

CAREGIVER BURDEN, RESILIENCE AND OPTIMISM-A PROSPECTIVE STUDY IN CAREGIVERS OF CANCER PATIENTS IN MUMBAI, INDIA

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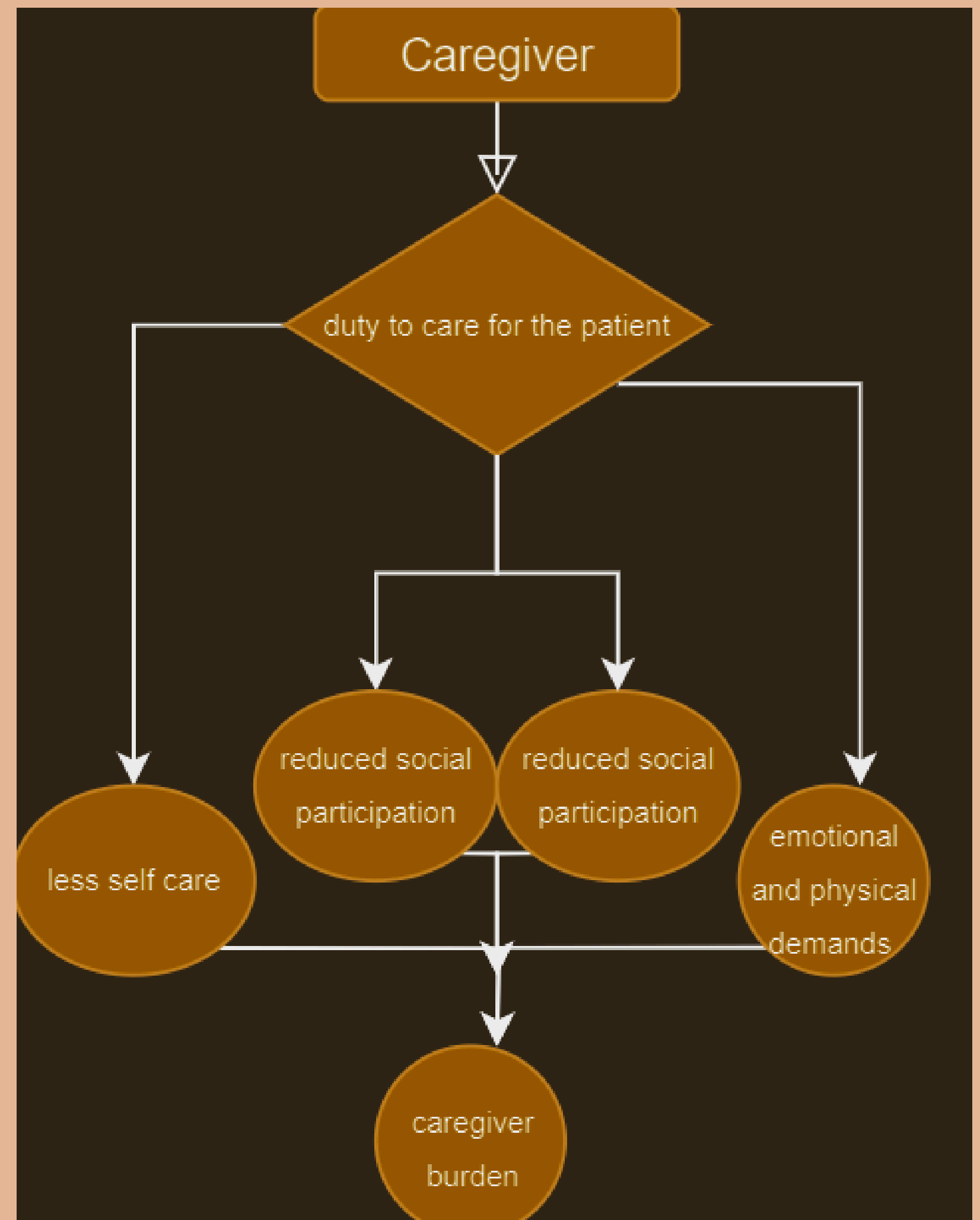
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INTRODUCTION

