



## Original Research

## Epidemiology and Clinical Features of Bipolar Disorder in the City of Douala (Cameroon)

### *Aspects Épidémiologiques et Cliniques du Trouble Bipolaire à Douala (Cameroun)*

Eyoum Christian<sup>1,2</sup>, Vouomene Tsowa Randol<sup>1</sup>, Halle Marie Patrice<sup>1,5</sup>, Doumbe Jacques Narcisse<sup>1,2</sup>, Basseguin Atchou Jonas<sup>1,3</sup>, Magnerou Annick Mélanie<sup>1,2</sup>, Nzesseu Djomo Aurore<sup>2</sup>, Njiengwe Erero<sup>2</sup>, Vofack Nzeuna Arnold Jauresse<sup>6</sup>, Kuate Tegueu Callixte<sup>2,4</sup>, Essomba Noel Emmanuel<sup>1,2</sup>

#### ABSTRACT

**Introduction.** Bipolar disorder (BD) is a chronic mood disorder. Its prevalence varies between 0.3 and 5% among the general population. Its most severe consequence is suicide. Data on the BD are quite limited in Africa and Cameroon. **Objectives.** The aim of this study was to identify the clinical and socio-epidemiological characteristics of bipolar disorders at the Laquintinie Hospital in Douala, Cameroon. **Methods.** We conducted a cross-sectional hospital-based analytical study of patients followed up at the Psychiatry Department of the Laquintinie Hospital in Douala, Cameroon, from 1<sup>st</sup> January to 15<sup>th</sup> April 2020. Among these patients were included those whose diagnosis of BD was made by the psychiatrist according to the DSM-V diagnostic criteria. For each patient, socio-demographic and clinical data were collected with a pre-established questionnaire. Statistical analysis was done using the 20.0 version of the SPSS software. The chi-square test was used to identify factors associated with suicide in BD patients and a  $p$ -value of  $< 0.05$  was considered significant. **Results.** During this period, 1360 patients were consulted in the Department, 91 of whom had BD, making a prevalence of 6.7% (91/1360) and 60.4% (55/91) being women. Mania was the main mode of manifestation in 85.7% (78/91) of patients. Psychological causes of the disease were attributed to 78.1% (71/91) of patients and 49.5% (45/91) had type I BD. Failure in secondary school had triggered the disease in 76.5% (26/34). 50.5% (44/91) had suicidal thoughts and 24.2% (22/91) of them had attempted suicide. No clinical or socio-demographic factors were associated with suicide attempts. **Conclusion.** BD is one of the most common pathologies observed in the Psychiatry Department, mainly affecting women, with mania being the main mode of manifestation. Suicidal tendencies were common among the latter.

#### RÉSUMÉ

**Introduction.** Les troubles bipolaires (TB) sont une pathologie chronique de l'humeur. Sa prévalence varie entre 0,3 et 5% en population générale. Le suicide en est la conséquence la plus grave. Les données sur le sujet sont rares en Afrique et au Cameroun. **Matériels et méthode.** Nous avons réalisé une étude transversale analytique en milieu hospitalier chez les patients suivis dans le service de Psychiatrie à l'Hôpital Laquintinie de Douala au Cameroun du 1<sup>er</sup> janvier au 15 avril 2020. Étaient inclus ceux dont le diagnostic de TB était posé par le psychiatre suivant les critères diagnostiques du DSM-V. Pour chaque patient, les données sociodémographiques et cliniques étaient collectées. L'analyse statistique était faite à l'aide du logiciel SPSS version 20.0. Le test de chi2 a été utilisé pour rechercher les facteurs associés au TB et une valeur  $p < 0,05$  était considérée comme étant significative. **Résultats.** Au total, 1360 patients avaient été consultés dans ce service durant cette période parmi lesquels 91 avaient un TB soit une prévalence de 6,7% (91/1360), 60,4% (55/91) étant des femmes. Le principal mode de présentation était maniaque chez 85,7% (78/91) des patients. La cause de la maladie était psychologique chez 78,1% (71/91) des patients et 49,5% (45/91) souffraient de TB de type I. L'échec scolaire au secondaire avait déclenché la maladie chez 76,5% (26/34). On retrouvait les idées suicidaires chez 50,5% (44/91) parmi lesquels 24,2% (22/91) avaient fait une tentative de suicide. Aucun facteur clinique ni sociodémographique n'était associé aux tentatives de suicide. **Conclusion.** Les TB font partie des pathologies fréquemment rencontrées dans le service de Psychiatrie, affectant majoritairement les femmes. La manie étant le principal mode de présentation. Les orientations suicidaires étaient courantes chez ces derniers.

