Original Article

STRESSORS AND COPING STRATEGIES IN HEMODIALYSIS PATIENTS

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ABSTRACT

Objectives: The aim of the study was to determine relationships among treatment-related stressors and coping strategies of chronic hemodialysis patients.

Methodology: The sample of this study consisted of 224 participants. Data was collected with Hemodialysis Stressors Scale and Carver Coping Scale and analysed by using the linear multiple regression analysis.

Results: The most frequent stressors reported were: limitation of vacation (80.4%), followed by fatigue (79.9%) and uncertainty about future (79.0%). The most frequently used coping strategies were turning to religion, active coping and suppression of competing activities. Physical treatment-related stressors were significantly related to behavioural disengagement.

Conclusions: This study shows that the most frequently used coping strategy is "turning to religion" by hemodialysis patients which is different from previous studies. The Turkish view the belief as the basic and most important aspect of human life so the belief of affects of coping in our country are different from the Western World.

KEY WORDS: Coping Strategies, Hemodialysis, Stressors.

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INTRODUCTION

End-stage renal disease (ESRD) is a worldwide public health problem. In the United States, the incidence and prevalence or kidney failure are rising, and the number of persons with kidney failure who are treated with dialysis and transplantation is projected to increase from 340.000 in 1999 to 651.000 in 2010.[1] In Turkey, there are presently 39.267 unit patients on hemodialysis and 5.307 unit patients in peritoneal dialysis and 5.647 patients undergoing renal transplantation. Hemodialysis remains the most common form of treatment for ESRD compared to peritoneal dialysis or renal transplantation.[2] Hemodialysis patients are subjected to multiple psychosocial and physiological stressors and may be threatened with many potential losses and lifestyle changes.[3,4] Patients receiving hemodialysis use various strategies to cope with the stressors related to their disease and the treatment procedures.[5,6] Preferred coping methods must be appraised relative to a social or cultural group, individual beliefs, values, norms, worldview, symbols and orientation.[6,7] The aim

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of the present study was to investigate the treatment-related stressors and coping strategies of chronic hemodialysis patients in Istanbul. Relationships among treatment-related stressors and coping strategies were explored.

METHODOLOGY

We used an improbability sampling technique to recruit the hemodialysis patients in three dialysis centres in Istanbul, in 2005. Participants were eligible for inclusion if they had been on hemodialysis for more than one year, were able to speak and read Turkish, did not have communication problems and were willing to participate. The research consisted of 224 participants. The interview included the administration of the following instruments: the Hemodialysis Stressors Scale[3] and Coping Scale.[8]

Hemodialysis Stressors Scale: A 29-item rating scale was designed to evaluate the perceived frequency and intensity of particular stressors associated with hemodialysis treatment. The questionnaire contained 29 different stressors associated with hemodialysis.[3] In this study, according to Turkish version, a 25-item was used for the Hemodialysis Stressors Scale. Each of stressors were scored on 2-point from 0 to 1 (0= absent and 1= present). The scale has two subscales, psychosocial and physical. The psychosocial subscale consists of 19 items, such as change in body appearance and uncertainty concerning the future. The physical subscale consists of 6 items relating symptoms such as muscle cramps and fatigue. Kuder-Richardson 21 value of 0.84 was found.

The Cope Scale: This scale measures coping strategies.[8] The Cope Scale contains 60-items but one item has been cancelled from Turkish version namely "I ask people who have had similar" version.[9] According to Turkish version, the cope contents a 59-item multidimensional coping instrument designed to assess 15 conceptually distinct methods of coping: active coping, planning, suppression of competing activities, restraint coping, seeking social support for instrumental, seeking social support for emotional reasons, positive reinterpretation & growth, acceptance, turning to religion, focus on & venting of emotions, denial, behavioural disengagement, mental disengagement, alcohol-drug disengagement and humour. A four-point (1-4) Likert scale was used (1= I usually don't do this at all, 2= I usually do this a little bit, 3= I usually do this a medium amount and 4= I usually do this a lot).[8] In the present study, Cronbach's alpha for the scale ranged from .46 (seeking social support for emotional reasons) to 0.95 (humour). The average alpha across the scale was 0.89.

Data analysis: Descriptive analysis was used to present demographic data, type of stressors associated with hemodialysis and coping strategies. Linear multiple regression analysis was used to examine relationships between the stressors associated with hemodialysis and the coping strategies. A two-tailed p-value <0.05 was considered statistically significant.

RESULTS

The research consisted of 224 participants of whom 135 were males (60%) and 89 were females (40%). Mean age was 51.54 (SD=14.03) years, mean duration of dialysis was 5.13 (SD=3.69) years and the majority (76%) were married. The majority of participants attended hemodialysis for four hours, three times a week. All of the participants were Muslim.

