Research Paper

Socio-demographic variables and suicidal ideation, cognitive distortions, impulsivity and depression in young adults, Patna (Bihar) India

Pallav Kumar[1]*, Pradeep Kumar[2], Sateyendra Dutta Mishra[3]

ABSTRACT

Background: Despite the widespread research work on suicidal ideation, cognitive distortion, impulsivity and depression from diverse perspectives, little research has directly examined the cognitive attributes underlying impulsive behaviour in adults. *Aims and objectives:* To study the socio- demographic variable and *Suicidal ideation, Cognitive distortions, Impulsivity and Depression among young adults.* *Methods and Material: Three hundred youth were selected purposively from different college of Patna, Bihar & applied* Suicidal Ideation Scale, Cognitive Distortion Scale, Impulsiveness Scale, Beck Depression Inventory*. The statistical package for social sciences (SPSS) 16.0 windows was used for statistical analysis. *Results:* There is significant positive correlation among suicidal ideation, cognitive distortion and depression where as there is negative correlation between suicidal ideation and impulsivity.

Keywords: *Suicidal ideation, Depression, Impulsivity, Cognitive Distortion*

U niversity students are a population that is particularly vulnerable to mental health problems and suicidality. According to American College Health Association, 2013most undergraduate students are in their late teens or early twenties, which is not only a major transitional period, but are when first episodes of many psychological disorders (e.g., depression) are most likely to appear. A survey of over 30,000 students from 34 colleges and universities in Canada found that 89% of students feel overwhelmed, 54% are hopeless, 64% are lonely, 87% report feeling exhausted, 56% experience overwhelming anxiety, and 10% had seriously considered suicide[1].

Large empirical research that has been devoted to identifying the risk factors associated with suicidality across university students and other populations. They have examined isolated risk factors, which on their own have limited utility for understanding and predicting

---

[1]Clinical Psychologist, District Mental Health Programme, Purnia, Bihar, India.
[2]Consultant Psychiatric Social Work, State Institute of Mental Health, Pt. B D Sharma Post Graduate University of health sciences, Rohtak, Haryana, India.
[3]Assistant Professor (Psychology), B. N. College, Patna university Patna, India.
*Responding Author

suicidal behavior not for cognitive vulnerabilities[2]. Jager-Hyman et al., (2014) have emerged it as possible mechanisms that may underlie the development and maintenance of suicidal thinking and behavior[3.]

Depression is a common mental disorder that presents with low mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite and poor concentration. According to WHO (2012), there are more than 8,00000 suicides per year globally and suicide is a second leading cause of death among the 15-25 age group[4]. In India, the National Crime Record Bureau (2014) reported that on an average more than 1,00000 people die by suicides every year, the equivalent of a 15 suicides per hour[5]. **Cognitive deficits** "refer to a lack of certain forms of thinking (e.g., the absence of information processing.) **Impulsivity** is a personality trait characterized by the inclination of an individual to initiate behavior without adequate forethought as to the consequences of their actions, acting on the spur of the moment, while Impulsivity has been conceptualized as an inability to delay gratification, or a tendency toward rapid responding [6]. Impulsivity increased the risks of complications like suicide [7].

Abdollahi et al. (2015) discussed **suicidal ideation** as an endogenous variable, meaning there are external factors that contribute to the development of suicidal ideation[8]. Boeninger and colleagues (2010) mentioned about developmental trends of suicidal ideation, plans and attempts. They found that for boys, levels of serious suicidal ideation and suicide plans increased linearly through age 19, whereas the girls 'prevalence rates peaked around age 16[9]. Jordan M., et al. (2017) found that one out of ten persons (10.3%) presenting at primary care facilities reported suicidal ideation within the past year, and 1 out of 45 (2.2%) reported attempting suicide in the same period[10]. Sara Mackenzie et al. (2011) studied the frequency of depression and suicide ideation among college students and found the frequency of depression was similar for men (25%) and women (26%). Thought of suicide was higher for men (13%) than women (10%)[11]. Holly C. et al. (2010) examined the prevalence and predictors of persistent suicide ideation, plans, and attempts among college student. Result revealed that 12% of individuals experienced suicide ideation at some point during college, and of those individuals, 25% had more than one episode of ideation[12]. David M., Rudd (1989) studied the prevalence of suicidal ideation among college students. A total of 737 university students were surveyed using a psychometrically sound self-report measure of suicidal ideation. Over 43% of those participating were found to have experienced some level of suicidal ideation during the previous year. 14.9% in some way acted on those thoughts without actually making suicide attempts. An additional 5.5% were found to have made attempts on their lives[13].

Mobini et al. (2006) studied –The relationship between cognitive distortions, impulsivity, and sensation seeking in a non-clinical population. They found that Individuals with high impulsivity had significantly higher levels of dysfunctional cognitions and sensation seeking[14]. Perveen, et al. (2016) studied the relationship between negative cognitive style and depression among medical students. They found positive relationship exists between depression and negative cognitive style among medical students. 41% percent male and 61% female students of first year and 58% males and 69% female of last year students exhibited depressive symptoms. Females have higher scores on cognitive style questionnaire[16].Yong-guang et al. (2017) studied family history of suicide and high motor impulsivity distinguish suicide attempters from suicide ideators among college students. They found that female gender, positive screening for psychiatric illness, positive family history of suicide, elevated

overall impulsivity, and elevated motor impulsivity were correlated with suicidal ideation, only positive family history of suicide and high motor impulsivity could differentiate suicide attempters from suicidal ideators.

