

A Root Cause Analysis of Various Causes of Self Poisoning

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ABSTRACT

Self poisoning refers to the intentional taking of too much of a poisonous substance believing that it will be noxious. Study aims is to study the socio-demographic variables in self-poisoning patients and to study various types of method of self-poisoning and to assess the Psychiatric morbidity in these patients according to DSM-IV TR. A cross sectional study conducted on 70 patients of self poisoning at one of the tertiary care teaching hospital of Ahmadabad, Gujarat from April 2009 to September 2009. Patients were assessed after emergency medical care & resuscitation, between 2nd to 7th days of suicidal attempt. OP Poisoning (42.86%) was the most common method used for self-poisoning. 82.86% patients were diagnosed to have psychiatric diagnosis on SCID-I, most common diagnosis was depressive disorder (38.57%) followed by adjustment disorder (28.57%). 17.14% patients had no psychiatric diagnosis. From my study conclusion is that Suicidal attempt was found more in married male. Housewives & unskilled workers formed majority in the study.

Keywords: *Self Poison, Suicide, Root Cause*

Kessel (1965) first described the term “deliberate self poisoning”. Since then it has been widely used by many workers. **Stengel** has justified the use of the word “poisoning” by the fact that swallowing of any amounts of tablets in excess is harmful & thus poisoning.^[2] Attempted suicide is an unsatisfactory term, because most attempters do not actually wish to commit suicide. Their motives are different. Several other terms have been introduced as alternatives like par suicide: Deliberate self poisoning (Kessel 1965), non-fatal deliberate self harm (Morgan et al 1975), temporary cessation, intermission, pseudocide (Lennard – Jones & Asher).

Most suicides occur in patients with psychiatric disorders that in most cases are probably treatable. A meta-analysis by **Harris & Barraclough** (1997) examined 249 studies of psychiatric disorders & suicide risk with a minimum 2-year follow-up. They found that 36 of the

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44 psychiatric disorders showed an increased risk of suicide. Notably, only mental retardation & dementia did not exhibit increase in suicide risk.

Manley, M.R.S found that persons with one psychiatric diagnosis were 4-times more likely to have attempted suicide than persons with no diagnosis; persons with more than one diagnosis were 18 times more likely to have attempted suicide.

Longuist JK states that the existence of mental disorders is almost constant in subjects who try to kill themselves. In addition, a majority of attempters have more than one diagnosis. This is especially true if Axis-II or Axis-I sub-threshold conditions are taken into account. The existence of a disorder largely explains the association between most socioeconomic variables (sex, marriage, education level) & sociality. Depressive disorders are the major risk factor, a risk probably linked to a current episode just before the attempt. The association of depressive episodes to an anxiety disorder or the existence of impulsive traits (& or cluster B personality disorder or drug abuse) increases the risk of acting out. Ideation & attempts show parallel onset curves peaking between the ages of 14 & 20 years, with the existence of a previous DSM-IV-TR diagnosis as a strong predictor. The number of associated disorders linearly increases the probability of attempting suicide & is the only significant predictor for lethality.

MATERIAL AND METHOD

A cross sectional study was conducted on 70 patients of self poisoning at NHL medical college and attached V.S hospital, one of the tertiary care teaching hospital of Ahmadabad, Gujarat from April 2009 to September 2009. Patients were assessed after emergency medical care & resuscitation, between 2nd to 7th days of suicidal attempt.

Inclusion criteria:

- 1). Patients referred to the psychiatry OPD with A/H/O self – poisoning whose physical condition was stable.
- 2). Patients who could undergo detailed assessment (between 2nd to 7th days of Attempt).

Exclusion criteria:

- 1). Patient who refused to give consent.
- 2). Patient who insisted that it was an accident.
- 3). Patient who were critically ill &/or medically unstable that an interview was not possible.

Control group was not included in the study because of difficulty of selecting an appropriate comparison sample.

After initial resistance & difficulties because of fear of police & court appearances, & social reasons, all patients offered co-operation later. All the patients were explained about investigation, its purpose & assured of confidentiality of the information.

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A detailed interview & evaluation was carried out with each subject & data was entered on predetermined Performa. All the data obtained were tabulated & wherever necessary was subjected to statistical analysis.

Presence of psychiatric disorder was evaluated by administering the structured clinical interview for DSM-IV for both Axis-I and Axis-II disorder.

