

Anxiety and Depression Disorders in Chronic Haemodialysis Patients at the Donka National Haemodialysis Centre

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Abstract

Introduction: The objective of our work was to determine the prevalence of anxiety-depressive disorders as well as associated somatic comorbidities in chronic hemodialysis patients at the Donka National Hemodialysis Center.

Methodology: This was a descriptive and analytical cross-sectional study over a period of two (2) months from August 1 to September 30, 2020. We included all patients with chronic hemodialysis for more than 3 months in whom the diagnosis of anxiety-depressive disorder was retained after the interview with the psychiatrist. The diagnosis of anxiety-depressive disorder was made using the Anxiety and Depression Scale (HADS). Associated factors were identified by bi- and multivariate analysis.

Results: Out of a total number of 158 chronic hemodialysis patients, we found 142 (90%) cases of anxiety disorders, of which 69.7% were depressive and 20.3% anxiety. The mean age was 43.48 ± 15.44 years and the sex ratio was 1.6 in favor of men. Vascular and glomerular nephropathies were the most frequent (41.1% and 38.6%). Associated somatic comorbidities were dominated by hypertension and heart disease 93.7% and 36.4%. After multivariate analysis, remote residence, professional activity and psychiatric history were significantly associated with the occurrence of depression ($p < 0.05$).

Conclusion: Anxiety-depressive disorders are very frequent in chronic hemodialysis patients in our center. Considering the seriousness of their complications, a systematic screening by the nephrologist, especially in patients with a professional activity and those living far from the center, would allow an early management.

Keywords: Anxiety and Depression Disorders ; Chronic Renal Failure ; Hemodialysis; Donka

Introduction

Chronic kidney disease is a global public health problem. It is a condition of high management in low-income countries due to its costs [1]. In 2015, more than 353 million people, or 5% of the world's population, had chronic kidney disease. The prevalence varies from country to country and access to treatment depends on the socio-economic level of the country concerned [2]. In addition, dietary restrictions, multiple medications and life long treatment with no possibility of a permanent cure are conducive to anxiety and

depression [3]. This is a formidable complication of chronic kidney disease (CKD), which has not only a somatic but also a social and psychological dimension [4].

Hemodialysis has improved the vital and functional prognosis of people with kidney failure. However, it remains a palliative treatment. The fact that the patient is put on dialysis has psychological repercussions, which are reflected in the idea of imminent death. This leads to anxiety and depression, which are considered to be

common disorders in people with end-stage renal disease (ESRD) [5].

The occurrence of these anxiety and depressive disorders appears to be real, linked to the disabling and often painful nature of the disease but also to socio-economic concerns and social disability [6].

The incidence of depression in haemodialysis patients varies from 19 to 60%, while that of anxiety ranges from 12 to 52% [7].

In Guinea a study conducted in 2016 by ML Kaba., *et al.* had reported 28% depression [8].

The objective of our work was to determine the prevalence of anxiety-depressive disorders as well as to identify associated somatic comorbidities in chronic haemodialysis patients at the Donka national haemodialysis centre.

Methodology

We conducted a descriptive and analytical cross-sectional study over a period of 2 months from 1 August to 30 September 2020 at the Donka national haemodialysis centre. We included chronic haemodialysis patients older than 3 months in whom the diagnosis of anxiety-depressive disorder was retained after the interview with the psychiatrist.

The data were divided into three categories. These were sociodemographic characteristics, haemodialysis data and somatic comorbidities, and psychiatric data.

Chronic haemodialysis was defined as any subject with end-stage renal disease on haemodialysis for at least three months.

Anxiety and depressive symptoms were assessed using the Hospital Anxiety and Depression scale (HAD) [9]. This scale is specifically adapted to screen for anxiety and depressive disorders in patients with somatic diseases. The questionnaire was translated into the local language for patients without schooling.

Data collection was carried out by a psychiatrist and a physician specialising in nephrology. The interview and clinical examination were conducted in an office located in the haemodialysis centre.

Anxiety was retained when the HADS score was ≥ 11 . It was classified into: mild, moderate and severe.

Depression was retained when the HADS score was ≥ 11 . It was classified as: mild, moderate and severe. This scale allowed us to assess anxiety and depressive symptoms. It is a questionnaire composed of 14 items, of which 7 items were designed to explore anxiety symptoms and 7 items to explore depressive symptoms.

In the absence of pathological data, clinical and biological criteria were used to classify the following chronic kidney diseases: vascular, glomerular, diabetic, tubulointerstitial, hereditary and undetermined.

Data entry and statistical analysis were performed using Statistical Package for Social Science (SPSS) version 26.