The most frequent stressors reported were: limitation of vacation (80.4%), followed by fatigue (79.9%), uncertainty about future (79.0%), limitation of activities (75.9%) and life depend on hemodialysis machine (75.0%), as shown in Table-I.

The total score of coping scale was 151.71 (SD=23.60, min=77, max=232), demonstrating a moderate wide range of scores. The most frequently used coping strategies were turning to religion (Mean=14.10, SD=3.99), active coping (Mean=11.43, SD=3.03) and suppression of competing activities (Mean=11.22, SD=2.15), as shown in Table-II.

To identify relationship among the stressors and the coping strategies, 15 linear multiple

Table-I: Ranking of hemodialysis-related stressors (N=224)

Stressors	*Rank Ordering*	*Yes n, (%)*	*No n, (%)*
Vacation limitation	1	180 (80.4)	44 (19.6)
Fatigue	2	179 (79.9)	45 (20.1)
Uncertainty about future	3	177 (79.0)	47 (21.0)
Activity limitation	4	170 (75.9)	54 (24.1)
Life depend on HD machine	5	168 (75.0)	56 (25.0)
Decreased social life	6	156 (69.6)	68 (30.4)
Length of HD treatment	7	142 (63.4)	82 (36.6)
Hypotension	8	141 (62.4)	83 (36.7)
Fluid limitation	9	138 (61.6)	86 (38.4)
Muscle cramping	10	131 (58.5)	93 (41.5)
Joint stiffing	11	129 (57.6)	95 (42.4)
Sleep disturbances	12	126 (56.2)	98 (43.8)
Transportation to/from unit	13	125 (55.8)	99 (44.2)
Food limitation	14	115 (51.3)	109 (48.7)
Decreased sexual drive	15	102 (45.5)	122 (54.5)
Itching	16	88 (39.3)	136 (60.7)
Insufficient A-V fistula	17,5	87 (38.8)	137 (61.2)
Nausea/vomiting	17,5	87 (38.8)	137 (61.2)
Job interference	18	85 (37.9)	139 (62.1)
Changes in family responsibilities	19	84 (37.5)	140 (62.5)
Fear of being alone	20	73 (32.6)	151 (67.4)
Dependency on medical staff	21	61 (27.2)	163 (72.8)
Financial factors	22	55 (24.6)	169 (75.4)
Loss of bodily function	23	49 (21.9)	175 (78.1)
Changes in bodily appearance	24	45 (20.1)	179 (79.9)

Note: A-V= arterio-venous

regressions were performed by using-coping strategies as the criterion variable and hemodialysis-related stressors as the predictor variables (Table-III). The 14 multiple regressions did not show any significant relationship between stressors and coping strategies. Only the eighth multiple regression, using behavioural disengagement coping as the criterion variable and psychosocial and physical as the predictor variables, explained 29% of the variance in the criterion variable, mostly through the strong relationship between physical stressors and behavioural disengagement coping (R^2=.010, p=.046).

DISCUSSION

Hemodialysis treatment results in many stresses and restrictions. In a number of studies, hemodialysis patients have reported a high degree of distress associated with a wide variety of psychosocial and physical problems.[3,4,7,10] In this study, the top three stressors experienced by hemodialysis patients were vacation limitation, followed by fatigue and uncertainty about future. Baldree et al. found that fluid limitation was ranked as the highest psychosocial stressor and the top physiological stressors were muscle cramps and fatigue.[3] The stressors such as fluid limitation, length of treatment, fatigue and vacation limitation were predominant stressors reported by Gurklis and Menke[4] and Welch and Austin.[11] According to the study of Mok and Tam, the most frequent stressors reported were fluid limitation, food limitation, itching of the skin, fatigue and cost factors.[7] The vacation limitation was ranked as the first stressor for this study, which is different from other studies. One of the most

Table-II: Ranking of 15-coping strategies (N=224)

Coping strategies	*Rank ordering*	*Mean scores*	*Standard Deviation*
Turning to religion	1	14.10	3.99
Active coping	2	11.43	3.03
Suppression of competing activities	3	11.22	2.14
Acceptance	4	11.20	2.56
Restraint coping	5	11.14	2.91
Focus on & venting of emotions	6	10.87	2.91
Planning	7	10.85	2.84
Mental disengagement	8	10.82	2.69
Seeking social support-emotional reasons	9	10.65	4.05
Positive reinterpretation & growth	10	10.32	2.52
Seeking social support-instrumental	11	10.26	2.85
Behavioural disengagement	12	9.04	2.99
Humour	13	7.94	3.13
Denial	14	7.93	2.82
Alcohol disengagement	15	3.93	1.78

important findings was that many patients experienced stress at vacation limitation because there is not enough hemodialysis centres at holiday cities to take a vacation in Turkey. In this study, the fatigue was found as second stressor, which is common finding for all studies. The uncertainty about future was ranked as the third stressor for this study, which is different from other studies.

