

Etiopathogenesis of suicidal behavior in a two-year study

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Abstract:

During two years, through a prospective study we found that the incidence rate per year of suicide attempt is 21, 77 per 100 000 inhabitants.

Many researches about etiopathogeny of suicide attempt show the difficulties to understand and explain this complex phenomenon. This includes heterogeneous association between individual vulnerabilities and other risk factors.

Finally, targeting suicide reduction, efforts must be gathered and converged to promote suicide prevention which has more effectiveness.

Key words: *suicide attempt, risk factors, etiopathogeny, vulnerability, education, prevention.*

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I. Introduction:

The frequency of suicide and attempted suicide is increasing worldwide. A better knowledge of the predictive factors of suicide would make it possible to intervene beforehand and to take charge of subjects at risk. It is widely accepted that the etiopathogenic mechanisms of suicidal behavior are multiple: bio-psycho-social. Recent studies have shown that epigenetic mechanisms regulating gene expression, without altering the DNA sequence, have been implicated in the regulation of suicidal behavior. Identifying the incidence of suicide attempts is difficult because, unlike suicides, there is no systematic survey of suicide attempts, surveys in the general population are obviously difficult to set up. The realization of an epidemiological study therefore seems important to better understand, quantify the extent of this phenomenon, detect risk factors, socio-demographic characteristics and a psychopathological analysis. The objectives of this work are:

- Determine the incidence of suicide attempts;
- Establish an etiopathogenic analysis of suicidal behavior.

II. Materials and methods:

2.1. Type of study:

It is a descriptive, observational and prospective, clinical and epidemiological study, spanning two years.

2.2. Study population:

The entire population resident in the province of Tizi – Ouzou during the study period.

2.3. Place of study:

The collection is made in hospital settings:

- Tizi-Ouzou University Hospital Center;
- FERNANE Hanafi Oued Aissi specialized hospital establishment.

2.4 .. Course of the study:

The information was collected on the basis of a pre-established questionnaire, through a direct interview with the consultant cases at the level of the structures concerned.

2.5. Data analysis :

The data will be entered and analyzed with the EPI Info 6-04 software and Excel 2007.

Statistical tests used:

- Comparison of two qualitative variables: Chi-square two
- Comparison of a qualitative and quantitative variable: student "t" test
- Significance threshold fixed $\alpha = 5\%$ (0.05)

Epidemiological association measure: Odds ratio and its confidence interval.

2.6. Ethical aspect:

- The work methodology is explained to patients and their families from the start of the survey.
 - The confidentiality of the information collected and anonymity are taken into account.
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III. Rating scales:

Scales for assessing the severity of suicide risk
 Beck's suicidal intentionality scale
 Suicidal ideation scale, developed by A.T. BECK in 1979.
 Insight rating scales (Q8 insight questionnaire)
 Social and professional functioning assessment scales (EFSP) (DSM IV-TR)

