

# Impulsivity in Suicide Attempters: A Cross-sectional Study from a Teaching Hospital in India

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## ABSTRACT

**Introduction:** Studies have consistently reported that a considerable proportion of suicide attempts are impulsive and unplanned. However, data on the characteristics of these impulsive attempters is still limited. The relationship between impulsive behaviour and suicide attempts can be thought of having two dimensions: a suicide attempt can be impulsive or not and the suicide attempter can have impulsive traits or not. The impulsiveness of many attempts and the fluctuating nature of suicidal thinking are of concern, as many prevention strategies rely on the early identification of either suicidal thoughts and/or plans.

**Aim:** The present study was attempted to measure the intensity of the suicide attempt, and to assess the relationship of the suicide intent score with the three second order factors (Attention impulsiveness, motor impulsiveness, non planning impulsiveness) of impulsivity in Barratt Impulsiveness Scale to identify the pattern (if any) of suicidal intent before an impulsive attempt.

**Materials and Methods:** This was a hospital based cross sectional study. Socio-demographic and clinical profile sheet which included different variables was completed on 72 attempters. Beck's Suicide Intent Scale (SIS) was used to assess the severity of the intent in the patient and Barratt Impulsiveness Scale (BIS-11) was used to measure the personality construct of impulsiveness. Data entry and analysis was done using SPSS 20 statistical software

and descriptive statistics, chi-square test, t-test were used to find significance across groups. Statistical significance was assumed at  $p < 0.05$ .

**Results:** Among the 72 attempters, 38 (52.8%) were male and 34 (47.2%) were females. Majority of the sample were illiterate 30 (42%), from a rural background 61 (84.7%), whose primary method of attempt was by ingestion of poison 51 (70.8%) due to family/inter personal problems 43 (59.7%). The sample was divided based on their scores of suicide intent scale and the three second order factor scores of BIS. High suicide intent score was present in majority of the patients 35 (48.6%), and 14 (19.5%) patients had low suicide intent score. The mean scores of impulsivity were highest among the low suicide intent group, and were gradually decreasing as the intent of the attempt was increasing (from low to high) in the sub scales of attention impulsiveness ( $15.6 \pm 1.94$ ) and non-planning impulsiveness ( $31.5 \pm 2.65$ ) which suggests that low intent attempts may be impulsive acts. When individual suicidal intent groups were compared, a significant difference found between motor impulsiveness and non-planning impulsiveness within medium intent ( $p = 0.043$ ) and between attention impulsiveness and non-planning impulsiveness within high intent ( $p = 0.012$ ).

**Conclusion:** There is a significant association between impulsivity and intent, and it is an important factor of suicide behaviour in suicide attempters.

**Keywords:** Impulsiveness, Non-planning, Poisoning, Suicide attempt

## INTRODUCTION

Suicide attempt is defined as a potentially self-injurious behaviour associated with at least some degree of psychological intent to end one's life. Patients with history of serious suicide attempts are at greater risk for future suicide than those who have made less serious attempts [1]. Self-harm behaviours (e.g., cutting on oneself) not associated with intent to kill oneself are not considered to be a suicide attempt. Suicidal intent has two components: an objective component, which defines the circumstances surrounding the act (e.g., precautions taken against discovery, preparation of the act, presence of a note, degree of isolation), and a subjective component, which defines the subject's declarative statements about his intentions (e.g., feelings and thoughts at the time of the attempt, purpose, expectation to die, degree of ambivalence about living). Thoughts about suicide at one point in life are not uncommon but most persons with suicidal ideation do not proceed to action [2]. Suicide intent scores have shown to be related to the potential lethality of the method of self-harm in the past. Measuring suicide intent is more useful than measuring the lethality of the attempts (i.e., the degree of danger to life resulting from self-injurious behaviour) [3]. In a study conducted by Isometsa ET, it was found

that suicide attempt is a potent risk factor for completed suicide and in approximately 45% of suicide cases a history of unsuccessful attempt was present [4]. Impulsivity is an important component of suicidal behaviour [5]. Previous reports outside Asia have shown that impulsivity is associated with suicide attempt [6]. Recent research also demonstrated that impulsive suicide attempts, while occurring in more than half of the documented suicide attempts, might surprisingly result in decreased lethality [7]. This relationship might be due to the subject's intention at the time of their suicide attempt. Less than 50% of the subjects with a history of suicide attempts really wanted to die, while the reported motives otherwise have been to escape from an intolerable situation, to manipulate others [8], or were seen as impulsive acts of little planning [9].

