

Characteristics of Burden, Coping Strategies, and Quality of Life: The Effect of Age, Gender, and Social Variables in Caregivers of Renal Transplanted Patients from Southern Andhra Pradesh, India

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Abstract

Background: Evaluation of burden, coping strategies, and quality of life (QOL) in caregivers may lead to specific interventions to reduce the burden among caregivers. **Methods:** In this prospective study, characteristics of burden, coping strategies, and QOL in caregivers was investigated and also studied the effect of age, gender, and social variables on these concepts. **Results:** Mean burden score of the caregivers was 28.66 ± 2.02 . Thirty percent of caregivers had mild-to-moderate burden followed by moderate-to-severe burden (20%). Seeking social support was the dominant coping strategy used by the caregivers. Role limitations due to the physical health (RLDPH) and role limitations due to emotional problem (RLDEP) were compromised subscales of QOL. The mean score of RLDPH ($P = 0.007$) and RLDEP ($P = 0.014$) were found to be significantly higher in males than that of females. Marital status, education, type of relationship with the patient, religion, occupation, and duration of care giving showed significant effect on burden, coping strategies, and QOL. Lower emotional well-being ($P = 0.003$) and escape avoidance ($P = 0.000$) in males and lower physical component (PC) ($P = 0.002$) in females and lower PC ($P = 0.000$) and escape avoidance ($P = 0.001$) were found to be the significant predictors of burden in caregivers of renal transplanted patients. **Conclusion:** Predictors of burden and QOL subscales varies by gender. Social and clinical variables influence the QOL subscales. Gender- and social group-specific interventions rather than global interventions may reduce the burden of caregivers.

Keywords: Burden, caregivers, coping strategies, quality of life, renal transplanted patients

INTRODUCTION

Chronic kidney disease (CKD) was shown to range from <1% to 17% globally and an estimated prevalence of stage 3 and 5 kidney disease (end stage) was found to be 0.78%–6% and 226 million in Indians.^[1,2] About 735,000 deaths annually resulting from CKD globally was reported.^[3] Although increase in CKD and end-stage kidney disease was observed in both developed and developing countries, the people from the former countries were found to benefit from different modalities of renal replacement therapies (RRT), whereas the people from the later countries die from uremia and cardiovascular diseases.^[4] Among the RRT modalities, renal replacement is considered as the golden standard modality due to the benefits such as long-term survival, lower mortality, cost-effective, and viable

long-term treatment modality in low-resource settings.^[5] After United States, the largest number of renal transplantations is performed at the rate of about 7500/year in India.^[6] Renal transplantations are the second common modality of RRT after hemodialysis (HD) in India.^[7]

Caregivers are those who attend the physical (maintaining the hygiene of the patient, prepare and serve the recommended

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diet, administer the medicine, and transport the patients for health-care delivery centers) and psychological needs of the patients. Caregivers are mostly family members, unpaid, unanticipated, unguided and have no skill when enter into care giving. During the process of caring, the caregivers face loss of energy, resources and social life, adjust daily life, neglect their health care needs and well-being, mandated to do flexible and low paying jobs and constant feeling of negative emotions in them cause decreased psychological health, increased stress, depression and anxiety, dysfunctional coping skills, strained relationships, imbalance in relationships and deficit in life satisfaction, quality of life (QOL), emotional, and physical well-being.^[8] Only few studies are available on burden^[9-11] and QOL^[10,12] in caregivers of RT patients. Burden, coping strategies, and QOL were shown to vary with culture.^[13-15] To the best of our knowledge, no studies are available on burden, coping strategies and QOL in caregivers of RT patients in India. The assessment of burden, coping strategies, and QOL may lead to the development of specific interventions to encourage positive coping strategies, to reduce burden, and to improve the QOL of caregivers of the RT patients. In this study, we attempted to study the characteristics of burden, coping strategies, and QOL and the role of age, gender, and social variables on the burden, coping strategies, and QOL and the predictors of burden.

