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Impulsivity In Patients With Attempted Suicide Presenting At A Tertiary Care Hospital In Karachi

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ABSTRACT

OBJECTIVE: To determine the prevalence of impulsivity in patients who attempted suicide presenting at a tertiary care hospital, Karachi.
STUDY DESIGN: Cross sectional study.
STUDY SETTING: Study was led in the Psychiatry Department, Abbasi Shaheed Hospital, Karachi.
DURATION OF STUDY: Six month after approval of synopsis.
SUBJECTS AND METHODS: Data was prospectively collected from patients after taking verbal consent. Permission was taken from ethical review committee. 95 patients presenting to the Psychiatry Department who met the inclusion criteria were included. A brief history about suicide attempt and demographic data was taken from the patient and confirmed by an attendee. The researcher himself interviewed the patient in a conducive environment assuring the patient's confidentiality. The Barratt Impulsiveness Scale (BIS-11) which consists of 30 self administered questions, marked out of 120 and rated from 0-4 was used to measure impulsivity. Demographic data was presented as simple descriptive statistics giving mean and standard deviation and qualitative variables was presented as frequency and percentages. Effect modifiers were controlled through the stratification of age, gender, marital status, educational status, socioeconomic status and occupational status to see the effect of these on the outcome variable. Post stratification chi square test was applied, taking p-value of ≤0.05 as significant.
RESULTS:
A total of 95 patients who attempted suicide, admitted in Psychiatry Department, Abbasi Shaheed Hospital, Karachi were included in the study. Out of 95 patients, mean and standard deviation of age and BIS-11 score was 36.47±9.13 years and 80.4±17.6 respectively. Out of 95 patients who attempted suicide, 45 (47.4%) had impulsivity and 50 (52.6%) had no impulsivity and 28 (29.5%) were male and 67 (70.5%) were female. Impulsivity was found to be the most common in the age group 21-30 years and those who were divorced, unemployed, less educated and belonged to the lower class.
CONCLUSION: The present data suggest that impulsivity, as reflected by a tendency toward rapid, unplanned responses on an immediate memory task, is a measurable characteristic of subjects with severe previous suicidal behaviour. People who attempted suicide tend to experience higher levels of trait impulsivity.
KEY WORDS: Attempted suicide, impulsivity, marital status, occupational status, educational status and socioeconomic status.

INTRODUCTION

Suicidal behaviour is a major public health problem. Every year around 1 million people die because of suicide around the globe (1).The World Health Organization estimates that worldwide, approximately 1.53 million people will pass awayby suicide, and 10 to 20 times more people will attempt suicide by year 2020 (2). Generally suicide is considered 11th leading cause of death, but it is the 3rd leading cause of death for people aged 15 to 24. Deprivation of spirit is not the sole cause of suicide, but it also negatively affects the folks and acquaintances of a person who attempt suicide.

Surveys showed that the prevalence of suicidal attempts is more than committed suicide (3). Suicidal attempt is counted an act potentially injurious with non-fatal outcome with evidence of intent to die while suicide is defined as an act of intentionally ending one's life.Although the cases of suicide are complex, but it involves environmental, biological, social and psychological factors also including psychiatric disorders. Socio-political factors are also pertinent to understanding of suicide. So, historically Durkheim defined suicide in terms of; Anomy, Egoistic and Altruistic (3-5). Currently Joiner's interpersonal psychological theory received considerable attention

in scientific research. Agreeing to this hypothesis, three things must be present before a mortal will pass away by suicide; these are 1) feelings of perceived burdensomeness 2) a sense of thwarted belongings, and 3) an acquired capability to lethally self-injury.Perceived burdensomeness occurs when a person thinks that others will be feeling better if he/she was numb.Thwarted belongings mean that when person's need/desire was depended on others, only they are not satisfied. Acquired capability to lethally self-harm is consider acquiring capability for suicide. Thus, Joiner's explains that when a person is repeatedly exposed to painful/or proactive stimuli he/she will develop the capability for suicide. The study showed that these factors are predictors of suicidal desires (6-7).

