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ALGERIAN SUICIDE PREDICTION SCORE

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INTRODUCTION :

Some see life as the set of functions that resist death [1]. The complete and definitive cessation of these vital functions could be secondary to either a natural process (natural death), an accidental process (accidental violent death) or a voluntary process (criminal violent death: homicide and **suicidal violent death: suicide**).

Although the phenomenon of killing oneself or committing suicide has existed for a long time, it still attracts the interest of many multidisciplinary studies and research, including philosophy, sociology, psychology, psychoanalysis, psychiatry and medicine, particularly forensic medicine [2].

More than 800,000 people commit suicide every year worldwide - that's one every 40 seconds. With around 9,000 suicide deaths a year, three times as many as from road accidents, France has one of the highest suicide rates in Western Europe [3].

The frequency of suicides in Oran/Algeria is 19.8% compared to 80.2% of non-suicidal violent deaths during the period from the year 2015 to the year 2020 [2].

The suicide mortality rate in Oran rose from 0.65 per 100,000 inhabitants in 2015 to 1.11 per 100,000 inhabitants in 2019 and 1.09 per 100,000 inhabitants in 2020 [2].

The suicide mortality rate per 100,000 inhabitants in the Oranese and Algerian population during 2019 was low compared with certain countries on different continents: Tunisia: 3.3, Morocco: 7.2, Libya: 4.5, Egypt: 3.0, South Africa: 23.5,

Italy: 6.7, France: 13.8, Germany: 12.5, United States: 16.1, Australia: 12.5, India: 12.7, Bahrain: 8.9, United Arab Emirates: 6.4... [2].

The search for suicidal risk factors makes it possible to identify the population at risk, hence the need to develop a suicide prediction score specific to our population. This will help healthcare professionals to predict the medico-legal form of suicide the time of death and will enable emergency practitioners to identify suicidal patients so that they can be managed to prevent suicide and any recurrence of suicide attempts.

MATERIALS AND METHODS :

This was a predictive study carried out by means of a longitudinal descriptive epidemiological survey with the aim of analyzing autopsies of suicidal violent deaths and non-suicidal violent deaths in the wilaya Oran/Algeria, from 01/01/2015 to 31/12/2020 at the level of all forensic medicine departments in the wilaya of Oran (C.H.U Oran, E.H.U Oran, EH Dr MEDJBEUR Tami Ain El Türk Oran, E.P.H El Mohgoun Arzew Oran).

Data was collected using a three-part questionnaire: (Appendix 01: The questionnaire).

1st part involved identifying the deceased, by: gender, age, place of residence, zoning and nationality.

The 2nd part dealt with the psycho-social profile of the deceased, such as: civility, number of engagements, number of marriages, number of divorces, polygamy, religious denomination, exorcism, level of education (school level), diplomas obtained, hobbies, profession, type of profession, consanguinity between the parents of the victim of violent death, cohabitation, etc.

The following information was collected: who the victim lived with, type of dwelling, type of abuse, type of psychological care provided to the victim of abuse, type of drug addiction, type of drug addiction, whether the victim had stopped using the drug, whether the victim had undergone detoxification, and the victim's criminal record.

The 3rd part concerned the forensic aspect, as :

- Personal medical and surgical history, such as: behavioural disorders, psychiatric illnesses, history of disease management, etc.

psychiatry, involuntary hospitalization, chronic organic diseases and surgery;

- Family medical history: notion of psychiatric illness in the family;
- Date, time and place of death ;
- The circumstances and motive for the incident, the day of the incident, the time of the incident, the season of the incident and the notion of hospitalization after the incident;
- The concept of medical-surgical management ;
- The notion of previous suicide attempts ;
- The notion of suicide in the family ;
- Body removal (done or not) ;
- Body removal: state of the premises; presence of suicide note, examination of clothing, presence of vulnating instrument and cadaveric phenomena;
- External examination of the corpse: build, size, cadaveric phenomena, asphyxia syndrome, search for wounds (superficial and/or deep, vital or postmortem) on the body, self-inflicted lesions (self-mutilation lesions);
- The internal examination of the corpse (the lesions found at autopsy that were the direct cause of death);
- Toxicological, anatomopathological and DNA samples taken from the corpse and their results;
- The number of processes in violent death ;
- Type of violent death (suicide, non-suicide) according to ICD-10 coding;
- Vulnerable instrument incriminated in violent death ;
- The mechanism of violent death [2].

RESULTS

The study population was all suicidal and non-suicidal violent deaths (accidental, criminal as well as violent deaths with undetermined circumstances) autopsied in the wilaya of Oran/Algeria.

This epidemiological investigation was based on a questionnaire, a study of autopsy files (medical reports of autopsied deceased, autopsy reports), interviews with the families of the deceased and medico-judicial data.

(Reports of body removals and information from judicial authorities).

The study population was a comprehensive, multi-center population.

Multivariate analysis enabled us to identify the factors associated with suicide in the wilaya of Oran, Algeria. A logistic regression analysis was carried out, with the final model based on a top-down stepwise strategy at the 05% significance level.

