



# COPING STRATEGIES DURING CHRONIC ILLNESS: A COMPARATIVE STUDY OF CARDIAC AND RENAL FAILURE PATIENTS

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**Article received on:**

18/02/2015

**Accepted for publication:**

13/03/2015

**Received after proof reading:**

17/04/2015

**ABSTRACT... Introduction:** Pakistan is a developing country where the majority of the population belongs to the lower socioeconomic class. Chronic diseases such as cardiovascular and kidney diseases are increasing day by day in Pakistan. Individuals suffering from chronic illnesses are at a greater risk of problems as compared to the un-sick. Their vulnerable situation and the stress of the event creates a lot of changes, changing the meaning of individual lives altogether. To understand the dynamics of chronic illnesses, it is important to find out what coping strategies were used by the cardiac and renal failure patients? **Objectives:** The researchers tried to find out whether cardiac and renal failure patients differ in their coping strategies. **Study Design:** Quantitative cross sectional study. **Period:** August 2014. **Setting:** The data was collected from the Dialysis Units of Mayo Hospital, Jinnah Hospital, Lahore General Hospital and all admitted patients of Punjab Institute of Cardiology, Lahore. These four hospitals have good turn-over of the patients. **Materials and Methods:** Purposive sampling method was used in this study. For the collection of quantitative data, a hospital-based survey was conducted by using a structured interview schedule. 275 patients (131-cardiac and 144-renal failure) including 184 males and 91 females between age of 20 to 110 years were interviewed. Mean age was 44 years (S.D = 15.338). T-Test for independent groups and Pearson's correlation tests were carried out to compare cardiac and renal failure patients coping strategies along with descriptive statistics. **Results:** Results indicate that renal failure patients used more physical coping (M = 11.23), t (df = 273) = -1.235, p < .01 that cardiac patients (M = 10.83), t (df = 273) = -1.242, p < .01. Cardiac patients used more psychological (M = 28.69), t (df = 273) = 1.511, p < .01 and behavioral coping (M = 17.37), t (df = 273) = 3.977, p < .01 than renal failure patients psychological (M = 27.97), t (df = 273) = -1.517, p < .01 and behavioral coping (M = 15.43), t (df = 273) = 3.980, p < .01. F = 11.800, 1.882, and 0.623 which are greater (i.e., p < .05). Pearson's Product-moment correlation coefficient show strong correlation exists between behavioral and psychological coping (r = .428). **Conclusions:** Study found significant differences between the cardiac and renal failure patients coping strategies. Renal failure patients used physical coping strategies more whereas cardiac patients used more psychological and behavioral coping strategies.

**Key words:** Physical Coping, Psychological Coping, Behavioral Coping, and Chronic Illness

**Article Citation:** Yasmeen B, Khan MZ, Jamshaid N, Salman M. Coping strategies during chronic illness; a comparative study of cardiac and renal failure patients. Professional Med J 2015;22(4):483-489.

## INTRODUCTION

Coping is the process of adjustment with the situation, cognitive and behavioral efforts to manage environments which addresses the internal as well as external demands to release/reduce the pressure/stress, complexities, and severity for the sake of comfort or to solve difficult life challenges exceeded than a person's available resources without a prior assumption.<sup>1-7</sup> Coping enables the ill individuals to deal with the tangible consequences of the problem and eliminates the source of stressful events like chronic illness. It helps individuals change the self and develop

a more satisfying situation, learn new skills and become independent. Stone, Greenbert, Kennedy-Moore, & Newman (1991)<sup>8</sup> called it a subjective appraisal of the situations.

Psychological adaptation is concerned with the efforts to control the emotions aroused by problems such as consciously postponing, paying attention to an impulse, trying not to be bothered by conflicting feelings, maintaining a sense of pride and tolerating ambiguity by withholding immediate action. There may be variability among individuals due to psychological

responses against stressful events, social integration, and available resources for coping. Psychological responses protect individuals against the pressure as many researchers have confirmed.<sup>9,10,4,11,12,13,14</sup> Adaptation brings behavioral changes that reduce situational threats to manage the severity of the situation. Burton, Tillotson, Main and Hollis (1995)<sup>15</sup> study indicated that psychosocial variables accounted for 59% of the variance in disability associated with chronic pain. Cognitive-behavioral approaches appear to prevent the development of chronic disability due to pain<sup>16,17</sup> described coping in terms of inner feelings and actions like strategies, tactics, responses, cognitions, or behavior.

