

PSYCHIATRIC COMORBIDITY AND QUALITY OF LIFE AMONG PRIMARY CAREGIVERS OF CANCER PATIENTS: A CROSS-SECTIONAL STUDY FROM A TERTIARY CARE HOSPITAL IN BENGALURU, INDIA

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ABSTRACT

Background: Distress in cancer caregivers is usually documented through symptom-screening questionnaires, which describe how much strain a caregiver reports but not whether that caregiver has a treatable psychiatric illness. Studies that establish a formal diagnosis through psychiatric evaluation, and that examine it alongside a disease-specific measure of caregiver quality of life, remain uncommon in Indian tertiary-care settings. The objective is to determine the prevalence and diagnostic pattern of psychiatric comorbidity among primary caregivers of cancer patients; to assess their quality of life; to compare both across sociodemographic variables; and to examine whether psychiatric diagnosis tracks the dimensional quality-of-life score. **Materials and Methods:** A cross-sectional, observational study was conducted in the oncology department of a tertiary care teaching hospital in Bengaluru over eighteen months. Forty-eight primary, unpaid caregivers of at least three months' standing were recruited by purposive sampling. Quality of life was measured with the 35-item Caregiver Quality of Life Index–Cancer (CQOLC-35). Psychiatric comorbidity was ascertained independently, by clinical evaluation of every caregiver by the treating psychiatric team against standard diagnostic criteria, and recorded separately from the questionnaire scores. Caregivers with psychiatric illness pre-dating the caregiving role were excluded at enrolment. Analysis used the independent-samples t-test, one-way ANOVA, chi-square and Fisher exact tests, and Pearson and point-biserial correlations. **Results:** A diagnosable psychiatric comorbidity was identified in 19 of 48 caregivers (39.6%). Depressive disorders accounted for the largest share (7/48, 14.6%; 36.8% of those diagnosed), followed by anxiety-spectrum disorders (6/48, 12.5%), adjustment disorder (4/48, 8.3%), and one case each of dysthymia with alcohol dependence syndrome and prolonged grief disorder. The mean CQOLC score was 74.2 ± 18.2 (range 44–113). Quality of life differed sharply by locality (urban 81.7 ± 15.7 vs rural 63.6 ± 16.4 ; $p < 0.001$) and by education (above high school 80.8 ± 17.0 vs up to high school 66.3 ± 16.9 ; $p = 0.005$). Psychiatric comorbidity status, by contrast, was not significantly associated with the mean CQOLC score (71.4 ± 17.3 vs 76.0 ± 18.8 ; $p = 0.403$), nor with any sociodemographic variable tested, although caregivers with a personal history of medical illness showed a higher comorbidity rate that approached significance (55.0% vs 32.1%; $p = 0.080$). **Conclusion:** Nearly two in five caregivers carried a diagnosable psychiatric disorder, a rate substantially above general-population estimates, yet that diagnosis could not be predicted from the quality-of-life score or from sociodemographic profile. Categorical psychiatric morbidity and dimensional quality of life describe related but partly independent axes of caregiver distress. A questionnaire-only screening strategy will therefore miss a clinically significant proportion of caregivers who require treatment, and routine psychiatric evaluation should be built into the oncology caregiving pathway rather than triggered by a high distress score.

