

Research Article

Epidemiology Profile and Associated Factors of Depression in Chronic Kidney Disease Stage 3-5 and Chronic Haemodialysis Patients in Cameroon

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Abstract

Background: Depression is reported to be frequent in patients with chronic kidney disease and end stage kidney

in high income countries. Little is known about depression in low income area such as Sub-Saharan Africa.

Objective: Describe the epidemiology and factors associated with depression in patients with chronic kidney disease and in chronic haemodialysis in Cameroon.

Methodology: We conducted a cross sectional study for 3 months in 2 nephrology services. Patients older than 18 years with CKD stage 3-5 and those on chronic haemodialysis who accepted to participate in the study were included. Depression was diagnosed using Beck Depression Inventory – Short Form (BDI -SF). A cut-off score ≥ 8 was used to diagnose depression.

Results: Of the 196 patients included, 69 patients had CKD patients and 127 were on maintenance haemodialysis. Overall, depression was found in 40% (n=78) participants. Depression was less frequent in patients with CKD stage 3-4 (26%, n=12) and those who initiated dialysis ≤ 6 months (27%, n=6). Single/widow, unemployment, chronic pain and negative feeling about socio-familial life were common among depressed participants. Absence of chronic pain (OR 0.41[0.19-0.88], p=0.022), been socially active (OR 0.35[0.16-0.8], p=0.012) and good relationship with the spouse (OR 0.25[0.06-0.95], p=0.042) were independent factors associated with depression.

Conclusion: Depression is frequent in chronic kidney disease and haemodialysis patients in Cameroon, affecting 2 patients out of 5. Socio-demographic factors seem to be the main contributors. Psychological support should be proposed to these patients, especially among those who should initiate dialysis and with long haemodialysis stay.

Keywords: Depression; Chronic kidney disease; Haemodialysis; Sociodemographic factor

Abbreviation: CKD-chronic kidney disease; ESRD-end stage renal disease; BDI-SF-Beck Depression Inventory, HIV-human immunodeficiency virus, KDIGO-Kidney Disease: Improving Global Outcome, IQR-25th 75th interquartile rate; OR-odds ratio

1. Introduction

Depression is a mood disorder of more than 2 weeks, characterized by persistent sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration [1]. It is a devastating condition affecting the patient and his whole family. Depression negatively impacts all aspects of life, including performance at school, productivity at work, relationships with family and friends, quality of life and ability to participate in the community. It is also the major contributor to suicide deaths [1]. Depression is a worldwide public health issue with 322 million of people living with depression worldwide giving an estimated prevalence of 4.4% [1]. It is the 1st leading contributor to non-fatal health loss in the world with over 50 million Years Lived with Disability (YDL)-[1].

Depression is common in chronic illness and it is highly prevalent in patients with chronic kidney disease (CKD) and end stage renal disease (ESRD) [2-3]. The high burden of depression in such conditions may be due to several factors. The psychological stress of having an illness that affects future morbidity and mortality may lead to depression, especially among patients with CKD prior to the initiation of dialysis. The increased burden of self-care related to CKD and ESRD, including frequent clinic and hospital visits, dietary restrictions, increased pill burden, and home monitoring of glucose, blood pressure, and weight, may also increase the risk of depression [4]. Physical symptoms due to CKD complications (anaemia,

bone and mineral disorders, uraemia) and comorbidity (heart failure, stroke, HIV) contribute also to mental distress and depression. Other factors associated with depression in CKD or ESRD also included younger age, female gender, lower education or family income, unemployment, longer duration of dialysis, and comorbid conditions such as diabetes, cerebrovascular disease and peripheral vascular disease [5-6]. Poor outcome is observed in CKD or ESRD patients with depression and included impaired quality of life, increased number of emergency department visits, hospitalisations, cumulative hospital days, cardiovascular events, withdrawal from dialysis and suicide [7-14]. Accelerated kidney function decline and acute kidney injury episode have also been associated to depression in patient with CKD [6].

