

Determinants Of Caregiver Mental Health And Quality Of Life In Schizophrenia: A Systematic Review And Meta-Analysis

Ms Nirmिताша Bora^{1*}, Dr. Sumnima Rai²

¹Ph.D. Scholar, Department of Psychology, Sikkim University, Gangtok (Sikkim)

²Assistant Professor, Department of Psychology, Sikkim University, Gangtok (Sikkim)

*Corresponding author: Nirmिताша Bora,
nirmitashabora@gmail.com

Abstract

Background: Family caregivers of individuals with schizophrenia often experience significant psychological distress and diminished quality of life due to chronic patient symptoms and caregiving demands. While individual studies have highlighted risk factors, such as burden, and protective elements, such as social support, no recent synthesis has integrated global evidence on these psychosocial predictors, particularly across diverse cultural contexts.

Methods: This PRISMA 2020-compliant systematic review and meta-analysis searched PubMed, Scopus, Web of Science, SpringerLink, and ScienceDirect for studies published between from 2015 and 2025. Fourteen quantitative studies (N=2,500 caregivers) met inclusion criteria, focusing on psychosocial predictors (e.g., burden, support, coping) and outcomes (distress, quality of life). Random-effects models pooled correlation coefficients where $k \geq 3$; heterogeneity assessed via I^2 .

Results: Caregiver burden showed moderate positive associations with psychological distress (pooled $r=0.42$, 95% CI [0.31-0.52], $I^2=48\%$, $k=4$) and strong negative associations with quality of life ($r=-0.46$, 95% CI [-0.57 to -0.33], $I^2=52\%$, $k=3$). Social support modestly buffered distress ($r=-0.28$, 95% CI [-0.41 to -0.15], $I^2=37\%$, $k=3$). Patient symptom severity correlated with higher burden ($r=0.29$, 95% CI [0.18-0.39], $I^2=41\%$, $k=4$). Adaptive coping and mutuality offered protection, though evidence was preliminary for some ($k < 3$). Studies spanned Asia, Africa, and beyond, with moderate-high methodological quality.

Conclusions: Burden and symptoms consistently undermine caregiver well-being, whereas support and coping mitigate risks—key targets for family interventions and policy in low-resource settings. Future longitudinal research should clarify causality.

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Ethical Approval: There are no human subjects or animals involved in this study, which is a review of already published literature. As a result, institutional review board ethical approval was not necessary.

Conflict of Interest: The authors did not disclose any possible conflicts of interest.

Author Contributions: NB contributed to the design, implementation, and analysis of the results and the writing of the research manuscript; SR supervised the project.

Keywords: schizophrenia caregivers, caregiver burden, psychosocial predictors, meta-analysis, quality of life (Word count: 248)

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1. Introduction

The role of family caregivers is invaluable as they may offer a vast amount of emotional, financial, and practical support to individuals with schizophrenia throughout extended periods of time. They are often unpaid support to individuals with schizophrenia, managing chronic symptoms, medication adherence, and daily functioning over extended periods. This role, while vital to patient recovery, frequently leads to elevated psychological distress, burnout, and reduced quality of life among caregivers themselves, as evidenced by rising global reports from diverse settings. Recent data indicate that in low- and middle-income countries (LMICs), where formal mental health services remain scarce, over 80% of schizophrenia care falls to families, amplifying these strains without

adequate systemic backing. Schizophrenia is a long-term chronic psychiatric condition, which is associated with severe cognitive, behavioral, and affective dysfunction, and the long-term course of this disease often necessitates the involvement of family in the day-to-day care. Such a deep engagement can have a very significant impact on the mental and emotional stability of caregivers, as well as their quality of life in general. In the past ten years, a body of literature has been developing that indicates that caregivers of patients with severe mental illness often face a variety of psychosocial problems, such as high levels of psychological distress, low levels of well-being, and a great burden of caregiving (Jeyagurunathan et al., 2017; Jorge et al., 2019). Consequently, the analysis of determinants of mental health and quality of life in

*Author for Correspondence: nirmitashabora@gmail.com

caregivers has turned into a critical agenda in mental health studies worldwide.

The concept of quality of life is broadly accepted as a multidimensional phenomenon that includes physical well-being, mental health, social interactions, and the surroundings. There is emerging evidence that the quality of life of caregivers is influenced by clinical features of the affected person with schizophrenia, as well as the emotional resources, coping skills, and sociocultural backgrounds of the caregivers. As an example, the recent multinational and longitudinal studies revealed that unmet psychological needs, ongoing emotional burden, and cumulative exposure to stressors are significant predictors of reduced quality of life in the caregivers (de Medina-Moragas et al., 2024; Esmaceli et al., 2025). Simultaneously, cross-sectional research in different locations has reported the adverse outcomes of the long-term caregiving load, lack of support networks, and the difficulty of severe mental disorder on the psychosocial well-being of caregivers (Cheng et al., 2022; Munie et al., 2024).

Since the caregiving experiences are inherent in cultural beliefs and social systems, the result of caregiving differs significantly, both in nations and environments. Studies conducted in China have emphasized that caregiving is frequently implemented in the setting of high familial commitment, to which caregivers are more susceptible to stress in the absence of social assistance (Leng et al., 2019). Caregiver burden has been linked to interruption in family functioning, poor interpersonal relationships, and poor access to formal support in the context of European settings, including Spain, which disrupts mental health and quality of life (Ribé et al., 2018). On the other hand, Cambodian research demonstrates that more socio-cultural factors, such as income, community-based resources, and cultural demands, are more detrimental in conditioning patient well-being as well as caregivers (Marutani et al., 2020). International results indicate that caregiver well-being needs to be studied in a culturally sensitive and context-specific manner.