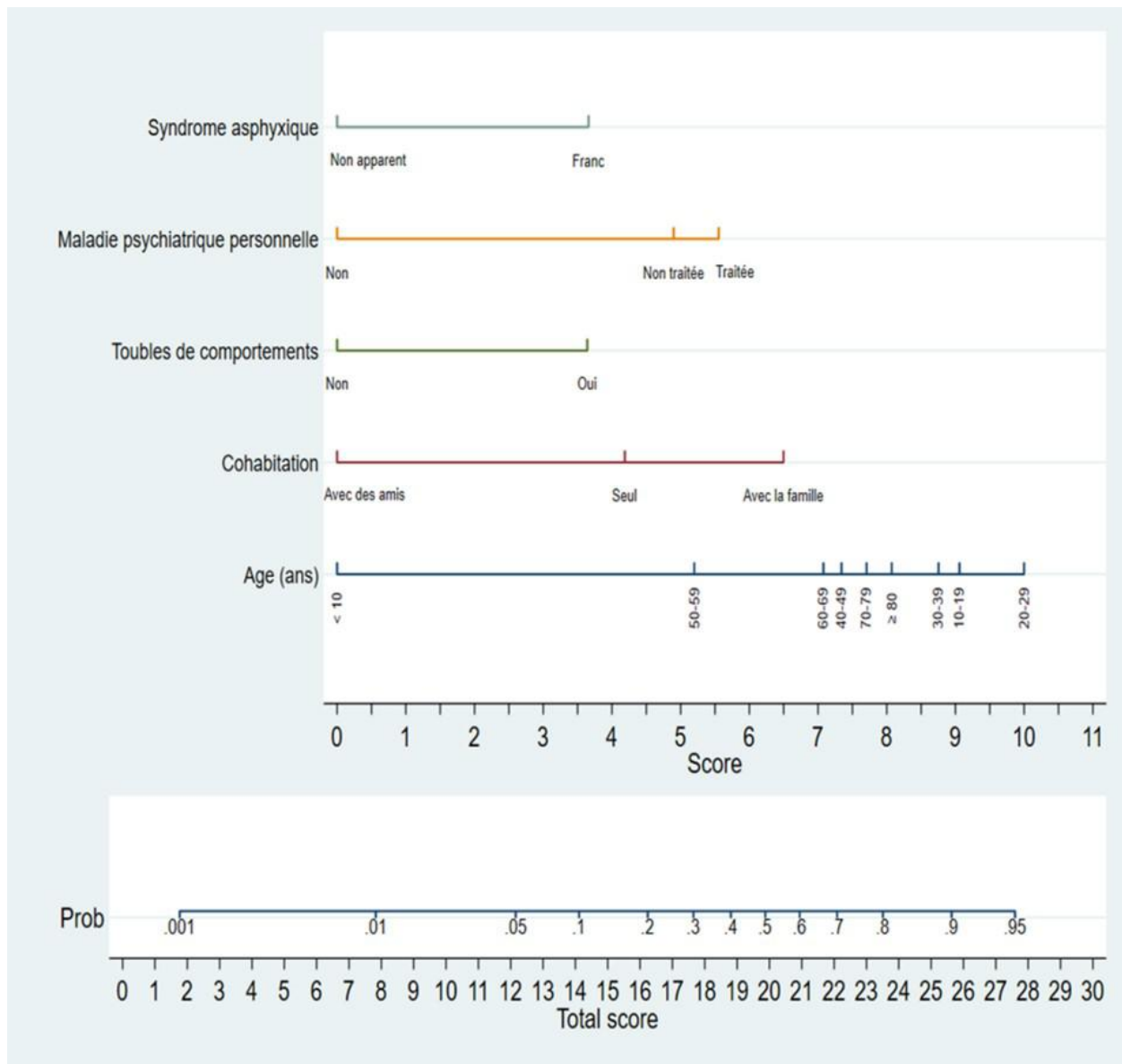
The risk factors significantly associated with suicide in the wilaya of Oran/Algeria, are (Table 01): age ≥ 10 years, with an increased risk for the [20-29] age group, living with family (promiscuity), the presence of personal behavioral disorders, the presence of a personal psychiatric illness, whether treated or not (the risk is greater when the psychiatric illness is treated = removal of inhibition), and the presence of frank asphyxia syndrome on external examination [2].

Table 01: Suicide risk factors in the wilaya of Oran/Algeria Multivariate analysis by logistic regression

<i>Variable avec P<5%</i>	<i>OR ajusté</i>	<i>[IC 95 %]</i>	<i>P</i>
Age			
< 10 ans	1		
[10-19] ans	31,7	[7,3-137,0]	< 10 ⁻³
[20-29] ans	45,4	[10,8-191,0]	< 10 ⁻³
[30-39] ans	28,2	[6,6-119,8]	< 10 ⁻³
[40-49] ans	16,5	[3,8-71,3]	< 10 ⁻³
[50-59] ans	7,3	[1,5-34,3]	0,012
[60-69] ans	14,9	[3,2-69,0]	0,001
[70-79] ans	18,9	[3,4-160,7]	0,001
≥ 80 ans	21,8	[3,8-125,7]	0,001
Cohabitation			
Avec les amis	1		
Seul	4,9	[1,0-25,0]	0,054
Avec la famille	11,9	[2,8-50,7]	0,001
Troubles de comportements			
Non	1		
Oui	4,0	[2,1-7,7]	< 10 ⁻³
Maladie psychiatrique personnelle			
Aucune	1		
Présente mais non traitée	6,5	[3,2-13,2]	< 10 ⁻³
Présente et traité	8,3	[4,9-14,1]	< 10 ⁻³
Syndrome asphyxique			
Non apparent	1		
Franc	4,0	[2,9-5,7]	< 10 ⁻³

A suicide predictive score was estimated from factors associated with suicide in the wilaya of Oran, Algeria (Figure: 01) [2].