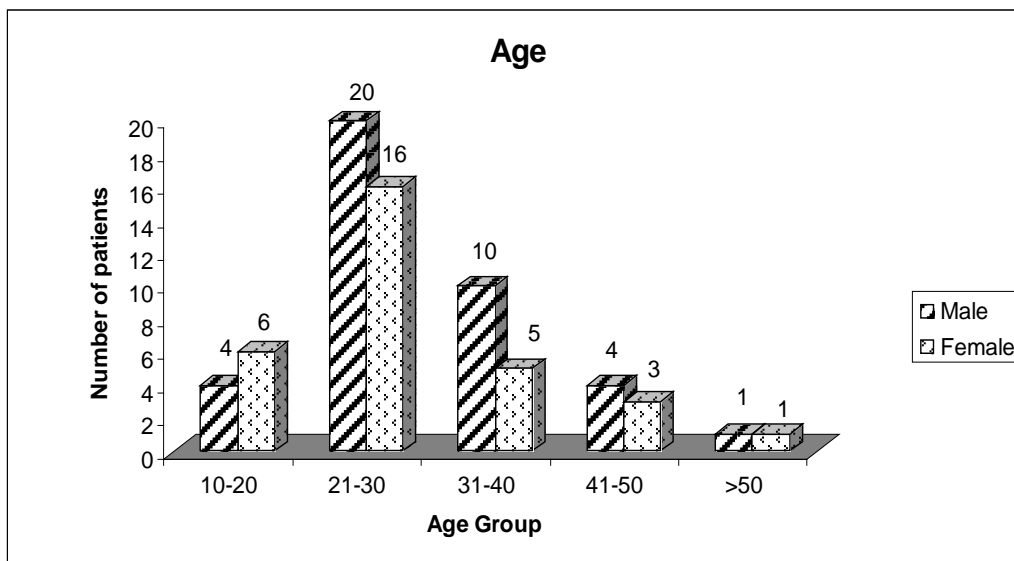
RESULTS

All participants of the study are categorized according to age, sex, family type, socioeconomic status, religion, Education, marital status, mode of suicide, psychiatric morbidity, various precipitating factors, stressful life, past history of suicidal attempt etc...

1) AGE

Age group	Male	Female	Total
10-20	04	06	10
21-30	20	16	36
31-40	10	05	15
41-50	04	03	07
>50	01	01	02
Total	39	31	70

Table 1: Frequency distribution of data by age group (n=70)



Graph 1: Graphical presentation of Frequency distribution of data by age group (n=70)

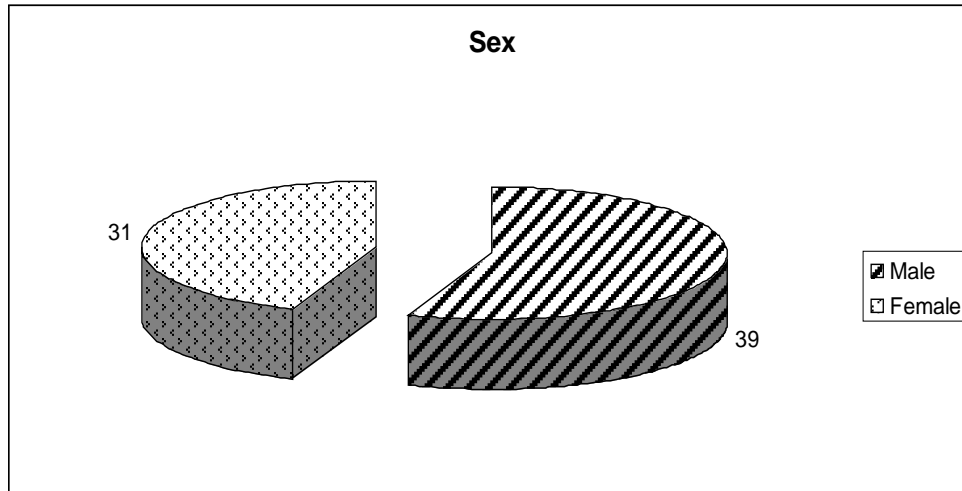
The particular vulnerability in adolescents & young adults may be due to emotional turmoil, interpersonal problems, increase in alcohol & substance abuse, breakdown in extended family, job difficulties & academic setbacks.

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02). SEX:

Sex	Frequency	%
Male	39	55.71
Female	31	44.29
Total	70	100

Table 2: Frequency distribution of data by sex (n=70)



Graph 2: Graphical presentation of Frequency distribution of data by sex (n=70)

This shows that suicidal attempts were more common in males than females. This is similar to most of Indian studies (Narang 2000, Kannapiran 1977, Jain 199 et al), but in contrast with other studies (Chandrasekhar 2003, Bhatia 2000, Beurtrais 1996 et al) where female dominance is noted.

