

# Depression and Suicidal Ideations among Prisoners of the Douala Central Prison

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## Abstract

**Introduction:** The prison environment is a conducive environment for the development of psychiatric pathologies such as depression and suicidal ideation. To date, no related study has been conducted in Douala, Cameroon. We have therefore undertaken to study the prevalence of these pathologies and their related factors among inmates of the Douala Central Prison. **Method:** We conducted a cross-sectional study of 309 prisoners over a 6-month period from 1 January to 31 June 2022. This involved prisoners aged 18 years and over, who were consenting and able to read and write. Data were collected during individual interviews using a structured questionnaire. Depression was assessed by the BECK Short Form Depression Inventory and suicidal ideation was assessed by the MINI. These data were processed using the SPSS version 25.0 software. The related factors were studied in bivariate and multivariate analysis. **Results:** Most of the prisoners were male (97%), and more than half knew their criminal status. The prevalence of depression was 33.7% and that of suicide ideation was 22.7%. Among the factors associated with depression were receiving social visits and suicidal ideation. A history of physical/psychological abuse, repeated offences and prison violence were protective factors. Factors associated with suicidal ideation were the absence of social visits, physical abuse in childhood, smoking in prison and depression. Suicidal ideation was independently associated with depression as well as depression being independently associated with suicidal ideation. **Conclusion:** About 1/3 of the prisoners had depression and almost 1/4 had suicidal

ideations. As a result of this and the related factors, there is a need to reorganize psychiatric care within our prison context.

## **Keywords**

Depression, Suicidal Ideation, Prevalence

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## **1. Introduction**

The world's prison population keeps increasing and is estimated to be approximately 10 Million [1]. Cameroon had 115 people/100,000 inhabitants incarcerated with a total number of 30,605 prisoners in October 2017. This results in an occupancy rate of 171% for the space available, which is evidence of serious overcrowding [2]. Prisons are usually hubs for disease development due to overcrowding, prolonged confinement in a small, poorly lit space, lack of hygiene and limited access to care [1]. They are also confined places that can favor the development of psychiatric disorders, including depression and suicide [1]. According to the World Health Organization (WHO), incarceration endangers prisoners' health; it estimates that at least 40% of prisoners suffer from some form of mental illness, with a suicide rate 7 times higher among prisoners than outside prison [1], with suicide being the leading cause of unnatural death in correctional settings, WHO 2007 [2]. Several studies have been conducted on mental health, revealing the predominance of depression and suicidal behavior among prison populations [3] [4]. However, studies on this issue in Cameroon are rare, thus prompting us to develop this work.

## **2. Tools and Methods**

### **2.1. Framework and Design**

We conducted a cross-sectional study over a period of 6 months, from 1 January to 30 June 2022 at the Douala Central Prison located in the New-Bell district. The Douala Central Prison is managed by a director. It consists of two large blocks, one which is composed of administrative offices, and the other of the visiting room 30, the prisoners' quarters and the infirmary. The prisoners' quarter is divided into three parts: the male quarter, the female quarter, the quarter reserved for minors and the courtyard, where male prisoners who cannot afford to pay for access to the cells are accommodated. The quarters themselves are subdivided into numerous cells. The prison infirmary includes a consultation office for the chief physician, consultation and treatment offices for the Certified Nurses, a reception and treatment hall, a laboratory and an observation room for sick prisoners. Access to the prison was granted after being searched at the reception desk and presenting one's national identity card, then one is led inside the prison by a guard. The interview took place either in the visiting room on Mondays, Tuesdays, Thursdays and Fridays, days when there was no communication, or

on Wednesdays, Saturdays and Sundays, days when there was communication, in one of the offices of the infirmary reserved for a Certified Nurse. This included prisoners aged 18 years and over who were able to read and write who could read and write and who have given consent to participate in the study.

Our sample size was estimated at 309 inmates calculated by the Lorentz formula  $n = z^2 \times p \times (1 - p) / m^2$  *i.e.*

$$1.96^2 \times 0.320 \times (1 - 0.286) / 0.05 \times 0.050$$

*n*: minimum sample size for obtaining significant results;

*z*: level of trust (value 95% *i.e.* 1.96);

*p*: estimated proportion of the population with such a problem, based on the prevalence of the study conducted at the Ouagadougou prison, which indicated 28.6%;

*m*: margin of error: 5%. The desired sample size is 309.

