

Hope and spirituality among patients with chronic kidney disease undergoing hemodialysis: a correlational study¹

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Objective: to analyze the relationship between the hope and spirituality of patients with chronic kidney disease undergoing hemodialysis. **Method:** this is a cross-sectional, correlational study. The sample was composed of 127 patients of a Renal Replacement Unit. Data were collected through individual interviews guided by the following instruments: participant characterization, Herth Hope Index (HHI), and Pinto Pais-Ribeiro Spirituality Scale (PP-RSS). **Results:** the average HHI score was 38.06 (± 4.32) while the average PP-RSS score was 3.67 (± 0.62) for "beliefs" and 3.21 (± 0.53) for "hope/optimism". Spearman's coefficient indicated there was a moderate positive correlation between the HHI and PP-RSS dimensions of "beliefs" ($r=0.430$; $p<0.001$) and "hope/optimism" ($r=0.376$; $p<0.001$). **Conclusion:** Since a relationship between the sense of hope and spirituality of patients with chronic kidney disease was found, these constructs should be taken into account at the time health professionals deliver care to help patients coping with the disease and treatment.

Descriptors: Renal Insufficiency Chronic; Renal Dialysis; Life Expectancy; Spirituality; Adult Health; Health of the Elderly.

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Introduction

Chronic kidney disease (CKD) is considered a complex, often slow and progressive syndrome that leads to the kidney's inability to excrete metabolites. This may be characterized by kidney damage and irreversible loss of renal function indicated by the filtration rate, which is the main mechanism to excrete toxic metabolites produced by the body⁽¹⁾.

Therefore, this condition generally causes patients to experience frustration and limitations, once various restrictions are imposed, such as: maintenance of a specific diet associated with fluid restrictions and change of body appearance due to the need for a catheter to enable vascular access or an arteriovenous fistula⁽¹⁾.

Because the treatment imposes many changes on one's daily routine, some processes may affect individuals' level of hopefulness. Being able to maintain hope in the face of a disease is, however, a continuous and important process because it encourages the individual and family to seek new ways or to acknowledge the new condition imposed by the disease. In this context, spirituality and religiosity related to one's spiritual beliefs can support and strengthen one's coping strategies to deal with everyday hardships⁽²⁾.

Hope is a state related to a positive expectancy of future and is an effective coping strategy. It encourages one to act and proceed through life and is key for one's spiritual wellbeing. Hope is related to quality of life and survival and encourages one to cope with problems. It is characterized as a universal and multidimensional construct with repercussions on quality of life and is mainly related to one's health condition. When the experience of becoming sick is accompanied by hope, the individual focuses his/her energy on reestablishing health and wellbeing⁽³⁾.

Therefore, the meaning of being hopeful is extremely important in the lives of patients with CKD since this attitude encourages them to expect improvement in their condition from the time the disease is diagnosed up to a potential kidney transplantation, which is the only procedure that enables one to expect "a cure" or a longer life with greater quality⁽⁴⁾. Hope is associated with spirituality because the spiritual dimension is described as being relevant in the attribution of meaning to life and is a resource that provides hope when one is coping with diseases that change individuals' health conditions and levels of distress⁽⁵⁾.

The spiritual state of patients dealing with the difficult experience of CKD and the arduous

hemodialysis treatment influences one's coping and is an active factor in the process. Hence, health professionals should pay attention to aspects related to the patients' manifestations of spirituality because a lack of it may aggravate a patient's physical and emotional symptoms and reduce the ability to cope with the disease⁽⁶⁾.

In this context, hope is associated with health recovery and encourages the patient to travel long distances in the search of an arduous treatment for their disease or undergo endless invasive procedures, change their lifestyle, routine, and adhere to treatment, even if in a debilitated state⁽⁷⁾.

It is worth noting that there is a lack of national and international studies addressing the hope and spirituality of patients with chronic kidney disease. Given the previous discussion, this study's objective was to analyze the relationship between hope and the spirituality of hemodialysis patients.

Method

This cross-sectional and correlational study was conducted in a Renal Replacement Therapy Unit in the interior of São Paulo, SP, Brazil providing care for patients covered by the Brazilian Unified Health System (SUS), private insurance companies or patients paying for the services themselves.

The study was approved by the Institutional Review Board at the Federal University of São Carlos (Protocol No. 53057/2012).

The sample was composed of 127 individuals who met the following inclusion criteria: being 18 years old or older; having been diagnosed with Terminal Chronic Kidney Disease; and undergoing hemodialysis.

The participants who consented to participate in the study, met the inclusion criteria and signed free and informed consent forms answered the following instruments: Socio-demographic and Clinical Characterization, Herth Hope Index (HHI), Pinto and Pais-Ribeiro's Spirituality Scale (PP-RSS).

