RESEARCH PAPER | Medical Science | Volume : 5 | Issue : 6 | June 2015 | ISSN - 2249-555X

# Analysis of Suicidal Attempts Inschizophrenics"N Asram Hospital, Eluru

KEYWORDS

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**ABSTRACT** *BACKGROUND AND OBJECTIVES*

*Schizophrenia is a complex neurobehavioral disorder that appears to be closely associated with suicidal behavior. Suicide is a major cause of premature death among patients suffering from schizophrenia.The present study is carried to study the frequency of suicide attempts in persons with schizophrenia and to compare various clinical and socio demographic variables of patients suffering from schizophrenia with and without suicide attempts, in search of possible risk factors for suicide in schizophrenia.*

*METHODOLOGY*

*100 consecutive patients suffering from schizophrenia based on ICD-10 diagnostic criteria,fulfilling inclusion and exclusion criteria, attending the outpatient department were studied using Semi-structured proforma, SAPS, SANS,CDSS,Beck's Suicide intent scale and clinical interview.The study is a cross sectional descriptive study.Statistical analysis was done using the chi-square test and the unpaired t-test.*

*RESULTS*

*Out of 100 patients studied, 27% had attempted suicide(n=27). Individuals who had a family history of suicide,prominent positive symptoms and depressive features,who were in their early stages of illness(first few years), had more suicidal attempts compared to those who did not have. We did not find any significant association between the various demographic variables,subtype of illness,negative symptoms,duration of illness, and the suicidal behavior.*

*CONCLUSIONS*

*People suffering from schizophrenia are at a highrisk for making suicidal attempts, especially when the illness is acute and severe, in early stages, when accompanied by depressive symptoms. Early identification of risk factors and*

*employment of possible preventive strategies,and effective monitoring of treatment would definitely make us keep a step towards meeting one of the greatest unmet challenges in psychiatry, "Suicide inSchizophrenia."*

*LIST OF ABBREVIATIONS*

CDSS - Calgary Depression rating scale for schizophrenia
D-FEN - D fenfluramine
DST - Dexamethasone suppression test
EEG - ElectroEncephaloGraphy
EPS - Extrapyramidal symptoms

5-HTR - Serotonin receptor
5-HTTgene - Serotonin transporter gene
IL-6 - Interleukin 6
MAO A - Monoamineoxidase A
PRL - Prolactin
REM - Rapid Eye Movement sleep
SANS - Scale for assessment of negative symptoms
SAPS - Scale for assessment of positive symptoms
SNP - Single nucleotide polymorphism
TPH 1 - Tryptophan hydroxylase1 gene

## INTRODUCTION

Schizophrenia is a complex neurobehavioral disorder that appears to be closely associated with suicidal behavior. Schizophrenia is associated with an excess premature mortality, up to 40% of this excess premature mortality can be attributed to suicide and unnatural deaths[1]. Suicide is a major cause of premature death among patients suffering from schizophrenia[2,3]. It reduces the life expectancy of those afflicted by approximately 10 years. About 25% of schizophrenic patients make at least one suicide attempt in their lifetime

People with schizophrenia are known to die much earlier than expected[5].Lifetime suicide risk is 4.9% for people with schizophrenia[6]. Detection of those at risk is clinically important, but risk prediction is known to be imprecise[7].

Inskip et al performed a meta-analysis on suicide among patients with affective disorder, alcoholism, and schizophrenia, and estimated that the lifetime risk of suicide was 4% for schizophrenia an estimate for schizophrenia that is consistent with the estimate of Palmer et al[10].

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The risk of suicide in schizophrenia exceeds that of all psychiatric disorders other than major depression[11]. The rate of suicide in schizophrenia has been reported to be some 20-50 times greater than suicide rate in general population[12]. It has been found that 20% to 40% of patients suffering from schizophrenia make suicide attempts. The completed suicide rate in schizophrenia ranges from 9% to 12.9%[13].Suicide rate in adults with schizophrenia was 6.8/1000 people/year[14].