Aim and Objectives of the study:
(i)   To study the association between age and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)
(ii)   To study the association between sex and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)
(iii)   To study the association between religion and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)
(iv)   To study the association between marital status and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)
(v)   To study the association between education and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)
(vi)   To study the association between residence and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)
(vii)   To study the association between income and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression).
(viii) To study the association between family type and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)

METHODOLOGY

Sampling
Purposive sampling method was used and ten colleges (30 students from each college) from Patna city, the capital of Bihar were selected for the study. Name of ten colleges of Patna were (a)B.N. college, (b)Patna College, (c)Science College, (D)Commerce College, (e) Women 's College, (f) J.D. women 's College, (G) Magadh Mahila College, (H)A.N. College, (i)Sanjay Gandhi Inter College, (j)R. P. M College. **Sample Size**: The study sample consisted of 300 participants. There were 150 male and 150 female students from different religion. Period of data collection was from March 2018 to September 2018.

Inclusion and Exclusion Criteria
Inclusion:(I) College students of Patna city. (II) Those who gave written informed consent for the participation in study. (III) Age 18 to 24years. (IV) Students of all subjects (except Psychology) (V) Students from Intermediate to post graduation. **Exclusion:** (i)Those who would not give written consent(ii)Age < 18 and >24 years would not be taken for the study (iii) Students below intermediate and above post graduate students.

Description of Tools:
(a) Socio-Demographic and Clinical Data Sheet: A socio-demographic data sheet was specially designed for the present study to record socio-demographic variables such as age, sex, income, residence, habitat, marital status and etcetera.
(b) Suicidal Ideation Scale (Sisodia, D. S. & Bhatnagar, V. 2011)[17]: It is a self report questionnaire comprising 25 statements. This scale measures suicidal ideation of the individual. The scale consists of 21 positive statements and 4 negative statements. The responses range from strongly agree, agree, uncertain, disagree, strongly disagree.
(c) Cognitive Distortion Scale, (Sisodia, D. S. & Sharma, D. 2005)[18]: It is a self-rated questionnaire to measure cognitive distortion. It has 25 statements. The scoring is done

manually. 5 marks to strongly agree, 4 marks to agree, 3 marks to uncertain, 2 marks to disagree, and 1 mark to strongly disagree are assigned. The sum of marks is obtained for the entire scale. The higher the score more is the cognitive distortion.

(d) Impulsiveness Scale (Rai, S.N. & Sharma, A. 2013)[19]

It is a self-rated questionnaire to measure impulsiveness among the age of16 years and above. It has 30 statements. The responses are given as true and false. The response indicating impulsiveness is scored as 1 and response indicating no impulsiveness is scored as 0.

(e) Beck Depression Inventory (Beck, A. T., 1996): The BDI-II (A. T. Beck, 1996)[20]is a 21-item instrument that assesses the presence of depression including physical, emotional, cognitive, behavioral symptoms and severity of depression. Individuals rate each statement on a 0 to 3 scale according to how well it describes how they have felt over the past two weeks. A sample itemis–Sadness:0=Ido not feel sad; 1 = I feel sad much of the time; 2 = I am sad all the time; 3 = I am so sad or unhappy that I can't stand it.‖ Total scores are yielded by summing items. (scores 0-9 indicate no depression, 10-18 indicate mild depression, 19-29 indicate moderate depression, 30-63 indicate severe depression).

Data collection Procedure: The researcher visited each college separately which were included in the study and explained about the purpose of visiting the college to the concerned principal. They gave the written consent for the study. Period of data collection were from march2018 to Septembers 2018.

Statistical Analysis

The statistical package for social sciences (SPSS) 16.0 for windows was used for statistical analysis. Descriptive statistics was used for analyzing discrete and continuous variables. Chi square test was used for comparing categorical variables. For measuring the difference among continuous variables, independent sample t-test was applied. Significance was kept at p value <0.05.

RESULT

Table 1: Association between age and various psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression).

Parameters	Category	Age category		Chi square	P Value
		<=20 yrs (n)=204	>20 yrs (n)=96		
Suicidal ideation scale	Very low suicidal ideation (25-30)	0(.0%) .0%	1(100.0%) 1.0%	8.29	**0.040***
	Low suicidal ideation (31-45)	60(77.6%) 29.4%	17(22.4%) 17.7%		
	Average suicidal ideation (46-105)	144(65.2%) 70.9%	77(34.8%) 80.2%		
	High suicidal ideation (106-125)	0(.0%) .0%	1(100.0%) 1.0%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	1(100.0%) 0.5%	0(.0%) .0%	1.41	0.842
	Low cognitive distortion (41-60)	14(70.0%) 6.9%	6(30.0%) 6.2%		
	Moderate cognitive distortion (61-90)	161(68.8%) 78.9%	73(31.2%) 76.0%		
	High cognitive distortion (91-110)	27(62.8%) 13.2%	16(37.2%) 16.7%		

Socio-demographic variables and suicidal ideation, cognitive distortions, impulsivity and depression in young adults, Patna (Bihar) India

