

# The physician-patient relationship in dialysis

## A relação entre médico e pessoa doente na diálise

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### ■ ABSTRACT

**Introduction:** Despite many technical and scientific advances in haemodialysis, the outcomes in patients with end stage renal disease are far from reaching the desired targets. How can they be improved? The doctor-patient relationship is a key issue in the healthcare provided to patients with end stage chronic kidney disease on dialysis. **Patients and Methods:** We, therefore, built a patient-centred biopsychosocial personalized approach to enhance patient autonomy and self-care as an alternative to the conventional medical approach to dialysis patients. We compared patient satisfaction achieved in both approaches using a patient satisfaction questionnaire, and we assessed the correlation between satisfaction and social, clinical and biological outcomes. **Results and Conclusion:** The alternative physician-patient relationship approach achieved better outcomes than the conventional one, and so it must be the choice approach for these patients.

**Key-Words:** Chronic kidney disease; dialysis; end stage renal disease; patient-centred care; patient satisfaction; physician-patient relationship.

### ■ RESUMO

**Introdução:** Apesar de muitos avanços técnicos e científicos no tratamento por hemodiálise, os resultados obtidos nas pessoas com doença renal crónica estão longe de atingir os resultados desejados. Como podemos melhorá-los? A relação entre médico e pessoa doente é um fator chave nos cuidados de saúde prestados a esta população. **Doentes e Métodos:** Construímos um modelo de abordagem da pessoa doente, personalizado, isto é, biopsicossocial e centrado na pessoa, para aumentar a sua autonomia e envolvimento

nos autocuidados, como alternativa ao modelo convencional, centrado nos profissionais ou no sistema. Comparámos os resultados obtidos com as duas abordagens, utilizando um inquérito de satisfação das pessoas. Avaliámos a correlação entre a satisfação percebida e os resultados sociais, clínicos e biológicos. **Resultados e conclusão:** O modelo personalizado obteve melhores resultados que o convencional e por isso deve ser o modelo de escolha para estas pessoas.

**Palavras-chave:** Cuidados centrados na pessoa; Diálise; Doença renal crónica; Hemodiálise; Relação médico-doente; Satisfação do doente.

## ■ INTRODUCTION

In spite of the many technical and scientific advances in dialysis, healthcare outcomes in patients with end-stage renal disease are far from reaching the desired targets<sup>1-3</sup>. How can we improve these outcomes?

Better outcomes are correlated with patient satisfaction, and this is associated with patient involvement in the healthcare process<sup>4,5</sup>. Patient satisfaction is correlated with the physician-patient relationship<sup>6</sup>.

The physician-patient relationship can be physician or patient centred. It can be biomechanical or biopsychosocial and personalized<sup>7</sup>. The conventional approach is biomechanical and staff centred.

We, therefore, developed a patient-centred and personalized approach, fully described in another paper<sup>8</sup>, to enhance patient autonomy and self-care as an alternative to the conventional medical approach to dialysis patients. We conducted a study to evaluate patient satisfaction with their relationship with their physician and other healthcare outcomes.

## ■ METHODS

This study was carried out in a population of patients with chronic kidney disease (CKD). They were over 18 years of age, had sufficient cognitive skills to understand and answer the questions put to them, and had been enrolled in a dialysis programme for more than three months.

The study protocol was approved by the Health Ethics Committee of the institution involved and a

written informed consent was obtained for every participant.

The study was developed in two dialysis clinics in northern Portugal. At Dialysis Clinic A, with 70 patients, the alternative approach was used. At Dialysis Clinic B, with 55 patients, a conventional approach was used.

The personalized approach is organized in five features: respect for patients' values, preferences and expectations; global and continuous communication about the illness and the treatment; patient, family and friends' involvement in the patient's care, increasing self-care and autonomy; emotional support, fear and distress relief, in order to maximize mental and physical comfort; specific and global health care coordination as well as social support<sup>9</sup>. The differences between the personalized and the conventional approach are summarized in Table 1.

After one year of intervention in Clinic A, we assessed patient satisfaction, and demographic, social, clinical and biological data, in both Clinics.

To study patient satisfaction, we used the Patient Satisfaction Questionnaire (PSQ), which is a 27-question survey, each with agree/disagree answers on a five-point Likert scale<sup>10</sup>. They are grouped into five domains. The survey enquires into patient opinion on physician issues. The requested opinion was the average opinion on every physician providing daily care.