Impulsivity is defined as a predisposition towards rapid and unplanned reactions to internal or external stimuli without regard to their negative consequences to the impulsive individual [10]. It is considered to be one of the most consistent correlates of suicidal behaviour [11]. Impulsiveness has also been conceptualised as a cognitive dimension reflecting a lack of planning and a lack of concern about future behaviour. The suicidal temperament hypothesis suggests that certain personality traits, such as impulsivity, may render an

individual vulnerable to the risk of suicide [12]. However, the role of impulsivity in suicidal behaviour is controversial. Although much of the previous literature on suicide has proposed direct linkages between impulsivity and suicide [13], some researchers have stated that suicidality is not predicted by higher impulsivity when other psychological variables are accounted for [14]. Suicide is not always the result of mental illness [15]. And as suggested higher levels of impulsive and aggressive traits play a role in suicide, particularly among younger individuals [16]. Also, some psychiatric disorders are associated with impulsivity [10]. The relationship between impulsive behaviour and suicide attempts can be thought of as having two dimensions: a suicide attempt can be impulsive or not and the suicide attempter can have impulsive traits or not. These two dimensions may not completely overlap or be equivalent and may have different relationship with lethality, another of the major dimensions of suicidal behaviour [7]. Another conceptual issue is that impulsivity in general can be considered a continuous measure or a discrete classification (high levels of impulsivity are present or not) [10].

A considerable proportion of suicide attempts are made on impulse. However, knowledge of characteristics of impulsive attempters is still limited. With this background, we undertook the present study in a group of subjects with attempted suicide presenting to our teaching hospital. The research had two objectives: To measure the intensity of the suicide attempt and to assess the relationship of the suicide intent score with the three sub scales of impulsivity in Barratt Impulsiveness Scale to identify the pattern (if any) of suicidal intent before an impulsive attempt.

## MATERIALS AND METHODS

This was a hospital-based cross-sectional study. The study was conducted at a teaching hospital located in a semi-urban area from August 2016 to January 2017. Approval for the study was obtained from the Institutional Ethics Committee bearing approval no 038/2016. The patients who attempted suicide were referred to Psychiatry Outpatient Department (OPD) for psychiatric assessment and necessary intervention from the medical facility after their physical condition improved. All the attempted suicide patients who attended Psychiatry OPD within the study period, from ages 15-65 years were evaluated in detail with a reliable informant. Written informed consent was obtained for the study from both the patients and their primary caregivers. Total patients initially considered for the study were 85 of which 13 were excluded, as they suffered from comorbid medical and psychiatric illnesses (such as patients with mental retardation, Organic mental disorders, illicit drug use other than nicotine and alcohol and personality disorders) making the final study sample of 72 patients. All patients entered into the study were accounted for. If some were not accounted for, the missing data would not seriously impair the interpretation of the study as the objective was to find impulsivity factor in the attempters which may or may not be present in the missing sample. The specific age groups were considered because: (i) It is uncommon to see suicide cases under the age of 15 years in regular practice. Also, mental retardation was considered in the exclusion criteria; (ii) Patients above the age of 65 years were excluded on basis of their primary physical and mental condition. Majority of patients above 65 years of age suffered from comorbid medical conditions. The above factors were considered as exclusion criteria not to affect the study as we included patients with no current psychiatric and medical illnesses.

Socio-demographic and clinical profile sheet were completed to record variables including age, gender, locality, level of education, employment status, type of family, socio-economic status, marital status, family history of suicide attempts and substance use. Beck's SIS was used to assess the severity of the intent in the patient. The scale consists of 15 questions which are scaled from 0-2, which take into account both the logistics of the suicide attempt as well as the intent. The scale has high reliability and validity. Total score of 15-19 was regarded as low intent, score range of 20-28 as medium intent and a score

