




Relation between Burnout and Psychosocial Factors in Health Care Providers and Family Caregivers of Patients with Cancer

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Abstract

Introduction Burnout has been widely studied among oncology health care providers such as nurses and doctors. However, it is a less explored but highly prevalent factor in family caregivers of patients with cancer.

Objective The study aimed to understand the construct of burnout among health care providers and family caregivers of patients with cancer, through three objectives: (1) to distinguish burnout between health care providers and family caregivers; (2) to predict burnout based on measurable characteristics, namely, perceived stress, psychological morbidity, well-being, problem-focused coping, emotion-focused coping, and avoidant coping; and (3) to find out the levels of burnout (low, medium, and high) in health care providers and family caregivers.

Materials and Methods It is a cross-sectional study conducted among the health care providers and family caregivers of patients with cancer. The measures used in the study were the Professional Quality of Life scale, 12-Item General Health Questionnaire, Perceived Stress Scale, 5-Item World Health Organization Well-Being Index, Brief COPE inventory, and a sociodemographic details form.

Results The study found a statistically significant difference in the mean burnout of health care providers ($p=0.027$) and family caregivers. Study variables such as perceived stress and avoidant coping positively predicted burnout, whereas well-being and emotion-focused coping negatively predicted burnout. The study also found that a majority of the participants fell into the category of “medium” level of burnout.

Conclusion While enhancing well-being and employing adaptive coping styles can act as the mitigating factors to burnout, the existence of stress and maladaptive styles of coping can prove counterproductive in dealing with burnout in work environments. This indicates that there is a need for psychosocial interventions to help the medical professionals deal with the burnout.

Keywords

- ▶ burnout
- ▶ health care providers
- ▶ family caregivers
- ▶ oncology

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Introduction

Cancer diagnosis has a catastrophic impact on both the professionals providing the care and the family caregivers. Oncology health care providers have high rates of burnout due to exposure to numerous patient deaths, treatment decisions, planning and carrying out treatments, and dealing with high workloads and time pressure, and they experience stress, burnout, and trauma. Family caregivers, on the other hand, have to deal with the emotional and psychological trauma of the diagnosis, stressors associated with the treatment, adjusting their own lives after the diagnosis, and additional caregiver responsibilities.¹⁻⁴

Burnout can be defined as “a state of physical, emotional and mental exhaustion caused by long-term involvement in emotionally demanding situations.”⁵ The construct has been widely studied over the decades among individuals working in the helping professions. Studies on understanding the effects of burnout on oncology health care providers such as nurses and doctors due to the nature of their jobs have also been common.⁶⁻⁸ In the case of family caregivers, the most widely studied concept, to understand the exhausting and negative effects of caregiving, has been the study of caregiver burden. Efforts have been made to understand the extent of burnout solely on family caregivers,⁹ and studies comparing the effects of burnout on both oncology health care providers and family caregivers together have been sparse. Present study, to the best of our knowledge, is the first in its field to understand burnout in the formal as well as the informal caregivers of patients with cancer. Thus, this study aims to understand the construct of burnout among health care providers and family caregivers of patients with cancer through the following objectives: (1) to distinguish burnout between health care providers and family caregivers; (2) to predict burnout based on measurable characteristics, namely, perceived stress, psychological morbidity, well-being, problem-focused, emotion-focused, and avoidant coping; and (3) to find out the levels of burnout (low, medium, and high) in health care providers and family caregivers. Based on the study findings obtained, recommendations for the development of necessary interventions for both healthcare providers as well as family caregivers to mitigate burnout will be proposed.

Materials and Method

Study Design and Procedure

A cross-sectional study was carried out at a regional cancer center and a corporate cancer hospital located in India for a period of 1 year. The total sample obtained was 309 participants inclusive of health care providers as well as family caregivers of patients with cancer. After taking permissions from the institution ethics committee, the data were collected. Data were collected after obtaining informed consent from the participants ensuring their voluntary participation. The participants were assured regarding their anonymity of participation, confidentiality, and the strict academic use of

the data collected. Based on the findings thus obtained, recommendations for the development of necessary interventions for burnout will be designed. Thus, several interventions for the health care providers as well as family caregivers who undergo complexities in psychosocial. After the completion of the study, the participants were debriefed.

The study included five measures, namely, the Professional Quality of Life (ProQOL) scale, Perceived Stress Scale, 12-Item General Health Questionnaire (GHQ-12), 5-Item World Health Organization Well-Being Index, and the Brief COPE inventory. Other details such as the sociodemographic characteristics of the health care providers and family caregivers were also collected.