IV. Results:

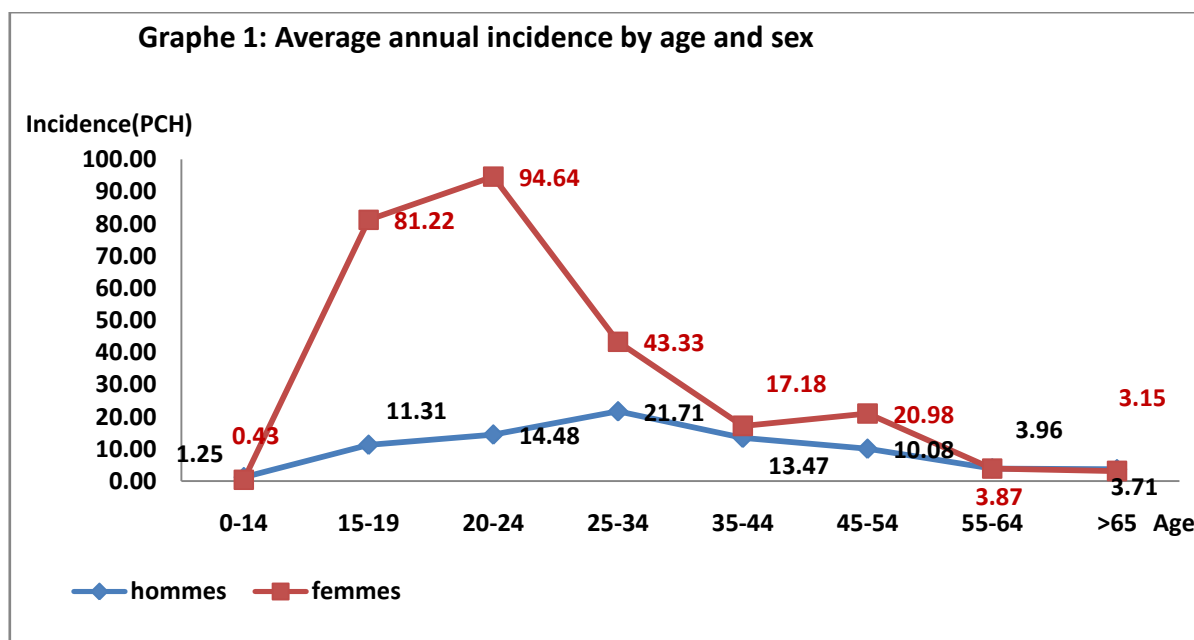
In total, during the study period, we recorded 503 cases of attempted suicide.

4.1. Incidence of suicide attempts:

Gross average annual incidence for the entire two-year study period:
 The average annual incidence of TS is 21.77 per 100,000 inhabitants.

4.2. Average annual incidence By age and sex:

In men, there is a relationship between age and incidence ($P < 108$). They are less common before the age of 14. The incidence increases with age to reach a maximum at the age group [25 - 34] then it decreases. Among women, suicide attempts are rare before 14 years of age, the incidence is greatest for the age groups of [15 - 19] and [20 - 24] and then decreases with age. (Graph 1). After 15 years the incidence of TS is higher in women.



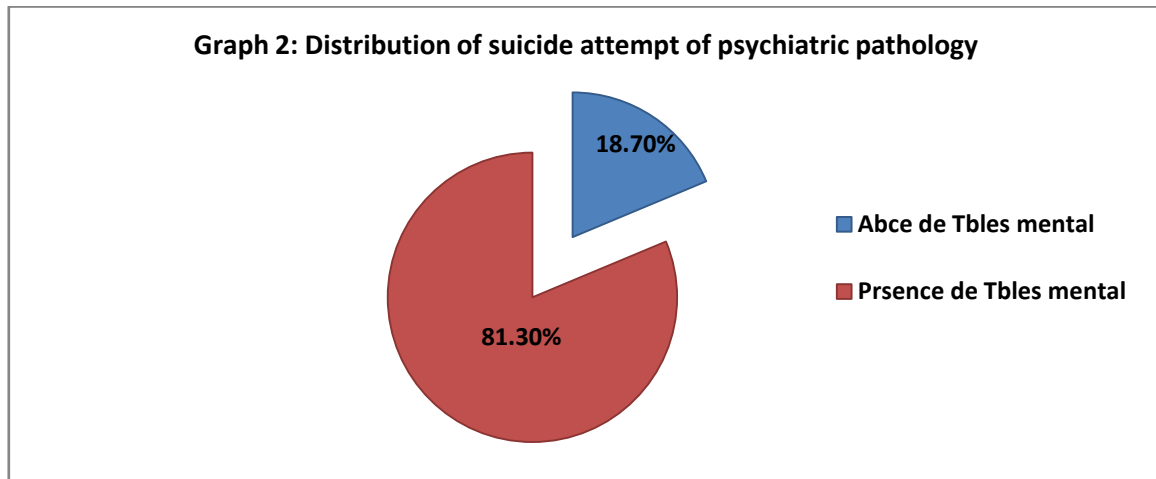
4.3. Distribution of suicide attempt cases according to personal history of TS:

