

Caregiver Burden, Anxiety and Depression among Primary Caregivers of Patients with Chronic Mental Illness

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Abstract: Family members who provide daily care for people with chronic mental illness often carry substantial emotional, social and financial strain. This study examined caregiver burden, anxiety and depression among primary caregivers of patients with chronic mental illness, and tested whether burden was related to anxiety and depression and whether these outcomes differed by age, gender and relationship to the patient. A cross-sectional correlational design was used with a purposive sample of primary caregivers recruited through psychiatric outpatient and community rehabilitation settings in Bengaluru (planned $n = 100$; 105 complete records analysed). Burden was assessed with the 22-item Zarit Burden Interview (ZBI), and anxiety and depression with the Hospital Anxiety and Depression Scale (HADS). Because scores departed from normality, Spearman correlations, permutation-based Mann-Whitney and Kruskal-Wallis tests and Holm-adjusted Dunn comparisons were used. The mean ZBI score was 32.37 ($SD = 15.96$); 77.1% of caregivers scored in at least the mild-to-moderate burden band, 59.0% had HADS anxiety scores of 8 or higher and 60.0% had HADS depression scores of 8 or higher. Burden correlated strongly with anxiety ($r_s = .810$) and depression ($r_s = .816$), Holm-adjusted $p_s < .001$. Relationship to the patient was significantly associated with burden, anxiety and depression (adjusted $p_s < .001$), with parent caregivers scoring highest, whereas age and gender differences did not survive correction for multiple testing. Findings are provisional because of an unresolved sample-size discrepancy and the cross-sectional, self-report, non-probability design. The results support routine screening of caregivers' psychological health, with particular attention to parent caregivers, alongside caregiver-focused psychoeducation and counselling.

Keywords: Caregiver burden, anxiety, depression, chronic mental illness, Zarit Burden Interview, Hospital Anxiety and Depression Scale, India

1. Introduction

Chronic mental illness refers to long-lasting psychiatric disorders, such as schizophrenia, bipolar affective disorder and chronic depression, that impair social, emotional and cognitive functioning and require sustained treatment and everyday support. In India, as in many other low- and middle-income settings, that support is provided largely by the family, so that for almost every patient in treatment there is a primary caregiver whose routine, finances, relationships and health are reshaped by the illness (Awad & Voruganti, 2008; Chadda, 2014). Since psychiatric care moved away from long-term institutional settings, the onus of care has increasingly rested on families, and the primary caregiver has become an object of clinical and research attention in his or her own right (Girdhar & Patil, 2023; Taj et al., 2022).

Caregiver burden was introduced into the literature by Zarit et al. (1980) and is commonly divided into objective burden, the observable demands and costs of caregiving, and subjective burden, the extent to which caregivers perceive those demands as oppressive (Awad & Voruganti, 2008). Pearlin et al. (1990) described how strain spreads from primary stressors arising from the illness to secondary stressors in work, finances and family life, and eventually to the caregiver's sense of self, while Lazarus and Folkman (1984) argued that the effect of a stressor depends on whether the person appraises the demands as exceeding available resources. When burden accumulates it is frequently accompanied by depressive and anxiety symptoms, and

caregivers often neglect their own health (Adelman et al., 2014; Girdhar & Patil, 2023). Not all caregivers are affected equally, and evidence on whether burden differs by caregiver age, gender or relationship to the patient is mixed across cultures (Yu et al., 2020). Identifying which caregivers are at highest risk is a practical question for services that must target limited counselling resources. The present study therefore measured burden, anxiety and depression in the same group of primary caregivers in Bengaluru, examined how strongly they are related, and compared caregiver subgroups. Scores on both instruments are treated as indicators of distress that may warrant clinical attention, not as diagnoses.