Suicide attempts in individuals with schizophrenia are serious, typically requiring medical attention. Intent is strong and the majority of those who attempt make multiple attempts, having a higher rate of more lethal methods. Risk factors including previous attempts are however found to be having limited value in the prediction of eventual suicide and traditional risk scales are considered ineffective. In this study, we have tried to find differences in the groups of suicide attempters and non-attempters in schizophrenia in search of possible risk factors for suicide. The question looming large is: "IS THERE PREVENTION?"

**AIMS AND OBJECTIVES**

The following were the aims and objectives of our study:

1. To study the frequency of suicide attempts in schizophrenia.
2. To compare the clinical and socio-demographic profile of patients suffering from schizophrenia with and without suicide attempts.
3. To study the various risk factors of suicide attempts in patients suffering from schizophrenia.
4. To study the relationship of severity, type and duration of schizophrenic illness in patients with and without suicide attempts.
5. To study the characteristics of suicide attempters in schizophrenia.

**METHODOLOGY**

The study was carried out in ASRAM

HOSPITAL,ELURU,A.P. Study Period: Jan 2012 to March 2013 (14 months).

**SAMPLE**

100 consecutive patients suffering from schizophrenia based on ICD-10 diagnostic criteria attending the outpatient department for treatment.

**INCLUSION CRITERIA**

1. Patients diagnosed as suffering from schizophrenia based on the ICD – 10 diagnostic criteria.
2. Patients on medication for their schizophrenic illness within a year of onset of symptoms.
3. Patients who have been on regular medication from the time of diagnosis.
4. The age of a patient at the onset of illness should have been more than 16 years.

**EXCLUSION CRITERIA**

1. Substance use disorder.
2. Organic condition.
3. Patients who could not be evaluated by meaningful conversation due to severe psychotic excitement.

**STUDY DESIGN**

The study is a cross sectional descriptive study.

**MATERIALS USED**

1. Semi-structured proforma.
2. SAPS (Scale for the assessment of positive symptoms)
3. SANS (Scale for the assessment of negative symptoms)
4. CDSS (Calgary Depression rating scale for schizophrenia)
5. Beck's Suicide intent scale.

A Semi-structured Proforma to include the socio-demographic data, family history, duration & type of disorder, treatment history and details of suicide attempt if present (Appendix I).

Clinical interview for diagnosis of schizophrenia using ICD 10 criteria.

Consecutive patients fulfilling ICD 10 criteria for schizophrenia were evaluated in the review OPD department of the ASRAM HOSPITAL,ELURU.Patients were approached without knowledge of whether they had a history of suicide attempt. 100 consecutive patients satisfying the inclusion and exclusion criteria were taken into the study. The diagnosis was obtained from case records and re-confirmed by 2 psychiatrists, one of them a senior consultant.

The data collected thus were tabulated and discussed with reference to the aims and objectives of the study. Statistical analysis was done using the chi-square test and the unpaired t-test.

Approval was obtained from the Ethics committee of ASRAM MEDICAL COLLEGE, ELURU,A.P

**RESULTS**

**TABLE NO 1 : FREQUENCY OF SUICIDE ATTEMPT IN THE STUDY POPULATION**

| Suicide Attempt | Frequency | Percent |
|---|---|---|
| Yes | 27 | 27 |
| No | 73 | 73 |
| Total | 100 | 100 |
| Suicide attempt frequency – 27 % | | 95 % CI = 19 – 37 % |

In the study population 27 % had attempted suicide while 73 % did not have a history of suicide attempt.

**TABLE NO. 2 : AGEWISE COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS**

| Age in Years | Suicide attempt | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | | |
| | n | % | n | % | |
| <21 | 0 | 0 | 3 | 4.1 | 3 |
| 21-30 | 13 | 48.2 | 34 | 46.6 | 47 |
| 31-40 | 11 | 40.7 | 22 | 30.1 | 33 |
| 41-50 | 3 | 11.1 | 11 | 15.1 | 14 |
| 51-60 | 0 | 0 | 3 | 4.1 | 3 |
| Total | 27 | 100 | 73 | 100 | 100 |

| | Value | P value | Significance |
|---|---|---|---|
| Chi-Square | 3.12 | 0.54 | Not significant |

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Out of the study group who attempted suicide, none were below 21 years, 48.2 % were between 21 and 30 years, 40.7 % were between 31 and 40 years, 11.1 % were between 41 and 50 years, and none between 51 and 60 years. Among the patients who did not attempt suicide, 4.1% were below 21 years, 46.6 % were between 21 and 30 years, 30.1 % were between 31 and 40 years, 15.1 % were between 41 and 50 years, and 4.1 % were between 51 and 60 years. This difference was not statistically significant.