HHI is an American self-reported instrument, quick to apply and easy to understand. It was developed and validated in the United States in 1992⁽⁸⁾ and was culturally adapted and validated to Portuguese in 2007⁽⁷⁾. This scale was designed to measure one's sense of hope and is composed of 12 statements, which are scored on a four-point Likert scale in which 4 indicates "totally agree" and 1 indicates "totally disagree". The scores of items 3 and 6 are inverted and the total score ranges

from 12 to 48, while the higher the score, the higher one's sense of hope⁽⁷⁾.

PP-RSS was created in Portugal in 2007⁽⁵⁾ and was adapted and validated in Brazil in 2010⁽⁶⁾. It assesses spirituality in health contexts and is composed of five questions that focus on the meaning of life and on the construction of hope and positive perspective. It is scored on a four-point Likert scale ranging from "do not agree" to "totally agree". The score of each subscale ("beliefs" and "hope/optimism") is computed through the average score of its items. The higher the score obtained for each item, the higher the level of agreement with the dimension under assessment⁽⁵⁾.

These instruments were applied during individual interviews prior to a hemodialysis session or, when that was not possible, in the first two hours of treatment, from July to September 2012.

Data were stored in an Excel spreadsheet and analyzed in the Statistical Package for the Social Sciences (SPSS) for Windows, version 19.0. Location (average, median, minimum and maximum) and dispersion measures (standard deviation) were computed to obtain a descriptive analysis of the data. Cronbach's alpha (α) was used to verify the scales' internal consistency (HHI and PP-RSS). The Kolmogorov-Smirnov test indicated non-normality of data, therefore Spearman's Correlation Coefficient was used to verify the existence and magnitude of correlation between the HHI and PP-RSS. Spearman's Correlation Coefficient is established by an R-value, which may range from -1 to +1. A perfect correlation is indicated by +1; zero indicates there is no correlation; and -1 indicates perfect negative or inverse correlation. In this study, the magnitude of correlations was classified either as: weak (<0.3); moderate (0.3 to 0.59); strong (0.6 to 0.9); or perfect (1.0)⁽⁹⁾. The level of significance adopted for the statistical tests was 5% ($p \leq 0.05$).

Results

A total of 127 individuals were assessed and most were male (63.8%), whose ages ranged from 23 to 89 years old, with an average of 56.47 (± 14.48) years old and a variation from 23 to 89 years old (Table 1). Average time of schooling was 3.15 (± 1.73) years, ranging from zero to 20 years of schooling, while most individuals were white (60.3 %) (Table 1).

In regard to marital status, most had a fixed partner (59.8%); 68.5% were from São Carlos and most were retired (75.6%). Table 1 shows a predominance

of Catholics (68.5%) followed by Evangelicals (21.3%). In regard to the practice of their religious beliefs, 67.7% (n=86) of the individuals regularly attended religious services.

Table 1 - Description of socio-demographic variables of a Renal Replacement Therapy Unit patients (N=127). São Carlos, SP, Brazil, 2012

Variables	n	%
Genders		
Male	81	63.8
Female	46	36.2
Age (in years)		
23 to 59	76	59.8
60 to 89	51	40.2
Ethnicity		
White	77	60.6
Others	50	39.4
Schooling		
Illiterate	13	10.3
1 to 4 years	52	40.9
5 to 9 years	30	23.6
10 years or more	32	25.2
Origin		
São Carlos	87	68.5
Ibaté	17	13.4
Porto Ferreira	11	8.7
Descalvado	7	5.5
Ribeirão Bonito	4	3.1
Dourado	1	0.8
Marital status		
Have a partner	76	59.8
Do not have a partner	51	40.2
Retired		
Yes	96	75.6
No	31	24.4
Religion		
Catholic	87	68.5
Evangelical	27	21.3
Christian Congregation	5	3.9
Adventist	3	2.4
Spiritism	1	0.8
No religion	4	3.1
Practice religion		
Yes	86	67.7
No	41	32.3

In regard to the individuals' sense of hope, as assessed by the HHI, the average score obtained was 38.06 (± 4.32) (Table 2). It is worth noting that total score ranges from 12 to 48 and the higher the score, the higher one's sense of hope. The total scores ranged from 22 to 45. In regard to the HHI's internal

consistency, Cronbach's alpha was 0.71, indicating satisfactory reliability.

Among the HHI's assessed items, we verify in Table 2 that item 2 obtained the lowest average score, 3.09 (± 1.20), showing that 70.1% of the sample either disagreed ($n=38$) or totally disagreed

($n=51$) with the statement "*I have short and long-term plans.*" Relatedly, item 6 ("*I feel scared of the future*") obtained the highest average score: 3.82 (± 0.59). That is, 91.3% of the respondents either agreed ($n=2$) or completely agreed ($n=116$) with this statement.

