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Impact of quality of life and Social Support on anxio-depressive symptomatology in Chronic Hemodialysis Patients in Morocco

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Abstract

The mental health of patients with chronic kidney failure remains neglected. Patients with this pathology failure under hemodialysis frequently experience an altered quality of life, which is most often accompanied by anxiety and depressive disorders that are more accentuated in those who do not receive social support. The objective of our research is to study the influence of quality of life and social support on anxio-depressive symptomatology in in patients with chronic kidney failure on hemodialysis. A cross-sectional study was conducted to the hemodialysis unit in the medical department at the El Idrissi de Kénitra hospital. An anonymous and standardized questionnaire, containing general data and scales measuring social support and quality of life (KDQOL-SF), and anxio-depressive symptomatology (HADS), was administered to patients with chronic renal failure. This study revealed that poor quality of life is accompanied by higher levels of anxiety and depression, particularly in the "consequences of kidney disease on patients' daily lives" dimension. Social support from family is significantly linked with depression in these patients, and patients who receive less family social support have a higher level of depression. Anxiety in haemodialysis patients was correlated with depression: the more anxious patients were, the more depressed they were. Programming interventions to improve quality of life and decrease the prevalence of anxiety and depression in hemodialysis patients, through the limitation of the effects of chronic kidney disease and the strengthening of family and caregiver social support, is a paramount need.

Keywords: Chronic hemodialysis, anxio-depressive symptomatology, Quality of life, Morocco

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1. Introduction

Today, people are exposed to various forms of disease [1]. These diseases can be infectious in origin [2], and their prevalence can be reduced by educating patient education and training of health professionals on good hygiene practices [3], or chronic diseases that are the leading cause of death and disability in the world [4] .Chronic kidney failure is one of the most disabling chronic diseases. disabling chronic diseases. It is a disease that evolves silently, requiring replacement treatment by dialysis or kidney transplantation when it reaches the end phase [5]. Worldwide, statistics for 2015 showed that 5% of the world's population, or 353 million people, suffer from kidney failure [6]. In Morocco, the prevalence rate of Chronic Kidney Disease has reached 1.6% according to a study carried out by MareMar [7].

This disease requires the patient, to suffer from hemodialysis, this type of replacement treatment which ensures only the survival of the patients, amalgamates with the disease [8] [9], and places a considerable burden on patients and their families. Although haemodialysis has changed the course of end-stage chronic kidney disease, by prolonging the life of patients, hemodialysis represents a very heavy constraint and a disruption of the patient's universe [10]**.** This type of treatment represents only part of their pathology, which periodically supports their feeling that they are undergoing an inevitable process of deterioration in their somatic and psychological health [11]. Complications and adverse effects that accompany hemodialysis such as severe pain, asthenia, restrictions on food and fluids, the long duration of a dialysis session and the harmful complications

on the sexual relationship of patients can directly impact the mental health and quality of life of patients on hemodialysis [12], thus causing neuropsychiatric complications in them [13]**.** Indeed, psychological problems associated with hemodialysis have been shown to include anxiety, depression, and decreased quality of life [14].

However, social connections are a factor that improves the mental health of patients with chronic diseases, so patients who receive more social support can better manage their stress and improve their well-being [15]. The objective of our study is to study the influence of quality of life and social support on anxio-depressive symptomatology in hemodialysis patients in order to find solutions that can help improve the well-being of these patients.

2. Materials and Methods

2.1. Type of study

This is a descriptive study with a cross-sectional analytical aim of a quantitative type.

2.2. Place of study

The study was carried out in the haemodialysis unit in the medicine department of the Idrissi Hospital in Kenitra-Morocco. This unit provides day hospitalisation for patients suffering from end-stage chronic renal failure, providing haemodialysis sessions three times a week for each patient.

2.3. Study population

The study population consisted of all patients with ESRD on haemodialysis.