Figure 01 : SCORE PREDICTIVE OF SUICIDE À AT WILAYA OF ORAN/ALGERIA



The score is given on a scale from 0 to 11 of the five (05) criteria observed on the victim, whether a suicide victim or a suicidal victim, as follows:

- Asphyxia syndrome: not apparent (corresponds to 0 on 11-point scale), frank (corresponds to 3.5 on the 11-point scale);

- Personal psychiatric illness: no (corresponds to 0 on the 11-point scale), present but untreated (corresponds to 4.75 on the 11-point scale), present and treated (corresponds to 5.5 on the 11-point scale);
- Behavioural problems: no (corresponds to 0 on the 11-point scale), yes (corresponds to 3.5 on the 11-point scale);
- Cohabitation: with friends (corresponds to 0 on the 11-point scale), alone (corresponds to 4 on 11-point scale), with family (corresponds to 6.5 on the 11-point scale);
- Age: < 10 years (corresponds to 0 on the 11-point scale), [50-59] years (corresponds to 5.25 on the 11-point scale), [60-69] years (corresponds to 7 on the 11-point scale), [40-49] years (corresponds to 7.25 on the 11-point scale), [70-79] years (corresponds to 7.75 on the 11-point scale).
on the 11 scale), ≥ 80 years (corresponds to 8 on the 11 scale), [30-39] years (corresponds to 8.75 on the 11 scale), [10-19] years (corresponds to 9 on the 11 scale), [20-29] years (corresponds to 10 on the 11 scale).

The calculation of the total score, which ranges from 0 to 30, is equal to the sum of the ratings for the five criteria. To this total corresponds a suicide probability rate ranging from 0.001 (i.e. probability of suicide estimated at 0.1%) to 0.95 (i.e. probability of suicide estimated 95%).

DISCUSSION

The risk factors for suicide in the wilaya Oran/Algeria are :

age brackets from childhood to old age, .e. 10 to 90, represent risk factors for suicide, with an increased risk, even multiplied by

45.4 for age group between [20-29] years (OR: 45.4, CI: [10.8-191.0], $P < 10^{-3}$) followed by the following age groups: [10-19] years (OR: 31.7, CI: [7.3-137.0], $P < 10^{-3}$), [30- 39] years (OR: 28.2, CI: [6.6-119.8], $P < 10^{-3}$), ≥ 80 years (OR: 21.8, CI: [3.8-125.7], $P < 0.001$), [70-79] years (OR: 18.9, CI: [3.4-160.7], $P < 0.001$), [40-49] years (OR: 16.5, CI: [3.8-71.3], $P < 10^{-3}$), [60-69] years (OR: 14.9, CI: [3.2-69.0]; $P < 0.001$) and finally the age group [50-59] (OR: 7.3, CI: [1.5-34.3], $P < 0.012$).

- Living with family multiplies the risk of suicide by 11.9, most likely due to promiscuity: (OR: 11.9, CI: [2.8-50.7], P: 0.001).

However, it cannot be ruled out that living alone is not a factor associated with suicide (such as loneliness, withdrawal, depression), with an OR: 4.9, CI: [1.0-25.0].

- The presence of personal behavior disorders multiplies the risk of suicide by 4: OR: 4.0, CI: [2.1-7.7], $P < 10^{-3}$.

- Having a psychiatric illness of one's own, whether treated or not, is associated with a higher risk of suicide (OR: 8.3, CI: [4.9-14.1], $P < 10^{-3}$), and this could be explained by the removal of inhibitions by the treatment (psychotropic drugs), which will prompt the patient to act out and commit suicide. On the other hand, untreated psychiatric illness multiplies the risk of suicide by 6.5 (OR: 6.5, CI: [3.2-13.2], $P < 10^{-3}$).

- The presence of frank asphyxia syndrome on external examination of the cadaver represents a factor associated with suicide, with an OR: 4.0, CI: [2.9-5.7], $P < 10^{-3}$. Bearing in mind that asphyxia syndrome could also be diagnosed in suicidal patients hospitalized in medical-surgical emergencies ($SpO_2 < 80\%$ = cyanosis of skin and mucous membranes) [2].

According to the literature, around 90% of suicide victims have one or more mental disorders at the time of death. In half to two-thirds of cases, these are mood disorders, followed by other psychiatric disorders, starting with problematic use of alcohol or substances, or personality disorders. The presence of several disorders is associated with a higher risk.

The broad representation of psychiatric disorders is found for all suicidal acts [4], with a particularly high risk in the 1st year following diagnosis of the mental disorder, and especially within 3 months [5].

Application of the suicide predictive score to the wilaya Oran/Algeria:

This score could be applied by general practitioners and medical specialists during the pronouncement of death, or more specifically in a forensic context by forensic pathologists during external examination of the corpse (for the pronouncement of death or autopsy) in order to determine the forensic form of death, or even predict a suicidal death, especially when the cause of death is undetermined or violent.

