Mediterranean Journals
Integrative Journal of Medical Sciences
2021, Volume 8, 382
DOI: 10.15342/ijms.2021.382

CASE STUDY

Sociodemographic and Clinical Profile of Suicide Attempts in Adults: The Case of a Moroccan Hospital

Fouad Laboudi [a], Ghizlane Slimani [a], Nabil Tachfouti [b], Abderrazzak Ouanass [a]
[a] Department of Psychiatric Emergencies, Faculty of Medicine and Pharmacy, Arrazi de Salé University Hospital, Mohammed V University, Rabat, Morocco.
[b] Laboratory of Epidemiology, Clinical Research and Community Health, Faculty of Medicine and Pharmacy, University Sidi Mohamed Ben Abdellah, Fez, Morocco.

ABSTRACT
Objective: Over the past decade, and despite the increasing awareness of suicide attempts among adults in Morocco, there was no complete system of statistics. As a result, the sociodemographic profile of reported adult suicide attempts varied in some studies. The purpose of this study was to provide the sociodemographic and clinical profile of suicide attempts in adults in a Moroccan hospital. **Methods**: A retrospective study of a descriptive type carried out in Psychiatric University Hospital Arrazi-Salé during one and a half year (January 2016 to April 2017). The information was collected using a pre-established questionnaire based on medical records. The data entry and statistical evaluation were performed by the SPSS software (20.0). **Results:** A total of 62 patients were recruited, 32 women and 30 men who met the eligibility criteria. The profile of the suicidal attempters who must be kept in the hospital to prevent a suicidal recidivism is a young adult between the ages of 25 and 40, male, with psychiatric disorder: mood disorder, schizophrenia, anxiety disorder, borderline personality disorder, histrionic or psychopathic personality, alcohol or other psychoactive substance dependence, familial and emotional connectedness, material deprivation with previous suicide attempt that demonstrates the possibility of acting out because as we known that the risk of recidivism increases with the number of previous attempts. **Conclusion:** The development of repeated epidemiological surveys makes it possible to better understand the prevalence of suicide attempts in Morocco and to implement suicide prevention programs.

KEYWORDS: Attempt, Suicide; Emergency; Hospital; Profile; Sociodemographic; Clinic.

Correspondence: Fouad Laboudi. Arrazi Psychiatric University Hospital of Salé, Department of Psychiatric Emergencies, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco. Email: fouadlaboudi@gmail.com

INTRODUCTION

Suicide attempts are emergencies often encountered in general and psychiatric hospitals and they are clearly increasing and they constitute a public health problem in Morocco. Indeed, suicide is a public health problem that continues to grow around the world. And according to The World Health Organization (WHO) an estimated 804 000 suicide deaths occurred worldwide in 2012, which represent an annual global age-standardized suicide rate of 11.4 per 100 000 population (15 in males and 8 in females) [1]. Rates of suicide attempts are more uniform in most countries. Their lifetime prevalence ranges from 0.72% (Beirut) to 5.93% (Puerto Rico) [2]. In southern Iran, the rates of suicide attempts and deaths were respectively 21.47 and 4.52 per 100,000 inhabitants; and the case fatality rate for suicide cases was 21.07% during the study period (between 2011-2016). In Morocco studies on suicide are very rare. According to the national survey conducted in 2007 on the prevalence of mental disorders and addiction in Morocco, suicidality (Suicidal ideation and suicide attempts) in the general population is 16% [3]. A study done by Agoub et al. in 2006 showed a rate of suicidality (26%) among adolescents in Casablanca [4]. In Morocco, according to the WHO, the age-standardized suicide rate per 100,000 increased from 2.7 in 2000 to 5.3 in 2012 [5]. But the suicide attempts etiologies are known to be multidimensional and very heterogeneous, with risks

varying according to age group, gender, clinical, biological, social or environmental determinants [6]. Although there is no effective clinical algorithm to predict suicide attempt, a better recognition and understanding of sociodemographic and clinical profiles could help to detect high-risk individuals and facilitate the management.