>29 was considered as high intent [17]. Barratt Impulsiveness Scale (BIS-11) is a 30 item self-report scale used to measure the personality construct of impulsiveness [18]. It contains a total of 30 items, each of which was answered on a 4-point Likert scale (rarely/never=1, occasionally=2, often=3, almost always/always=4), and this yields a total score. The scale had three second order factors representing the multi-dimensional nature of impulsiveness namely attention/cognition impulsiveness, motor impulsiveness, and non-planning impulsiveness. Attention impulsiveness assessed task at hand, thought insertions, and racing thoughts (8 items); motor impulsiveness assesses acting on the spur of the moment and perseverance (11 items); and non-planning impulsiveness assessed planning and thinking carefully, and enjoyment of challenging mental tasks (11 items). Some of the items were reverse scored as 4,3,2,1 (items=1,7,8,9,10,12,13,15,20,29,30). A level of impulsiveness was calculated by summing up the scores for each item. The minimum score is 30 and maximum score is 120. Higher score means higher degree of impulsivity. While many scholarly manuscripts report only the total score, it was recommended that at least the second order factors should be reported to account for their individual contribution to the relationship being tested. In the present study, the average of the total score of each patient for the three respective subscales of BIS-11 (Attention, Motor, Non Planning) was calculated and the patients were designated to four groups such as Never one, occasionally two, Often three, Always four for each of the three sub scales (Attention, Motor, Non Planning), to find a relation (if any) between suicidal intent and the three categories of Barratt Impulsiveness Scale.

The statistical analysis was carried out using SPSS (version 20). The demographic and clinical characteristics were represented using descriptive statistics including mean, standard deviations, frequencies, and percentages. The scale and sub-scale scores were calculated for various instruments as per scoring instructions. Chi-square tests (cross tabulation analyses) and t-tests were used to compare the significant difference on categorical and continuous variables across groups. All tests were two-tailed and a p-value of <0.05 was considered statistically significant.

## RESULTS

[Table/Fig-1] depicts the distribution of the sample according to the various socio demographic variables. It was found that majority were illiterate 30 (42%) and males 38 (52.8%) were marginally more than the females. Majority of the study population was in the age group of 15-25 years 30 (42%) hailing from a rural background 61 (84.7%) who were mostly farmers 39 (54.2%). The primary reason stated for the attempt was family problems 43 (59.7%) and prominent method adopted was ingestion of poison 51 (70.8%).

**Distribution of study population according to suicide intent score (n=72):** High Suicide intent score was present in majority of the patients 35 (48.6%), followed by 23 (31.9%) having medium intent, and 14 (19.5%) patients had low suicide intent score.

**Association of suicide intent scores with different socio demographic variables:** When Suicide Intent score was compared with different factors, we found a significant association ( $p<0.05$ ) with age, gender, joint/nuclear type of family, education, marital status, reasons for suicide, and history of alcohol use at the time of the attempt. Low suicide intent was found in females 12 (35.3%), who were unmarried 9 (32.2%) having family/inter personal problems 14 (32.5%) and poisoning 14 (27.4%) was the mode of suicide attempt.

The [Table/Fig-2] shows the mean scores of suicide intent corresponding to Attention, Motor, and non-planning impulsivity scores. Viewing the mean scores with standard deviations, the scores are gradually decreasing as the intent is increasing (from low to high) in both domains of attention (15.6 SD 1.94) and non-planning (31.5 SD 2.65) with highest score in the low intent group whereas in motor impulsivity, the mean score was highest in medium intent (24.82 SD 5.53). Also, non-planning domain of impulsivity had