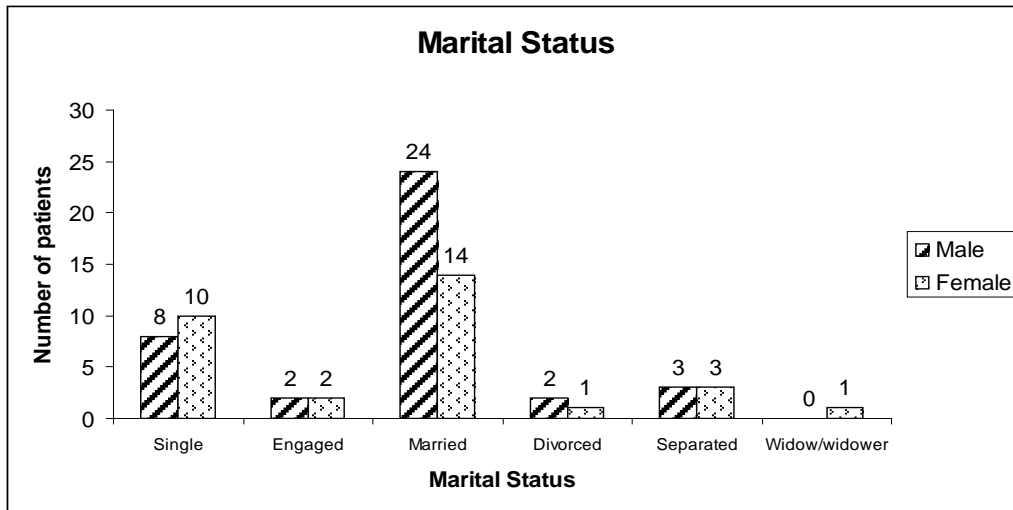
The higher rate for males in the study reflects that more males were brought to the OPD, as they are most productive than females.

03). MARITAL STATUS:

Marital status	Male	Female	Total
Single	08	10	18
Engaged	02	02	04
Married	24	14	38
Divorced	02	01	03
Separated	03	03	06
Widow/widower	00	01	01
Total	39	31	70

Table 3: Frequency distribution of data by marital status (n=70)

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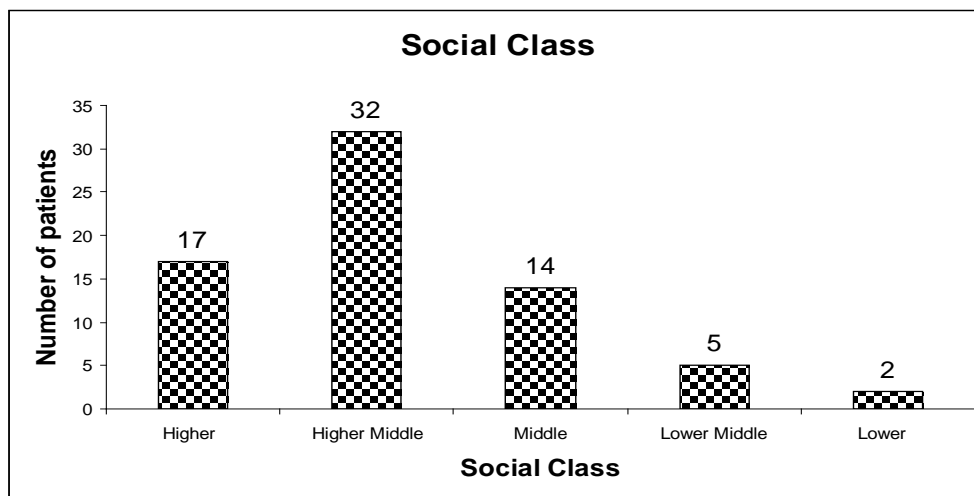


Graph3: Graphical presentation of Frequency distribution of data by marital status (n=70)

04). SOCIO-ECONOMIC STATUS:

Sr. No.	Social class (income in Rs./head/month)	No. of Patients
1.	Higher (≥ 1900)	17
2.	Higher middle (950-1899)	32
3.	Middle (570-949)	14
4.	Lower middle (285-569)	05
5.	Lower (< 284)	02
Total	-----	70

Table 4: Frequency distribution of data by Social Status (n=70)



Graph 4: Graphical presentation of Frequency distribution of data by Social Status (n=70)

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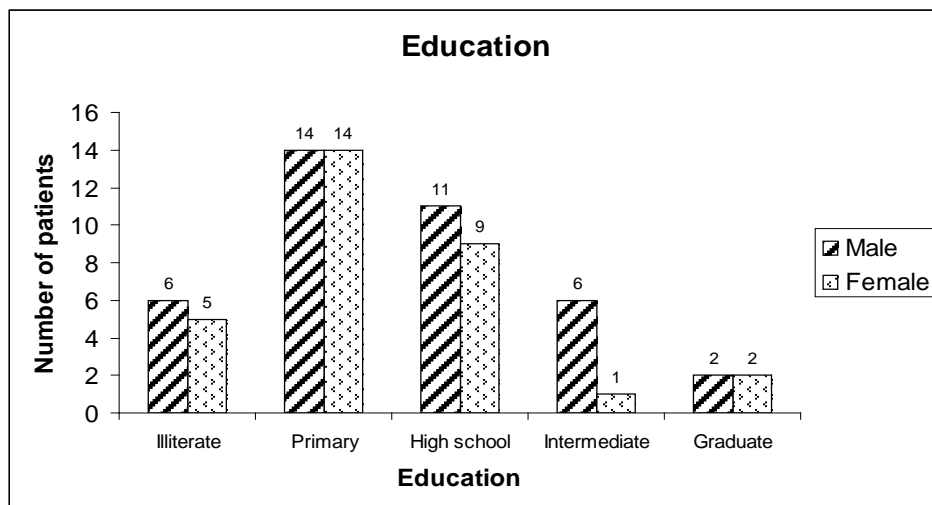
Surprisingly, most of the attempters fall in higher middle & Middle social class acc. to Modified Prasad's classification.