## 2.2. Procedure

Data were collected during individual interviews using a structured questionnaire, after obtaining ethical clearance from the constitutional ethics committee of the University of Douala and a research authorization from the Littoral regional delegation of the prison administration. Data was collected every day from 8 am to 5 pm. A list of the cells was drawn up for one month, which was the time allowed for data collection. The list of volunteers per cell was drawn up by the head of the cell on the eve of each cell's visit, following an order that we communicated to them. The voluntary prisoners whose names appeared on the lists were then taken to the collection site by their cell manager in order of appearance. A prison guard was responsible for maintaining order and security. After explaining the purpose of our study, each prisoner was asked to fill-in the informed consent form before starting the survey.

Data were collected by means of a questionnaire divided into four main parts:

Socio-demographic data that is: gender, age, religion, level of education, marital status, occupation, family situation before incarceration, region of origin, whether or No they had children.

Medical history: hypertension, diabetes, sickle cell anemia, HIV, tuberculosis  
Psychiatric and family pathologies: physical abuse, psychological abuse, rape, having grown up with biological parents.

Judicial data: types of offences, length of stay in prison, status of the prisoner (convicted, accused), social support in prison, conflict with co-prisoners, guards, alcohol, tobacco and drug use.

Depression was assessed based on the BECK Short Form Depression Inventory (Appendix). We evaluate the intensity of sadness, pessimism, feeling of failure, satisfaction with actions, feeling of guilt, self-loss, negative thoughts, fatigue and appetite. Prisoners with a score between 4 and 39 were considered to have depression. Depression was said to be mild for those with a score between 4 and 7, moderate between 8 - 15 and severe between 16 and 39.

For suicidal behavior, we chose the MINI (appendix), a validated score based on the criteria of the DSM IV and the International Classification of Diseases tenth edition (ICD-10). It was used to assess the occurrence of suicidal ideations and behaviors within the month preceding the assessment and throughout life.

The following questions were asked: Have you ever

- Thought that you would be better off dead, or wished you were dead?
- Thought about committing suicide?
- Attempted suicide?

### 2.3. Statistical Analyses

These data were processed using the SPSS software version 25.0. The related factors were studied in bivariate and multivariate analysis. Correlations were assessed using the Chi-square test at the 5% significance level.

## 3. Results

### 3.1. Descriptive Study

We approached 325 prisoners, 309 of whom were interviewed and finally included.

The male gender was more represented with a total *n* of 300 (97%). Those aged between 20 and 40 years represented 74.1% of our entire population, with a total of 229 prisoners. The average age was  $33.24 \pm 10.2$  years with extremes between 18 and 74 years and a median age of 31 years (**Table 1**).

Before incarceration, more than half of the inmates had a stable job (self-employed, private workers and official's workers), *i.e.* 54% with a staff of 167 (**Table 2**).

Nearly 2/3 of our study population had attained at least secondary education, *i.e.* 62.1%. Before imprisonment, more than half of the prisoners had a stable job, *i.e.* 54% giving a total of 167 (**Table 2**).

Of the 309 prisoners, only 31 (10.7%) had at least one medical history and 2 (0.6%) had a known psychiatric pathology.

**Table 1.** Age ranges in years.

Age in ranges (years)	Number	Percentage (%)
<20	11	3.6
[20 - 30[	118	38.2
[30 - 40[	111	35.9
[40 - 50[	47	15.2
[50 - 60[	15	4.9
[60 - 70[	3	1.0
Total	309	100

More than half of the detainees had a known criminal status (56.8%) and more than half had been in prison for less than a year that is 184 (61.2%) (**Table 3**). The most frequent reason for incarceration was theft and possession of stolen property (58.3%). Prisoners who had repeated offences were represented by 23 % (**Table 3**). Violence in the prison environment was highly prevalent, perpetrated by 57% of the prisoners and 22.7% by the guards. More than half of the prisoners received social visits (53.1%).

About 2/3 of the prisoners consumed alcohol in prison (63.1%), 28.8% used drugs and 27.2% used tobacco.

Nearly 1/3 of our study population had major depression, *i.e.* 33.7% of the prisoners.

The prevalence of suicidal ideation was 22.7% in our study population. Only 5.5% of the inmates had tried to commit suicide, 11.7% had planned to do so, and 5.5% had already attempted suicide in their lifetime.

