
Magnitude and Determinants of Socio-demographic Variables in Social Support, Coping & Subjective Well-Bing of Kidney Patients in Lahore (Pakistan)

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Heart and Kidney Diseases in Pakistan

Pakistan is a developing country where majority belongs to the lower socio-economic class. Poverty increased a range of risks for poor health outcomes (Seeman and Crimmins 2001). In other words, poverty reduced coping resources. High social status influenced positive health behaviors. Cardiovascular and kidney diseases are increasing day by day in Pakistan. High incidence and prevalence rates reflect that more and more people are wrapped up in the trap of these diseases. In Pakistan, prevalence of chronic diseases is 37.9% of the overall adult population with 16.4% and 21.5% being the rural and urban prevalence (WHO Report 2003). Above 45 years, one in three Pakistanis (33%) is hypertensive. World Health Organization Report (2003) mentioned that 42 % of all deaths in Pakistan are due to chronic diseases.

Major cardiovascular diseases in Pakistan include ischemic heart disease, valvular heart disease, congenital heart disease, pericardial disease and tumors of the heart. It was reported in the National Health Survey of Pakistan (NHSP) 2001 that ischemic heart disease (IHD) accounts for 12% of adult mortality in Pakistan. Two causes were mentioned in the survey - tobacco use and hypertension. Tobacco use was estimated at 29% and 3.4 % in adult males and females respectively. Hypertension was estimated at 10 % in the national population.

This situation is alarming for Pakistan. High cost of treatments for the heart and kidney diseases among the population is becoming difficult. Therefore, this is the time to emphasize on the preventive measures and reduce the risk factors that play a significant role in both diseases. For handling the situation, sociological dimensions equally need considerations other than medical interventions. Therefore, in this context there is a need to know how to meet the challenge especially at individual level. This study was designed to directly examine the magnitude and determinants' of socio-demographic variables in social support, coping and subjective well-being among the individuals who had cardiovascular and kidney diseases. This study expands previous findings and understanding of how socio-demographic variables influences social support in coping and subjective well-being.

Socio-demographic Variables

Socio-demographic information has always been considered an important powerful tool for analysis in the social sciences research. It is well established in researches that the socio-demographic variables are associated with a "broad range of human health behaviors and active coping efforts" (Natthan et al 2008; Thrope, Lewis, and Streba 2008). The demographic characteristics have the quality to display the complete background of any person in the social structure as well as built environment in which individuals live. Socio-demographic

approach towards illness behavior is macro sociological in nature (Young 2004). Socio-demographic approach stem with resources. These resources work as background variables in social support and coping. Studies (Adler et al. 1994; Pincus and Callahan 1995; Williams 1990) show that "lower social status has been related to higher prevalence and incidence of most chronic and infectious diseases". For example, more education and greater occupation autonomy develop more flexible and effective coping strategies to deal with life events (Seeman and Crimmins 2001). Information on the basic characteristics such as age, level of education, occupation, household income, marital status, type of family system, and place of birth was collected. All information was important for the better understanding of the effects of social support in coping and can be helpful in the subjective well-being. Among selected socio-demographic variables, the researcher selected age, education, occupation, income, marital status, and type of family system of the patients. Across socio-demographic variables, four facets of social support: emotional, informational, material, and instrumental; three facets of coping: physical, psychological, and behavioral; and subjective well-being were tested.

Objectives

- i. to explore the relationship between socio-demographic variables and social support.
- ii. to explore the relationship between socio-demographic variables and coping strategies employed by heart and kidney patients.
- iii. to explore the relationship between socio-demographic variables and the subjective well-being of the heart and kidney patients.

Research Methodology and Data Used

To ensure the true respondents, the researcher decided to collect the data from those patients (males and females above the age of 20 years) who were currently enrolled and taking treatment. This selection of the respondents maximizes coping differences and to hold constant certain dispositional factors that may have systematically influenced the nature of social support. The researcher interviewed all the male and female patients who were enrolled in the dialysis units of the selected government hospitals and admitted in the Punjab Institute of Cardiology at the time of data collection.

Data Sources

Government hospitals were used as the main sources to obtain the subjects for the study. A total of four (4) hospitals were covered having the biggest dialysis units and a specialized tertiary care cardiac hospital. All these four places were rendering services to the maximum number of patients. Other reason for the selection of these hospitals was that the accessibility and availability of the patients was 100 percent. For the kidney patients, the following three Government hospitals were running the largest dialysis units in the Lahore city:

Table 1
No. of patients enrolled for Dialysis in Government
Hospitals of Lahore

S.No.	Dialysis Centers-Hospitals	No. of Patients (M & F)
1	Lahore General Hospital	50
2	Mayo Hospital	44
3	Jinnah Hospital	50
Total		144

These dialysis centers were running two shifts. The first shift was in the morning (from 8.00 a.m to 1.00 p.m) and the second

shift was in the evening (from 1.00 p.m to 4.00 p.m). At the time of data collection, the total numbers of enrolled patients were 144 (92 males and 52 females) who were getting dialysis services in both shifts from these centers. These enrolled patients visited dialysis units once, twice and thrice a week according to their fixed days and time.

