

# DEMOGRAPHIC DIFFERENCES ON CAREGIVER BURDEN, PSYCHOLOGICAL DISTRESS AND HOPELESSNESS AMONG CAREGIVERS OF PSYCHIATRIC PATIENTS

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## ABSTRACT

**OBJECTIVE:** To explore the demographic differences on caregiver burden, hopelessness, and psychological distress among caregivers of psychiatric patients.

**METHODS:** This descriptive cross-sectional study was conducted in Pakistan Institute of Medical Sciences Islamabad and Nishtar Hospital Multan, Pakistan in eight months from 10<sup>th</sup> April 2019 to 20<sup>th</sup> November 2019. Purposive sampling technique was used to include 240 caregivers of different age of psychiatric patients (with different duration of illness and type of illness) which were assessed on Burden Scale for Family Caregivers, Kessler Psychological Distress Scale and Beck Hopelessness Scale.

**RESULTS:** Out of 240 participants, 124 (51.6%) were females and 116 (48.3%) were males, ranging in age from 18 to 45 years. Results disclosed that age group 36-45 years showed significant mean difference on psychological distress and age group 18-35 years showed significant difference on Hopelessness at  $p < 0.01$ . While, caregivers dealing with patients who have illness for more than 20 years have significant mean difference on psychological distress and hopelessness at  $p < 0.05$ . Caregivers dealing with patients who have less than 5 years of illness have significant mean difference on caregiver burden at  $p < 0.001$ , and caregivers of patients with schizophrenia have significant mean difference with substance abuse, mood disorder and mental retardation on psychological distress and hopelessness at  $p < 0.05$ .

**CONCLUSION:** Older adults have higher psychological distress while, young adults have higher level of hopelessness. Caregivers of prolonged mental illness have higher psychological distress and caregiver burden. Caregivers of schizophrenic patients have higher level of psychological distress and hopelessness.

**KEY WORDS:** Care giver burden (Non-MeSH); Hopelessness (Non-MeSH); Psychological Distress (MeSH); Psychiatric patients (Non-MeSH).

**THIS ARTICLE MAY BE CITED AS:** Batool I, Malik G, Manzoor I. Demographic differences on caregiver burden, psychological distress and hopelessness among caregivers of psychiatric patients. *Khyber Med Univ J* 2021;13(4):227-31. <https://doi.org/10.35845/kmu.2021.20469>.

## INTRODUCTION

Caregiver burden is usually the outcome from providing care to the patients with chronic illness. It can occur in any of the 43.5 million individuals providing support to patients with different psychiatric illnesses. Explicitly they announced serious dimensions of depression, anxiety and emotional distress while dealing with the patients having long course of illness.<sup>1</sup>

Previously it was reported that caregiver burden of the caregivers of psychiatric patients is assessed only 14% around

the globe.<sup>2</sup> Psychiatric disorders have significant negative outcomes on the personal satisfaction of patients and their caregivers or companions, especially in low-and middle-income individuals. Caregiver burden has been portrayed as the general physical, emotional, and economic expenses of thinking about a relative.<sup>3</sup> During illness, caregivers encounter stress, guilt, sleeplessness, and anxiety. In the previous decades, most scientists and psychological well-being experts have focused a lot of their time and endeavors on individuals living with psychiatric disorders with specific symptomatology. There is presently the

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**Date Submitted:** June 17, 2020

**Date Revised:** December 20, 2021

**Date Accepted:** December 24, 2021

need to concentrate on caregivers of patients with psychiatric patients too, particularly in wellbeing frameworks for overseeing emotional wellness of patients and their caregivers who are facing inadequate environment.<sup>4</sup> Inaccessibility of wellbeing frameworks influences personal satisfaction. In this way, the psychological well-being of caregivers tends to reduce among individuals with psychiatric problems and worsening caregiver burden.<sup>5</sup>

Psychological distress is a general term that is utilized to portray unpleasant sentiments or feelings that affect your degree of work.<sup>6</sup> The administration of psychological distress is a significant thing to measure concerning psychological issues that may intensify the indications of the illness and increment of social insurance costs.<sup>7</sup> In any case, psychiatric patients habitually report significant levels of distress and self-destructive thoughts (evaluated rate: 7%25%), and they demonstrate a higher risk of suicidal ideation than the overall public. Second, anxiety and depression influence the personal satisfaction of oncologic psychiatric patients in a few spaces.<sup>8</sup> Elevated levels of depression and anxiety during the psychiatric procedure detrimentally affect prevalence rates of caregiver burden.<sup>9</sup>