INTRODUCTION

The family caregiver of a cancer patient occupies an ambiguous position within the health system. They are present at every consultation, are relied upon to deliver much of the actual care, and absorb a large share of the illness's emotional and financial consequences — yet they are not a patient, have no record, and are not systematically assessed by anyone. Psycho-oncology has increasingly argued that this position is untenable, and that the caregiver should be considered a legitimate object of clinical attention in their own right.^[1,2] Two distinct questions arise once that argument is accepted, and they are frequently conflated. The first is dimensional: how much has caregiving cost this person in terms of daily functioning, emotional state, family life and financial security? This is the domain of health-related quality of life, and for cancer caregivers specifically it is captured by the Caregiver Quality of Life Index–Cancer (CQOLC), developed by Weitzner and colleagues to measure the broader impact of caregiving rather than distress alone.^[3,4] The second question is categorical: does this person meet criteria for a psychiatric disorder that warrants treatment? These questions are related but not interchangeable. A caregiver may report a substantially disrupted life without meeting criteria for any disorder, and another may meet criteria for major depression or an anxiety disorder while reporting relatively preserved functioning, particularly where stoicism or fear of appearing to complain shapes self-report. The literature reflects this distinction unevenly. A large proportion of studies in cancer caregiving rely on symptom-screening instruments such as the Beck Depression Inventory, the Hospital Anxiety and Depression Scale or the PHQ-9, and report the proportion scoring above a cut-off. Such studies typically yield high figures — Rhee and colleagues found depression to be highly prevalent among Korean cancer caregivers with care burden as its strongest predictor,^[5] and Belapurkar and colleagues reported that 65.1% and 69.5% of family caregivers of patients with oral cancer in central India screened positive for depressive and anxiety symptoms respectively.^[6] Studies that instead apply a formal diagnostic process yield lower and rather different figures. Vanderwerker and colleagues, using the Structured Clinical Interview for DSM-IV in 200 caregivers of patients with advanced cancer, found that 13% met criteria for a psychiatric disorder, and, more troublingly, that fewer than half of those who did had accessed any mental health service.^[7] The discrepancy between screening-positive and diagnosis-positive proportions is not an artefact to be explained away; it marks the gap between distress and disorder, and it has direct implications for what a service should do with a screening result. Indian tertiary-care data addressing both dimensions together remain limited. Thorat and colleagues, in a cross-sectional study of cancer caregivers at an

Indian tertiary care centre that combined the ZBI and CQOLC with clinical diagnostic evaluation, reported depression in 42% and anxiety in a further 18% of caregivers.^[8] Chaturvedi, reviewing the Indian psycho-oncology field, has repeatedly emphasised that caregivers are as important as patients but are routinely overlooked, and that consultation-liaison psychiatry is the natural vehicle for addressing this.^[1,2] What is still missing from the Indian literature is a study that measures caregiver quality of life with a cancer-specific instrument, establishes psychiatric diagnosis independently of that instrument, and then tests directly whether the two correspond. The present study was designed to answer that question in a Bengaluru tertiary-care cohort. Its practical importance is straightforward: if the quality-of-life score predicts psychiatric diagnosis well, a brief questionnaire can serve as a triage tool for psychiatric referral. If it does not, then questionnaire-based screening alone will systematically miss caregivers who need treatment, and the design of caregiver services must take that into account.

Objectives

- To determine the prevalence of clinically diagnosed psychiatric comorbidity among primary caregivers of cancer patients.
- To describe the diagnostic pattern of that comorbidity.
- To assess the quality of life of the same caregivers using a cancer-specific instrument.
- To compare psychiatric comorbidity and quality of life across sociodemographic and clinical variables.
- To examine the relationship between psychiatric comorbidity status and the continuous quality-of-life score.

MATERIALS AND METHODS

Study design, setting and duration: This was a hospital-based, cross-sectional, observational study conducted in the Oncology Department of RajaRajeswari Medical College and Hospital, Bengaluru, over eighteen months. The institution is a tertiary care teaching hospital drawing patients from both metropolitan Bengaluru and the surrounding rural districts of southern Karnataka.

Sample size and sampling: A sample size of 48 was derived using the Yamane formula at a 95% confidence level with a margin of error of 0.05.9 Participants were enrolled by purposive sampling from caregivers accompanying patients to the oncology outpatient department and inpatient wards.

Eligibility criteria

Inclusion: adults aged 18–65 years serving as the primary, unpaid caregiver of a patient with confirmed cancer under treatment or follow-up at the study site, for a minimum of three months, and willing to give written informed consent.

Exclusion: caregivers with a psychiatric diagnosis pre-dating the onset of caregiving; paid or professional caregivers; those unable to complete the instruments owing to physical, sensory or cognitive impairment; and those unwilling to participate. This exclusion is central to the interpretation of the present results: every psychiatric diagnosis reported here was made during the caregiving period and is distinct from any pre-existing psychiatric history.

Instruments and the elaboration of their terms

Semi-structured sociodemographic proforma

A study-specific proforma recorded age, gender, marital status, education, locality, religion, occupation, socioeconomic status, personal history of medical illness, the patient's diagnosis and the duration of caregiving. Locality followed the urban or rural classification of the residential census unit; education was dichotomised at completion of high school; personal history of medical illness denoted any chronic physical illness in the caregiver requiring ongoing treatment.