For heart patients, only Punjab Institute of Cardiology (PIC), Lahore was selected. This tertiary care hospital is providing services to the maximum number of heart patients not only in Lahore city but also to the patients of other nearby cities. Except intensive care units- ICU's, CCU's and emergency ward, data were collected from different following wards:

Table 2
No. of admitted patients in Wards of Punjab Institute of Cardiology

S.No.	Wards in PIC	No. of Patients (M & F)
1	Cardiology	37
2	Cardiac Surgery	25
3	Irfan Block	29
4	Jillani Block	40
Total		131

Respondents

In this study 275 interviews were conducted. Out of 275, 131 were heart patients (92 males and 39 females) and 144 were kidney patients (92 males and 52 females).

Socio-demographic Variables

Age

Age and gender are directly linked with the physical health. Deterioration in the physical health needs a lot of care and support. There is a vise versa relationship between health and care along with support. Studies (Uchino et al., 1990) found

association between social support and immune function. It is generally believed that chronic illnesses are associated with the old age. This scenario has been shifted towards middle age and young ones. To find out the reality, age was recorded in this study. The age of the patients varied from a minimum of 20 years to a maximum of 110 years. Mean age was 44 years in both diseases.

Education

Education is considered one important variable in the social context. It influences individual attitude and outlook on various aspects of life (NIPS 2006-7). It enhances the understanding, better health care knowledge, and acceptance that can redirect attitudes and behaviors of the population towards improvement in the quality of life, and increases the adequacy of self-care (Baumann 1961; Young 2004). Education helps to overcome poverty, increase income, and improve health and nutrition (NIPS 2006-7). Those individuals who have high education have more power to choose health behaviors, have more knowledge of health care facilities, live in and enjoy better life; face fewer environmental hazards than those who have less education (Siegrist et al., 1990; Stimson and Webb 1975; Young 2004). Education modifies attitudes, behaviors, and choices that effects health and illness behavior (Young 2004).

Occupation

The social status of an individual in the society is generally recognized by the profession/occupation. It reflects the nature of work, abilities, skills or capabilities of an individual. In Pakistani society, males have to earn and bear all family expanses. Outdoor exposure to occupational stress is always characterized by inadequate and unpredictable resources including job security (Seeman and Crimmin 2001; Williams 1990). Resources and security of job affects physical and psychological health (directly or indirectly). Turner et al (1995) found the expected association between occupation, depressive symptoms, and stressful life events (Adelmann 1994). In Pakistani society, multiple duties and

responsibilities (paid or unpaid) among males and females embraced a lot of stress and tensions.

Household Income

Income is the source of living standards and styles. It reflects the financial position of an individual in the society. Money enables individuals' resources to manage healthy food, luxurious, comfortable and a healthy life. In case of illness, those who have money can easily manage best treatment than those who belongs to middle or poor social classes. Low income is generally associated with poverty and less preventive health care and lifestyle choices than those who have higher income (Siegrist 1989; Young 2004). Poor financial resources and living conditions are the obvious factors for the high risks of negative health outcomes (Seeman and Crimmins 2001) including poor physical, psychological, and cognitive functioning (Lynch, Kaplan, and Shema 1997). Chronic illnesses such as heart and kidney required long and expensive treatment which is even difficult to manage for middle class.

Type of family system

Family members are always the best source of support and comfort in difficult times throughout life. Generally there are two types of family systems that prevail in the Pakistani society: joint and nuclear. In this study, nuclear family system is defined as the family living under one roof and running a single kitchen in a household. The joint family system is defined as the family consisting of all other households, most of which include more than two generations in a family (Report "Pakistan contraceptive prevalence survey 1994-95": 1998).

Current Marital Status

In the social context of social integration, studies (House et al., 1988) suggest that being married is more beneficial to health, and becoming widowed/separated more detrimental for men than women (Folkman, S. 2001; Gove 1972). Uchino et

al., (1999) found direct evidence that spousal support help patients to control over the disease. Koskenvuo et al., (1986) study showed that single men have a significantly higher risk than married men. Mental satisfaction has been related with the health status (Levenson and Gottman 1985).