ProQOL (version 5)¹⁰ is a 5-point Likert scale and has 10 items assigned to each of the three subscales—compassion satisfaction, burnout, and secondary trauma. However, in this study, it was solely used for the measurement of burnout in the participants. It is self-administered and consists of 30 items, originally developed for professionals working in human services. The scale was adopted to be administered among family caregivers of patients with cancer to explore and understand the same. The scale does not yield a composite score. The scale also allows for the categorization of scores, low, average (medium), and high levels, for each category. Scores of 43 or less are categorized as low, scores around 50 as average (medium) level of burnout, and scores of 57 and more as high level of burnout.

The Perceived Stress Scale was used to measure stress. The scale is a 10-item, 4-point Likert scale used to assess participants' perception of stressors in daily life, occurrence of major events in life, and notable changes in coping within the past 1 month.¹¹

The GHQ-12, consisting of 12-item and a 4-point Likert scale, was used to measure psychological morbidity.¹²

Well-being was measured by the 5-Item World Health Organization Well-Being Index. It is a 5-item and 6-point Likert scale used to measure participant's positive mood, levels of vitality, and general interests.¹³

Coping was measured with the Brief COPE Inventory. It is a 28-item instrument consisting of 3 broad dimensions, namely, problem-focused, emotion-focused, and avoidant coping, obtaining three separate scores for each subscale.¹⁴ There is no composite score available for this inventory.

Inclusion and Exclusion Criteria

This study recruited health care providers inclusive of doctors and nurses, who have been working in the fields of oncology for more than 1 year, along with family caregivers who have been taking care of patients with cancer over a period of 1 year. Participants with psychological illnesses were excluded from the study.

Primary and Secondary Outcome

Primarily, the study found that there is a significant difference in the burnout experienced by health care professionals and family caregivers, showing that professionals scored higher on burnout when compared with the family caregivers.

The secondary outcome of the study suggests that although family caregivers have scored lower on burnout when compared with the health care professionals, it is important to equally address both the groups and provide suitable interventions to handle the levels of burnout.

Statistical Analysis

Descriptive statistics were carried out to gain an overview of participants' sociodemographic characteristics such as gender, age, marital status, and socioeconomic status. Statistical analyses such as analysis of variance (ANOVA) and analysis of covariance (ANCOVA) were conducted to estimate the variation in the means of burnout in health care providers and family caregivers. Logistic regression analysis and contingency analysis were used to find out the levels of burnout in health care providers and family caregivers. All statistical tests and analyses were carried out using SPSS 21.0 for Windows.

Ethics

The study has been conducted in compliance with the protocol that has gained the approval of the Institutional Ethics Committee of the University of Hyderabad. The approval number as given by ethics committee is "UH/IEC/2018/24" (December 21, 2021). All procedures performed were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Table 1 Sociodemographic details of the health care providers and family caregivers of patients with cancer ($n = 309$)

Variables		Professional caregiver ($n = 153$), n (%)	Family caregiver ($n = 156$), n (%)
Gender	Male	39 (25.5)	73 (46.8)
	Female	114 (74.5)	83 (53.2)
Age, y	18–27	34 (22.2)	20 (12.9)
	28–37	72 (47.1)	49 (31.6)
	38–47	25 (16.3)	39 (25.2)
	48–57	21 (13.7)	25 (16.1)
	≥58	1 (0.7)	23 (14.2)
Marital status	Unmarried	72 (47.1)	28 (17.9)
	Married	75 (49)	117 (75)
	Separated/ divorced/ widow(er)	6 (3.9)	11 (7.1)
Monthly income, ₹	1,000–7,000	–	105 (67.3)
	8,000–15,000	–	51 (32.7)
	30,000–55,000	17 (11.1)	–
	57,000–80,000	82 (53.6)	–
	≥100,000	54 (35.3)	–

Results

► **Table 1** provides characteristics of the sample. The mean age of the participants was 34.6 years. Most participants were female (63.8%) and were in the age group of 28 to 37 years (39.2%). The majority of the study participants reported to be married (62.1%), and a majority of them were categorized as belonging to the middle social class (43%).

ANOVA was computed to investigate the differences in the burnout experienced by health care providers and family caregivers of patients with cancer. The ANOVA results showed that there exists a statistically significant difference in the mean burnout between health care providers and family caregivers, $F(1, 307) = 4.917$, $p = 0.027$. Health care providers ($M = 53.27$) experienced more burnout when compared with family caregivers ($M = 48.94$).