Proportions of categorical variables were compared between patients with and without anxiety-depressive disorders by a chi-square test. For quantitative variables, means and medians were compared. The association between the variable and the different parameters was assessed by the odds ratio (OR). The threshold of $p < 0.05$ was considered significant. Anonymity and confidentiality were respected for all respondents.

The free and informed consent of the patients was taken into account. The anonymity of the data collected was preserved.

Results

In our study we registered 158 patients on chronic haemodialysis for more than 3 months, among whom we noted 142 cases of anxiety disorders, i.e. a prevalence of 90%, including 110 cases of depression and 32 cases of anxiety (Table I). The average age of our patients was 45.33 ± 15.09 years, more than one third of our patients were younger than 65 years. There was a male predominance (61.3%) with a sex ratio of 1.58 (Table II). Shopkeepers and housewives were dominant (26% and 26.8%) followed by civil servants (22.5). The educated population was the most represented, 80 (56.3%) versus 62 (56.3%) not in school (Table 2). Vascular nephropathy was the most represented 58(41%) followed by glomerular nephropathy in 52(36.6%). The mean duration of haemodialysis was 27.5 months and 99(90%) had a duration of

haemodialysis of less than 5 years. We found a statically significant association between having a professional activity and the occurrence of depression (table III). Hypertension, diabetes mellitus and heart disease were the most frequent somatic comorbidities (table 3).

Discussion

This study was conducted to assess anxiety-depressive disorders (ADD) in our chronic haemodialysis patients.

During this study, we recorded 142 cases of ADD, i.e. a prevalence of 90%, including 110 cases (69.7%) of depression and 32

Level of anxiety/depression	N = 158	Pourcentage
Anxiety and depressive disorders	142	90
Anxiety	32	20,3
light	24	16,90
Moderate	6	4,22
Severe	2	1,41
Depression	110	69,7
mild	66	46,47
Moderate	36	25,35
Severe	8	5,6

Table 1: Distribution of patients according to the level of anxiety-depressive disorders in chronic haemodialysis patients.

Variables	Depression		P-value	Anxiety		P-value
	Yes	Non		Yes	Non	
Age						
< 65	95(86,36)	45(93,75)	0,18	2(6,25)	16(12,70)	0,24
≥ 65	15(13,64)	3(6,25)		30(93,75)	110(87,30)	
Gender						
Male	65(59,09)	32(66,67)	0,38	18(56,25)	79(62,70)	0,50
Female	45(40,91)	16(33,33)		14(43,75)	47(37,30)	
Marital status						
Lives alone	34(30,91)	18(37,50)	0,46	23(71,87)	83(65,87)	0,51
Lives with a partner	76(69,09)	30(62,50)		9(28,13)	43(34,13)	
Residence						
Next to	11(10,00)	2(4,17)	0,063	2(6,25)	11(8,74)	0,50
far	74(67,27)	25(52,08)	0,015	18(56,25)	81(64,28)	
Very far away	25(22,73)	21(43,75)		12(37,50)	34(26,98)	
Professional activity						
Yes	24(21,82)	18(37,50)	0,04	10(31,25)	32(25,40)	0,50
Non	86(78,18)	30(62,50)		22(68,75)	94(74,60)	
Autonomy						
Yes	96(87,28)	43(89,58)	0,68	29(90,62)	110(87,30)	0,60
No	14(12,72)	5(10,42)		3(9,38)	16(12,70)	
Insurance						
Insured	6(5,46)	3(2,25)	0,84	4(12,50)	5(3,97)	0,08
Uninsured	104(94,54)	45(93,75)		28(87,50)	121(96,03)	
Family support						
Yes	87(79,09)	43(89,58)	0,11	25(78,12)	105(83,34)	0,49
No	23(20,91)	5(10,42)		7(21,88)	21(16,66)	
Seniority						
≤ 5 years	99(90)	42(87,5)	0,64	27(84,37)	114(90,48)	0,45
>5 years	11(10)	6(12,5)		5(15,63)	12(9,52)	

Table 2: Prevalence and factors associated with depression and anxiety in chronic haemodialysis patients: results of a bivariate analysis.

Parameters	Workforce	Percentage	OR	P-value	95% I C
Diabetes mellitus					
Yes	15	13,6	1,73	0,34	0,54-5,53
Non	95	86,4			
STROKE					
Yes	7	6,4	0,72	0,51	0,17 - 1,94
No	103	93,6			
Heart disease					
Yes	40	36,4	1,92	0,09	0,88 - 4,18
No	70	63,6			
Peripheral vascular diseases					
Yes	3	2,7	1,45	0,25	1,30-1,61
No	107	97,3			
Pathological fractures					
Yes	2	1,8	0,43	0,22	0,06 -3,11
No	110	98,2			
HTA					
Yes	104	94,5	1,47	0,49	0,42-5,86
No	6	5,5			

Table 3: Presentation of patients according to comorbidities.

cases (20.3%) of anxiety. This result is comparable to that reported by Coulibaly N., *et al.* [10]. In Mali in 2017 who found 88% of depression and that of Coulibaly. G., *et al.* [4]. In Burkina Faso in 2019 who found respectively 42.4% anxiety and 66.5% depression. Our result is also largely superior to that reported by Kaba ML., *et al.* [8]. 2016 who found 28% depression. In our context where renal transplantation is not yet accessible, the entry into hemodialysis may appear as a condemnation for the patient, especially the young one, and could increase in him the risk of depression. This difference may be related to the different tools used to assess these disorders and the irregularity of the sample.