1 Department of clinical sciences, Faculty of Medicine and pharmaceutical Sciences, University of Douala, Douala, Cameroon  
2 Laquintinie Hospital of Douala, Douala, Cameroon  
3 2th Region Military Hospital, Maroua, Cameroon  
4 Department of clinical Sciences, Faculty of Medicine and Biomedical Sciences of Yaoundé 1, Douala, Cameroon  
5 Douala General Hospital, Douala, Cameroon  
6 Faculty of Health Sciences, University of Buea, Douala, Cameroon

#### Corresponding Author

Dr Eyoum Christian  
Laquintinie Hospital of Douala, Douala, Cameroon  
Tel: (+237) 671874623  
E-mail:  
eyoumchristian1@gmail.com

**Key words:** Bipolar disorder, Prevalence, Suicide, Douala Cameroon.

**Mots clés :** Troubles bipolaires, Prévalence, Suicide, Douala Cameroon.

### HIGHLIGHTS

#### What is already known on this topic

The epidemiology of bipolar disorder is poorly known in sub-Saharan Africa. Suicide is one of the most common consequences of bipolar disorder

#### What question this study addressed

To describe the prevalence and clinical characteristics of bipolar disorders, then determine factors associated to suicide at the Laquintinie Hospital in Douala, Cameroon.

#### What this study adds to our knowledge

6.7% of patients followed in psychiatric consultation in Douala have bipolar disorder. Fifty percent of bipolar patients have had suicidal ideation.

#### How this is relevant to practice, policy or further research.

Suicide ideation should be sought thoroughly among patients with BD.

## INTRODUCTION

Bipolar disorder (BD) is a chronic mood disorder marked by the occurrence of depressive, manic, hypomanic episodes and/or mixture of it all [1]. The World Health Organization (WHO) classifies it as the seventh leading cause of disability per year of life for people aged between 15 and 44 [1]. With an estimated prevalence of between 0.3 and 5% in the general population [2-5]. In the United States of America, the prevalence was 4% in 2018 [6] and 2% in England in 2013 [7]. Meanwhile in Africa it ranged between 0.1 and 9.92% [4,8]. It is a severe disease with a high recurrence rate in nearly 60% of patients [9-15]. The complexity of the diagnosis leads to a high rate of errancy (eight years on average) [2].

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), this is actually a group of disorders that can be clinically classified into 6 categories including:

- Type I characterised by a depressive and manic episode;
- Type II characterised by a depressive and hypomanic episode;
- Cyclothymic disorder characterised by hypomanic and depressive symptoms and not meeting the diagnostic criteria for depression;
- BD associated with another medical condition
- BD due to substance abuse
- BD not belonging to any category [1,9].

In the social aspect, BD leads to family and professional instability, unjustified debts and regular incarcerations [1]. Suicide is the most severe complication recorded in BD as shown by Ayal S *et al.* Recorded 36,7% of suicide at Toronto (Canada) in 2017[16]. Latalova K *and al.* Found in the United States of America between 25 and 50% in 2014[17]. Fouilhoux. N *and al.* had a prevalence varying between 50 to 80% linked to suicide in BD in France[18]. In Nigeria and Ethiopia in 2015, Oluyomi E *and al.* had a proportion of 8,1% in males and 5,4% in females [15].

The aims of this work were to determine the prevalence of BD, determine de clinical characteristics of the later and

research factors associated to suicide among this subjects at the Laquintinie Hospital in Douala, Cameroon.

## METHODS

### Study design

We carried out a cross-sectional analytical study to determine the socio-epidemiologique aspects of bipolar disorders in the Psychiatry Department of the Laquintinie Hospital Douala (HLD).

### Study setting

Laquintinie Hospital Douala (HLD) is a 2<sup>nd</sup> level reference health facility created in 1931 located at the heart of the Akwa neighbourhood in the Deido health District, receiving patients from Cameroon and from CEMAC sub-region countries. The psychiatric department is bordered on it's sides by the physiotherapy unit, the KADO supermarket and in front by the nephrology unit. It is settled in 03 buildings:

- One building for hospitalisation ward
- One building for offices and consultations
- One building for secured isolations (cabanon)

With a total capacity of 35 beds, the service count 15 personnels among which 01 psychiatrist, 01 general practitioner, 09 nurses, 01 assistant nurse, 01 secretary, 01 security guard and 02 service agents. On average per month, 300 patients are received as outpatients and 67 hospitalisations. And each year the department records about 5 deaths.

### Ethical consideration

The ethical committee of the University of Douala approved this study; equally, administrative authorisation was obtained at the Douala Laquintinie Hospital. For each participant, an informed consent was signed before participating. We read and explain the consent to those who could not read. No personally identifiable information was collected.