Socio-economic factor & unemployment have been recognized as important factor in a etiology of suicide.

5) EDUCATION:

Education	Male	Female	Total
Illiterate	06	05	11
Primary	14	14	28
High school	11	09	20
Intermediate	06	01	07
Graduate	02	02	04
Total	39	31	70

Table 5: Frequency distribution of data by Education (n=70)



Graph 5: Graphical presentation of Frequency distribution of data by Education (n=70)

Most of the patients had some form of formal education.

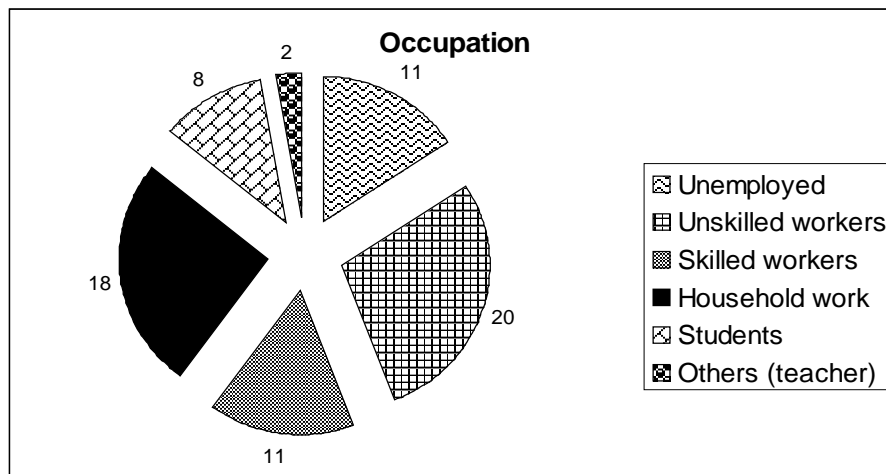
Higher education offers better ways of thinking & perceptual processing, which forms a protective factor.

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6). OCCUPATION:

Occupation	Frequency	%
Unemployed	11	15.7
Unskilled workers	20	28.6
Skilled workers	11	15.7
Household work	18	25.7
Students	08	11.4
Others (teacher)	02	2.7
Total	70	100

Table 6: Frequency distribution of data by Occupation (n=70)



Graph 6: Graphical presentation of Frequency distribution of data by Occupation (n=70)

Majority of the attempters were either unskilled workers or housewives. Unskilled workers were having the earning difficulties at the work place. Being unemployed causes major financial burden.

Housewives are usually exposed to interpersonal problem with parents, in-laws, spouse & other family members. This in accordance to the study by Narang et al 2000, reported 30% housewives, 23% students, 8% unemployed, 14% shop owners in their study at medical college Ludhiana.

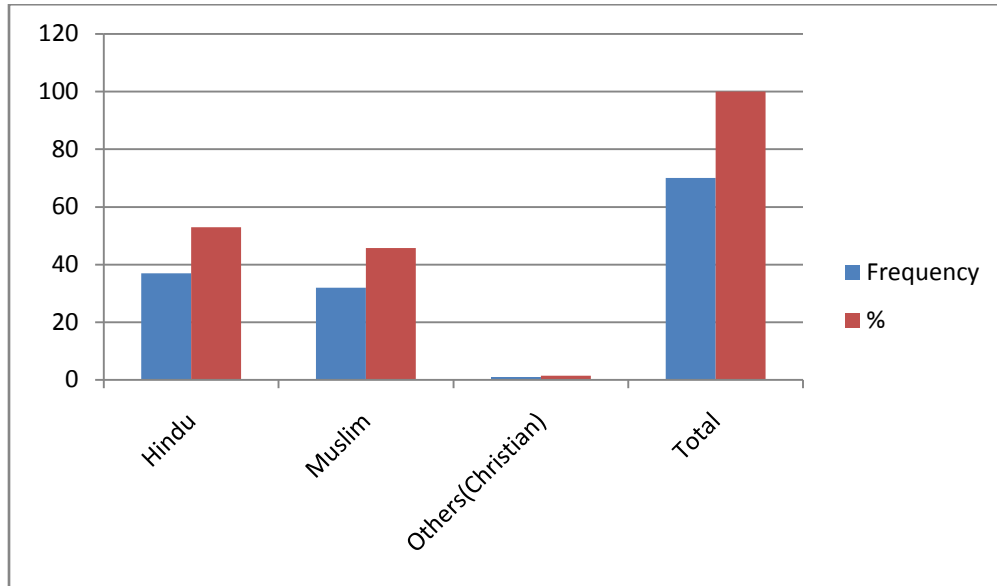
07) RELIGION:

Religion	Frequency	%
Hindu	37	52.9
Muslim	32	45.7
Others(Christian)	01	1.4
Total	70	100

Table 7: Frequency distribution of data by Religion (n=70)

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Some religion, especially Islam, have protective effect against suicide (Conklin & Simpson, 1987). They view it as a form of homicide; also they commonly taught a problem-solving method by reciting certain Quranic verses in times of acute stress, thereby reducing impulsive suicidal acts.