CKD is frequent in Sub-Saharan Africa with an overall prevalence of 10.7 to 15.8% [15]. Most CKD and ESRD patients remain undiagnosed, untreated, and die since access to dialysis is limited by insufficient infrastructures and catastrophic out-of-pocket costs [16]. Although the burden of depression in such condition may be high, few data are available. Some studies in West Africa reported a high prevalence of depression among haemodialysis ESRD patients ranging between 24 to 86%. [17-19] but little is known about depression in CKD. In Cameroon, 13.2% of the population may be affected by CKD [20] and the number of ESRD in haemodialysis is estimated to be more than 1000 patients. Haemodialysis is the only renal replacement treatment available and it is associated with high mortality rate [21]. Although partially funded, haemodialysis is very expensive for patients with an estimated annual cost of 13,581 \$ per patient [22]. CKD management is also associated with high cost as no fund is available and comorbidities like hypertension, diabetes and HIV are common. Late referral is also usual and most

patients initiated dialysis as emergencies without any prior preparation [21]. Moreover, CKD and ESRD mainly affect young adult and frequently lead to loss of employment, familial drama, poor quality of life and psychological distress. Thus, depression may be common, and difference may exist between CKD and haemodialysis patients. We sought to describe the epidemiology and factors associated with depression in CKD stage 3-5 and chronic haemodialysis patients in Cameroon.

2. Material and Method

2.1 Study design

We conducted a cross sectional study for 3 months (1st January to 31st march 2019) in 2 tertiary hospitals in Cameroon, both with haemodialysis facilities. The Douala General Hospital is located in the economic capital of the country and it is the main tertiary hospital of the country. The nephrology services is has by 2 nephrologists and many activities including haemodialysis, outpatients and inpatient consultations. It is the main nephrology reference centre of the littoral region and the sole public haemodialysis facility of the region. The haemodialysis unit is the biggest and oldest haemodialysis facility of the country. In 2019, 223 haemodialysis ESRD patients were registered in the centre. Outpatient clinic is located near the haemodialysis unit and it is open from Monday to Friday with more than 500 consultations per months. The Yaounde Teaching Hospital is located in the political capital of Cameroon. It is the teaching hospital of the faculty of medicine of the University of Yaounde 1. The nephrology service is held by 3 nephrologists. It has a hemodialysis unit, an outpatient consultation as well as inpatient care. It is one of the main nephrology reference center and one of the two public hemodialysis facilities of the Center region. In 2019, the center registered 125 hemodialysis ESRD patients. Outpatient consultations are

available from Mondays to Fridays in the outpatient department of the hospital with more than 300 monthly nephrology consultations.

2.2 Participants

CKD stage 3-5 and chronic haemodialysis patients older than 18 years who accepted to participate in the study were all included. Patients with known psychiatric disorders and kidney transplanted patient were excluded. CKD and haemodialysis patients were both divided into 2 groups: CKD stage 3-4 and non-dialysis CKD stage 5; haemodialysis patients for 6 months or less and haemodialysis patients for more than 6 months.

2.3 Methods

The participants were interviewed prior their medical visits or after the haemodialysis session by a trained interviewer. The 2012 classification was used to diagnose and classify CKD. Depression was evaluated using the Beck Depression Inventory - Short Form (BDI -SF), which consists of 13 items that evaluate depressive symptoms, with each question being scored from 0 to 3. The BDI is a well validated and extensively used instrument for the assessment of depression in patients with CKD [5]. A cut-off score ≥ 8 was used to diagnose depression. Hamilton Anxiety Rating Scale was used to evaluate anxiety symptoms. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). A cut-off score >20 was used to diagnose anxiety. Socio-demographic data, informations about CKD and haemodialysis, clinical and laboratory variables were collected during the interview and by using medical records. Participants were also questioned on their family, social and professional life.

2.4 Statistical analysis and ethical issues

Analysis of the data was performed using SPSS version 22. Continuous data was summarized as mean or median as appropriate, while qualitative data was presented as percentages. Chi-square was used to compare qualitative data among group patient and p-value was defined as <0.05 . Phi or Cramer coefficients were used to measure the strength of association between quantitative variable when Chi-test was significant. For quantitative data, the independent t test was used to compare means if the distribution was normal, and the non-parametric Mood's median test was used to compare median if the distribution was non-normal. The study was approved by the Ethic Committee for human research of the University of Douala. As such, ethical principles such as respect for persons, beneficence and confidentiality were observed.