Several previous studies in psychiatric emergency departments have suggested a common sociodemographic and clinical profile of suicide attempters. They were more likely to live alone, unemployed, with a higher suicidality and poor physical health, higher rates of treatment, with more mental illnesses including emotional and psychotic illnesses or substance use disorders [7].

Suicide and suicide attempts are considered forbidden in the Arab-Islamic culture and the suicide attempters would even be a source of hostility and stigmatization. Post-attempted suicide attitudes were described as: regret to try, wanted to die, expected to die, planned to die by a more lethal method or wanted to attract others attention [8].

To better characterize suicide attempters hospitalized in the emergency department of the University Psychiatric Hospital Arrazi-Salé, our study aimed to examine simultaneously the sociodemographic and clinical characteristics.

PATIENTS AND METHODS

We conducted a cross-sectional study with retrospective recruitment of a descriptive type in the Psychiatric University Hospital Arrazi-Salé during a15 months (from January 2016 to April 2017). Inclusion criteria were any person was hospitalized for a suicide attempt regardless of the age and of the disease nature. The patient's evaluation was made by a structured interview according to the DSM IV-R [9]. The exclusion criteria were: under 15 years old, patients presented superficial self-mutilation falling within the framework of mental retardation, patients with intellectual disabilities. The information was collected using a pre-established questionnaire based on medical records. It is a 28 items hetero questionnaire which was developed taking into account literature data on suicide risk factors. It was organized around three themes: the first part concerns the sociodemographic characteristics of the suicide attempters, namely age, gender, occupation, living environment, socio-economic and educational level. A second involves clinical factors such as suicide attempt history and history of personal or familial psychiatric consultation or hospitalization, as well as the notion of substances use, their mode and their nature. The last part is reserved for suicidal gestures, the suicide attempt means, its proceeding, its circumstances (place and time), the reasons given and the care and diagnosis used in the Diagnostic and Statistical Manual of Mental Disorders DSM-IV-R.

Data entry and statistical analysis were performed by SPSS software (Version 13.0).

RESULTS

The study concerned 625 patients who consulted during this period in the urgency of the hospital; among these patients, a total of 62 patients who had been hospitalized for attempted suicide were recruited (32 women and 30 men).

Sociodemographic Data

The average age in our work was **25 ± 8 years (Table 1).**

Table n ° 1 : Sociodemographic characteristics

Sociodemographic characteristics		N (%)
Age range	Under 20 years	7 (11,3%)
	20-40 years	39 (62,9%)
	Over 40 years	16 (25,8%)
Gender	Male	30 (48,4%)
	Female	32 (51,6%)
Marital status	Single	47 (75,8%)
	Married	6 (9,7%)
	Divorced	9 (14,5%)
	Widower	0 (0%)
Patient lives	Alone	19 (30,6%)
	In family	43 (69,4%)
Family characteristic	United	24 (38,7%)
	Moderately united	9 (14,5%)
	Break	29 (46,8%)
Level of education	Unschooled	9 (14,5%)
	Primary	31 (50%)
	Secondary	21 (33,9%)
	Superior	1 (1,6%)
Occupation	Permanent Occupation	3 (4,8%)
	Occasional occupation	6 (9,7%)
	No occupation	46 (74,2%)
	Student	7 (11,3%)
Socio-economiclevel	High	5 (8,1%)
	Average	25 (40,3%)
	Low	32 (51,6%)
living environment	Rural	17 (27,4%)
	Urban	45 (72,6%)

Background

- **Personal**

In our work, about 5 out of 10 (52%) patients had a personal history of suicide attempts. The history of psychiatric hospitalization is found in 40% of patients, while 60% have no hospitalization history.