Caregiver Quality of Life Index–Cancer (CQOLC-35)

The CQOLC is a cancer-specific, self-report instrument developed by Weitzner and colleagues through semi-structured interviews with patient–caregiver dyads and health-care providers, and designed specifically to capture the impact of caregiving on the caregiver's quality of life rather than psychological symptoms alone.^[3,4] It contains 35 items, each rated on a five-point Likert scale scored 0 = not at all, 1 = a little bit, 2 = somewhat, 3 = quite a bit and 4 = very much, with the reference period being the preceding seven days. After reverse-scoring the positively worded items so that all items point in the same direction, the item scores are summed to a total ranging from 0 to 140, in which a higher total indicates better quality of life.

The content of the instrument is best understood through its four established domains, since the total score masks considerable variation in where a given caregiver's difficulty actually lies.

- Burden covers the felt weight of the caregiving role: the sense that one's responsibilities are overwhelming, that there is too much to manage, and that one's own needs have receded. This domain overlaps conceptually with dedicated burden inventories but is embedded here within a broader quality-of-life framework.
- Disruptiveness covers the intrusion of the illness into the ordinary architecture of life — sleep, appetite, employment, household routines, social and recreational activity, and the ability to plan ahead. It is the domain most likely to register the logistical reality of cancer treatment, particularly for families travelling long distances.
- Positive adaptation covers the constructive side of the experience: the sense of meaning, closeness and personal growth that caregiving can produce, and the caregiver's confidence in facing the situation. Its inclusion is a deliberate design

feature, acknowledging that caregiving is not experienced purely as loss.

- Financial concerns covers worry about the cost of treatment, the adequacy of family income, and the economic security of dependants — a domain of particular salience in a health system where a large share of cancer costs is met out of pocket.

A number of items sit outside these four factors and address specific concerns identified during instrument development, including day-to-day focus, being adequately informed about the illness, the impulse to protect the patient from distressing information, and the management of the patient's pain. In the original validation among 263 family caregivers of patients with lung, breast and prostate cancer, test–retest reliability was 0.95 and internal consistency 0.91, with moderate correlations against overall mental health and caregiver burden and low correlations against physical health and social desirability — a pattern supporting both convergent and discriminant validity.^[4] The instrument has since been translated and validated across multiple languages and health systems, including in Asian populations.^[10] One methodological caveat is important. Unlike the Zarit Burden Interview, the CQOLC has no universally accepted severity cut-offs. In the present study, quality of life was therefore additionally grouped into tertiles derived from the sample's own distribution (poor, average, good) for descriptive comparison only. These tertile labels are relative to this cohort and carry no diagnostic meaning; they should not be transferred to other samples.^[11]

Ascertainment of psychiatric comorbidity:

Psychiatric comorbidity was not derived from any questionnaire. Every caregiver underwent an independent clinical evaluation by the treating psychiatric team, conducted during the same visit but recorded separately from the CQOLC score and without reference to it. The evaluation comprised a detailed psychiatric history covering the onset and course of any current symptoms in relation to the caregiving role, a mental state examination, and assessment against standard diagnostic criteria for the disorders under consideration.^[12,13] Diagnoses were assigned only where the symptom cluster, its duration and the associated functional impairment together satisfied those criteria — that is, at a categorical clinical threshold rather than at a symptom-severity cut-off. The diagnostic categories considered were depressive disorders (including moderate and severe depressive episodes and recurrent depressive disorder), anxiety-spectrum disorders (including panic disorder, generalised anxiety disorder and illness anxiety disorder), adjustment disorder, other stress-related disorders including prolonged grief disorder, and substance use disorders occurring in combination with a mood disorder. Because caregivers with a psychiatric diagnosis pre-dating the caregiving role were excluded at enrolment, the temporal relationship of symptom onset to the

assumption of caregiving duties was specifically established in each case.

Administration: The questionnaire was administered face to face in a private room within the hospital, in the caregiver's preferred language, after the response format had been explained and practised. For caregivers with limited literacy, items were read aloud verbatim with the full set of response options repeated for each item. A complete sitting, including the clinical evaluation, lasted approximately 45 to 60 minutes.