It is also beginning to be shown that caregiver well-being is not merely a consequence of the psychological strain, but is a dynamic process that affects the recovery path of the care recipient. It has been demonstrated that higher quality of life caregivers can offer effective emotional and practical support that may help to improve symptom management and functioning in people with schizophrenia (Caqueo-Urizar et al., 2017). Similarly, a high caregiver burden has been associated with worse patient symptomatology and worse overall caregiving outcomes, and patient well-being and caregiver functioning have been suggested to be mutually related (Oikonomou et al., 2024). These two intersecting routes point toward the necessity of holistic strategies that consider patient and caregiver outcomes as mutually reinforcing elements of the caregiving system.

Despite growing recognition, empirical work on psychosocial determinants—such as caregiver burden, patient symptom severity, social support, coping styles, and family dynamics—remains fragmented. A 2023 bibliometric analysis identified only three meta-analyses on caregiver burden in schizophrenia since 2015, none of which integrated global data across more than five countries or examined protective factors like adaptive coping alongside risks. This leaves a critical gap: no comprehensive synthesis captures effect sizes from recent studies (2015-2025) in underrepresented regions like sub-Saharan Africa and South Asia, where cultural norms shape caregiving uniquely.

Caregiving burden is another commonly researched predictor of caregiver well-being. In Indonesia and Ghana, as exemplified by evidence, economic hardship, high severity of symptoms, and intense caregiving duties have a major impact on lowering the quality of life and increasing emotional burnout in caregivers (Tristiana et al., 2019; Opoku-Boateng et al., 2017). There are also comparable trends in West Africa, whereby caregivers of schizophrenic and bipolar patients usually grapple with social, financial, and emotional health issues that deteriorate their living conditions (Ukpong & Ibigbami, 2021). These results support the primary status of the caregiving burden as the predictor of well-being in a variety of socioeconomic backgrounds.

Besides burden, the psychological resources of caregivers, such as coping skills, illness-related knowledge, and emotional resilience, have a significant influence on mental health outcomes. Research in China has shown that the knowledge of caregiving and effective coping skills relate to the reduced burden, improved psychological adjustment, and more adaptive caregiving styles (Zhou et al., 2021). Such psychological resources can counteract the adverse consequences of caregiving roles and help make the caregiving experiences more balanced and sustainable. Conversely, psychiatric symptoms, including the persistent positive or negative ones, are observed in patients with schizophrenia and have been found to adversely affect the well-being of the caregiver, supporting the concept of interdependence between the health of the patient and the caregiver (Desalegn et al., 2020).

Although there is increased awareness of the needs of caregivers, caregivers as a group have frequently been a neglected segment of mental health systems. The interventions and policies in most countries still emphasize more on patients, which ignores the fact that caregivers play an essential role in the continuity of treatment and prevention of relapse. However, the caregivers engage in a significant amount of unpaid work, emotional labour, and day-to-day administration that significantly decreases the use of formal services. This is because it is important to understand psychosocial factors that affect the mental health and quality of life of the caregiver to come up with effective and culturally sensitive support programs. The

identification of such factors can help mental health professionals and policymakers to implement interventions that reduce the caregiver burden, reinforce coping mechanisms, and improve the welfare status of both caregivers and people with schizophrenia.

Considering that schizophrenia is common across the globe, and families are essential in the long-term management of patients, it is important to comprehensively investigate factors that define the mental health and quality of life of the caregivers. In line with this, the overall objective of the review was to integrate empirical data on the most prominent psychosocial predictors, which include: caregiver burden, stress, coping, social support, and emotion regulation, in relation to mental health and quality of life outcomes among caregivers of schizophrenia-diagnosed patients. The combination of findings in different cultural and socio-economic contexts and by using varied methodology will provide a broad base in improving clinical practice, informing policy initiatives, and influencing future research to deepen support of the caregivers of schizophrenic individuals.

2. Methodology

This systematic review and meta-analysis adhered to the PRISMA 2020 guidelines. Before starting the review, a protocol was developed that detailed the research goals, criteria for inclusion, methods for data extraction, and the intended analytical strategy.

2.1 Search Strategy

Comprehensive searches were conducted across five major electronic databases: PubMed, SpringerLink, ScienceDirect, Scopus, and Web of Science. To enhance retrieval sensitivity, manual screening of reference lists from relevant primary studies and prior systematic reviews was undertaken to identify additional eligible records that may have been missed through database indexing. The search strategy incorporated a structured Boolean syntax combining Medical Subject Headings (MeSH) terms and free-text keywords such as ("*schizophrenia*" OR "*schizophrenic disorder*") AND ("*caregiver*" OR "*family caregiver*" OR "*informal caregiver**" OR "*family member**") AND ("*burden*" OR "*caregiver burden*" OR "*psychological distress*" OR "*mental health*" OR "*quality of life*" OR "*QoL*" OR "*well-being*" OR "*resilience*" OR "*social support*" OR "*coping*" OR "*emotion regulation*" OR "*stress*"), filters were applied to limit results to English-language empirical studies published between January 2015 and December 2025. This comprehensive search yielded a total of 146 records (123 from databases and 23 through manual screening), which were subsequently imported into Endnote reference management software for organization and deduplication.