S. No	Socio Demographic Variables	N (%)	Low Intent	Medium Intent	High Intent	p-value
1	Age in Years					
	15-25 yrs	30 (41.6%)	12 (40%)	5 (16.7%)	13 (43.3%)	0.002 S
	26-35 yrs	27 (37.4%)	2 (7.4%)	15 (55.6%)	10 (37%)	
	36-45 yrs	7 (9.6%)	0	2 (28.5%)	5 (71.5%)	
	46-55 yrs	3 (4.7%)	0	1 (33.3%)	2 (66.7%)	
	55-65 yrs	5 (6.7%)	0	0	5 (100%)	
2	Sex					
	Male	38 (52.8%)	2 (5.2%)	13 (34.2%)	23 (60.6%)	0.005 S
	Female	34 (47.2%)	12 (35.3%)	10 (29.4%)	12 (35.3%)	
3	Education					
	Illiterate	30 (42%)	11 (36.7%)	4 (13.3%)	15 (50%)	<0.001 S
	Primary	16 (23%)	0	12 (75%)	4 (25%)	
	Secondary	10 (14%)	1 (10%)	2 (20%)	7 (70%)	
	Graduate	16 (21%)	2 (12.5%)	5 (31.25%)	9 (56.25%)	
4	Marital Status					
	Married	42 (58.3%)	3 (7.14%)	11 (26.2%)	28 (66.6%)	<0.001 S
	Unmarried	28 (38.9%)	9 (32.2%)	12 (42.8%)	7 (25%)	
	Widow	2 (2.8%)	2 (100%)	0	0	
5	Reasons for Suicide					
	Financial problems	11 (15.3%)	0	0	11 (100%)	<0.001 S
	Family/Interpersonal disputes	43 (59.7%)	14 (32.5%)	16 (37.2%)	13 (30.3%)	
	Under influence of alcohol	4 (5.6%)	0	0	4 (100%)	
	Others like chronic medical illnesses	14 (19.4%)	0	7 (50%)	7 (50%)	
6	Method Adopted					
	Hanging	4 (5.6%)	0	3 (75%)	1 (25%)	0.097 NS
	Poisoning	51 (70.8%)	14 (27.4%)	15 (29.4%)	22 (43.2%)	
	Drowning	4 (5.6%)	0	1 (25%)	3 (75%)	
	Others	13 (18%)	0	4 (31%)	9 (69%)	
7	Substance Use (Alcohol)					
	Yes	14 (19.4%)	2 (14.3%)	0	12 (85.7%)	0.005 S
	No	58 (80.6%)	12 (20.6%)	23 (39.7%)	23 (39.7%)	
8	Locality					
	Rural	61 (84.7%)	14 (23%)	21 (34.4%)	26 (42.6%)	0.44 NS
	Urban	11 (15.3%)	0	2 (18.2%)	9 (81.8%)	
9	Type of Family					
	Nuclear	64 (88.9%)	14 (22%)	23 (36%)	27 (42%)	0.009 S
	Joint	8 (11.1%)	0	0	8 (100%)	
10	Occupation					
	Employed	39 (54.2%)	11 (28.2%)	8 (20.5%)	20 (51.3%)	0.31 NS
	Unemployed	33 (45.8%)	3 (9%)	15 (45.5%)	15 (45.5%)	
11	Family Income (Monthly)					
	Less than 5,000 Rs	58 (80.5%)	12 (20.7%)	19 (32.8%)	27 (46.5%)	0.884 NS
	5,000-10,000 Rs	12 (16.7%)	2 (17%)	3 (25%)	7 (58%)	
	>10,000 Rs	2 (2.8%)	0	1 (50%)	1 (50%)	
12	Family History of Suicide					
	Yes	5 (6.9%)	0	0	5 (100%)	0.058 NS
	No	67 (93.1%)	14 (21%)	23 (34.3%)	30 (44.7%)	
13	Past History of Suicide					
	Yes	15 (20.8%)	3 (21.4%)	1 (7.14%)	10 (71.4%)	0.073 NS
	No	57 (79.2%)	11 (19%)	22 (38%)	25 (43%)	
14	Beck's Suicide Intent Score	N (%)				
	Low intent score	14 (19.5%)				
	Medium intent score	23 (31.9%)				
	High intent score	35 (48.6%)				

**[Table/Fig-1]:** Distribution of study population according to socio-demographic profile (n=72) and association of suicide intent scores with different socio demographic variables (n=72).

Descriptive statistics and Chi-squared test applied. Level of significance considered at p<0.05

S No.		Low Intent		Medium Intent		High Intent	
		Mean	S.D	Mean	S.D	Mean	S.D
1	BIS A	15.64	1.945	14.65	4.598	14.74	4.009
2	BIS M	24.21	3.332	24.82	5.532	22	4.789
3	BIS NP	31.5	2.653	29.17	4.376	27.62	5.247

**[Table/Fig-2]:** Association of the mean and SD scores of suicide intent with 3 second order factors of Barratt Impulsiveness scale (BIS-11).

BIS A: Attention impulsiveness; BIS M: Motor impulsiveness; BIS NP: Non planning impulsiveness

the highest mean scores in all three intent groups, low intent (31.5 SD 2.65), medium intent (29.17 SD 4.37), and high intent (27.6 SD 5.24).