Social Support

In this study, social support with respect to subjective well-being refers to the functional support that is the actual receipt of emotional, informational, material and instrumental support from the close one's (family members). It is hypothesized that some background factors strengthen social support such as the socio-demographic variables: education, occupation, income, marital status and social net works result in positive well-being. For example, more income provides concrete assistance to protect from hardships as compared to low income as well as some other variables. In this study, social support is measured into four categories:

Emotional Social Support

Emotional social support refers to the confronting gestures like encouragement, comforting gestures which are intended to alleviate, hopelessness, depressions, and current difficulties. Family helps the sufferers to enhance emotional strengths through motivation and encouragement, sharing of ideas and experiences to divert attention from illness and engaging in healthy practices so that sufferers feel better and important about themselves.

Informational Social Support

Informational support refers to giving advices to the patient by the family members or information through mass media, literature, and bill boards about prevention, treatment, and food. It enhances understanding about illness and enables them to handle the situation.

Material Social Support

Material support refers to the services provided by the family members such as transportation, companionship at home and during hospitalization, financial assistance for treatment, food and for other needs.

Instrumental Social Support

Instrumental support refers to the tangible support according to the perceived need such as physical care and personal hygiene, medicines, and assistance at household tasks provided from family or from social network along with conducive environment.

Coping

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. Different people use different approaches to cope in a same situation. In trait measurement, it is difficult to predict the consistency in coping behavior (Cohen and Lazarus, 1979). Furthermore, Cohen (1987) indicates coping traits do not seem to be predictive of how individuals actually cope in stressful situations. Lazarus and Folkman (1984b) state that the measurement of coping traits has modest predictive value with respect to the coping process. In an earlier study Folkman and Lazarus (1980) found some stability in the use of coping responses for an individual across episodes but in general, subjects were characterized more by variability than by stability in coping patterns. As well, since coping is a process, it changes over time. A person may use an emotion-focused strategy and then shift to a problem-focused strategy or vice versa. In this study, individual physical, psychological and behavioral efforts were measured:

Physical Coping

Physical coping deals with the physical efforts, movement and actions for eating, bathing, going to the toilet, changing the dress, getting into and out of bed and a little bit of walking. These efforts

are the prime focus of physical coping in this study as the sufferer knows the physical limitations and bodily difficulties during the illness.

Psychological Coping

Psychological coping deals with the sharing and expressing of emotions, feelings, thoughts, tolerance, anger, and to gain sympathy during illness. It is a natural process that an ill individual constructs the perceptions differently about different situations or levels of illness/disease progression (slow or faster); although the level of perception may vary from person to person and from illness to illness. Tolerance and patience may also vary in different situations among gender. All these shape the psychological coping responses. Psychological coping may be positive or negative. Both positive and negative coping affects have been linked or associated with the supportive environment that construct or shape the responses. Studies indicate that positive coping responses reflect that an individual takes the situation as a challenge. Surrender before the situation reflects negative coping responses. Ill individuals from different gender and social classes may express or share emotions, feelings, and thoughts differently in their existing illness and conditions.

Behavioral Coping

Behavioral coping deals with the demonstration of perceptions/ choices, patterns of health care practices, degrees of compliance with the prescribed treatment, and participation in recreational activities like watching T.V., playing cards, etc;. Depending on the nature of the illness, behavioral coping may vary among the genders and in different age groups in different social classes as human behavior stems with the socio-economic background too.

Subjective Well-being

In this study, subjective well-being was measured in terms of extent of satisfaction in the functioning of daily life such as

performance of routine activities, taking medicines and exchange of views etc. Feelings of well-being during chronic illness refer to the capacity to re-establish the balance between self and environment. Subjective well-being are related with the capacity of an individual regarding the management of illness, ability to face the reality, handle the situation, and maintain control while perform routine activities. Gender, age, and severity may influence the capacity level or adaptation. Social support in coping facilitates the capacity level of feelings of well-being. According to theory, feelings of well-being describe the internal conditions exhibited from patient's attitude and behavior. This view emphasizes individual subjective interpretations about the feelings of well-being. The measurement of the "extent" of well-being has significant value in the analysis of the data. Interpretation of the results is helpful to predict the well-being. Self-rated subjective feeling of well-being will provide a guideline in socio-psycho health research.

Instrument

For descriptive and analytical purpose, interview schedule of 132-items was constructed by using a structured questionnaire. The questionnaire consisted of four sections. First section was about the socio-demographic information. Other three sections were about social support, coping and subjective well-being.

To examine the effects of socio-demographic variables on social support, coping, and well-being; age, level of education, occupation, monthly household income, family system, and current marital status, were included in the questionnaire. In total six questions under different response categories along with scores were used. Each demographic factor was considered socially desirable for both sexes.