METHODS

Caregivers attending the RT patients at the outpatient department for follow-up were recruited for the study. Caregivers aged >18 years, who understand Telugu, the local vernacular language and had no history of psychiatric or neurological disorders or social/financial conflicts or divorce or death of family members were included and those who were not falling in the inclusion criteria were excluded from the study. Ethical clearance for conducting the study was obtained from the Institutional Ethics Committee (IEC No. 564). Assuming reliability and inter observer reliability to be 0.9 and 0.95, $\alpha = 0.05$, $\beta = 0.2$, the calculated sample size was 50. We included a total of 50 caregivers in the present study. The data of the study were collected using questionnaire with two sections. The first section included details on age, gender, religion, education, occupation, marital status, duration of care giving, relationship to the patient, history of number, and duration of suffering from chronic diseases. The second section has instruments such the Zarit Burden interview for the assessment of burden, revised ways of coping devised by Folkman and Lazarus, 1988^[16] for investigation of coping strategies and Short-form-36 (SF-36) to evaluate QOL. The three instruments were translated into the Telugu and back translated into the English. Opinions of the nursing, psychiatry and psychology faculty were elicited to check inconsistencies in items. A pilot study was conducted on caregivers to authenticate whether the translated items were clearer to them or not. Cronbach's alpha and intracorrelation coefficient (ICC) were calculated for reliability and repeatability of the instruments. Patients attending our tertiary care hospital for

RRT modalities are dominated by the patients undergoing hemodialysis and peritoneal dialysis followed by RT. We determined the reliability and repeatability of the instruments on caregivers of patients undergoing HD.

Zarit burden interview

This instrument has 22 items dealing health, psychological well-being, financial status, social life, and relationship of the caregivers with the patient. This is rated on 5 point Likert scale: 0–4 indicating never, rarely, sometimes, frequently, and quite frequently. The score ranges from 0 to 88, the highest the score the greater will be the burden. Burden is classified based on score: 0–20 (no burden); 21–40 (mild to moderate); 41–60 (moderate to severe); and 61–88 (very severe). The calculated Cronbach's alpha and ICC for Telugu version of the instrument were 0.906 and 0.928.

Ways of revised coping

Using this instrument, thoughts and behaviors used by the caregivers to cope with stressful situations in their daily lives were documented. It has 66 items and the responses of the caregivers were recorded on 4 point Likert scale (0–3): 0: not applicable; 1: somewhat; 2: quite a bit; and 3: great deal. Eight domains were reported in this instrument such as confronting, distancing, self-controlling, seeking social support, accepting responsibility, escape avoidance, planful problem solving, and positive reappraisal. The total Cronbach's alpha and ICC for the Telugu translated instrument were 0.994 and 0.762. The Cronbach's alpha for eight subscales ranged from 0.31 to 0.988. The higher the score the greater will be use of that coping strategy.

Short-form 36

QOL of caregivers was assessed using SF-36 QOL instrument. It was developed by RAND organization, USA. This instrument has 36 items and eight subscales such as physical functioning, role limitations due to physical health, role limitations due to emotional problems (RLDEPs), energy/fatigue, emotional well-being, social functioning, pain, and general health. Items scores were transformed from 0 to 100 scale, the higher the score the greater will be QOL. For the Telugu version of instrument the calculated Cronbach's alpha and ICC for total items were 0.885 and 0.949. Cronbach's alpha for eight subscales were fallen in the range of 0.47–0.90.

Statistical analysis

Means and standard error of the mean were presented for quantitative variables and frequency and percent for categorical variables. Significance difference between mean were evaluated using Student's *t*-test, one-way analysis of variance (ANOVA) and *post hoc* test "Tukey." Interaction between gender and age was investigated using two-way ANOVA. Association between variables was examined by Spearman rank correlation analysis. Predictors of burden score were identified by stepwise regression analysis. Small case "P" was used to indicate the level of significance, whereas upper case "P" showed for exact significance. All statistical analyses were carried out in International Business Machines

Corporation Statistical Package for Social Sciences Statistics for Windows, Version 20, New York, United States of America.

RESULTS

Demographic, social, and clinical variables gender-wise are presented in Table 1. The mean age of the caregivers was 36.51 ± 1.51 years. The majority of caregivers were males, the Hindus, married, secondary school educated, unemployed, spouses, have no illness and were in care giving for mean 1.16 years and suffering from chronic diseases for mean 0.42 years. Male when compared to female caregivers showed significantly higher mean duration of care giving (1.12 vs. 1.00 year) ($P = 0.044$) and higher prevalence of one chronic disease (22.85 vs. 0%) ($P = 0.043$). Statistically significant difference was observed between genders in married persons ($P = 0.010$), educational ($P = 0.026$), occupational ($P = 0.000$) categories, and type of relationship with the patient ($P = 0.004$).