On the right, there is a simplistic framework that represents how caregiving leads to caregiver burden. With the increased duties that come with caregiving, caregivers tend to make sacrifices that, in these ways, lead to caregiver burden. Caregiver burden has austere implications upon one's psychological health, and hence it is important to note that optimism and resilience are prominent protective factors against caregiver burden and depression. Hence, aside from increasing self-care and making more time for oneself, it is important for caregivers to increase their optimism and resilience levels, particularly since they could impact disease outcomes (Alisson et al., 2003).



MY RESEARCH

Since optimism and resilience affect disease outcomes, and combined with caregiver burden, they significantly influence one's psychological health, it is important to assess the factors that affect them. Thus, this study investigates the adult caregiver community of cancer patients in Mumbai, India and explores how caregiver resilience, optimism and burden levels differ among them. The impact of factors such as gender, age and relationship status of the caregiver and the patient cancer stage have been examined.

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When tumor load is small, when illness is beginning to progress, optimism might spell the difference between life and death

-Martin Seligmann

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Aim: to understand resilience, optimism,
and caregiver burden levels using a
quantitative approach

sample of 40 caregivers: 20 male and 20
female, with purposive sampling used.

inclusion criteria: 1) willingness to
participate
2) aged 18 or older 3) being able to
communicate 4) being the primary
caregiver 5) not being paid for the
care

informed verbal consent was taken

METHODOLOGY: SAMPLING

BRS

Brief resilience scale

For resilience, the *Brief Resilience Scale* was used, a 6-item questionnaire that measures an individual's 'ability to bounce back' and 'recover from stress'. The scale ranging from 1-6 consists of "strongly agreeing" to "strongly disagreeing" to questions including, "I tend to bounce back quickly after hard times". The

norms are as follows:

- 1.00-2.99: Low Resilience
- 3.00-4.30: Normal Resilience
- 4.31-5.00: High Resilience

LOT-R

Life Orientation Test Revised

To test optimism levels, the Revised Life Orientation Test was used, a 10-item questionnaire that measures 'how optimistic or pessimistic people feel about the future'. It consists of statements like "In uncertain times I usually expect the best" The interpretation is as

follows:

- 0-13: Low Optimism
- 14-18: Moderate Optimism
- 19-24: High Optimism

ZBI

Zarit Burden Interview

The 4-item screening version of the Zarit Burden Interview was used to test caregiver burden. It measures the 'level of multifaceted strain perceived by the caregiver from caring for a family member and/or loved one over time'. It consists of questions like: "Do you feel you don't have enough time for yourself?"

METHODOLOGY: TOOLS USED

DATA COLLECTION

informed consent was taken, and then the purpose of the study and its implications were explained. A printed version of the study was handed to the participant

The participants that could understand English filled the form themselves. For those that could not, the author translated the questions and helped the participants tick the appropriate option.

The data was saved onto a google sheets file, where optimism, resilience, and caregiver burden scores were calculated.

DATA ANALYSIS

These were tabulated in relation with gender, age, type of relationship, and stage of cancer.

T-tests were carried out for optimism, resilience and caregiver burden

**METHODOLOGY:
Data collection +
Analysis**

Table 1: Independent t-test analysis of optimism levels based on gender, relationship status, age and stage of cancer (N=40)

Source	M	n	SD	t	p
Male	18.15	20	3.9	-0.87	.39
Female	16.9	20	5.11		
Child	18	17	3.89	-0.23	.821
Spouse	18.33	15	4.3		
age \geq 50	17.4	20	5.08	0.38	.708
age < 50	17.95	20	3.91		
Stage 2	16	12	5.24	-1.76	.092
Stage 3	19.33	15	4.39		

Table 1 denotes that gender $t(40) = -0.87$, $p > 0.05$, relationship $t(32) = -0.23$, $p > 0.05$ and age $t(39) = 0.38$, $p > 0.1$ showed no significant impact on the optimism levels of caregivers. There was, however, a significant difference in optimism levels between caregivers of patients with stage 2 cancer and stage 3 cancers, $t(27) = -1.76$, $p < 0.1$, and hence *stage of cancer influences caregiver optimism*.