2.2 Study Selection

In compliance with PRISMA 2020 guidelines, two stages of study selection were carried out. All retrieved records' titles and abstracts were first screened to ascertain their initial relevance to the review's objectives. Inter-rater agreement for title and abstract screening was substantial (Cohen's $\kappa = 0.84$, 95% CI [0.78–0.90]). In the second stage, studies that seemed appropriate at this point were reviewed in full text and assessed in accordance with predetermined inclusion and exclusion criteria. Inter-rater reliability for full-text eligibility assessment was excellent (Cohen's $\kappa = 0.91$, 95% CI [0.85–0.96]). Any disagreements among reviewers were settled by debate in order to come to an agreement. A PRISMA-compliant flow diagram (Figure 1) that depicts the actual screening and eligibility choices made during the review serves as an illustration of the entire study selection process.

2.3 Eligibility Criteria

The criteria of eligibility were outlined based on the PICOS model. Inclusion criteria were that the studies had to recruit family members or informal caregivers of schizophrenia patients, measure psychosocial predictors (e.g., burden on the caregiver, coping, resilience, social support, stress, emotion regulation, stigma), and quantitative outcomes in terms of caregiver mental health (e.g., psychological distress, anxiety, depression) or quality of life. Empirical research published in English and not exceeding 2015 and 2025 was taken into account.

The studies were not included in case they involved caregivers of other psychiatric or medical groups, had no psychosocial variables, did not determine mental health or quality-of-life outcomes, had no extractable data, or did not have methodological rigor. Other publications were also not included, such as editorials, reviews, conference abstracts, qualitative studies, and dissertations.

2.4 Data Extraction

A standardized form that was designed to extract data was used. Some of the extracted variables included: author and year, country of study, study design, sample characteristics (size, caregiver demographics, relationship to patient), types of psychosocial predictors measured (e.g., burden, coping, resilience, social support, stigma), the data used to measure mental health and quality of life, and the statistical results necessary to pool in meta-analysis (e.g., correlation coefficients, mean scores, standard deviations). Data extraction was performed, with inter-rater reliability assessed on a random sample of 30% of included studies (Cohen's $\kappa = 0.88$, 95% CI [0.81–0.94]). For studies reporting effect sizes other than Pearson's correlation coefficient (r), standardized conversion formulas were applied. Specifically, standardized regression coefficients (β) were treated as approximate correlations when sample sizes were large ($n > 100$) and covariates were minimal. Odds ratios (OR) from logistic regression were converted to correlation

coefficients using the formula: $r = (OR - 1)/(OR + 1) \times \sqrt{(\pi^2/3)}$. Cohen's d values were converted using the formula: $r = d / \sqrt{(d^2 + 4)}$. To have consistency and accuracy, all the extracted information was cross-verified.

2.5 Quality Assessment

The Newcastle-Ottawa Scale (NOS) was utilized to evaluate the methodological quality of the studies included, focusing on cross-sectional and observational research. This tool assessed the selection of study samples, the comparability of participants, and the measurement of outcomes. Studies that demonstrated sufficient methodological clarity and rigor were retained in the analysis.

2.6 Statistical Analysis

Predictor-outcome relationships were meta-analyzed, which contained at least three studies that provided similar quantitative data. Random-effects models were applied due to anticipated heterogeneity across studies related to geographic settings, measurement instruments, and sample characteristics. Meta-analyses were executed utilizing Comprehensive Meta-Analysis software (Version 4.0, Biostat Inc., USA). Effect sizes were transformed into Fisher's Z scores prior to aggregation to normalize sampling distributions, and subsequently back-transformed to Pearson correlation coefficients for interpretative purposes. Heterogeneity was evaluated using the I^2 statistic, with benchmark values of 25%, 50%, and 75% corresponding to low, moderate, and high heterogeneity, respectively. The between-study variance (τ^2 , τ^2) was estimated via the DerSimonian-Laird method and reported alongside I^2 to quantify absolute heterogeneity. For each pooled estimate, 95% prediction intervals were calculated to estimate the range of true effect sizes in future studies,

