

Quality of life of chronic renal patients on hemodialysis in Marília, SP, Brazil

A qualidade de vida dos pacientes renais crônicos em hemodiálise na região de Marília, São Paulo

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Submitted on: 30/06/2010

Accepted on: 14/01/2011

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The authors declare no
conflict of interest.

ABSTRACT

Introduction: Hemodialysis is responsible for significant alterations in the quality of life of chronic renal patients. **Objective:** To compare the quality of life of patients on hemodialysis without depression (A) and those with some level of depression (B). **Methods:** This was a transversal and descriptive study in which the Beck Depression Inventory (BDI) and the WHOQOL-bref scale were used. **Results:** The studied sample consisted of 130 patients, 65.15% in A, and 33.84% in B. The highest levels of depression were related to longer periods of treatment. Quality of life indexes were better for A, and, as certain domain increased, also were the others. More differences were observed in the Psychological (A: 69.40 and B: 49.22) and Physical (A: 62.81 and B: 42.19) Domains; and the Social Relations Domain had a better average between the populations, as well as a better correlation with the other domains. **Conclusion:** Although there was a low prevalence of depression among hemodialysis patients, some investments should be made in the social, psychological and physical support aiming to improve their quality of life. **Keywords:** renal insufficiency, chronic; depression; quality of life; renal dialysis.

RESUMO

Introdução: A hemodiálise é responsável por alterações significativas na qualidade de vida dos pacientes renais crônicos. **Objetivo:** Comparar a qualidade de vida dos pacientes em hemodiálise sem depressão (A) com aqueles com algum grau de depressão (B). **Métodos:** Estudo descritivo e transversal, utilizando o Inventário de Depressão de Beck (BDI) e a Escala WHOQOL-bref. **Resultados:** A população foi de 130 pacientes, 65,15%, na A, e 33,84%, na B. Os maiores níveis de depressão se relacionam com maior tempo de tratamento. Houve melhores índices de qualidade de vida para A e à medida que um domínio aumentou, os demais também aumentaram. Destacam-se grandes diferenças no Domínio Psicológico (A: 69,40 e B: 49,22) e Físico (A: 62,81 e B: 42,19) e o Domínio Relações Sociais tem melhores médias entre as populações, assim como correlações com os demais domínios. **Conclusão:** Apesar da baixa prevalência de quadros depressivos entre os hemodialíticos, deve-se investir no suporte social, psicológico e físico para melhorar a qualidade de vida destes pacientes. **Palavras-chave:** insuficiência renal crônica; depressão; qualidade de vida; diálise renal.

INTRODUCTION

Chronic renal patients who depend on renal replacement therapy (continuous peritoneal dialysis and hemodialysis) have a limited daily life and go through many biopsychosocial changes and losses which interfere in their quality of life¹.

In Brazil, approximately 90,000 people are currently on renal replacement

therapy. When dialysis came up, the main concern was to prolong the survival of chronic renal patients, unlike nowadays, when special attention is dedicated to their quality of life².

Being under hemodialysis three times a week or under peritoneal dialysis on a daily basis has consequences for the patients regarding physical, emotional and social aspects of their lives. Depression

is the most common mood disorder among these patients, and usually represents an answer to a real or imagined loss, thus configuring persistent depressive mood, bad self-image and pessimistic feelings, besides physiological complaints such as sleep disorders, changes in appetite and weight, diminished sexual interest, among others³.

This study emphasizes the importance of evaluating the quality of life (QOL) of chronic renal patients on hemodialysis. The objective of this study is to compare QOL of patients with minimum or no depression with those who have some level of depression (mild, moderate or severe).

METHODS

A transversal and descriptive study was carried out at the hemodialysis service of *Santa Casa de Misericórdia de Marília*, São Paulo, which is a reference center for dialysis treatment in the IX Regional Health Direction, São Paulo.

The sample consisted of patients who underwent hemodialytic treatment in the first five months of the 12-month research.

We selected patients who presented chronic renal disease ($n = 167$), with at least 60 days of hemodialytic treatment; the patients had to be older than 18 years, in stable clinical conditions and able to answer the questionnaires. Patients under other dialytic treatments, or those who had been included in other categories of treatment during the study, were excluded ($n = 148$). Eighteen patients refused to participate in the research.

As to data collection instruments, firstly, socio-demographic and clinical data were gathered. The second step required the following instruments: Beck Depression Inventory (BDI), Portuguese version with 21 affirmations, each of them with four alternatives; and WHOQOL-bref, Portuguese version, with 26 questions, each of them with five alternatives.

In order to analyze the information, we compared QOL of chronic renal patients on hemodialysis with minimum or no depression symptoms to those with mild, moderate and severe symptoms.