- Inclusion criteria:
- To be a patient with ESRD
- To be hospitalised in the haemodialysis unit at the Kenitra Regional Hospital
- Exclusion criteria:
- Patient refusal to participate
- Participation in the questionnaire pre-test
- Patient with a communication disorder
- Minor patient

2.4. Data collection

Data collection instrument:

The data collection was done using a questionnaire divided into several components:

- General characteristics of the patient
- HADS scale to measure anxiety and depression [16]
- KDQOL-36 scale to assess QOL [17]

2.4.1.. Anxio-Depressive Status Scale (HADS)

The Hospital Anxiety and Depression Scale (HADS) originally developed by Zigmond and Snaith in 1983 translated and validated in French by Untas and colleagues [18], is an instrument for measuring anxiety and depression in 14 items. This instrument is suitable for patients with physical diseases; it is often used to assess anxiety symptomatology and depressive symptomatology in dialysis patients.It contains 14 items, seven of which assess anxiety ((items one*, three*, five,* seven, nine, eleven* and thirteen*) and seven of which assess depression (items two, four, six*, eight*, ten*, twelve and fourteen). Responses are completed on a 4-Modality Likert scale, ranging from 0 “never” to 3 “most of the time”. Individual scores on the HADS scale can range from 0 to 21, higher scores indicate a higher state of anxiety or depression, so a score that exceeds 8 indicates doubtful depression or anxiety and a score that exceeds 10, indicates certain depression or anxiety.

The internal consistency of this scale was α= 0.79 for anxiety and; α= 0.82 for depression [18]**.** For our case we found a satisfactory internal consistency (α= 0.76 for anxiety and; α= 0.79 for depression.

2.4.2. Quality of Life Scale

The reduced version of the KDQOL, developed by Hays and his collaborators [17], translated and validated in French by Boini and collaborators [19], is an instrument that measures the quality of life of dialysis patients. It is a tool specific to dialysis patients but also includes items from the generic version of the Short Form-12.It contains 36 items grouped into 5 dimensions: Physical quality of life: this is a dimension of the Short Form-12 with items (1, 2A, 2B, 3A, 3B, 5A.), groups (somatic functioning, disability caused by physical condition, somatic pain and overall health) into 1 or 2 items;Mental Quality of Life: This is a component of the Short Form-12 with items (4A, 4B, 6A, 6B, 6C, 7), groups (psychological health, disabilities caused by mental state, life and links with others, vitality) into 1 or 2 items;«Burden of kidney disease» dimension: this dimension includes items 8a to 8d, it allows the assessment of perceived constraints and complications of kidney disease; «Symptoms/ problems of kidney disease» dimension: this dimension includes items 9A to 9L, it measures the problems and signs related to the renal disease felt by the patient (muscle pain, chest pain, cramps, itching, dizziness, asthenia, etc.Dimension «effects of kidney disease on daily life»: this dimension includes items 10A to 10H, it assesses the impact of kidney disease on the daily life of the dialysis patient (diet, fluid limitations, work limitations at home, travel limitations, caregiver dependence, stress associated with kidney disease, sex life and physical appearance). The questions were about the last 4 weeks. The individual score for each component ranged from 0 to 100, with a high score corresponding to a good QoL. The internal consistency of this scale was between α= 0.82 and ; α= 0.86 for the different dimensions [17] [19]. In our case we found a satisfactory internal consistency between α= 0.78 and ; α= 0.81.

2.4.3. Family social support items

It consists of two items relating to social support referenced in the long version of KDQOL [17]. These two items form a single dimension relating to the patient's satisfaction with the support received: Responses are completed on a 5-Modality Likert scale ranging from 1 “very dissatisfied” to 5 “very satisfied”. The individual score ranged from 0 to 100 where a high score corresponded to a good satisfaction of the social support received from the family. La consistance interne de ces items était entre α= 0,75 [19]. For our case we found a satisfactory internal consistency α= 0.82.

2.4.4. Care Team Social Support Items

It consists of two social support items referenced in the long version of KDQOL [17]. These two items are a single dimension of patient satisfaction with “caregiver encouragement”. The answers are filled on a Likert scale with 5 modalities, ranging from 1 «totally true» to 5 «totally

false». The individual score ranges from 0 to 100 where a high score indicates that the patient is encouraged and supported by caregivers. The internal consistency of these items was between α= 0.92 [19]. For our case we found a satisfactory internal consistency α= 0.83.

2.5. Method of administering the questionnaire

The questionnaires were administered directly to hemodialysis patients hospitalized at the Kenitra hospital, by the study investigator.