### Participants

After obtaining all the necessary authorisations, we selected patients among those being followed up in the department from 1<sup>st</sup> January to 15<sup>th</sup> April 2020 (3 months and 2 weeks). Among these patients, were consenting patients followed for BD without any other associated psychiatric pathology. The sampling method was consecutive. Participants were obtained by 03 means: outpatient for newly diagnosed cases; inpatient and after phone invitation of former patients to visit the hospital. The consultant psychiatrist, according to DSM-V criteria [1], made BD diagnosis.

### Variables

Data was collected from the patient or in the presence of a carer, and information related to the BD were recorded. These informations included :

- Socio-demographic features (age, gender, occupation, monthly income, marital status, region of origin, area of residence, religion, rank among siblings, companion, level of education, indebtedness, rape, bereavement, divorce, job loss, incarceration, huge loss, accident, relocation, illness of a relative, refugee, failure in school);

- Clinical features: mode of manifestation at the hospital (mixed mode, mania and depression), personal history of psychiatric disorder, suicidal thoughts, suicide attempts, depressive symptoms, manic symptoms, hypomania, date of diagnosis, duration of pathology, number of recurrences, interval between attacks, age of first attack, cause as perceived by the patient;
- Personal history of drug use, family history of psychiatric disorders;
- Current treatments (thymoregulators, antidepressants, neuroleptics, psychotherapy, psychoeducation, auto-medication, phytotherapy, religious treatment).
- The independent variable was suicide attempt

### Data source and measurement

#### Data collection tool

A structured questionnaire established for the purpose of this study was used to obtain informations.

#### Data collection

Sociodemographic, clinical features, personal history of drug use, current treatment and information on suicide were recorded with the questionnaire registered on an android application, Open Data Kit collect (ODK collect). A final year medical student member of the research team collected this data through a face-to-face interview with the patient or together with the care taker. The data was then downloaded and merged into a data base using statistical package for social sciences (SPSS) version 20.0. the database has been stored in a password-protected computer. Further cleaning and analysis was done using the same software.

The chi-square test was used to identify factors associated with suicide in BD patients with a 95% confidence interval, and a p-value < 0.05 considered statistically significant.

### Sample size

The consecutive sampling method was used and our minimal sample size calculated using the Lorentz formula:  $N = [Z^2 \times (pxq)] / m^2$

Where:

N = Minimal sample size

Z = Confidence interval of 95%

P = prévalence of the pathology. Haven noticed a low prevalence in Nigeria and Ethiopie, 1,6%, we considered the prevalence of a similar study in India which was at 6,9%

m = margin of error at 5% (0,05)

q = 1-p, that is 0,88

After calculation,  $N = [1,96 \times 1,96 \times 0,069 \times 0,88] / 0,05^2 = 94$  patients

### Data analysis

To assure good quality results, the investigator strictly followed selection criteria. Analysis were performed using SPSS 20.0, the dependent variable was suicide and independent variable included some sociodemographic variables as age, sex. Descriptive analysis was run,

numbers and frequencies were reported. For age, we calculated the mean and range. Analytical statistics was conducted to measure associations between dependent and independent variables with significant association in bivariate analysis considered when  $p < 0.05$ . Those significant in bivariate were included in multivariate.

### Bias

Barrier languages and collecting data from the caretaker could be a source of bias for quality data.

## RESULTS

### Participants

Upon completion of this work, we expected 94 participants with regard to the minimum sample size, we had 91 participants out of 1360 patients received at the Psychiatry Department throughout the collection period, making a prevalence of 6.7%.

### Socio-demographic features

The mean age was  $39.5 \pm 12.2$  years, and 56% (51/91) were aged between 20 and 40 years. The female/male sex ratio was 1.52. Most of them lived in urban areas that is 93.4% (85/91) and 59.3% (54/91) were single. Many were enrolled in school, with 49.5% (45/91) of patients having attended university. The monthly income for 67.0% (61/91) was less than 50 000 CFA francs (**Table 1**).

**Table 1 : Socio-demographic features of study participants in the Psychiatric unit of the Douala Laquintinie Hospital, from January 1<sup>st</sup> to April 15<sup>th</sup>. (N=91)**

	Total population	Percentage
<b>Total population</b>	91	100
<b>Age</b>		
Mean age in year (SD)	39.5 ±12.2	/
Age range (years)		
]0 – 20]	2	2.2
]20 – 40]	51	56
]40 – 60]	35	38.5
> 60	3	3.3
<b>Gender</b>		
Male	36	39.6
Female	55	60.4
<b>Area of residence</b>		
Rural	6	6.6
Urban	85	93.4
<b>Occupation</b>		
Employed	14	15.4
Self-employed	76	84.6
<b>Marital Status</b>		
Widow/Widower	2	2.2
Divorced	5	5.5
Married/Cohabitation	30	33.0
Single	54	59.3
<b>Level of education</b>		
Not in school	1	1.1
Primary	7	7.7
Secondary/High school	38	41.8
<b>University</b>	45	49.5
<b>Monthly income (in CFA francs)</b>		
< 50 000	61	67.0
50 000 – 100 000	17	18.7
100 000 – 150 000	5	5.5
> 150 000	8	8.8

### Clinical data

Concerning the clinical analysis (**Table 2**), the majority 49.5% (45/91) suffered from type I BD, against 8.8% for

type II (8/91). 39.6% (36/91) had begun the disease between the ages of 21 and 30. A psychological cause was attributed to 78.1% (71/91) of our study population. The mean interval between two attacks was 143.6 weeks (standard deviation 128) and for 43.1% (19/44) there was a family history of BD.