ANCOVA was carried out to understand the burnout experience in health care professionals and family caregivers of patients with cancer in light of perceived stress, psychological morbidity, well-being, problem-focused coping, emotion-focused coping, and avoidant coping. While both groups of participants (types of caregivers) were taken as categorical independent variables, the covariates were perceived stress, psychological morbidity, well-being, problem-focused coping, emotion-focused coping, and avoidant coping. Levene's test and normality tests were done and assumptions were met. ANCOVA results in ► **Table 2** show a statistically significant difference in the mean burnout between the two groups, when controlled for perceived stress ($F(1, 301) = 40.62$; $p < 0.001$), well-being ($F(1, 301) = 13.88$; $p < 0.001$), emotion-focused coping ($F(1, 301) = 20.10$; $p < 0.001$), and avoidant coping ($F(1, 301) = 40.62$; $p < 0.001$).

Parametric estimates in ► **Table 3** show a positive relationship between perceived stress ($B = 0.69$, $p < 0.001$) and

Table 2 Analysis of covariance for the dependent variable burnout

Source of variance	SS	df	MS	F
Perceived stress	2,183.15	1	2,183.15	40.62***
Psychological morbidity	60.34	1	60.34	1.12
Well-being	746.39	1	746.39	13.88***
Problem-focused coping	9.72	1	9.72	0.18
Emotion-focused coping	1,080.14	1	1,080.14	20.10***
Avoidant coping	1,193.88	1	1,193.88	22.2***
Type of caregiver	952.91	1	952.91	17.73***
Error	16,177.0	301		

Abbreviations: df, degree of freedom; MS, mean squares; SS, sum of squares.

Note: $R^2 = 0.471$, adjusted $R^2 = 0.459$.

*** $p < 0.001$

Table 3 Parameter estimates for the dependent variable burnout

Parameters	B	SE	t
Perceived stress	0.699	0.110	6.3373***
Psychological morbidity	0.132	0.125	1.069
Well-being	-0.098	0.026	-3.727***
Problem-focused coping	0.061	0.142	0.425
Emotion-focused coping	-0.504	0.112	-4.713***
Avoidant coping	0.0872	0.185	4.713***
[Type of caregiver = 0]	4.609	1.095	4.211***
[Type of caregiver = 1]	0a	-	-

Abbreviation: SE, standardized error.

Note: B, unstandardized beta coefficient; t = value of beta.

*** $p < 0.001$.

avoidant coping ($B = 0.087$, $p < 0.001$) with burnout. This finding meant that high perceived stress and high avoidant coping predicted high burnout. On the other hand, well-being ($B = -0.98$, $p < 0.001$) and emotion-focused coping ($B = -0.504$, $p < 0.001$) shared a negative relationship with burnout, indicating that higher well-being and emotion-focused coping predicted low burnout and vice versa.

► **Table 4** demonstrates the independent variables that significantly predict the probability of individuals belonging to the “low level of burnout” and the “medium level of burnout” category (i.e., the comparison groups) versus the “high level of burnout” category (i.e., the baseline), conditional on the predictors.

In the “low level of burnout” versus the “high level of burnout” category, the regression slope for the significant predictors, perceived stress, well-being, emotion-focused coping, and avoidant coping is interpreted as follows:

Perceived stress: For an increase of each unit on perceived stress, the odds of a case falling into the “low level of burnout” category (relative to “high level of burnout”) decreases by 0.308 units. The odds ratio is 0.735, indicating that with increasing scores on the predictor perceived stress, the odds of falling into the “low level of burnout” category changes by a factor of 0.735. Thus, overall, these results suggest that individuals who score higher on perceived stress are at a lower probability of belonging to the category of “low level of burnout,” which means that they are at a greater probability of belonging to the category of “high level of burnout” than individuals who have lower scores of perceived stress ($B = -0.308$, standardized error [SE] = 0.065, $p \leq 0.001$).

Well-being: For an increase of each unit on well-being, the odds of a case falling into the “low level of burnout” category (relative to “high level of burnout”) increases by 0.039 units. The odds ratio is 1.039, indicating that with increasing scores on well-being, the odds of belonging in the “low level of burnout” category changes by a factor of 1.039. Thus, overall, these results suggest that individuals who score higher on well-being are at a higher probability/likelihood of falling into the category of “low level of burnout,” which means that they are at a lesser risk of falling into the category of “high level of burnout” than individuals who have lower scores of well-being ($B = 0.039$, SE = 0.014; $p < 0.01$).