For social support in coping, it was important to measure the different types of social support received by the patient during illness from family, relatives and friends in terms of emotional,

informational, material and instrumental support. The family members and the close one's intuitively know liking/disliking, about the need and comfort of the ill family member. So, they tried to provide it to mitigate the impact of illness.

Social support and coping with regard to illness and well-being originated in self-rated research and were operationalized subsequently into questionnaires to collect quantitative data from a large number of subjects, on particular dimensions of social support and coping. Various instruments have been developed by different researchers to measure the role of social support and coping which were widely used in social science researches. In this study, few questions to measure the role of social support and coping were adapted from some standard instruments: Multidimensional Scale of Perceived Social Support (MSPSS) developed by Dahlem, Zimet., and Walker in 1991; Norbeck Social Support Questionnaire (NSSQ) developed by Norbeck, J. S., Lindsey, A. M., Carrieri, V. L. in 1981; Social Support Questionnaire developed by Sarason, I. G., Henry, M. L., Basham, R. B., and Sarason, R. (1983); Physical Self-Maintenance Scale (PSMS) developed by Lawton in 1988.

In relation to chronic illness, for the measurement of coping, ideas from different instruments are adapted to meet the needs of this research, as they reflected multidimensional perspective of coping strategies regarding individuals such as "Chronic Heart Failure Questionnaire" developed by Guyatt, G.H. et al., in 1989. American Cancer Society has developed a "Coping Checklist for Patients" coping with Physical and Emotional Changes for cancer patients; Ways of coping (WOC) questionnaire developed by Folkman and Lazarus revised in 1985. WOC is about people thoughts and actions which they use in specific stressful situations to deal with the internal and external demands. This scale measures the process and is consisted of eight subscales that is confront coping, distancing, self-controlling, seeking social support, accepting responsibility, escape avoidance, painful

problem solving, and positive appraisal; Coping Inventory for Stressful Situation (CISS-Adult): Manual (1990b) of Multi-Health Systems developed by Endler and Parker in 1990. American Cancer Society has developed a checklist to measure coping with Physical and Emotional Changes for cancer patients. Interview schedule question numbers 108 and 114 were adapted from "Coping with Physical and Emotional Change- American Cancer Society". Same instruments were not used due to the cultural differences.

Subjective well-being section consisted of six new items intended to measure the patients' feelings of well-being. The researcher was responsible for constructing this section of the interview schedule. The questions were constructed on the basis of reading of the relevant research literature and personal observation. The researcher observed during 19 years social work experiences in different hospitals that patients who received social support in coping have more feelings of well-being. These patients manage their health problems in a better way that is follow doctors advices, took part in recreational activities, less worried about their illness, and tried to perform daily routine activities compared to those who do not feels well. It shows patients preferences and choices towards health behavior.

Statistical Analysis

To determine the influence of socio-demographic variables to predict whether there were any statistical significant disease type difference exists between socio-demographic variables across various facets of social support, coping and the subjective well-being; the researcher used chi-square test ($\alpha = 0.05$). At first, social support, coping, and subjective well-being were computed on summated scale across responses to all items. Secondly, the researcher dichotomized these socio-demographic variables into categories of 'low' and 'high' (taking median as a cutting point).

On the next stage, in multivariate analysis, logistic binary regression by using "Enter" method was used to assess the combined effects of socio-demographic variables on subscales of social support, coping, and subjective well-being on heart and kidney patients'. The use of logistic regression is justified whenever the dependent or criterion variable is dichotomous. Binary logistic regression is a very flexible method of model testing that allows researchers useful insight to test the predicting power (dependent variable on the basis of continuous covariates-nominal to ratio (Munro, 2001, p:288) and to understand the combined effect/impact size or strength of association between dependent and any number of qualitative or categorical independent variables (predictors). To investigate through logistic regression, following formula was used for testing the model:

$$P = 1/1 + \text{Exp} (B) ^{-z} \quad (\text{Munro, B. H. 2001: 296-297})$$

[Where P is the probability of received social supports, $\text{Exp} (B) =$ the ratio of one probability to the other, $z = \text{constant} + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_kX_k$ - z is the amount of change in the dependent variable with the other variables held constant (regression coefficients) and X_i is the variables included].

In the logistic regression, the regression coefficients (B) indicate the relationship or net effect of independent variables on dependent variable. The findings of significance explain the significant relationship between independent and dependent variables.

Results

Results of chi-square test show statistical significant relationships of socio-demographic variables with all facets of social support. Summary table of socio-demographic variables is presented below in table 3.