A feeling of hopelessness appears to prompt progressively negative assessments of new circumstances and less viable adapting new techniques; in this manner, the recognition is that one won't achieve anything meaningful. To date, very few examinations have

**TABLE I: ONE WAY ANOVA FOR DIFFERENCES OF CAREGIVERS WITH DIFFERENT AGE GROUPS ON PSYCHOLOGICAL DISTRESS AND HOPELESSNESS (N=240)**

Variables	Sources of variation	SS	DF	MS	F	Sig
Psychological distress	Between Groups	760.45	2	380.22	3.53	.031*
	Within Groups	25487.34	237	107.54		
	Total	26247.79	239			
Hopelessness	Between Groups	828.34	2	414.17	11.96	.000***
	Within Groups	8204.30	237	34.61		
	Total	9032.65	239			

\*p<.05; \*\*p<.01; \*\*\*p<.001; SS: sum of squares, DF: degrees of freedom, MS: Mean sum of squares, F: F-statistic, Sig: Significance

researched the connection between caregiver burden and hopelessness.<sup>10</sup> An enormous group of research substantiates the impacts that psychological problems can have on the emotional, social, and physical wellbeing of the family such as parents. Researches have uncovered the fact that parents of cancer patients report negative impacts on their wellbeing, for example, anxiety, depression, exhaustion, hopelessness, guilt, fear, restlessness, social disengagement, and burnout. It has been expressed that patients with disorders and their family guardians experience comparable degrees of hopelessness.<sup>11-13</sup>

The purpose of the current study was to explore the caregiver burden with psychological distress and the mediating role of hopelessness for different demographic properties (age, duration of illness, and type of illness) among caregivers of psychiatric patients. It was aimed to explore the demographic differences (age, duration of illness, type of illness) on care giver burden, hopelessness and psychological distress among caregivers of psychiatric patients.

## METHODS

This descriptive cross-sectional study was done at Pakistan Institute of Medical Sciences (PIMS) Islamabad and Nishtar Hospital Multan, Pakistan. There were 240 participants, selected through purposive sampling technique which comprises of caregivers of psychiatric patients including Schizophrenia, mood disorder, substance abuse and mental

retardation. Both male and female caregivers participated in this research which were 124 female (51.6%) and 116 male (48.3%) age ranging between 18 to 45 years only caregivers of psychiatric patients were included and caregivers related to some other kind of illness we excluded from the study. Data was collected from PIMS Islamabad and Nishtar Hospital Multan Pakistan in eight months from 10<sup>th</sup> April 2019 to 20<sup>th</sup> November 2019. Permission of data collection was granted from both hospitals prior to conducting the study. The data was gathered from the caregivers of psychiatric patients who bring them for follow up sessions in Out Patient Department. Informed consent was given to the participants and get that signed. Demographic variables were asked such as age, gender, duration of illness of the patients and type of illness of the patients. Questionnaire were filled to measure care giver burden, hopelessness and psychological distress among caregivers of psychiatric patients.

Burden Scale for Family Caregivers was used to measure care giver burden comprising of 28 statements for assessment of caregivers perceived subjective burden for looking after of persistently -ill family member with strong reliability (.80). Four response categories ranging from strongly agree =0 to strongly disagree =3 are used for each statement. Higher score on this tool indicates the higher degree of burden.<sup>14</sup>

Kessler psychological distress scale was used to assess psychological distress. It

is a five-point Likert scale ranging from 1 = none of the time through to 5 = all of the time score 10-19 depicts the wellness, while 30-50 indicate severe disorder and has good reliability i.e., 0.89.<sup>15</sup>

Beck Hopelessness Scale was used to analyze hopelessness. Reliability of the scale was good i.e., 0.81 and its assess the answer through true and false for each statement score of this scale range from 0 to 20 and higher score indicate higher level of hopelessness.<sup>16</sup>

## RESULTS

This study was conducted on 240 caregivers of psychiatric patients, which included 116 (48.3%) males and 124 (51.6%) female age ranging between 18 to 45 years, were included as the sample of the study. Differential statistical Analyses Version 18 were applied by SPSS to investigate the results of One-way analysis of variance (ANOVA) and multiple analysis of variance (post hoc).