2. Literature Review

2.1 Caregiver burden and theoretical background

Three ideas structure the study. First, burden has objective and subjective components; the ZBI mainly captures the subjective side, since respondents rate how they feel about the demands placed on them (Zarit et al., 1980; Zarit et al., 1985). Yu et al. (2020) showed why this matters: parent and spouse caregivers of people with schizophrenia in rural China reported similar caregiving activities and objective burden, yet parents reported significantly higher subjective burden and psychological distress. Second, the stress process model (Pearlin et al., 1990) implies that burden and psychological symptoms should be positively related and that background characteristics such as kinship role may shape exposure to strain and the resources available to cope with it. Third,

transactional theory (Lazarus & Folkman, 1984) explains why caregivers facing similar tasks report different levels of distress: the outcome depends on appraisal. The study did not measure stressors, coping, appraisal or social support, so these frameworks guide interpretation rather than test mediating pathways.

2.2 Burden in schizophrenia and bipolar disorder

Reviews report that caregivers of people with serious mental illness experience more burden than caregivers of people with some other chronic conditions, although findings on whether burden differs by diagnosis are inconsistent (Awad & Voruganti, 2008; Girdhar & Patil, 2023). In a Gujarat tertiary-care sample of 210 caregivers, burden was considerable in both schizophrenia and bipolar groups and greater in the schizophrenia group (Tanna, 2021), whereas other studies found no diagnostic difference (Abbaslou et al., 2023; Blanthorn-Hazell et al., 2018, as cited in Girdhar & Patil, 2023). Diagnosis alone is therefore an unreliable guide to which caregivers are most affected.

2.3 Anxiety and depression among caregivers

Caregivers are at elevated risk of depression, anxiety and reduced quality of life, and burden is closely linked with these outcomes (Adelman et al., 2014; Girdhar & Patil, 2023). Nearly 40% of caregivers in Sri Lanka screened positive for depression (Rodrigo et al., 2013, as cited in Girdhar & Patil, 2023); most caregivers of patients with schizophrenia in Egypt had depressive symptoms, and burden was positively related to depression (Salem Hussien et al., 2023, as cited in Girdhar & Patil, 2023). An Indian study of 75 caregivers likewise found all had moderate to high burden and that burden correlated positively with depression (Taj et al., 2022).

2.4 Caregiver characteristics and relationship to the patient

Older and less-educated caregivers experienced greater burden in some samples (Hsiao et al., 2020, as cited in Girdhar & Patil, 2023; Taj et al., 2022). Evidence on kinship is thin and inconsistent: parents reported more burden than spouses in lower- and middle-income countries in the World Mental Health Surveys, whereas studies in India and Taiwan found no parent-spouse difference in depression or anxiety (Chang et al., 2017; Shahly et al., 2013; Stanley et al., 2017, all as cited in Yu et al., 2020). Authors in India and internationally have called for caregivers to be assessed and supported as part of routine psychiatric care (Adelman et al., 2014; Chadda, 2014).

2.5 Research gap

Much of the work concerns single-diagnosis samples, typically schizophrenia, with differing instruments and cut-offs. Studies that apply both the ZBI and the HADS to mixed-diagnosis caregivers in an urban Indian clinical setting, and that compare five relationship categories (spouse, parent, sibling, child, other) rather than only parents and spouses, are scarce. The present study addresses this gap.

3. Problem Definition

Although caregiver distress is widely recognised, psychiatric services in India still tend to treat the primary caregiver as an instrument of the patient's care rather than as a person with psychological needs of their own. Local quantitative evidence is needed on how many caregivers are affected, how strongly burden relates to anxiety and depression, and which caregivers are most at risk. This study examines the level of burden among primary caregivers of patients with chronic mental illness, its relationship with anxiety and depression, and whether burden, anxiety and depression differ by age, gender and relationship to the patient.

Objectives of the Study

The general objective was to analyse the relationship between caregiver burden, anxiety and depression in primary caregivers of patients with chronic mental illness. The specific objectives were:

- To evaluate the level of burden experienced by primary caregivers using the Zarit Burden Interview (ZBI).
- To measure the prevalence and severity of anxiety and depression among primary caregivers using the Hospital Anxiety and Depression Scale (HADS).
- To examine the relationship between perceived burden and the levels of anxiety and depression.
- To identify whether age, gender and relationship to the patient are associated with the levels of burden, anxiety and depression.