Mean burden score and level of burden are shown in Table 2. Mean burden score of the caregiver was 28.66 ± 2.02 . The percent distribution of mild to moderate, moderate to severe, and severe burden was as follows: 38%, 20%, and 2%. No effect of age and gender was observed on the level of burden

in the caregivers. Average score of coping subscales are given in Table 3. Seeking social support was the dominant coping strategy observed in the caregivers of RT patients. QOL subscales were presented in mean and standard error in Table 4. Role limitations due to the physical health (RLDPH) and RLDEP subscale of QOL showed lower score in the caregivers.

Details of effect of age, gender, and interaction of age and gender analyzed using two-way ANOVA are shown in Table 5. Gender showed effect on QOL subscales such RLDPH and RLDEP. In further analysis, Student's *t*-test showed significantly higher mean RLDPH (69.28 ± 5.33 vs. 40.00 ± 10.00 , $P = 0.007$) and RLDEP (67.61 ± 5.71 vs. 40.00 ± 9.86 , $P = 0.014$) in males when compared to that of females.

Factors responsible for increased burden in pooled and gender-wise caregivers were analyzed and are given in Table 6. Lower emotional well-being ($P = 0.003$) and escape avoidance ($P = 0.000$) in male and lower physical component (PC) ($P = 0.002$) in females and lower PC ($P = 0.000$) and escape avoidance ($P = 0.001$) in pooled caregivers were found to be the predictors of burden.

Effect of social variables on burden score, coping strategies, and subscales of QOL were investigated using Student's

Table 1: Characteristics of caregivers of renal transplanted patients (n=50)

Variable	Male (n=35)	Female (n=15)	Total (n=50)	P
Age, mean \pm SEM	36.60 \pm 1.78	36.40 \pm 2.94	36.54 \pm 1.51	0.953
Religion (%)				
Hindu	33 (94.28)	14 (93.33)	47 (94.00)	0.897
Muslim	2 (5.71)	1 (6.66)	3 (6.00)	
Marital status (%)				
Un-married	2 (5.71)	5 (33.33)	7 (14)	0.010
Married	33 (94.28)	10 (66.66)	43 (86)	
Education (%)				
Illiterate	9 (25.71)	0 (0.00)	9 (18.00)	0.026
Primary	7 (20.00)	2 (13.33)	9 (18.00)	
Secondary	9 (25.71)	2 (13.33)	11 (22.00)	
Intermediate	1 (2.85)	3 (20.00)	4 (8.00)	
Graduate	6 (17.14)	3 (20.00)	9 (18.00)	
Postgraduate	3 (8.57)	5 (33.33)	8 (16.00)	
Occupation (%)				
Unemployed	28 (80.00)	2 (13.33)	30 (60.00)	0.000
Private employee	4 (11.42)	5 (33.33)	9 (18.00)	
Government employee	1 (2.85)	5 (33.33)	6 (12.00)	
Labourer	2 (5.71)	3 (20.00)	5 (10.00)	
Duration of care giving (years), mean \pm SEM	1.22 \pm 0.07	1.00 \pm 0.00	1.16 \pm 0.05	0.044
Relationship with patient (%)				
Husband/wife	21 (60.00)	3 (20.00)	24 (48.00)	0.004
Son/daughter	5 (14.28)	2 (13.33)	7 (14.00)	
Mother/father	6 (17.14)	2 (13.33)	8 (16.00)	
Other relative	3 (8.57)	8 (53.33)	11 (22.00)	
Number of chronic diseases (%)				
No illness	27 (77.14)	15 (100.00)	42 (84.00)	0.043
One disease	8 (22.85)	0 (0.00)	8 (16.00)	
Duration of chronic disease (years)	0.60 \pm 0.25	0.00 \pm 0.00	0.42 \pm 0.18	0.128

SEM: Standard error of the mean

Table 2: Mean burden score and frequency distribution of burden severity (n=50)

Variable	Details
Burden score, mean \pm SEM	28.66 \pm 2.02
Severity of burden (%)	
No burden	20 (40)
Mild to moderate	19 (38)
Moderate to severe	10 (20)
Severe	1 (2)

SEM: Standard error of the mean

Table 3: Descriptive statistics of subscales of ways of coping (n=50)

Subscale	Mean \pm SEM
Confrontive	1.91 \pm 0.09
Distancing	1.94 \pm 0.09
Self-controlling	1.98 \pm 0.07
Seeking social support	2.60 \pm 0.07
Accepting responsibility	2.29 \pm 0.10
Escape avoidance	1.04 \pm 0.10
Planful problem solving	2.37 \pm 0.10
Positive appraisal	2.31 \pm 0.11