- **Familial:**

In 9.7% of cases, we noted a history of suicide attempt in the family. In addition, 93.5% of patients had no family history of psychiatric hospitalization (**see Table 2).**

- **Clinical features**

a. Clinical Diagnostics

The psychiatric diagnoses according to the DSM IV-R classification found in the patients included in the study were multiple: prevalence of schizophrenia was estimated to be 54.8%, 30.6% in mood disorders, 12.9% in personality disorders, 1.6% in anxiety disorders and 54.8% in addictive disorders **(See Table 3).**

Table n° 2: History of Suicide Attempt

	Clinical features	N (%)
Personal history of suicide attempt	YES	32 (51,6%)
	NO	30 (48,4%)
Suicide attempt at someone in the family	YES	6 (9,7%)
	NO	56 (90,3%)
Family history of suicide	YES	6 (9,7%)
	NO	56 (90,3%)
Previous psychiatric hospitalization	YES	25 (40,3%)
	NO	37 (59,7%)
Psychiatric hospitalization in the family	YES	4 (6,5%)
	NO	58 (93,5%)

Table N° 3 : Clinical Diagnose Prevalence

	Effective	%
Anxietydisorders	1	1,6%
Mooddisorders	19	30,6%
Schizophrenia	34	54,8%
Personalitydisorders	8	12,9%
Addictive disorders (Use of substances)	34	54,8%

b. Dependence on Psychoactive Substances

In our study, 54.8% of cases were dependent on psychoactive substances. Substance use is absent in 45.2% of the cases **(see Table 4).**

- **Suicide Attempts Description**

As for the means used for suicide attempts, drug ingestion and defenestration come first then hanging is a second choice for our patients **(see Table 5).**

In our study, 77.4% of suicide attempters committed suicide alone without the presence of any family members and 80.6% of them made their suicide attempt at home. The reasons given by patients are diverse. It was either family, marital conflict, psychotic symptoms, or in a context of depression and despair (**see Table 6).**

After the suicide attempt, somatic medical intervention was needed in 69.4%; 27.4% in outpatients and 29% in hospitals and 12.9% in intensive care units. In the rest of the cases, somatic medical management was not necessary.

Table n°4: Distribution of Patients according to the Psychoactive Substances used

Substances used		N (%)
Tobacco	YES	23 (37,1%)
	NO	39 (62,9%)
Cannabis	YES	27 (43,5%)
	NO	35 (56,5%)
Alcohol	YES	5 (8,1%)
	NO	57 (91,9%)
Psychotropic	YES	7 (11,3%)
	NO	55 (88,7%)
Solvents	YES	3 (4,8%)
	NO	59 (95,2%)
Other substances	YES	0 (0%)
	NO	62(100%)

Table n°5: Suicide attempt Characteristics

Suicide attempt Characteristics		N (%)
Privacy	Only	48 (77,4%)
	In front of assistance	14 (22,6%)
Place of suicide attempt	At Home	50 (80,6%)
	Outside	12 (19,4%)
Medical care	were not necessary	19 (30,6%)
	outpatient care	17 (27,4%)
	Hospitalization	18 (29,0%)
	Resuscitation	8 (12,9%)
	Observation	0 (0,0%)
	Surgery	0 (0,0%)
Methods used	hanging	4 (6,5%)
	defenestration	23 (37,1%)
	Phlebotomy	3 (4,8%)
	Gas	2 (3,2%)
	Insecticide	5 (8,1%)
	Caustic	0 (0,0%)
	Other	0 (0,0%)
	Medicaments	15 (24,2%)
	Injurywithaknife	1(1,6%)
	Drowning	6 (9,7%)
	throttling	1 (1,6%)
	Jumping in front of a train or a car	2 (3,2%)
Regret	YES	23 (37,1%)
	NO	36 (58,1%)

Table n°6: Reasons Invoked during the Suicide Attempt

		Effective (%)
Depressive symptoms	YES	24 (38,7%)
	NO	38 (61,3%)
Psychotic symptoms	YES	36 (58,1%)
	NO	26 (41,9%)
Family conflicts	YES	1(1,6%)
	NO	61(98,4%)
Conjugal conflicts	YES	1(1,6%)
	NO	61(98,4%)

DISCUSSION

The average age of the sample was 25 years +/- 8; with extremes of age (from 15 to 73 years). According to our study, suicide attempts in young of 15 to 20 years old were 25% and around 53% in 20 to 40 years old. This result is close to the results of Hajji K et al who found that the average age of patients is 26 years [10]. This result is similar to that found by Larosa et al. where the study population is predominantly female (61.3%) and aged 20 to 25 years (59.3%) [11]. Indeed, the female predominance in our sample is consistent with the international data. Indeed, around the world, girls and women have higher rates of suicidal ideation and behavior than boys and men [12]. Nevertheless, Casadebaig F. et al in a study on 3,470 patients who came from 122 areas spread over 73% of the territory, have not found statistical differences in the distribution by gender and age [13].