**Table 2.** Distribution by occupation.

Occupation	Number	Percentage (%)
Unemployed	82	26.5
Self-employed	74	23.9
Private	73	23.6
No permanent job	42	13.6
Official	20	6.5
Student	9	2.9
Pupil	6	1.9
Retired	3	1.0
Total	309	100

**Table 3.** Distribution according to judicial status and prison experience.

Judicial status and prison experience	Number	Percentage (%)
Condemned	175	56.8
<b>Duration of prison stay (year)</b>		
<1	189	61.2
[1 - 5[	111	35.9
[5 - 10[	6	1.9
≥10	3	1.0
Repeat offender	71	23.0
Received visits	164	53.1

Suicidal risk was observed in 99 prisoners (32%) and this risk was slight in 30.3% of cases, moderate in 30.3% of prisoners and severe in 39.4% of the prisoners interviewed.

### 3.2. Analytical Study

After a univariate logistic regression analysis, we did not find a significant correlation between socio-demographic data and suicidal ideation. The absence of social visits ( $P = 0.014$ ) and smoking ( $P = 0.020$ ) was statistically associated with suicidal ideation in univariate regression. Prisoners with depression were 4.6 times more likely to have suicidal ideation.

None of the socio-demographic information examined was statistically related to depression. Being a repeated offender ( $P = 0.050$ ) and being subjected to violence in prison ( $P = 0.001$ ) were protective factors against the occurrence of depression. Receiving social visits ( $P = 0.019$ ) was statistically associated with depression. We found a significant correlation between suicidal ideation and depression (**Table 4** and **Table 5**).

After multivariate logistic regression analysis, depression was the only predictor of suicidal ideation among prisoners. Having suicidal ideation was a predictive factor for the occurrence of depression.

**Table 4.** Factors related to suicidal ideation.

Judicial data and prison experience	Depression n (%)		OR (IC 95%)	P
	Yes	No		
<b>Repeated Offence</b>				
Yes	17 (23.9)	54 (76.1)	0.546 (0.298 - 1.001)	<b>0.050</b>
No	87 (36.6)	151 (63.4)	1	
<b>Physical violence by guards</b>				
Yes	11 (15.7)	59 (84.3)	0.293 (0.146 - 0.586)	<b>0.001</b>
No	93 (38.9)	146 (61.1)	1	
<b>Threats of physical violence by detainees</b>				
Yes	47 (26.7)	129 (73.3)	0.486 (0.301 - 0.784)	<b>0.003</b>
No	57 (57.1)	109 (42.9)	1	
<b>Received a visit</b>				
Yes	65 (62.5)	99 (37.5)	1.785 (1.102 - 2.891)	<b>0.019</b>
No	39 (26.9)	106 (73.1)	1	

**Table 5.** Factors related to depression.

Past History	Suicidal ideation n (%)		OR IC 95%	P
	Yes	No		
<b>Physical abuse</b>				
Yes	22 (31.9)	47 (68.1)	1.872 (1.031 - 3.401)	<b>0.039</b>
No	48 (20.0)	192 (80.0)	1	
<b>Received a visit</b>				
Yes	28(17.1)	136 (82.9)	1	
No	42 (60.0)	103 (40.0)	1.981 (1.151 - 3.407)	<b>0.014</b>
<b>Tobacco use</b>				
Yes	28 (31.5)	61 (68.5)	1.945 (1.112 - 3.405)	<b>0.020</b>
No	42 (80.9)	178 (19.1)	1	
<b>Depression</b>				
Yes	64 (31.2)	141 (68.8)	4.6 (0.056 - 0.324)	<b>0.004</b>
No	6 (5.8)	98 (94.2)	1	

## 4. Discussion

### 4.1. Socio-Demographic and Judicial Data

The majority of our samples were males (97%). This is close to the results of Reta Y *et al.* in Ethiopia [3] and Forry JB *et al.* in Uganda [4]. This can be explained by the fact that prisons were initially intended for men. The average age in our study was 33.24 years. This is close to the results of Osasona *et al.* in Nigeria in 2015 who reported an average age of 33.6 years [5] and Egnonwa *et al.* in Mali in 2020 [6]. The prison population is predominantly youthful in many prisons due to the rise of delinquency in rural areas.

In our study population, 26.5% of prisoners were unemployed before imprisonment. This result is close to that reported by Beyen *et al.* in 2017 [7] but lower than that of Benavides *et al.* 55% in 2019 [8]. Due to the high unemployment rate, more than 1/4 of young people indulge into illegal activities. The difference in results observed by Benavides *et al.* can be justified by the different socio-economic conditions in the countries.

