

Original Article

Burden of Caring in Schizophrenia: A Bibliometric Analysis

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Abstract

Background: Patients with schizophrenia cannot fully fulfil their roles in the society and family due to the cognitive losses, disability, economic and social problems they experience, and they need the care and support of someone else. This may cause burden on the caregivers.

Aim: The aim of this study is to bibliometrically analyse the trends in the studies related to the burden of care of individuals caring for schizophrenia patients.

Methodology: This study is a descriptive study based on bibliometric analysis of the literature database. The data were obtained from a literature search on the Web of Science (WoS) database using the keywords 'schizophrenia' and 'burden of care'. The 752 data that met the inclusion criteria were analysed. In the bibliometric data analysis, the data obtained from the WoS database, WoS analysis reports and VOSviewer software were used for data analysis and visualisation.

Results: The articles analysed were published in many different categories, more than half of them were in the psychiatry category, with the nursing category coming in second place. According to the most frequently used keywords, schizophrenia and carer burden are especially focused on families, and quality of life, coping and emotional expression are also highly researched topics. Psychoeducation has also been used as part of the research. Recently, especially anxiety, depression, stress, social support, psychosocial intervention have been focused on the axis.

Conclusion: The issue of care burden of individuals caring for schizophrenia patients is a current issue that continues to be studied with increasing number from past to present. In this study, a general perspective on the subject was presented and thematic issues were determined. The results of the study may guide future research on the burden of care of individuals caring for schizophrenia patients.

Keywords: Family burden, Caregiver, Burden of care, Bibliometric analysis, Schizophrenia

Introduction

Schizophrenia is a chronic mental disorder with negative and positive symptoms and the lifetime risk of schizophrenia is 1%. Schizophrenia has negative psychological, social and economic effects on the patient, family and society (Issac et al., 2022; Mueser & Jeste, 2008; Villena Jimena et al., 2024). Individuals with schizophrenia cannot fully fulfil their roles in the society and family due to cognitive losses, disability, economic and social problems they experience, and they need continuous care and support. This

creates a burden for the caregivers (Awad & Voruganti, 2008; Nazan et al., 2022; Saunders, 2003; Shamsaei et al., 2015; Von Kardorff et al., 2016). The care burden of schizophrenia affects caregivers, but despite this negative impact, caregivers and families continue to provide support to the sick individual (Awad & Voruganti, 2008).

Care burden refers to the emotional, psychological, physical and economic effects of caregiving on the caregiver and includes two separate components, subjective and objective (Awad & Voruganti, 2008).

Objective burden refers to the effects of the disease on health, economic loss and daily work, while subjective burden refers to the extent to which the caregiver perceives the burden (Hoenig & Hamilton, 1966). Many studies have been conducted from past to present on care burden levels of caregivers of schizophrenia patients, affecting and related factors and psychosocial interventions to reduce burden (Liang et al., 2024; Magliano et al., 2005; Millier et al., 2014; Wang et al., 2025; Yesufu-Udechuku et al., 2015). Psychosocial interventions applied to caregivers improve the caregiving experience and quality of life and reduce psychological distress. In addition, interventions applied to the caregiver can also reduce the recurrence rate of the disease. Therefore, interventions for caregivers of individuals with serious mental illness can be planned and integrated into the services provided (Liang et al., 2024; Magliano et al., 2005; Yesufu-Udechuku et al., 2015).

Recently, bibliometric analysis has gained importance with the development of databases such as Web of Science, Scopus and bibliometric software such as VOSviewer. Bibliometric analysis reveals the bibliometric and intellectual structure of a field by analysing the social and structural relationships between various research components such as authors, topics, countries (Donthu et al., 2021; Ellegaard & Wallin, 2015). With bibliometric data analysis, large amounts of bibliometric data such as the number of citations and publications, keyword and topic occurrences can be processed and the structure of trends, collaborations and networks between research components in articles and journals can be revealed (Donthu et al., 2021; Verma & Gustafsson, 2020). The process steps of the bibliometric analysis study are as follows: 1- Firstly, the purpose and scope of the designed study are determined. 2- Appropriate bibliometric analysis technique is determined. 3- Research words are created and data are obtained from a selected database and then the data are analysed and any errors are cleaned. 4- Analysis is performed and the result is reported (Donthu et al., 2021).

This study was conducted as a bibliometric analysis to determine the trends in the studies

related to the burden of care of individuals caring for patients with schizophrenia. The number and years of publications, types, journals, journals, distribution of countries, characteristics and trends of the literature on the burden of care of individuals caring for schizophrenia patients were analysed. Bibliometric studies provide an overview of a field from a single point, reveal information gaps in the literature and contribute to researchers to produce new research ideas (Donthu et al., 2021). Therefore, this study aims to summarise the existing literature by focusing on the burden of care of individuals caring for schizophrenia patients, to identify trends and to identify knowledge gaps in the literature, and to provide suggestions and scope for future research through collaboration between researchers and identification of thematic issues.