Parameters	Category	Age category		Chi square	P Value
		<=20 yrs (n)=204	>20 yrs (n)=96		
	Very high cognitive distortion (111-125)	1(50.0%) 0.5%	1(50.0%) 1.0%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25)	27(84.4%) 13.2%	5(15.6%) 5.2%	4.69	0.196
	Average impulsive (-0.50 to +0.50)	139(65.9%) 68.1%	72(34.1%) 75.0%		
	Below average impulsive (-0.51 to 1.25)	37 (67.3%) 18.1%	18 (32.7%) 18.7%		
	Low impulsive (-1.26 to -2.00)	1 (50.0%) 0.5%	1 (50.0%) 1.0%		
Beck depression inventory	No depression (0-9)	68(67.3%) 33.3%	33(32.7%) 34.4%	6.26	0.099
	Mild depression (10-18)	77(68.8%) 37.7%	35(31.2%) 36.5%		
	Moderate depression (19-29)	50(74.6%) 24.5%	17(25.4%) 17.7%		
	Severe depression (30-63)	9(45.0%) 4.4%	11(55.0%) 11.5%		

The table 1. Those subjects belonged to <= 20 years were kept in first group and 21 to 24 years were kept in 2nd group. Out of 300, 204 were in first group and 96 were in second group.

The suicidal ideation is significant (r-8.29, P- value 0.040) at .05 level. The result shows that majority of the subjects (70.9%) had moderate level of suicidal ideation in 1st age group and 29.4% subjects had low level of suicidal ideations, where as in the 2ndage group (21 to 24yrs), the majority of subjects (80.2%) had average level of suicidal ideation and 17.7% had low level of suicidal ideation though only 1% subjects had very low and very high level of suicidal ideation.

In 1st age group, the majority of subjects (78.9%) had moderate level of cognitive distribution. 13.2% subjects had high cognitive distortion and 6.9% had low cognitive distortion. Only 0.5% subjects had very low and very high level of cognitive distortions. In 2ndage group also the majority of the subjects (76.0%) had moderate cognitive distortions. 16.7% subjects had high cognitive distortions. 6.2% subjects had low cognitive distortions. Only one percent (1%) subjects had very high level of cognitive distortion.

In 1st age group of impulsivities scale the majority of the subjects (68.1%) had moderate level of impulsivity. Then 18.1% subjects had impulsivity below than average. 13.2 % subjects had impulsivity above than average. Only 0.5% subjects had low impulsiveness. On the other hand, in the age range of 21 to 24 years (2nd age group) the majority of the subjects (75.0%) had average impulsive and 18.7% subjects had below average impulsive while 1% subjects had low impulsivity. Few subjects (5.2%) had impulsivity above average.

On depression scale, there is slightly different in both the age group. In 1st group, the majority of subjects (37.7%) had mild level of depression. 24.5% subjects had moderate

depression and 4.4 % subjects had severe level depression. Overall, 66.7% subjects had depression and 33.3% subjects had no depression. In 2nd age group (21 to 24) also the majority of subjects (36.5%) had mild depression. The few subjects (17.7%) had moderate depression and a few subjects (11.5%) had severe depression and 34.4% subjects had no depression.

Table 2: Association between sex and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression).

Parameters	Category	Gender		Chi square	P Value
		Male (n=150)	Female (n=150)		
Suicidal ideation scale	Very low suicidal ideation (25-30)	0 (.0%) .0%	1 (100%) 0.7%	9.25	**0.02***
	Low suicidal ideation (31-45)	48(63.2%) 32.2%	28(36.8%) 18.7%		
	Average suicidal ideation (46-105)	100(45.2%) 67.1%	121(54.8%) 80.7%		
	High suicidal ideation (106-125)	1(100%) 0.7%	0 (.0%) .0%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	1 (100.0%) 0.7%	0 (0%) 0%	3.42	0.489
	Low cognitive distortion (41-60)	11 (55.0%) 7.3%	9 (45.0%) 6.0%		
	Moderate cognitive distortion (61-90)	116(49.6%) 77.3%	118(50.4%) 78.7%		
	High cognitive distortion (91-110)	20 (46.5%) 13.3%	23 (53.5%) 15.3%		
	Very high cognitive distortion (111-125)	2 (100.0%) 1.3%	0 (0%) 0%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25)	24 (75%) 16.5%	8 (25%) 5.3%	11.59	**0.009***
	Average impulsive (-0.50 to +0.50)	103(48.8%) 68.7%	108(51.2%) 72.0%		
	Below average impulsive (-0.51 to 1.25)	23 (41.8%) 15.3%	32 (58.2%) 21.3%		
	Lowimpulsive (-1.26 to-2.00)	0 (.0%) .0%	2 (100.0%) 1.3%		
Beck depression inventory	No depression (0-9)	60 (60.4%) 40.7 %	40 (39.6%) 26. 7%	6.947	0.074
	Mild depression (10-18)	52 (46.4%) 34.7%	60 (54.6%) 40.0%		
	Moderate depression (19-29)	29 (43.3%) 19.3%	38 (56.7%) 25.3%		
	Severe depression (30-63)	8 (40.0%) 5.3%	12(60.0%) 8.0%		

The table 2. The result show there is significant difference on suicidal ideation (r – 9.25 p – 0.02) and impulsivity (r - 11.59, p – 0.009) between male and female subjects.

Finding of this table indicated that majority of the subjects: 67.1% male and 80.7% female had average suicidal ideation;77.3% male and 78.7% female had moderate cognitive

distortion, 68.7% male and 72.0% female subjects had average impulsivity, while majority of male (59.3%) and female (73.3%) subjects had depression at different level although 40.7% male and 26.7% female subjects had no depression at all. This study reveals that female were higher in depression as compared to male at different level of depression.