More than half of the detainees (58.6%) had a known legal status. This result is higher than that of Egnonwa *et al.* who reported 35.6% [6]. This difference in results can be explained by the organization of the legal services.

The majority of prisoners were incarcerated for a period ranging from 0 to 5 years (97.1%). This is higher than the result of Reta *et al.* which was 78.6% [3]. This can be justified by the fact that the crimes committed are generally minor.

More than half, *i.e.* 53.1% of the prisoners received social visits. In contrast, Bena-vides *et al.* reported that 85.1% of prisoners received visits [8]. In our own

social context, imprisoned people are usually abandoned by their families, but also the difficult access to visitors could explain this difference in results.

Only 31 prisoners/309 or 10.7% of the prisoners had a known medical history. This figure is similar to that of Reta *et al.* who found that 10.4% of detainees had a known medical history [3], 2/309 or 0.6% of detainees had a psychiatric history, a lower figure than that of Nanema in 2014 which was 2.6% [1]. These results can be explained by the fact that mental health is still not well understood in our context, with chronic pathologies remaining under-diagnosed.

## 4.2. Prevalence of Depression and Suicidal Ideation

We found a prevalence of 22.7% for suicidal ideation. This is close to that of Minkoa *et al.* in 2020, who found 21.3% [9], and Tadesse *et al.* [10] in Ethiopia, who found 21.9%. Meanwhile higher rates were found by Sarah Larney in Australia with a prevalence of 33.7% for suicidal ideation [11] and Favril *et al.* in Belgium with 44.4% [12]. This difference in results would probably be due to the beliefs and socio-cultural differences of each people and also to different conditions in the prison environment. In addition, suicidal ideation is rare in black Africans, who often function in a persecutory defense mechanism, whereby they believe that everything that happens to them comes from others. Nevertheless, a suicidal risk of 39.4% indicates a high possibility of carrying out the act.

The prevalence of major depression found in our study was 33.7%. This is similar to that of Minkoa *et al.* in the Yaoundé Central Prison which was 33.5% [9], close to the results of Shrestha *et al.* in Eastern Nepal which was 35.3% [13], and of Egnonwa of 32.2% [6]. However, this prevalence is lower than that of Albertie *et al.* in Mexico which was 69.3% [14], Osasona *et al.* in Nigeria which was 72.6% [15] and Reta *et al.* which was 44% [3]. In Ethiopia, Bedaso *et al.* found a prevalence of 56.4% [16], and Benavides *et al.* in Ecuador with 50.2% [8]. It is higher than that of Nanema in Burkina Faso at 28.16% [1]. These differences are due to the various tools used and the different conditions of detention between the prisons.

## 4.3. Factors Associated with Depression and Suicidal Ideation

Physical abuse in childhood was significantly related to suicidal ideation in prison. Indeed, prison confinement perceived as a trauma can lead to a revival of previous traumas and therefore to psychic ruminations with subsequent development of suicidal ideation; traumatic childhood experiences being reported as a risk factor for suicidal ideation in the literature review. Smoking in prison was also strongly related to suicidal ideation. Larney in Australia in 2012 also found a significant correlation between smoking and suicidal ideation [11]. The absence of social visits was significantly related to the occurrence of suicidal ideation. This result is similar to that of Tadesse *et al.* in Ethiopia who found a significant correlation between the absence of social visits and the occurrence of suicidal ideation [10]. This could probably be due to the feeling of abandonment expe-

rienced by the prisoners. Prisoners with depression were 4.6 times more likely to have suicidal ideation. Favril in Flanders also found a relationship between depression and the occurrence of suicidal ideation [12]. The literature review shows that depression contributes to more than 50% of suicidal attempts and ideation.

Being a repeated offender was a protective factor against the occurrence of depression in prison ( $P = 0.050$ ). Minkoa *et al.* also found that being a first-time offender was significantly related to depression [9]. Benavides *et al.*, contrary to us, found in Ecuador that being a repeated offender was related to the occurrence of depression in prison [8]. In our context, the fact of being used to the place makes it easier for a repeated offender to adapt to the conditions of life in prison. Being physically abused by co-prisoners or guards were protective factors against the occurrence of depression ( $P = 0.003$ ) and ( $P = 0.01$ ) respectively. These results are contrary to those of Egnonwa *et al.* in Mali and Albertie *et al.* in Mexico who found a significant correlation between prison violence and depression [6] [14]. Our result can be explained by the fact that prison violence is a means of asserting oneself and gaining popularity. In addition, we can consider a Stockholm syndrome. Receiving visits was significantly related to the occurrence of depression ( $P = 0.019$ ); Albertie *et al.* found out that receiving family visits was a protective factor [8] [14]. This result can be explained by prisoners' feelings of shame towards their family members, a sense of disappointment and an inability to solve the various problems raised during visits. This brings up the issue of the content and quality of the visits.