Table 3
Chi-square results: Summary of socio-demographic variables with four facets of social support

Socio-demographic Variables	Social Support							
	Emotional		Informational		Material		Instrumental	
	Heart	Kidney	Heart	Kidney	Heart	Kidney	Heart	Kidney
Gender	.006*	.127	.062	.540	.434	.832	.369	.370
Age	.000*	.011*	.039*	.412	.003*	.022*	.008*	.116
Education	.014*	.704	.059	.793	.139	.907	.118	.061
Occupation	.051*	.578	.232	.781	.053	.288	.494	.628
Income	.001*	.006*	.172	.100	.003*	.443	.004	.089
Marital Status	.000*	.073	.003*	.584	.063	.089	.530	.076
Type of Family System	.898	.540	.996	.138	.684	.660	.003	.970

*Note: All types of Social Support were dichotomized (High & Low) by taking median cut point.

*Pearson χ^2 significant at $p < 0.05$.

Results in table 3 indicate that in the emotional social support except type of family system, all socio-demographic variables show statistical significant influence whereas among kidney patients only age and income show significant influence. In informational social support, only age and marital status show statistical significance with the heart patients. In material social support, age influences both heart and kidney patients whereas income show statistical significant influence only with the heart patients. For instrumental social support, age was the only variable which shows statistical significant association with the heart patients. The variations in the influence of socio-demographic variables on the social supports were might be due to the differences of disease although both were chronic, or might be due to the variations in proportion of male/female heart and kidney patients. These variations might be due to the patients' physical conditions or gender and financial difference.

Among three facets of coping, chi-square test show that out of all socio-demographic variables: age and education shows significant influence only in the physical coping of kidney patients. For the psychological coping, there were insignificant associations

found with all socio-demographic variables in both types of patients. In behavioral coping of the heart patients, gender, education, and income show significant association with the heart patients. Among kidney patients, only education shows significant association.

Table 4
Chi-square results: Summary of socio-demographic variables with three facets of coping

Socio-demographic Variables	Coping					
	Physical		Psychological		Behavioral	
	Heart	Kidney	Heart	Kidney	Heart	Kidney
Gender	.529	.627	.229	.445	.024*	.192
Age	.367	.040*	.226	.336	.717	.947
Education	.305	.005*	.616	.121	.000*	.031*
Occupation	.517	.530	.809	.124	.109	.273
Income	.038*	.588	.186	.249	.037*	.276
Marital Status	.215	.514	.315	.326	.192	.599
Type of Family System	.247	.720	.712	.733	.371	.271

*Note: All types of Coping were dichotomized (High & Low) by taking median cut point.

*Pearson χ^2 significant at $p < 0.05$.

For the subjective well-being, heart patients expressed their well-being better than kidney patients. Table 5 demonstrates that four variables: education, occupation, income, and type of family system significantly contributed for the subjective feelings of well-being among heart patients only.

Table 5
Chi-square results: Summary of socio-demographic variables with Subjective Well-being

Socio-demographic Variables	Subjective feeling of well-being	
	Heart	Kidney
Gender	.243	.476
Age	.812	.558
Education	.006*	.064
Occupation	.002*	.255
Income	.004*	.089
Marital Status	.530	.076
Type of Family System	.003*	.970

*Pearson χ^2 significant at $p < 0.05$.

Results of Binary Logistic Regression

Emotional Social Support

Results of statistical test suggest that the model significantly predicts the category membership on emotional social support (Omnibus chi square=85.670, df=14, p-value=.000). As Cox and Snell R^2 amounts to 0.268 and Nagelkerke R^2 amounts to 0.357. Thus, it may conclude that the model accounted for between 26% to 36% variations in emotional social support. Successful prediction of emotional social support resulted for 73% of the cases.

Secondly, Hosmer and Lemeshow test was insignificant which fosters the result of omnibus test (chi-square = 3.083, df = 8, p-value = 0.929). Furthermore the Wald statistics reveals that, disease type, gender, age and income can all significantly predicts the ascribed category of emotional social support. In fact disease type can predicted the emotional social support by a factor of (AOR 1.748(95% CI .969-3.152) and the gender by a factor amounting (AOR 0.218 (95%CI .049-.962). Similarly, age can predict the emotional social support by a factor of (AOR 0.964 (95% CI 0.940-0.988).

Informational Social Support

All the cases were tested and model test statistics reveals that data fits to a prediction model of informational social support with socio-demographic variables being covariates (Omnibus chi square=40, df=14, p-value=0.000). As Cox and Snell R^2 amounts to 0.138 and Nagelkerke R^2 amounts to 0.185. Thus, it may conclude that the model accounted for between 13.8% to 18.5% variations in informational social support. Successful prediction of informational social support resulted for 68.5% of the cases. Hosmer and Lemeshow test was insignificant fostering the result of Omnibus test (chi square=5.898, df=8, p-value=0.659). Furthermore, the Wald statistics reveals that type of disease, age

and marital status can significantly predict the ascribed category of informational social support.