Demographic and social data analyzed were age (in years), sex, marital status, education level (in years), and employment status. Clinical data were CKD aetiology, period of dialysis (in years), patient co-morbidity by Charlson co-morbidity index<sup>11-13</sup> functional status by Karnofsky performance scale<sup>14,15</sup> and vascular

**Table I**

Comparison of summarized features of personalized and conventional patient approach

Personalized approach	Conventional approach
Yearly assessment of QOL, occupation and daily life activities.	Omission.
Monthly evaluation and support of adherence.	Omission.
Full explanation about personal health issues, outcomes and related plans.	Omission.
Systematic learning about CKD issues, twice a year.	Omission.
Avoidance of critical judgement.	No avoidance.
Scheduling of health tests determined by patients' interests and possibilities.	Scheduling of health tests determined by institutional interests.
Shared decision about health issues.	Physician ruled decision.
Patient autonomous empowerment to self-care.	Omission.
Information and support to family members.	Omission.
Interconnection with social support institutions.	Omission.
Global health care issues coordination.	Omission.

QOL – Quality Of Life; CKD – Chronic Kidney Disease.

access in use (arteriovenous fistula, AVF; arteriovenous graft, AVG; central venous catheter, CVC).

Assessed biological data were pre-dialysis serum haemoglobin (g/dL), albumin (g/L), phosphate (mg/dL), potassium level (mEq/L), dialysis dose achieved (equilibrated eKt/V).

We compared patient outcomes in both medical approaches and studied the correlation between satisfaction and objective data.

Statistical analysis was performed using IBM-SPSS v. 21. After verifying the non-normal distribution of the data, using the Kolmogorov-Smirnov test, the non-parametric Mann-Whitney test for two independent samples was used to analyse if there were statistical differences between the Clinics according to each item and respective factor.

To analyse if there was a relationship between categorical variables (sociodemographic characteristics: gender, marital status, job status, vascular access and the two Dialysis Clinics), non-parametric chi-square test of independence was used. On the other hand, to verify if there were significant differences between quantitative variables (age, education level (years), dialysis vintage (years), co-morbidity Index-Charlson, Functional Status Index – Karnofsky, haemoglobin (g/dL), albumin (g/L), phosphate (mg/dL), potassium (mEq/L) and eKt/V according the Dialysis Clinics, parametric students' *t* test for two independent groups.

In a second stage, following the instructions of PSQ-Patients Perceptions of the Physician Conduct authors<sup>10</sup>, we performed the validation of the scale, consisted of the mean and standard deviation for each item, as well as reliability measures for each of the separated factors (inter-item correlations and Cronbach's alpha) and item-total correlations with each scale. Subsequently, in order to determine whether there were differences between patient's satisfaction according to the dialysis Clinic (for the 5 dimensions and 27 items of the PSQ), we use the non-parametric Mann-Whitney test. To control the multiplicity problem (family-wise error rate -FWER), the Bonferroni approach was used<sup>16</sup>.

Finally, Pearson correlation coefficients were computed among the five a priori formed scales.

For all tests, significance levels were set at 2-tailed,  $p < 0.05$ .

## ■ RESULTS

We gathered the data of 125 patients (70 at Clinic A; 55 at Clinic B). Their demographic, social, clinical and biological data are shown in Table II, (A, B). The demographic, social and clinical background of the population of each Clinic was similar, except for job status (more retired people in B Clinic) and for educational level (higher in B Clinic). The biological outcomes achieved were also statistically similar,

**Table II (a)**

Characterization of demographic and social data

Sociodemographic characteristics	Clinic				p-value	95% CI of the difference	
	A (n = 70)		B (n = 55)			Lower	Upper
	N	%	N	%			
Gender					ns <sup>a</sup>	–	–
Female	33	47.1%	33	60.0%			
Male	37	52.9%	22	40.0%			
Marital status					ns <sup>a</sup>	–	–
Silgle/Divorced	12	17.1%	10	18.5%			
Widowed	13	18.6%	8	14.8%			
Married	45	64.3%	36	66.7%			
Job status					s <sup>a</sup>	–	–
Retired	47	67.1%	51	94.4%			
Other	23	32.9%	3	5.6%			
	Mean±SD		Mean±SD				
Age (years)	63.69 ± 15.97		64.93 ± 14.12		ns <sup>b</sup>	-6.66	4.17
Educational level (years)	2.99 ± 3.69		4.17 ± 2.43		s <sup>b</sup>	-2.29	-0.09