This score could also be used by practitioners working in urgences (GPs, surgeons, resuscitators, pediatricians, pediatric surgeons, psychologists, psychiatrists...) to screen and treat suicidal patients.

To test the reliability of this score, we began applying it in our forensic medicine department at Oran University Hospital in July 2023 to a number of autopsy cases in which the cause of death was undetermined or violent, and in which the predictive score was greater than or equal to 50%. This enabled us to put forward the hypothesis of violent suicidal death, while comparing our data with that of judicial investigation, and sometimes even with data from interviews with the families of the deceased, who confirmed the suicide hypothesis [2].

The 1st case :

A 42-year-old man died suddenly on the public highway. The physician concluded that the cause of death was undetermined, and a forensic autopsy was ordered.

At autopsy, a frank asphyxia syndrome was observed, with lesions of caustic esophagitis.

Questioning of the deceased's brother revealed that he :

- Was married with 03 children, unemployed and had no leisure activities.
- Cohabited with his family.
- Was diabetic and had behavioral problems.

- Treated for a personal psychiatric illness such as schizophrenia.
- Had voluntarily ingested over a liter of bleach orally 20 days before his death.

The score (Total score= 30):

- Frank asphyxia syndrome: 3.5
- Treated personal psychiatric illness: 5.5
- Behavioural disorders: 3.5
- Living with family: 6.5
- Age 42: 7.25
- The total score= 26.25=> corresponds to a 91% probability of suicide.

The 2nd case :

Fall from a great height (precipitation causing polytrauma) in a male victim.

The score (Total score= 30):

- Absent frank asphyxia syndrome: 0
- Personal psychiatric illness treated (yes): 5.5
- Behavioral problems (yes): 3.5
- Cohabitation with family (yes): 6.5
- Age 35: 8.75

The total score= 24.25=> corresponds to an 85% probability of suicide.

The 3rd case :

Passive neck constriction by a tie (vital hanging) in a young man. Score (Total score = 30):

- Frank asphyxia syndrome present: 3.5

- No personal psychiatric illness: 0
- Behavioral problems (yes): 3.5
- Cohabitation with family (yes): 6.5
- Age 20: 10

The total score= 23.5=> corresponds to an 80% probability of suicide.

The 4th case :

Fall from a great height causing polytrauma in a female victim whose husband and brother spoke a suicidal fall (precipitation) without any notion of a previous suicide attempt.

The score (Total score= 30):

- Absent frank asphyxia syndrome: 0
- No personal psychiatric illness: 0
- Behavioral problems (yes): 3.5
- Cohabitation with family (yes): 6.5
- Age 20: 10

The total score= 20=> corresponds to a 50% probability of suicide.

The 5th case non-suicidal violent death:

A young man aged 26, single, no profession, occasional drug addict, with no medical or surgical history and a criminal record (offender), victim of intentional assault and battery with a bladed weapon, causing a deep wound to the neck.

The score (Total score= 30):

- Absent frank asphyxia syndrome: 0
- No personal psychiatric illness: 0

- Behavioural disorders (no): 0
- Cohabitation with family (yes): 6.5
- Age 26: 10

Total score = 16.5 => probability of suicide 22.5%: a low probability of suicide, which eliminates the suicide hypothesis [2].

CONCLUSION

Suicide is a complex, worldwide phenomenon that affects all populations, regardless of ethnicity, culture, religion or socio-economic level. It is caused by a number of factors that are the focus of multidisciplinary studies in sociology, philosophy, psychoanalysis, psychology, psychiatry and forensic medicine.

This predictive study enabled us to identify the following risk factors for suicide in the wilaya of Oran /Algeria:

- Age ≥ 10 years, with an increased risk in the [20-29] age .
- Living with family (promiscuity).
- The presence of personal behavioral problems.
- A personal psychiatric illness, whether treated or not (the risk is greater when the psychiatric illness is treated = removal of inhibition).
- The presence of frank asphyxia syndrome on external examination.

At the end of our research and after identifying the factors associated with suicide in the wilaya of Oran/Algeria, we were able to draw up a suicide prediction score that will help health professionals, whether general practitioners or specialists, in particular forensic pathologists in the wilaya of Oran/Algeria, to predict the medico-legal form of suicide when they are called upon to make a death certificate, while at the same time questioning those close to them (friends, family, work colleagues, etc.).

work, etc.) of the deceased and after examining the corpse (especially in cases of death from undetermined or violent causes). Forensic pathologists can also apply it to corpses to be autopsied.

Secondly, this score can be used by emergency practitioners who receive patients who may be suicidal during the course of their work, in order to detect them and provide them with appropriate medical and surgical care, psychological support through listening , and referral to psychiatric services to prevent suicide and any recurrence of suicide attempts.



APPENDIX: (Questionnaire)

Autopsy survey sheet of victims of suicidal and non-suicidal violent deaths in the wilaya of Oran/Algeria from January 01, 2015 to December 31, 2020.