Contribution of the Department of Psychiatry:

The Department of Psychiatry was not a collaborator on this study but its operational centre, and the central finding — that psychiatric diagnosis does not track the quality-of-life score — could not have been generated by any other arrangement. The departmental contribution is therefore described here in some detail. Independent diagnostic ascertainment. The methodological pivot of this study is that diagnosis was established clinically by psychiatrists rather than inferred from a self-report cut-off. Had comorbidity been defined as, say, a CQOLC score below a threshold, the correlation between diagnosis and quality of life would have been guaranteed by construction and the study would have answered nothing. Independent ascertainment by a psychiatric team is what makes the comparison in [Table 5] meaningful, and it is what allows the dissociation reported here to be interpreted as a substantive finding rather than a measurement artefact. Clinical judgement in a difficult diagnostic space. Distinguishing a normative reaction to a relative's cancer from an adjustment disorder, and an adjustment disorder from a depressive episode, is not a task that a questionnaire performs well. It requires assessment of symptom duration, pervasiveness, diurnal pattern, functional impairment and the presence of features such as anhedonia, guilt or morbid ideation that do not belong to ordinary sorrow. The same applies to the identification of illness anxiety disorder in a person legitimately worried about illness, and of prolonged grief disorder where anticipatory grief has become entrenched. These distinctions were made by clinicians trained to make them, working to standard criteria. Standardised administration and complete data. All 48 caregivers were interviewed by a psychiatry postgraduate trainee under consultant supervision, following a training period covering item wording, handling of ambiguous responses and avoidance of leading prompts. Clinician administration rather than questionnaire distribution yielded complete data with no missing values, and allowed the interviewer to distinguish incomprehension from reluctance. Exclusion of pre-existing illness. The department's evaluation also operationalised the study's most important exclusion criterion. Establishing that

psychiatric illness did not pre-date caregiving required a history rather than a checkbox, and it is this that permits the reported prevalence to be attributed to the caregiving period. Treatment, not merely measurement. Nineteen caregivers were identified as having a diagnosable disorder in the course of this study. All were offered assessment and management through the psychiatry outpatient service, and those in acute distress were seen the same day. A study that enquires systematically into psychiatric morbidity incurs an obligation to respond to what it finds, and the presence of the department made that response possible at the point of identification rather than by onward referral. Consultation-liaison in practice. Recruitment occurred within the oncology department's routine clinical flow, requiring an agreed pathway for approaching caregivers without disrupting patient care and for handing over a caregiver identified as unwell. That this functioned across 48 consecutive cases without additional infrastructure is itself a service-level finding, and one consistent with longstanding arguments for consultation-liaison psychiatry as the appropriate model in oncology.^[1,14]

Statistical analysis

Data were entered in Microsoft Excel and analysed in SPSS. Continuous variables are reported as mean $\pm$ standard deviation with range, categorical variables as frequencies and percentages. Mean CQOLC scores were compared across two-level variables using the independent-samples t-test and across multi-level variables using one-way ANOVA. Associations between psychiatric comorbidity status and sociodemographic or clinical categories were tested with Fisher's exact test, or the chi-square test where the variable had more than two levels. The relationship between comorbidity status and the continuous scores was examined using the point-biserial correlation, which is mathematically equivalent to the corresponding t-test. A two-tailed p-value below 0.05 was taken as significant.

Ethical considerations

Institutional Ethics Committee approval was obtained before recruitment. Written informed consent was taken from every participant. Caregivers were told explicitly that participation was voluntary and independent of their relative's treatment.

Data were anonymised at entry, and diagnostic information was handled within the same confidentiality framework as routine clinical records.

RESULTS

Forty-eight primary caregivers completed the study with no missing data. The mean age of the cohort was 46.1 ± 13.2 years (range 19–70 years).