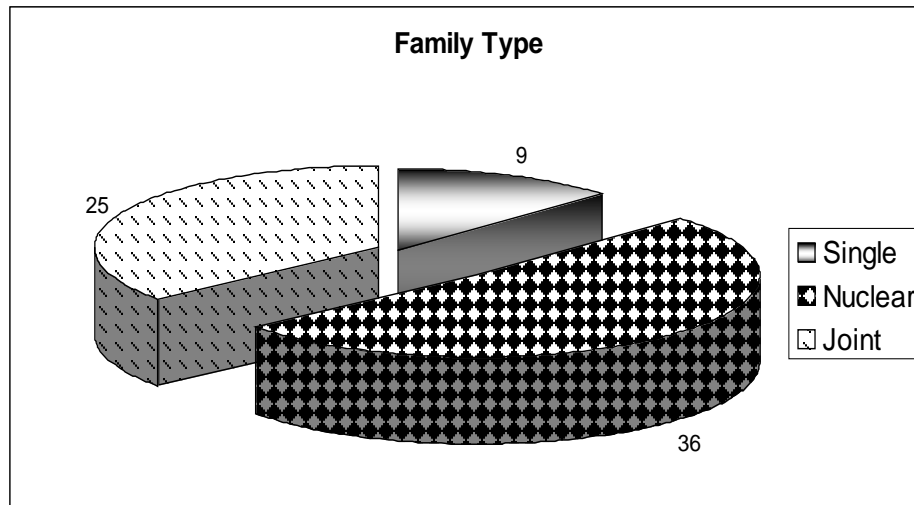
Graph 7: Graphical presentation of Frequency distribution of data by Religion (n=70)

06). FAMILY TYPE:

Family type	Frequency	%
Single	09	12.86
Nuclear	36	51.43
Joint	25	35.71
Total	70	100

Table 8: Frequency distribution of data by Family Type (n=70)

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Graph 8: Graphical presentation of Frequency distribution of data by Family Type (n=70)

Nuclear family is an autonomous unit on which the impact of stressors is more than the extended family. Joint family provides a protective environment to individual where he can deal with the stressors & his individual problems in a better way.

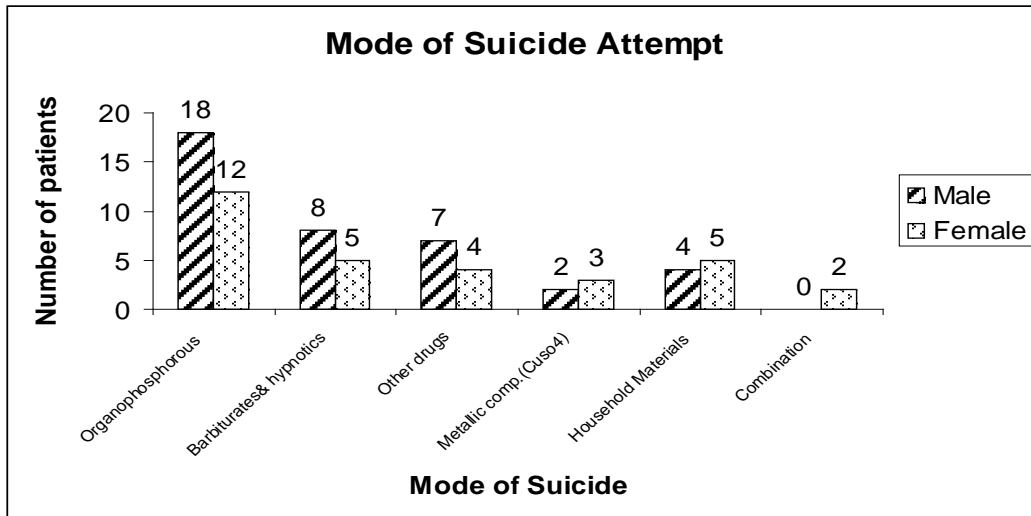
Out of 9 single family type, 4 were students staying in hostel.

09). MODE OF SUICIDE:

Mode of suicide	Male	Female	Total
Organophosphorous	18	12	30
Barbiturates& hypnotics	08	05	13
Other drugs	07	04	11
Metallic comp.(Cuso4)	02	03	05
Household Materials	04	05	09
Combination	00	02	02
Total	39	31	70

Table 9: Frequency distribution of data by Mode of Suicide (n=70)

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Graph 9: Graphical presentation of Frequency distribution of data by Mode of Suicide (n=70)

Most common method of attempt is OP ingestion (42.86%), in contrast to use of firearms in US (Moscicki 1997).