Results: Optimism

Table 2: Independent t-test analysis of resilience levels based on gender, relationship status, age and stage of cancer (N=40):

Source	M	n	SD	t	p
Male	3.275	20	0.957	-0.64	.527
Female	3.075	20	1.023		
Child	3.215	17	0.687	-0.14	.888
Spouse	3.267	15	1.225		
age \geq 50	2.76	20	0.75	1.86	.073
age <50	3.38	20	1.3		
Stage 2	3.18	12	0.78	-0.52	.607
Stage 3	3.38	15	1.18		

Results: Resilience

From Table 2, it can be inferred that there is no significant difference in resilience levels between male and female caregivers $t(40)=-0.64$, $p>0.05$ or between child and spouse caregivers of the cancer patients $t(32)=-0.14$, $p>0.05$. Similarly, there was no significant difference in resilience levels of caregivers of patients with stage 2 or stage 3 cancers $t(27) =-0.52$, $p>0.1$. There was however a significant difference in resilience levels between caregivers of patients below the age of 50 and older caregivers $t(39)=1.86$, $p<0.1$.

Table 3: Independent t-test analysis of caregiver burden levels based on gender, relationship status, age and stage of cancer (N=40)

Source	M	n	SD	t	p
Male	6.75	20	4.23	-0.97	.336
Female	8.05	20	4.21		
Child	6.65	17	4.94	-1.09	.284
Spouse	8.33	15	3.79		
stage 2	7	12	3.67	-2.63	.015
stage 3	10.67	15	3.52		
age ≥50	8.7	20	3.77	-2.03	.05
age<50	7.3	19	4.13		

Results: Caregiver Burden

It can be inferred that there is no significant difference in caregiver burden levels between male and female caregivers $t(40) = -0.97, p > 0.05$ or between child and spouse caregivers $t(32) = -1.09, p > 0.05$. There was, however a significant difference in caregiver burden levels between caregivers of patients with stage 2 and stage 3 cancers, $t(27) = -2.63, p < 0.05$. Caregiver age above 50 years also negatively impacted burden levels $t(39) = -2.03, p < 0.05$ (Table 4)

DISCUSSION: optimism

- Gender: In this study, the optimism level was unaffected by the gender of the caregiver. Opposing results were obtained by Schnedier et al. (2011), who show that female caregivers have lower optimism levels when compared to their male counterparts. This is consistent with research for non-caregivers as well (Dawson, 2023). The reason this study did not obtain the same is likely the sample size.
- Age: In this study, optimism was unaffected by age. Conflicting results are found in research. While logic suggests that since higher caregiver burden entails lower optimism (Sardella et al., 2021), and older people have higher caregiver burden, it is likely that older people will have lower optimism. There is, on the other hand, research that suggests that caregivers that are grandparents have better psychological health than other types of relationships (De Oliveira et al., 2017). Putting the conflicting research aside, there are many other factors that affect caregiver optimism, and hence the aforementioned logic cannot be relied upon, either.
- Stage of cancer: Significant results were found when exploring the link between stage of cancer and optimism levels in caregivers, with the optimism of caregivers of patients with stage 3 cancer being higher than those of stage 2 cancer. However, since higher caregiver burden is linked to lower optimism (Sardella et al., 2021), and caregivers of stage 3 cancer patients have increased duties and burden, it is more likely that advanced cancers would actually lead to lower optimism levels, contrary to this study's finding. This is supported by research that shows that caregivers of higher cancer stage patients have worse psychological outcomes (Ketcher et al., 2020).