Hypothesis

The following hypotheses, derived from the objectives and the stress process model, were examined:

- H1: Caregiver burden is significantly and positively related to anxiety and to depression.
- H2: Burden, anxiety and depression differ significantly across caregivers' relationship to the patient.
- H3: Burden, anxiety and depression differ significantly across caregiver age groups.
- H4: Burden, anxiety and depression differ significantly between male and female caregivers.

4. Methodology

4.1 Research Design

A quantitative, cross-sectional correlational design was used, in which all variables were measured at a single point in time. The design suits describing the levels of burden, anxiety and depression and examining how they relate, but it cannot establish temporal order or causation (Setia, 2016).

4.2 Participants

The target population was primary caregivers of patients with chronic mental illness (for example, schizophrenia, bipolar affective disorder and chronic depression) attending psychiatric outpatient departments and community rehabilitation centres in Bengaluru. Purposive sampling was used, so that participants were selected deliberately because they were primary caregivers of patients with a chronic diagnosis (Etikan et al., 2016); results therefore describe the sample and cannot be generalised statistically. The planned

sample was 100, but the data file contained 105 complete records with no missing values. Without an identifier, exclusion rule or recruitment log to justify removing any record, all 105 were analysed and the findings are described as provisional. The planned inclusion criteria were primary caregivers aged 18–65 years, providing daily care for at least six consecutive months and living in the same household as the patient; paid, professional or temporary caregivers and caregivers with a prior major psychiatric illness were to be excluded. Several records appear inconsistent with these criteria: 14 caregivers (13.3%) reported less than six months of care, 22 (21.0%) lived separately from the patient, and 21 (20.0%) were in the below-20 age group, seven of whom were recorded as spouses. No values were altered, and this is treated as a limitation.

4.3 Measures

- *Socio-demographic schedule*: A researcher-developed schedule recorded age (six grouped categories), gender, relationship to the patient (spouse, parent, sibling, child, other), duration of caregiving, living arrangement and the patient's diagnosis as reported by the caregiver.
- *Zarit Burden Interview (ZBI)*: The 22-item ZBI (Zarit et al., 1980, 1985) is rated from 0 (never) to 4 (nearly always), giving a total of 0–88, with higher scores indicating greater perceived burden. Study-specific bands were applied: little or no burden (0–21), mild to moderate (22–46), moderate to severe (47–55) and severe (56–88). These bands were not independently validated.
- *Hospital Anxiety and Depression Scale (HADS)*: The 14-item HADS (Zigmond & Snaith, 1983) has seven anxiety (AS) and seven depression (DS) items, each subscale scored 0–21. Four study-specific bands were used: normal (0–7), mild/borderline (8–10), moderate (11–14) and severe (15–21). Scores of 8 or higher and 11 or higher were also reported as screening thresholds, not diagnoses (Bjelland et al., 2002). Item-level responses were unavailable, so reliability coefficients could not be computed.

4.4 Procedure

Caregivers were approached through psychiatric outpatient departments and community rehabilitation centres in Bengaluru and completed the socio-demographic schedule, the ZBI and the HADS.

4.5 Ethical Considerations

The analysed data file contained no participant identifiers, and scores are reported only in aggregate and interpreted as indicators of distress warranting clinical attention rather than as diagnoses. [Authors to insert institutional ethics approval and informed-consent details, which are not documented in the dissertation.]

4.6 Statistical Analysis

All tests were two-sided with $\alpha = .05$. Shapiro–Wilk tests showed departures from normality for ZBI ($W = .968$, $p = .013$), AS ($W = .950$, $p < .001$) and DS ($W = .970$, $p = .016$), and scores were bounded and tied, so rank-based and

resampling methods were used. Burden–anxiety and burden–depression associations were tested with Spearman rank correlations (10,000-resample bootstrap confidence intervals; permutation p values from 49,999 permutations) and adjusted together with the Holm procedure. Gender differences were tested with a permutation Mann–Whitney U test (rank-biserial effect size), and age-group and relationship differences with tie-corrected permutation Kruskal–Wallis H tests (η^2H effect size). The nine demographic tests formed one Holm family. Exploratory Dunn comparisons among relationship groups were Holm-adjusted across 30 contrasts. No adjusted regression models were fitted, so all associations are bivariate.