<sup>a</sup> Chi-square test of independence, 95% confidence interval

<sup>b</sup> Student's t test for 2 independent groups, 95% confidence interval

**Table II (b)**

Characterization of clinical and biological data

Clinical and biological data	Clinic				p-value	95% CI of the difference	
	A (n = 70)		B (n = 55)			Lower	Upper
	N	%	N	%			
Vascular access					ns <sup>a</sup>	–	–
AV fistula	50	71.4%	41	77.4%			
AV graft	1	1.4%	0	0.0%			
Central venous catheter	19	27.1%	12	22.6%			
	Mean±SD		Mean±SD				
Dialysis vintage (years)	4.25 ± 4.25		4.04 ± 3.85		ns <sup>b</sup>	-1.27	1.69
Co-morbidity index – Charlson	5.55 ± 2.23		6.36 ± 4.21		ns <sup>b</sup>	-1.98	0.36
Functional status index – Karnofsky	78.12 ± 15.74		69.04 ± 21.54		s <sup>b</sup>	2.05	16.11
Haemoglobin (g/dL)	11.43 ± 1.22		11.71 ± 1.93		ns <sup>b</sup>	-0.84	0.29
Albumin (g/L)	44.99 ± 4.71		38.92 ± 3.08		s <sup>b</sup>	4.65	7.47
Phosphate (mg/dL)	4.44 ± 1.35		4.60 ± 1.19		ns <sup>b</sup>	-0.63	0.31
Potassium (mEq/L)	5.20 ± 0.74		5.24 ± 0.79		ns <sup>b</sup>	-0.31	0.24
eKt/V	1.54 ± 0.25		1.54 ± 0.33		ns <sup>b</sup>	-0.11	0.10

<sup>a</sup> Chi-square test of independence, 95% confidence interval

<sup>b</sup> Student t test for 2 independent groups, 95% confidence interval

except those of the functional status (higher in A Clinic) and of albumin (higher in A Clinic).

The outcome of the questions on patient satisfaction, mean value and standard deviation, (SD) are shown in Table III, grouped by domains. Nine of 27 questions achieved better statically significant results

with the personalized approach. When adjusting for multiplicity, all results were non-significant.

Studying every patient (n = 125), the correlation coefficient between perceived patient satisfaction and demographic, social and clinical background and the outcomes of biologic patient is very low (Table IV).