2.6. Statistical analysis of data

A descriptive analysis was done for all variables of the research. Qualitative variables were presented as a proportion. Quantitative variables as a mean ±standard deviation.The Pearson correlation test was used to test associations and the t Student, ANOVA tests were used to compare means. The significance threshold was set at 0.05. Data were analyzed using SPSS version 26.0 software.

2.7. Ethical Considerations

Before starting data collection, a request for prior authorisation was sent to the provincial delegate of the Ministry of Health in Kenitra. Patients were informed about the aims of the research. They were also told that participation in the research was completely voluntary and that they could refuse or withdraw from the survey at any time. A consent form and an information form were distributed to each participant.

3. Results and Discussions

3.1. Results

3.1.1. Socio-Economic Characteristic

The mean age of patients participating in the study was 51.6±15.9 years, with females predominating (57.1%). Of these patients, 60.0% were illiterate and 40% attended school. On the other hand, most of the students (97.1%) declared that they had no job (Figure 1).

3.1.2. Relationship between anxiety and quality of life

The results shown in Table 1 indicate that there is a highly significant negative association between the anxiety manifested by haemodialysis patients and the "Effects of kidney disease on daily life" component (p= 0.000) (r= -0.487), whereas there is no significant association between this psychological disorder and the "Symptoms of kidney disease" "Burdens of kidney disease" "Physical health component" "Mental health component" and the overall QOL Score.

3.1.3. Relationship between anxiety and social support

The results in the table above show that there is no significant relationship between the anxiety expressed by haemodialysis patients and the social support provided by their relatives and the social support provided by the healthcare team (Table 2)

3.1.4. Relationship between depression and quality of life

The results shown in Table 3 indicate that there is a negative significant association between depression manifested by haemodialysis patients and the overall QOL score and more specifically in the dimensions "Symptoms of kidney disease" (p= 0.000) (r= -0.435), "Effects of kidney disease on daily life" (p= 0.002) (r= -0.365) and "Mental health component" (p= 0.002) (r= -0.365) ; while there was no significant association between depression and the dimensions "Burden of kidney disease" and "Physical health component".

3.1.5. Correlation between support and level of depression

The results in the table above show that there is no significant relationship between the anxiety exhibited by hemodialysis patients on the one hand, and the social support of relatives and social support on the other hand (Table 4).

3.1.6. Correlation between anxiety depression

From the table above, we find that there is a highly significant link between anxiety and depression in the patients included in our study (Table 5).

3.2. Discussion

The mental health of hemodialysis patients is an ongoing concern that must be considered. Indeed, living with chronic end-stage renal failure requires the patient to remain connected to a hemodialysis machine to ensure his survival while waiting for the chance to be among the beneficiaries of a kidney transplant. The aim of our study is to investigate the effect of quality of life and social support on psychological disorders, such as anxiety and depression, in patients with end-stage renal disease on haemodialysis, Namely, patients living with a chronic disability requiring them to undergo brutal transformations in all aspects of their lives (physical, psychological, social, etc.), a disease that requires positive psychological support from their families and caregivers. The aim is to find adequate solutions to reduce these repercussions that affect the daily life of these patients. The study targeted all patients hospitalised in the haemodialysis unit (70 patients), with a participation rate of 92.10%. The average age of our study force was 51.66 ±15.96 years, the female sex constitutes the majority of our population 57.1%. The overwhelming majority of patients studied, a rate of 98%, have no function, This may be justified by the serious repercussions of chronic kidney disease, requiring patients to travel three times a week to the dialysis centre to benefit from hemodialysis sessions. The prevalence of anxiety and depression in these hemodialysis patients was significant, more than half of the patients (74.29%) have an anxious state and (70%) have a depressive state [20]. In addition, quality of life was degraded in these patients [21]. The study of the links between anxiety, depression and the quality of life of hemodialysis patients has identified the presence of a significant relationship between the anxiety manifested by hemodialysis patients and the components “Effects of kidney disease on daily life.” Cukor and colleagues [22] revealed that the existence of anxiety disorders is linked to a lower quality of life in hemodialysis patients. In addition, Untas and al. [18] found that anxiety correlates significantly with different dimensions of quality of life. On the other hand, the study revealed the presence of a significant link between depression manifested by patients on hemodialysis and the overall score of quality of life and more precisely in the dimensions «Symptoms of kidney disease», “Effects of Illness on Daily Living” and “Mental Health Component”. Bouidida and colleagues [23] identified depression as a consequence of poor quality of life; although it is the most common psychiatric impact in dialysis patients.