Most of the studies have shown that preferred coping methods must be appraised relative to a social or cultural group, individual beliefs, values, norms, worldview, symbols and orientation.[6,7] We found that hemodialysis patients preferred coping strategy that was turning to religion. Most of Turkish population believes in Islamic religion (Muslim). According to the Islam pray is only made to Allah (Lord). Person says that "My Allah, give me patience and strength". Person feels the serenity and rest after praying. Mok and Tam have showed that the most common coping methods were "accepted the situation because very little could be done", followed by "told oneself not to worry because everything would work out fine" and "told oneself that the problem was really not that important". It was found that the traditional philosophies of the Chinese–Confucianism, Buddhism and Taoism–share an approach to the understanding and managements of life stressors as different from that adopted by Western philosophies.[7] Our data seem to support cultural notions about the role of religion within Turkish people receiving hemodialysis. Similar to the findings of Gok who found that patients having psychiatric disorder were more likely to use turning to religion-coping strategy[9], hemodialysis patients preferred coping strategy that was turning to religion. Some researchers found that hemodialysis patients were more likely to use problem-oriented coping strategies,[3,4,7,11] or emotion-oriented,[12,13] avoidance and isolated thoughts as coping strategies.[13] According to these studies, Turkish population, in comparison to western countries would be more likely to use religious coping.

We found that physical stressors were related to coping strategy including behavioural disengagement. Most of the studies examining the relationship between coping strategy and stressors for hemodialysis patients are limited in sample size and seem to have inconsistent results. For example, Gurklis and Menke found that an increase in physical stressors was associated with an increase in emotion-focused coping.[4] Their findings were consistent with Lazarus and Folkman's suggestion that emotion-focused coping occurs primarily when an appraisal suggests nothing can be done to al-

Table-III: Regression analyses of hemodialysis-related stressors and coping strategies

	ß	sr^2	*Adjusted* R^2
Active coping			-0.005
Physical treatment-related stressors	0.048	0.093	
Psychosocial treatment-related stressors	0.022	0.018	
Planning			-0.008
Physical treatment-related stressors	-0.031	-0.056	
Psychosocial treatment-related stressors	0.028	0.022	
Suppression of competing activities			-0.005
Physical treatment-related stressors	0 .011	0.016	
Psychosocial treatment-related stressors	0.059	0.035	
Restraint coping			0.003
Physical treatment-related stressors	-0.006	-0.011	
Psychosocial treatment-related stressors	0.112	0.090	
Seeking social support for instrumental			0.010
Physical treatment-related stressors	0.050	0.092	
Psychosocial treatment-related stressors	0.107	0.084	
Seeking social support for emotional reasons			-0.009
Physical treatment-related stressors	0.021	0.054	
Psychosocial treatment-related stressors	-0.008	-0.009	
Focus on & venting of emotions			0.008
Physical treatment-related stressors	0.103	0.191	
Psychosocial treatment-related stressors	0.045	0.036	
Behavioural disengagement			0.010*
Physical treatment-related stressors	0.153	0.292	
Psychosocial treatment-related stressors	-0.046	-0.038	
Mental disengagement			0.005
Physical treatment-related stressors	-0.039	-0.067	
Psychosocial treatment-related stressors	0.129	0.096	
Positive reinterpretation & growth			-0.004
Physical treatment-related stressors	0.047	0.075	
Psychosocial treatment-related stressors	0.033	0.023	
Denial			0.004
Physical treatment-related stressors	0.129	0.232	
Psychosocial treatment-related stressors	-0.047	-0.036	
Acceptance			-0.001
Physical treatment-related stressors	-0.004	-0.007	
Psychosocial treatment-related stressors	0.092	0.065	
Turning to religion			-0.001
Physical treatment-related stressors	-0.444	-0.086	
Psychosocial treatment-related stressors	-0.911	-0.077	
Alcohol disengagement			-0.001
Physical treatment-related stressors	0.003	0.003	
Psychosocial treatment-related stressors	0.090	0.044	
Humour			-0.005
Physical treatment-related stressors	0.056	0.112	
Psychosocial treatment-related stressors	-0.072	-0.062	

Note: *p<0.05.

ter or modify conditions.[6] Yeh and Chou explained that fluid and food restriction and ambiguity-related stressors were positively associated with coping strategies that were emo-

tion-oriented, involved avoidance, or isolated thoughts.[13] According to Welch and Austin physical stressors were not related to any coping were in contrast with our findings.[11]

Our finding that psychosocial stressors were not related to any of the 15 types of coping were in contrast to those found by Gurklis and Menke, who found that psychosocial stressors were associated with affective-oriented and problem-oriented coping.[4] Welch and Austin found that psychosocial stressors were significantly related to problem-solving coping and avoidance coping.[11] Our findings are in contrast to these study findings.

In conclusion, the study demonstrates that alternative beliefs may have influences that need to be recognized by conducting further studies with different cultural groups.

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