STUDY OF IMPULSIVITY AND SUICIDE INTENT IN ATTEMPTED SUICIDE PATIENTS

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ABSTRACT

BACKGROUND

Suicide is one of the leading cause of death, both in developing and developed countries. Nowadays suicidal behaviour has been recognised as an increasing public health problem.

The aim of this study is to study the impulsivity and suicidal intent in suicide attempters.

The objectives of this study are-

1. To assess the impulsivity in suicide attempters.
2. To evaluate the suicide intent among the attempters.
3. To identify the relationship between impulsivity and intent among suicide attempters.

Setting- Study was done in Department of Psychiatry, Mahatma Gandhi Memorial Hospital attached to KAPV Government Medical College, Trichy.

Design- This is a cross-sectional observational study.

MATERIALS AND METHODS

One hundred suicide attempters above the age of 18, attending Department of Psychiatry were included in the study. Kuppaswamy's revised socioeconomic status scale, Barratt Impulsiveness Scale (BIS-II) and Beck's suicide intent scale were administered for study population.

Statistical Analysis- Data were analysed using appropriate statistical methods such as ANOVA, Chi-Square test and Pearson correlation coefficient.

RESULTS

Among one hundred study population, almost equal percentage of male and female were present and majority were less than age of 45 years. In this study, statistically significant association between persons with family history of mental illness and suicidal intent and impulsivity were made out. Family history of suicide attempt did not show significant association neither to suicidal intent nor to impulsivity. Religious status had significant association with suicidal impulsivity.

CONCLUSION

Even though there is a difference among suicide attempters, there is significant difference among various impulsivity factors between gender. Socio-demographic factors except religion revealed no correlation for impulsivity and suicidal intent.

KEYWORDS

Impulsivity, Intent, Suicide, Mental Illness.

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BACKGROUND

Suicide is to the psychiatrist as cancer is to the internist.¹ Suicidal behaviour is a major public health problem nowadays.² Suicide is the leading cause of premature death, especially among young adults. In many westernised countries, suicide is the frequent cause of death than traffic accidents. Globally, one person commits suicide every minute.³ A process which leads to suicidal ideation, suicidal communication and self-destructive behaviour in some cases

even to the suicide and its consequences to the survivors is referred to as suicidal process.³ Suicide is considered as fatal act of self-injury undertaken with more or minimal intent, however vague or ambiguous.⁴

Suicide is mostly preceded by suicidal behaviour or feelings, plans as well as warnings. In about half of suicides, history of previous attempt is found and this is an opportunity for suicide intervention.

From various viewpoints about suicide, culture defines basic attitude towards life and death. We still have stigma against suicide. Religion is still a meaningful and protective factor for many individuals in a crisis of suicide.³

Sociology view suicide as a social phenomenon. Suicides are viewed as disturbance of relationship between society and individuals. Psychologically, Freud's theory assumes that self-destructive behaviour in depression represents aggression directed against self. Suicidal behaviour is highly familial. Heritability of suicidal behaviour appears to be 30% - 50% and interactions with various environmental factors is significant.³

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Usually, suicide has no single cause. In this, several interacting risk factors can be identified.

Socio-demographic variables such as male gender, elderly age group, low socioeconomic and lower educational status, unmarried or divorced, living alone and unemployment are the risk factors of suicide. Virtually, all mental disorders carry an increased risk of suicide. The most common psychiatric diagnosis in suicide are major depression and alcohol dependence followed by personality disorders and schizophrenia.²

The risk of completed suicide is highest among patients with both major depression and substance use disorders.⁵ Individuals with problems in help seeking, social communication, self-disclosure also pose a suicide risk as do personality traits of aggression and impulsivity.² Mechanisms underlying some risk factors (aggression, impulsivity, suicide intent) remain unclear.