Impulsivity has also been connected with suicide and self-injury and is regarded one of the important risk genes to the aetiology and predictive of suicide (8). Impulsivity comprises of many thought constructs such as; self-control, cognitive complexity, attention, cognitive instability and non-planning. There is significant role of impulsivity in suicide, merely, a compelling mechanism for this relationship has not been adequately documented. Yet, surveys have shown that rate of attempted suicide tends to be higher in impulsive individuals than non-impulsive people. However not all people who die by suicide are impulsive (9).The relationship between suicide attempts and impulsivity can be considered as having two dimensions, state impulsivity and trait impulsivity. State impulsivity can be defined as impulsive experience at certain situation or point and usually this type of suicide is unplanned. Intrait suicide on the other hand a person has impulsive personality that influences his interest in risky behaviours and can contribute to suicidal behaviour. These two dimensions may not completely overlap or be equivalent and may bear a different relationship with lethality (10-11).A study conducted in China which included 239 consecutive suicide attempters found that 44.8% patients were categorized as impulsive attempters. Consistent with these findings other studies also described a substantial link between suicidal behaviour and impulsivity (12-13).Moreover, Dougherty and colleagues reasoned that higher degree of impulsivity was related to more suicide attempts.Some mental disorders that have impulsivity as a core feature are considered a risk of suicidal behaviour, People with borderline personality disorder are more likely to engage in self-mutilating behaviours which contribute to suicide (14).Therefore, it appears that impulsivity does play an important but distal role, in suicidal behaviour. Researchers reasoned that people with high impulsivity tend to hire in more painful and risky behaviours which make them more vulnerable to acquire capability for suicide, and less scared of death (7,15).Suicidal attempt is an important problem in Pakistani population because in the last few year rate of suicidal attempts has increased due to different causes such as unemployment, lack of resources, low literacy rate, weak political processes and lack of proper primary and mental health services (16).

The principle of this study is to establish local perspective as there is a dearth of local information.On the foundation of this study effective screening and management plans can be built up in order to identify and scale down the incidence of suicide attacks.

METHOD

SAMPLE: The required sample size was calculated using WHO software by taking the prevalence of 44.8% (14)confidence level 'C. I'=95%, margin of error d=10%. The sample size came out to be 95. The sample was gathered through non-probability Consecutive sampling technique.

Inclusion Criteria:

- Patient with history of suicide attempt(s) within last three months
- Male or Female.
- Age 20-60 years.

Exclusion Criteria:

- Non consenting patients.
- Known thyroid disease.
- Critically ill patients.
- Congestive cardiac failure.
- Post myocardial infarction.
- Pregnancy.
- Chronic renal failure.
- Chronic liver disease.

DATA COLLECTION PROCEDURE:

This study was conducted after approval from College of Physicians and Surgeons Pakistan and institutional ethical review committee. Patients who met the inclusion criteria were selected from Psychiatry Department, Abbasi Shaheed Hospital, Karachi and after taking informed consent, confidentiality was assured.information about suicide attempt and demographic data was taken from the patient and confirmed by an attendant. The Barratt Impulsiveness Scale (BIS-11) that consists of 30 self administered questions, which is scored out of 120, rated from 0-4 and cutoff is ≥ 22 (calculated by the formula 30 x 75%), was used to measure impulsivity, filled by the patients in terms of (Yes (1) / No (0)]. The findings of outcome variable impulsivity (yes/no) was entered in Performa.

DATA ANALYSIS PROCEDURE:

The data wasanalyzed using SPSS Version 20.