Major triggers included failure in high school in 76.5% (26/34) of patients, father's death in 48.3% (15/31), rape in 88.9% (8/9), job loss for >12 months in 92.9% (13/14), and love relationship break-up for >12 months in 96.2% (25/26) of patients.

Among these patients, 36.4% (16/44) had frequent suicidal thoughts and of those who had attempted suicide, 50% (22/44) had made at least one attempt. Tobacco was the most used substance among these last 41.7% (5/12).

**Table 2: Clinical features of study participants in the Psychiatric unit of the Douala Laquintinie Hospital, from January 1<sup>st</sup> to April 15<sup>th</sup>.**

	Total population (N = 91)	Percentage (%)
<b>Mode of manifestation</b>		
Mania	78	87.7
Depression	13	14.3
<b>Type of Bipolar disorder</b>		
Type I	45	49.5
Type II	8	8.8
Cyclothymia	12	13.2
*other types	26	28.6
<b>Age of the start of the disease</b>		
Average in years (SD)	26.3 (14.00)	
] 0-10]	1	1.1
] 11-20]	29	31.9
] 21-30]	36	39.6
] 31-40]	14	15.4
] 41-50]	5	5.5
> 60 years	2	2.2
<b>Cause of the disease</b>		
Psychological	71	78.1
Spiritual	18	18.7
Biological	1	1.1
Traditional	1	1.1
<b>Interval between crisis (in the week)</b>		
Mean in wks (DS)	143.6±128	/
] 1 – 100]	45	49.5
] 100 – 200]	23	25.3
] 200 – 300]	11	12.1
] 300 – 400]	4	4.5
] 400 – 500]	2	2.3
] 500 – 600]	2	2.3
] 600 – 700]	0	0
> 700	1	1.1
<b>Family history of psychiatric disorder (N=44)</b>		
Bipolar disorders	19	43.1
Mania	8	18.1
Depression	7	15.0
Schizophrenia	7	15.0
Unknown	2	4.5
Mystical-religious disorders	1	2.2
Autism	1	2.1

\* Other types: BD due to another medical condition, BD due to substance abuse, BD not categorised elsewhere. SD: Standard Deviation

**Table 2 (continuation)**

Triggering factors for BD	Population	Percentage (%)
<b>Failure at school (N=34)</b>		
Secondary/High school	26	76.5
University	8	23.5
<b>Bereavement (N=31)</b>		
Father	15	48.3
Siblings	5	16.1
*Others	4	12.9
Mother	3	9.7
Child	2	6.5
Spouse	2	.5
<b>Rape (N=9)</b>		
Stranger	8	88.9
Cousin	1	11.1
<b>Job loss (N=14)</b>		
> 12 months	13	92.9
< 12 months	1	7.1
<b>Relationship break-up (N=26)</b>		
> 12 month	25	96.2
< 12 month	1	3.8
<b>Suicidal thoughts (N=44)</b>		
Frequent	16	36.4
Rare	28	63.6
<b>Suicide attempts (N=22)</b>		
1 times	11	50
2 times	2	9.1
3 times	1	4.5
> 3 times	8	36.4
<b>Substance use (N=12)</b>		
Tobacco	5	41.7
Cannabis	4	33.3
Alcohol	3	25

\* Other : 04 friends

Some of the characteristics that exposed respondents to the risk of suicide were identified, but there was no significant statistical association in the logistic regression (**Table 3**).

## DISCUSSION

### Key results

The general objective of our work was to identify the clinical and socio-epidemiological features of bipolar disorders at the Laquintinie Hospital, Douala. Results show that the prevalence of BD in the Psychiatric Department at the Laquintinie Hospital was 6.7% (91/1360). That mania was the mode of manifestation in 85.7% of the patients, and that 49.5% of the said bipolar patients had type I BD. The mean age of the start of the disease was 26.3±14 years. A family history of BD was observed in 19 patients meanwhile a psychological cause was detected in 78.1% (71) of the patients. Suicidal thoughts were observed in 44 out of 91 patients with BD and the prevalence of suicide attempts was 24.5% (22/91). At the end of this study, we had an overall prevalence of 6.7% of bipolar disorders at the Laquintinie Hospital, Douala. Merikangas et al. obtained a lesser percentage of 2.4% in 2011 in a general population study conducted in 11 countries of America, Asia and Europe [19,20]. Our prevalence is higher than the 0.9% and 0.20% gotten in 2017 and 2020 by Zhang et al. in China, and 0.6 by Leclerc et al. in Quebec in 2017 [21-23]. The fact that our study was carried out in a psychiatric department only, whereas in China the study was carried out among the general population, could explain this major difference.