Service de médecine légale

1- Etablissement hospitalier :

CHUO 1- / EHUO 2- / EPH ELMOHGOUN 3- /EH AIN EL TUTK 4-

2- Numéro de fiche d'enquête :

3- Numéro d'autopsie :

4- Date d'autopsie :

5- Type de mort violente : Suicide 1- / Non suicide 0-

6- Sexe : Masculin 1- / Féminin 2-

7- Age : ans

8- Lieu de résidence : Oran Ouest 1- / Oran Est 2- / Hors Oran 3-

9- Zoning : Zone urbaine 1- / Zone rurale 2-

10-Nationalité : Algérienne 1- / Etrangère 2-

11-Civilité : Célibataire 1- /Fiancé (e) 2- /Concubin (e) 3- /Marié(e) 4- / Séparé (e)

5- / Divorcé (e) 6- / Veuf (ve) 7-

12-Nombre de fiançailles :

13-Nombre de mariages :

14-Nombre de divorces :

15-Notion de polygamie : Oui 1- / Non 0-

16-Nombre d'enfants :

17-Confession religieuse : Musulman (e) 1- / Autre confession 2-

18-Notion d'exorcisme (Roqya) : Oui 1- / Non 0-

19-Niveau scolaire :

Primaire 1- / Moyen 2- / Secondaire 3- / Universitaire 4 /Aucun 5-

20-Diplômes obtenus : Oui 1- / Non 0-

21-Passe-temps : Oui 1- / Non 0-

22-Profession : Avec 1- / Sans 2- / Retraité(e) 3-

23-Si oui :

Travail manuel 1- / Travail intellectuel 2- /Travail manuel et intellectuel 3-

24- Notion of consanguinity between parents : Yes 1- / No 0-

25- Did he/she live:' Alone 1- /With family 2- /With friends 3- /Other 4- :

26- Type of dwelling : Apartment 1- / Haouche 2- / Detached house 3-/ Slum 4- / Homeless

5- /Other 6- :

27- Victim of abuse: Yes 1- / No 0-

28- Type of abuse: Action 1- / Omission 2- / Action and omission 3-

29- Notion of medical and psychological care for the victim abuse: Yes 1- / No 0-

30- Notion of drug addiction: Yes 1- / No 0-

31- If the concept of addiction is used, is consumption ...'

Occasional 1- / Chronic 2-

32- Notion stopping toxic consumption: Yes 1- / No 0-

33- Notion of detox: Yes 1- / No 0-

34- Criminal history, incarcerated : Yes 1- / No 0- Personal

medical and surgical history :

35- Personal behavioural problems: Yes 1- / No 0- 36- If yes,
what type of behavioural problems?

- Mental retardation 1-
- Fugue 2-
- Depression, melancholy 3-
- Insomnia 4- W
- Isolation, silence, solitude (withdrawal) 5-.
- Anger, aggressiveness 6-
- Dementia, Alzheimer 7-
- Aggressiveness 8-
- Hallucinations 9-
- Anxiety, depression 10-
- Aggressiveness, isolation, irritability 11-
- Autism 12-
- Anxiety, anguish I3-

- Irritability 14-
- Suicide threats 15- W
- Agitation 16-
- Delirium 17-
- Depression, melancholy, isolation 18-
- Dementia, delirium 19-
- Phobias 20-
- Aggression, delirium 21-
- Homosexuality 22-
- Fearful, apathetic 23-

37- Personal psychiatric illness: Yes 1- / No 0-

38- If yes, is your personal psychiatric illness being treated? Yes 1- / No 0-

39- Notion involuntary hospitalization (internment) : Yes 1- / No 0-

40- Other personal chronic organic diseases: Yes 1- / No 0- 41- Personal surgical history: Yes 1- / No 0-

42- Notion of psychiatric illness in the family: Yes 1- / No 0-

43- Date of death :

44- Time of death :

Dawn (from 1h to 6h) 1- / Morning (from 7h to 12h) 2- / Afternoon (from 13h to 19h) 3- / Evening (from 20h to 24h) 4-

45- Place of death :

Home 1- / Hospital 2- / Workplace 3- / Public place 4- / Sea 5- / Police lock-up 6- / Lake 7- / Retirement home 8- / Vehicle 9- / Hotel 10- / Railway 11- / Swimming pool 12- / Day nursery 13- / Room in university dormitory 14- / Gutter 15- / House of the family

46- Circumstances and motive for incident:

- CBV 1-
- Unknown 2-
- AVP 3-
- Rixe 4-
- Work accident 5-

- Abuse (child abuse, abuse by an adult) 6-
- Attack by an animal (made by a calf, canid bite, wild boar bite) 7-
- Domestic accident 8-
- Iterative blows and wounds by the exorcist during exorcism 9-
- Intentional homicide 10-
- Traffic accident 11-
- Boating accident, sport accident, diving accident, fishing accident (fall from a high height), hunting accident with a shotgun, accidental drowning (in a swimming pool, sea, lac)| 12-
- Induced fall from a great height 13-
- Accidental fall (from a bridge, a building, a ditch, a rock, taking a selfie) 14-
- Family quarrel 15-
- Contagious infectious disease (TBC, HIV, Covid-19) 16.
- Death of one of the parents (father and/or mother) 17-
- Suicide following a brawl with a neighbor 18- W
- Academic failure (Baccalaureate or other) 19-
- Epileptic seizure 20-
- Despair, loss of taste for life 21-
- Overwork (after cleaning the mosque) 22-
- Accidental death (fall from height) 23-
- Suicide after homicide of family members HS 24-
- HS victim (uxoricide, parricide) 25-
- Housing dispute (housing crisis) 26-
- Oppression by judicial authorities (the gendarmerie) 27-
- Honor 28-
- Domestic violence VC 29-
- Fratricide 30-
- Harga 31-
- Theft of the suicide victims vehicle 32-
- Deliberate inhalation of a toxic gas (Butane) 33-.