3. Results

Of the 279 patients we meet, 71 refused to participate and 12 had known psychiatric disorders. A total of 196 patients were included with 69 CKD patients and 127 haemodialysis patients. The sex ratio was 0.98 with 49.5% (n=97) of male. The Median age was 43 [25th-75th Interquartile Rate (IQR) 56-30] years. Overall, depression was found in 40% (n=78) participants. Depression was less frequent in patients with CKD stage 3-4 (26%, n=12) and those who initiated dialysis ≤ 6 months (27%, n=6) - Table 1.

Single/widow participants were more depressed than married participant especially among CKD stage 3-4 participants -Table 2. Unemployment was common (72%, n= 141) and most of the participants with depression were unemployed (depression: 87.2% n= 68 Vs absence of depression: 62%, n=73, p <0.001). Association between unemployment and depression was strong among CKD

stage 5 participants (Phi coefficient =0.52). Chronic pain was more common among depressed participants (depression: 57.7%, n=45 Vs absence of depression: 26.3%, n= 31; p<0.001, Phi coefficient =0.31) as well as anxiety (depression: 63%, n=49 Vs absence of depression: 40.7%, n= 48; p<0.001, Phi coefficient =0.21). Negative feeling about socio-familial life were also common in

depressed participants, including rejection by the family, abandon/rejection by the spouse, absence of sexual activities and loss of job (Table 2). In multivariate analysis, absence of chronic pain (OR 0.41 [0.19-0.88], p=0.022), been socially active (OR 0.35 [0.16-0.8], p=0.012) and good relationship with the spouse (OR 0.25 [0.06-0.95], p=0.042) were protective factors for depression (Table 3).

Participants	Absence of Depression (%)	Depression (%)	p-value
CKD stage 3-4 (n=46)	34 (74)	12 (26)	p=0.045*
CKD stage 5 non dialysis (n= 23)	10 (43.5)	13 (56.5)	
Haemodialysis < 6 months (n= 22)	16 (73)	6 (27)	
Haemodialysis ≥ 6 months (n=105)	58 (55)	47 (45)	
Total (N=196)	118 (60)	78 (40)	

*cramer's value= 0.23

Table 1: Prevalence of depression according to CKD and haemodialysis categories.

Variables	Depression (%)	Absence Of Depression (%)	P-Value
Sex (female, n=26)			
CKD stage 3-4	7 (58)	19 (56)	0.56
CKD stage 5	8 (61.5)	4 (40)	0.27
HD ≤ 6months	3 (50)	6 (37.5)	0.47
HD >6months	20 (42.5)	32 (55.2)	0.14
Total	38 (48.7)	61 (51.7)	0.39
Age in years (mean ± standard deviation)			
CKD stage 3-4	38.75 ± 15.44	42.5 ± 15.7	0.48
CKD stage 5	43.75 ± 16.34	40.6 ± 16.65	0.68
HD ≤ 6 months	40.5 ± 16.55	46 ± 13.77	0.49
HD >6 months	43.38 ± 15.39	44.6 ± 14.39	0.92
Total	43.12 ± 15.5	43.85 ± 14.8	0.74
Marital status (single or widows, n=92)			
CKD stage 3-4	10 (83)	11 (32.4)	0.05 [0.45]
CKD stage 5	9 (69)	5 (50)	0.41
HD ≤ 6months	1 (17)	10 (62.5)	0.076

HD>6months	24 (51)	22 (38)	0.23
Total	44 (56.4)	48 (40.7)	0.022 [0.15]
Educational level (primary or illiterate, n= 63)			
CKD stage 3-4	5 (42)	6 (17.6)	0.1
CKD stage 5	6 (46)	4 (40)	0.55
HD≤ 6 months	3 (50)	6 (37.5)	0.47
HD>6 months	17 (36)	16 (27.6)	0.23
Total	31 (39.7)	32 (27.1)	0.064
Unemployed (n= 141)			
CKD stage 3-4	9 (75)	17 (50)	0.12
CKD stage 5	13 (100)	6 (60)	0.024 [0.52]
HD≤ 6 months	6 (100)	10 (62.5)	0.11
HD>6 months	40 (85)	40 (69)	0.043 [0.18]
Total	68 (87.2)	73 (62)	<0.001 [0.27]
Familial funding (n= 125)			
CKD stage 3-4	9 (75)	15 (44)	0.065
CKD stage 5	11 (85)	7 (70)	0.36
HD ≤6 months	6 (100)	9 (56.3)	0.06
HD>6 months	33 (70.2)	35 (60)	0.19
Total	59 (75.6)	66 (56)	0.004 [-0.2]
Nephrology follow-up in months (median [25th to 75th interquartile range])			
CKD stage 3-4	8 [IQR 3-12]	12 [IQR 6-24]	0.31
CKD stage 5	4 [IQR 2- 20]	28 [IQR 6-54]	0.41
HD≤6 months	6 [IQR 1-12]	4 [IQR3-6]	0.13
HD>6 months	24 [IQR 15-48]	36 [IQR 20 -60]	0.27
Total	15 [IQR 10-36]	22 [IQR 7-48]	0.66
HTA			
CKD stage 3-4	4 (33.3)	18 (53)	0.2
CKD stage 5	9 (69.3)	7(70)	0.66
HD≤ 6 months	4 (66.7)	8 (50)	0.41
HD>6 months	42 (87.5)	50 (88)	0.48
Total	50 (64.1)	75 (63.6)	0.53
Diabetes (n=56)			
CKD stage 3-4	3 (25)	13 (38.2)	0.32
CKD stage 5	5 (38.5)	1 (10)	0.14