Table 1: Anxiety and quality of life dimensions

		Anxiety
Symptoms of kidney disease	r : Correlation coefficient p	-,231 ,055
Burdens of kidney disease	r : Correlation coefficient p	-,245 ,041
Effects of kidney disease on daily life	r : Correlation coefficient p	-,483 **,000**
Physical Health Component	r : Coefficient de correlation p	-,021 ,864
Mental Health Component	r : Correlation coefficient p	-,186 ,124
Overall QOL score	r : Correlation coefficient p	-,304 ,010

Table 2: Correlation between social support and level of anxiety

		Anxiety
Social support from family and friends	r : Correlation coefficient p	-,216 ,073
Social support from the care team	r : Correlation coefficient p	**,**037 ,759

Table 3: Depression and dimensions of quality of Life

		Depression
Symptoms of kidney disease	r : Correlation coefficient p	-,435 **,000**
Burdens of kidney disease	r : Correlation coefficient p	-,311 ,009
Effects of kidney disease on daily life	r : Correlation coefficient p	-,365 **,002**
Physical Health Component	r : Coefficient de correlation p	-,221 ,066
Mental Health Component	r : Correlation coefficient p	-,365 **,002**
Overall QOL score	r : Correlation coefficient p	-,498 **,000**

Table 4: Correlation between support and level of depression

		Dépression
Social support from family and friends	r : Correlation coefficient p	-,381 **,001**
Social support from the care team	r : Correlationcoefficient p	-,039 ,750