Table 4 Logistic regression analysis of levels of burnout

		B	SE	Exp(B)	p
Low level of burnout	Perceived stress	-0.308	0.065	0.735	0.000***
	Psychological morbidity	-0.041	0.067	0.960	0.541
	Well-being	0.039	0.014	1.039	0.005**
	Problem-focused coping	0.014	0.070	1.014	0.845
	Emotion-focused coping	0.104	0.055	1.109	0.050*
	Avoidant coping	-0.211	0.095	0.809	0.026*
	[caregiving = 0]	-1.668	0.591	0.189	0.005**
		B	SE	Exp(B)	Sig.
Medium level of burnout	Perceived stress	-0.252	0.052	0.777	0.000***
	Psychological morbidity	-0.012	0.052	0.988	0.822
	Well-being	0.014	0.011	1.014	0.176
	Problem-focused coping	-0.093	0.054	0.911	0.084
	Emotion-focused coping	0.077	0.044	1.080	0.080
	Avoidant coping	-0.216	0.072	0.805	0.003**
	[caregiving = 0]	0.002	0.435	1.002	0.996

Abbreviation: SE, standardized error.

Note: B = unstandardized beta coefficient; Exp(B) = odds ratio.

* $p \leq 0.05$. ** $p < 0.01$.

*** $p < 0.001$.

Emotion-focused coping: The regression slope for emotion-focused coping is interpreted as follows: for an increase of each unit on this variable, the odds of a case falling into the “low level of burnout” category (relative to the “high level of burnout”) is predicted to increase by 0.109 units. The odds ratio is 1.109, indicating that with increasing scores on this predictor, the odds of falling in the “low level of burnout” category changes by a factor of 1.109. Thus, overall, these results suggest that individuals who score higher on emotion-focused coping are at a higher probability/likelihood of falling into the category of “low level of burnout,” which means that they are at a lesser probability of falling into the category of “high level of burnout” than individuals who have lower scores of emotion-focused coping ($B = 0.104$, $SE = 0.055$; $p < 0.05$).

Avoidant coping: For an increase of each unit on this variable, the odds of a case falling into the “low level of burnout” category (relative to “high level of burnout”) is predicted to decrease by 0.211 units. The odds ratio is 0.735, indicating that with increasing scores on avoidant coping, the odds of falling into the “low level of burnout” category changes by a factor of 0.735. Thus, overall, these results suggest that individuals who score higher on avoidant coping are at a lower probability/likelihood of falling into the category of “low level of burnout,” which means that they are at a greater probability/likelihood of falling into the category of “high level of burnout” than individuals who have lower scores of avoidant coping ($B = -0.211$, $SE = 0.095$, $p = 0.05$).

In the “medium level of burnout” versus the “high level of burnout” category, the regression slope for the significant predictors, perceived stress, and avoidant coping is interpreted as follows.

Perceived stress: For an increase of each unit on this variable, the odds of a case falling into the “medium level of burnout” category (relative to the “high level of burnout”) is predicted to decrease by 0.252 units. The odds ratio is 0.777, indicating that with increasing scores on perceived stress, the odds of falling into the “medium level of burnout” category changes by a factor of 0.777. Thus, overall, these results suggest that individuals who score higher on perceived stress are at a lower probability/likelihood of falling into the category of “medium level of burnout,” which means that they are at a greater probability/likelihood of falling into the category of “high level of burnout” than individuals who have lower scores of perceived stress ($B = -0.252$, $SE = 0.052$, $p \leq 0.001$).

Avoidant coping: For an increase of each unit on this variable, the odds of a case falling into the “medium level of burnout” category (relative to the “high level of burnout”) is predicted to decrease by 0.216 units. The odds ratio is 0.805, indicating that with increasing scores on this predictor (avoidant coping), the odds of falling into the “low level of burnout” category changes by a factor of 0.805. Thus, overall, these results suggest that individuals who score higher on avoidant coping have a lower probability/likelihood of falling into the category of “medium level of burnout,” which means that they are at a greater probability/likelihood of falling into

Table 5 Contingency analysis of the levels of burnout

Levels of burnout	Low	Medium	High	Percent of levels
Low	21	36	6	33.3%
Medium	11	128	21	80.0%
High	0	37	49	57.0%
Overall percentage	10.4%	65.0%	24.6%	64.1%

the category of “high level of burnout” than individuals who have lower scores of avoidant coping ($B = -0.216$, $SE = 0.072$, $p \leq 0.01$).

The probability of an individual falling into one of the levels of burnout has been calculated by the contingency analysis. It has also been used to determine which level of burnout is the best predictor of the model. As shown in **Table 5**, low levels of burnout were correctly predicted by the model only 33.3% of the time, while medium levels of burnout were correctly predicted by the model 80.0% of the time and high levels of burnout were correctly predicted by the model 57.0% of the time by the model. This shows that the classification was accurate with respect to the medium level of burnout and equally accurate in the high level of burnout. However, in the low level of burnout, it is biased toward the medium level of burnout. Overall, this suggests that the model is more or less well to classify an individual into the level of burnout. Contingency analysis has been carried out as a validation for the above-mentioned logistic regression analysis.