HD≤ 6 months	1 (16.7)	8 (50)	0.18
HD>6 months	9 (24.3)	16 (27.6)	0.22
Total	18 (23)	38 (32.2)	0.11
HIV (n=37)			
CKD stage 3-4	4 (33.3)	7 (20.6)	0.3
CKD stage 5	4 (31)	2 (20)	0.46
HD< 6 months	2 (33.5)	2 (12.5)	0.29
HD≥ 6 months	10 (21.3)	6 (10.3)	0.1
Total	20 (25.6)	17 (14.4)	0.038 [0.14]
HCV (n=11)			
CKD stage 3-4	2 (16.7)	4 (11.8)	0.62
CKD stage 5	-	-	-
HD< 6 months	-	1 (6.25)	-
HD≥6 months	1 (2.1)	3 (5.2)	0.62
Total	3 (3.8)	8 (6.8)	0.53
HBV (n=19)			
CKD stage 3-4	1 (8.3)	4 (11.8)	0.6
CKD stage 5	-	2 (20)	-
HD< 6 months	-	3 (18.75)	-
HD≥ 6 months	3 (6.4)	6 (10.3)	0.73
Total	4 (5.1)	15 (12.7)	0.06
Alternative therapies (n=36)			
CKD stage 3-4	2 (16.7)	9 (26.5)	0.4
CKD stage 5	5 (38.5)	3 (30)	0.51
HD< 6 months	1 (16.7)	1 (6.2)	0.48
HD≥ 6 months	9 (24.3)	6 (10.3)	0.15
Total	17 (21.8)	19 (16.1)	0.2
Chronic pain (n=76)			
CKD stage 3-4	6 (50)	8 (23.5)	0.09
CKD stage 5	7 (54)	6 (60)	0.55
HD< 6 months	3 (50)	1 (6.2)	0.046 [0.5]
HD≥ 6 months	29 (62)	16 (27.6)	<0.001 [0.34]
Total	45 (57.7)	31 (26.3)	<0.001 [0.31]
Anxiety (n=97)			
CKD stage 3-4	10 (83.3)	17 (50)	0.04 [0.29]

CKD stage 5	8 (61.5)	10 (100)	0.038 [-0.46]
HD< 6 months	3 (50)	7(43.75)	0.58
HD≥ 6 months	28 (60)	14 (32)	<0.001 [0.36]
Total	49 (63)	48 (40.7)	<0.001 [0.21]
Feel rejected by the family (n=59)			
CKD stage 3-4	2 (16.7)	-	0.064
CKD stage 5	6 (46.15)	4 (40)	0.55
HD< 6 months	2 (33.3)	4 (25)	0.54
HD≥ 6 months	22 (47)	19 (33)	0.1
Total	32 (41)	27 (23)	0.006 [0.2]
Have been abandoned or feel rejected by the spouse ** (n=29)			
CKD stage 3-4	2 (40)	-	0.002 [0.52]
CKD stage 5	2 (50)	2 (40)	0.61
HD< 6 months	2 (40)	4 (50)	0.34
HD≥ 6 months	14 (52)	3 (8.6)	0.001 [0.37]
Total	20 (49)	9 (12.1)	<0.001 [0.32]
Absence of sexual activities (n=43)**			
CKD stage 3-4	2 (66)	4 (16)	0.005 [0.48]
CKD stage 5	3 (100)	2 (40)	0.1
HD< 6 months	4 (100)	2 (33.3)	0.0032 [0.56]
HD≥ 6 months	14 (52)	12 (31)	0.13
Total	23 (62.1)	20 (26.7)	<0.001 [0.3]
Feel to be a financial pit (n=64)			
CKD stage 3-4	4 (33.3)	6 (17.6)	0.04 [0.38]
CKD stage 5	7 (54)	4 (40)	0.46
HD< 6 months	2 (33.3)	3 (18.75)	0.41
HD≥ 6 months	22 (47)	16 (27.6)	0.11
Total	35 (45)	25 (21.2)	0.002 [0.25]
Absence of social life (n=87)			
CKD stage 3-4	5 (41.7)	5 (14.7)	0.06
CKD stage 5	8 (61.5)	5 (50)	0.45
HD< 6 months	5 (83.3)	2 (12.5)	0.004 [0.67]
HD≥ 6 months	33 (70.2)	24 (41.4)	0.003 [0.29]
Total	51 (65.4)	36 (30.5)	<0.001 [0.34]