As to BDI, the sum of the scores showed that the level of depression reached the following marks: 0 to 11 – minimum or no depression (Population A); 12 to 19 – mild; 20 to 35 – moderate; 36 to 63 – severe (Population B).

Regarding WHOQOL-Bref, the answers were obtained with a five-point Likert scale and,

depending on the content of the question, they were analyzed by four types of scales: intensity, capacity, frequency and satisfaction level².

To calculate domain scores, the index of the components summarized the domains to which they belong. The domain and the general QOL are measured in a positive direction, which means higher scores point out to a better QOL.

The SPSS software (Statistical Package for Social Science) was used for this calculation, so the scores for domains and QOL questions in general were automatically checked, recodified and established⁴. The chosen scale was 0 to 100, since such values are easily interpreted by the average reader, given the association to percentage values.

STATISTICAL ANALYSIS

In order to meet the goals of this study, we performed a descriptive statistical analysis of socio-demographic and clinical data by calculating the mean, the standard deviation, the proportions and the inferential analysis of the other data by the following statistical procedures: Student's t-test; analysis of variance (ANOVA), and Pearson's correlation coefficient with a confidence interval of 95% and significance level set at $p < 0.05$.

RESULTS

The whole sample consisted of 130 chronic renal patients under hemodialysis. Population A was more prevalent in the total population (65.15%) over Population B, which corresponded to 33.84% of the total population (Table 1); out of the 33.84% which correspond to Population B, 21.54% of the patients had mild depression; 11.54%, had moderate depression; and 0.76% had severe depression.

As to the gender, males (63.07%) were prevalent over females (36.92%) in the total population, as well as in Population A: 65.12 *versus* 34.88%, and B: 59.10 *versus* 40.9%. The mean age was of \bar{x} 49.7 years (18-80); in population A, \bar{x} 49.09 years (18-75), and in population B, \bar{x} 50.9 years (22-80) (Table 1).

Regarding conjugal status, we observed the prevalence of patients "with a partner" in all populations: total (58.46%); A (53.48%) and B (65.90%) (Table 1).

As to schooling, elementary school was mentioned by all populations: total, with 53.08%; A, 51.16%; and B, 56.82%. Levels "above elementary" presented in 30.77% of the total population;

36.04% of A; and 20.45% of B. Illiteracy levels reached 16.15% of the total population; 12.8% of A; and 22.73% of B (Table 1).

Among the religions of the studied populations, Catholicism was prevalent, being declared by 64.61% of the total population patients; 66.28% of A; and 61.36% of B. Protestantism was declared by 25.38% of the total population; 22.09% of A; and 31.82% of B. Other religions were declared by 10.01% of the total population; 11.62% of A and 6.82% of B. Among these, Spiritualism, Buddhism and Jehova's witnesses stood out (Table 1).

It was demonstrated that, in the total population, the prevalent time of hemodialytic treatment was longer than five years, which means that 40.76% was within that period, 38.46% was between one and five years, and 20.76% was with less than one year. In Population A, the prevalence from one to five years was 39.54%: 25.57% with less than one year and 34.87% for longer than five years. In population B, 52.26% of patients were in treatment for longer than five years; 36.37% were between one and five years; and 11.47% were under treatment for less than one year (Table 2).

Regarding the main causes of chronic renal disease, it is possible to say that a high percentage of its causes was related to systemic arterial hypertension (SAH), for 55.38% of the total population, followed by the multifactorial association of diabetes mellitus and SAH, which corresponds to 22.3%.

The average scores in a WHOQOL-bref scale from 0 to 100 obtained from the total population of renal chronic patients in hemodialysis identify a decreasing order of domain means: Social Relations (SR), which involves personal relationships, social support and sexual activity (67.63); Psychological (PS), involving positive feelings, self-esteem, body image, appearance and spirituality (62.72); Environment (E), which involves home environment, financial resources, leisure, information and transportation (59.59); and Physical (PH), which relates to pain and discomfort, energy and exhaustion, daily life activities and ability to work (55.99) (Table 3).

For Population A, the decreasing domain means are: SR (72.61), PS (69.40), E (63.58) e PH (62.81). For Population B, the numbers are: SR (57.56), E (51.53) PS (49.22) e PH (42.19) (Table 3).