Table 3: Association between religion and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)

Parameters	Category	Religion category		Chi square	P Value
		Hindu N=284	Islam & Christian N=15+1=16		
Suicidal ideation scale	Very low suicidal ideation (25-30)	1(100%) 0.4%	0(0%) 0%	3.47	0.747
	Low suicidal ideation (31-45)	75(98.7%) 26.5%	1(1.3%) 6.7%		
	Average suicidal ideation (46-105)	206(93.2%) 72.8%	15(6.8%) 93.7%		
	High suicidal ideation (106-125)	1(100%) 0.4%	0(0%) 0%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	1(100%) 0.4%	0 (0%) 0%	2.63	0.955
	Low cognitive distortion (41-60)	20(100%) 7.0%	0(0%) 0%		
	Moderate cognitive distortion (61-90)	219(93.6%) 77.1%	15(6.4%) 93.7%		
	High cognitive distortion (91-110)	42(97.7%) 14.8%	1(2.3%) 6.7%		
	Very high cognitive distortion (111-125)	2(100%) 0.7%	0(0%) 0%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25)	31(96.9%) 10.9%	1(3.1%) 6.25%	10.90	0.091
	Average impulsive (-0.50 to +0.50)	198(93.8%) 69.7%	13(6.2%) 86.7%		
	Below average impulsive (-0.51 to 1.25)	53(96.4%) 18.7%	2(3.6%) 13.3%		
	Low impulsive (-1.26 to -2.00)	2(100%) 0.7%	0(0%) 0%		
Beck depression inventory	No depression (0-9)	95(94.1%) 33.5%	6(6.0%) 37.5%	4.68	0.585
	Mild depression (10-18)	104(92.9%) 36.6%	8(7.1%) 53.3%		
	Moderate depression (19-29)	65(97.0%) 22.9%	2(3.0%) 13.3%		
	Severe depression (30-63)	20(100%) 7.0%	0(0%) 0%		

The table 3. The result shows that majority of Hindus (72.8%) and Islam's (93.7%) had average suicidal ideation, 77.1% Hindu subjects had moderate level of distortion in thinking, 93.7% Muslims had moderate cognitive distortion, 69.7% Hindu & 86.7% Muslims had average impulsivity. The majority of Hindu (36.6%) and Muslim (53.3%) subjects had mild level of depression.

Table 4: Association between marital status and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression).

Parameters	Category	Marital status		Chi square	P Value
		Married N=37	**Unmarried N=263**		
Suicidal ideation scale	Very low suicidal ideation (25-30)	1(100.0%) 2.8%	0(0.0%) 0.0%	11.56	**0.009***
	Low suicidal ideation (31-45)	4(5.3%) 11.1%	72(94.7%) 27.4%		
	Average suicidal ideation (46-105)	31(14.0%) 86.1%	190(86.0%) 72.2%		
	High suicidal ideation (106-125)	0(0.0%) 0.0%	1(100.0%) 0.4%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	0(0%) 0%	1(100%) 0.4%	1.55	0.816
	Low cognitive distortion (41-60)	4(20%) 10.8%	16(80%) 6.1%		
	Moderate cognitive distortion (61-90)	28(12%) 75.7%	206(88%) 78.3%		
	High cognitive distortion (91-110)	5(11.6%) 13.5%	38(88.4%) 14.4%		
	Very high cognitive distortion (111-125)	0(0%) 0%	2(100%) 0.8%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25)	1(3.1%) 2.7%	31(96.9%) 11.8%	5.96	0.114
	Average impulsive (-0.50 to +0.50)	26(12.3%) 70.3%	185(87.7%) 70.3%		
	Below average impulsive (-0.51 to 1.25)	9(16.4%) 24.3%	46(83.6%) 17.5%		
	Low impulsive (-1.26 to -2.00)	1(50.0%) 2.7%	1(50.0%) 0.4%		
Beck depression inventory	No depression (0-9)	10(9.9%) 27.0%	91(90.1%) 34.6%	1.76	0.622
	Mild depression (10-18)	15(13.4%) 40.5%	97(86.6%) 36.9%		
	Moderate depression (19-29)	8(11.9%) 21.6%	59(88.1%) 22.4%		
	Severe depression (30-63)	4(20.0%) 10.8%	16(80.0%) 6.1%		

The table 4. Showed that suicidal ideation was significantly correlated (r-11.56, P- 0.009) with married and unmarried subjects, majority of the married (86.1%) and unmarried (72.2%) subjects had moderate/ average level of suicidal ideation. Most of the married and unmarried subjects (75.7%, 78.3%) respectively had moderate level of cognitive distortions. The majority (70.3%) of married & unmarried subjects had average impulsiveness. The result shows that unmarried subjects (11.8%) and married (2.7%) had above impulsivity

than average. This also indicates that unmarried group had higher impulsivity than married group. The majority of married (40.5%) and unmarried (36.9%) subjects had mild level of depression.