**Table 3: Factors related to suicide within the study participants in the Psychiatric unit of the Douala Laquintinie Hospital, from January 1<sup>st</sup> to April 15<sup>th</sup>.**

Variable		Total population n (%)	Suicide attempts N=22		OR (CI at 95%)	p-Value
			Yes (%)	No (%)		
Gender	Female	55 (100)	14 (25.5)	41 (74.5)	0.837 (0.310 – 2.258)	0.725
	Male	36 (100)	8 (22.2)	28 (77.8)	1.195 (0.443 – 3.225)	
Age (in years)	]21 - 40]	51 (100)	16 (31.4)	35 (68.6)	0.386 (0.135 – 1.103)	0.076
	]41 - 60]	35 (100)	6 (17.2)	29 (82.8)	1.933 (0.675 – 5.541)	
Marital status	Single	54 (100)	12 (22.2)	42 (77.8)	1.296 (0.492 – 3.414)	0.599
	Divorced	10 (100)	10 (100)	0	0.490 (0.182 – 1.315)	
Area of residence	Urban	85 (100)	21 (24.7)	64 (75.3)	0.610 (0.067 – 5.517)	0.066
	Rural	6 (100)	1 (16.7)	5 (83.3)	1.641 (0.181 – 14.849)	
Occupation	Self-employed	76 (100)	21 (27.6)	55 (72.4)	0.205 (0.025 – 1.667)	0.138
	Employed	14 (100)	1 (7.2)	13 (92.8)	4.875 (0.600-39.606)	
Monthly income (CFA francs)	< 50 000	61 (100)	5 (27.9)	25 (72.1)	0.518 (0.170 – 1.573)	0.246
	50 000-100 000	17 (100)	16 (94.1)	1 (5.9)	2.371 (0.275 -20.414)	
	> 150 000	8 (100)	1 (12.5)	7 (87.5)	1.045 (0.302 – 3.610)	
Level of education	University	45 (100)	12 (26.7)	33 (73.3)	0.764 (0.292 – 2.001)	0.584
	Secondary/High school	38 (100)	9 (23.7)	29 (76.3)	1.047 (0.395 – 2.777)	
	Primary	7 (100)	1 (14.3)	6 (85.7)	2.000 (0.227 – 17.584)	
Rape		9 (100)	2 (22.2)	7 (77.8)	0.994 (0.176 – 5.629)	0.995
Bereavement		31 (100)	6 (19.4)	25 (80.6)	0.685 (0.222 – 2.113)	0.511
Divorce		26 (100)	4 (15.4)	22 (84.6)	0.429 (0.123 – 1.498)	0.185
Failure at school		34 (100)	10 (29.4)	24 (70.6)	1.561 (0.577 – 4.375)	0.397

This result is also higher than the 0.1 to 1.83% gotten by Esan et al. in a systematic review of publications in Africa on the subject in 2016 [14].

This result is close to the 4.3% gotten in 2016 by Kim et al. in South Korea, the 5% of Ketter et al. in the USA in 2010 and the 9.92% in Morocco in 2010 [23,24].

Our study population was mainly composed of youths with an average age of 39.55 years, and 51 (56%) patients were in the age range of 20 to 40 years. In Ethiopia, Negash et al. reported an average of 29.5 years in their work; Ihsane et al. in Marrakech in 2010 reported an average of 31.87 years and, Fagbamigbe et al. in 2017 in Nigeria reported an average of 32.92 years [12,13,24]. This age is lower than the 50.6 years reported by Carvalho et al. in 2012 in France and the 47 years reported by Llorca et al. in France in 2013 [25,26]. The youthfulness of the African population as compared to the European population could account for this difference.

The female gender was more representative of our study population with 60.4%, for a female to male sex ratio of 1.52. This majority had been reported in 2015 by Hirneth et al. in Australia with a sex ratio of 2.5 and 1.4 in France by Llorca et al. in 2013 [25,27]. These results were different from the 1.2 in favour of men gotten by Negash et al. in Ethiopia and 1.02 gotten by Zhang et al. in China in 2017 [12,28]. The sex ratio in our results makes us wonder whether there might be a factor favouring the presence of more women in our sample; the hypothesis of a more representative representation of women in the samples of depressed patients could perhaps justify these results.