Ingestion of barbiturates & hypnotics was 2nd most common.

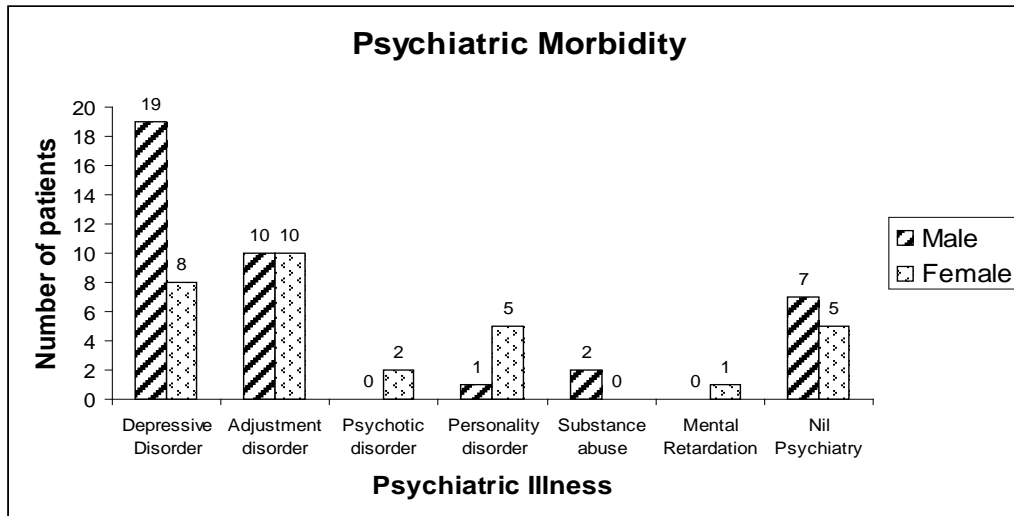
Other drugs - Over the counter analgesics or antipyretics by 8 Patients, antihypertensive medications, naphthalene balls & OC pills by 1 patient each.

10). PSYCHIATRIC MORBIDITY:

Psychiatric Illness	Male	Female	Total
Depressive Disorder	19	08	27
Adjustment disorder	10	10	20
Psychotic disorder	00	02	02
Personality disorder	01	05	06
Substance abuse	02	00	02
Mental Retardation	00	01	01
Nil Psychiatry	07	05	12
Total	39	31	70

Table 10: Frequency distribution of data by Psychiatric Morbidity (n=70)

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Graph 10: Graphical presentation of Frequency distribution of data by Psychiatric Morbidity (n=70)

All patients were evaluated using SCID-I. Of all the patients, 58 (82.86 %) of them suffered from some psychiatric illness.

Most common psychiatric diagnosis was Depressive disorder (38.57%), followed by Adjustment disorder (28.57%) .

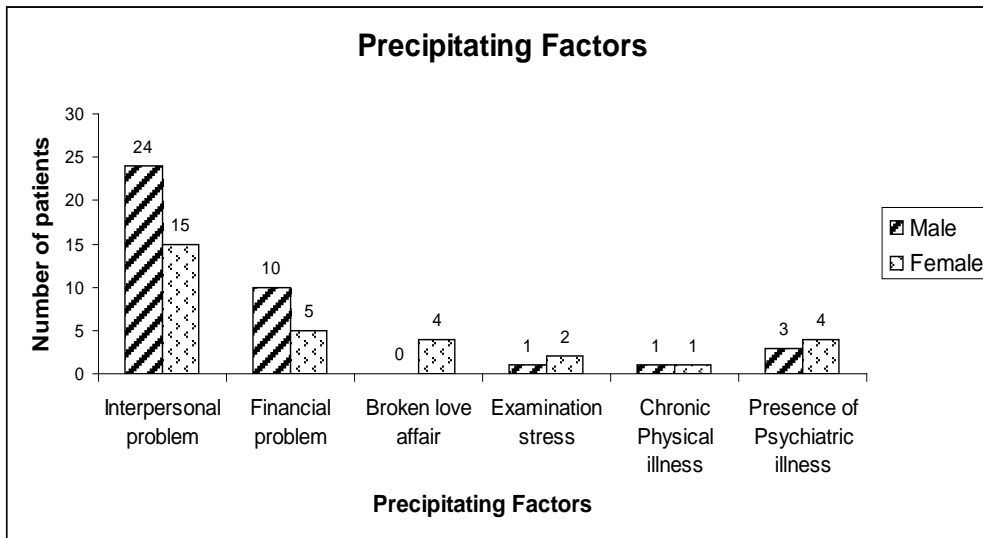
Out of 27 patients of Depression 25 were diagnosed as MDD and 2 patients were of Bipolar Depression. 2 had co morbid axis-II diagnosis (Borderline personality traits).Most of the patients had agitation, hostility associated with depressive symptoms. It appears that the period of highest risk of attempted suicide is both early in the course of a major depressive episode & within the few years of the disorder (Nierenberg et al., 2001) as younger age group is affected with the same.