SEM: Standard error of the mean

Table 4: Mean and standard error of subscales of quality of life (n=50)

Subscale	Mean \pm SEM
Physical functioning	85.40 \pm 2.38
Role limitation due to physical health	60.50 \pm 5.10
Role limitation due to emotional problem	59.33 \pm 5.24
Social functioning	70.25 \pm 3.13
Energy/fatigue	61.90 \pm 2.50
Emotional well-being	64.40 \pm 2.46
Pain	69.75 \pm 3.84
General health	67.08 \pm 2.00
Physical component	70.68 \pm 2.33
Mental component	63.97 \pm 2.52

SEM: Standard error of the mean

t-test and one-way ANOVA. Significantly higher mean burden score was observed in married than unmarried caregivers (30.39 \pm 2.14 vs. 18.00 \pm 4.33, $P = 0.032$). Self-controlling mean score was significantly higher in married when compared to unmarried caregivers (2.05 \pm 0.07 vs. 1.53 \pm 0.24, $P = 0.014$). Mean score of seeking social support was significantly higher in unemployed than privately employed (2.75 \pm 0.05 vs. 2.24 \pm 0.26, $P = 0.038$). Significantly higher mean accepting responsibility was observed in the Hindu than the Muslims (2.37 \pm 0.09 vs. 1.00 \pm 0.38, $P = 0.001$) and in intermediate (2.68 \pm 0.15) and graduation educated (2.69 \pm 0.16) when compared to postgraduate (1.48 \pm 0.30) ($P = 0.004$). Escape avoidance mean score was significantly higher in parents than children as caregivers (1.62 \pm 0.29 vs. 0.64 \pm 0.21,

$P = 0.050$) and increased with an increased duration of care giving ($P = 0.00$). Planful problem-solving was found to decrease with an increase in educational status ($P = 0.031$). Pain mean subscale of QOL was found to be significantly lower in married than unmarried caregivers (66.39 \pm 4.14 vs. 90.35 \pm 6.23, $P = 0.029$) and in children when compared to spouses, parents, and other relatives ($P = 0.020$). Significantly lower mean general health was observed in parents against other relatives (54.68 \pm 8.38 vs. 74.62 \pm 3.99, $P = 0.011$).

DISCUSSION

Comparison of the study results with other studies made difficulty due to the using of different instruments,^[11] for burden, coping strategies and QOL, unavailability of literature in public domain in view of their publication in paid journals, prohibitive price of the reprints, lack of funding for purchasing reprints to the academicians in developing countries like India, limited subscription of the journals of university libraries, and noncooperation of authors to share their published articles with other researchers in spite of requests. In this study, an attempt has been made to compare the findings of the present study with the available findings in the public domain. Most of the studies caregivers of RT patients reported in sample range of 19–65^[9-11,17] and the present study sample falls within the range of earlier studies. The mean age of caregivers of RT patients in the present study was lower than the caregivers of RT patients. The observation of higher proportion of married and spouses as caregivers in the present study is in agreement with an earlier study.^[11]

In the present study, higher percent of caregivers were males in contrast with an earlier study in which almost equal number of both genders was observed.^[11] This may be due to higher proportion of male caregivers were spouses (60%). It was observed that spouses are intrinsically motivated, most attached, stay with care recipients for providing long hours of caring and have no conflicting roles than the children as caregivers.^[18]

In the present study, no effect of age and gender was observed either on burden score or level of burden. Among those who have burden (60%), 38% had mild to moderate followed by moderate to severe (20%), and severe burden (2%). This observation suggests that the presence of burden in caregivers of RT patients though its level varies. The presence of some level of burden in caregivers even after transplantation suggests that as they have to attend along with RT patients for follow-up appointments, medical tests, rehospitalization, medication regimes, life style modifications, and treatments for comorbid conditions that may be causing burden among them.^[12] In an earlier study, significant association of burden score was found to be higher in married, low educated, parent, and spouse as caregiver.^[11] In the present study, significantly higher burden was observed in married than unmarried caregivers ($P = 0.032$). This may be due to the additional responsibilities associated with being married.