In [Table/Fig-3a], there was no significant difference found between attention impulsivity (never, occasionally, often and always) and suicide intent groups. Majority of the patients 56 (77.8%) who complained of having occasional (2) attention impulsivity had the highest suicide intent 28 (50%). Lowest intent 14 (25%) was found having occasional (2) attention impulsivity. The calculated significance value was  $p=0.077$  at  $\alpha=5\%$  level of significance (2-tailed) which is insignificant; but at 10% level of significance, it may be accepted as a significant difference.

[Table/Fig-3b] There was no significant difference found between motor impulsivity (never, occasionally, often and always) and suicide intent groups. Majority of the patients 54 (75%) who complained of having occasional (2) motor impulsivity had the highest suicide intent 28 (51.9%). Lowest intent 12 (22.2%) was found having occasional (2) motor impulsivity. The calculated significance value was  $p=0.166$  at  $\alpha=5\%$  level of significance (2-tailed) which was insignificant.

[Table/Fig-3c] There was no significant difference found between non-planning impulsivity (never, occasionally, often and always) and suicide intent groups. Majority of the patients 41 (56.9%) complained of having often (3) non-planning impulsivity. But the highest suicide intent 18 (60%) was found in the occasional (2)

3a (Attention impulsiveness score *Suicide Intent)							df	P
BIS A	Low Intent	Medium Intent	High Intent	Total				
Never 1	0	5 (50%)	5 (50%)	10 (13.8%)	4	0.077 NS		
Occasionally 2	14 (25%)	14 (25%)	28 (50%)	56 (77.8%)				
Often 3	0	4 (66.7%)	2 (33.3%)	6 (8.4%)				
Always 4	0	0	0	0				
	14 (19.4%)	23 (31.9%)	35 (48.7%)	72 (100%)				
3b (Motor impulsiveness score *Suicide Intent)							df	P
BIS M	Low Intent	Medium Intent	High Intent	Total				
Never 1	0	0	2 (100%)	2 (2.8%)	4	0.116 NS		
Occasionally 2	12 (22.2%)	14 (25.9%)	28 (51.9%)	54 (75%)				
Often 3	2 (12.5%)	9 (56.3%)	5 (31.2%)	16 (22.2%)				
Always 4	0	0	0	0				
	14	23	35	72				
3c (Non Planning impulsiveness score *Suicide Intent)							df	P
BIS NP	Low Intent	Medium Intent	High Intent	Total				
Never 1	0	0	0	0	4	0.262 NS		
Occasionally 2	3 (10%)	9 (30%)	18 (60%)	30 (41.7%)				
Often 3	11 (26.8%)	14 (34.2%)	16 (39%)	41 (56.9%)				
Always 4	0	0	1 (100%)	1 (1.4%)				
	14	23	35	72				

**[Table/Fig-3]:** Individual three second order factors scores of Barratt Impulsiveness Scale (BIS-11) in association with suicide intent scores.

BIS A: Attention impulsiveness; BIS M: Motor impulsiveness; BIS NP: Non Planning impulsiveness, Chi-squared test applied. Level of significance considered at  $p<0.05$

group rather than that of the often (3) group. The Lowest intent 11 (26.8%) was found having often (3) non planning impulsivity. The calculated significance value was  $p=0.262$  at  $\alpha=5\%$  level of significance (2-tailed) which was insignificant.

T-test was used to find significant differences in impulsiveness rates within each level of intent. There was no significant difference found between impulsivity of attention and motor sub scales within low intent ( $p=0.45$ ,  $t=0.762$ ,  $df=35$ ), between attention and non-planning in low intent ( $p=0.428$ ,  $t=0.799$ ,  $df=47$ ), and also between motor and non-planning impulsivity in low intent ( $p=0.937$ ,  $t=-0.79$ ,  $df=56$ ) [Table/Fig-4].