### Interpretation

We found the manic mode of manifestation in 85.7% (78) of patients. This is close to the 77.3% reported in Butajira by Negash et al. but higher than the 25% reported by Ihsane in Marrakech in 2010 [12,24]. With regards to the type of bipolar disorder, 49.5% and 8.8% of patients were of types I and II respectively. This result is close to the 58% for type I, but much lower than the 42% for type II

reported in 2012 by Carvalho et al. in France. In Marrakech, Ihsane found 91% of the population to be type I, 7% type II and 2% type III [24,26].

We note the frequent occurrence of type I BD compared to the others. Rowland et al. in 2018 had 1.06% and 1.57% for types I and II respectively in a meta-analysis done in North and South America. [22, 28-30]. This difference in proportion can be explained by the difference in methodology, our sample being intra-hospital.

The mean age of start of the disease was 26.3 years and 71.5% had begun the disease between 11 and 30 years. This result is close to that of Rowland et al. who had an age range of 20-30 years and that of Ihsane et al. who had 57% with disease start before the age of 25 [24,26]. The age of the start of the disease cannot be exactly defined because the diagnosis is very often made at a late stage. However, it can be said that the start of the disease is at the age of the young adult.

An interictal interval (interval between attacks) of 1 to 100 weeks was gotten in 49.5% of our sample. This is close to the results of Fagbamigbe et al. in Nigeria in 2017 who found 87 ( $\pm 4$ ) weeks for mania and 82 ( $\pm 4$ ) weeks for depression [13]. A family history of psychiatric pathology was present in 42 patients in our series, of whom 42.2% had BD and 15.5% had schizophrenia; Carvalho et al. obtained similar results in France in 2012, i.e. 48.3% of BD and 10.0% of schizophrenia in the families concerned. However, Ihsane et al. in Marrakech reported just 4% and 2% respectively of BD and schizophrenia and up to 20% of unspecified diseases [24,26].

Psychological stress was a factor associated with the disease in 78.1% of patients, followed by said spiritual factors in 18.7%. This result is in line with that of Rouillon et al. who identified poor psycho-affective quality of life and tragic events to be the main cause of the disease [18]. In the current literature, psycho-trauma and affective disorders are identified as triggering mechanisms for the disease [31].

Suicidal thoughts were expressed by 50.5% of the patients, 36.4% of whom had frequently had such thoughts. 24.2% of these patients had already made a suicide attempt. In the studies conducted so far, it has been noted that suicide mortality in the group of patients with BD is higher than in other psychiatric diseases and that this risk is 10 to 30 times higher compared to the general population [15,32]. Several studies indicate that 90% of people who attempt suicide and/or commit suicide suffer from at least one other mental pathology that is often unknown, untreated and/or under-treated and occurs in 56 to 87% of cases during depressive episodes. In the work of Gonda *et al.* in 2012, about 1/3 of patients have suicidal thoughts and half of bipolar patients are liable to make at least one suicide attempt in their lifetime [32,33], which is comparable to our results. The results of several individual studies and meta-analyses in the literature show us a frequency of suicide attempts varying between 13.1% and 36% between 2010 and 2016 [15,20,33-39]. These results are in line with those reported in our work.

Being between 41 and 60 years of age, celibacy, and living in a rural area were considered to be at high risk of suicide attempts without a statistically significant association ( $p=0.220$ ). In the literature review, early age of the start of the disease (<19 years), gender, are statistically associated with suicide attempts [16,39]. Duration of illness and treatment were not associated with suicide attempt ( $p=0.133$ ).

In contrast, having type II BD increased the risk of making suicide attempts. These results differ from those of some authors in the literature review [16,39].

#### Limitations

The limits of our study could be related to the fact not only that it does not concern an entire year, but also that it is about the experience of a single hospital.

#### Generalisability

Given the fact that it is an experience of one hospital, these results can't be generalised on a larger scale

#### CONCLUSION

Among the patients followed up at the Psychiatric Department of the Laquintinie Hospital Douala during the period of our study, one out of fifteen suffered from BD; women were predominantly represented. The mode of manifestation was manic in nine out of ten patients and of type I in almost half of the patients. The mean age of the start of the disease was  $26\pm 14$  years and one out of five patients had a family history of BD. Half of the patients had suicidal thoughts and a quarter had made at least one suicide attempt.