## 5. Conclusion

At the end of our work, which aimed at studying the prevalence and factors related to depression and suicidal ideation among prisoners at the Douala Central Prison, we can draw the following conclusions: The male gender was predominant in our study, more than half of the inmates had a known judicial status, the duration of imprisonment most found was less than one year. Out of three hundred and nine prisoners interviewed, only two had a known history of psychiatric pathology and at least thirty-one had a known history of medical pathology. About one-third of the prisoners had depression and almost one-quarter had suicidal ideation. Factors statistically related to depression were the fact of receiving social visits and having suicidal ideation. Those related to suicidal ideation were a history of physical abuse in childhood, smoking in prison, no social visits and depression. After multivariate logistic regression analysis, depression was a factor predicting suicidal ideation and suicidal ideation was a factor predicting depression. Based on these results, there is a need to re-organize psychiatric care in prison.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## Appendix

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### Suicidal Ideation (Mini)

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#### In the past month:

- C1) Have you thought it would be better if you were dead? or wished that you were died?
  - C2) Wanted to hurt yourself?
  - C3) Thought of committing suicide?
  - C4) Established how you could commit suicide?
  - C5) Attempt suicide?
- 

#### During your life:

- C6) Have you ever attempt suicide?
- 

- C1 or C2 or C6 yes
  - C3 or (C2 + C6) yes
  - C4 or (C3 + C6) yes
- 

### Depression (Beck's Depression Inventory Short-Form)

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- 1) I don't feel sad
  - 2) I feel blue or sad
  - 3) I feel blue or sad all the time and I can't get out of it
  - 4) I'm so sad and unhappy that I can't bear it
- 

- 1) I'm not particularly pessimistic or discouraged about the future
  - 2) I feel discouraged about the future
  - 3) For my future, I have no reason to hope
  - 4) I feel there is no hope for my future and that situation cannot improve.
- 

- 1) I have no sense of failure
  - 2) I feel that I have failed more in my life than most of people
  - 3) When I look back in my past life, I see that it is a set of failures
  - 4) I feel a complete failure in my personal life (in my relationship with my parents, my partner and my children)
- 

- 1) I don't feel particularly unsatisfied
  - 2) I don't know how to make the most of circumstance
  - 3) I did not feel any satisfaction with things
  - 4) I'm unhappy with all
- 

- 1) I don't feel particularly guilty
  - 2) I feel bad or unworthy most of the time
  - 3) I feel guilty
  - 4) I judge myself very bad and I feel like I'm worthless
- 

- 1) I'm not disappointed about myself
  - 2) I'm disappointed about myself
  - 3) I am disgusted by myself
  - 4) I hate myself
-

**Continued**

- 
- 1) I don't think about hurting myself
  - 2) I think dead would set me free
  - 3) I have definite plans to kill myself
  - 4) I would kill myself, if I could
- 

- 1) I haven't lost interested in other people
  - 2) Currently, I'm less interested in other people than I used to be
  - 3) I have lost most of my interest in other people and have few feelings for them
  - 4) I have lost all interest in others and I no longer pay any attention to them
- 

- 1) I am able to make up my mind easily as usual
  - 2) I am less sure of myself.
  - 3) I have great difficulty making a decision
  - 4) I am unable to make any decision
- 

- 1) I don't feel more attractive than before
  - 2) I'm afraid of looking old or weary
  - 3) I feel like there is a permanent change in my physical appearance that makes me look unattractive
  - 4) I feel ugly and unattractive
- 

- 1) I work as easily as before
  - 2) I have to go the extra mile to start doing something
  - 3) It takes a very big effort to do anything
  - 4) I'm unable to do anything
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- 1) I'm not more tired than usual
  - 2) I get tired more easily than usual
  - 3) Doing anything tires me
  - 4) I am unable to do anything
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- 1) My appetite is still as good as usual
  - 2) My appetite is not as good as currently
  - 3) Normally, my appetite is that good
  - 4) I have no appetite
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**Total**

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- 0 - 4 No depression  
 4 - 7 Mild depression  
 8 - 15 Moderate depression  
 16 and more severe depression
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