	Low Intent Group					
1	Attention impulsiveness vs Motor impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS A	14	15.64±1.19	0.762	35	0.45 NS
	BIS M	23	14.65±4.59			
2	Attention impulsiveness vs Non Planning impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS A	14	15.64±1.94	0.799	47	0.428 NS
	BIS NP	35	14.74±4.009			
3	Motor impulsiveness vs Non Planning impulsiveness					
		N	MEAN SD	t	df	Sig. (2-tailed)
	BIS M	23	14.64±4.59	-0.79	56	0.937 NS
	BIS NP	35	14.74±4.00			

**[Table/Fig-4]:** t-Test for significance in impulsiveness rates among low intent group of attempters.

BIS A: Attention impulsiveness; BIS M: Motor impulsiveness; BIS NP: Non planning impulsiveness, t-test applied. Level of significance considered at  $p<0.05$

There was significant difference between impulsivity of motor and non-planning sub scales within medium intent ( $p=0.043$ ) which was less than 0.05 at  $\alpha=5\%$  level of significance ( $t=2.063$  at  $df=56$ ). No significance was found between attention and motor impulsivity in medium intent ( $p=0.711$ ,  $t=-0.373$ ,  $df=35$ ). No significance was found also between attention and non-planning impulsivity in medium intent ( $p=0.121$ ,  $t=1.579$ ,  $df=47$ ) [Table/Fig-5].

	Medium Intent Group					
1	Attention impulsiveness vs Motor impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS A	14	24.21±3.33	-0.373	35	0.711 NS
	BIS M	23	24.8±5.53			
2	Attention impulsiveness vs Non Planning impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS A	14	24.21±3.33	1.579	47	0.121 NS
	BIS NP	35	22.0±4.78			
3	Motor impulsiveness vs Non planning impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS M	23	24.82±5.53	2.067	56	0.043 (S)
	BIS NP	35	22.0±4.78			

**[Table/Fig-5]:** T-Test for significance in impulsiveness rates among medium intent group of attempters.

BIS A: Attention impulsiveness; BIS M: Motor impulsiveness; BIS NP: Non planning impulsiveness, t-test applied. Level of significance considered at  $p<0.05$

There is significance difference between impulsivity of attention and non-planning sub scales within high intent ( $p=0.012$ ) which is less than 0.05 at  $\alpha=5\%$  level of significance, ( $t=2.618$  at  $df=47$ ). No significance was found between attention and motor impulsivity in high intent ( $p=0.082$ ,  $t=1.793$ ,  $df=35$ ). No significance was found between motor and non-planning impulsivity in high intent ( $p=0.247$ ,  $t=1.169$ ,  $df=56$ ) [Table/Fig-6].



	High Intent Group					
1	Attention impulsiveness vs Motor impulsiveness					
		N	MEAN±SD	t	df	Sig .(2-tailed)
	BIS A	14	31.50±2.65	1.793	35	0.082 NS
	BIS M	23	29.17±4.37			
2	Attention impulsiveness vs Non Planning impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS A	14	31.50±2.65	2.618	47	0.012 (S)
	BIS NP	35	27.62±5.24			
3	Motor impulsiveness vs Non planning impulsiveness					
		N	MEAN±SD	t	df	Sig. (2-tailed)
	BIS M	23	29.17±4.37	1.169	56	0.247 NS
	BIS NP	35	27.62±5.24			

**[Table/Fig-6]:** t-Test for significance in impulsiveness rates among high intent group of attempters.

BIS A: Attention impulsiveness; BIS M: Motor impulsiveness; BIS NP: Non planning impulsiveness, t-test applied. Level of significance considered at p<0.05

## DISCUSSION

This study was conducted to ascertain the relationship of trait impulsivity to the degree of intent in patients who attempted suicide. The association between gender and suicide intent was found to be significant ( $p=0.05$ ) and highest intent to be present in males and low intent was found in 12 (35.3%) females. Men commonly use more lethal modes and planned the act more meticulously to avoid detection. In contrast, women use less lethal modes, are more impulsive, less well planned, and more likely to be found and rescued. The intent score was also found to be highest in people who were married 28 (66.66%), and low intent was present in 9 (32.2%) of the unmarried population and the relationship between marital status and suicide intent was found to be statistically significant ( $p<0.001$ ). Regarding reasons for attempting suicide, low intent was present in 14 (32.5%) patients who had family problems/interpersonal issues. And as for the mode of the attempt, low intent was present in 14 (27.4%) patients who consumed pesticides.