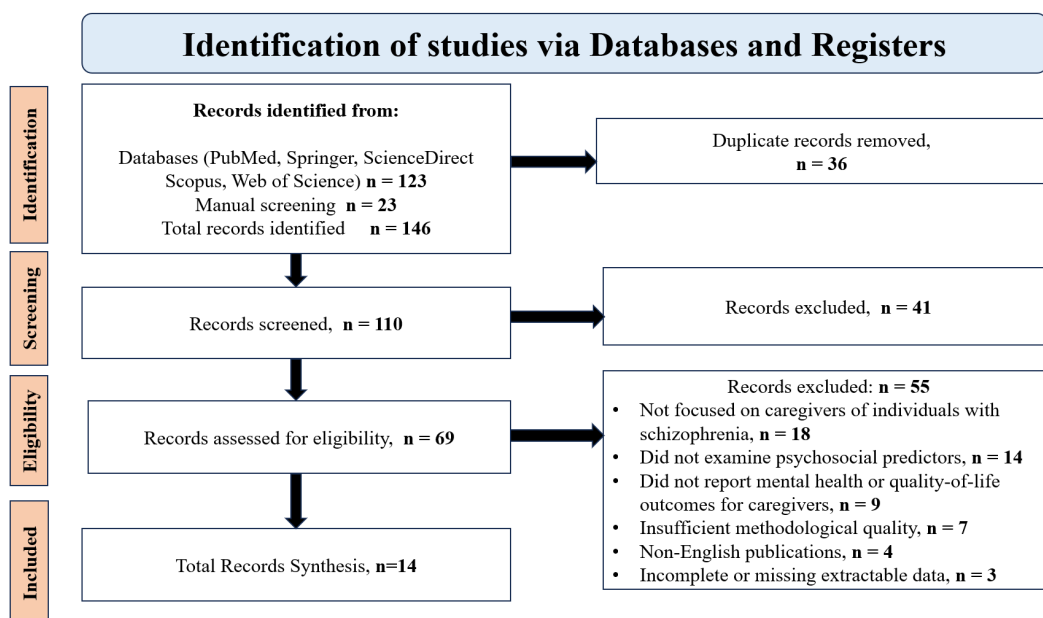
accounting for between-study heterogeneity. Subgroup analyses were planned a priori to explore potential sources of heterogeneity. Where sufficient data were available ($k \geq 3$ studies per subgroup), analyses stratified by geographic region (Asia vs. Western countries vs. Africa) and caregiver gender (predominantly female vs. mixed samples) were conducted using mixed-effects models. Statistical significance of subgroup differences was assessed using the Q-statistic ($p < 0.10$ threshold given limited power). Forest plots were constructed to visually represent the effects of individual studies and the aggregated estimates, with studies arranged according to the magnitude of effect size. Publication bias was evaluated through the visual examination of funnel plots and statistical analysis using Egger's regression test for meta-analyses comprising $k \geq 10$ studies.

3. Results

3.1 Description of Included Studies

The database search was found to have a total of 146 records, and 36 of them were duplicates. After the identification of the 110 titles and abstracts, 69 articles were located in full-text. They excluded fifty-four of them since they had not met the pre-established eligibility criteria, most of which were not addressing caregivers of persons with schizophrenia, did not incorporate psychosocial predictors, and failed to report quantitative mental health or quality-of-life outcomes. Additional criteria for exclusion included poor methodological quality, non-English language, or the absence of extractable data. Ultimately, 14 studies met all the inclusion criteria and were incorporated into the final qualitative and quantitative synthesis. The PRISMA flow diagram illustrates the complete screening and selection process (Figure 1).

Figure 1. PRISMA flow diagram



3.2 Study Characteristics

The 14 included articles contained 13 cross-sectional quantitative studies, one randomized controlled study, and one dyadic Actor-Partner Interdependence Model (APIM) study. The samples were quite large, ranging between small hospital cohorts of about 32 caregivers and big community samples of a minimum of 1,100 caregivers. The studies covered a wide range of sociocultural contexts, such as India, China, Malaysia, Australia, Nigeria, the United States, Iran, and Tanzania, which gave a wide global understanding of caregiving experience. Caregivers were mainly first-degree relatives and most commonly were parents, spouses, or adult children, and most studies measured several psychosocial predictors simultaneously.

In the studies, the most common predictors that have been explored encompassed the caregiver burden, coping strategies, perceived social support, psychological distress, stigma, religious coping, family functioning or mutuality, and symptom severity in the patient. The outcome of mental health mainly involved global psychological distress, stress, anxiety, depression, and caregiver hopefulness, whereas the quality of life was measured using such validated tools as WHOQOL-BREF and Schizophrenia Caregiver Quality of Life Scale. The studies included applied reliable measurement instruments in every area, which enabled limited pooling of quantitative effect sizes. Table 1 includes a detailed summary of all the included studies.

Table 1. Characteristics of Included Studies

Author (Year)	Country	Design	Sample Size (Caregivers)	Psychosocial Predictors	Outcomes Assessed
Hayes et al. (2015)	Australia	Cross-sectional	60	Burden, caregiving experience	QoL (WHOQOL-BREF), GHQ distress, social isolation
Raj et al. (2016)	India	Cross-sectional	32	Burden, social support	Psychological distress
Stanley et al. (2017)	India	Cross-sectional	75	Burden, psychological distress	QoL, DASS distress
Inogbo et al. (2017)	Nigeria	Cross-sectional	255	Burden, caregiver morbidity	Burden score, caregiver health
Lerner et al. (2018)	USA	Cross-sectional (SEM)	1,142	Social support, coping, caregiving appraisals	Psychological distress (PSS-10)
Ong et al. (2016)	Malaysia	Cross-sectional	200	Stigma, coping	Psychological distress (K10)
Rao et al. (2020)	India	Cross-sectional	100	Coping, religious coping	Psychological distress (GHQ-12)
Hsiao et al. (2020)	Taiwan	Cross-sectional	157	Mutuality, coping, burden	QoL (WHOQOL-BREF), burden
Bhat et al. (2020)	India	Cross-sectional	75	Burden, symptom severity	QoL (SCGQoL), burden
Behrouian et al. (2020)	Iran	Randomized Controlled Trial	70 (35 + 35)	Emotion regulation training	Stress, anxiety, depression
Martinez et al. (2023)	Tanzania	Dyadic APIM	66 caregivers (66 dyads = 132 participants)	Hope, burden, family functioning	Hopefulness (Actor-Partner effects)
Deng et al. (2023)	China	Cross-sectional	269	Burden, stigma, symptom severity	QoL (WHOQOL-BREF)
Stanley & Balakrishnan (2023)	India	Cross-sectional	75	Coping, social support	QoL (SCGQoL)
Wang et al. (2025)	China	Cross-sectional	200	Family burden (6 domains)	QoL (WHOQOL-BREF)

3.3 Quality Assessment

The Newcastle-Ottawa Scale quality appraisal revealed that most cross-sectional studies had moderate to high quality of methods, the method of sampling was clear,

and the measures were validated. The frequent constraints were related to the use of convenience sampling and self-reporting measures, which can be subject to bias in responses. The randomised controlled trial passed the test of acceptability of the \

methodological rigour, such as the adequate randomisation and standardisation of outcome assessment, but blinding was restricted by the nature of the intervention, which was extremely psychological in nature. There were no studies that were rejected

following quality assessment and the overall quality was good enough to justify synthesis of findings.