Discussion

The results of the study were threefold: the first aim was to distinguish burnout between health care providers and family caregivers; the second aim was to predict burnout based on measurable characteristics, namely, perceived stress, psychological morbidity, well-being, problem-focused coping, emotion-focused coping, and avoidant coping; and the third aim was to find out the levels of burnout (low, medium, and high) in health care providers and family caregivers of patients with cancer.

The study found a difference between the experience of burnout among the health care providers and family caregivers, thus supporting the first objective. It was seen that health care providers experienced more burnout when compared with family caregivers. This can be explained by the nature of their job, which entails work-related stressors² as well as dealing with the emotional exhaustion of patients' pain and death,^{3,15,16} when compared with their counterparts, family caregivers.

According to the second and third objectives, it was checked whether there was a difference between the two groups with respect to perceived stress, well-being, emotion-focused coping, and avoidant coping. It was seen that there exists a difference between these two groups as

mentioned previously. Perceived stress positively predicted burnout, indicating that individuals who perceived stress experienced more burnout. Therefore, overall, this suggests that individuals who score higher on perceived stress are at a higher probability/likelihood of high level of burnout and less likely to belong to low or medium levels of burnout. This has also been found in previous studies¹⁷ and can also be explained by the concept of burnout, i.e., a phenomenon that emerges due to the prolonged exposure to stress and demanding situations,^{18,19} especially in the context of medical field.

Avoidant coping also positively predicted burnout, which showed that individuals who adopted avoidant coping mechanisms to deal with the stressors experienced more burnout. Hence, overall, this suggests that individuals who score higher on avoidant coping are at a higher probability/likelihood of high level of burnout and less likely to belong to low or medium levels of burnout. This finding is in line with the recent research conducted on health care professionals.^{20–22} However, it is important to note that this finding was also contrary to previous research that did not find that coping strategies predicted burnout.²³

Moreover, it was also seen that emotion-focused coping and well-being negatively predicted burnout. This indicates that individuals who increasingly adopted emotion-focused mechanisms to cope were seen to have lower burnout and vice versa. Thus, overall, this suggests that individuals who score higher on emotional-focused coping are at a higher probability/likelihood of low level of burnout and less likely to belong to the high level of burnout category. This was supported by previous research that stated health care professionals use emotion-focused mechanisms to deal with work-related as well as personal situations, such as having an active social life and maintaining a positive disposition to combat burnout.^{22,24,25}

Likewise, well-being also predicted burnout negatively, indicating an increased experience of well-being leads to the decreased experience of the burnout and vice versa. Therefore, overall, this suggests that individuals who score higher on well-being are at a higher probability/likelihood of low level of burnout and less likely to belong to high level of burnout.²⁶

Conclusion

Major findings of the current study show that health care providers of patients with cancer experience more burnout when compared with family caregivers of patients with cancer. It was also seen that while factors such as perceived stress and avoidant coping predicted and increased the risk of burnout, factors such as well-being and emotion-focused coping decreased the risk of burnout. This indicates a strong need for psychosocial interventions to help the medical professionals deal with the burnout. While their professionalism and regular exposure to all situations may contribute to their strength, the same may also contribute to anticipation and sensitivity to crisis faced by patients and as medical professionals to the challenges. Hence, customized relaxation techniques and stress management programs targeting

doctors and nurses and other health professionals are recommended. At the same time, caregivers who are the silent sufferers and do not vent out their psychosocial suffering also need to be paid attention to with suitable psychosocial interventions.

The study included participants from only one state from India; a larger pool will expand the scope of the study. Integrative health team should include not only the health professionals but also family caregivers and other related professionals who can address different aspects of aligned care relevant to the needs of the patients and caregivers. This may minimize the stress both in terms of family caregivers and also health care professionals who get greater support in the health care. Cross-cultural studies comparing the cultural factors leading to the burnout of professionals and family caregivers dealing with patients with cancer are needed to design culture-appropriate interventions to deal with burnout.

Note

The manuscript has been read and approved by all the authors, that the requirements for authorship have been met, and that each author believes that the manuscript represents honest work

Authors' Contributions

D.A. conducted the literature search, data acquisition, data analysis, manuscript preparation, and manuscript editing. G.P. was responsible for the concept, design, and manuscript review. C.R.R. handled the statistical analysis.

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Conflict of Interest

None declared.

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