- Disappointment in love 34-
- Marital separation 35-
- Collapse accident 36-
- Voluntary termination of pregnancy IVG 37-
- Internet game ri La Baleine Bleue, Blue Whale " 38-.
- Voluntary ingestion of cocaine sachets (for pills arrest, sell them) 39-
- Matricide 40-
- Kidnapping followed voluntary manslaughter 41-
- Railway accident 42-
- Newborn child born illegally (illegitimate pregnancy) 43-
- Attempted abortion 44-
- Infanticide 45- W
- Suicidal delirium 46-

47- Day of incident: Week 1- / weekend 2-

48- Time of incident :

Dawn 1- / Morning 2- /Afternoon 3- /Dusk 4- / Evening 5-

49- Season of incident: Summer 1- / Autumn 2- / Winter 3- / Spring 4-

50- Notion hospitalization after the incident: Yes 1- / No 0-

51- If yes, is the treatment ? Medical 1- / Surgical 2- / None 3- 52-Previous suicide attempts: Yes 1- / No 0-

53- Notion of suicide in the family: Yes 1- / No 0-

54- Levée de corps : Done 1- / Not Done 11-

55-If done, condition of premises: Order 1- / Disorder 2- / No particularity 3-

56-Presence of suicide note on premises: Yes 1- / No fl-.

57-Corpse's clothing: Not torn 1- / Torn 2- / Soiled with biological fluid 3- / Not torn but soiled with biological fluid 4- / Torn and soiled with biological fluid 5- / Other 6- : Soiled with paint dust, biological fluid; blood, urine, semen, vomit 58-Presence a vulnating instrument (blunt, sharp, firearm, tie, other): On the body 1- / Near the body 2- / Far from the body 3- / Absent 4-

59-Cadaveric phenomena at the time of body removal are : Absent 1- / Beginners 2- /
Installed 3-

External examination of the corpse:

60-Corpulence :

Low 1- /Medium 2- /High 3- /In proportion to age 4-/ Obese 5- 61-Height
.....cm

62-Cadaveric phenomena: Absent 1- / Beginning 2- / Established 3-

63- Asphyxia syndrome: Clear 1- / Not apparent 0-

64-Self-inflicted lesions (ATM): Present 1- / Absent 0-

65-Injuries found on the body:

Antemortems 1- / Postmortems 2- / Absent 3- 66-

Are the injuries noted :

Superficial 1- / Deep 2- / Superficial and deep 3-

67- Autopsy findings (direct cause of death) :

- Polytrauma 1-

The classic definition of a polytrauma patient is an injured person with two or more traumatic injuries (wounds, fractures, burns, etc.), at least one of which is life-threatening.

- Head trauma 2-
- Thoracic trauma (Exp by thoracic compression) 3-
- Locomotor trauma (Exp complications of this trauma: pulmonary embolism; septicemia) 4-
- Cervical trauma (fractures, dislocations of cervical vertebrae) 5-
- Craniofacial trauma 6
- Abdominal trauma 7-
- Trauma to the dorsal spine 8-
- Trauma to the lumbosacral spine 9-
- Pelvic trauma 10-
- Facial trauma 11-
- Burn injuries (extensive and deep) 12-

- Lesions of burns (extensive and deep) with of lesions cauterization (burns caused by an electrical agent) 13-
- Ante mortem carbonization: presence of soot in the upper respiratory tract (mouth, larynx and trachea), sometimes HbCO >40%, 14-
- Vascular wound of the left thigh (left femoral artery) 15- W
- Vascular wound of the right forearm 16-
- Cardiac wound 17-
- Multiple visceral wounds 18-
- Vascular wound of the right thigh (right femoral artery) 19-
- Neck wound (section of jugular vein and/or section of carotid artery) 20-
- Lung wound 21-
- Liver wound 22- W
- Abdominal aorta and left kidney wounds 23-
- Thoracic aorta wound 24-
- Vascular wound on left arm 25-
- Vascular wound left forearm 26-
- Vascular wounds of the left wrist and left knee 27-
- Vascular wounds of the right elbow and left wrist 28-
- Deep facio-cranio-cerebral wound 29-
- Slaughter 30-
- Limb amputation 31-
- Skinning 32-
- Pulmonary oedema, poly visceral congestion 33-
- Foam fungus, liquid (water or other) in respiratory tract and stomach, poly visceral congestion (vital drowning) 34-
- Caustic esophagitis (necrotic lesions of the lips, oropharynx, digestive tract and viscera) 35-
- Cauterization lesions, poly visceral congestion, sometimes ecchymotic myocardial infiltration (electrocution) 36-
- Presence of HbCO>20% to HbCO>40%, carmine-red skin and mucous membranes, poly visceral congestion (Carbon monoxide CO poisoning) 37-