Table 5: Correlation between anxiety depression

		Depression
Anxiety	r : Correlation coefficient p	,397 **, 001**

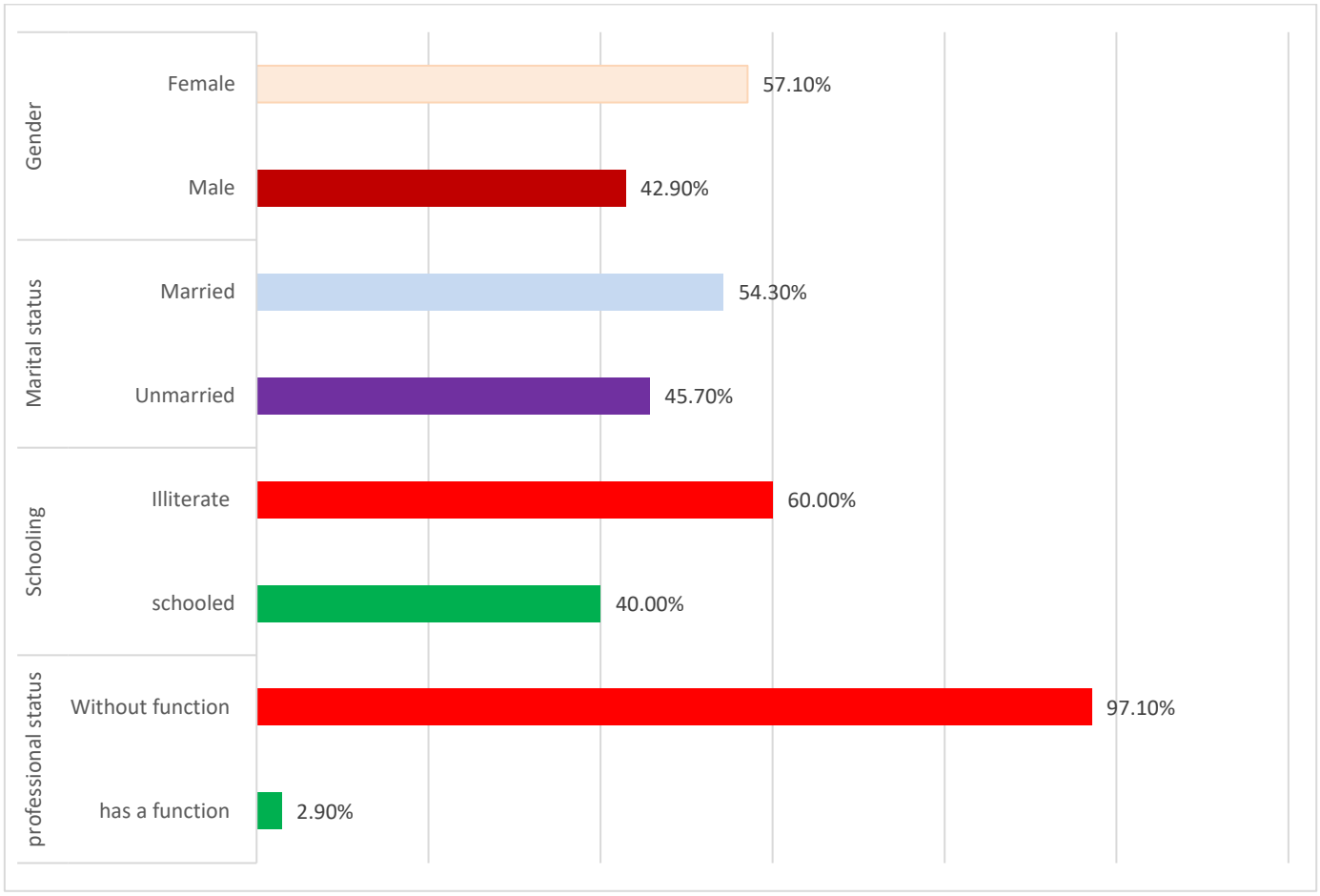

Figure 1: Distribution of patients by socio-demographic data

These links can be attributed to the onset of symptoms, the effects and consequences of chronic kidney disease, and the difficulty of accepting that the kidney that exists in the body is not functioning and has been replaced by an artificial kidney that exists outside the body, the difficulty of coping with the effects of the severe diet that can leave the patient with oedema that is difficult to tolerate, and difficulty in accepting that the arm is permanently scarred by the arteriovenous fistula needed to connect it to the dialysis machine [24].These findings can also be explained by the severe impact of haemodialysis on patients' lives, which forces patients to travel from home to the haemodialysis centre three times a week, with a strict diet adversely affecting these patients' mental health [25].Non-acceptance and poor adaptation to the disease in these patients are also factors at the root of these psychological disorders [26].

Social support is an important element in the event of illness.

For Chronic Kidney Disease patients on haemodialysis, it represents a source of security and assistance throughout their chronic disease [27].This is an essential factor in patients adjusting to chronic disease [28]. In addition to family social support, the support of the dialysis team is of great importance to dialysis patients, some of whom consider the members of the care team as family members [29]. In this sense, the study of the relationship between social support and anxiety revealed that the social support of relatives and social support received from the health care team do not influence the state of anxiety manifested by these patients. Nevertheless, Turkistani and al. [30] reported that patients' dependence on caregivers and inability to play previous roles within the family and society, remain among the determinants of anxiety. In addition, the results obtained in our study showed that it has a significant correlation between depression and social support from relatives. Indeed, patients who received higher family social support have a lower level of depression Christensen and colleagues have identified that in dialysis patients less favourable social support from the family would be accompanied by a higher level of depression [31].On the other hand, the results revealed the absence of a significant link between depression manifested by hemodialysis patients and the social support of caregivers. While Turkistani and al [30] reported that dependence on healthcare staff likely causes depression in haemodialysis patients.

In addition to these results, the study of the correlation between anxiety and depression revealed a significant link between these two psychological disorders, patients with high levels of anxiety also have high levels of depression. These constants are consistent with other studies that have reported that patients with signs of depression also show signs of anxiety [32] [18]. This can be explained by the fact that anxiety is one of the most well-known symptoms of depressive syndromes, anxiety associated with depression can exist in several forms and levels of intensity [33].

4. Conclusions

Patients with chronic end-stage renal failure under hemodialysis frequently experience an altered quality of life, which is most often accompanied by anxiety-depressive disorders that are more accentuated in those who do not receive social support. The objective of our research is to study the influence of quality of life and social support on anxio-depressive symptomatology in hemodialysis patients. This study revealed that poor quality of life is accompanied by higher levels of anxiety and depression, particularly in the "consequences of kidney disease on patients' daily lives" dimension. Social support from family and friends is significantly linked with depression in these patients, and patients who receive less family social support have a higher level of depression. Anxiety in haemodialysis patients was correlated with depression: the more anxious patients were, the more depressed they were. The results of this study may provide a basis for programming interventions aimed at improving the quality of life of these patients, and reducing the prevalence of anxiety and depression by limiting the effects of chronic kidney disease and reinforcing family and carer social support.

