et al; 2008, among young adults, they also support this finding of study. Also a study conducted among female college students by [Regestein](#) et al; 2010, result of this study showed that college students with poor sleep quality show high risk of depression. this result is also supported by a study conducted among university students in Ethiopia by [Seblewngel](#) et al; 2012, they also reported that there is a strong relation between depression and sleep disturbance, another study was conducted in 12 rural communities of southeastern Missouri, Tennessee, and Arkansas by [Chang](#) et al; 2012 also support this result. This result is also supported by a study conducted among Adolescents from households in the Houston metropolitan area, by [Robert E.](#) et al; 2014, a study conducted among Chinese adolescents by [Lan](#) et al; 2014. Another study conducted among adolescence in Hordaland County in

Norway by [Sivertsen](#) et al; 2014, also reported that there is a correlation between depression and sleep disturbance, depress adolescent shows shorter sleep duration and sleep disturbance increase risk of depression. This result is also supported by study conducted by [Meerlo](#) et al; 2015).

In this study males have shown more sleep disturbance than females. Though the relation is not statistically significant due to small sample size there is a relation between sleep disturbance and

Gender, in our study it is found that out of total respondents with sleep disturbance 55 % are male and 45% are females. This result is supported by a study conducted among adolescents of Saudi Arabia by [Merdad](#) et al; 2014; they reported that poor sleep pattern was more prevalent among boys. This result is also supported by a study conducted among Asian adults by [Mirrakhimov](#) et al; 2013, they reported that obstructive sleep apnea was more among males and a study conducted among Chinese adolescents by [Lan](#) et al; 2014.

Our study also found that depression is more prevalent among males than females. Though the relation is not statistically significant due to small sample size there is a relation between depression and gender, in our study it is found that out of total respondents with depression 55 % are male and 45% are females. This result is supported by a study conducted by [Wang](#) et al; 2015; they found that males had reported more cognitive symptoms of depression than females and a study conducted by [Liu](#) et al; 1999, they reported that emotional problems were higher in males than females.

In our study it is found that sleep disturbance is more among those with low socio- economic or family income, this result is supported by a study conducted adult Norwegian population by [Pallesen](#) et al; 2014, which reported that insomnia is more prevalent among individual with low socio economic status and by a study conducted among urban communities of Pakistan by [Kidwai](#) et al; 2013.

In our study it is also found that depression is more prevalent among low family income or low socioeconomic status, this result is supported by a study conducted among university students by [Eisenberg](#) et al; 2007, they reported that students having low family income were at more risk for mental health problems. This result is also supported by a study conducted among Large Urban South Indian Population by [Subramani](#) et al; 2009

The result of our study also found that depression is more prevalent among young age, this result is supported by a study conducted by [Nakku](#) et al; 2006, shows that psychological problems are more prevalent among young age and a study conducted among Brazilian adolescents by [Munhoz](#) et al; 2015.

Our study also reported that sleep disturbance is more prevalent among young age, this result is supported by a study conducted among university students in Ethiopia by [Seblewngel](#) et al; 2012, reported that sleep disturbance was decreasing with increasing years of study among students.

Our study reports that sleep disturbance is more prevalent among graduate students than post graduate students, that is out of total respondents with sleep disturbance 81.42% are graduates and



18.57% are post graduates, so, sleep disturbance is more among fresher than seniors. This result is supported by among university students in Ethiopia by [Seblewengel](#) et al; 2012, they found that increasing year of study in university was associated with reduce poorsleep quality. This result is also supported by a study conducted among university students in Hong Kong by [Suen](#) et al; 2008. This result was also supported by a study conducted among college students by [Tsai](#) et al; 2004; they reported that sleep disturbance was more prevalent among fresher college students than seniors.

The result of our study found that depression is more prevalent among graduate than post graduates, it is found that out of total respondents with depression 80% are graduate and 20% are post graduate, so, depression is more prevalent among low level education than those with better level education. This result is supported by a study conducted among Large Urban South Indian Population by Subramani et al; 2009

In our study it is found that sleep disturbance is more prevalent among general caste than other caste like OBC, ST, SC, similarly depression is more prevalent among general caste than other caste like OBC, ST, SC. But there is no any previous related study found to support this result. Likewise our study reported that both sleep disturbance and depression is more prevalent among nuclear family than joint family, but no related study were found to support this result.

#### V. LIMITATION OF THE STUDY:

The study was conducted in a short duration of time due to this the sample size was small, no funding was provided for this study, the data was collected during the exam time and the festive time that is why large amount of individuals did not participated and the participants was selected on the basis of inclusion and exclusion criteria so even though any individual willing to participate does not fulfill this criteria was not selected.