- Furrow above larynx, oblique, incomplete, poly visceral congestion (passive constriction of neck by a tie) 38-
- Furrow above larynx, oblique, incomplete, poly visceral congestion, fracture of hyoid bone (passive constriction of neck tie) 39-
- Furrow above larynx, oblique, incomplete, poly visceral congestion, hyoid bone fracture, Amussat's sign (passive constriction of the neck by a tie) 40-
- Furrow above larynx, oblique, incomplete, poly visceral congestion, fractures of hyoid bone and thyroid cartilage (passive constriction of neck tie) 41-
- Furrow above larynx, oblique, incomplete, poly visceral congestion, Amussat's sign (passive constriction of the neck by a tie) 42-
- Groove above the larynx, oblique, incomplete, poly visceral congestion, fracture-luxation of the hyoid bone (passive constriction of the neck by a tie) 43-
- Furrow above larynx, oblique, incomplete, poly visceral congestion, thyroid cartilage fracture, cervical trauma (dislocation of cervical vertebrae C2-C3), healed anal fissures 44-
- Groove above the larynx, oblique, incomplete, poly visceral congestion, fracture of the thyroid cartilage, cervical trauma (fracture and/or dislocation of the cervical vertebrae) (passive constriction of the neck by a tie) 45-
- Presence food of the same nature as the gastric contents in the upper and lower respiratory tracts (false alimentary route), poly visceral congestion 46-.
- Obstruction of the respiratory tract by a foreign body (peanut or other} 47-
- Body dehydration, pulmonary oedema, poly visceral congestion 48-
- Facial suffocation (presence of bruises and excoriations on the face near the nostrils and perioral region), poly visceral congestion 49-.
- Hand strangulation (neck bruises, thyroid cartilage fracture) 50-

- Cocaine overdose (pulmonary oedema, poly visceral congestion, presence of broken cocaine bags in the stomach) 51-
- Head trauma with vital drowning 52-
- Hand strangulation (neck and scalp bruising, fractures of thyroid cartilage and hyoid bone) 53-
- Furrow below of the larynx, horizontal, fracture of hyoid bone (tie strangulation) 54-
- Groove below larynx, horizontal, fracture of thyroid cartilage (strangulation with tie) 55-
- Groove below larynx, horizontal (strangulation at tie) 56-
- Suffocation with hand strangulation (without fracture) 57-
- Strangulation by hand (fracture of hyoid bone), recent anal fissures 58-.
- Positive macroscopic pulmonary docimasia, umbilical cord torn off a few centimetres from emergence, poly visceral congestion (newborn from clandestine birth): Infanticide by omission 59-.
- Positive macroscopic pulmonary docimasia, umbilical cord torn off a few centimetres from emergence (newborn from clandestine delivery), poly visceral congestion, postmortem absence of lower limbs left upper limb and eyeballs Infanticide by omission 60-
- Strangulation in connection with polytrauma 61-
- Pulmonary edema, poly visceral congestion, choline esterase activity very high during his lifetime, alphachloralose activity 70% during his lifetime (rat poison) 62-.
- Pulmonary edema, poly visceral congestion, choline esterase activity diminished during his lifetime (organophosphate poisoning) 63-
- DIC (multivisceral petechiae), dilated cervix, pregnant uterus containing a fetus 64-.
- Large loss of musculocutaneous substance with pulmonary edema and poly visceral congestion 65-.
- Dysenteric syndrome (entameba histolytica food poisoning), emphysematous lung, steatotic liver 66-.

- Dehydration dehydration, delay staturo-ponderal, cutaneous skin, muscle and bone lesions of different ages (abuse by action and omission) 67-
- Head trauma, slight build (cachectic), skin, muscle and bone lesions of different ages (abuse by action and omission) 68-.
- Non-viable fetus, negative docimasie, fetal distress, poly visceral congestion 69-
- Beheading 70-
- Vascular wounds of the right arm 71-
- Pulmonary embolism, poly visceral congestion 72-

68- Toxicological tests: Done 1- / Not done 0-

69- If done, result: Positive 1- / Negative 2- / Result not obtained 3-

70- Pathological study: Done 1- / Not done 0-

71- DNA in case of unidentified corpse : Done 1- / Not done 0-

72- Number of processes in violent death : One 1- / Several 2-

73- Type of violent death according to CM-10 coding :

Type of non-suicidal violent death, according to ICD-10 coding, Chapter XX

External causes of morbidity and mortality (V01-Y98) :

1- Assaults (X85-Y09) excluding acts of war (Y36} and police intervention (Y35)

2- Accidents (V01-V99) and (W00-X59)

3- Event whose intervention is not determined (Y10-Y98)

Type of suicide (suicide typology) according to ICD-10 coding, Chapter XX

External causes of morbidity and mortality (V01-Y98), self-inflicted injuries (X60- X84) :

4- Complete hanging

5- Incomplete hanging

6- Ingestion of caustic products

7- Ingestion of drugs

- 8- Insecticide ingestion
- 9- Ingestion of pesticides
- 10- Ingestion of poisons
- 11- Ingestion of toxic products
- 12- Drugs
- 13- Inhalation of toxic gas
- 14- Drowning
- 15- Containment
- 16- Firearm
- 17- White Weapon
- 18- Precipitation (fall from a great height)
- 19- Death by fire (immolation)
- 20- Other: Harga, Infanticide, rail crossing, voluntary ingestion of body foreign.....