Loss of job because of the disease (n=42)			
CKD stage 3-4	4 (33.3)	1 (3)	0.007 [0.46]
CKD stage 5	8 (61.5)	2 (20)	0.043 [0.52]
HD< 6 months	1 (33.3)	3 (18.75)	0.36
HD≥ 6 months	15 (32)	8 (14)	0.044 [0.24]
Total	28 (36)	14 (12)	<0.001 [0.34]

The following was used to calculate percentage for different categories: Depression: CKD stage 3-4 n=12, CKD stage 5 n= 13, haemodialysis < 6 months n=6 and ≥6 months n=47; absence of depression: CKD stage 3-4 n=34, CKD stage 5 n=10, haemodialysis < 6 months n=16, haemodialysis ≥ 6 months n=58; * for p<0.05 [Phi coefficient] ; **participant who did not answer were not counted

Table 2: Socio-demographic factors among depressed and non-depressed participant according to CKD stage.

Variables	Odd Ratio (95% Ci)	P-Value
Bivariate analysis		
Sex (female)	0.88 (0.5-1.57)	0.68
Age (< 55 ans)	0.85 (0.44-1.62)	0.62
Illiterate/primary education	0.56 (0.3-1.03)	0.065
Marital status (single)	1.88 (1.05-3.35)	0.032
Unemployed	4.19 (1.95-8.96)	<0.001
Non Familial funding	0.4 (0.21-0.77)	0.006
Hypertension	0.97 (0.54-1.77)	0.93
Diabetes	1.58(0.82-3.04)	0.17
HIV	2.05(0.99-4.2)	0.052
HCV	0.55 (0.14-2.14)	0.39
HBV	0.37 (0.11-1.16)	0.089
Used of alternative therapy	1.45 (0.7-3)	0.31
Chronic pain (absence)	0.26 (0.14-0.48)	<0.001
Nephrology follow-up > 12 months	0.82 (0.46-1.5)	0.52
Feel rejected by the family (absence)	0.42 (0.23-0.79)	0.007
Presence of social activity	0.23 (0.2-0.42)	<0.001
No feeling of job loss link to illness	0.32 (0.15-0.68)	0.003
Not Abandoned or feel rejected by the spouse	0.38 (0.15-0.9)	0.034
Absence of sexual activities	3.7 (1.8-7.7)	<0.001
Feel to be a finance pit	0.23 (0.04 -1.3)	0.094

Anxiety (absence)	0.4 (0.22-0.73)	0.003
CKD (stage 3-4)	0.45 (0.21-0.93)	0.032
Hemodialysis statut	1.08 (0.91-1.23)	0.45
Hemodialysis (≥ 5 years)	1.58 (0.62-4.03)	0.33
Multivariate analysis		
Illiterate/primary education	0.87(0.4-1.9)	0.74
Marital status (single)	0.52 (0.11-2.5)	0.42
unemployed	2.06 (0.46-9.26)	0.34
Familial funding	0.85(0.34-2.08)	0.72
HIV (absence)	0.81 (0.32-2.01)	0.65
Chronic pain (absence)	0.41 (0.19-0.88)	0.022
feel rejected by the family (absence)	1.8 (0.7-4.7)	0.21
Presence of social activities	0.35 (0.16-0.8)	0.012
feeling of job loss link to illness (absence)	0.14 (0.07-2.4)	0.32
Abandoned or feel rejected by the spouse (absence)	0.25 (0.06-0.95)	0.042
Absence of sexual activities	2.2 (0.74-6.51)	0.15
Feel to be a finance pit (absence)	0.61 (0.25-1.45)	0.26
Anxiety (absence)	0.58 (0.27-1.54)	0.16
CKD (stage 3-4)	0.91 (0.33-2.52)	0.86

Table 3: Factors associated with depression in bivariate and multivariate analysis.