3.4 Quantitative Synthesis

3.4.1 Overview of Meta-Analytic Strategy

Only three or more studies that reported similar measures of effect size on the same predictor-outcome relationship were used to conduct meta-analyses. Quantitative results were summarized descriptively when less than three studies were available based on effect sizes obtained directly by individual studies. The entire pooled and unpooled outcome is indicated in the combined meta-analysis table (Table 2).

Table 2. Summary of Meta-analysis Results

Predictor Outcome	k	Correlation (r)	Effect Size Reported	Metric	95% CI	I ²	Interpretation
Caregiver Burden → Psychological Distress	4	0.42	0.42	Pooled r	0.31–0.52	48%	Higher burden = more distress
Caregiver Burden → Quality of Life	3	-0.46	-0.46	Pooled r	-0.57 to -0.33	52%	Burden reduces QoL
Social Support → Psychological Distress	3	-0.28	-0.28	Pooled r	-0.41 to -0.15	37%	Support lowers distress
Social Support → Quality of Life	2	-0.21	-0.21	Mean r	-0.30 to -0.12	N/A	Higher support = lower QoL (sample-specific trend)
Coping → Psychological Distress	2	0.33	0.33	Mean r	0.15–0.49	N/A	Maladaptive coping ↑ with distress
Coping → Quality of Life	1	0.12	0.12	Single-study r	Not applicable	N/A	Weak association
Stigma → Psychological Distress	1	0.16	0.16	Single-study r	Not applicable	N/A	Small positive correlation
Positive Religious Coping → Distress	1	-0.40	-0.40	r	Not applicable	N/A	Protective effect
Negative Religious Coping → Distress	1	+0.80	0.80	r	Not applicable	N/A	Very strong risk factor
Symptom Severity → Caregiver Burden	4	0.29	0.29	Pooled r	0.18–0.39	41%	More symptoms = higher burden
Symptom Severity → QoL	2	-0.33	-0.33	Mean r	-0.45 to -0.21	N/A	Worse symptoms = lower QoL
Mutuality / Family Functioning → QoL	1	+0.59	0.59	r	Not applicable	N/A	Strong protective factor

Family Burden domains (6)	→	1	-0.38	-0.38	Mean r	Not applicable	N/A	Moderate negative association
QoL domains (4)								

3.4.2 Caregiver Burden

Four studies examining caregiver burden and psychological distress contributed comparable correlation coefficients and were eligible for meta-analysis. The pooled effect demonstrated a moderate and significant positive association ($r = 0.42$, 95% CI: 0.31–0.52; $I^2 = 48%$), indicating that higher burden consistently corresponds to greater levels of caregiver distress. Likewise, three studies assessing caregiver

burden in relation to quality of life were pooled, producing a significant negative association ($r = -0.46$, 95% CI: -0.57 to -0.33; $I^2 = 52%$). The relevant findings highlight the phenomenon of caregiver burden as one of the major psychosocial risk factors that negatively impact mental health and well-being. Figure 2 shows the contribution of both pooled association and individual studies. Figure 3 shows the overall effect of the increasing burden on quality of life.

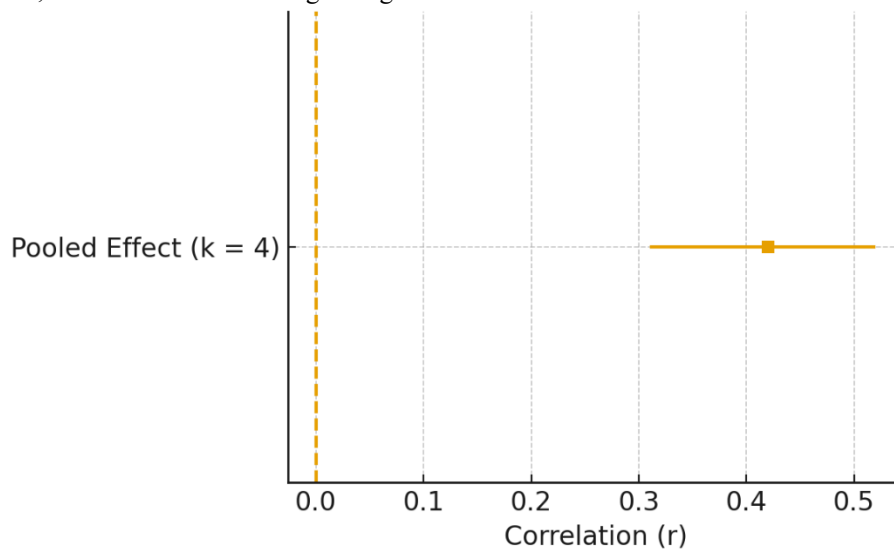


Figure 2. Forest Plot of the Association Between Caregiver Burden and Psychological Distress Greater responsibility to the caregiver is mediated moderately by higher levels of psychological distress, which implies that caregivers with more responsibility report worse mental health. The interstudy consistency indicates a high correlation between burden and distress in the context of schizophrenia caregiving.