There was a male predominance of 61.3% and a sex ratio (M/F) of 1.59. Our result is similar to that reported by S. Barrah., *et al.* [11]. Tunisia 2017 who found 61.48% males. Traders were the most represented 26.8%. This result is contrary to that of L. Zouari., *et al.* [12]. Tunisia (2011) who found 83% of the patients professionally inactive. This difference could be explained by the different selection criteria for dialysis placement in different developing countries.

The mean age of the patients was 45.33 ± 15.09 years. This result is comparable to that of D D Maiga., *et al.* [13]. In Niger in 2013 who found a mean age of 45.49 ± 16.32 years. Work in western countries has shown that chronic haemodialysis patients are older than 60 years [14]. This difference could be related to medical progress in developed countries, resulting in longer life expectancy, and could also be due to the lack of control of cardiovascular risk factors, which cause end-stage renal disease in developing countries.

Vascular nephropathy was the most common 40.8%, followed by glomerular nephropathy 36.6%. Our result is similar to that of Coulibaly N., *et al.* [10]. Mali in 2017 who reported 74.8% vascular nephropathy.

Somatic comorbidities associated with CKD were dominated by hypertension 93% followed by diabetes 13.4%. This result is comparable to that of B Ramilitiana., *et al.* [1]. In Madagascar, who reported 79.5% hypertension. This high frequency of hypertension

can be explained by the fact that it is an important risk factor in the development of chronic kidney disease.

The average duration of haemodialysis was 27.5 months. This result is much lower than that of F. El Alaoui Ismaili, *et al.* [15]. Morocco who have. Morocco who found a mean duration of hemodialysis of 68.41 months. This difference can be explained by the fact that the duration of hemodialysis varies according to the age of the center and the patient [16]. In this study, we did not find an association between the lack of family support and the occurrence of anxiety. On the other hand, Njah, *et al.* [17] in Tunisia found a significant association between the occurrence of anxiety disorders and the absence of financial support. This could be explained by the fact that financial support reassures the patient that dialysis is the only way to stay alive.

In our study, we did not find a correlation between somatic comorbidities and the occurrence of depression. Our result is contrary to that reported by L Zouari, *et al.* [12]. Tunisia in 2011 who had found a correlation between diabetes and the occurrence of depression, a disease that would in itself constitute a risk factor for the occurrence of depression independently of hemodialysis [18]. However, in our study, we found a statistically significant correlation between psychiatric history and the occurrence of depression.

In this study, we found a correlation between having a professional activity and the occurrence of depression. This result is contrary to that of Coulibaly N., *et al.* [10]. In Mali, they found in their study that having a professional activity was not correlated with the occurrence of depression. On the other hand, the association between the absence of professional activity and the occurrence of ADD has been demonstrated in studies such as those of Zouari [12], Njah [17]. In Tunisia and Saeed [19], in Pakistan. These authors reported that maintaining a professional activity seemed to play a protective role in the occurrence of depression in hemodialysis patients.

Limitations

A weakness of our study is the use of a single HADS scale, which is a screening method and therefore cannot diagnose anxiety and depression. This assessment was only carried out once, so we do not have a follow-up of the patients to assess the progression or remission of the anxiety-depression symptomatology.

Conclusion

Anxiety-depressive disorders remain very high in our chronic haemodialysis patients. Having a professional activity and living far from the haemodialysis centre were associated with the occurrence of depression in our patients. These results demonstrate the need for a multidisciplinary approach between nephrologist and psychiatrist in the follow-up of these patients. A future study based on screening and follow-up would allow us to better understand this problem.

Conflicts of Interest

The authors declare no conflict of interest What is known about this topic

- Anxiety disorders in chronic haemodialysis patients are a major public health problem in Guinea and worldwide.
- Recent research has shown that patients with chronic kidney disease on haemodialysis have high levels of anxiety and depression.
- What is new in your study.
- The prevalence of depressive and anxiety symptoms was (69.7%) and (20.3%) respectively.

Authors' Contributions

All authors were involved in data collection, analysis and writing of the manuscript. The final manuscript was read and accepted by all authors.

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