Table 1: Sociodemographic profile of caregivers (N = 48)

Variable	Category	n	%
Age group	< 40 years	17	35.4

	40–59 years	24	50.0
	≥ 60 years	7	14.6
Gender	Male	25	52.1
	Female	23	47.9
Marital status	Married	38	79.2
	Single	10	20.8
Education	Above high school	26	54.2
	Up to high school	22	45.8
Locality	Urban	28	58.3
	Rural	20	41.7
Religion	Hindu	43	89.6
	Muslim	5	10.4
Employment status	Professional	15	31.2
	Farmer	12	25.0
	Other employed (skilled / business / clerical)	10	20.8
	Unemployed	8	16.7
	Student	3	6.2
Socioeconomic status	Upper / upper-middle	19	39.6
	Lower-middle	9	18.8
	Upper-lower / lower	20	41.7
History of personal medical illness	Yes	20	41.7
	No	28	58.3

Prevalence and pattern of psychiatric comorbidity

Of the 48 caregivers evaluated, 19 (39.6%) were found to have a diagnosable psychiatric comorbidity

arising during the caregiving period; the remaining 29 (60.4%) had no diagnosable disorder at the time of evaluation.

Table 2: Psychiatric comorbidity and diagnostic category (N = 48)

Category	n	% of total (N = 48)	% of those diagnosed (n = 19)
No psychiatric comorbidity	29	60.4	—
Any psychiatric comorbidity	19	39.6	100.0
Depressive disorders (moderate / severe / recurrent)	7	14.6	36.8
Anxiety-spectrum disorders (panic disorder, generalised anxiety disorder, illness anxiety disorder)	6	12.5	31.6
Adjustment disorder	4	8.3	21.1
Dysthymia with alcohol dependence syndrome	1	2.1	5.3
Prolonged grief disorder	1	2.1	5.3

The diagnostic distribution follows the pattern expected in a population under sustained stress. Depressive and anxiety-spectrum disorders together accounted for more than two-thirds of all diagnoses (13 of 19), with adjustment disorder making up most of the remainder. The two single cases are clinically instructive out of proportion to their frequency: the caregiver with dysthymia and comorbid alcohol

dependence illustrates the substance-related pathway through which caregiving stress can express itself and which a distress questionnaire would not detect at all, while the case of prolonged grief disorder indicates that grief work may begin, and become pathological, well before bereavement.

Quality of life

Table 3: Distribution of caregivers by quality-of-life tertile (N = 48)

CQOLC category (sample tertile)	n	%
Poor quality of life (≤ 66)	16	33.3
Average quality of life (67–85)	16	33.3
Good quality of life (≥ 85)	16	33.3

Mean CQOLC score 74.2 ± 18.2 ; observed range 44–113. As the CQOLC has no universally validated severity cut-offs, these categories are derived from the sample's own score tertiles for descriptive comparison only and carry no diagnostic meaning. The mean CQOLC score of 74.2 falls near the midpoint of the theoretical 0–140 range. More informative than the mean is the spread: the observed

range of 44 to 113 spans almost half the available scale, and the standard deviation of 18.2 is wide. Quality of life in this cohort was not uniformly poor; it was highly variable, with some caregivers functioning near the upper end of the observed distribution and others substantially impaired. The comparisons that follow indicate that much of this variation is structured rather than random.

Table 4: Comparison of mean CQOLC scores across sociodemographic variables

Variable	CQOLC (mean ± SD)	p value
Gender		
Male (n = 25)	74.4 ± 17.9	0.940
Female (n = 23)	74.0 ± 18.8	

Marital status		
Married (n = 38)	75.0 ± 18.2	0.552
Single (n = 10)	71.1 ± 19.1	
Locality		
Urban (n = 28)	81.7 ± 15.7	< 0.001*
Rural (n = 20)	63.6 ± 16.4	
Religion		
Hindu (n = 43)	75.1 ± 18.1	0.311
Muslim (n = 5)	66.4 ± 19.4	
Education		
Above high school (n = 26)	80.8 ± 17.0	0.005*
Up to high school (n = 22)	66.3 ± 16.9	
History of personal medical illness		
Yes (n = 20)	77.3 ± 18.4	0.325
No (n = 28)	71.9 ± 17.9	
Employment status (5 groups, ANOVA)	F = 1.58	0.170
Age in years (Pearson correlation)	r = 0.080	0.591

* Significant at $p < 0.05$ (independent-samples t-test, one-way ANOVA or Pearson correlation as applicable). Cross-tabulation of the CQOLC tertile categories against the same sociodemographic groups using chi-square and Fisher's exact tests corroborated these findings, with locality significant at $p < 0.001$ and education at $p = 0.013$. Two variables accounted for most of the structured variation in quality of life. Rural caregivers scored 18.1 points lower than urban caregivers, a difference

exceeding one standard deviation and the largest observed for any comparison in this study. Caregivers educated up to high school scored 14.5 points lower than those educated beyond it.