**Table III**

Perceived patient satisfaction data by domains and by questions

Question number. Question	Clinic				p-value <sup>a</sup>
	A		B		
	N	Mean ± SD	N	Mean ± SD	
<b>General satisfaction and commitment to their physician</b>	<b>69</b>	<b>4.47 ± 0.57</b>	<b>49</b>	<b>4.29 ± 0.72</b>	<b>ns</b>
5. I don't think I would recommend this doctor to a friend.	68	4.25 ± 1.36	48	4.04 ± 1.52	ns
12. I really like this doctor.	68	4.79 ± 0.51	47	4.60 ± 0.68	ns <sup>b</sup>
14. I don't like this doctor as a person.	68	4.46 ± 1.16	46	4.15 ± 1.32	ns <sup>b</sup>
15. This doctor is the nicest person I have ever met.	67	4.15 ± 1.02	46	4.07 ± 1.16	ns
19. I would like to keep this doctor forever and not have to change to any other.	68	4.68 ± 0.74	46	4.57 ± 0.75	ns
<b>Communication</b>	<b>69</b>	<b>3.90 ± 0.51</b>	<b>50</b>	<b>3.88 ± 0.58</b>	<b>ns</b>
2. This doctor explains absolutely everything I want to know about my health.	69	4.64 ± 0.75	50	4.64 ± 0.60	ns
7. This doctor always gives me suggestions on how to be as healthy as possible.	68	4.78 ± 0.62	49	4.73 ± 0.64	ns
11. While examining me, this doctor always tells me what he is doing.	69	4.59 ± 0.94	47	4.23 ± 1.11	s
16. This doctor doesn't give me the opportunity to say what I think.	67	3.87 ± 1.52	44	3.77 ± 1.55	ns
22. This doctor always listens to what I have to say.	68	4.62 ± 0.77	47	4.77 ± 0.48	ns
23. This doctor doesn't talk much about his plans for treating me.	66	3.52 ± 1.55	46	3.54 ± 1.39	ns
25. When this doctor prescribes medication, he/she doesn't tell me what I want to know about them.	68	3.68 ± 1.61	45	3.38 ± 1.59	ns
27. This doctor always explains the reasons for proceeding with medical exams or tests.	69	4.51 ± 0.90	46	4.46 ± 0.98	ns
<b>Affective physician behaviour</b>	<b>70</b>	<b>4.46 ± 0.61</b>	<b>49</b>	<b>4.31 ± 0.68</b>	<b>ns</b>
1. I don't think this doctor spends enough time with me.	68	3.69 ± 1.63	49	4.24 ± 1.18	ns <sup>b</sup>
4. This doctor takes care of me as a person. I'm not just part of his job.	68	4.51 ± 1.01	48	4.63 ± 0.73	ns
6. This doctor acts as if I have no feelings.	67	4.58 ± 1.00	48	4.17 ± 1.31	s
9. This doctor has always treated me with respect and doesn't speak down to me.	69	4.78 ± 0.68	47	4.89 ± 0.37	ns
10. This doctor always eases my worries regarding my health.	69	4.72 ± 0.64	48	4.63 ± 0.64	ns
17. This doctor doesn't seem to think I'm important as a person.	65	4.28 ± 1.28	46	4.00 ± 1.38	ns
21. I don't feel that this doctor takes my problems seriously.	67	4.51 ± 0.99	45	3.84 ± 1.48	s
24. This doctor is always gentle and interested in my problems.	69	4.72 ± 0.62	47	4.64 ± 0.61	ns
26. This doctor does not normally try to make me feel better when I feel bad or worried.	67	4.25 ± 1.25	47	3.70 ± 1.56	s
<b>Patient perception of physician's technical competence</b>	<b>69</b>	<b>4.50 ± 0.67</b>	<b>49</b>	<b>4.47 ± 0.74</b>	<b>ns</b>
3. I have some doubts as to this doctor's capabilities.	67	4.13 ± 1.42	49	4.06 ± 1.52	ns
18. This doctor seems to always know what he/she is doing.	69	4.65 ± 0.85	45	4.76 ± 0.53	ns
20. I have great confidence in this doctor.	67	4.72 ± 0.62	45	4.67 ± 0.56	ns
<b>Physician interest in patient's family and job status</b>	<b>68</b>	<b>3.52 ± 1.31</b>	<b>49</b>	<b>2.86 ± 1.53</b>	<b>s</b>
8. This doctor hasn't asked me about my work or my daily routine.	67	3.51 ± 1.63	47	3.00 ± 1.64	ns <sup>b</sup>
13. This doctor has asked nothing about my family.	68	3.54 ± 1.60	46	2.67 ± 1.62	s

<sup>a</sup> According to Mann-Whitney's non-parametric test, with 95 % level of confidence.

<sup>b</sup> Significant at 90 % level of confidence.

All tests were non-significant according to the Bonferroni procedure

**Table IV**

Pearson correlation coefficients (r) between PSQ\_dimensions and the biological variables of interest

Biological variables	PSQ_DIM1	PSQ_DIM2	PSQ_DIM3	PSQ_DIM4	PSQ_DIM5
Haemoglobin (g/dL)	0.215*	0.129	0.200*	0.16	0.118
Albumin (g/L)	-0.041	-0.193*	-0.108	-0.137	0.038
Phosphate (mg/dL)	-0.032	-0.053	-0.055	0.031	-0.108
Potassium (mEq/L)	-0.023	-0.08	-0.064	0.005	-0.107
eKt/V	-0.009	-0.02	0.049	-0.07	0.127

\* Correlation is significant at the 0.05 level (2-tailed).

Labels: PSQ\_DIM1 = General satisfaction and commitment to their physician; PSQ\_DIM2 = Communication; PSQ\_DIM3 = Affective physician behaviour; PSQ\_DIM4 = Patient perception of physician's technical competence; PSQ\_DIM5 = Physician interest in patients family and job status.