11). PRECIPITATING FACTORS:

Precipitating Factors	Male	Female	Total
Interpersonal problem (including marital stress)	24	15	39
Financial problem	10	05	15
Broken love affair	00	04	04
Examination stress	01	02	03
Chronic Physical illness	01	01	02
Presence of Psychiatric illness	03	04	07
Total	39	31	70

Table 11: Frequency distribution of data by Precipitating Factors (n=70)

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Graph 11: Graphical presentation of Frequency distribution of data by Precipitating Factors (n=70)

Majority, 39(55.71 %) patients attributed interpersonal problems as the reason for suicidal attempt, 13 (18.57%) had interpersonal problems with their parents, 15 (21.43%) with their spouse, 07 (10%) with their in-laws & 04 (5.79%) with their siblings, friends or colleagues.

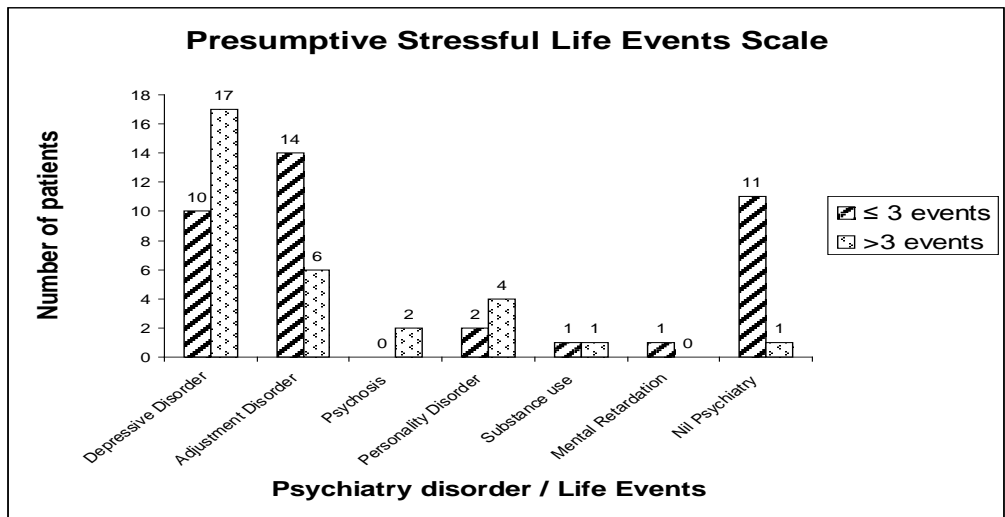
Many attempters have experienced acute interpersonal problems & financial stressors & they often form the background to the suicidal attempts (Roy 1995).

12). STRESSFUL LIFE EVENTS IN PAST 1 YEAR:

Psychiatry Disorder/Life events	≤ 3 events	>3 events
Depressive Disorder	10	17
Adjustment Disorder	14	06
Psychosis	00	02
Personality Disorder	02	04
Substance use	01	01
Mental Retardation	01	00
Nil Psychiatry	11	01
Total	39	31

Table 12: Frequency distribution of data by Stressful Life Events in Past 1 year (n=70)

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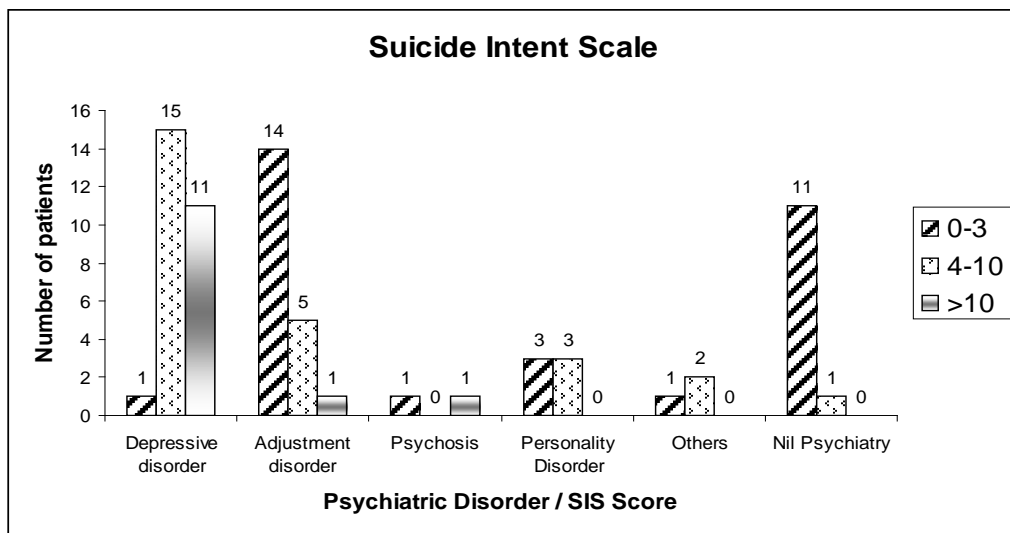
Graph 12: Graphical presentation of Frequency distribution of data by Stressful Life Events in Past 1 year (n=70)

13). SUICIDE INTENT SCALE:

Suicide intent scale was divided into low (0-3), intermediate (4-10) and high (> 10) intent group.