Suicide intent is defined as seriousness of the wish of a patient to end his life.⁶ Suicide attempters with high intent scores may carry higher risk of completed suicide, although not all studies support this view.⁷

Suicide intent was measured via hopelessness. Hopelessness is a cognitive trait associated with suicide, leading suicidal patients to believe that suicide is the only feasible strategy for dealing with their seemingly insoluble problems.⁸ Hopelessness is the mediating variable between depression and suicide intent,⁹ but all findings are not consistent with this interpretation.^{10,11}

Individuals who choose the more immediate reward are often said to be impulsive. Action without planning or thinking about its consequences is central to most definitions of impulsivity. It may also be defined as a tendency to respond quickly without understanding its consequences.¹² Thus, impulsivity appears to be associated with a failure of behavioural filtering process outside of consciousness¹³ with compromised ability to use knowledge to guide behaviour.¹⁴ Impulsive individuals have inappropriately short threshold for response, lack of reflection, lack of modulation and lack of potential gain.

Impulsivity is seen as a complex, multidimensional trait that is viewed both as a normal dimensional behaviour and as core pathological features of mental disorders such as Attention Deficit Hyperactivity Disorder, Suicidal and aggressive behaviour, antisocial and borderline personality disorder, alcohol and drug dependence.¹⁵

Baumeister thought suicide as a means of escape from aversive self-awareness. To alleviate this aversive self-awareness, they achieve a state of "cognitive deconstruction." This is characterised by a constricted, present focused time perspective and cognitive rigidity. This deconstructed state dulls self-awareness and leads to disinhibition. Due to this disinhibition, individuals attempt suicide impulsively.¹⁶

Impulsivity is considered as a state impulsivity (impulsivity experienced at particular point of time), trait impulsivity (variable that influences involvement in risky behaviour). It has been stated that state impulsivity is less important than impulsivity exhibited throughout the life.¹⁷ In previous studies, it is documented that persons who attempt suicide impulsively are less depressive and have a less strong intent to die than non-impulsive attempters.⁴

Aim

To study the impulsivity and suicidal intent in suicide attempters.

Objectives

1. To assess the impulsivity in suicide attempters.
2. To evaluate the suicide intent among the attempters.
3. To identify the relationship between impulsivity and intent among suicide attempters.

MATERIALS AND METHODS

One hundred attempted suicide patients attending Department of Psychiatry, Mahathma Gandhi Memorial Government Hospital (MGMGH) attached to K.A.P.V. Govt. Medical College, Tiruchirapalli, were included in this study.

Ethical Clearance

Ethical clearance for this study was obtained from college ethical committee. This study involved cross-sectional observational and purposive sampling procedure. Every patient was assessed once for the study.

Materials

Suicide attempters above the age of 18 years, who were referred from medical wards after the improvement of their general condition. Patients with cognitive impairment, poor physical status were excluded from the study. Informed consent was obtained from them.

Methods

Individual's details were collected using socio-demographic data sheet and Kuppuswamy's socioeconomic status scale was applied to all subjects.

Barratt Impulsiveness scale¹⁸ (BIS-II) is a 30-item questionnaire, includes three second order factors labelled Attentional (F1), Non-planning (F2), Motor (F3). Factor (F1) combined first order factors attention and cognitive instability impulsiveness, the second factor (F2) non-planning was defined by perseverance and motor, while the third factor (F3) is the combination of first order factors such as self-control and cognitive complexity.

A total score of 72 and above indicates high impulsivity, scores between 52 and 71 is defined as within the normal limits of impulsiveness. Scores below 52 are extremely over controlled.

Beck's Suicide Intent Scale

This is a 15-item questionnaire, each item is scored from 0 to 2 giving a possible range of score from 0 to 30. It consists of two parts: part 1 (items 1 to 8) covers the objective circumstances of the attempt, part 2 (items 9 to 15) reflects the attempter's self-report. This scale assesses the severity of the subject's psychological intent to die at the time of attempt.⁶

Descriptive statistics for socio-demographic profile: Chi-square test was done to analyse the qualitative variables, ANOVA test was applied for comparing various dimensions of suicidal impulsivity score and Pearson correlation test was done to compare the relation between impulsivity and suicide intent.