The results of variables with reverse dependency are also very low, thus not bearing any correlation.

## ■ DISCUSSION

Dialysis is a very complex and challenging area of CKD patient care<sup>1,17-18</sup>. The physician's aim is to reach a higher level of health for the patient<sup>10,19</sup>.

There are many ways improvement can be achieved. A high level of patient satisfaction is related to a higher level of clinical care provided<sup>6</sup>. Patient-centred care improves patient adherence, and the latter improves clinical outcomes<sup>20</sup>.

There are two main components to the doctor-patient relationship beyond a general satisfaction, implying patient commitment to their physician: technical and relationship quality of care. The technical includes technical skills and scientific knowledge. The relationship comprises communication, affective behaviour and interest in patient's family and job. The communication issue is represented by medical information on illness and treatment, but also about careful, non-judgmental listening to patients. Affective physician behaviour includes physician commitment to the patient<sup>5,10</sup>.

The five questionnaire domains gather questions that include the above mentioned doctor-patient relationship issues. The outcomes of questions on general satisfaction and patient commitment to their physicians are higher in alternative approaches, but the difference has no statistical significance.

The satisfaction of patients with their physician is highly related to physician communication<sup>10</sup>. In this survey, patients were very satisfied with how their physicians explained what they were doing as they were examining patients. An alternative approach showed better outcomes than a conventional one, and with statistical significance.

In this survey, time spent with the patient shows us that patients treated under the alternative approach are more satisfied than those under the conventional approach. Patients state they prefer having enough time with their physician<sup>21</sup>. The matter is not how much time but how it is managed during this meeting between physician and patient<sup>22</sup>. The prime elements

are the outcomes, the achieved answers or solutions to questions or problems presented by patients<sup>2</sup>.

In the same way, in an alternative approach, a statistically higher satisfaction level was achieved regarding how seriously doctors take into account problems expressed by their patients and how much they try to improve patients' negative or concerned feelings. Patient's problems are those that they perceive to interfere with their daily lives. Patient priority can be different from physician priority<sup>23</sup>. But patients need to feel their physician's commitment to their illness or to their worries. Patients also need to feel that their physician is committed to solving their problems. At least, patients must feel that their physician is making an effort to relieve their suffering<sup>24-26</sup>.

The patients' jobs and occupations are central in their lives. Patient's family is a paramount support for most patients. Do physicians care for these patients' issues? In these aspects, an alternative approach has better outcomes, statistically significant.

After one year of an alternative approach, the biological data of both populations are identical, except the albumin and functional status figures. Functional status is worse in Clinic B patients but both patients are unable to work, with varying amount of need of assistance. They are more frequently retired but the occupational status is similar. The educational level is higher in B Clinic patients, but they are both of low level. For albumin differences data research must be done with a larger number of patients. Therefore, we can say that in this study, in patients on dialysis treatment, except for albumin, every objective patient outcome is similar in both physicians' approaches.

In our study, when we considered the total patients ( $n = 125$ ), patient satisfaction, as an independent variable, was not related to patients' demographic, social, clinical or biological outcomes. Reversing the dependency variable, no relation was found either. Some researchers found some relationship between objective variables and satisfaction<sup>4,5</sup>, but in our study patient satisfaction behaved as an independent issue. Others studies found no correlation between functional capacity and satisfaction level, nor with the health state. Patient satisfaction behaviours are an independent matter<sup>27</sup>.

The main limitation of this study is the sample size. Study correlations must be done with a large number



of patients. However, this is a preliminary study, which must be expanded to include larger populations.

The second limitation is related to the low educational level of the population. Satisfaction is a ratio between what is expected and what is perceived as received. Illiteracy can change both, but not in the same way or amount. The influence of literacy on patient satisfaction is another field of research.

Another limitation is the patient selection. They were not randomized. Each approach has been applied to each Clinic.

Nonetheless, we can conclude that, in several issues, the alternative approach is better than the conventional one. Patient satisfaction with physician communication, affective behaviour and physician interest in patients' family and job status is higher with the alternative patient-centred approach. This is very important due to the influence it can exert over other care-related issues, such as cost and efficiency. As a chance to search for better outcomes, further research regarding patient satisfaction is required.

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