Demographics were presented as simple descriptive statistics, giving mean and standard deviation for age and BIS-11 score. For qualitative variables like gender, marital status, educational status, socioeconomic condition, occupational status and impulsivity (yes/no) were presented as frequency and percentages. Effect modifiers were controlled through the stratification of age, gender, marital status, educational status, socioeconomic status and occupational status to see the effect of these on the outcome variable. Post stratification chi square test was applied taking the p-value of ≤ 0.05 as statistically significant.

RESULTS

Table 1 shows descriptive statistics, mean and standard deviation of age and BIS-11 score. Figure 1 shows the frequency of impulsivity in the entire sample. The findings of Chi-square test presented in Table3-4.

TABLE-1

DESCRIPTIVE STATISTICS

VARIABLE	MEAN ± SD	STANDARD DEVIATION	MIN-MAX
AGE (YEARS)	36.47	±9.13	24-52
BIS-11 SCORE	80.4	±17.6	60-100

Table-1 shows Mean age was 36.47 years with the standard

Deviation of ±9. 13.

The mean BIS-11 score was 80.4±17.6.

TABLE-2

Descriptive Statistics of Demographic Information's of entire sample

Variables	Frequency	Percentages
(a) Gender		
Male	28	29.5%
Female	67	70.5%
(b) Age		
21-30 (years)	38	40%
31-40 (years)	18	18.9%
41-50 (years)	29	30.5%
51-60 (years)	10	10.5%
(c) Marital Status		
Married	9	9.5%
Unmarried	27	28.4%
Divorced	39	41.1%
Widow/widower	20	21.1%
(d) Occupation		
Employed	38	40%
Unemployed	57	60%
(e) Educational level		
No formal education	37	38.9%
Primary	28	29.5%
Secondary	20	21.1%
Higher secondary	10	10.5%
(f) Socioeconomic status		
Lower class	45	47.4%
Middle class	21	22.1%
Upper class	29	30.5%

Table 2 shows most of the adults are within the range of 21-30 years (40%), divorced (41.1%), unemployed (60%), without formal education (37%) and 47.4% belong to lower socioeconomic status.

FIGURE-1

IMPULSIVITY DISTRIBUTION n=95

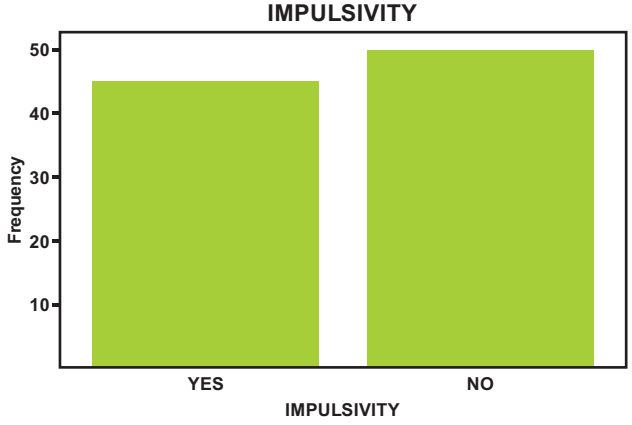

TABLE-3

IMPULSIVITY ACCORDING TO GENDER n=95

GENDER	IMPULSIVITY		TOTAL
	YES	NO	
MALE	13 (46.4%)	15 (53.6%)	28 (100%)
FEMALE	32 (47.8%)	35 (52.2%)	67 (100%)
TOTAL	45 (47.4%)	50 (52.6%)	95 (100%)
P-VALUE	0.53		

Table 3 shows that 13 (46.4%) male and 32 (47.8%) female have impulsivity.

TABLE-4

IMPULSIVITY ACCORDING TO AGE n=95

AGE YEARS	IMPULSIVITY		TOTAL
	YES	NO	
21-30	21 (55.3%)	17 (44.7%)	38 (100%)
31-40	08 (44.4%)	10 (55.6%)	18 (100%)
41-50	10 (34.5%)	19 (65.5%)	29 (100%)
51-60	06 (60%)	04 (40%)	10 (100%)
TOTAL	45 (47.4%)	50 (52.6%)	95 (100%)
P-VALUE	**0.31**		

Table 4 showed that out of 95 patients, 21 (55.3%), 08 (44.4%), 10 (34.5%) and 06 (60%) who were in the age group 21-30, 31-40, 41-50, 51-60 had impulsivity respectively.