#### Conflict of interest

The authors declare no conflict of interest

#### Author's contributions

Eyoum Christian: Data collection and article writing  
 Vouomene Tsowa Randol: Data collection and article writing  
 Halle Marie Patrice: Article writing, supervision and proofreading  
 Doumbe Jacques Narcisse: Article design and supervision

Basseguin Atchou Jonas: Data collection, Proofreading  
 Vofack Nzeuna Arnold jauresse: data collection, Proofreading

Magnerou Annick Mélanie: Proofreading

Nzesseu Djomo Aurore: Proofreading

Njiengwe Erero: Proofreading

Essomba Noel: Supervision, Proofreading

Kuate Tegueu Callixte: Model design, Supervision, Proofreading

#### REFERENCES

- Bourgeois M-L. Les troubles bipolaires. Lavoisier; 2014. 656 p.
- Reich M, Kotecki N. Les troubles bipolaires en oncologie : caractéristiques et prise en charge. *Bull Cancer (Paris)*. 2017;104(5):442-51.
- Carvalho W, Nuss P, Blin P, Arnaud R, Filipovics A, Loze J-Y, *et al.* Caractéristiques sociodémographiques et cliniques des patients souffrant de troubles bipolaires suivis en ambulatoire en France métropolitaine. *L'Encéphale*. 2012;38(3):211-23.
- Esan O, Esan A. Epidemiology and burden of bipolar disorder in Africa: a systematic review of data from Africa. *Soc Psychiatry Psychiatr Epidemiol*. 2016;51(1):93-100.
- Geoffroy PA, Fovet T, Micoulaud-Franchi J-A, Boudebessé C, Thomas P, Etain B, *et al.* Luminothérapie et épisodes dépressifs saisonniers du trouble bipolaire. *L'Encéphale*. 2015;41(6):527-33.
- McCormick U, Murray B, McNew B. Diagnosis and treatment of patients with bipolar disorder: A review for advanced practice nurses. *J Am Assoc Nurse Pract*. 2015;27(9):530-42.
- Rowland TA, Marwaha S. Epidemiology and risk factors for bipolar disorder. *Ther Adv Psychopharmacol*. 2018;8(9):251-69.
- Besnier N, Fakra E, Kaladjian A, Adida M, Maurel M, Azorin J-M. Premier épisode dépressif d'un trouble bipolaire : aspects cliniques et pronostiques. *L'Encéphale*. 2010;36:S18-22.
- Phillips ML, Kupfer DJ. Bipolar disorder diagnosis: challenges and future directions. *Lancet Lond Engl*. 2013;381(9878):1663-71.
- pubmeddev, FM MJ and L. Bipolar disorder: clinical overview. - PubMed - NCBI
- Lima IMM, Peckham AD, Johnson SL. Cognitive deficits in bipolar disorders: Implications for emotion. *Clin Psychol Rev*. 2018; 59 :126-36.
- Negash A, Alem A, Kebede D, Deyessa N, Shibre T, Kullgren G. Prevalence and clinical characteristics of bipolar I disorder in Butajira, Ethiopia: a community-based study. *J Affect Disord*. 2005;87(2-3):193-201.
- Fagbamigbe AF, Makanjuola VA. Modeling association between times to recurrence of the different polarities in bipolar disorder among service seekers in urban Nigeria: a survival analysis approach. *Neuropsychiatr Dis Treat*. 2017;13:1967-74.
- Rouillon F. Épidémiologie du trouble bipolaire. *Ann Med-Psychol Rev Psychiatr*. 2009;167(10):793-5.
- Schaffer A, Weinstock LM, Sinyor M, Reis C, Goldstein BI, Yatham LN, *et al.* Self-poisoning suicide deaths in people with bipolar disorder: characterizing a subgroup and identifying treatment patterns. *Int J Bipolar Disord*. 2017;5(1):16.
- Latalova K, Kamaradova D, Prasko J. Suicide in bipolar disorder: a review. *Psychiatr Danub*. 2014;26(2):108-14.
- Fouilhoux N. Troubles bipolaires et suicide. *L'Encéphale*. 2006;32(3, Part 2):6-9.
- Rouillon F. Épidémiologie du trouble bipolaire. *Ann Méd-Psychol Rev Psychiatr*. 2009;167(10):793-5.