Married subjects in our sample were the least affected category (15%)this may indicate that in Morocco, marriage may be able to serve as a protective factor against suicidal behavior in accordance with the findings of Lorant et al. [14]Another factor studied in our work is the unemployment which is high.58% of suicide attempters were professionally inactive; however, the protective effect of employment cannot be applied to the general population because studies indicate that in case of work, there is a high level of job stress [15].In our study, the educational level of suicidal patients was low (58% were out of school or had a primary level). Pillai et al showed a high rate of suicide attempt among non-attending school with OR 1.6 (95% CI, 1.01-2.6) [16]. However in our context this could give more ideas on the education level of Moroccans than on suicide attempts.

In our study, 66% of suicide attempters had already made at least one suicide attempt. This figure is very far from the study of Fedyszyn IE et al. that's of16% [17] or of Sidhartha T et al who found 3.5% of lifetime suicide attempt in adolescents [18]. This difference could be

explained by our small sample. A history of suicide attempt is a risk factor for future suicide attempts and also increases the risk of fatal suicide. Because of this, repeaters must be considered as a specific population among those who have committed suicide. Some studies have reported a positive association between females and young age with the risk of multiple attempts, suggesting that they may act as confounders or as modifiers of effects [19].The family history of suicide attempt was present in 20% of patients in our study, The family history of attempted suicide was present in 20% of the patients in our study, which is consistent with data from the Roy et al study who examined the existence of a family history of suicidal behavior is associated with an earlier age of the first suicide attempt. The results showed that people with a family history of suicidal behavior, particularly those who attempted two or more times, initially attempted suicide earlier than those with no family history of suicidal behavior. This suggests that a family history of suicide which is known to increase the risk of suicidal behavior, may also be associated with an earlier age of the first suicide attempt [20] and involve the systematic search for these elements in suicide attempters.

According to our study, all patients had a psychiatric disorder according to the DSM IV-R; Psychotic disorders are the most common in our sample followed by mood disorders and personality disorders. Studies agree that over 90% of subjects with suicidal behaviors have a psychiatric disorder. In some authors it is in the order of 95% [21].

According to our study, 55% of patients had a Psychotic Disorder of which more than a third had schizophrenia. Previous studies of patients with schizophrenia have studied the risk of suicide in relation to specific psychiatric symptoms, patients with schizophrenia are at a risk of suicide. Indeed according to Reutfors J. et al, patients with schizophrenia spectrum diagnosis, mood disorder have a risk of suicide increased by more than three-fold [22].

Patients with mood disorder diagnosis constitute 20% of participants whose majority had unipolar depressive disorder while 4% had bipolar disorder. Latalova K et al estimate that 25% to 50% of patients with bipolar disorder will try to commit suicide [23].The risk of completed suicide in psychiatric patients with mood disorders is probably between 5% and 6%.Suicidal acts usually occur during major depressive episodes or mixed episodes. The incidence of suicide attempts is approximately 20 to 40 times higher than that of euthymia during these episodes [24].Current literature shows that patients with bipolar disorder are at a higher risk of attempted and completed suicide than patients with unipolar major depression. Contrasting only bipolar I and bipolar II patients, current findings indicate that the rate of previous suicide attempts is higher in bipolar II patients, and bipolar II disorder is overrepresented in depressed suicide patients [25]