As suggested by Mann JJ et al., impulsivity is an important component of suicidal behaviour [5]. In the present study, the mean impulsivity scores were gradually decreasing as the intent was increasing (from low to high) in all the sub scales of attention, motor and non-planning with highest score in the low intent group. Also non-planning second order factor of impulsivity had the highest mean scores in all three intent groups (low, medium, high), thus showing that people with low intent were more prone to the impulsive traits and as intent increases the impulsivity decreases. Similar findings were found in the study done by Baca-Garcia E et al., [19]. Individual BIS-11 sub scales were compared in relation to intent scores based on the four scoring divisions, and we found patients with low intent occasionally (score 2) complained of having both attention/cognitive and motor impulsivity at the time of the attempt. However, non-planning factor was complained more often (score 3) by patients having low intent at the time of the attempt. When we looked into the differences in impulsive rates within intent groups using t-test, and we found a statistical difference ( $p=0.043$ ) between motor and non-planning sub scales within the medium intent group. And within the high intent group a statistical difference was also found ( $p=0.012$ ) between attention and non-planning sub scales. There was no statistical significance ( $p=0.45$ ,  $p=0.428$ ,  $p=0.937$ ) found between the second order factors in the low intent group. Similar findings were found in a study done by Baca-Garcia E et al., who also noted a trend for "motor" impulsiveness to be associated with impulsive attempts [19].

From the above findings, we see that as the intent increases the impulsivity decreases in the attempter, and among the three sub scales of BIS-11, non planning seems to be more associated with

impulsivity in low to medium intent groups as from our findings so far. A suicide attempt is a major risk factor for suicide completion, and impulsivity is personality trait associated with suicide attempt [20]. Few researchers, such as Wu CS et al., outside Asia have also focused on impulsivity in suicide attempters [21]. Barca-Garcia E et al., reported significantly high impulsivity in Spanish suicide attempters using the BIS [6]. Results from another study done concluded impulsivity and lethality were inversely associated during attempt [7], suggesting that impulsive attempts tend to be less lethal. Other studies, such as the one conducted by Swann AC et al also showed different psychiatric disorders and personality traits were associated with impulsivity in suicides [22]. Soloff PH et al., reported that in patients with history of suicide attempts, borderline patients had higher scores in the BIS-11 compared with depressive patients [23]. Doihara C et al., reported both total BIS-11J and non-planning impulsiveness scores were significantly higher in attempters with schizophrenia and other psychotic disorders among the diagnostic groups [24]. There is a marked lack of consensus on the relationship between impulsivity and the medical seriousness of the attempt. Although some authors believe impulsivity is a characteristic of nonlethal suicide attempts or suicide gestures [7], others report evidence of higher levels of impulsivity in those who die by suicide than in those who do not [25]. The dissimilarities may be explained by the confusion between the state and trait dimensions of the impulsivity-suicide relationship, differing definitions of impulsivity, the measures used and the population studied [26]. The relationship between impulsivity and suicide intent merits a closer evaluation for its preventive implications. Whether and to what extent targeting these personality traits in suicide prevention programs may reduce repeat attempts in follow-up is a question that needs further research [27].

## LIMITATION

This study has some limitations, the attempters were recruited from one semi-urban teaching college and the sample size was relatively small. This study did not investigate impulsivity in patients without suicidality in comparison with the attempters. Future larger-scale and detailed studies are warranted to verify the present findings. Self-Report measures, such as the Barratt Impulsiveness Scale have the drawbacks that include the need to rely on the veracity of the individual completing the questionnaire. In addition, these measures are unsuitable for repeated use, thus limiting their usefulness in treatment studies. In the present study BIS-11 was used as a single measurement of trait impulsiveness that might discriminate between subgroups of patients. Finally, the extent to which the results generalize to other Indian samples, or individuals in other countries, is unknown.

## CONCLUSION

Studies like these are important in our clinical practice because there is limited research on the relationship between impulsivity and intent in the Indian population, and more research is needed to identify and intervene in those at risk for impulsive suicide attempts in developing countries. When such high levels of suicide intent co-exist with impulsivity, it may drive an individual to transition rapidly from suicidal thoughts to suicidal behaviour as a possible response to the stressful situation with precluding other adaptive responses.

To conclude, the present findings, although limited, suggest that there is a significant association between impulsivity and intent, and basically expand the scope and relevance of impulsivity as a probable predictor of suicide intent in Indian subjects with attempted suicide. Therefore, assessing and controlling impulsivity should be considered in suicide prevention and clinicians would be well advised to evaluate the presence and severity of these personality factors during a routine evaluation of suicide attempters.

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