5. Results and Discussion

Screening of the 105 records revealed no missing cells and no out-of-range codes. Table 1 describes the sample. Caregivers were most often aged 20–29 (30.5%) or 30–39 years (25.7%), 65.7% were women, children of the patient formed the largest relationship group (32.4%), and 79.0% lived with the patient.

Table 1: Participant characteristics (N = 105)

Characteristic	Category	n	%
Age (years)	Below 20	21	20.0
	20–29	32	30.5
	30–39	27	25.7
	40–49	12	11.4
	50–59	11	10.5
	Above 60	2002	1.9
Gender	Male	36	34.3
	Female	69	65.7
Relationship	Spouse	24	22.9
	Parent	22	21.0
	Sibling	13	12.4
	Child	34	32.4
	Other	12	11.4
Duration of caregiving	<6 months	14	13.3
	6 mo–1 yr	26	24.8
	1–5 yrs	26	24.8
	6–10 yrs	26	24.8
	>10 yrs	13	12.4
Living arrangement	Same house	83	79.0
	Separately	22	21.0
Patient diagnosis	Schizophrenia /	26	24.8
	Bipolar	40	38.1
	Chronic depression	12	11.4
	Other	27	25.7

5.1 Levels of burden, anxiety and depression

The mean ZBI score was 32.37 ($SD = 15.96$; maximum possible 88), and the mean HADS anxiety and depression scores were 8.66 ($SD = 5.45$) and 8.75 ($SD = 5.17$), at the borderline threshold of 8 (Table 2). Table 3 shows the severity distributions. Most caregivers (81 of 105, 77.1%) had at least mild-to-moderate burden and 17 (16.2%) had moderate-to-severe or severe burden. Borderline or higher anxiety (≥ 8) was found in 62 caregivers (59.0%) and moderate or severe anxiety (≥ 11) in 47 (44.8%); the corresponding figures for depression were 63 (60.0%) and 41 (39.0%). These are screening elevations in this sample, not diagnoses or population prevalence.

Table 2: Descriptive statistics for scale scores (N = 105)

Scale	M	SD	Mdn	Q1–Q3	Range
ZBI	32.37	15.96	33	22.0–44.0	5–67
HADS-Anxiety	8.66	5.45	9	4.0–12.0	0–21
HADS-Depression	8.75	5.17	9	5.0–12.0	0–21

Table 3: Severity distribution using study-specific cut-offs, n (%)

Scale	Normal / little	Mild / mild-mod	Moderate / mod-severe	Severe
ZBI (0–21; 22–46; 47–55; 56–88)	24 (22.9)	64 (61.0)	8 (7.6)	9 (8.6)
Anxiety (0–7; 8–10; 11–14; 15–21)	43 (41.0)	15 (14.3)	33 (31.4)	14 (13.3)
Depression (0–7; 8–10; 11–14; 15–21)	42 (40.0)	22 (21.0)	24 (22.9)	17 (16.2)

The distribution of burden is less severe than in several Indian studies. Tanna (2021) reported means of about 59–65 on the ZBI (as summarised by Girdhar & Patil, 2023), and Taj et al. (2022) found moderate to high burden in all 75 caregivers using a different instrument. Direct comparison is limited by differing scales, cut-offs and settings. The sample was also young, with half of caregivers under 30 and children of the patient the largest group, and these groups scored markedly lower than parents; a different relationship mix could produce a higher mean. The proportion with elevated anxiety and depression is somewhat higher than the nearly 40% depression screen-positive rate reported in Sri Lanka and consistent with the majority depressive symptoms in Egypt (Rodrigo et al., 2013; Salem Hussien et al., 2023, both as cited in Girdhar & Patil, 2023), supporting the conclusion that psychological symptoms are common among caregivers (Adelman et al., 2014).