SIS score	Psychiatric Illness						Total
	Depressive disorder	Adjustment disorder	Psychosis	PD	Other	Nil	
0-3	01	14	01	03	01	11	31
4-10	15	05	00	03	02	01	26
>10	11	01	01	00	00	00	13
Total	27	20	02	06	03	12	70

Table 13: Frequency distribution of data by SIS (n=70)



Graph 13: Graphical presentation of Frequency distribution of data by SIS (n=70)

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In present study, 31 (44.29%) patients had low SIS, 26 (37.14%) had intermediate and 13 (18.57%) had high SIS. Mean suicide intent score = 4.63.

Mean SIS in various Psychiatric Illness

Psychiatric Illness	Mean SIS
Depressive Disorder	7.77
Adjustment Disorder	2.60
Psychosis	7.00
Personality Disorder	3.16
Other Disorders	5.00
Nil Psychiatry	0.33

In patient with MDD, SIS was high in 11 patients whereas in patient with no psychiatric illness, 11 patients have low SIS and none had high SIS.

Mean SIS for various methods of self poisoning

Method	Mean SIS
Organophosphorous	2.83
Barbiturate Overdose	6.00
Other drugs over dose	3.18
Metallic compound (CuSO ₄) ingestion	5.40
Household materials ingestion	11.40
Combination method	3.00
Total	4.63

14). PAST H/O SUICIDAL ATTEMPT:

Past history of Suicidal attempt	Male	Female	Total
Present	04	05	09
Absent	35	26	61
Total	39	31	70

Table 14: Distribution of participants according to past history

9 (12.86%) patients had history of previous suicidal attempt. All of them were diagnosed to have some psychiatric illness during their previous attempt, 3 were diagnosed to have personality disorder, 5 were patients with depressive disorder & 1 diagnosed as Psychotic.

Bagadia et al (1979) found 7% patients with one previous attempt & 2.4% with more than one attempts. Sethi et al (1978) observed that 14.6% had previous suicidal attempts.

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The statistical analysis was done by using SPSS-PC software package and required corrections were applied when ever significant. The following results were found.

Chi-Square Results

(for statistical significance)

	<u>p. Value</u>
• Psych. Illness & mode of S.A.	– 0.000
• Psych. Illness & ppt. factor	- 0.000
• Psych. Illness & Marital status	– 0.000
• Psych. Illness & SIS	- 0.001
• Psych. Illness & Social class	- 0.003
• Psych. Illness & Education	- 0.038
• Psych. Illness & Occupation	- 0.147
• Psych. Illness & PSLES	- 0.456

$p < 0.05$ – statistically significant.

$p \geq 0.05$ – statistically not significant.

DISCUSSION

Attempted suicide is the burning issue as it is 10-25 times more than completed suicide & the most important public health concern. Wide variation in the frequencies of psychiatric disorder reported in Indian studies ranging between 5.5 to 93%. We decided to evaluate psychiatric morbidity along with other important aspects of attempted suicide.

The study was carried at a tertiary care multi-specialty teaching hospital, 70 consecutive patients of suicidal attempt were evaluated during April 2009 to Sep 2009. Data was collected on a specifically designed Proforma for socio-demography, mode of suicidal attempt, past history of suicidal attempt, psychiatric diagnosis was established on SCID-I. Severity of suicidal intent was also evaluated by using scales. Stressors were elicited using PSLES scale for previous 1 year.

The following results were observed.

- Suicidal attempt was found more in married male. Housewives & unskilled workers formed majority in the study.
- OP Poisoning (42.86%) was the most common method used for self-poisoning.
- 82.86% patients were diagnosed to have psychiatric diagnosis on SCID-I, most common diagnosis was depressive disorder (38.57%) followed by adjustment disorder (28.57%). 17.14% patients had no psychiatric diagnosis.
- Most of the patients attributed interpersonal problems (55.7%) as the reason for their suicidal attempt.
- All patients with past history of suicidal attempt had some psychiatric diagnosis during the previous attempt.
- Patients having adjustment disorder & no diagnosis on axis-I scored low on scales: SIS & PSLES.

The findings of the present study were compared with the findings of the past Indian and International Studies and possible explanations were discussed.

CONCLUSION

From my study conclusion is that Suicidal attempt was found more in married male. Housewives & unskilled workers formed majority in the study. OP Poisoning (42.86%) was the most common method used for self-poisoning. 82.86% patients were diagnosed to have psychiatric diagnosis on SCID-I, most common diagnosis was depressive disorder (38.57%) followed by adjustment disorder (28.57%). 17.14% patients had no psychiatric diagnosis

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