Table I showed One way ANOVA for differences in age groups of caregivers on psychological distress and hopelessness. Results revealed that there is significant mean difference among different age groups of caregivers on psychological distress at p<.05 and hopelessness at p<.000.

Table II shows Post hoc Analysis for differences in age groups of caregivers on psychological distress and hopelessness. Results indicated that age group 36-45 years showed significant mean difference with age group 46-55 years on psychological distress and age group 18-35 showed significant mean difference with age groups 36-45 years and 46-55 years on hopelessness at p<0.01.

Table III shows One way ANOVA for duration of illness on psychological distress, hopelessness and care giver burden. Results indicated that there were significant differences between duration of illness on psychological distress at p<.001, hopelessness at p<.001 and care giver burden at p<.001.

Table IV shows post hoc analysis for differences among caregivers in duration of illness on psychological distress, hopelessness, and care giver burden. Results of post hoc analysis revealed that caregivers dealing with individuals who have illness above 20 years have

**TABLE II: POST HOC ANALYSIS FOR DIFFERENCES IN AGE GROUPS OF CAREGIVERS ON PSYCHOLOGICAL DISTRESS AND HOPELESSNESS (N=240)**

Variables	Age groups		Mean difference	St	Sig	95%CI	
						LL	UL
Psychological distress	18-35	36-45	2.207	1.62	.363	-1.6171	6.0315
	18-35	46-55	-2.237	1.63	.358	-6.0881	1.6132
	36-45	46-55	-4.444*	1.67	.023	-8.3869	-.5025
Hopelessness	18-35	36-45	3.181*	.919	.002	1.0115	5.3510
	18-35	46-55	4.337*	.926	.000	2.1531	6.5225
	36-45	46-55	1.156	.948	.443	-1.0801	3.3932

\*p<.05, \*\*p<.01, \*\*\*p<.001; LL=Lower Limit; UL=Upper Limit

**TABLE III: ONE WAY ANOVA FOR DURATION OF ILLNESS ON PSYCHOLOGICAL DISTRESS, HOPELESSNESS AND CARE GIVER BURDEN (N=240)**

Variables		SS	DF	MS	F	Sig
Psychological distress	Between Groups	3648.95	3	1216.31	12.70	.000
	Within Groups	22598.84	236	95.75		
	Total	26247.79	239			
Hopelessness	Between Groups	820.04	3	273.34	7.85	.000
	Within Groups	8212.60	236	34.79		
	Total	9032.65	239			
Caregiver burden	Between Groups	7421.15	3	2473.71	34.24	.000
	Within Groups	17047.73	236	72.23		
	Total	24468.89	239			

\*p<.05; \*\*p<.01; \*\*\*p<.001; SS: sum of squares, DF: degrees of freedom, MS: Mean sum of squares, F: F-statistic, Sig: Significance

significant mean difference with the course of illness of less than 5 years, 5-10 years and 11-20 years on psychological distress and hopelessness at  $p<0.05$  and on the other hand caregivers dealing with less than 5 years of illness have significant mean difference with 11-20 years and above 20 years while 5-10 years have significant mean difference with above 20 years on caregiver burden at  $p<0.001$ .

Table V shows One way ANOVA for types of patients on psychological distress and hopelessness. Results indicated that there were significant differences between groups of caregivers of patients with schizophrenia, mood disorders, substance abuse and mental retardation on psychological distress at  $p<.001$  and hopelessness at  $p<.001$ .

Table VI shows post hoc analysis for differences in types of patients with schizophrenia, mood disorders, substance abuse and mental retardation on psychological distress, hopelessness, and care giver burden. Results of post hoc analysis revealed that caregivers of patients with

schizophrenia have significant mean difference with substance abuse, mood disorder and mental retardation with psychological distress at  $p<0.05$ . On the other hand, mood disorder has significant mean difference with schizophrenia, substance abuse and mental retardation at  $p<0.05$ .

## DISCUSSION

Present study was meant to explore the demographic differences for caregiver burden, psychological distress, and hopelessness among caregivers of psychiatric patients. Which concluded that elderly people have higher level of psychological distress while, younger have higher level of hopelessness. And those who are dealing with patients of prolonged illness have higher psychological distress and caregiver burden. On the other hand, caregivers of schizophrenic patients have higher level of psychological distress and hopelessness.