References

[1] R. Rouani R. Boujdi, A. Elouakfaoui T. Hassouni, D. Lamri. (2023). Health education in the Moroccanhigh school physics-chemistry curriculum: currentsituation, prospects and proposals. International Journal of Chemical Biochemical Sciences. 24 (4): 87-95.

[2] A. Boualam, R. Seghiri, D. Touil, N. Berrid, and E.M. Aouane. (2023). A cross-sectional epidemiological study of tuberculosis in the province of Sidi Kacem, Morocco. The Pan African Medical Journal. 44: 106.

[3] A. Elouakfaoui A. Rouani Y. Chaïb, M. Aouane. (2023). Evaluation of Education and Training in Good Hygiene Practices amongHealth Professionals: A Cross-Sectional Study in Moroccan Hospitals. Journal of Educational and Social Research. 13(6): 350-360.

[4] WHO. (2010). Global status report on non-communicable diseases. Genève. 176.

[5] P.L. Kimmel, R.A. Peterson. (2005). Depression in end-stage renal disease patients treated with hemodialysis: tools, correlates, outcomes, and needs. Seminars in Dialysis. 18(2): 91–97.

[6] B. Ramilitiana, E.M. Ranivoharisoa, M. Dodo, E. Razafimandimby, and W.F. Randriamarotia. (2016). A retrospective study on the incidence of chronic renal failure in the Department of Internal Medicine and Nephrology at University Hospital of Antananarivo (the capital city of Madagascar). The Pan African medical journal. 23: 141.

[7] B. Gharbi, M. Elseviers M. Zamd A.B. Alaoui, B. Benahadi, E. Trabelssi, M. De Broe. (2016). Chronic kidney disease, hypertension, diabetes, and obesity in the adultpopulation of Morocco : how to avoid “over”- and “under”-diagnosis of CKD. Kidney International. 89(6): 1363-71.

[8] M. Njah, M. Nasr, B.N. Dhia. (2001). Anxio-depressive morbidity in the patient hemodialysis. Néphrologie. 22(7): 353-357.

[9] A. Desseix, L. hémodialyse, C. Maladie. (2011). “Hemodialysis, this disease”. Anthropological approach of an amalgam. Sciences sociales et santé. 29: 41-73.

[10] H. Ghezaiel, A. Belarbia, D. Zellama S. Bannour, I. Bougmiza S. Amor, A. Achour. (2013). Evaluation of the quality of life of hemodialysis patients. Communication poster in 2013: dialyse / Néphrologie & Thérapeutique. 9: 282–319.

[11] A. Desseix, P. Merville, L. Couzi. (2010). Analysis of representations of hemodialysis and transplantation in chronic renal patients: an anthropological approach. Néphrologie & Thérapeutique.6: 111–120.

[12] J. Cleary, and J. Drennan. (2004). Quality of life of patients on hemodialysis for end-stage renal disease. Journal of Advanced Nursing. 51(6): 577–86.

[13] F. Teles, V.F. Azevedo, C.T. Miranda, M.P. Miranda, M.D.C. Teixeira, R.M. Elias. (2014). Depression in hemodialysis patients: the role of dialysis shift. Clinics. 69(3): 198–202.

[14] A.C. Rocha, J.M. Krzesinski, X. Warling, N. Smelten, A.M. Etienne. (2011). The role of psychological interventions in dialysis: an exploratory study. Nephrologie & therapeutique. 7(4): 211–218.

[15] A.S. Santhi, R. Samson, R. Srikanth, D. Pethuru. (2018). Effectiveness of physical activityon depression, anxiety, stress and quality of life of patients on hemodialysis. Biomedical Research. 29(9):1885–1890.

[16] A.S. Zigmond, and R.P. Snaith. (1983). The hospital anxiety and depression scale. Acta Psychiatrica Scandinavica. 67(6) :361-370.