Physical coping may vary with the changes in time, age, style, personality, adaptive capacities, gender, and available resources along with the type of chronic illness.<sup>18,19,20,21,22</sup> Most of the work on coping with chronic illness<sup>23,10,4,12,13,14</sup> emphasized one dimension or aspect corresponding to the psychological coping that was associated with stress. Hasenbring, Ulrich, Hartmann, and Soyka (1999)<sup>16</sup>; Zeidner and Endler (1996)<sup>17</sup> described the cognitive and behavioral aspect of coping in terms of inner feelings and actions like strategies, tactics, responses, cognitions, or behavior. However, to examine the dimensions of coping during chronic illness, and the strength of associations between different coping strategies varied from study to study. The earlier studies (Turk 1990<sup>24</sup>; Kerns, Rosenberg, Jamison, Candill, and Haythornwaite 1997<sup>25</sup>; Turk and Okifuji 2002<sup>26</sup>) found fewer links between physical, psychological, and behavioral coping strategies during chronic illness. The cultural differences, living styles and standards of common man, and available resources varied in the eastern societies where poverty, low literacy level, and scarce available resources are the prominent features. There is a need to identify the role and strength of coping strategies during chronic illness.

### Research Methodology and Data Used

A survey was conducted with 275 admitted patients (131-heart and 144-kidney) 184 male and 91 female (20 to 110 years of age) by using

a structured interview schedule. The researcher used purposive sampling method to collect the data from admitted male/female patients above the age of 20 years patients by keeping in view 100 percent accessibility and availability of the patients.

### Data Sources

Four government hospitals were used as a main source to obtain the subjects for the study. Three major hospitals (Lahore General Hospital, Mayo Hospital, and Jinnah Hospital) were covered for renal failure patients and Punjab Institute of Cardiology (PIC), Lahore for cardiac patients.

### Respondents

In this study 275 interviews were conducted. 144 interviews were conducted from kidney patients (92 males and 52 females) enrolled in the dialysis units of the selected government hospitals and at the time of data collection and 131 interviews were conducted from cardiac patients (92 males and 39 females).

### Instrument

An index of thirty six item scales was constructed to ask about patients' coping strategies (physical, psychological, and behavioral). Physical coping scale consisted of 16-items, Psychological coping scale was consisted of 11-items, and behavioral coping scale consisted of 9-items scale. All scales were rated on a four point response categories from 1 (not at all) to 4 (always) indicate patients' coping efforts. Some questions were asked to get demographic information in the interview schedule.

### Data Analysis

Descriptive statistics was deployed on demographic data. For the reliability of the instrument, an exploratory factor analysis was performed on the data. T-Test for independent groups and Pearson's correlation tests were carried out to compare cardiac and renal failure patients coping strategies.

## RESULTS

Two seventy five hospitalized patients (males: 184

and females: 91) suffering from chronic illnesses were evaluated for their coping strategies. Descriptive statistics are presented in table-I. [See Table-I]

Characteristics	F	%	Mean	S.D	P-value
<b>Disease</b>			1.5	.500	
Cardiac	131	47.6			
Renal Failure	144	52.4			
<b>Gender</b>			1.33	.471	.264
Male	184	66.9			
Female	91	33.1			
<b>Age</b>			2.95	1.379	.040*
20-29	55	20.0			
30-39	54	19.6			
40-49	65	23.6			
50-59	52	18.9			
60 & above	49	17.8			
<b>Education</b>			1.97	1.850	.038*
No Schooling	87	31.6			
Class 1-5	43	15.6			
Class 6-8	40	14.5			
Class 9-10	50	18.2			
Class 11-12	22	8.0			
Class 13-14	17	6.2			
Class 15+	16	5.8			
<b>Occupation</b>			3.31	1.303	.107
Business	25	9.1			
Govt. Job	63	22.9			
Laborer/Farmer	53	19.3			
House wife	69	25.1			
Unemployed / Retired	65	23.6			
<b>Income</b>			1.84	.993	.755
Up to 9999/-	136	49.5			
10000-19999/-	70	25.5			
20000-29999/-	45	16.4			
30000 7 above	24	8.7			
<b>Marital Status</b>			1.87	.538	.113
Never Married	60	21.8			
Married	191	69.5			
Separated / Divorced / Widow	24	8.7			
<b>Family Size</b>			4.19	1.108	.053
0-2	2	0.7			
3	33	1.0			
4	36	13.1			
5	44	16.0			
6+	160	58.2			
<b>Type of Family System</b>			1.31	.463	.050*
Nuclear	190	69.1			
Joint	85	30.9			

Table-I. Descriptive Statistics of the Sample

\*Pearson  $\chi^2$  significant at  $p < .05$ .