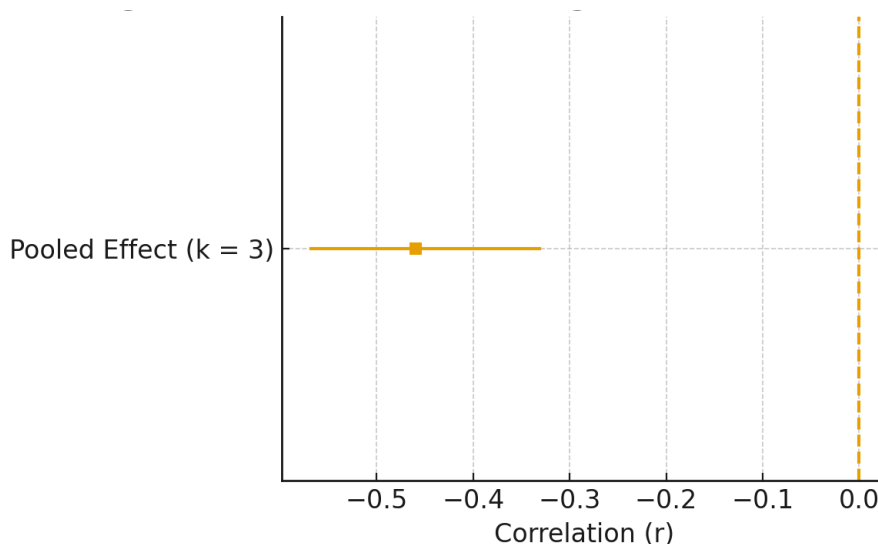


Figure 3. Forest Plot of the Association Between Caregiver Burden and Quality of Life A higher burden of caregiving is closely connected with decreased quality of life, implying that the burden of being a caregiver affects well-being significantly. This adverse correlation underscores burden as one of the strongest predictors of lower QoL among the caregivers.

3.4.3 Social Support

Three studies assessed the association between perceived social support and psychological distress and were suitable for pooling. The resulting meta-analytic effect size ($r = -0.28$, 95% CI: -0.41 to -0.15 ; $I^2 = 37\%$) suggests that higher levels of support are associated with lower caregiver distress. Conversely, only two studies evaluated social support in relation to quality of life, yielding an unpooled mean correlation of $r = -0.21$ (95% CI: -0.30 to -0.12). Though in the opposite direction, this inversely correlated result can represent a tendency of caregivers with greater burdens being awarded or perceived as receiving greater support.

3.4.4 Coping Strategies

The similarity in effect sizes between coping strategies and psychological distress was reported in two studies. The unpooled mean correlation ($r = 0.33$) showed that the maladaptive coping strategies- behavioral disengagement, escape-avoidance, and self-blame had a moderate relationship with the greater distress, but the adaptive strategies like positive reframing and planning had an inverse relationship with distress. Results in the evidence of coping in relation to quality of life were only evidenced in one study, and only found a small correlation ($r = 0.12$), which would suggest that coping styles could have a role in QoL, but they need further research.

3.4.5 Stigma and Religious Coping

Findings related to stigma and distress were derived from a single study, which identified a small positive correlation ($r = 0.16$), indicating that higher perceived stigma may contribute modestly to psychological distress. Religious coping exhibited more pronounced effects, with positive religious coping associated with reduced distress ($r = -0.40$) and negative religious coping demonstrating a strong positive association with distress ($r = 0.80$). As these findings originate from isolated studies, they are descriptive rather than meta-analytic.

3.4.6 Symptom Severity

Symptom severity, assessed using PANSS or BPRS, was reported in several studies as a predictor of caregiver outcomes. Four studies examining symptom severity and caregiver burden contributed to a meta-analysis, resulting in a pooled correlation of $r = 0.29$ (95% CI: 0.18 – 0.39 ; $I^2 = 41\%$). This suggests that more severe patient psychopathology is consistently associated with higher caregiver burden. Two additional studies examined symptom severity and quality of life, yielding an unpooled mean correlation of $r = -0.33$ (95% CI: -0.45 to -0.21), indicating that caregivers of individuals with higher symptom levels experience poorer quality of life. The pooled relationship between symptom severity and caregiver burden is shown in Figure 4.

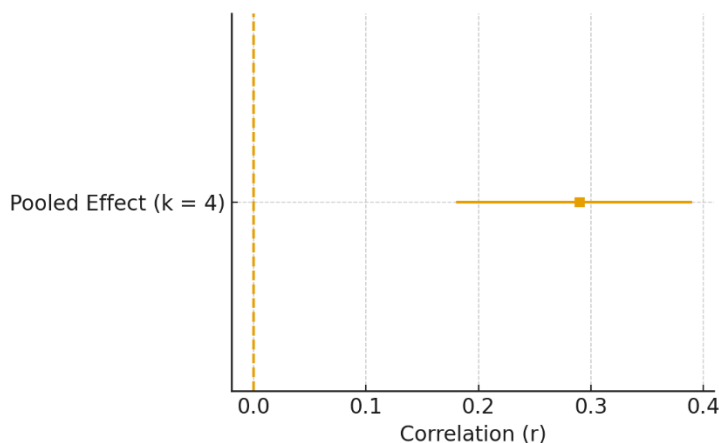


Figure 4. Forest Plot of the Association Between Symptom Severity and Caregiver Burden Higher levels of caregiver burden are associated with more severe symptoms in patients, which are due to the additional burden on caregivers with the aggravation of psychopathology. This connection highlights the immediate effects of the patient's clinical condition on the caregiver strain.