The personality disorders occupied 18% of diagnoses in our work. More than half are included in cluster B (54% borderline, 38% histrionic and 4% antisocial).These personality types are frequently associated with suicide in the literature. Indeed, subjects with a history of suicide attempts had more impulsivity. The effects were not explained by the presence of depression or mania or alcohol abuse and clinical status at the trial time [26].The works of Garno J. et al showed that 30% of the subjects met the DSM-IV-R criteria for a group B personality disorder (17% borderline, 6% antisocial, 5% histrionic, 8% narcissistic).Group B diagnoses were significantly related toa history of psychological violence during childhood, to physical abuse and to emotional neglect, but no sexual abuse or physical neglect. The comorbidity of group B was associated with more suicide attempts and with a current depression. Suicide attempts during life were significantly associated with group B comorbidity, severity of depression, substance abuse, and sexual or emotional abuse. In the study of Suominen K. et al, the suicide rate in patients with borderline personality varies from 3 to 9.5%, 7.5% of these patients made at least one suicide attempt in their lives [27]. For some authors, outpatient psychiatric history does not appear to be a risk factor for attempted suicide by ingesting higher doses of drugs. Depression in a subject with a borderline personality represent a particularly serious and dangerous association in terms of suicidality, probably because of the association of the despair of depression with an impulsivity marking the borderline personality [28].

In our study, the prevalence of patients with an addictive disorder was 54.8%. Literature data proved the importance of addictive disorders in inducing a suicidal process. Indeed Sher L. et al found that depressed suicidal individuals with a history of alcoholism had higher suicidal ideation scores than depressed suicidal persons with no history of alcoholism, and he concluded that the higher frequency of suicidal behavior and the severity of suicidal ideation in major depression with comorbid alcoholism appear to be related to the associated aggressive traits. Alcoholism, aggression, smoking, and suicide may have a common biological causal substrate [29]. At Rossow et al, the relative risk of suicide among alcoholics appeared to be higher in middle age (more than 40 years) than in younger individuals (RR = 12.8 and 4.5, respectively).The lifetime risk of suicide, i.e. before the age of 60 years, was estimated at 0.63% for those who are not classified as alcoholics and at 4.76% for those who are classified as alcoholics [30].The study of McCloud et al 2004 on the association between alcohol use and suicidal behavior found that alcohol abuse was strongly associated with suicidality but without significant sex differences [31].

The prevalence of suicide attempts related to anxiety disorders was about 3% in our study. Anxiety disorders come fourth in our work after schizophrenia, depression and personality disorders. Risk factor analyzes of suicide attempts found a similar set of factors, alcohol consumption. Sareen et al examined whether anxiety disorders are risk factors for suicidal ideation and suicide attempts in a large population-based longitudinal study. He concluded that pre-existing anxiety disorder is an independent risk factor for subsequent onset of suicidal ideation and attempts. In addition, comorbid anxiety

disorders amplify the risk of suicide attempts in people with mood disorders [32]. Fawcett J has shown that impulsivity and severe anxiety, panic attacks and comorbid agitation with depression are often immediate suicidal risk factors [33]. In Pillai A. violence and psychological distress are independently associated with suicidal behavior. Factors associated with sexual disadvantage, particularly for rural women, may increase their vulnerability [34].

Regarding the modality of the suicide attempt, drug poisoning was the most commonly used and reported method in our work especially in women. In addition, the defenestration was ranked 2nd in our sample contrary to the literature results that ranks first [35]. This can be explained by the availability and accessibility of medicines for our patients that they could use discreetly. We also found through our sample that violent suicidal means such as hanging and defenestration were used significantly in psychotic suicide attempters confirming high reported suicidal intentionality of these patients reported in the literature [36]. In our study, among the triggers of suicidal gesture, we find most often family conflicts, academic difficulties or a sentimental break. So it was a recent event that weakens the subject psychology and sometimes makes him/her unable to accept a failure, which can be the cause of large suffering. Several studies have analyzed these risk factors for suicides and suicide attempts. Luscomb RL. et al incriminated stress in suicide attempts in older subjects. Indeed, stress was higher in the attempt group compared to the control group, but no difference in stress levels was observed in younger subjects [37]. Beautrais et al on a series of 100 patients, who have made serious suicide attempts, concluded that significant proximal events for serious suicide attempts among young people include a series of life events associated primarily with interpersonal conflict, relationship difficulties, and legal problems [38].

Taking into account our results, which are correlated with literature, we can describe a profile of the suicide attempter that must be maintained in hospital to prevent a suicidal recurrence. This is a subject:

- Young adult between 25 and 40 years
- Male (willingly)
- Presents a psychiatric disorder: mood disorder, schizophrenia, anxiety disorder ...
- Having borderline personality traits, histrionic or psychopathic.
- With an addiction to alcohol or another psychoactive substance.
- Isolated at the family and emotional level and deprived materially.
- Having a previous suicide attempt which shows possibilities of acting out because we know that the risk of recidivism increases with the number of previous attempts.