RESULTS

Among study population of 100, females constitute 51% (n=51) and males constitute 49% (n=49). Majority (n=87) were below the age of 45 years and nearly half of the population (n=53) were married. In this study, two-third (n=70) of them were from rural area and joint family setup; 88% of Hindus and 7% of Muslims constitute study population (Table 1).

In evaluating suicide intent, 75% (n=75) expressed medium suicide intent and 19% had high intent. Among females, 78% expressed medium suicide intent and 14% expressed high suicide intent. In males, 71% had medium intent and 24% had high intent. High suicide intent was more in males (24%) than females (14%). Even though there was a difference in expressing suicide intent between males and females, it was not statistically significant (Table 2).

In comparing the suicide intent among various age groups, persons between 31 - 45 yrs. showed high intent (24%) followed by 18 - 30 yrs. (17%). All the people above 45 yrs. had medium-to-high suicide intent. In this study, marital status did not make any significant difference in suicide intent. Educational qualification and socio-economic status had no impact on suicide intent (Table 2).

In our study, 38% of persons with family history of psychiatric illness expressed high suicide intent and this is statistically significant (p= 0.015). Family history of suicide attempt did not show association with suicide intent (Table 3).

In analysing impulsivity, around three-fourths of the study population scored within normal limits of impulsivity. Around one-fifth of the study population scored high on impulsivity. Among the people with normal limits of impulsiveness, females constitute 56% and males 44.3%. Within high impulsivity group, males comprised 63% and females 37%. No significant association was found in analysing impulsivity with living status, education, occupation and socioeconomic status (Table 4).

There is significant association between impulsivity and religious status of study members (p= 0.007).

Persons with family history of psychiatric illness had significant association with impulsivity in comparing persons without family history of psychiatric illness (p= 0.04). When analysing persons with and without family history of suicide attempt, no difference was made out regarding impulsivity (Table 5).

There was no statistical significance in assessing impulsivity in individuals with mental illness (depressive disorder, alcohol dependence syndrome, impulse control disorder, adjustment disorder with depressed mood) and individuals without history of mental illness (Table 5).

In evaluating factors of impulsivity among male and female participants, males showed statistical significance in self-control factor (p= 0.055), females showed statistical significance in 1st order factor motor (p= 0.027) (Table 6).

Sl. No.		Total (n= 100)	-100%
1	Age		
	18 - 30 yrs.	66	66.0%
	31 - 45 yrs.	21	21.0%
	46 - 60 yrs.	13	13.0%
2	Sex		
	Male	49	49.0%
	Female	51	51.0%
3	Marital Status		
	Never Married	44	44.0%
	Married	53	53.0%
	Divorced/ Separated	1	1.0%
	Widow	2	2.0%
4	Living Status		
	Nuclear Family	70	70.0%
	Joint Family	30	30.0%
5	Area of Living		
	Rural	70	70.0%
	Urban	30	30.0%
6	Religion		
	Hindu	88	88.0%
	Muslim	7	7.0%
	Christian	5	5.0%
7	Education		
	Illiterate	9	9.0%
	Primary	25	25.0%
	Middle	26	26.0%
	HSC	24	24.0%
	Diploma	7	7.0%
	Graduate and Postgraduate	9	9.0%
8	Occupation		
	Unemployed	3	3.0%
	Unskilled	8	8.0%
	Semiskilled	49	49.0%
	Skilled	37	37.0%
	Clerical and Shop Owner	1	1.0%
	Semi Professional	2	2.0%
9	Socioeconomic Status		
	Upper Middle	3	3.0%
	Middle	34	34.0%
	Lower Upper	57	57.0%
	Lower	6	6.0%

Table 1. Socio-Demographic Profile of Study Population

Sl. No.	Demographic Factors		Suicide Intent Score			Total (N=100)	Chi-Square Test		
			Low (n=6)	Medium (n=75)	High (n=19)		Value	df	Significance
1.	Sex	Male	2	35	12	49	2.277	2	0.320
		Female	4	40	7	51			
2.	Age	18 - 30 yrs.	4	51	11	66	2.020	4	0.732
		31 - 45 yrs.	2	14	5	21			
		46 - 60 yrs.	0	10	3	13			
3.	Marital Status	Unmarried	3	33	8	44	5.007	6	0.543