Table 5: Effect of age and gender on burden score, coping strategies, and quality of life subscales analyzed by two-way analysis of variance

Variable	Age (F and P)	Gender (F and P)	Age and gender interaction (F and P)
Burden score	0.289, 0.593	0.685, 0.412	0.986, 0.326
Confrontive	0.512, 0.478	0.317, 0.576	2.959, 0.092
Distancing	0.002, 0.961	0.090, 0.765	0.559, 0.458
Self-controlling	1.169, 0.285	1.556, 0.219	2.241, 0.141
Seeking social support	0.058, 0.810	1.698, 0.199	1.456, 0.234
Accepting responsibility	0.367, 0.548	0.834, 0.366	1.807, 0.185
Escape avoidance	0.758, 0.389	0.941, 0.337	0.050, 0.824
Planful problem solving	0.005, 0.945	2.115, 0.153	0.580, 0.450
Positive reappraisal	0.031, 0.862	1.617, 0.210	1.702, 0.199
Physical functioning	3.149, 0.083	0.039, 0.845	0.309, 0.581
Role limitation due to physical activity	0.002, 0.965	6.635, 0.013	0.002, 0.965
Role limitation due to emotional problem	0.003, 0.956	5.270, 0.026	0.003, 0.956
Energy/fatigue	0.007, 0.934	0.565, 0.456	1.005, 0.321
Pain	1.266, 0.266	0.313, 0.578	1.082, 0.304
Social function	0.563, 0.457	0.340, 0.562	0.007, 0.934
Emotional well-being	0.101, 0.752	1.792, 0.187	1.312, 0.258
General health	1.691, 0.200	0.005, 0.944	0.803, 0.375
Physical component	0.064, 0.802	1.142, 0.291	0.587, 0.448
Mental component	0.070, 0.793	2.182, 0.146	0.227, 0.636

Table 6: Regression analysis between burden score and independent variables

Variable	Standardized beta coefficient	Significance	Adjusted R ²
Males			
Emotional well-being	-0.462	0.003	0.418
Escape avoidance	0.697	0.000	
Females			
Physical component	-0.737	0.002	0.508
Pooled			
Physical component	-0.425	0.000	0.417
Escape avoidance	0.509	0.001	

Among the coping strategies studied in the present study, higher mean score of seeking social support suggests more frequently used this coping strategy by the caregivers of the present study. Seeking social support is both problem and emotional focused coping strategy. Seeking of social support occurs primarily for instrumental (advice, assistance, or information) and emotional reasons (moral support sympathy or understanding).^[19] Seeking social support coping was reported to be unstable and depend on the social context.^[20] In the present study, seeking social support was positively correlated with other coping strategies such as self-control ($P = 0.025$) and accepting responsibility ($P = 0.000$) (both emotional focused strategies) suggesting that caregivers seek social support when they accept their responsibility and make efforts to control their emotions and actions. Educating of caregivers on disease, treatment regimens, and possible clinical outcomes by social workers and nurses and efforts of caregivers to access the sources of information and help may reduce the

burden among caregivers.^[21] Significantly higher mean score of seeking social support was observed in unemployed than privately employed caregivers ($P = 0.038$). Higher proportion of unemployed (60%) and some level of burden in 60% of the caregivers in the present study may be responsible for the emergence of seeking social support as a dominant coping strategy.

Exploration on the effect of age, gender, social, and clinical variables on coping strategies showed no effect of age and gender. Married than unmarried caregivers use more frequently self-control coping; unemployed than privately employed use seeking social support commonly; The Hindus than the Muslims and lower than higher educated use accepting responsibility frequently; parents than children as caregivers and those in longer than lesser duration of caring increase the use of escape avoidance; and lower than higher educated use planful problem-solving more frequently. In terms of problem and emotion focused coping strategies, married, low educated, the Hindus, parents as caregivers and those were in longer care use emotion focused coping, lower educated use problem focused coping, whereas unemployed use both problem and emotion focused coping strategies. Interventions should be designed to encourage problem focused coping to reduce the burden among the caregivers.

Mean subscales of QOL in the caregivers of the present study were found to be lower than the score of subscales of QOL in the general population reported in India.^[22] In the present study, QOL subscales of RLDPH and RLDEP showed lower mean score than other subscales suggest experiencing of difficulties in work or daily activities due to physical and mental ill health. RLDPH ($P = 0.003$) and RLDEP ($P = 0.008$)

were significantly correlated with level of burden. Significant decrease in RLDPH (34.09 ± 12.73 vs. 76.25 ± 6.14 , $P = 0.004$) and RLDPH (39.39 ± 12.56 vs. 75.00 ± 6.78 , $P = 0.025$) was observed in caregivers with moderate-to-severe burden when compared to no burden. Lower RLDPH and RLDPH in the caregivers may be due to the 22% of caregivers with moderate-to-severe burden. Mental component summary score was found to be lower than the PC summary score in the caregivers of RT patients earlier study^[12] and is in agreement with the findings of the present study.