74- Vulnerable instrument incriminated in violent death :

- 1- Blunt object (stone, heavy object, fall from a door onto the head, iron bar, television, kick, punch, kicked by a calf, gored by a cow...)
- 2- Blunt and sharp objects (two objects)
- 3- Hit by a vehicle (car, motorcycle, tractor)
- 4- Chest compression by a vehicle
- 5- Fall from a great height (from a bridge, a building, a house slab, a rock, a building under construction, etc.).
- 6- Collision
- 7- Unknown
- 8- Vehicle (Death of the victim inside the vehicle in the event ADC)
- 9- Fall from stairs
- 10- Falling out of bed
- 11- Ladder fall
- 12- Fall from height onto a hard surface (in the event of unconsciousness, epileptic seizure, obesity, haemophilia} W
- 13- Falling from a chair

- 14- Fall into a ditch
- 15- The victim was pushed and received on a hard surface
- 16- Projection against a hard surface
- 17- Fall from a horse
- 18- Tractor fall
- 19- Truck falls
- 20- Falling tree
- 21- Fall from top of a machine W
- 22- Firearms (Small-calibre projectiles: rifled bullet, pellet cartridge)
- 23- Thermal agent (gas flame, candle flame, boiling water...)
- 24- Thermal agent with accelerant (gasoline) W
- 25- Explosion: Butane gas, LPG tank, electrical substation, motorcycle, boiler, household appliance, factory machine)
- 26- Electrical agent (high-voltage cable, electric cable)= Electrocution
- 27- White weapon (sharp object: knife) W
- 28- Sharp objects (saw, glass)
- 29- Sharp, blunt objects (axes, sabres)
- 30- Vital drowning in: a lake, the sea, a swimming pool, a water tank, a basin filled with water, a gutter, a bucket filled water)
- 31- Chemical agent: caustic and corrosive product (strong acid, strong base)
- 32- Gas CO
- 33- Toxic gas for lighter loading
- 34- Gas: Butane, Butanol (Volatile Substances Addiction: CS)
- 35- Butane gas
- 36- A single link (rope, scarf, scarf, electrical cable, sweatshirt cord, belt, fabric, knitted fabric, swing rope, satellite dish cable, tape, sheets)
- 37- Miscarriage

- 38- Foreign bodies (peanuts, meat scraps)
- 39- Crushing by: falling containers, falling machinery, falling power poles, vehicles, elevators, walls, bricks, stone blocks)
- 40- Collapse: of a wall, of the earth, of the ground W
- 41- Fall into concrete mixer W
- 42- Medicines (Psychotropic anticoagulants anti-vitamin-K, paracetamol)
- 43- Hands (natural weapon)
- 44- Hands and fabrics (linen)
- 45- Drugs (Cocaine, opiates, Ecstasy)
- 46- Fall with life-threatening drowning (in the sea, in the pool)
- 47- Ethanol W
- 48- Binding and natural weapons (hands and feet) W
- 49- Scorpion venom
- 50- Train
- ii1- Unassisted childbirth (Clandestine childbirth) 52- Organophosphates (insecticides)
- ii3- Alphachloraloses (Raticides)
- 54- Electrocution and body projection (Electrical agent)
- 55- Animal bite (Canid: dog, wild boar)
- 56- CO gas, thermal agent
- 57- Burial (Sand, wheat grains...)
- 58- Fall from , thermal agent
- 59- Hands, fall from height W
- 60- Parasite: Entamoeba Histolytica W
- 61- Food deprivation
- 62- White weapon, link, natural weapons (hands)
- 63- Natural weapons (hands) and blunt objects
- 64- Two (02) ties used (rope and electrical cable, knit and rope, two ropes, one lined rope, sheets and electrical cable) W

75- Mechanism of violent death :

- 1- Active blunt mechanism
- 2- Passive blunt mechanism
- 3- Firearm injuries
- 4- Thermal burns
- 5- Sharps injuries
- 6- Submergence
- 7- Caustic burns
- 8- Electrocution
- 9- Unknown
- 10- Gas poisoning
- 11- Passive neck constriction
- 12- Miscarriage
- 13- Blast effect
- 14- Crushing
- 15- Drug intoxication
- 16- Suffocation: airway obstruction
- 17- Drug intoxication
- 18- Two incriminating mechanisms 2 and 6
- 19- Ethanol intoxication
- 20- Active neck constriction
- 21- Two incriminating mechanisms 16 and 20
- 22- Vehicle collision
- 23- Envenomation
- 24- Crossing
- 25- Infanticide by omission
- 26- Four incriminated mechanisms 1, 12, 16 and 20
- 27- Organophosphorus poisoning
- 28- Two incriminating mechanisms 8 and 2
- 29- Attempted abortion
- 30- Animal bite
- 31- Two incriminating mechanisms 10 and 4
- 32- Burial

- 33- Deux mécanismes incriminés 2 et 4 ☐
- 34- Deux mécanismes incriminés 8 et 4 ☐
- 35- Deux mécanismes incriminés 20 et 2 ☐
- 36- Intoxication alimentaire ☐
- 37- Deux mécanisme 11 et un autre méconnu 9 ☐
- 38- Sévices par omission ☐
- 39- Deux mécanismes incriminés 20 et 5 ☐
- 40- Deux mécanismes incriminés 1 et 5 ☐
- 41- Deux mécanismes incriminés 1 et 38 ☐
- 42- Infanticide par action ☐

Interrogatoire fait par Dr.....
Avec (lien de parenté avec le défunt) :
Pièce d'identité N° :
Numéro de téléphone :
Oran le :

Signature du médecin

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