Gender, marital status, age, employment status and the presence of the caregiver's own medical illness showed no significant association with quality of life.

Relationship between psychiatric comorbidity and quality of life

Table 5: Comparison of mean scores by psychiatric comorbidity status

Scale	Comorbidity present (n = 19)	No comorbidity (n = 29)	t	p value
CQOLC (quality of life)	71.4 ± 17.3	76.0 ± 18.8	-0.845	0.403
ZBI (caregiver burden)	41.9 ± 15.0	37.2 ± 12.0	1.206	0.234
RS (resilience)	102.9 ± 26.1	108.6 ± 31.3	-0.656	0.515

None of the differences reached statistical significance. Point-biserial correlations between comorbidity status and the continuous scores were correspondingly weak (CQOLC: $r = -0.124$, $p = 0.403$; ZBI: $r = 0.175$, $p = 0.234$; RS: $r = -0.096$, $p =$

0.515) and are mathematically equivalent to the t-tests shown.

Burden and resilience data are included here for completeness; their full analysis is reported in a companion paper on the same cohort.

Table 6: Association between psychiatric comorbidity and sociodemographic or clinical variables

Variable	Comorbidity present : absent (n)	Test	p value
Gender (male / female)	10:15 / 9:14	Fisher exact	1.000
Marital status (married / single)	15:23 / 4:6	Fisher exact	1.000
Locality (urban / rural)	9:19 / 10:10	Fisher exact	0.245
Education (above high school / up to high school)	9:17 / 10:12	Fisher exact	0.557
Religion (Hindu / Muslim)	18:25 / 1:4	Fisher exact	0.635
Employment status (5 categories)	—	Chi-square†	0.339
Socioeconomic status (5 categories)	—	Chi-square†	0.401
History of personal medical illness (yes / no)	11:9 / 8:20	Fisher exact	0.080
Age in years (mean ± SD)	45.1 ± 12.9 vs 46.8 ± 13.6	t = -0.442	0.660

† Employment status and socioeconomic status each contain several categories with expected cell counts below five at this sample size; these results should be read as exploratory. No association reached statistical significance, although caregivers with a personal history of medical illness showed a numerically higher comorbidity rate (55.0% vs 32.1%) that approached conventional significance.

[Tables 5 and 6] together produce the study's principal negative finding, and it is a substantive one. Caregivers carrying a psychiatric diagnosis did score somewhat worse on quality of life than those without, but the 4.6-point difference is well within measurement noise for an instrument with a 140-

point range and a sample standard deviation of 18.2. No sociodemographic variable distinguished the two groups either. Knowing a caregiver's CQOLC score, locality, education, gender, age or employment would not have allowed the psychiatrically ill caregivers in this cohort to be identified.

DISCUSSION

Two findings stand out from this analysis, and they pull in different directions. The first is the prevalence figure: 39.6% of caregivers, evaluated clinically and with pre-existing psychiatric illness excluded at enrolment, carried a diagnosable psychiatric

disorder. The second is that this diagnosis bore no significant relationship to quality of life or to any sociodemographic characteristic measured.

The prevalence figure requires calibration against the literature, which is heterogeneous precisely because ascertainment methods differ. It sits well below the screening-based figures of Belapurkar and colleagues, who reported 65.1% screening positive for depressive symptoms and 69.5% for anxiety symptoms among caregivers of patients with oral cancer in central India,^[6] and somewhat below the 42% depression and 18% anxiety reported by Thorat and colleagues in an Indian tertiary-care cohort.^[8] It sits well above the 13% found by Vanderwerker and colleagues using the Structured Clinical Interview for DSM-IV among caregivers of patients with advanced cancer in the United States.^[7] Several factors plausibly account for the position of the present figure between these poles. The threshold applied here was a formal categorical diagnosis rather than a symptom-severity cut-off, which lowers the count relative to screening studies. The exclusion of caregivers with pre-existing psychiatric illness removes a group that would ordinarily contribute substantially to prevalence. Working in the other direction, the structural circumstances of Indian caregiving — out-of-pocket treatment costs, long-distance travel, absence of respite provision and minimal formal support — would be expected to generate more incident disorder than the comparatively supported US setting. Against general-population estimates of common mental disorders, and against hospital-based Indian surveys of psychiatric morbidity conducted in oncology settings, a rate approaching two in five is substantially elevated regardless of which comparison is preferred.^[11]