Significantly lower score in RLDPH ($P = 0.007$) and RLDPH ($P = 0.014$) subscales of QOL was observed in females than that of males. RLDPH in female was significantly correlated with the level of burden ($P = 0.040$) and the RLDPH was found to be lower in caregivers with moderate-to-severe burden when compared to no burden but not significant (30.00 ± 11.66 vs. 60.00 ± 16.95 , $P = 0.165$). Lower RLDPH in females may be due to higher proportion of caregivers with moderate-to-severe burden against no burden (66.66% vs. 33.33%). RLDEP in females was significantly correlated with education ($P = 0.023$) which in one-way ANOVA showed decreased RLDEP with an increase in education but not significant ($P = 0.722$) which needs to be explored further. These observations suggest lower mean RLDPH and RLDEP in females may be due to higher proportion of caregivers with moderate-to-severe burden and increased educational status. Pain was found to be lower in married than unmarried and in children against other type of relatives, whereas general health was found to be lower in parents as caregivers than other type of caregiver relatives of the patient suggesting that married spouse and children caregivers feel less pain as they may be thinking that it is their duty to serve the spouse and parent and observation of lower general health in parents of RT patients may be due to the morbidities and aging related deformities which needs to be explored in future studies.

Lower emotional well-being and escape avoidance were observed as predictor of burden in male caregivers. Emotional well-being was found to decrease with increased level of burden in male caregivers but not significant ($P = 0.247$). Escape avoidance significantly correlated with level of burden ($P = 0.003$). Increased escape avoidance was observed in male caregivers with moderate-to-severe burden when compared to no burden (1.59 ± 0.24 vs. 0.72 ± 0.19 , $P = 0.027$). These observations suggest lower emotional well-being subscale of QOL and increased escape avoidance increase the burden in male caregivers. PC summary score was significantly correlated with the level of burden ($P = 0.037$). Lower mean PC score was observed in female caregivers with mild-to-moderate burden against no burden but was not significant ($P = 0.069$) may be due to small sample size and suggest lower PC score increase burden in female caregivers. In pooled caregivers, PC was significantly correlated with the level of burden ($P = 0.012$). Significantly lower mean PC was observed in pooled caregivers with moderate-to-severe burden when compared to no burden (60.45 ± 6.29 vs. 76.54 ± 2.86 ,

$P = 0.023$). In pooled caregivers, escape avoidance was significantly correlated with level of burden ($P = 0.000$). Significantly higher mean escape avoidance was observed in pooled caregivers with moderate-to-severe burden when compared to no burden (1.54 ± 0.19 vs. 0.65 ± 0.15 , $P = 0.003$). These observations suggest that lower PC score and higher escape avoidance increase the burden in pooled caregivers of RT patients. Earlier studies showed that after transplantation, the caregiver QOL improved^[9,12] but not burden.^[12] Reduced burden was observed in intervention group that received enhanced psychological support than no support received.^[23]

This is a cross-sectional study and the longitudinal studies are needed to confirm the findings. This study carried out in single renal transplantation center and to generalize the findings of the present study, large number of studies needed to be carried out in different cultural settings as burden, coping strategies, and QOL were shown to differ with culture. We have used only general instruments for the assessment of burden, coping strategies and QOL which are not specific to the disease but facilitate the comparison of the findings of the studies as these are widely used and available to the research and academic communities.

CONCLUSION

To the best of our knowledge, this is the first study to show higher proportion of male as caregivers, seeking social support as dominant mechanism, variation of coping strategies by social, educational and occupational status, duration of caring and type of relationship with the patients and also variation in QOL subscales by gender, social status, and type of relationship with the patient. This is the first study in the Indian context and provides first line of evidence on the burden, coping strategies, and QOL on caregivers of RT patients.

The results of the study indicate coping strategies vary with social, occupational, educational status, and type of relationship with patients; QOL subscales vary with gender, social status, duration of caring, and type of relationship with the patients and predictors of burden vary with burden. Designing of global interventions to reduce burden in caregiver may not be beneficial, designing of tailor-made interventions depending on the gender, social, educational and occupational status, and type of family caregivers may be helpful in encouraging problem focused coping, to improve QOL and to reduce the burden. Further randomized controlled studies are needed to study the effect of interventions based on gender and social, educational and occupational status, and duration of caring to propose recommendations on reducing the burden among caregivers of RT patients.

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Conflicts of interest

There are no conflicts of interest.

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