Table 2 - Descriptive statistics of scores assigned by Renal Replacement Therapy Unit patients (N=127) to the domains of the Herth Hope Index (HHI). São Carlos, SP, Brazil, 2012

Variables	Average	Sd*	Median	Obtained variation	Expected variation
Herth Hope Index items					
1. I am optimistic about life	3.53	0.73	4	1-4	1-4
2. I have short and long-term plans	3.09	1.20	3	1-4	1-4
3. I feel very lonely	3.44	0.98	4	1-4	1-4
4. I see possibilities in the midst of difficulties	3.50	0.73	4	1-4	1-4
5. I have faith and it comforts me	3.61	0.76	4	1-4	1-4
6. I feel scared of the future	3.82	0.59	4	1-4	1-4
7. I can remember happy and pleasant times	3.69	0.61	4	1-4	1-4
8. I feel strong	3.41	0.88	4	1-4	1-4
9. I am able to give and receive affection/love	3.61	0.52	4	2-4	1-4
10. I know where I want to go	3.41	0.79	4	1-4	1-4
11. I believe in the value of each day	3.72	0.56	4	1-4	1-4
12. I feel my life is useful and worthy	3.73	0.62	4	1-4	1-4
HHI Total	38.06	4.32	39.00	22-45	12-48

*Standard deviation

In regard to spirituality as assessed by PP-RSS, the average score of the dimensions "beliefs" and "hope/optimism" were 3.67 (± 0.62) and 3.21 (± 0.53) respectively (Table 3). This scale's total internal consistency was $\alpha=0.72$, also indicating satisfactory reliability.

Item 4 obtained the lowest average score 2.34 (± 1.22), showing that 51 individuals either disagreed or totally disagreed with the statement "*I feel my life has improved*". On the other hand, items 2 and 5, "*My faith and beliefs give me strength in difficult times*" and "*I learned to value the small things in life*" obtained the

highest average scores, 3.73 ± 0.64 and 3.73 ± 0.58 , respectively. That is, most respondents either agreed or totally agreed with these statements. The total averages of the dimensions "beliefs" and "hope/optimism" were 3.67 (± 0.62) and 3.21 (± 0.53), respectively.

In regard to the relationship between the sense of hope and spirituality of hemodialysis patients, we verified a moderate positive correlation between the HHI and PP-RSS, specifically with the dimension "beliefs" ($r=0.430$; $p<0.001$) and with the dimension "hope/optimism" ($r=0.376$; $p<0.001$).

Table 3 - Descriptive statistics of the scores obtained by Renal Replacement Therapy Unit patients (N=127) in the Pinto and Pais-Ribeiro Spirituality Scale (PP-RSS). São Carlos, SP, Brazil, 2012

Variables	Average	Sd	Median	Obtained variation	Expected variation
PP-RSS Items					
1. My spiritual and religious beliefs give meaning to my life	3.61	0.75	4	1-4	1-4
2. My faith and beliefs give me strength in difficult times	3.73	0.64	4	1-4	1-5
3. I am hopeful towards the future	3.56	0.77	4	1-4	1-5
4. I feel my life has improved	2.34	1.22	2	1-4	1-5
5. I have learned to value to small things in life	3.73	0.58	4	1-4	1-5
PP-RSS Domains					
Beliefs	3.67	0.62	4	2-4	1-5
Hope/Optimism	3.21	0.53	3	2-4	1-5

Discussion

The prevalence of males among the subjects is in agreement with a study performed with hemodialysis patients (60 %) ⁽¹⁰⁾. The participants' ages ranged from 23 to 89 years old with an average of 56.47 (± 14.48) years old; most individuals were white (60.3%). Another study ⁽¹¹⁾ conducted with hemodialysis patients reports similar findings in which the average age of the participants was 51 years old and 63.9% of the interviewees were white.

In terms of schooling, a low educational level was observed. It is noteworthy that only 40.5% of the individuals were literate, corroborating the findings of one study conducted in Sao Paulo with adult and elderly hemodialysis patients in which 66.0% of the interviewees were functionally illiterate ⁽¹¹⁾.

Concerning occupation, 75.5% of the interviewees were retired. This result is also similar to the results of a study addressing the health-related quality of life of patients with chronic kidney disease ⁽¹¹⁾, in which 72.3% of the men and 27.7% of the women were retired.

Catholicism presented the highest percentage (70.7%) of adherents. This result is in agreement with data from a Brazilian study in which most participants were Catholic (54.5%) and 81.8% of the individuals undergoing hemodialysis reported they practice their beliefs ⁽¹²⁾.

In regard to the sense of hope of the individuals assessed by the HHI, the average score was 38.06 (± 4.32). It is worth noting that the possible scores for this scale range from 12 to 48 and the higher the score the higher the sense of hope of the individual under study.