It was hypothesized that there will be significant mean differences among

caregivers of different age groups on psychological distress and hopelessness thus current hypothesis of the present study was also accepted. Results of post hoc analysis revealed that caregivers of age group 36-45 years showed significant difference with age group 46-55 years on psychological distress and age group 18-35 years showed significant difference with age groups 36-45 years & 46-55 years on hopelessness at  $p<0.001$ . The results were in conformity with other studies that were conducted in Indonesia and Bali, which found that there was positive relationship of psychological distress with age of caregivers of schizophrenic patients.<sup>17</sup>

Another assumption of the study was meant to measure the differences on care giver burden, psychological distress and hopelessness or duration of illness of patients. Results of post hoc analysis revealed that caregivers dealing with individuals who have prolonged illness more than 20 years, have significant difference with the course of illness of less than 5 years, 5-10 years and 11-20 years on psychological distress and hopelessness at  $p<0.05$  and on the other hand caregivers dealing with less than 5 years of illness have significant difference with 11-20 years and above 20 years while 5-10 years have significant difference with above 20 years on caregiver burden at  $p<0.001$ . These findings are parallel to the outcomes of a previous studies.<sup>18-19</sup>

**TABLE IV: POST HOC ANALYSIS FOR DIFFERENCES AMONG CAREGIVERS IN DURATION OF ILLNESS ON PSYCHOLOGICAL DISTRESS, HOPELESSNESS AND CARE GIVER BURDEN (N=240)**

Duration of illness (years)		Age group (years)	Mean difference	St	Sig	95% CI	
						LL	UL
Psychological distress	Less than 5	5-10	.760	1.825	.976	-3.96	5.482
		11-20	-1.594	1.769	.804	-6.17	2.984
		above 20	-9.166*	1.817	.000	-13.86	-4.464
	5-10	11-20	-2.354	1.761	.540	-6.91	2.202
		above 20	-9.926*	1.809	.000	-14.60	-5.244
	11-20	above 20	-7.572*	1.753	.000	-12.10	-3.036
Hopelessness	Less than 5	5-10	1.930	1.100	.298	-.916	4.777
		11-20	1.495	1.066	.499	-1.26	4.255
		above 20	5.134*	1.095	.000	2.29	7.969
	5-10	11-20	-.435	1.061	.977	-3.18	2.311
		above 20	3.203*	1.090	.019	.38	6.026
	11-20	above 20	3.639*	1.056	.004	.90	6.373
Caregiver burden	Less than 5	5-10	-3.805	1.585	.080	-7.90	.295
		11-20	-7.418*	1.536	.000	-11.39	-3.44
		above 20	-15.279*	1.578	.000	-19.36	-11.19
	5-10	11-20	-3.612	1.529	.087	-7.57	.345
		above 20	-11.473*	1.571	.000	-15.53	-7.407
	11-20	above 20	-7.860*	1.522	.000	-11.80	-3.920

\*p<.05, \*\*p<.01, \*\*\*p<.001; LL=Lower Limit; UL=Upper Limit

**TABLE V: ONE WAY ANOVA FOR TYPES OF PATIENTS ON PSYCHOLOGICAL DISTRESS AND HOPELESSNESS (N=240)**

Variables		SS	DF	MS	F	Sig
Psychological distress	Between Groups	2445.71	3	815.23	8.08	.000
	Within Groups	23802.08	236	100.85		
	Total	26247.79	239			
Hopelessness	Between Groups	881.48	3	293.82	8.50	.000
	Within Groups	8151.16	236	34.53		
	Total	9032.65	239			

\*p<.05; \*\*p<.01; \*\*\*p<.001; SS: sum of squares, DF: degrees of freedom, MS: Mean sum of squares, F: F-statistic, Sig: Significance

It was hypothesized that there will be differences among caregivers of patients with schizophrenia, substance users, mood disorder and mental retardation on hopelessness and psychological distress. Results of post hoc analysis revealed that caregivers of patients with schizophrenia have significant difference with substance abuse, mood disorder and mental retardation with psychological distress at  $p<0.05$ . On the other hand, mood disorder has significant difference with schizophrenia, substance abuse and mental retardation at  $p<0.05$ . Other study discovered the similar findings for instance in a study outcome revealed that being a caregivers of a critically psychologically ailing family member, (schizophrenic sufferer) caregivers had to face both types of difficulties in the form of an emotional impact such as feelings of sadness, hopelessness, nervousness, and discomfort in addition to burden related to helping in the daily activities of dependent patient.<sup>20</sup>