DISCUSSION

Suicidalbehaviour is a major public health problem all over the world and one of the leading causes of deaths in young people. Each year approximately one million people perish due to suicide. Suicidal behaviour can be considered as a continuum ranging from wish of death or ideation in the form of views and passive plan to harm oneself / to attempt suicide / complete suicide. Risk analysis varies from only suicidal ideation without a plan (low severity) to the highest severity if there is suicidal ideation with the plan or any past suicide attempt. Impulsivity either chronic or acute isrisk factor for suicide, further trait impulsivity ishigher in attempted suicide than those who have only suicidal ideation. Nevertheless, these widely held perceptions of the association between suicide and impulsivity appear to have mixed findings in many researches (1, 17).

Findings of current study indicated that out of 95 patients who attempted suicide, 45 (47.4%) had impulsivity and 50 (52.6%) had no impulsivity. The sample consisted of28 (29.5%) male and 67 (70.5%) female. Stratification for gender with respect to impulsivity showed that out of 95 patients, 13 (46.4%) males were impulsive while 15 (53.6%) were not, Whereas 32 (47.8%) females were impulsive but 35 (52.2%) were not. Wang et al. studied impulsivity and suicide behaviour among the scholars of China.They reported that in total (5,265), 9.1% (n= 479) students never thought about suicide, but 1% (n=50) had a history of attempted suicide. Further analysis indicated significant differences between suicidal ideates and attempters on cognitive impulsivity and self-oriented attacks (18). Similarly Ghaffari et al. found significant difference between suicides ideates and non-suicide ideates individuals in attempted, motor and non-planning impulsiveness. Moreover, there is high incidence of substance abuse and significant other suicide attempts among suicide ideates as compared to non-suicidal ideates (19).Another survey concluded that people with bipolar disorder score high on the BIS-11 scale as compared to normal mortals.These high scores were associated with past suicide attempts and age, but education has less independent effect.Suicidal ideation is highly prevalent and patients with high impulsivity score appear to be more susceptible to committing suicide. Thus impulsivity may be an important factor for differentially predicting between individuals with suicide ideation and those who have made intention to attempt suicide (20).

On contrary Berzo and colleagues found no difference in impulsivity of suicidal ideates and suicide attempters, same as another study showed that suicide ideates and attempters both have the same scores in impulsivity, but scores were higher than people who have never been suicidal (21).It suggested that impulsivity is moderately high in people with suicidality either in ideas or behaviour.Suicide attempts estimates to be impulsive range from 20% to 85% (22-23).Anestis et al examined 70 studies on impulsivity and suicide, they concluded that impulsivity and suicide were moderately realted. Impulsivity has an indirect relation rather than direct and central but there is a role of impulsivity in suicide (8).

CONCLUSION

This study began to elucidate the role of impulsivity in suicidal behaviour. Present data suggests that impulsivity, as reflected by a tendency toward rapid, unplanned responses on an immediate memory task, is a measurable characteristic of cases with severe previous suicidal behaviour.This issue seems to be influenced by education, socioeconomic, occupation, married status, age and is dependent on the clinical state at the time of testing.People who attempted suicide tend to experience higher levels of trait impulsivity

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Ayesha Abdul Hameed; concept, data collection, data analysis, manuscript writing, manuscript review
Haresh Kumar; data collection, data analysis, manuscript writing, manuscript review
Sarika Bai; data analysis, manuscript writing, manuscript review
Azra Shaheen; data analysis, manuscript writing, manuscript review
Ravi Athwani; data analysis, manuscript writing, manuscript review
Mohammad Munir Hamirani; data analysis, manuscript writing, manuscript review