Table 1 SOCIODEMOGRAPHIC VARIABLES IN THE TOTAL POPULATION OF CHRONIC RENAL PATIENTS ON HEMODIALYSIS, POPULATION A AND POPULATION B

Variables (n)	Total population		Population A Minimum or no depression		Population B Mild, moderate and severe depression	
	n = 130	%	n = 86	%	n = 44	%
Sex						
Male	82	63.07	56	65.12	26	59.10
Female	48	36.92	30	34.88	18	40.90
Age						
Mean (years)	\bar{x} 49.7		\bar{x} 49.09		\bar{x} 50.90	
Minimum – Maximum (years)	18 – 80		18 – 75		22 – 80	
Marital status						
With a partner	76	58.46	46	53.48	29	65.90
Without a partner	54	41.53	40	46.52	15	34.10
Education level						
Illiterate	21	16.15	11	12.80	10	22.73
Elementary	69	53.08	44	51.16	25	56.82
Above Elementary	40	30.77	31	36.04	9	20.45
Religion						
Catholicism	84	64.61	57	66.28	27	61.36
Protestantism	33	25.38	19	22.09	14	31.82
Others	13	10.01	10	11.62	3	6.82

As to the mean score of general QOL for the total population, the mean is 57.98. For populations A and B, respective values are 63.36 and 47.09 (Table 3).

In Table 4, Student's t-test compared the mean scores and general QOL of populations A and B. A significant difference was demonstrated between domain means of the scale and general QOL of WHOQOL-bref, which indicates that the patients in Population A present higher mean scores in all domains when compared to patients in Population B.

A statistical test was performed as to the marital status of the patients, and there was no difference in score means between the verified domains. There were no significant differences when relating QOL with age and education level.

Score means of WHOQOL-bref domains compared as to the age presented no statistically significant differences ($p = 0.37$), as well as to schooling.

Regarding the domains, there is a direct correlation. When certain domain increases its score, there is a moderate tendency that the other correlated domains will also increase, and vice-versa, all at $p = 0.0$, thus being statistically significant (Table 5).

Thus, it is possible to analyze the following average intensity correlations between score means: Domain PH with PS ($r = 0.66$) and with E ($r = 0.51$); PS with SR ($r = 0.58$) and with E ($r = 0.59$); as well as domain SR with E ($r = 0.56$), besides general QOL with PS ($r = 0.54$). Weak correlations are shown between domain PH with SR ($r = 0.47$), general QOL with PH ($r = 0.41$), with domain SR ($r = 0.22$) and E ($r = 0.43$) (Table 5).

DISCUSSION

The way each patient lives and relates to chronic renal disease is personal and unique, since it depends

Table 2 DISTRIBUTION OF PATIENTS IN THE TOTAL POPULATION, POPULATION A AND POPULATION B AS TO TIME OF HEMODIALYSIS IN MONTHS AND YEARS

Time of hemodialysis	Total population		Population A		Population B	
	n = 130	%	n = 86	%	n = 44	%
1 to 3 months	7	5.38	5	5.81	2	4.55
3 to 12 months	20	15.38	17	19.76	3	6.82
1 to 5 years	50	38.46	34	39.54	16	36.37
5 to 10 years	27	20.76	14	16.27	13	29.54
> 10 years	26	20	16	18.60	10	22.72

Table 3 SCORE MEANS, STANDARD DEVIATION AND VARIANCE OF DOMAINS AND GENERAL QUALITY OF LIFE OF WHOQOL-BREF, ACCORDING TO THE TOTAL POPULATION AND SCORE MEANS OF POPULATIONS A AND B

Domains	Total population			Population A			Population B		
	Mean	SD	95%CI	Mean	SD	95%CI	Mean	SD	95%CI
Physical	55.99	15.81	25.01 – 85.97	62.81	11.56	40.18 – 85.49	42.19	14.19	14.80 – 70.43
Psychological	62.72	14.32	31.74 – 90.80	69.40	10.79	48.33 – 92.13	49.22	10.52	28.91 – 70.14
Social relations	67.63	14.36	36.64 – 95.78	72.61	11.76	49.62 – 95.33	57.56	13.69	30.93 – 84.60
Environment	59.59	12.10	28.60 – 83.31	63.58	10.77	42.55 – 86.32	51.53	10.33	31.38 – 71.88
General Quality of Life	57.98	18.22	26.99 – 93.69	63.36	15.92	32.16 – 86.03	47.09	17.59	12.96 – 81.93

SD: standard deviation; CI: confidence interval.

on many factors, such as: psychological profile, social and environmental conditions and family support.

QOL perceptions influence the way each individual faces the disease; positive perceptions are related to rational strategies, like setting a goal or knowing more about the condition; negative ones relate to denying the situation, acting as if it were not real.

In this study, chronic renal patients with some level of depression presented a close percentage to that reported in literature, in which the prevalence of depression varies between 5 and 25% in hemodialysis patients⁵.

The mean age of the total population was 49.7 years, a value that is similar to that of another study that presented mean age of 53.1 years, ranging from 18 to 81⁶. As to schooling, elementary school was prevalent among all populations, which is also in accordance with the other study⁶.