**TABLE NO. 3 : GENDERWISE COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS**

| Gender | Suicide attempt | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | | |
| | n | % | n | % | |
| Male | 21 | 77.8 | 51 | 69.9 | 72 |
| Female | 6 | 22.2 | 22 | 30.1 | 28 |
| Total | 27 | 100 | 73 | 100 | 100 |
| Chi-Square | Value | P value | | Significance | |
| | 0.61 | 0.43 | | Not significant | |

Among the group of suicide attempters, 77.8 % were males and 22.2 % were females. In the non-attempters group 69.9 % were males, while 30.1 % were females.

This difference was not statistically significant.

**TABLE NO. 4 : COMPARISON OF THE SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SOCIOECONOMIC STATUS**

| SE Status | Suicide attempt | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | | |
| | n | % | n | % | |
| Low | 20 | 74.1 | 60 | 82.2 | 80 |
| Middle | 6 | 22.2 | 12 | 16.4 | 18 |
| High | 1 | 3.7 | 1 | 1.4 | 2 |
| Total | 27 | 100 | 73 | 100 | 100 |

| | Value | P value | Significance |
|---|---|---|---|
| Chi-Square | 1.07 | 0.59 | Not significant |

Out of the group which attempted suicide, 74.1% were from lower socio- economic group, 22.2 % were from middle socio-economic group, and 3.7 % belonged to higher socio-economic group. In the non-attempters group, 82.2 % were from lower socio-economic group, 16.4 % were from middle socio- economic group, while 1.4 % belonged to higher socio-economic group. The difference was not statistically significant.

**TABLE NO. 5 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY MARITAL STATUS**

| Marital Status | Suicide Attempt | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | | |
| | n | % | n | % | |
| Married | 11 | 40.7 | 26 | 35.6 | 37 |
| Unmarried | 12 | 44.4 | 41 | 56.2 | 53 |
| Separated | 1 | 3.7 | 5 | 6.8 | 6 |
| Divorced | 3 | 11.1 | 1 | 1.4 | 4 |
| Total | 27 | 100 | 73 | 100 | 100 |

| | Value | P value | Significance |
|---|---|---|---|
| Chi-Square | 5.65 | 0.13 | Not significant |

In the group which attempted suicide, 40.7 % were married, 44.4 % were unmarried, 3.7 % were separated, and 11.1 % were divorced. Among the non- attempters group 35.6 % were married, 56.2 % were unmarried, 6.8 % were separated, while 1.4 % were divorced. The difference was not statistically significant.

**TABLE NO. 6**
**COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY**
**FAMILY HISTORY OF MENTAL ILLNESS AND SUICIDE**

| Family History | Suicide attempt | | | | Total | Chi value | P value |
|---|---|---|---|---|---|---|---|
| | Yes | | No | | | | |
| | n | % | N | % | | | |
| None | 7 | 25.9 | 41 | 56.2 | 48 | 7.22 | 0.007* |
| Mental illness | 8 | 29.6 | 21 | 28.8 | 29 | 0.01 | 0.93 |
| Suicide | 7 | 25.9 | 4 | 5.5 | 11 | 8.42 | 0.003* |
| Both | 5 | 18.8 | 7 | 9.6 | 12 | 1.49 | 0.22 |
| Total | 27 | 100 | 73 | 100 | 100 | - | - |

Out of the study population who attempted suicide, 25.9 % had no family history of mental illness or suicide, 29.6 % had family history of mental illness, 25.9 % had family history of suicide, and 18.8 % had family history of both mental illness and suicide. Among the non-attempters group 56.2 % had no family history of mental illness or suicide, 28.8 % had family history of mental illness, 5.5 % had family history of suicide, and 9.6 % had family history of both mental illness and suicide. Family history of suicide was significantly more prevalent in those who attempted suicide compared to those who did not (p - 0.003). The non-attempters group had significantly less number of family members with either mental illness or suicide (p -0.007).