19. Rowland TA, Marwaha S. Epidemiology and risk factors for bipolar disorder. *Ther Adv Psychopharmacol*. 2018;8(9):251-69.
20. Merikangas KR, Jin R, He J-P, Kessler RC, Lee S, Sampson NA, *et al*. Prevalence and Correlates of Bipolar Spectrum Disorder in the World Mental Health Survey Initiative. *Arch Gen Psychiatry*. 2011;68(3):241-51.
21. Leclerc J, Lesage A, Rochette L, Huynh C, Pelletier É, Sampalis J. Prevalence of depressive, bipolar and adjustment disorders, in Quebec, Canada. *J Affect Disord*. 2020;263:54-9.
22. Zhang Y-S, Rao W-W, Zeng L-N, Lok GKI, Cui L-J, Li J-F, *et al*. Prevalence and correlates of bipolar disorder in the adult population of Hebei province, China. *J Affect Disord*. 2020;263:129-33.
23. Kim J-H, Chang SM, Hong JP, Bae JN, Cho S-J, Hahn B-J, *et al*. Lifetime prevalence, sociodemographic correlates, and diagnostic overlaps of bipolar spectrum disorder in the general population of South Korea. *J Affect Disord*. 2016;203:248-55.
24. Ishane El Abbas. *Les Troubles Bipolaires Chez L'adulte*. [Faculté de Médecine et Pharmacie de MARRAKECH]: Université Cadi Ayyad; 2010.
25. Llorca P-M, Camus V, Courtet P, Gourion D, Lukasiewicz M, Coulomb S. Caractéristiques et modalités de prise en charge des patients présentant un trouble bipolaire en France : enquête MONTRA. *L'Encéphale*. 2013;39(3):212-23.
26. Carvalho W de, Nuss P, Blin P, Arnaud R, Filipovics A, Loze J-Y, *et al*. Caractéristiques sociodémographiques et cliniques de patients souffrant de troubles bipolaires suivis en ambulatoire en France métropolitaine. /data/revues/00137006/v38i3/S0013700612000735/ [Internet]. 2012
27. Hirneth SJ, Hazell PL, Hanstock TL, Lewin TJ. Bipolar disorder subtypes in children and adolescents: Demographic and clinical characteristics from an Australian sample. *J Affect Disord*. 2015; 175:98-107.
28. Zhang L, Cao X-L, Wang S-B, Zheng W, Ungvari GS, Ng CH, *et al*. The prevalence of bipolar disorder in China: A meta-analysis. *J Affect Disord*. 2017;207:413-21.
29. Ketter, terrence. *Diagnostic Features, Prevalence, and Impact of Bipolar Disorder* [Internet]. 2010
30. Clemente AS, Diniz BS, Nicolato R, Kapczinski FP, Soares JC, Fermo JO, *et al*. Bipolar disorder prevalence: a systematic review and meta-analysis of the literature. *Rev Bras Psiquiatr Sao Paulo Braz* 1999. 2015;37(2):155-61.
31. Haustgen T. *Les troubles bipolaires*, M.-L. Bourgeois, C. Gay, C. Henry, M. Masson, editors. Médecine Sciences Publications, Lavoisier, Paris (2014). /data/revues/00137006/v40i5/S0013700614001146/ [Internet]. 2014
32. Gonda X, Pompili M, Serafini G, Montebovi F, Campi S, Dome P, *et al*. Suicidal behavior in bipolar disorder: Epidemiology, characteristics and major risk factors. *J Affect Disord*. 2012 ;143(1):16-26.
33. Clements C, Morriss R, Jones S, Peters S, Roberts C, Kapur N. Suicide in bipolar disorder in a national English sample, 1996-2009: frequency, trends and characteristics. *Psychol Med*. 2013;43(12):2593-602.
34. González-Pinto A, Barbeito S, Alonso M, Alberich S, Haidar MK, Vieta E, *et al*. Poor long-term prognosis in mixed bipolar patients: 10-year outcomes in the Vitoria prospective naturalistic study in Spain. *J Clin Psychiatry*. 2011;72(5):671-6.
35. De Abreu LN, Nery FG, Harkavy-Friedman JM, de Almeida KM, Gomes BC, Oquendo MA, *et al*. Suicide attempts are associated with worse quality of life in patients with bipolar disorder type I. *Compr Psychiatry*. 2012;53(2):125-9.
36. Stange JP, Sylvia LG, da Silva Magalhães PV, Miklowitz DJ, Otto MW, Frank E, *et al*. Extreme attributions predict suicidal ideation and suicide attempts in bipolar disorder: prospective data from STEP-BD. *World Psychiatry Off J World Psychiatr Assoc WPA*. 2014;13(1):95-6.
37. Sala R, Goldstein BI, Morcillo C, Liu S-M, Castellanos M, Blanco C. Course of comorbid anxiety disorders among adults with bipolar disorder in the U.S. population. *J Psychiatr Res*. 2012;46(7):865-72.
38. Ryu V, Jon D-I, Cho HS, Kim SJ, Lee E, Kim EJ, *et al*. Initial depressive episodes affect the risk of suicide attempts in Korean patients with bipolar disorder. *Yonsei Med J*. sept 2010;51(5):641-7.
39. Schaffer A, Isometsä ET, Tondo L, Moreno DH, Sinyor M, Kessing LV, *et al*. Epidemiology, neurobiology and pharmacological interventions related to suicide deaths and suicide attempts in bipolar disorder: Part I of a report of the International Society for Bipolar Disorders Task Force on Suicide in Bipolar Disorder. *Aust N Z J Psychiatry*. sept 2015;49(9):785-802.