		Married	3	40	10	53			
		Divorced/ Separated	0	0	1	1			
		Widowhood	0	2	0	2			
4.	Living Status	Nuclear	3	53	14	70	1.282	2	0.527
		Joint	3	22	5	30			
5.	Area of Living	Rural	5	52	13	70	0.546	2	0.761
		Urban	1	23	6	30			
6.	Religion	Hindu	5	67	16	88	2.566	4	0.633
		Muslim	1	5	1	7			
		Christian	0	3	2	5			
7.	Socio-Economic Status	Upper Middle	0	2	1	3	3.661	6	0.722
		Middle	2	27	5	34			
		Lower Upper	4	40	13	57			
		Lower	0	6	0	6			

Table 2. Association between Socio-Demographic Status and Suicide Intent

Sl. No.	Mental Illness		Suicide Intent Score			Total (N=100)	Chi-Square Test		
			Low (n=6)	Medium (n=75)	High (n=19)		Value	df	Significance
1.	Depressive episode	Without illness	5	70	17	92	0.958	2	0.619
		With illness	1	5	2	8			
2.	Adjustment disorder with depressed mood	Without illness	6	71	16	93	3.026	2	0.220
		With illness	0	4	3	7			
3.	Binge drinking	Without illness	6	72	18	96	0.329	2	0.848
		With illness	0	3	1	4			
4.	Impulse control disorder	Without illness	6	73	19	98	0.680	2	0.712
		With illness	0	2	0	2			
5.	Borderline personality traits	Without illness	5	67	17	89	0.210	2	0.900
		With illness	1	8	2	11			
6.	Multiple psychiatric disorders	Without illness	6	72	18	96	0.329	2	0.848
		With illness	0	3	1	4			
7.	Family history of psychiatric illness	Without family history	4	72	16	92	8.429	2	0.015 (significant)
		With family history	2	3	3	8			
8.	Family history of suicide attempt	Without family history	6	71	18	95	0.336	2	0.845
		With family history	0	4	1	5			

Table 3. Association between Psychiatric Illness and Suicide Intent

Sl. No.	Demographic Factors		Barratt Impulsiveness Score			Total (N=100)	Chi-Square Test		
			Good (n=11)	Normal (n=70)	High (n=19)		Value	df	Significance
1.	Sex	Male	6	31	12	49	2.282	2	0.320
		Female	5	39	7	51			
2.	Marital Status	Unmarried	8	29	7	44	5.441	6	0.489
		Married	3	38	12	53			
		Divorced/ Separated	0	1	0	1			
		Widowhood	0	2	0	2	0.335	2	0.846
3.	Living Status	Nuclear	7	49	14	70			
		Joint	4	21	5	30	0.531	2	0.767
4.	Area of Living	Rural	8	50	12	70			
		Urban	3	20	7	30	14.129	4	0.007 (Significant)
5.	Religion	Hindu	8	63	17	88			
		Muslim	0	6	1	7			
		Christian	3	1	1	5	10.938	6	0.090
6.	Socio-Economic Status	Upper Middle	0	3	0	3			
		Middle	8	18	8	34			
		Lower Upper	3	44	10	57			
		Lower	0	5	1	6			