5.2 Association between burden, anxiety and depression

Burden was strongly and positively associated with anxiety, $r_s = .810$, and with depression, $r_s = .816$ (Table 4); both Holm-adjusted p values were below .001, supporting H1. Caregivers reporting higher burden therefore tended to report more anxiety and depressive symptoms. The exploratory anxiety–depression correlation was also very strong ($r_s = .907$).

Table 4: Spearman correlations between burden and HADS scores (N = 105)

Association	r_s	95% CI	Permutation p	Holm p
ZBI- Anxiety	0.81	[.705, .882]	< .001	< .001
ZBI – Depression	0.816	[.717, .883]	< .001	< .001
Anxiety – Depression	0.907	[.857, .937]	< .001	-(exploratory)

This agrees with earlier studies linking caregiver burden to depression (Salem Hussien et al., 2023, as cited in Girdhar & Patil, 2023; Taj et al., 2022) and with the stress process model, in which strain arising from care demands spreads across life domains and erodes well-being (Pearlin et al., 1990). Transactional theory offers a complementary reading: caregivers who appraise demands as exceeding their resources report both high burden and high distress (Lazarus & Folkman, 1984). Because all measures were self-reported by the same respondents at one time point, shared method variance and mood-congruent reporting may inflate the correlations, and the direction of influence could run from distress to perceived burden or both ways (Setia, 2016). The anxiety–depression correlation was almost as high as the burden correlations, suggesting a general distress factor and limiting any claim that burden is specifically related to one condition.

5.3 Differences by relationship, age and gender

Relationship to the patient was significantly associated with all three outcomes after Holm adjustment (Table 5): ZBI, $H(4) = 24.90$, $\eta^2H = .209$; anxiety, $H(4) = 28.82$, $\eta^2H = .248$; depression, $H(4) = 35.05$, $\eta^2H = .311$ (all adjusted $ps < .001$), supporting H2. These are large effects by conventional benchmarks (Cohen, 1988). Parents had the highest medians (ZBI = 45.0, anxiety = 12.0, depression = 14.5) against 23.0, 5.0 and 5.5 for children. Age differences were nominally significant before correction (raw $p = .022$ –.044) but not after (adjusted $p = .134$ –.177), and gender differences were not significant (adjusted $p = .245$ –.448); H3 and H4 were therefore not supported. Absence of significance is not evidence of equivalence (Altman & Bland, 1995); the oldest age group had only two caregivers and the study had limited power for small gender effects.

Table 5: Omnibus comparisons of scale scores by demographic group

Variable	Score	Test	Statistic	df	Effect	Raw p	Holm p
Age	ZBI	H	10.9	5	0.06	0.044	0.177
Age	Anxiety	H	11.5	5	0.066	0.035	0.177
Age	Depression	H	12.39	5	0.075	0.022	0.134
Gender	ZBI	U	1128.5	—	-.091	0.448	0.448
Gender	Anxiety	U	985.5	—	-.207	0.082	0.245
Gender	Depression	U	1033	—	-.168	0.157	0.315
Relationship	ZBI	H	24.9	4	0.209	< .001	< .001
Relationship	Anxiety	H	28.82	4	0.248	< .001	< .001
Relationship	Depression	H	35.05	4	0.311	< .001	< .001

Exploratory Dunn comparisons (Table 6) showed that parents scored higher than siblings, children and other caregivers on burden and depression, and higher than children and other caregivers on anxiety; spouses scored higher than children on anxiety. No parent–spouse contrast was significant after

correction, so the data do not show that parents are more affected than spouses.