DISCUSSION: resilience

- Gender: This study showed no differences in resilience levels between both genders. Dias et al., (2015) opposes this, showing that resilience is higher for females. This is contrasted with research that suggests males have higher resilience by Whitten et al., (2022) and Dias et al. (2016). Since there are contrasting results regarding the resilience of both the genders in a caregiving context, the conclusion made by this paper is supported- that there is no difference in resilience levels between genders.
- Age: A significant difference was found in resilience levels between those two groups, with older caregivers having higher levels of caregiver resilience. This finding is supported with a study carried out by Thakur et al. (2024). Since resilience is not innate, but something that develops with experience, it seems likely that older people would have more resilience.
- Stage of cancer: The study showed no significant changes in resilience levels among caregivers of stage 2 versus stage 3 cancers. Research (Cui et al., 2023) showed that patients undergoing fewer than two types of treatment and a lower symptom burden of patients predicted higher caregiver family resilience. However, their study was restricted only to patients with advanced cancers and may not be representative of cancer holistically- especially when making comparisons between stages. The link between cancer stage and treatment is also not perfect. Furthermore, though Thakur et al. (2024) did show that there is a link between duration of treatment and resilience, the relationship between stage of cancer and treatment duration is not perfect either, and hence the conclusion made by our study is supported.
- Relationship: no difference was found on caregiver resilience on the basis of relationship (adult-child or spousal). Evidence derived from research by Donnellan et al., (2021), however, shows that spousal relationships often result in higher caregiver resilience. This is consistent with research by Thakur et al. (2024). The reason this study did not reach the same conclusion is likely the sample size.

DISCUSSION: Caregiver Burden

- Gender: This study showed no differences in caregiver burden levels between genders. This is contrasted, however, by research from Moghaddam et al. (2023) and Thakur et al. (2024) who showed that females have higher caregiver burden than males.
- Age: The finding that caregiver burden is higher in older caregivers is supported by Tuttle et al., 2022 who found that age was significantly associated with caregiver burden. This could arise due to the physical difficulties experienced by caregivers as they age, experiencing reduction in stamina and strength. This is supported by Mukhtar et al. (2019), who shows that older caregivers generally experience higher caregiver burden, with the 60-79 age range encountering the most.
- Stage of cancer: Caregiver burden was also similarly higher among caregivers of Stage 3 cancers when compared to stage 2. Since a higher stage cancer usually warrants a patient that has worse physical and mental health, a caregiver would, naturally, need to assist them with daily tasks more, increasing caregiver burden. This reasoning is supported by research from Thakur et al. (2024).
- Relationship: As for the type of relationship, research by Reed et al., 2014 does indicate that adult-child caregivers experience greater caregiver burden than spousal caregivers. The reasoning for this result is likely that adult-child caregivers have to balance more commitments with caregiving, on average. Considering Reed's study had a data set of 1,497 participants which is significantly more than that of this study, it can be concluded that the reason significant results were not obtained regarding the relationship type and the associated caregiver burden likely boils down, again, to the sample size of the study.

Conclusion

Aim: to explore how resilience, optimism and caregiver burden differ amongst the caregivers of cancer patients in Mumbai, Maharashtra, India. The study explored how the aforementioned variables differed by caregiver age, caregiver gender, the relationship between the patient and the caregiver, and the patient's stage of cancer.

Implications: the results can be used to inform mental health services that can be catered towards ameliorating the mental health and depressive symptoms of these caregivers. Furthermore, interventions can be executed by doctors for these caregivers, creating workshops to educate caregivers on how to deal with caregiver burden, as well as strategies to increase their optimism and resilience.

Limitations: A major limitation of the study is the sample size. Further studies must be done with larger samples to ensure proper representation of the Mumbai population. There also was a potential language barrier, as many of the participants did not use English as their first language and so the meaning of the questions may have been lost in translation. The researcher, as a result, often also had to explain the meaning of the questions to the caregivers. This means biases like the framing bias could influence the results, especially since the data is self-reported. Lastly, a potent limitation is that some of the studies' findings are not conclusive because there is a lack of research surrounding it. Meta-analyses thus must be done in order to yield conclusive findings.

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