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**TABLE NO. 7 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SUB-TYPES OF SCHIZOPHRENIA**

| Subtypes | Suicide attempt | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | | |
| | n | % | n | % | |
| Undifferentiated | 19 | 70.4 | 41 | 56.2 | 60 |
| Paranoid | 5 | 18.5 | 22 | 30.1 | 27 |
| Hebephrenic | 2 | 7.4 | 6 | 8.2 | 8 |
| Catatonic | 1 | 3.7 | 4 | 5.5 | 5 |
| Total | 27 | 100 | 73 | 100 | 100 |

| | Value | P value | Significance |
|---|---|---|---|
| Chi-Square | 1.79 | 0.62 | Not significant |

In the study group of those who attempted suicide, 70.4 % were undifferentiated type, 1 8.5 % were paranoid type, 7.4 % were hebephrenic type, and 3.7 % were catatonic type. Among the non-attempters group 56.2 % were undifferentiated type, 30.1 % were paranoid type, 8.2 % were hebephrenic type, and 5.5 % were catatonic type. The difference was not statistically significant.

**TABLE NO. 8**
**COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SAPS (SCALE FOR THE ASSESSMENT OF POSITIVE SYMPTOMS) SCORES**

| SCALE | Suicide Attempts | | | | P value |
|---|---|---|---|---|---|
| | Yes (n – 27) | | No (n – 73) | | |
| | Mean | S.D. | Mean | S.D. | |
| SAPS SCORE | 21.93 | 9.20 | 17.33 | 7.68 | 0.01 |

The mean score on SAPS (positive symptoms scale) was 17.33 (SD - 7.68) for non-attempters, compared to 21.93 (SD - 9.20) for those with suicide attempt. The difference was statistically significant (p - 0.01) in t test.

**TABLE NO. 9**
**COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SANS (SCALE FOR THE ASSESSMENT OF NEGATIVE SYMPTOMS) SCORES.**

| SCALE | Suicide Attempts | | | | P value |
|---|---|---|---|---|---|
| | Yes (n – 27) | | No (n – 73) | | |
| | Mean | S.D. | Mean | S.D. | |
| SANS SCORE | 15.52 | 6.27 | 15.23 | 7.61 | 0.86 |

The mean SANS (negative symptoms scale) score was 15.23 (SD - 7.61) for non-attempters, compared to 15.52 (SD - 6.77) for those with attempt. This difference was not statistically significant (p - 0.86) in t test.

**TABLE NO. 10**
**COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY CDSS (CALGARY DEPRESSION SCALE FOR SCHIZOPHRENIA) SCORES.**

| SCALE | Suicide Attempts | | | | P value |
|---|---|---|---|---|---|
| | Yes (n – 27) | | No (n – 73) | | |
| | Mean | S.D. | Mean | S.D. | |
| CDSS SCORE | 4.667 | 2.602 | 3.320 | 2.266 | 0.01 |

The mean score on CDSS (Depression scale) was 3.320 (SD - 2.266) for non attempters, while it was 4.667 (SD - 2.602) for attempters. This difference was statistically significant (p - 0.01) in t test.

**TABLE NO. 11 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY DURATION OF THE ILLNESS**

| Duration of Illness | Suicide attempts | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | | |
| | n | % | n | % | |
| < 1 year | 2 | 7.4 | 5 | 6.8 | 7 |
| 1 – 2 years | 2 | 7.4 | 13 | 17.8 | 15 |
| 2 – 5 years | 11 | 40.7 | 21 | 28.8 | 32 |
| > 5 years | 12 | 44.4 | 34 | 46.6 | 46 |
| Total | 27 | 100 | 73 | 100 | 100 |

| | Value | P value | Significance |
|---|---|---|---|
| Chi Square | 2.33 | 0.20 | Not significant |