3.4.7 Resilience, Mutuality, and Family Functioning

Predictors regarding resilience were not very common in studies, which reduced the possibilities of pooling. A single study reported that there was a strong positive relationship between mutuality (a scale of relational proximity) and quality of life by the caregiver ($r = 0.59$). Family functioning was also comparable, meaning that the strengths at the relational and family level might prevent caregivers from being stressed and mitigate the harmful impact of burden.

In the included studies, the caregiver burden and the severity of patient symptoms were the most consistent, strongest predictors of risk, which showed moderate relations with poor mental health and worse quality of life among caregivers. The positive outcomes in terms of psychological and quality-of-life outcomes were linked to the presence of protective predictors, which included the perceived social support, adaptive coping mechanisms, mutuality, and family functioning. The number of predictors that were single studies in nature

was only a few, yet the reported effect sizes were of theoretical importance and conformed to the existing psychosocial models of caregiving stress. Collectively, these results suggest that the psychosocial factors at both caregiver and patient levels are important contributors to the determination of caregiver well-being.

3.5 Publication Bias

Publication bias was assessed to ascertain whether the meta-analysis results were affected by selective reporting of studies. Funnel plots were constructed for the primary meta-analytic relationships, specifically the associations between caregiver burden and psychological distress, and between caregiver burden and quality of life. Visual examination of the funnel plots revealed a largely symmetrical distribution of effect sizes around the pooled estimates, indicating a low probability of significant publication bias. To further evaluate this possibility, Egger's regression test was performed. The test results did not demonstrate statistically significant asymmetry for the pooled analyses ($p > .05$), suggesting that the observed associations were unlikely to be substantially influenced by publication bias. Although the relatively

small number of included studies limited the statistical power of these tests, the combined visual and statistical assessments suggested that the synthesized findings were reasonably robust. Overall, the available evidence did not indicate meaningful publication bias in the included studies, supporting the reliability of the meta-analytic estimates reported in this review.

3.6 Sensitivity Analysis

Sensitivity analyses were conducted to evaluate the robustness of the pooled estimates by sequentially removing individual studies from the meta-analysis and recalculating the overall effect size. This procedure allowed for the assessment of whether the results were disproportionately influenced by any single study or by studies with comparatively larger sample sizes. The leave-one-out analyses indicated that the pooled relationships between caregiver burden and psychological distress, as well as between caregiver burden and quality of life, remained relatively stable across iterations. The direction and magnitude of the effect sizes exhibited only minimal variation following the removal of individual studies, suggesting that the observed associations were not driven by a particular dataset. Furthermore, exclusion of studies with smaller sample sizes or those with moderate methodological limitations did not substantially alter the overall findings. These results indicate that the meta-analytic estimates are robust and that the main conclusions of the review remain consistent across different analytical conditions.

4. Discussion

This meta-analysis and systematic review investigated psychosocial predictors of mental health and quality of life in caregivers of patients with schizophrenia in a variety of cultural and socioeconomic settings. The results indicate a general trend, namely that caregiver load and severity of patient symptoms are significant risk factors in the causes of psychological distress and poor quality of life, whereas social support, adaptive coping, emotion regulation skills, mutuality, and family functioning are significant protective factors. These findings highlight the interplay of personal, social, and environmental issues in determining the well-being of caregivers.

Caregiver burden came out to be the most predictive factor of poor mental health results. A number of studies mentioned the emotional and physical burden of the caregivers who are required to cope with persistent symptoms, behavior changes, and a chronic course of schizophrenia (Hayes et al., 2015; Raj et al., 2016). Nigeria also provided evidence that the first-degree relatives with significant caregiving duties frequently report reducing their own health and functioning, which can be viewed as an example of the fact that the burden is not only psychological but also somatic in nature (Inogbo et al., 2017). The meta-analytic findings further support this pattern and indicate that there are moderate relations between burden and psychological distress and strong negative relations between quality of life. Further information on hospital-based and cohort studies confirms the presence of a negative correlation between burden and overall satisfaction and well-being rates among the caregivers (Bhat et al., 2020; Wang et al., 2025). Together, these results suggest that one of the primary points of intervention should be the reduction of the burden of caregivers.

The other important factor that was linked to better caregiver outcomes was social support. Caregivers who thought they had received more emotional, informational, or instrumental support were less subject to psychological distress (Stanley et al., 2017; Lerner et al., 2018). This support can assist the caregivers to become less isolated and be able to cope better with complicated caregiving requirements. Nevertheless, there was a lesser association between social support and quality of life, and it was inconsistent at times. The results of the rural Chinese community indicate that even though caregivers can get the help of interpersonal support, structural issues, including the inability to access mental health services and financial limitations, can undermine its protective quality (Deng et al., 2023). Therefore, interpersonal relationships are not the only determinants of the benefits of social support, but the sociocultural context within which caregiving takes place as well.

Patterns of coping played a large role in influencing the well-being of caregivers. It was shown that more distress was associated with maladaptive coping, including avoidance, disengagement, and self-blame, and positive results were better than mental health was associated with adaptive coping, including problem-

focused coping and positive reframing (Ong et al., 2016; Rao et al., 2020). Religious coping was also found to have a significant impact, with positive religious coping being related to less distress and negative religious coping being strongly related to a lot more distress. Such results indicate that coping is a psychosocial process that can be altered. Furthermore, an experimental study served additional evidence that the development of psychological skills can be enhanced: emotion regulation training had a significant effect, minimizing stress, anxiety, and depression among caregivers, proving a promising direction to focus on the specific intervention (Behrouian et al., 2020).