Table 4. Association between Socio-Demographic Factors and Impulsivity

Sl. No.	Mental Illness		Barratt Impulsiveness Score			Total (N=100)	Chi-Square Test		
			Good (n=11)	Normal (n=70)	High (n=19)		Value	df	Significance
1.	Depressive episode	Without illness	10	64	68	92	0.242	2	0.886
		With illness	1	6	1	8			
2.	Adjustment disorder with depressed mood	Without illness	10	64	19	93	1.770	2	0.413
		With illness	1	6	0	7			
3.	Alcohol dependence syndrome	Without illness	10	63	16	89	0.558	2	0.757
		With illness	1	7	3	11			
4.	Binge drinking	Without illness	10	69	17	96	4.055	2	0.132
		With illness	1	1	2	4			
5.	Impulse control disorder	Without illness	11	69	18	98	1.373	2	0.503
		With illness	0	1	1	2			
6.	Borderline personality traits	Without illness	10	63	16	89	0.558	2	0.757
		With illness	1	7	3	11			
7.	Multiple psychiatric disorders	Without illness	11	67	18	96	0.552	2	0.759
		With illness	0	3	1	4			
8.	Family history of psychiatric illness	Without family history	8	66	18	92	6.242	2	0.044 (significant)
		With family history	3	4	1	8			
9.	Family history of suicide attempt	Without family history	11	65	19	95	2.256	2	0.324
		With family history	0	5	0	5			

Table 5. Association between Psychiatric Illness and Impulsivity

Sex	Dimensions of Impulsivity	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.
Male	Attention	Between Groups	.667	2	.334	1.729	.189
		Within Groups	8.874	46	.193		
		Total	9.541	48			
	Cognitive Instability	Between Groups	.282	2	.141	.439	.648
		Within Groups	14.811	46	.322		
		Total	15.093	48			
	Motor	Between Groups	.082	2	.041	.170	.845
		Within Groups	11.130	46	.242		
		Total	11.212	48			
	Perseverance	Between Groups	.131	2	.066	.385	.683
		Within Groups	7.841	46	.170		
		Total	7.972	48			
	Self-Control	Between Groups	1.132	2	.566	3.069	.055
		Within Groups	8.480	46	.184		
		Total	9.611	48			
	Cognitive Complexity	Between Groups	.135	2	.068	.262	.771
		Within Groups	11.904	46	.259		
		Total	12.039	48			

Table 6. Analysis of Impulsivity Factors among Gender (Male)

Sex	Dimensions of Impulsivity	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.
Female	Attention	Between Groups	.425	2	.213	.918	.406
		Within Groups	11.123	48	.232		
		Total	11.548	50			
	Cognitive Instability	Between Groups	.884	2	.442	.751	.477
		Within Groups	28.244	48	.588		
		Total	29.129	50			
	Motor	Between Groups	2.284	2	1.142	3.908	.027
		Within Groups	14.028	48	.292		
		Total	16.312	50			
	Perseverance	Between Groups	.103	2	.052	.232	.794
		Within Groups	10.669	48	.222		
		Total	10.772	50			
	Self-Control	Between Groups	1.480	2	.740	2.167	.126
		Within Groups	16.393	48	.342		
		Total	17.873	50			
	Cognitive Complexity	Between Groups	.461	2	.231	.378	.687
		Within Groups	29.275	48	.610		
		Total	29.736	50			

Table 7. Analysis of Impulsivity Factors among Gender (Female)

		Attention	Cognitive Instability	Motor	Perseverance	Self-Control	Cognitive Complexity	Suicide Intent Score
Attention	Pearson Correlation	1	.515**	.479**	.531**	.501**	.547**	.015
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.884
	N	100	100	100	100	100	100	100
Cognitive Instability	Pearson Correlation	.515**	1	.274**	.393**	.281**	.317**	-.086
	Sig. (2-tailed)	.000		.006	.000	.005	.001	.393
	N	100	100	100	100	100	100	100
Motor	Pearson Correlation	.479**	.274**	1	.559**	.391**	.346**	-.014
	Sig. (2-tailed)	.000	.006		.000	.000	.000	.892
	N	100	100	100	100	100	100	100
Perseverance	Pearson Correlation	.531**	.393**	.559**	1	.299**	.490**	-.005
	Sig. (2-tailed)	.000	.000	.000		.002	.000	.961
	N	100	100	100	100	100	100	100
Self-Control	Pearson Correlation	.501**	.281**	.391**	.299**	1	.404**	.043
	Sig. (2-tailed)	.000	.005	.000	.002		.000	.674
	N	100	100	100	100	100	100	100
Cognitive Complexity	Pearson Correlation	.547**	.317**	.346**	.490**	.404**	1	.193
	Sig. (2-tailed)	.000	.001	.000	.000	.000		.054
	N	100	100	100	100	100	100	100
**. Correlation is significant at 0.01 level (2-tailed)								

Table 8. Correlation between Suicidal Intent and Impulsivity Factors

DISCUSSION

In our study, males and females are almost equal in number (51:49). About two-third of the study population were between the age of 18 - 30 yrs. (66%). Our study population constitutes entirely of middle and lower socioeconomic group.