Among those who attempted suicide, 7.4 % had duration of illness less than 1 year, 7.4 % had duration of illness between 1 and 2 years, 40.7 % had duration between 2 and 5 years, while 44.4 % had more than 5 years duration of illness. The mean duration of illness among those who attempted suicide was 6.48 years (S.D. 4.8). In the non-attempters group, 6.8 % had duration of illness less than 1 year, 17.8 % between 1 and 2 years, 28.8 % between 2 and 5 years, while 46.6 % had more than 5 years duration of illness. The mean duration among non-attempters was 8.3 years (S.D. 6.8). This difference was not statistically significant.

**TABLE NO. 12 : SUICIDE INTENT AMONG THOSE WHO ATTEMPTED**

| Suicide Intent | Frequency | Percentage |
|---|---|---|
| Low | 10 | 37.1 |
| Medium | 9 | 33.3 |
| High | 8 | 29.6 |
| Total | 27 | 100 |

On assessing the severity of suicide attempt (suicide intent scale), 37.1 % were found to have low intent, 33.3 % were found to have medium intent, and 29.6% had high intent.

**DISCUSSION**

Studies state that the risk for suicidal behavior is high throughout the life-span

Volume : 5 | Issue : 6 | June 2015 | ISSN - 2249-555X

of individuals suffering from schizophrenia. The role of demographic variables in suicidal behavior has given contrasting results across various studies. Young males suffering from schizophrenia have been stated to be at a higher risk. Tsuang reported lesser suicide risk in females suffering from schizophrenia[13], while studies by Ting- Pong Ho and Vanessa Raymont,caldwell reported higher risk for young adults Men with schizophrenia commit suicide more frequently than women with schizophrenia. In our study we could not establish age and gender to be associated with suicidal attempts in schizophrenia.

Higher socio-economic status is stated to be a risk factor for suicide. In higher status group fall in social status due to illness is said to contribute towards suicide attempts. Suicide is also said to be more prevalent in the lower socio-economic class (Kaplan) . We were not able to find any significant relationship between social status and suicidal attempts. Most of our patients were from the lower and middle socioeconomic groups, while only two individuals were from higher socioeconomic class in our study.

According to the study by Radomsky et al being single, separated or divorced did not confer higher risk for suicide attempts in psychosis. But the result is in contrast to literature which states that majority of the schizophrenic suicides are committed by unmarried. Those who are living alone, are at increased risk for suicide[11,]. Our study did not find any significant association between marital status and suicide attempts in schizophrenia

A common underlying genetic factor may explain the association of suicidal behavior with aggression. In our study significantly higher number of individuals who had a family history of suicide had more suicidal attempts compared to those who did not. The finding was consistent with adoption studies reporting genetic risk for suicide (Roy and Segal).

Fenton et al found that individuals with paranoid schizophrenia subtype had an elevated suicidal risk compared to others. Our findings were similar to the views expressed by Kaplan and Ting Pong Ho who did not find any particular sub-type of schizophrenia to be prone for suicidal attempts .

Most of the studies have not established association between suicidal behavior and negative symptoms (Dhavale et al) similar to our study, while Fenton et al found that suicidal behavior in schizophrenia had significantly lower negative symptoms, suggesting that prominent negative symptoms, such as diminished drive, blunted affect, and social & emotional withdrawal, counter the emergence of suicidality in patients with schizophrenia and that deficit syndrome defines a group at relatively lower risk for suicide. In our study both the groups were suffering to a similar extent from negative symptoms.

The finding of delusions to be the most common cause of suicidal attempt in our study is similar to the reports by Fenton et al who found two positive symptoms, suspiciousness and delusions to be more severe in schizophrenic suicides. Dhavale et al in their study on suicide attempts in schizophrenia also found that delusions were the most common cause. More than forty percent of those who attempted suicide attributed their delusions to be the reason which drove them to the attempt. Impulsive acts are common in schizophrenia, where people suffering are found to have low threshold for tolerance. It was found to be the third common reason for suicide attempts in our study.