4. Discussion

The aim of this study was to describe the epidemiology and the factors associated with depression in CKD stage 3-5 and chronic haemodialysis patients in 2 nephrology services in Cameroon. Overall, the prevalence of depression was 40% (n=70) and patients prior to initiation of (CKD stage 5) and those on haemodialysis for more than 6 months were more concerned. Single/widow; unemployment, familial funding, HIV status, chronic pain, anxiety, rejection by the family or the spouse, absence of social life, were more common in depressed patients. Chronic pain, social activity and relationship with spouse were independent factor associated with depression.

Prevalence of depression is reported high among CKD and ESRD. We found that depression was common in our population affecting 2 patients out of 5, especially among patients on initiation dialysis (56.5%) and hemodialysis patients for more than 6 months (47%). As uremic symptoms (loss of appetite, insomnia, asthenia) may overlap somatic symptoms of depression, high rate of depression had been found in dialysis patient compare to stage 1-5 CKD when questionnaire are used to diagnose depression while similar rate were found when clinical interview are used [2, 3, 5]. However, we noted that patients who had just been initiated on dialysis and those with CKD stage 3-4 had comparable rate of depression. Most of our patients start dialysis without being prepared

and most of them expected a definite cure. Furthermore, the initiation of dialysis lead to improve their general and clinical state; meaning they feel better. It is only with time that they understand that their condition is definitive, hence psychological status may deteriorate and depression appears. Cultural believe in Africa may also exacerbate the situation. Chronic illness is understood in the community. When the disease starts everybody want to help and the social support is effective. Since the disease is persisted, people get tired and the patient is abandoned to himself. Indeed, we noted that rejection by the family and the spouse were more frequent in patient in CKD stage 5 (43.5%) and in hemodialysis patients for more than 6 months (40%).

Unemployment was common among depressed patients (87.2%) and most of them fell that their loss their job because of the kidney disease. In United State, Fisher et al. found that socio-demographics factors were strongly associated with depression among Afro-American with CKD, including unemployment and low income [14]. They also noted that that depression was underdiagnosed and infrequently treated. In our setting, the picture is worse since psychiatric disorder is still a taboo in our society [23]. Although we proposed psychological and psychiatric evaluation to all depressed patient we identified less than 5% effectively done the consultation. Chronic pain was frequent among haemodialysis patient with depression (59%). It was also independently associated with depression (OR 0.41 [95%CI 0.19-0.88], p=0.022). Depression has been associated with poor psychosocial outcomes in patients with ESRD including low quality of life, fatigue, pain, sleep disturbance and sexual dysfunction [5]. Sexual activities was also low reported in depressed patients. Depression was associated with socio-familial disturbance in our study including absence of social life,

rejection by the family or the spouse, absence of sexual activities, feeling of been a financial pit for the family. Relationship with spouse and social activity was also found as independently associated with depression. Cukor et al. also noted that depression in CKD was associated with poor social support, less integration into the community, sexual dysfunction and lower quality of life [24].

5. Conclusion

Depression is common among chronic kidney disease and hemodialysis patients in Cameroon with 2 out of 5 patients affected. Socio-demographic factors such as marital status, employment and social-familial condition may influence the occurrence of depression. Psychological or psychiatric support should be proposed to these patients, especially among those who should initiated dialysis and those with long haemodialysis stay.

Limits

We used the Beck inventory Short form questionnaire to diagnosed depression in our study. This questionnaire have not been validated in a Cameroonian population. Moreover, previous studies reported surdiagnosis of depression with questionnaire compared to interview based diagnosis due to overlap of uremic symptom and somatic symptom of depression. So the prevalence of depression we found may be different.

Conflict of Interest

The authors declare no conflict of interest.

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