The values of the coefficients reveal that disease type is associated with odds of High informational social support by a factor of (AOR 0.90 (95% CI 1.298-3.795)). The age of kidney patients also significantly predicts the category of informational social support. In fact one unit increase in the age is associated with decrease of informational social support by a factor of 0.976 (95% CI 0.954-0.999). Similarly, marital status also significantly predicts the category membership on dichotomized informational social support.

Material Social Support

Model test statistics reveals that data fits to a prediction model of material social support with socio-demographic variables as covariates (Omnibus chi square=41.771, df=14, p-value=0.000). As Cox and Snell R^2 amounts to 0.141 and Nagelkerke R^2 amounts to 0.191. Thus, it may conclude that the model accounted for between 14.1% to 19.1% variations in material social support. Successful prediction of material social support resulted for 71.6% of the cases. Furthermore, the Wald statistics reveal that age and marital status can significantly predict the ascribed category of material social support. The values of the coefficients reveal that the age of patient can significantly predicts the category of material social support. In fact one unit increase in the age is associated with decrease of material social support by a factor of (AOR 0.970 (95% CI 0.948-0.993)). Similarly, marital status also significantly predicts the category membership on dichotomized material social support.

Instrumental Social Support

Results of statistical test suggest that the model significantly predicts the category membership of 65.5% of respondents on

instrumental social support (Omnibus chi square=34.414, df=14, p-value=0.002). As Cox and Snell R^2 amounts to 0.118 and Nagelkerke R^2 amounts to 0.158. Thus, it may conclude that the model accounted for between 11.8% to 15.8% variations in instrumental social support. Furthermore the Wald statistics reveals that, age and marital status can significantly predict the ascribed category of instrumental social support. In fact age can predict the instrumental social support by a factor of (AOR 0.955; 95% CI 0.932-0.978).

Physical Coping

Data significantly predicts the score of the individual on dichotomized physical coping and the model fits to our data (Omnibus chi square=35.216, df=14, p-value=0.001). As Cox and Snell R^2 amounts to 0.120 and Nagelkerke R^2 amounts to 0.161. Thus, it may conclude that the model accounted for between 12% to 16% variations in Physical coping. Successful prediction of physical coping resulted for 65.5% of the cases.

Secondly, Hosmer and Lemeshow test was insignificant which fosters the result of Hosmer and Lemeshow (chi-square=6.410, df=8, p-value =0.601). Furthermore the Wald statistics reveal that only age, education and a category of occupation significantly predicts the score on physical coping. The values of the coefficients reveal that an increase one year of age is associated with decrease in the odds of physical coping by a factor of (AOR 0.97; 95% CI 0.57-1.66). Similarly, increase in the income is positively associated with the odds of high physical coping by a factor of (AOR 1.094; 95% CI 1.03-1.015).

Psychological Coping

Analysis suggests that data does not predict the score of the individual on dichotomized psychological coping. The model does not fit to this data (Omnibus chi square=15.163, df=14, p-

value=0.367). As Cox and Snell R^2 amounts to 0.053 and Nagelkerke R^2 amounts to 0.073. Thus, it may conclude that the model only accounted for between 5.3% to 7.3% variations in psychological coping. Successful prediction of psychological coping resulted for 66% of the cases. Hosmer and Lemeshow test was insignificant which may be ignored in this case (chi-square=6.961, df=8, p-value =0.541). Furthermore, the Wald statistics reveal that none of the variables was able to significantly predict the score on psychological coping.

Behavioral Coping

As in the case of two other facets of coping, the researcher also applied the test to see the socio-demographic variables can be good predictors of behavioral coping or not. Covariates which were used in the measurement model were the same as in the case of physical and psychological coping. All the cases were tested and model test statistics reveal that data fits to a prediction model of behavioral coping with socio-demographic variables as covariates (Omnibus chi-square=51.791, df=14, p-value=0.000). As Cox and Snell R^2 amounts to 0.172 and Nagelkerke R^2 amounts to 0.229. Thus, it may conclude that the model accounted for between 17% to 23% variations in behavioral coping. Successful prediction of behavioral coping resulted for 70% of the cases. Hosmer and Lemeshow test was insignificant fostering the result of Omnibus test (chi-square=11.703, df=8, p-value= 0.165). Furthermore the Wald statistics reveal that type of disease; education, and income significantly predict the ascribed category of behavioral coping.

The values of the coefficients reveal that an increase one unit of education is associated with decrease in the odds of high behavioral coping by a factor of (AOR 0.90; 95% CI 0.85-0.95). The disease type also significantly predicts the category of behavioral coping by a factor of (AOR 1.95; 95% CI 1.14-3.35).