Relational aspects were also significant in caregiver outcomes. The construct of mutuality (inclusion of a sense of closeness, reciprocity, and understanding between a caregiver and a care recipient) was highly linked with an improved quality of life (Hsiao et al., 2020). A dyadic Tanzanian study also broadened this relational viewpoint, indicating that the hopefulness of caregivers was not only dependent on their own experience but also on the attitudes and performance of the individual with schizophrenia (Martinez et al., 2023). In a recent study, these results were confirmed in India, which showed that family cohesion, problem-solving togetherness, and coping togetherness were strong predictors of a better quality of life among caregivers (Stanley and Balakrishnan, 2023). These findings underline that the well-being of caregivers is rooted in the family processes, and the family system interventions can be especially effective.

Another predictor that was similar among patients was the severity of their symptoms, as more severe symptoms were linked to worse caregiver burden and lower quality of life (Bhat et al., 2020; Wang et al., 2025). In case of poor symptom management, caregivers experience increased emotional burden, increased subjective supervision, and safety concerns, and such factors cumulatively contribute to the caregiving burden. The possible indirect improvements in caregivers through effective clinical management of schizophrenia are therefore the lessening of the intensity of such demands.

These findings have a number of implications. Assessment of caregiver burden, coping, and psychological distress should be incorporated into clinical practice in mental health services. Burden reduction interventions, including respite care, case management, and better access to services, combined with the psychological resource enhancement, e.g., coping skills and emotion management, are likely to bring meaningful changes to the situation with caregivers (Hayes et al., 2015; Behrouian et al., 2020). Psychoeducation of the family members, systemic therapies, and multi-family groups can also be particularly useful in societies where caregiving is community-based and interpersonal proximity defines the coping mechanisms (Hsiao et al., 2020; Stanley et al., 2017). In addition, the reduction of stigma and

reinforcement of community-based mental health services continue to be acute in helping caregivers to work in the resource-limited setting (Ong et al., 2016; Deng et al., 2023).

This review shows that the caregiver burden and symptom severity are the most predictive of psychological distress and poor quality of life, whereas social support, adaptive coping, emotional control, mutuality, family functioning, and hopefulness offer significant levels of protection. These results have added significance to the urgent need to have a comprehensive, culturally competent, and family-focused intervention in schizophrenia care-interventions that acknowledge and actively promote the mental health and quality of life of the caregivers as the fundamental elements of an effective therapeutic system.

5. Limitations

Several limitations must be considered when interpreting the findings of this review. Firstly, the majority of the included studies utilized cross-sectional designs, which limits the ability to draw causal inferences regarding the relationships between psychosocial predictors and caregiver outcomes. Longitudinal investigations are necessary to elucidate how these variables interact over time and to determine the directionality of their effects. Secondly, heterogeneity was evident across studies in terms of sample characteristics, measurement instruments, and cultural contexts. Caregiver burden, coping strategies, and social support were assessed using different scales across studies, potentially contributing to variability in the reported effect sizes. Although random-effects models were employed to account for between-study variability, methodological differences may still influence the comparability of results. Thirdly, the number of studies available for certain predictor–outcome relationships was relatively limited. Consequently, some psychosocial variables—such as resilience, stigma, and religious coping—could only be examined descriptively rather than through pooled meta-analysis. Future research with larger and more diverse samples would enable a more comprehensive quantitative synthesis of these factors. Another consideration pertains to the geographic distribution of the included studies. Although the review incorporated research from multiple regions, including Asia, Africa, and Western countries, some areas remain underrepresented. Cultural norms, health system structures, and social support networks can shape caregiving experiences, and these contextual factors may influence the generalizability of the findings. Finally, most studies relied on self-report measures of caregiver well-being and psychosocial variables. While these instruments are widely used and validated, self-report data may be subject to response bias and social desirability effects. Incorporating mixed-method approaches or objective indicators of caregiver functioning may provide a more comprehensive

understanding of caregiver experiences. Despite these limitations, the review offers an integrative synthesis of the available evidence and highlights key psychosocial determinants associated with caregiver mental health and quality of life in schizophrenia caregiving contexts.

6. Conclusion

The systematic review and meta-analysis presented an evidence synthesis regarding psychosocial predictors of mental health and quality of life in family caregivers of schizophrenic individuals. Caregiver burden and symptom severity of the patients were the most consistent risk factors, which showed moderate relationships with increased psychological distress and reduced quality of life. Conversely, perceived social support, adaptive coping measures, emotion management, mutuality, and family functioning were linked with better caregiver outcomes, which helps identify key areas of psychosocial assessment and intervention. Despite the moderate quality of the methodological quality of the included studies, the evidence base is still weak due to most studies being cross-sectional, heterogeneous, and insufficient in the number of studies to predict certain predictors. Longitudinal and intervention research, the use of standardized measures, and also investigating unstudied constructs like resilience, stigma, and hopefulness in the various cultural contexts should be the focus of future studies. Combined, the results make the case to adhere to models of schizophrenia care that are comprehensive and family-based, where a systematic identification and reduction of caregiver burden and an increase in social and psychological resources are utilized to enhance outcomes in the well-being of caregivers and the people they serve.

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