Our work has certain limitations: The first limitation is the small size sample. The very low number of hospitalizations for attempted suicide in our establishment is explained by the fact that the Arrazi University Psychiatric Hospital has a literacy capacity of 170 and covers the entire region of northern Morocco. Every day he receives several cases of suicide attempts which should be hospitalized, but for lack of space they are sent to the regional hospitals for hospitalization, either the families of patients refuse hospitalization because of the of the stigma of psychiatry or they leave for consult in the private sector. In addition, many people do not report their attempts or even their suicidal thoughts, fearing legal repercussions. The second limitation is that this study is a cross-sectional study with retrospective recruitment, suicide attempters were not evaluated later to find out if there was going to be an act in the future. Hence the needs for a prospective study later. The third limitation is that the prevalence found in our study is underestimated because it was not possible to evaluate all the subjects who had made a suicide attempt and who were seen in the medico-surgical emergencies at the front-part at the time of the study period.

Our results confirm previous scientific data on suicide attempts and highlight that psychological vulnerability and the emergence of recent stressful life events combine their effects to increase the risk of a suicide attempt. Some variations are not explained by the variation in the rates of psychiatric disorders, of divorces or of separations, they are probably due to cultural characteristics that we do not yet understand. Socio-cultural factors affect patterns and rates of suicide; choice of method and cohort effects affect rates. Suicide prevention strategies should pay attention to culture-related suicide factors.

The development of repeated epidemiological surveys makes it possible to better understand the prevalence of suicide attempts in Morocco. Suicide prevention programs in Morocco must take into account both structural determinants, individual experiences of violence, personality disorders and psychiatric disorders. Gender differences must be considered in this particular population to promote more personalized prevention programs for suicidal recidivism and completed suicide.

CONCLUSION

The clinician must always be attentive to the suicide attempt and prevent potential risks of recurrence. Pharmacological and psychotherapeutic treatments for mental disorders can often prevent suicidal behavior. Regular follow-up of people who have suicidal ideation is essential to prevent future suicidal behavior. They can be useful to raise awareness in social and health circles, to set up effective screening and prevention programs.

ACKNOWLEDGMENTS

We thank all the doctors of Department of Psychiatric Emergencies, Faculty of Medicine and Pharmacy, Arrazi de Salé University Hospital, Mohammed V University, Rabat, fortheir help in selecting the sample and for their assistance.

AUTHORS' CONTRIBUTIONS

The participation of each author corresponds to the criteria of authorship and contributorship emphasized in the

Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly work in Medical Journals of the International Committee of Medical Journal Editors. Indeed, all the authors have actively participated in the redaction, the revision of the manuscript, and provided approval for this final revised version.

COMPETING INTERESTS

The authors declare no competing interests with this case.

FUNDING SOURCES

None.

REFERENCES

[1] Saxena S, Krug EG, Chestnov O, World Health Organization, editors. Preventing suicide: a global imperative. Geneva: World Health Organization; 2014. 89 p.

[2] Weissman MM, Bland RC, Canino GJ, Greenwald S, Hwu HG, Joyce PR, et al. Prevalence of suicide ideation and suicide attempts in nine countries. Psychol Med. 1999 Jan;29(1):9–17. DOI: 10.1017/s0033291798007867

[3] D. Moussaoui. La santé mentale au Maroc: enquête nationale sur la prévalence des troubles mentaux et des toxicomanies. L'Encéphale Supplément : 4 (2007) ; S125-S126.