Similarly, all income categories significantly predict the category membership on dichotomized behavioral coping.

Summary

To resume, the researcher presents summary tables for all the facets of social support, coping strategies (see table 6 and 7).

Table 6
 Logistic Regression statistics for Prediction Model of four facets of Social Support

Logistic Regression	Emotional social support	Informational Social support	Material Social Support	Instrumental social support
Omnibus test	P-value=.000	P-value=.000	P-value=.000	P-value=.002
Cox and Snell \hat{R}^2	.268	.138	.141	.118
Negelkerke \hat{R}^2	.357	.185	.191	.158
Predicted cases (%)	73%	68.5%	71.6%	65.5 %

Table 6 above displays the results of model fit through binary logistic regression of the four subtypes of social supports. It may safely conclude that a model of prediction having as covariates the set of socio-demographic variables including age, income gender, education, type of family system, and marital status successfully predict all types of social support. The prediction is highest in the case of emotional social support where 73% of the 275 cases are successfully predicted on dichotomized scale. Value of Cox and Snell R^2 is 0.268 and the value of Negelkerke R^2 is 0.357. This characteristic of data suggests that this model accounts for 27% to 36% of variation in emotional social support.

Table 7 below shows the results of model fit through binary logistic regression of the three subtypes of coping. For the predicting ability of various socio-demographic variables, three coping strategies were analyzed. Table 7 shows that socio-demographic variables can predict both physical and behavioral coping as the p-value is 0.001 and 0.000 respectively. It may safely concluded that a model of prediction having covariates the set of socio-demographic variables including disease, age,

education, and income successfully predict physical and behavioral coping strategies.

Table 7
Logistic Regression statistics for Model Prediction of three facets of Coping

Logistic Regression	Physical coping	Psychological coping	Behavioral coping
Omnibus test	P-value=.001	P-value=.367	P-value=.000
Cox and Snell \hat{R}^2	.120	.054	.172
Negelkerke \hat{R}^2	.161	.072	.229
Predicted cases (%)	65.5%	62.2%	69.8%

Prediction is highest in the behavioral coping where 70% of the 275 cases are successfully predicted on dichotomous scale. Value of Cox and Snell R^2 is 0.172 and the value of Negelkerke R^2 is 0.229. This characteristic of data suggests that this model accounts for 17% to 23% of variation in behavioral coping. In the physical coping, prediction is 66% of the 275 cases. Value of Cox and Snell R^2 is 0.120 and the value of Negelkerke R^2 is 0.161. This characteristic of data suggests that this model accounts for 17% to 23% of variation in physical coping.

Subjective Well-being

Data can predict the score of the individual on dichotomized subjective well-being and the model of prediction fits to the data (Omnibus chi square=63.090,df=14, p-value=0.000). As Cox and Snell R^2 amounts to 0.205 and Negelkerke R^2 amounts to 0.276. Thus, it may conclude that the model accounted for between 21% to 28% variations in subjective well being. Successful prediction of subjective well-being resulted for 69.5% of the cases. Furthermore the Wald statistics reveal that education can significantly predict the score on subjective well-being as one unit increase in education is associated with the increase of subjective well-being by a factor of (AOR 0.916 (95% CI 0.863-0.973). Similarly, income and family system can also predict the subjective well-being of the patient. For instance, type of family

system can predict the subjective well-being by a factor of (AOR 0.457(95% CI 0.251-0.831).

Discussion

Previous studies highlighted different dimensions and roles of social support and coping. None of those studies were done here in our Pakistani society. The uniqueness of the present study comes from the role of social support in coping with chronic illnesses- heart and kidney- the two major killing diseases that majority of the individuals experiencing and affecting with disability, stress, disruption of social and family life, and expensive treatment extended to life course today in Pakistan. This study appears to represent the first attempt to investigate the combined effects of socio-demographic variables on social support, coping, and feeling of well-being among heart and kidney patients in Pakistan. Sample was homogenous – chronic illnesses. Because 1) both diseases are the top most killing diseases in Pakistan and 2) 100 percent participation rate enable us to investigate heart and kidney patients during treatment and routine dialysis. The role of social support in coping is a process of subjective well-being. For heart and kidney patients, no potential bias was an issue in this study because all enrolled kidney failure and admitted heart patients were interviewed. Severity of illness was presumed as uniform in all the subjects. Considering the multidimensional nature of social support and coping, four types of social support and three types of coping were measured. Items/questions ideas were conceived from different instruments so that items maintain the suitability and adequately represent the concepts. Items used were of single dimension.