Among the TS cases, 35.6% made at least one suicide attempt before.
 (Table 1)

Table 1 : Distribution of suicide attempt cases according to personal history of TS

ATCDT TS	Effectifs	Percentage (%)
Yes	179	35.6
No	324	64.4
Total	503	100

4.4. Distribution of suicide attempt cases according to the presence of a personal history of psychiatric pathology: Psychiatric history is present in 52.3% of TS cases. 4.5. Distribution of suicide attempt cases according to the existence of a mental disorder: Out of 503 cases of attempted suicide, 409 cases presented a mental disorder on examination, a rate of 81.30%. (Graph 2)



4.5. Distribution of suicide attempt cases according to psychiatric diagnosis and sex:

There is a relationship between psychiatric diagnosis and sex, indeed EDM, personality disorders and anxiety disorders are more common in women, while addictive behaviors and schizophrenia are more common in men.

V. Discussion

In our work, the average gross annual incidence of suicide attempts in the province of Tizi-Ouzou for the period of the two years of study (from June 01, 2012 to May 31, 2014) is 21.77 per 100,000 inhabitants; it is significantly lower than the annual incidence of TS in the wilaya of Constantine found by Pr BENSMAIL in 1987 (34.1 per 100,000 inhabitants) ($P < 0.03$).

The average annual incidence of TS in women is significantly higher than the average annual incidence of TS in men (32.58 per 100,000 women versus 10.98 per 100,000 men) ($P < 10^{-9}$); this excess risk in women was also found in Europe in 1999 (79 - 544 per 100,000 women and 51 - 380 per 100,000 men) [22]. These annual incidences by sex found in Europe are frankly higher than those found in our study ($p < 10^{-6}$); this can be explained by better epidemiological surveillance in Europe, but also by multiple risk factors (socio-economic: loneliness, unemployment, low income, alcohol consumption, working conditions ...).

In our analysis of personal history, one third (35.6%) of the recorded TS are recurrences, 52.3% of the TS have a personal psychiatric history, which constitutes eight times more risk of recurring than subjects without personal history psychiatric. This differs significantly with the result found by Pr ZIRI (2007-2008) (29.7% of recurrences among TS) [33], ($P < 10^{-3}$). On the other hand, in Morocco, the history of TS is significantly more frequent (54%) ($P < 10^{-6}$), and the psychiatric history found in 49%.

Regarding psychiatric diagnosis, in our survey; in both sexes a mental disorder was found in 81.30% of TS cases, among which:

- 56% of mood disorders.
- 20.5% of cases of psychotic disorders.
- 9.9% of cases of personality disorders of which there is a frequency of histrionic personality in women (70%) and psychopathic in men (57.15%).
- 5.3% of addictive behavior.
- 8.7% of predominantly female anxiety disorders.

The level of insight was good in 32.4% of TS and moderate in 28.8% of TS.

In Morocco from 2006 to 2008; 35% of mood disorders, 30% of psychotic disorders, 22% of personality disorders, 10% of anxiety disorders and 2% of addictive behavior disorders. On the other hand, the difference is significant with the results of Pr Guillaume VAIVA who notices that psychiatric disorders were present in 90% - 95% of TS cases ($P < 10^{-6}$) including: 43.2% of mood disorders, 25.7% of addictive behaviors and 16.2% of personality disorders.

VI. Conclusion

How can an individual be brought to end his life? This is a big question that is not easy to answer.

Through this modest work, we have tried to contribute to the clarification of the state of play regarding suicide attempts in our country. We have shown that the incidence is very close to that of our neighbors in the Mediterranean. This work allowed us to prospect recent data from the literature (sociological, philosophical, neurobiological, epigenetic, anatomical, cognitive, therapeutic) and an in-depth analysis of the relevant

etiopathogenic and clinical data characterizing our country, which we were able to compare to recent international data from renowned researchers in suicidal behavior.

Our study can constitute a beginning to this great challenge of the scientific community; which consists not only of understanding this phenomenon but of finding real solutions and improving the quality of care.

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