#### VI. CONCLUSION

In conclusion depression and sleep disturbance is highly prevalent among youth in the age group of 20- 25 years in Raipur, Noida. The study found that there is a strong relationship between depression and sleep disturbance, and they show a statistically significant relationship. It was found that among respondents with depression most of the respondents show sleep disturbance that is 3/4<sup>th</sup> of respondents with depression have sleep disturbance, individual with depression increase the risk of sleep disturbance in the other hand individual with sleep disturbance shows depressive symptoms that is 2/4<sup>th</sup> of respondents with sleep disturbance shows depressive symptoms. There is a statistically significant relationship of sleep disturbance with education, family income, of respondents and between depression and family income. But due to small sample size though there was no statistical significance association between sleep disturbance and gender, caste, family type, age, and between depression and gender, education, caste, family type, and age of the respondents it is found that both depression and sleep disturbance is related to this factors.

#### VII. RECOMMENDATION

1. Since this study is conducted in urban area, similar study should be conducted in rural area.
2. It is also suggested to consider The Body Mass Index (BMI) of the respondents along with the level of depression and sleep disturbance.
3. Since in our study majority of respondents were Hindu, this variable was not included in our study, so, a study can be considered keeping this variable as an important factor.
4. Since our study is conducted on association between sleep disturbance and depression, further research can be conducted on impact of depression and sleep disturbance on health.
5. Since our study is conducted among youth between 20- 25 years of age further research can be conducted among other age groups.

#### Appendix A

##### Amity University

Sector 125 Noida, Uttar Pradesh 201303

Questionnaire: "A Study on depression and sleep disturbance among youth in the age group of 20-25 years in Raipur, Noida"

##### Consent form

I hereby give consent to participate in the study titled "A study on depression and sleep disturbance among youth in the age group of 20-25 years"

- 1) I have been informed about the title, nature and procedure of the study
- 2) Have been given the opportunity to ask all the questions and I have been given option to withdraw myself from the study at any moment. If I don't feel satisfied with the study.
- 3) Acknowledge that no guarantee and promise has been made to me concerning the result of the procedure.
- 4) I consent to photography or videography of any procedure to be performed, including application portion of my body for medical, scientific or educational purpose, provided my identity is not revealed by pictures or by descriptive tests accompanying them.
- 5) I, certify that the statement made in the above consent letter have been read and explained to me in my mother tongue and I have fully understood the implications of the above and further submit the statement therein referred to were filled in an applicable paragraph stricken off before I signed.

Signature of participant:

Name of the researcher: BananiBharali  
MPH

#### APPENDIX B

##### DEMOGRAPHIC PROFILE:

1. Gender:
2. Age:
3. Current address:



4. Education:

5. Father education

6. Mother education

7. Religion:

8. Caste:

9. Father occupation:

10. No. Of family member:

11. Type of family

12. Family income

### Appendix C

#### Your usual sleep habits during the past month:

13. When have you usually gone to bed? \_\_\_\_\_

14. How long (in minutes) has it taken you to fall asleep each night  
.....

15. When have you usually gotten up in the morning?  
\_\_\_\_\_

16. How many hours of actual sleep do you get at night?  
\_\_\_\_\_

17. During the past month, how often have you had trouble sleeping because you...

a. Cannot get to sleep within 30 minutes.

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

b. Wake up in the middle of the night or early morning.

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

c. Have to get up to use the bathroom

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

d. Cannot breathe comfortable

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

e. Cough or snore loudly

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

f. Feel too cold

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

g. Feel too hot

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

h. Have bad dreams

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

i. Have pain

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

j.. Other reason(s), please describe, including how often you have had trouble sleeping because of this reason(s):

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

18. During the past month, how often have you taken medicine (prescribed) to help you sleep?

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

19. During the past month, how often have you had trouble staying awake While driving, eating meals, or engaging in social activity?

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

20. During the past month, how much of a problem has it been for you to keep up enthusiasm (interest) to get things done?

Not during the past month Less than once a week.

Once or twice a week. 3 or more times a week

21. During the past month, how would you rate your sleep quality overall?

a. Very good b. fairly good c. fairly bad d. very bad

PSQI Score .....

#### During past week:

22. I was bothered by things that don't usually bother me.

a. Rarely (<1 day) b. sometime (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

23. I didn't feel like eating, my appetite was poor

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

24. I felt that I could not shake off the blues (free from unhappiness) even with the help of my family or friends.

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most or all of the time (5-7 days)

25. I felt that I was just as good as other people

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

26. I had trouble keeping my mind on what I was doing

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

27. I felt depressed.

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

28. I felt that everything I did was an effort.

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

29. I felt hopeful about the future.

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

30. I thought my life had been a failure.

a. Rarely (<1 day) b. sometime. (1-2 days)

c. occasionally. (3-4 days) d. most of the time. (5-7 days)

31. I felt fearful  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
32. My sleep was restless  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
33. I was happy  
a. Rarely (<1 day)b. sometime.(1-2 days)  
c. occasionally .(3-4 days)d. most of the time. (5-7 days)
34. I talked less than usual.  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
35. I felt lonely  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
36. People were unfriendly.  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
37. I enjoyed life.  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
38. I had crying spells.  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
39. I felt sad.  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)
40. I felt that people disliked me.  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally .(3-4 days)d. most of the time. (5-7 days)
41. I could not get “going” (active)  
a. Rarely (<1 day)b. sometime. (1-2 days)  
c. occasionally. (3-4 days)d. most of the time. (5-7 days)

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