This study was co relational in nature and identifies particular social supports and coping patterns that influenced the subjective well-being instead of identifying causal relationships (Deichert et al., 2008). Chi-square was used to signify the singular effect and binary logistic regression was used to analyze the combined effects

of socio-demographic variables on the social support (emotional, informational, material, and instrumental), coping (physical, psychological, and behavioral), and subjective well-being (Dooley et al., 1987; Elovainio and Kivimäki, 2000; Hewitt, Baxter, and Western 2006). Chi-square signifies that age had a significant influence on all types' social support among heart patients. With reference to gender, results indicated that females received more emotional social support than males in both diseases. This finding agrees with the Woods, Yates, and Primomo (1989) study findings that has shown "women may receive more support from persons other than spouse in case of life sever illness". Belle (1987) study also shows that "women in times of stress are more inclined than men to use social support". Studies of Bowling et al., (1991); Farber et al., (1991); Krause (1990); Newsom and Schultz (1996) found relationship between social support and subjective well-being. With the help of these social supports, the psychological and behavioral coping effect feelings of well-being among females than males. Age has significant influence on all facets of social support among heart patients. Among kidney patients', results indicated that age has a significant association only with the emotional social support. Education and occupation significantly influenced the emotional social support for heart patients only. This finding is consistent with Young (2004). Income significantly influenced the emotional social support received both types of patients. Income also influenced the material social support for heart patients. In case of kidney patients, material social support was found insignificant. Marital status showed significant association with the emotional and informational social support of heart patients. Type of family system showed insignificant relationship in all types of social support of both types' of patients.

Among three facets of coping, chi-square test showed that out of all socio-demographic variables: gender showed a significant association with the behavioral coping of the heart patients; age influenced the physical coping of the kidney patients; education

influenced the physical coping of kidney patients and behavioral coping of both types of patients (Krause 1990); income influenced the physical and behavioral coping of the heart patients. Occupation, marital status, and type of family system showed insignificant relationships with both types of patients. For the psychological coping, there were insignificant associations of all socio-demographic variables in both types of patients. For the subjective well-being, heart patients expressed their feelings better than kidney patients. Four variables: education, occupation, income, and type of family system contributed for the subjective feelings of well-being among heart patients. The results are supported by the numerous studies as discussed by Elovainio and Kivimäki (2000) about socio-economic status (back ground factors) as significant predictors of subjective well-being (Cockerham 2000). In all types of coping, education shows significant influence. Other than education, age enhanced the physical coping of the kidney patients. For subjective well-being, education, type of family system, and marital status show significant influence with the heart patients.

For combined effects, Logistic regression pointed out that disease, gender, age and income predict successfully emotional social support. Age and marital status predict successfully the informational, material, and instrumental social support. In coping, age, education, occupation, and income showed significant influence for the physical coping. Not a single socio-demographic variable predict significant influence in psychological coping. Disease, education, and income showed significant influence on the behavioral coping. These socio-demographic variables significantly predicted the physical and psychological copings. For subjective well-being, education, income and type of family system showed significant influence.

Study also explore the difference of means between social support (emotional, informational, material, instrumental), coping (physical, psychological, and behavioral) and subjective

well-being among heart and kidney patients. Statistical test (z-test) suggests that heart patients received more emotional, informational, and material social support than kidney patients. Both types of patients received equal material social support. There exists a statistical significant difference in received emotional and informational social support by the patients. For material and instrumental social support, it was found insignificant. In coping, z-test suggested that kidney patients cope physically more than heart patients whereas heart patients cope psychologically and behaviorally more than kidney patients. Results indicated that there exists a statistical significant difference in behavioral and psychological coping. For physical coping, it was found insignificant.

Implications of the Study

The study allows for many implications in the field of clinical psychology, social work, sociology and social policy. The coverage of various socio-demographic variables has also been exhaustive. People with chronic diseases such as heart and kidney disease face many difficulties in maintaining a viable and long term relationship with their medicinal and various therapeutically regimes (Gehlert and Browne 2006). Chronic heart and kidney disease are the two most common diseases encountered by the social work practitioners. In many countries chronic diseases have surpassed infectious diseases in constituting a risk for the society, even though this might not be true for Pakistan, yet we cannot ignore the ever growing mass of Pakistani individuals who have been living with chronic heart and kidney diseases.

The present research has many implications for the field of social work practice. Since the subjective well-being is also the main goal of health social work practice, the practitioners must take into account the role of four correlates of subjective well-being. These correlates are physical and behavioral coping as well as emotional social support and informational social support.

For behavioral coping, social workers must try to create a positive image of self-care and self-efficacy in the minds of patients. Similarly emotional social support was also a key variable of interest and an important predictor of well being. It is worth mentioning that emotional social support is a major concern of the family institution for helping their ill members to deal with the pressure of chronic illness. Thus, social workers can apply techniques such as family therapy.

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