## Limitations and

## Suggestions

The study has been done with the sample of caregivers of only four types of psychiatric patients suffering from Schizophrenia, mood disorder, substance abuse and mental retardation, a further

study should be conducted on family caregivers of other types of psychiatric patients so that the findings can be more generalized. The sample for this study was selected only from government Institute of mental health and caregivers from semi-government and private mental health institutions were overlooked. This study should be done with the sample draw from semi government and private mental health hospitals from different cities of Pakistan. Moreover, in relation to present study further study should include more variables such as caregivers' perceived help and hours of care providing per day as well as care provider's economic status should be added and a comparison among caregivers should be done on the basis of newly added variables. The results of the study were perhaps more related to Pakistani population and due to the culture related deviations there is limited scope for generalization the results in other countries.

## CONCLUSION

Older adults have higher psychological distress while, young adults have higher level of hopelessness. Caregivers of individuals having prolonged mental illness have higher psychological distress and caregiver burden. Caregivers of

schizophrenic patients have higher level of psychological distress and hopelessness.

## REFERENCES

1. Ampalam P, Gunturu S, Padma V. A comparative study of caregiver burden in psychiatric illness and chronic medical illness. *Indian J Psychiatry* 2012 (3):239-43. <https://doi.org/10.4103/0019-5545.102423>.
2. Möller-Leimkühler AM, Obermeier M. Predicting caregiver burden in first admission psychiatric patients. *Eur Arch Psychiatry Clin Neurosci* 2008 (7):406-13. <https://doi.org/10.1007/s00406-008-0818-7>.
3. Pearson J, Verma S, Nellett C. Elderly psychiatric patient status and caregiver perceptions as predictors of caregiver burden. *Gerontologist* 1988 (1):79-83. <https://doi.org/10.1093/geront/28.1.79>.
4. Ohaeri JU. Caregiver burden and psychotic patients' perception of social support in a Nigerian setting. *Soc Psychiatry Psychiatr Epidemiol* 2001 (2):86-93. <https://doi.org/10.1007/s001270050294>.
5. Möller-Leimkühler AM, Wiesheu A. Caregiver burden in chronic mental illness: the role of patient and caregiver characteristics. *Eur Arch Psychiatry Clin Neurosci* 2012 (2):157-66. <https://doi.org/10.1007/s00406-011-0215-5>.
6. Schene AH, Tessler RC, Gamache GM. Instruments measuring family or caregiver burden in severe mental illness. *Soc Psychiatry*

**TABLE VI: POST HOC ANALYSIS FOR DIFFERENCES IN TYPES OF PATIENTS WITH SCHIZOPHRENIA, MOOD DISORDERS, SUBSTANCE ABUSE AND MENTAL RETARDATION ON PSYCHOLOGICAL DISTRESS, HOPELESSNESS AND CARE GIVER BURDEN (N=240)**

Patients' groups			Mean difference	St	Sig	95%CI	
						LL	UL
Psychological Distress	Schizophrenia	Substance Abuse	6.850*	1.833	.001	2.1058	11.5942
		Mood Disorder	7.650*	1.833	.000	2.9058	12.3942
		Mental Retardation	7.516*	1.833	.000	2.7725	12.2608
	Substance abuse	Mood Disorder	.800	1.833	.972	-3.9442	5.5442
		Mental Retardation	.666	1.833	.984	-4.0775	5.4108
	Mood Disorder	Mental Retardation	-.133	1.833	1.000	-4.8775	4.6108
Hopelessness	Schizophrenia	Substance Abuse	.666	1.072	.925	-2.1096	3.4429
		Mood Disorder	-4.11667*	1.072	.001	-6.8929	-1.3404
		Mental Retardation	.15000	1.072	.999	-2.6263	2.9263
	Substance abuse	Mood Disorder	-4.78333*	1.072	.000	-7.5596	-2.0071
		Mental Retardation	-.51667	1.072	.963	-3.2929	2.2596
	Mood Disorder	Mental Retardation	4.26667*	1.072	.001	1.4904	7.0429