The pattern of diagnoses is consistent with expectation and with the wider psycho-oncology literature, in which depressive spectrum disorders, adjustment disorders and anxiety disorders predominate among those affected by cancer.^[2,15] The single case of prolonged grief disorder merits comment. Formal recognition of this condition as a distinct diagnostic entity is recent,^[13] and its appearance in a caregiver whose relative was still living indicates that the grief process may be well advanced, and already pathological, before bereavement occurs. Caregiver services organised around bereavement follow-up alone will not reach such patients. The case of dysthymia with comorbid alcohol dependence is similarly instructive, since alcohol use as a coping response to caregiving stress is systematically invisible to distress and quality-of-life questionnaires and will be detected only where a clinical history is taken.

The dissociation between diagnosis and quality of life

The more consequential finding is the absence of any significant relationship between psychiatric diagnosis and the CQOLC score. This warrants careful interpretation, because there are two quite

different explanations and they carry different implications. The first explanation is conceptual, and in our view the more likely. The CQOLC is a dimensional instrument that measures perceived strain, disruption, adaptation and financial worry along a continuum. A psychiatric diagnosis is a categorical judgement that depends on the clustering of particular symptoms, their duration and the functional impairment they produce. These are not two measures of a single underlying quantity, and there is no reason in principle why they should move together. A caregiver may report considerable disruption to sleep, work and social life — a low CQOLC score — while responding to an extraordinary situation in a way that remains within normal limits. Conversely, a caregiver may report a relatively intact life while meeting criteria for illness anxiety disorder, for panic disorder, or for a depressive episode manifesting as anhedonia and morbid guilt rather than as reported disruption. In a cultural context where complaint may be experienced as disloyalty to a sick relative, this second pattern is likely to be common. The implication is that a dimensional screen cannot substitute for a diagnostic assessment; the two answer different questions.

The second explanation is statistical. With 19 caregivers in the comorbidity-positive group, this study had limited power to detect a small-to-moderate difference, and a true effect may have been missed (Type II error). The observed direction of all three differences in [Table 5] is in fact the expected one — caregivers with a diagnosis scored worse on quality of life, higher on burden and lower on resilience — and it is entirely possible that a larger sample would render these differences significant. Honesty requires stating that this study can demonstrate the absence of a strong association but not the absence of any association.

These two explanations do not lead to different clinical conclusions, which is fortunate. Whether the relationship between quality of life and psychiatric diagnosis is genuinely weak or merely modest, it is not strong enough to support triage. A service that refers caregivers for psychiatric assessment only when their quality-of-life score falls below some threshold will miss a substantial proportion of those who need treatment.

Structural determinants of quality of life

The quality-of-life findings tell a different and more orderly story. Locality and education were both strongly associated with the CQOLC score, with rural caregivers scoring 18.1 points lower and those educated up to high school 14.5 points lower than their comparators. This aligns with the pattern found for burden and resilience in the same cohort and with the social-determinants framework described by Nikbakht-Nasrabadi and colleagues, in which socioeconomic resources shape how far support translates into reduced strain.^[16] Reading these results through the four CQOLC domains makes them more interpretable. The disruptiveness domain would be expected to register the days lost to travel

and the interruption of agricultural or daily-wage work that characterise rural caregiving, while the financial concerns domain would register the out-of-pocket costs of tertiary cancer treatment against a lower and less secure income. Neither of these is a psychological variable, which is precisely the point: much of the variation in caregiver quality of life in this setting is generated by logistics and economics rather than by disposition.^[16-25]

The near-significant association between the caregiver's own medical illness and psychiatric comorbidity (55.0% vs 32.1%, $p = 0.080$) is the one clinical variable that showed any signal in [Table 6]. The direction is intuitive — a caregiver managing their own chronic illness while caring for a relative with cancer carries a compounded load — and the finding is consistent with evidence that caregivers systematically defer their own health care.¹⁷ With 20 caregivers in that group, the study cannot resolve whether this represents a true association; it is a hypothesis worth testing in a larger sample, and in the meantime a reasonable prompt for clinical attention.^[26-30]