[17] R.D. Hays, J.D. Kallich, D.L. Mapes, S.J. Coons, W.B. Carter. (1994), Development of the kidney disease quality of life (KDQOL) instrument. Quality of Life Research. 3(5): 329-338.

[18] A. Untas, M. Aguirrezabal, P. Chauveau, E. Leguen, C. Combe, N. Rascle. (2009). Anxiety and depression in hemodialysis: validation of the Hospital Anxiety and Depression Scale (HADS). Nephrol. Ther. 5(3): 193–200. (in Frensh).

[19] S. Boini, A. Leplege, C.L. Ayav, P. Français E. Ecosse, S. Briançon. (2007). Measuring quality of

life in chronic end-stage kidney disease: Cross-cultural adaptation and validation of the Kidney Disease. Quality of Life specific questionnaire]. Nephrology and Therapeutics. 3(6): 372-383.

[20] D. Touil, M. Aouane, A.O.T. Ahami. (2019). Evaluation of anxiety and depression disorders and the associated factors among hemodialysis subjects. Acta Neuropsychologica. 17(4): 405–416.

[21] D. Touil, A. Boualam, I. El Harchaoui, I. Louragli, M. Aouane, A.O.T. Ahami. (2022). Quality of life and its generating factors in hemodialysis patients hospitalized at the regional hospital idrissi kénitra morocco. Acta Neuropsychologica. 20(1): 67–79.

[22] D. Cukor, J. Coplan, C. Brown, S. Friedman, H. Newville, M. Safier, L.A. Spielman, R.A. Peterson, P.L. Kimmel. (2008). Anxiety disorders in adults treated by hemodialysis: a single-center study. American journal of kidney diseases. The Official Journal of the National Kidney Foundation. 52(1):128–136.

[23] B. Bouidida, H. Rhou, R. Bayahia, and L. Benamar. (2011). [Quality of life and chronic end-stage renal failure]. Néphrologie et Thérapeutique. 7(5): 339-340.

[24] D. Ledey, C. Mette, R. Gagnayre. (2006). "Needs and skills of dialysis patients in the centre in the management of their disease and treatment in their daily lives: cross-views between patients and caregivers, . Educ. du patient enjeux santé 24: 22–31.

[25] A. ELfilali, Y. Bentata, N. Abda, B. Oneib. (2016). [Anxiety-depressive disorders in subjects chronic hemodialysis]. Néphrologie & Thérapeutique.12(5): 404.

[26] S. Barrah, H. Jebali, N. Rafrafi, S. Rafrafi, W. Smaoui, R. Khedher, L. Benfatma, M. Krid, S. Beji, L. Rais, K. Zouaghi. (2017). Anxiety and depression in hemodialysis patients]. Néphrologie & Thérapeutique. 13(5): 317.

[27] B. Saugeron, P. Sonnier, S. Marchais. (2016). [COMITEE: a tool to develop psychosocial skills in therapeutic patient education]. Santé Publique. 28: 157-161.

[28] A.J. Christensen, J.S. Wiebe, T.W. Smith, C.W. Turner. (1994). Predictors of survival among hemodialysis patients: effect of perceived family support. Health Psychology. Health Psychology. 13(6): 521–525.

[29] N. Ghazouani. (2015). Psychological management in chronic hemodialysis patients.Échanges de l'afidtn. 114.

[30] I. Turkistani, A. Nuqali, M. Badawi, O. Taibah, O. Alserihy, M. Morad, and E. Kalantan. (2014). The prevalence of anxiety and depression among end-stage renal disease patients on hemodialysis in Saudi Arabia. Renal failure. 36(10) :1510–1515.

[31] A.J. Christensen, J. Alan, C.W. Turner, J.R. Slaughter, J.M. Holman. (1989). Perceived family support as a moderator psychological well-being in end-stage renal disease. Journal of Behavioral Medicine. 12(3): 249–265.

[32] M. Bossola, C. Ciciarelli, E. Di Stasio, G.L. Conte, C. Vulpio, G. Luciani, L. Tazza. (2010). Correlates of symptoms of depression and anxiety in chronic hemodialysis patients. General Hospital Psychiatry. 32(2): 125–131.

[33] A. Pelissolo, N. Hamdani. (2018). Depression and anxiety disorders. Dans : Frank Bellivier éd., News on depressive diseases. Cachan, Lavoisier, 2018.