As to the variable “occupational profile”, around 36.92% of the total population declares to be “retired”; such labor perspective was noticed in another study⁶, in which 52.8% of the patients were inactive (retirement or medical leave); according to the authors, the situation of repressing work activities damages the physical aspects of patients⁶.

In this manner, while becoming sick, some people think it is more comfortable and less compromising to transmit to other people the ability to promote health; so, chronic renal patients allow this psychological dynamics, as the diagnosis becomes a synonym of incapacity. Thus, the patient interrupts his or her activities, or even the search for better life conditions⁷.

This study also identified that chronic renal patients with higher levels of depression have been under hemodialysis for longer, as reported in literature⁸.

Score means with better values for SR, followed by PS and presenting the worst mean for the PH domain are in accordance with another study⁶, in which the psychological domain had the best mean and the physical domain had the worst mean among chronic renal patients.

This study shows Population A with the following decreasing order of domain means: SR, PS, E and PH; domains present an average above 60. Satisfactory values were observed for SR in patients from Population A, which is probably related to the social support they receive, according to literature⁹. The emotional support affects the health in different ways, since the support from family members,

Table 4 STUDENT'S T-TEST FOR SCORE MEANS AND GENERAL QUALITY OF LIFE OF WHOQOL-BREF IN POPULATIONS A AND B

Domains	t-value	p-value
Physical	8.65	0.00
Psychological	9.98	0.00
Social relations	6.41	0.00
Environment	6.06	0.00
General quality of life	5.16	0.00

Significant for p-value < 0.05.

Table 5 PEARSON'S LINEAR CORRELATION BETWEEN SCORE MEANS OF WHOQOL-BREF DOMAINS FOR THE TOTAL POPULATION

	Physical domain		Psychological domain		Social relation domain		Environment domain	
	r	p	r	p	r	p	r	p
Physical domain			0.66	0.00	0.47	0.00	0.51	0.00
Psychological domain					0.58	0.00	0.59	0.00
Social relation domain							0.56	0.00
General quality of life	0.41	0.00	0.54	0.00	0.22	0.00	0.43	0.00

Significant for p-value < 0.05.

friends and partners usually generate better physical and mental health conditions among these patients, and improve their depressive mood⁹.

Regarding Population B in this study, there is the following decreasing order of domain means: SR, E, PS and PH, all under 60, taking into account that domain means for WHOQOL-bref for Population B are inferior to those of Population A, especially for PS (69.40 *versus* 49.22) and PH (62.81 *versus* 42.19).

Stressful factors, such as the conditions which lead patients to increasing depression levels, gather physiological and psychological aspects, all present during the treatment. They change the patients' QOL, just like the disease and its treatment, which cause symptoms that radically change the complete functioning of the individual¹⁰.

SR domain is considered to have the best average in the total population (67.63), in Population A (72.61) and in Population B (57.56) because of its correlations with all the other domains, PS ($r = 0.58$), E ($r = 0.56$), showing the importance brought out by Kimmel¹¹. The author reported the need for a proper social support for these patients in order to improve their QOL, and related social support from friends to a better adherence to the treatment.

Besides, when reporting social support received from friends, the author emphasized the positive contribution it has on the patients' depressive mood, and that such support may impact on differences in mortality rates, once it improves the adherence to treatment. This is also confirmed by Shidler et al.¹, who studied 50 patients with chronic renal failure and observed that social support plays an important role against the negative effects of stressful situations.

Regarding significance tests involving the variable "sex" with domain means, which did not identify differences as to QOL, they differ from another study¹² that showed the same variable as a predictor to a better QOL in chronic renal female patients.

In the present study, PH domain is correlated to PS, E (average intensity correlation – $r = 0.51$) and SR domains (weak intensity correlation – $r = 0.47$). Therefore, we may suggest that the factors connected to these domains influence the individual's perception as to physical domain.

CONCLUSIONS

When comparing the QOL of patients with minimum or no depression and those with some level of

depression (mild, moderate or severe), the conclusion is that, in the hemodialysis service of Marília, there was a lower prevalence of depression among chronic renal patients undergoing hemodialysis, especially regarding QOL domains which interrelate and demonstrate the importance to invest in social support to improve the biopsychosocial health of these patients.

In this matter, it is important to interfere not only in social, but also in psychological and physical support in order to improve the QOL of patients undergoing renal replacement therapy, especially those presenting symptoms of depression, once new therapeutic approaches, which go beyond the technology of dialysis machines, contribute in different ways to the care of a chronic patient.

Also, there are no recent studies in literature involving the comparison of QOL between chronic renal patients with and without depression; therefore, our paper offers complementary information to provide the proper care to the health needs, concerning the financing of actions and the encouragement to apply adequate interventions in renal replacement therapy policies.

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