Implications for service design

Three implications follow, and all concern how psychiatry and oncology divide the work between them. First, psychiatric evaluation of caregivers should be routine rather than triggered. Because neither the quality-of-life score nor the sociodemographic profile identified the caregivers with a diagnosable disorder, a threshold-based referral system will not work. What this study supports instead is periodic clinical review of the primary caregiver as a standing element of the oncology pathway — brief, but conducted by someone trained to distinguish distress from disorder. Second, quality-of-life measurement retains its own distinct value and should not be abandoned because it fails as a diagnostic proxy. The CQOLC identified the rural and less-educated caregivers whose lives had been most disrupted, and it points towards interventions — appointment clustering, travel and accommodation support, financial counselling, clearer information provision — that are largely logistical rather than psychiatric. Screening for quality of life and evaluating for psychiatric illness are complementary activities directed at different remedies.^[31]

Third, both can be delivered through a consultation-liaison arrangement of the kind operated in this study, which required no infrastructure beyond an agreed pathway between two existing departments.^[1,14] Where psychiatric staffing is limited, evidence for digitally delivered psychoeducation and counselling is relevant: Li and colleagues found in a meta-analysis of randomised trials that e-health interventions reduced depressive symptoms among informal cancer caregivers even where overall burden did not significantly fall.^[18] That dissociation mirrors the one reported here and reinforces the same conclusion — that the psychiatric and the dimensional aspects of caregiver distress respond to

different things and should be addressed separately.^[32]

Limitations

- The cross-sectional design precludes causal inference and captures psychiatric status at a single point in a caregiving trajectory that may extend over years.
- The comorbidity-positive subgroup of 19 limited statistical power; the reported null associations may reflect Type II error rather than true independence, and the study can exclude only a strong association between diagnosis and quality of life.
- Diagnoses were established by clinical evaluation at one-time point without a second independent rater and without a structured diagnostic instrument such as the SCID or MINI. Inter-rater reliability was therefore not quantified, and diagnostic reliability cannot be formally demonstrated.
- Purposive sampling from a single tertiary centre limits generalisability, and caregivers willing to undergo a psychiatric evaluation may differ systematically from those who declined.
- CQOLC tertile categories were derived from this sample's own distribution rather than from validated cut-offs, and are not transferable to other cohorts. Domain-level CQOLC subscores were not analysed separately, which limits interpretation of which aspects of quality of life drove the locality and education effects.
- Patient-side variables — cancer site, stage, performance status and treatment intent — were not modelled and may confound the locality findings if disease severity at presentation differs between rural and urban patients.
- No multivariable analysis was performed, so the independent contributions of locality, education and socioeconomic status to quality of life cannot be separated.

CONCLUSION

Nearly two in five primary caregivers of cancer patients at a tertiary care hospital in Bengaluru carried a diagnosable psychiatric disorder arising during the caregiving period, most commonly a depressive or anxiety-spectrum disorder. Their quality of life varied widely, and that variation was strongly patterned by locality and education, with rural residence and schooling up to high school associated with substantially poorer scores.

The two findings did not converge. Psychiatric diagnosis was not significantly related to the quality-of-life score, nor to any sociodemographic variable examined, indicating that categorical psychiatric morbidity and dimensional quality of life represent related but partly independent axes of caregiver distress. The practical consequence is that these two axes require two different responses. Poor quality of life in this cohort was largely a structural problem,

concentrated among rural and less-educated caregivers and amenable to logistical, informational and financial remedies. Psychiatric comorbidity was distributed unpredictably across the cohort and is amenable only to clinical assessment and treatment. A caregiver support model built on questionnaire screening alone will therefore identify the overburdened while missing the ill. Embedding routine psychiatric evaluation of the primary caregiver within the oncology pathway, alongside rather than conditional upon quality-of-life measurement, is the more defensible arrangement, and this study indicates that it can be delivered through existing consultation-liaison arrangements without additional infrastructure.

Ethical approval: Obtained from the Institutional Ethics Committee of RajaRajeswari Medical College and Hospital prior to commencement.

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