Analysis shows that majority of the patients age group was 40-49 years. Majority of the patients never attended school. Majority of the patients' were house wives unemployed/retired. Most of the patients household income was Rs.9, 999/- . Most of the patients and were married had large families living in "nuclear family" system. Age, education, and type of family system show significant association with the disease.

For the reliability of the instrument was exploratory factor analysis was performed to test the dimensionality of the measurement scales for coping scales and to test the sampling adequacy and the adequacy of various items in constructing the scale. The statistical procedure began with Factor Analysis. Principal component analysis with Varimax rotation method was used for coping scale. Extraction method used in the analysis was principal component analysis to test the factor loadings on various factors. As the two factors were not correlated to each other, rotation method used was Varimax rotation. The data displays a fairly acceptable sampling adequacy as Kaiser-Meyer-Olkin (KMO) amounts to 0.727 and the Bartlett's test of sphericity is also significant (Chi-square(df= 153)=1508.517, p-value=0.000). Factor loadings less than 0.3 were ignored. Six factors were extracted this was in contrast to the two factors that were theoretically expected by the researcher. The first two factors only account for the 34% of the variance. The table-II below shows the correlations between the extracted factors for the above mentioned factors. [See Table-II]

Component	1	2	3	4	5	6
1	.796	.441	-.209	.302	.166	-.098
2	.102	.750	-.292	.387	.438	.012
3	.113	.055	.897	.149	.352	-.186
4	.443	.246	.046	-.784	.192	.300
5	-.354	.351	-.242	-.246	.747	-.273
6	-.148	.238	.079	.248	.250	.889

Table-II. Correlations between the extracted factors

Using the Scree plot elbow criteria we can further eliminate three factors. The analysis indicates the validity of the construct. The findings of the

Coping Strategies		Leven's Test for Equality of Variance		T-Test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Physical	Equal variance assumed	11.800	.001	-1.242	273	.251	-.40	.320	-1.026	.232
	Equal variance not assumed			-1.235	261.049	.218	-.40	.321	-1.030	.236
Psychological	Equal variance assumed	1.882	.171	1.511	273	.132	.72	.478	-.219	1.664
	Equal variance not assumed			1.517	272.970	.130	.72	.476	-.215	1.660
Behavioral	Equal variance assumed	.632	.427	3.977	273	.000	1.94	.487	.978	2.894
	Equal variance not assumed			3.980	271.295	.000	1.94	.486	.978	2.894

Table-III. Independent Sample Test

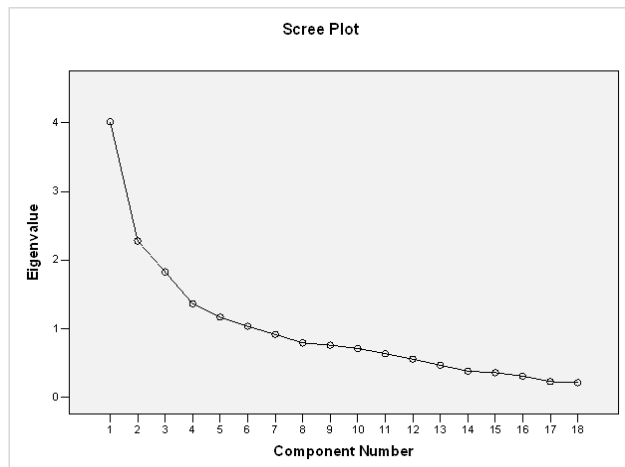


Fig-1. Scree Plot of Coping

factor analysis indicate that the instruments used to measure the coping strategies (physical, psychological, behavioral) was uni-dimensional and fairly acceptable. [See Figure 1]

For the comparison of coping strategies,

independent T-Test was used. Leven's Test for Equality of Variance tests the hypothesis that the two types of patients' variance are equal. [See Table-III].