**SUMMARY**

- High rates of suicide attempts are seen in people suffering from schizophrenia especially during early stages of their illness.
- Demographic profile such as age, sex, , socioeconomic status, marital status were not significantly related to suicide attempts.
- Family history of suicide was a strong and significant factor in patients with suicide attempts.
- Subtypes of schizophrenia were not related to suicide attempts.
- Those who attempted suicide were suffering more from positive symptoms, and had more depressive features.
- Duration of illness was not a significant factor between suicide attempters and non-attempters.
- Most of the suicide attempts had medium to high intent.

**CONCLUSIONS**

People suffering from schizophrenia are at a high risk for making suicidal attempts, especially when the illness is acute and severe, in early stages, when accompanied by depressive symptoms. Clinicians need to be wary of this fact and intervene aggressively and early. More attention is needed for the higher risk group which includes those with a family history of suicide and persons communicating their intention.

Suicide is the single largest cause of premature death among individuals with schizophrenia. It requires early identification of risk factors and possible prevention strategies needs to be devised. Maintaining care beyond the point of clinical recovery is important in protecting high risk individuals. Prevention of suicide in schizophrenia is likely to result from treatment of depressive symptoms, improving adherence to treatment, and maintaining special vigilance in patients with risk factors, especially after losses.

**LIMITATIONS**

- Since this study was done in a private institute located in rural area, the groups did not represent the suffering schizophrenic population in its entirety. Certain variables like socioeconomic status, are not fully represented.
- Recall bias could have influenced the patients and relatives recollection of the suicidal intent during the attempt.
- Only the individuals who survived the suicidal attempt were analyzed. To analyze the entire suicidal behavior, completed suicides also needs to be studied.

Volume : 5 | Issue : 6 | June 2015 | ISSN - 2249-555X

**REFERENCE**

Bushe C, Taylor M and Haukka J: Mortality in schizophrenia A measurable | clinical endpoint. J Psychopharmacol 2010; 24(Suppl 4): 17-25. | 2. Roy A, Pompili M: Management of schizophrenia with suicide risk. | PsychiatrClin North Am. 2009;32(4):863-883. | 3. Pompili M, Lester D, Innamorati M, Tatarelli R, Girardi P: Assessment and | treatment of suicide risk in schizophrenia. Expert Rev Neurother. 2008;8(1):51- | 74; | 4. Laursen TM, Munk-Olsen T, Nordentoft M, Mortensen PB: Increased mortality | among patients admitted with major psychiatric disorders: a register-based study | comparing mortality in unipolar depressive disorder, bipolar affective disorder, | schizoaffective disorder, and schizophrenia. J Clin Psychiatry. 2007;68:899-907. | 5. Saha S, Chant D, McGrath J: A systematic review of mortality in schizophrenia: | Is the differential mortality gap worsening over time? Arch Gen Psychiatry | 2007; 64: 1123-1131. | 6. Palmer BA, Pankratz VS, Bostwick JM: The lifetime risk of suicide in | schizophrenia a reexamination. Arch Gen Psychiatry 2005; 62: 247-253; | 7. Goldney RD: Prediction of suicide and attempted suicide. In: Hawton K, van | Heeringen K, editors. (eds) The International Handbook of Suicide and | Attempted Suicide Chichester: Wiley;2000; 585-596; | 8. Allebeck P: Schizophrenia: A life shortening disease. Schizophrenia Bull 1989; | 15:81-88; | 9. Black DW, Winokur G. Warrack G: Suicide in schizophrenia: The Iowa linkage | study. J Clin Psychiatry 1985; 46:14-17. | 10. Inskip HM, Harris EC, Barraclough B: Lifetime risk of suicide for affective | disorder, alcoholism and schizophrenia. Br J Psychiatry 1998;172:35-37.. | 11. Asnis GM, Friedman TA, Sanderson WC, Kaplan ML, Van Praag HM, | Harkavy-Friedman JM: Suicidal behavior in adult psychiatric outpatients: | Description and prevalence. Am J Psychiatry 1992; 149:394-395.. | 12. Black DW: Mortality in schizophrenia: The Iowa record linkage study. A | comparison with general population mortality. Psychosomatics 1988; 29:55-60. | |