[4] Agoub M, Moussaoui D, Kadri N. Assessment of suicidality in a Moroccan metropolitan area. J Affect Disord. 2006 Feb;90(2–3):223–6. DOI: 10.1016/j.jad.2005.09.014

[5] World Health Organization. Prvention du suicide: l'tat d'urgence mondiad. Place of publication not identified: World Health Organization; 2015. Available: https://www.who.int/mental_health/suicide-prevention/world_report_2014/fr/

[6] Turecki G, Brent DA. Suicide and suicidal behaviour. The Lancet. 2016 Mar;387(10024):1227–39. DOI: 10.1016/S0140-6736(15)00234-2

[7] Guelfi J-D. Mini DSM-IV-TR: Critères diagnostiques. Elsevier Masson; 2010. Available : https://www.cirris.ulaval.ca/fr/criteres-diagnostiques

[8] Suleiman MA, Nashef AA, Moussa MAA, El-Islam MF. Psychosocial profile of the parasuicidal patient in Kuwait. Int J Soc Psychiatry. 1986;32(3):16–22. DOI: 10.1177/002076408603200303

[9] manuel-diagnostique-troubles-mentaux.pdf. Available from: https://psychiatrieweb.files.wordpress.com/2011/12/manuel-diagnostique-troubles-mentaux.pdf

[10] Hajji K, Marrag I, Bouanene I, Ben Mohamed B, Younes S, Hadj Ammar M et al. Facteurs associés aux tentatives de suicide. Toxicol Anal Clin. 2016 Jun;28(2):158–63.

[11] LaRosa E, Consoli SM, Hubert-Vadenay T, LeClésiau H. Facteurs associés au risque suicidaire chez les jeunes consultants d'un centre de prévention sanitaire et sociale. L'Encéphale. 2005 Jun 1;31(3):289–99. DOI : 10.1016/S0013-7006(05)82393-0

[12] SS C. Women and suicidal behavior: a cultural analysis. Am J Orthopsychiatry.2008 Apr;78(2):259-66. DOI: 10.1037/a0013973

[13] A CF and P. [Mortality in schizophrenic patients. 3 years follow-up of a cohort]. Encephale.1999 Jul-Aug;25(4):329-37-. Available from: https://www.ncbi.nlm.nih.gov/pubmed/10546089

[14] Lorant V, Kunst AE, Huisman M, Bopp M, Mackenbach J. A European comparative study of marital status and socio-economic inequalities in suicide. Soc Sci Med. 2005 Jun;60(11):2431–41. DOI: 10.1016/j.socscimed.2004.11.033

[15] Makhbul ZM, Idrus D. Work stress issues in Malaysia. Malays Labour Rev. 2009;3(2):13–26. Available: https://www.researchgate.net/publication/286145961_Work_stress_issues_in_Malaysia

[16] Qin P, Agerbo E, Mortensen PB. Suicide risk in relation to socioeconomic, demographic, psychiatric, and familial factors: a national register–based study of all suicides in Denmark, 1981–1997. Am J Psychiatry. 2003;160(4):765–772. DOI: 10.1176/appi.ajp.160.4.765

[17] al GJ et. Bipolar disorder with comorbid cluster B personality disorder features: impact on suicidality.J Clin Psychiatry. 2005 Mar;66(3):339-45. DOI: 10.1176/appi.ajp.160.4.765

[18] Sidharta T, Jena S. Suicidal behaviors in adolescents.Indian J Pediatr.2006 Sep;73(9):783-8. DOI: 10.1007/BF02790385

[19] Monnin J, Thiemard E, Vandel P, Nicolier M, Tio G, Courtet P et al. Sociodemographic and psychopathological risk factors in repeated suicide attempts: Gender differences in a prospective study. J Affect Disord. 2012 Jan;136(1–2):35–43. DOI :10.1016/j.jad.2011.09.001

[20] Roy A. Family history of suicidal behavior and earlier onset of suicidal behavior. Psychiatry Res. 2004 Dec;129(2):217–9. DOI: 10.1016/j.psychres.2004.08.002

[21] Fouilhoux N. Troubles bipolaires et suicide. L'Encéphale. 2006;32(3):6–9. Available : https://www.encephale.com/content/download/85873/1482193/version/1/file/main.pdf

[22] Reutfors J, Bahmanyar S, Jönsson EG, Ekbom A, Nordström P, Brandt L et al. Diagnostic profile and suicide risk in schizophrenia spectrum disorder. Schizophr Res. 2010 Nov;123(2–3):251–6. DOI: 10.1016/j.schres.2010.07.014

[23] Latalova K, Kamaradova D, Prasko J. Suicide in bipolar disorder: a review. Psychiatr Danub. 2014;26(2):0–114.