Table 05: Association between education and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)

Parameters	Category	Educational level			Chi square	P value
		10+2 (n=36)	Graduation (n=228)	Post graduation (n=36)		
Suicidal ideation scale	Very low suicidal ideation (25-30)	1(100%) 2.8%	0(0%) 0%	0(0%) 0%	12.6	**0.049***
	Low suicidal ideation (31-45)	5(6.6%) 13.9%	65(85.5%) 28.6%	6(7.9%) 16.7%		
	Average suicidal ideation (46-105)	30(13.6%) 83.3%	161(72.9%) 70.9%	30(13.6%) 83.3%		
	High suicidal ideation (106-125)	0(0%) 0%	1(100%) 0.4%	0(0%) 0%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	0(0%) 0%	1(100%) 0.4%	0(0%) 0%	2.26	0.972
	Low cognitive distortion (41-60)	1(5.0%) 2.8%	17(85.0%) 7.5%	2(10.0%) 5.6%		
	Moderate cognitive distortion (61-90)	30(12.8%) 83.3%	175(74.8%) 76.8%	29(12.4%) 80.6%		
	High cognitive distortion (91-110)	5(11.6%) 13.9%	33(76.7%) 14.5%	5(11.6%) 13.9		
	Very high cognitive distortion (111-125)	0(0%) 0%	2(100%) 0.9%	0(0%) 0%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25)	8(25.0%) 22.2%	23(71.9%) 10.1%	1(3.1%) 2.8%	8.32	0.215
	Average impulsive (-0.50 to +0.50)	23(10.9%) 63.9%	161(76.3%) 70.6%	27(12.8%) 75.0%		
	Below average impulsive (-0.51 to 1.25)	5(9.1%) 13.9%	42(76.4%) 18.4%	8(14.5%) 22.2%		
	Low impulsive (-1.26 to -2.00)	0(0%) 0%	2(100%) 0.9%	0(0%) 0%		
Beck depression inventory	No depression (0-9)	16(15.8%) 44.4%	71(70.3%) 31.1%	14(13.9%) 38.9%	18.19	**0.006***
	Mild depression (10-18)	10(8.9%) 27.8%	90(80.4%) 39.5%	12(10.7%) 33.3%		
	Moderate depression (19-29)	5(7.5%) 13.9%	58(86.6%) 25.4%	4(6.0%) 11.1%		
	Severe depression (30-63)	5(25.0%) 13.9%	9(45.0%) 3.9%	6(30.0%) 16.7%		

The table 05. The result shows that majority of the subjects in all three educational level had average suicidal ideation 10+2 (83.3%), Graduation (70.9%) and post graduation (83.3%) respectively. Most of the 10 + 2, graduate, post graduate (83.3%, 76 .8%, 80.6%) respectively had moderate cognitive distortion. The majority of subjects in all three group 10 + 2 (63.9%), graduation (70.6%), post graduate (75.0%) had average impulsive.

The result shows that suicidal ideation (chi-squire 12.6, P– 0.049) and depression (chi-squire-18.10, P-0.006) were significantly correlated with different level of education. The majority of subjects in all three educational group 10 + 2 (27.8%), graduate (39.5%), postgraduate (33.3%) had mild level of depressions, while lesser number in moderate and severe depression

Table 6: Association between residence and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)

Parameters	Category	Residence			Chi square	P Value
		Rural (n=102)	Urban (n=181)	Suburban (n=17)		
Suicidal ideation scale	Very low suicidal ideation (25-30)	0(0%) 0%	1(100%) 0.6%	0(0%) 0%	2.71	0.844
	Low suicidal ideation (31-45)	25(32.9%) 24.5%	47(61.8%) 26.1%	4(5.3%) 23.5%		
	Average suicidal ideation (46-105)	76(34.4%) 74.5%	132(59.7%) 73.3%	13(5.9%) 76.5%		
	High suicidal ideation (106-125)	1(100%) 1.0%	0(0%) 0%	0(0%) 0%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	1(100%) 1.0%	0(0%) 0%	0(0%) 0%	5.36	0.718
	Low cognitive distortion (41-60)	7(35.0%) 6.9%	13(65.0%) 7.2%	0(0%) 0%		
	Moderate cognitivedistortion (61-90)	75(32.1%) 73.5%	145(62.0%) 80.1%	14(6.0%) 82.4%		
	High cognitive distortion (91-110)	18(41.9%) 17.6%	22(51.2%) 12.2%	3(7.0%) 17.6%		
	Very high cognitive distortion (111-125)	1(50.0%) 1.0%	1(50.0%) 0.6%	0(0%) 0%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25)	12(37.5%) 11.8%	18(56.2%) 9.9%	2(6.2%) 11.8%	2.16	0.904
	Average impulsive (-0.50 to +0.50)	72(34.1%) 70.6%	126(59.7%) 69.6%	13(6.2%) 76.5%		
	Below average impulsive (-0.51 to 1.25)	18(32.7%) 17.6%	35(63.6%) 19.3%	2(3.6%) 11.8%		
	Lowimpulsive (-1.26 to-2.00)	0(0%) 0%	2(100%) 1.1%	0(0%) 0%		
Beck depression inventory	No depression (0-9)	35(34.7%) 34.3%	59(58.4%) 32.6%	7(6.9%) 41.2%	4.84	0.565
	Mild depression (10-18)	40(35.7%) 39.2%	67(59.8%) 37.0%	5(4.5%) 17.6%		
	Moderate depression (19-29)	18(26.9%) 17.6%	46(68.7%) 25.4%	3(4.5%) 17.6%		
	Severe depression (30-63)	9(45.0%) 8.8%	9(45.0%) 5.0%	2(10.0%) 11.8%		

The table 6. The result shows that majority of the subjects from different habitat (rural 74.5%, urban 73.3%, suburban 76.5%) had average level of Suicidal ideation. Most of the subjects (rural 73.5%, urban 80.1%, and suburban 82.4%) had moderate cognitive

distortions, majority of the rural (70.6%), urban (69.6%), suburban (76.5) subjects had average impulsivity.