Table 6: Significant exploratory Dunn comparisons by relationship (Holm-adjusted)

Score	Group 1	Group 2	z	Holm p
ZBI	Parent	Sibling	3.55	0.01
ZBI	Parent	Child	4.36	< .001
ZBI	Parent	Other	3.07	0.048
Anxiety	Spouse	Child	3.19	0.033
Anxiety	Parent	Child	4.83	< .001
Anxiety	Parent	Other	3.37	0.018
Depression	Parent	Sibling	4.08	0.001
Depression	Parent	Child	5.42	< .001
Depression	Parent	Other	3.68	0.006

The relationship finding partly agrees with Yu et al. (2020), who found higher subjective burden, depression and anxiety in parents than spouses in rural China, and with the World Mental Health Surveys result for lower- and middle-income countries (Shahly et al., 2013, as cited in Yu et al., 2020). Their cultural explanation, that parents feel responsibility for their children, may blame themselves and see little alternative to continuing care, is plausible in the Indian family context but was not measured here. The pattern differs from studies in which spouses were more burdened (Taj et al., 2022) and from an Indian study finding no parent-spouse difference (Stanley et al., 2017, as cited in Yu et al., 2020), consistent with kinship effects depending on cultural and economic context. Relationship is also confounded with uncontrolled factors: children and siblings may be younger, share care and have other roles that offer respite, whereas parents may have longer caregiving histories, fewer co-carers and concerns about who will care in future. These possibilities require adjusted models. The lack of an age gradient contrasts with studies in which older caregivers were more burdened (Hsiao et al., 2020, as cited in Girdhar & Patil, 2023), though the grouped age variable, the two-person oldest group and the seven below-20 spouses make age findings especially uncertain.

5.4 Implications and limitations

The high proportion of caregivers with borderline or higher anxiety and depression supports routine, brief psychological screening of caregivers at psychiatric visits and their inclusion in care planning (Awad & Voruganti, 2008; Chadda, 2014; Girdhar & Patil, 2023). Parent caregivers may merit particular attention, but spouses, siblings and children also included individuals with moderate to severe scores, so support should not be withheld from other groups. Because burden and distress were so strongly related, interventions that reduce burden might plausibly reduce symptoms, although this study cannot show that.

Limitations qualify these findings:

The 105 analysed records exceeded the planned 100 and could not be reconciled, and some records appear inconsistent with the inclusion criteria, so results are provisional. Purposive sampling precludes population estimates; the cross-sectional design prevents causal inference; all measures were self-reported; item-level data were unavailable, so reliability and factor structure could not be checked and the ZBI bands were not validated; several subgroups were small; and comparisons were unadjusted for confounders such as duration, diagnosis and social support. Strengths include the use of established instruments in the same respondents,

coverage of five kinship categories, rank-based and permutation methods suited to non-normal bounded scores, reporting of confidence intervals and effect sizes, and explicit multiplicity control that prevented over-interpretation of nominal age differences.

6. Conclusion

Among 105 primary caregivers of patients with chronic mental illness in Bengaluru, burden, anxiety and depression were common: 77.1% had at least mild-to-moderate burden and about 59–60% had borderline or higher anxiety or depression scores. Burden was strongly associated with both anxiety ($r_s = .810$) and depression ($r_s = .816$). Relationship to the patient, but not age or gender, was significantly associated with all three outcomes after correction, with parent caregivers scoring highest. The findings support caregiver-focused screening, psychoeducation and counselling within psychiatric services, but they cannot establish causation, population prevalence or the independent effect of relationship type. Resolving the sample-size and eligibility discrepancies and extending the analysis to adjusted models would strengthen these conclusions.

7. Future Scope

Future studies should recruit a verified sample with a documented recruitment log and check eligibility against the stated criteria. They should record exact age, caregiving duration, shared caregiving, social support, caregiver health and patient symptom severity so that adjusted models can estimate the independent contribution of relationship type and burden to anxiety and depression, and should analyse diagnosis and duration, which were recorded but not tested here. Longitudinal or intervention designs are needed to test whether reducing burden reduces anxiety and depression, and qualitative work could explore why parents appear most affected. Item-level data would permit evaluation of the reliability and factor structure of the ZBI and HADS, and the ZBI cut-offs used here should be validated against independent clinical assessment.

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