The Levene statistic is F = 11.800, 1.882, and 0.623 which are greater (i.e.,  $p < .05$ ) (table III). Thus, T-Test assumption that the population variances are unequal is accepted. The results from the analysis indicate that there are significant differences between the cardiac and renal failure patients coping strategies. For physical coping,  $t(df = 273) = -1.242, p < .01$ . In table IV, the mean values indicate that renal failure patients used more physical coping (M = 11.23) than cardiac patients (M = 10.83). For psychological coping,  $t(df = 273) = 1.511, p < .01$ . The mean values indicate that cardiac patients used more psychological coping (M = 28.69) than renal failure patients (M = 27.97). For behavioral coping,  $t(df = 273) = 3.977, p < .01$ . The mean

Coping Strategies	Disease	N	Mean	Std. Deviation	Std. Error Mean
Physical	Cardiac	131	10.83	2.810	.245
	Renal Failure	144	11.23	2.491	.208
Psychological	Cardiac	131	28.69	3.782	.330
	Renal Failure	144	27.97	4.115	.343
Behavioral	Cardiac	131	17.37	3.998	.349
	Renal Failure	144	15.43	4.062	.338

Table-IV. Independent T-Test

	Physical Coping	Psychological Coping	Behavioral Coping
Physical Coping	1.000	-	-
Psychological Coping	-.132*	1.000	-
Behavioral Coping	-.307**	.428**	1.000

**Table-V. Pearson's correlations between Coping Strategies**

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

\*\*Correlation is significant at the 0.01 level (2-tailed).

values indicate that cardiac patients used more behavioral coping (M = 17.37) than renal failure patients (M = 15.43). F = 11.800, 1.882, and 0.623 which are greater (i.e., p < .05). [See Table-IV]

Pearson's Product-moment correlation coefficient was used to analyze the relationship between three types of coping strategies for the patients overall ratings. Result show strong correlation exists between behavioral and psychological coping (r = .428). A negative but strong correlation was found between behavioral and physical coping (r = -.307). A negative but moderate correlation exists between psychological and physical coping (r = -.132). [See Table-V]

**DISCUSSION**

The measurement of coping is the assessment of individual behavior dealing with a stressful situation. It is the identification of changing behaviors and actions with the changing situation. Important thing is that different people use different approaches to cope in a same situation. In trait measurement, it is difficult to predict the consistency in coping behavior.<sup>7</sup> Since coping is a process, it changes over time. A person may use different strategies in different situations. This study focused chronic patients' coping efforts (physical, psychological and behavioral) to manage the chronic illness. Previous studies indicated that chronic illness disrupted routine and was a constant source of stress. Studies of Dooley et al. 1987<sup>27</sup>; Duangdao and Roesch, 2008<sup>28</sup> indicated that patients' used behavioral coping to manage stress. According to Shen et al, 2003<sup>29</sup>, individuals suffering from chronic heart disease use an optimistic approach in stressful events for active coping and seek social support<sup>30,31</sup>. Hasenbring, Ulrich, Hartmann,

and Soyka (1999)<sup>16</sup> argue that behavioral approaches appear to prevent the development of chronic disability due to pain. This is in line with the relationships explained by Turk and Okifuji (2002, p: 681)<sup>26</sup> between coping efficacy and physiological arousal and bodily tension, which only exacerbate discomfort. Results of this study indicate that behavioral coping is strongly associated with psychological coping. Results suggest the strong effects of behavioral coping with the disease. The result is consistent with the study findings of Croyle et al., (2003)<sup>32</sup> where patients use behavioral strategy and minimization of depressive symptomatology associated with better QOL. Behavioral coping (directly) and psychological coping (indirectly) influenced the patients.

Socio-demographic variables directly or indirectly influence physical health and health behaviors<sup>33,34</sup>. Socio-demographic approach towards illness behavior is macro sociological in nature<sup>35</sup>. Several studies have shown that socio-economic status is significant for the management of the disease.<sup>36,37,38,39,40,28</sup> Out of socio-economic variables, coping efforts were enhanced by age, education, and family support to alleviate the personal emotional stress and disabilities induced by the chronic illness.

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
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**AUTHORSHIP AND CONTRIBUTION DECLARATION**

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Bushra Yasmeen	Conceived the idea, wrote abstract, methodology, did SPSS analysis, conclusion, technical input at every step and overall management of the article.	
2	Dr. Muhammad Zohaib Khan	Data collection, data entry in SPSS and analysis, results and discussion	
3	Dr. Nermeen Jamshaid	Introduction part and references section	
4	Dr. Munnaza Salman	Tabulated presentation, overall forming of the article.	