Table 7: Association between income and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)

Parameters	Category	Income in per month (Rs.)			Chi square	P Value
		Upto Rs.10,000	Rs. 10,001 to 30,000	Above Rs. 30,000		
Suicidal ideation scale	Very low suicidal ideation (25-30)	0(0%) 0%	0(0%) 0%	1(100%) 1.4%	7.60	0.269
	Low suicidal ideation (31-45)	21(27.6%) 22.3%	38(50.0%) 29.0%	17(22.4%) 23.0%		
	Average suicidal ideation (46-105)	73(33.0%) 77.7%	93(42.1%) 71.0%	55(24.9%) 74.3%		
	High suicidal ideation (106-125)	0(0%) 0%	0(0%) 0%	1(100%) 1.4%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	0(0%) 0%	0(0%) 0%	1(100%) 1.4%	10.00	0.265
	Low cognitive distortion (41-60)	5(25.0%) 5.3%	12(60.0%) 9.2%	3(15.0%) 4.1%		
	Moderate cognitive distortion (61-90)	72(30.8%) 75.8%	105(44.9%) 80.2%	57(24.4%) 77.0%		
	High cognitive distortion (91-110)	18(41.9%) 18.9%	13(30.2%) 9.9%	12(27.9%) 16.2%		
	Very high cognitive distortion (111-125)	0(0%) 0%	1(50.0%) 0.8%	1(50.0%) 1.4%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25) C	8(25.0%) 8.4%	16(50.0%) 12.2%	8(25.0%) 10.8%	5.68	0.460
	Average impulsive (-0.50 to +0.50) D	65(30.8%) 68.4%	94(44.5%) 71.8%	52(24.6%) 70.3%		
	Below average impulsive (-0.51 to 1.25) E	22(40.0%) 23.2%	19(34.5%) 14.5%	14(25.5%) 18.9%		
	Low impulsive (-1.26 to -2.00) F	0(0%) 0%	2(100%) 1.5%	0(0%) 0%		
Beck depression inventory	No depression (0-9)	28(27.7%) 29.5%	48(47.5%) 36.6%	25(24.8%) 33.8%	4.21	0.648
	Mild depression (10-18)	33(29.5%) 34.7%	51(45.5%) 38.9%	28(25.0%) 37.8%		
	Moderate depression (19-29)	26(38.8%) 27.4%	26(38.8%) 19.8%	15(22.4%) 20.3%		
	Severe depression (30-63)	8(40.0%) 8.4%	6(30.0%) 4.6%	6(30.0%) 8.1%		

The table 7. There was no significant difference found among all three income groups. The result shows that majority of subjects in group (A-77.7%, B-71.0%, C-74.3%) had average suicidal ideation. The majority of the subjects in all income groups (A-75.8%, B-80.2%, C-77.0%) had moderate cognitive distortion. The majority of subjects in all income groups (A-68.4%, B-71.8%, C- 70.3%) had average impulsivity. few subjects in group A-23.2%, B-14.5%, C-18.9%) had below average impulsivity. The majority of the subjects in all income groups (A-34.7%, B-38.9%, C-37.8%) had mild depression.

Table 8: Association between family type and different psychological variable (suicidal ideation, cognitive distortions, impulsivity and depression)

Parameters	Category	Family type		Chi square	P value
		Joint & Extended family (n=178+7=185)	Nuclear (n=115)		
Suicidal ideation scale	Very low suicidal ideation (25-30)	1(100%) 0.5%	0(0%) 0%	4.06	0.669
	Low suicidal ideation (31-45)	41(53.9%) 22.16%	35(46.1%) 30.7%		
	Average suicidal ideation (46-105)	142(64.3%) 76.7%	79(35.7%) 69.3%		
	High suicidal ideation (106-125)	1(100%) 0.5%	0(0%) 0%		
Cognitive distortion scale	Very low cognitive distortion (25-40)	1((100%) 0.5%	0(0%) 0%	51.98	**0.000***
	Low cognitive distortion (41-60)	13(65.0%) 7.02%	7(35.0%) 6.1%		
	Moderate cognitive distortion (61-90)	135(57.7%) 72.97%	99(42.3%) 86.1%		
	High cognitive distortion (91-110)	35(81.4%) 18.91%	8(18.6%) 7.0%		
	Very high cognitive distortion (111-125)	1(50.0%) 0.5%	1(50.0%) 0.9%		
Impulsivity scale	Above average impulsive (+0.51 to +1.25) C	14(43.7%) 7.56%	18(56.2%) 15.71%	5.54	0.476
	Average impulsive (-0.50 to +0.50) D	134(63.5%) 72.43%	77(36.5%) 67.0%		
	Below average impulsive (-0.51 to 1.25) E	36(65.4%) 19.45%	19(34.5%) 16.5%		
	Low impulsive (-1.26 to -2.00) F	1(100%) 0.5%	1(100%) 0.9%		
Beck depression inventory	No depression (0-9)	54(53.5%) 29.18%	47(46.5%) 40.9%	13.30	**0.038***
	Mild depression (10-18)	69(61.6%) 37.29%	43(38.4%) 37.4%		
	Moderate depression (19-29)	45(67.2%) 24.32%	22(32.8%) 19.1%		
	Severe depression (30-63)	17(85.0%) 9.18%	3(15.0%) 2.6%		

The table 8 indicated that significant relationship was found between cognitive distortion (chi squire 51.98, P- 0.000) and depression (chi squire 13.30, P-0.038) between joint family and nuclear family.