In the search for national and international studies addressing patients with chronic kidney disease undergoing dialysis, we found only one study, which was conducted with 50 elderly individuals with CKD undergoing hemodialysis in a Renal Replacement Treatment Unit in the interior of São Paulo, Brazil, which obtained an average score of 35.67 (± 3.20) ⁽¹⁰⁾.

The cancer and diabetic patients addressed in the study that translated, adapted and validated the Herth Hope Index in the Brazilian context obtained average scores of 41.57 (± 4.60) and 40.46 (± 4.88), respectively ⁽⁷⁾. The average HHI score obtained in a study ⁽¹³⁾ conducted in Fortaleza, CE, Brazil, administered to assess the sense of hope of women infected by HIV was 34.86, that is, below the score obtained in this study.

Among the studies using the HHI to measure hope, we highlight one conducted in the medical service of the University of California, USA ⁽¹⁴⁾. The study's objective was to investigate the relationship between hope and pain among cancer patients and it reported results similar to the ones observed in this study, with an average level of hope of 38.22 (± 5.09).

Studies reporting average scores lower than the ones reported here were found. A study ⁽¹⁵⁾ assessing the level of hope of 50 year-old or older women with HIV was conducted in a specialized care service in city of Sao Paulo, SP, Brazil and an average score of 36.75 (± 4.52) was obtained on the HHI.

Another study addressing the experiences of family caregivers of people with Alzheimer's was conducted in Canada and reports a score of 37.4 ⁽¹⁶⁾. Finally, a study ⁽¹⁷⁾ performed in Iran to investigate the sense of hope of cancer patients and related factors reports an average score of 37.6 on the HHI.

Literature reviews addressing studies with a sense of hope higher than the level found in this study report an investigation conducted in China that investigated hope among women with breast cancer undergoing chemotherapy. The Chinese participants obtained an average score of 38.62 (± 4.56) ⁽¹⁸⁾ on the HHI.

In regard to the level of spirituality assessed by the PP-RSS, the average scores obtained in this study for the dimensions "beliefs" and "hope/optimism" were 3.67 (± 0.62) and 3.21 (± 0.53), respectively.

The search for studies addressing individuals with chronic kidney disease undergoing dialysis revealed only one study that intended to identify the nursing diagnosis spiritual distress in 120 patients with chronic kidney failure receiving renal treatment in a clinic located in the south of Minas Gerais, Brazil ⁽¹⁹⁾. The efficiency of PP-RSS was verified during the development of the study through clinical validation. In regard to the scale's reliability, the authors verified a global Cronbach's alpha of 0.81, or significant internal consistency. In this study, PP-RSS also presented satisfactory internal consistency (0.72).

The search for national and international studies using PP-RSS to measure the spirituality of respondents and reporting average scores below those found in this study, revealed a study addressing caregivers of diabetic children in Minas Gerais, Brazil. It obtained an average score of 3.33 in the "beliefs" and 3.26 in the "hope/optimism" dimensions ⁽²⁰⁾. One study conducted in Portugal with 60 people with multiple sclerosis, to assess the correlation between quality of life and spirituality,

reports average scores of 2.39 (± 0.55) and 2.58 (± 1.01) for "hope/optimism" and "beliefs", respectively⁽²¹⁾.

International studies reporting spiritual levels higher than those found in this study were also found. One study assessing both the quality of life and the spirituality of cancer patients undergoing chemotherapy reports average scores of 3.9 (± 0.22) and 3.7 (± 0.38) for "beliefs" and "hope/optimism," respectively⁽²²⁾.

In regard to the relationship between hope and the spirituality of hemodialysis patients, we found a moderate positive correlation in this study between the PP-RSS' domains ("beliefs and hope/optimism") and the HHI' domains. No studies addressing the relationship between hope and the spirituality of chronic renal patients were found in the scientific literature, though there is one study conducted in Portugal⁽²³⁾ analyzing the relationship between the spirituality and hope of cancer patients. It obtained results similar to those found in this study: it reports a moderate positive correlation between the scales measuring hope and spirituality, verified by Pearson's Correlation Coefficient⁽²³⁾. Therefore, since hope is essential for human beings and has the power to support, encourage and benefit individuals coping with difficult situations, religiosity and spirituality may be associated with a sense of hope, since the spiritual dimension is relevant to assigning meaning to life and a resource of hope when coping with diseases⁽⁵⁾.

It is worth noting that spirituality and religiosity may be associated with hope since the spirituality dimension is described as being relevant when one is coping with diseases that cause changes in one's health condition and level of distress⁽⁵⁾.

Conclusion

Hope and spirituality were assessed in this study that addressed patients with chronic kidney disease undergoing hemodialysis. A moderate positive correlation was found.

Health professionals providing care to hemodialysis patients should consider these individuals' sense of hope and spirituality at the time care is delivered, because, for those coping with disease and treatments, these concepts are extremely important.

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