In analysing suicide intent among the persons with depressive disorder (n= 8), 25% expressed high suicide intent and 62.5% expressed medium suicide intent. This finding is similar to the study of K. Suominen, E. Isometsa et al⁴ and study done by Linehan MM.⁷ In persons without depressive disorder, 76% showed medium intent and 18.5% expressed high suicide intent.

In assessing suicide intent in persons with adjustment disorder with depressed mood (n= 7), 43% expressed high suicide intent score and 57% expressed medium intent. In persons with binge drinking pattern of alcohol dependence syndrome (n= 4), one-fourth expressed higher intent and three-fourth expressed medium intent. While assessing persons with impulse control disorder (n= 2), all expressed medium intent only. In persons with borderline personality traits (n= 11), around three-fourth expressed medium intent and nearly one-fifth expressed high intent. In our study analysis, suicide intent between persons with individual mental illness (namely depressive disorder, adjustment disorder with depressed mood, alcohol dependence syndrome) and without mental illness showed no statistically significant difference (Table 3).

In comparing impulsivity among males and females, 63.2% males are within normal limits, 24.5% males expressed high impulsivity scores, 76.5% females are within normal limits, 13.7% females scored high on impulsivity.

On examining impulsivity among alcohol dependence syndrome individuals, 27% expressed high impulsivity, 64% scored within normal limits, majority of persons without alcohol dependence expressed normal to good control over impulsivity. In persons with depression (n= 8), 75% scored within normal limit, 12.5% belonged to high impulsivity group. In this study, persons with alcohol dependence expressed high impulsivity compared to individuals with

depressive disorder. This finding is consistent with the study done by K Suominen and E Isometsa et al.⁴

In assessing correlation between factors of impulsivity and suicidal intent, factors such as attention, cognitive complexity and self-control showed positive correlation and impulsivity factors such as cognitive instability, motor and perseverance showed negative correlation. Significant correlation was found between cognitive complexity factor of impulsivity with suicide intent score (0.05) (Table 7). Study of Suominen K and E Isometsa et al⁴ reveals significant correlation between impulsiveness and suicidal intent.

In comparing persons without multiple psychiatric disorders (18.75%), persons with multiple psychiatric disorders (25%) had high suicidal intent. In patients with impulse control disorder (n= 2), 50% showed high impulsivity compared with only 18.36% of persons without impulse control.

In patients with borderline personality traits, 27% had high impulsivity compared with only 18% of persons without borderline personality traits. Analysing subjects with multiple psychiatric disorders (n= 4) regarding impulsiveness, 75% were in normal limits of impulsivity, 25% of them expressed high impulsivity. In persons without multiple psychiatric disorders (n= 96), 19% (n= 18) expressed high impulsivity and 70% (n= 67) scored within normal limits of impulsivity.

In our study, persons showing good control over their impulsivity were very less in number among persons with psychiatric illness.

Implications

Impulsiveness and intent were found to be significant factors in persons with suicide attempt. During assessment of patients with psychological problems, the above factors are to be given greater significance.

Limitations

Since the study is cross-sectional and one-time assessment of patient is done, a prospective study would be able to assess the impulsivity factors in more detail.

CONCLUSION

In conclusion, suicide attempts differ among attempters. The present findings suggest qualitative difference among gender in impulsivity factors. Suicide attempters with biological factors with respect to family history of psychiatric illness played a greater role in increasing the risk of impulsivity and suicide intent.

Future Directions

In the era of increasing suicide attempts, in spite of its social implications research work is sparse and given less importance compared to other psychiatric disorders. Along with current factors studied other factors like hopelessness, social support and interventions can be included in future studies.

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