The result shows that joint & extended family (76.7%) and nuclear family (69.3%) had average level of suicidal ideation. The significant relationship was found between cognitive distortion & family type (chi squire 51.98, p – 0.000). The majority of subjects from joint & extended family (72.9%) and nuclear family (86.1%) had moderate cognitive distortion. The result shows that majority of the subjects from joint & extended family (72.43%) and nuclear (67.0%) had average impulsivity. Overall, the 29.18% subjects from joint & extended family had no depression and 70.82% had different level of depression where as

40.9% subjects from nuclear family had no depression where as 59.1% had different level of depression.

DISCUSSION

The aim of the present study was to assess the relationship and difference among socio - demographic variable and various psychological variables. Age wise findings of the subjects indicated that there is significant difference on suicidal ideation (r-8.29, P- value 0.040) between the first age group and second age group. The 2nd age group (21 to 24yrs), had more suicidal ideation as compared to 1st age group (18-20 years). Previous study also suggested that majority of individuals who have suicide ideation or attempt suicide are between 15-24 years old[21]. Another study highlighted that peak levels of past-year ideation and plans occurred during mid adolescence for girls, but slowly increased through late adolescence for boys.[22]

Sex wise findings showed there is significant difference on suicidal ideation (r –p – 0.02) and impulsivity (r -11.59, p – 0.009) between male and female subjects. Female (80.7%) had more suicidal ideation as compared to male (67.1%). Male subjects (16.5%) had more impulsivity than female subject (5.3%). A study done by L Vijaya Kumar (2015) "women are more likely than men to report suicidal ideation and attempts and to be hospitalized for suicide attempts" and hence in terms of total burden of morbidity and mortality combined the burden of female suicidal behavior is more than men[23][24]. In earlier research studies, findings showed that females reported a higher tendency for suicidal thoughts and ideation compared to male adolescents[25]. However, the latest findings in Malaysia showed that the level of suicidal ideation among male students is higher compared to female students[26].

Marital wise findings show that, there was significant correlation (r-11.56, P- 0.009) between married and unmarried subjects on suicidal ideation. The result showed that married subjects (86.1%) had more suicidal ideation as compared to unmarried (72.2%) subjects. Marriage is not a strong protective factor for suicide attempts in developing countries[27]. In 2009, 70.4% of all suicide victims in India were married and 21.9% were unmarried. Divorcees and individuals who were separated accounted for about 3.4%, while widows and widowers comprised 4.3% of the total suicide victims.[28]

Education wise findings showed that there was significant difference between educational level on suicidal ideation and depression. Subjects studied up to 10+2 and post-graduation had more suicidal ideation (83.3%) as compared to subjects studied up to graduation (70.9%). Similarly, graduate subjects had more depression (68.8%) as compared to post graduation (61.1%), and intermediate (55.6%). The NCRB data reveal that 25.3% of suicide victims were educated up to primary level, 23.7% had a middle-school education, 21.4% were illiterate, and 3.1% were graduates or postgraduates[29]. Fewer years of education may be associated with higher suicide rates. In the United States, the suicide rate in 2014 was approximately two times greater in men with a high school education than men with a college degree or more education (39 and 17 suicides per 100,000 individuals)[30]

Regarding family type, the present study revealed there was significant relationship found between joint family and nuclear family on cognitive distortion (chi squire 51.98, P-0.000) and depression (chi squire 13.30, P-0.038). The subjects who lived in Nuclear family had more cognitive distortion. (94.0%) as compared to Joint family (91.93%). The subjects who lived in joint family had more depression (70.79%) as compared to nuclear family (59.1%).

This contradiction might have occurred due to fast changing society where many individuals have started preferring to live in nuclear family.

CONCLUSION

There is significant positive correlation among suicidal ideation, cognitive distortion and depression where as there is negative correlation between suicidal ideation and impulsivity, there is no correlation between depression and impulsivity, there is no correlation between cognitive distortion and impulsivity. Female subject had more depression as compared to male subject. Socio-cultural activity as well as mental disengagement may be the reason behind this gender difference, because in Indian society especially in Bihar, male get more chance for outside activities than female. Age is also a factor which plays an important role in initiation and maintenance of suicidal ideation. As per the present study, the upper age group (21-24 years) had more suicidal ideation as compared to lower age group (18-20 years). It may be because of age growing maturity. As age grows so the people get matured. On contrary to it the lesser age, the lesser maturity and responsibility. . In the present study it was found that female had more suicidal ideation as compared to male. Depression may be one reason behind it because female are more depressed than male. But on the other hand, male subjects (16.5%) had more impulsivity as compared to female subjects (5.3%). Marital status is also a factor which is directly related with suicidal ideation. In the present study, it was clearly indicated that married subjects had more suicidal ideation as compared to unmarried subjects.