\*p<.05, \*\*p<.01, \*\*\*p<.001; LL=Lower Limit; UL=Upper Limit



- Psychiatr Epidemiol 1994 (5):228-40. <https://doi.org/10.1007/BF00796381>.
7. Nielsen MK, Neergaard MA, Jensen AB, Bro F, Guldin MB. Psychological distress, health, and socio-economic factors in caregivers of terminally ill patients: a nationwide population-based cohort study. Support Care Cancer 2016 (7):3057-67. <https://doi.org/10.1007/s00520-016-3120-7>.
  8. Stanley S, Balakrishnan S, Ilangovan S. Psychological distress, perceived burden and quality of life in caregivers of persons with schizophrenia. J. Mental Health 2017 (2):134-41. <https://doi.org/10.1080/09638237.2016.1276537>.
  9. Ukpong D. Burden and psychological distress among Nigerian family caregivers of schizophrenic patients: the role of positive and negative symptoms. Turk Psikiyatri Derg 2012(1):40-5.
  10. Romaniello C, Farinelli M, Matera N, Bertolotti E, Pedone V, Northoff G. Anxious attachment style and hopelessness as predictors of burden in caregivers of patients with disorders of consciousness: A pilot study. Brain Injury 2015 (4):466-72. <https://doi.org/10.3109/02699052.2014.989402>.
  11. Tokem Y, Ozelik H, Cicik A. Examination of the relationship between hopelessness levels and coping strategies among the family caregivers of patients with cancer. Cancer Nurs 2015 (4):E28-34. <https://doi.org/10.1097/NCC.000000000000189>.
  12. Aloba O, Ajao O, Alimi T, Esan O. Psychometric properties and correlates of the beck hopelessness scale in family caregivers of Nigerian patients with psychiatric disorders in Southwestern Nigeria. J Neurosci Rural Pract 2016 (S 01):S018-25. <https://doi.org/10.4103/0976-3147.196434>.
  13. Rhee YS, Yun YH, Park S, Shin DO, Lee KM, Yoo HJ, et. al. Depression in family caregivers of cancer patients: the feeling of burden as a predictor of depression. J Clin Oncol 2008 (36):5890-95. <https://doi.org/10.1200/JCO.2007.15.3957>.
  14. Graessel E, Berth H, Lichte T, Grau H. Subjective caregiver burden: validity of the 10-item short version of the Burden Scale for Family Caregivers BSFC-s. BMC Geriatr 2014 (1):23.1-9. <https://doi.org/10.1186/1471-2318-14-23>.
  15. Kessler RC, Mroczek DK. Final versions of our non-specific psychological distress scale. University of Michigan. Ann Arbor: Survey Research Center of the Institute for Social Research 1994.
  16. Beck AT, Brown G, Berchick RJ, Stewart BL, Steer RA. Relationship between hopelessness and ultimate suicide: A replication with psychiatric outpatients. Am J Psychiatry 1990 Feb;147(2):190-5. <https://doi.org/10.1176/ajp.147.2.190>.
  17. Gratao ACM, Vendrúscolo TRP, da Silva Talmelli LF, Figueiredo LC, Santos JLF, et al. Burden and the emotional distress in caregivers of elderly individuals. Texto e Contexto Enfermagem 2012;21(2):304-12. [HTTPS://DOI.ORG/10.1590/S0104-07072012000200007](https://doi.org/10.1590/S0104-07072012000200007).
  18. Gul U, Batool I, Bajwa RS, Emtiaz E. Cognitive behavior avoidance, care giver burden and psychological wellbeing as a predictor of temporal satisfaction among mothers of slow learners. Pak J Soc Sci 2019 (04): 1641-48.
  19. Raj EA, Shiri S, Jangam KV. Subjective burden, psychological distress, and perceived social support among caregivers of persons with schizophrenia. Indian J Soc Psychiatry 2016;32(1):42-9.
  20. Schrag A, Hovris A, Morley D, Quinn N, Jahanshahi M. Caregiver-burden in Parkinson's disease is closely associated with psychiatric symptoms, falls, and disability. Parkinsonism Relat Disord 2006 (1):35-41. <https://doi.org/10.1016/j.parkreldis.2005.06.011>.

## AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

**IB:** Conception and design, acquisition, analysis and interpretation of data, drafting the manuscript, critical review, approval of the final version to be published

**GM:** Analysis and interpretation of data, drafting the manuscript, approval of the final version to be published

**IM:** Acquisition of data, drafting the manuscript, approval of the final version to be published

*Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.*

## CONFLICT OF INTEREST

Authors declared no conflict of interest

## GRANT SUPPORT AND FINANCIAL DISCLOSURE

Authors have declared no specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors

## DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.



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