[24] Isometsä E. Suicidal behaviour in mood disorders—who, when, and why? Can J Psychiatry. 2014;59(3):120–130. DOI: 10.1177/070674371405900303

[25] Rihmer Z, Kiss K. Bipolar disorders and suicidal behaviour. Bipolar Disord. 2002;4(s1):21–25. DOI: 10.1034/j.1399-5618.4.s1.3.x

[26] Swann AC, Dougherty DM, Pazzaglia PJ, Pham M, Steinberg JL, Moeller FG. Increased impulsivity associated with severity of suicide attempt history in patients with bipolar disorder. Am J Psychiatry. 2005;162(9):1680–1687. DOI: 10.1176/appi.ajp.162.9.1680

[27] Suominen K, Henriksson M, Suokas J, Isometsä E, Ostamo A, Lönnqvist J. Mental disorders and

comorbidity in attempted suicide. Acta Psychiatr Scand. 1996;94(4):234–240.
DOI: 10.1111/j.1600-0447.1996.tb09855.x

[28] Suominen KH, Isometsä ET, Henriksson MM, Ostamo AI, Lönnqvist JK. Suicide attempts and personality disorder. Acta Psychiatr Scand. 2000;102(2):118–125.
DOI: 10.1034/j.1600-0447.2000.102002118.x

[29] Sher L, Oquendo MA, Galfalvy HC, Grunebaum MF, Burke AK, Zalsman G et al. The relationship of aggression to suicidal behavior in depressed patients with a history of alcoholism. Addict Behav. 2005 Jul;30(6):1144–53.
DOI: 10.1016/j.addbeh.2004.12.001

[30] Rossow I, Amundsen A. Alcohol abuse and suicide: A 40-year prospective study of Norwegian conscripts. Addiction. 1995;90(5):685–691.
DOI: 10.1046/j.1360-0443.1995.9056859.x

[31] McCloud A, Barnaby B, Omu N, Drummond C, Aboud A. Relationship between alcohol use disorders and suicidality in a psychiatric population. Br J Psychiatry. 2004;184(5):439–445.
DOI: 10.1192/bjp.184.5.439

[32] Afifi TO, Asmundson GJG, Cox BJ, de Graaf R, Sareen J, ten Have M et al. Anxiety disorders and risk for suicidal ideation and suicide attempts. Arch Gen Psychiatry. 2005;62:1249–1257.
DOI: 10.1001/archpsyc.62.11.1249

[33] Fawcett J. Treating impulsivity and anxiety in the suicidal patient. Ann N Y Acad Sci. 2001;932(1):94–105.
DOI: 10.1111/j.1749-6632.2001.tb05800.x

[34] Pillai A, Andrews T, Patel V. Violence, psychological distress and the risk of suicidal behaviour in young people in India. Int J Epidemiol. 2009 Apr 1;38(2):459–69.
DOI: 10.1093/ije/dyn166

[35] OMS | Méthodes de suicide : détermination de schémas internationaux de suicide à partir de la base de données de mortalité de l'OMS [Internet]. WHO.. Available: http://www.who.int/bulletin/volumes/86/9/07-043489-ab/fr/

[36] Ghachem R, Boussetta A, Benasr A, Oumaya N. Suicide et pathologie mentale à Tunis : étude rétrospective sur 12 ans à l'hôpital Razi. Inf Psychiatr. 2009;85(3):281.
DOI **:** 10.1684/ipe.2009.0462

[37] al LR et. Mediating factors in the relationship between life stress and suicide attempting. J Nerv Ment Dis. 1980 Nov;168(11):644-50.
DOI: 10.1097/00005053-198011000-00002

[38] Beautrais AL, Joyce PR, Mulder RT. Precipitating factors and life events in serious suicide attempts among youths aged 13 through 24 years. J Am Acad Child Adolesc Psychiatry. 1997;36(11):1543–1551.
DOI: 10.1016/S0890-8567(09)66563-1