REFERENCES

1. American College Health Association. (2013). American College Health Association-National College Health Assessment II:Canadian Reference Group Data Report Spring 2013. Hanover, MD, USA:Author.
2. Richard-Devantoy, S., Szanto, K., Butters, M. A., Kalkus, J., & Dombrovski, A. Y. (2015). Cognitive inhibition in older high lethality suicide attempters. International Journal of Geriatric Psychiatry, 30,274-283.
3. Jager-Hyman, S., Cunningham, A., Wenzel, A., Mattei, S., Brown, G. K., & Beck, A. T. (2014). Cognitive distortions and suicide attempts. Cognitive Therapy and Research, 38, 369-374.
4. WHO, 2012.http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/ cited on 15.12.2019
5. NCRB, 2014. http://www.nber.org/chapters/c10690.pdf cited on 15.12.2019.
6. Swann, A. C., Bjork, J. M., Moeller, F. G., et al. (2002). Two models of impulsivity: relationship to personality traits and psychopathology, Biological Psychiatry, 51, 988–994.
7. Corruble, E., Damy, C. & Guelfi, J. D. (1999). Impulsivity: A relevant dimension in depression regarding suicide attempts. Journal of Affective Disorder, 53, 211-215.
8. Abdollahi, Abbas, Mansor Abu Talib, SitiNorYaacob, and Zanariah Ismail. (2015): The role of hardiness in decreasing stress and suicidal ideation in a sample of undergraduate students. Journal of Humanistic Psychology 55, 202– 22.
9. Boeninger, D. K., Masyn, K. E., Feldman, B. J., & Conger, R. D. (2010). Sex differences indevelopmental trends of suicide ideation, plans, and attempts among European American adolescents. Suicide and Life-Threatening Behavior, 40, 451-464.
10. Jordans, M., Rathod, S., Fekadu, A., et al. (2017). Suicidal ideation and behavior

among community and health care seeking populations in five low and middle income countries: A cross sectional study Epidemiological Psychiatric Science.

11. Sara Mackenzie, Jennifer, R., Wiegel,, M.M., & David, B. (2011). Depression and suicide ideation among students accessing campus health care. http://Onlinelibrary.wiley.com. cited on 15.12.2019.

12. Holly, C.W., Amelia, M.A., Kimberly, M.C., et al. (2010). Prevalence and predictors of persistent ideation, plans and attempts. 27, 287-294. http://www.jad- journal.com. cited on 15.12.2019.

13. David, M. Rudd. (1989). Prevalence of suicidal ideation among college students. Suicide and Life-Threatening Behavior. http://Onlinelibrary.wiley.com. cited on 15.12.2019.

14. Mobini, S., Pearce, M., Grant, A., et al. (2006). The relationship between cognitive distortions, impulsivity, and sensation seeking in a non-clinical population sample. Personality and Individual Differences, 40, 1153–1163.

15. Perveen, S., Kazmi, S.F., & Ur, Rehman, A. (2016). Relationship between negative cognitive style and depression among medical students. Journal of Ayub Medical College, Abbottabad, 28, 94-8.

16. Yong-guang, W., Shen Chen, Z. X., Zhi-hua, S. & Yi-quan, W. (2017). Family history of suicide and high motor impulsivity distinguish suicide attempters from suicide ideators among college students. Journal of Psychiatric Research, 90, 21-25.

17. Sisodia, D.S. & Bhatnagar, V. (2011). Manual for suicidal ideation scale, National psychological corporation, Agra, India. http://www.casestudiesjournal.com/ cited on 25.12.2019.

18. Sisodia, D.S. & Sharma D. (2005). Manual for cognitive distortion scale, National psychological corporation, Agra, India. http://www.npcindia.com/downloads/NPC-Catalouge-2018.pdf cited on 25.12.2019.

19. Rai, S.N. & Sharma, A. (2013). Manual for Impulsiveness Scale, National psychological corporation, Agra, India. www.npcindia.com › downloads › NPC-Catalouge-2017 cited on 25.12.2019.

20. Beck Depression Inventory-II Manual. San Antonio, TX (2006): The Psychological Corporation.

21. Parellada M,Safz,P,,Morev,D,,Vidal J,Llorence,C,,Alvarare,M (2008) :Is attempted suicide difficult in adolesents and adults, psychiatry research 157,131-137.

22. Boeninger DK, Masyn KE, Feldman BJ, Conger RD. Sex differences in developmental trends of suicide ideation, plans, and attempts among European American adolescents. Suicide Life Threat Behav. 2010;40(5):451–464.

23. Vijaya Kumar L. Suicide in women. Indian J Psychiatry 2015;57Suppl 2:S233-8.

24. Lewinsohn, P. M., Rohde, P., Seeley, J. R., & Baldwin, C. L. (2001). Gender differences in suicide attempts from adolescence to young adulthood. Journal of the American Academy of Child & Adolescent Psychiatry, 34, 599–611.

25. Grøholt B, Ekeberg Ø, Wichstrøm L, Haldorsen T. Sex differences in adolescent suicides in Norway, 1990–1992. Suicide Life Threat Behav. 1999;29(4):295–308.

26. Mustaffa S, Aziz R, Mahmood MN, Shuib S. Depression and suicidal ideation among university students. Procedia Soc Behav Sci. 2014; 116:4205–4208.

27. World Health Organization. (2012). Public health action for the prevention of suicide: A framework. Retrieved from http://www.who.int/mental_health/resources/suicide/en/index.html.

28. National Crime Records Bureau (2007); Suicide: An Indian perspective, https://www.ncr.nim.nih.gov.

29. National Crime Records Bureau (2009); Suicide: An Indian perspective, https://www.ncr.nim.nih.gov.
30. Phillips JA, Hempstead K. Differences in U.S. Suicide Rates by Educational Attainment, 2000-2014. Am J Prev Med 2017; 53:123.

Conflict of Interest
The author declared no conflict of interest.

How to cite this article: Kumar P., Kumar P. & Dutta Mishra S. (2021). Socio-demographic variables and suicidal ideation, cognitive distortions, impulsivity and depression in young adults, Patna (Bihar) India. *International Journal of Indian Psychology*, *9*(1), 464-479. DIP:18.01.047/20210901, DOI:10.25215/0901.047