Research question:

- What is the distribution of the most cited publications on the burden of care of individuals caring for patients with schizophrenia and how is the connection between these publications?
- What is the distribution of the countries with the highest number of publications on the burden of care of individuals caring for patients with schizophrenia?
- What is the distribution of the journals with the highest number of publications and the most cited journals related to the burden of care of individuals caring for patients with schizophrenia?
- What are the key themes and trending subject keywords of the studies on the care burden of individuals caring for schizophrenia patients?

Methodology

Aim & design: The aim of this study is to bibliometrically analyse the trends in the studies related to the burden of care of individuals caring for schizophrenia patients. This study is a descriptive study based on bibliometric analysis of the literature database.

Database Selection: Web of Science (WoS) database was used for the study data. WoS was used because it is one of the most authoritative and frequently used databases for this type of bibliometric analysis research

and because its journal and citation archive dates back to older years (Ellegaard & Wallin, 2015; Zavadskas et al., 2014).

Search Strategy and Data Collect: A literature review was conducted by two independent researchers through the Web of Science (WoS) database using the keywords 'schizophrenia' and 'burden of care' as follows: TS=((("schizophrenia" OR "psychosis" OR "schizophrenic disorders" OR "psychotic disorders") AND ("caregiver burden" OR "burden of care" OR "family burden" OR "caregiving burden" OR "psychosocial burden" OR "caregiver stress" OR "caregiver challenges") NOT ("dementia" OR "alzheimer"))). After screening, according to the type of publication, original research articles and review articles were included and other types of articles such as letters to editors, reports, notes, short communications, short surveys, patents and unspecified were excluded. The language of publication was filtered to include English and Turkish articles and no year filtering was made. In order to ensure the validity and reliability of the data obtained, two independent researchers conducted a literature review with the same search terms at the same time and the results were compared. The obtained data were analysed and duplicates, erroneous data and articles that were not directly related to the subject were removed so that only focused publications were included in the data set.

Inclusion/exclusion criteria:

- Original research articles and review articles were included.
- Articles published in English and Turkish were included.
- Studies published in the Web of Science (WoS) database until the date of the search were included.
- Other types of articles such as letters to editors, reports, notes, short communications, short surveys, patents and unspecified are not included.
- Data not directly related to the burden of care of caregivers of patients with schizophrenia were excluded.

On 4 February 2025, a total of 990 articles were found in the Web of Science (WoS) database. When filtered to include original research articles and review articles, 918

articles were identified, and 874 articles were identified when the publication language was filtered as English and Turkish. Studies conducted between 1987 and 2025 were included without filtering by year. Duplicate, erroneous and not directly related to the subject (articles on the burden of care of other mental illnesses such as bipolar disorder, obsessive-compulsive disorder, Parkinson's disease, personality disorders or articles not directly related to the burden of care) were removed and 752 data were included in the analysis (Figure 1).

Data analysis: There are two types of bibliometric analysis techniques: performance analysis and scientific mapping. Performance analysis analyses the contribution of research components such as authors, countries, institutions, subjects, etc. to a specific field and measures such as the number of publications and citations are obtained. The science mapping technique deals with the relationships between research components. There are various types of citation analysis such as citation analysis, co-citation analysis, bibliographic coupling, co-word analysis and co-authorship analysis. Network measurements, clustering and visualisation can be performed to enrich the results of these analyses (Donthu et al., 2021). In the bibliometric data analysis in the study, WoS analysis reports with the data obtained from the Web of Science (WoS) database and VOSviewer 1.6.20 program for data analysis and visualisation were used. The VOSviewer programme enables the creation and display of bibliometric maps (van Eck & Waltman, 2010). Analyses were performed using network metrics, citation analysis, science mapping and network visualisation techniques with VOSviewer software. Citation analysis was used to analyse the most influential articles, journals, countries and the relationship between them, co-citation analysis to analyse the relationship between the cited articles to understand the development of the main themes related to the subject, and common word analysis analysis to reveal the relationships between the topics studied. As a result of the analysis, data on the number of publications, the distribution of the most cited publications, countries and journals, and the most frequently used keywords were revealed.

Ethical considerations: Since the study was not conducted on humans, ethical and institutional permission was not obtained from any institution.

Results

As a result of the literature search on the Web of Science database, the number of studies related to the care burden of individuals caring for schizophrenia patients and meeting the inclusion criteria was 752 (689 research articles and 63 review articles). The first article on the subject was published in 1987. 63.1% (475) of the publications were in the psychiatry category and 11.4% (86) in the nursing category.

Citation Analysis Results: According to the results of the article citation analysis, the 10 most cited articles are given in Table 1. The top three most cited authors are Awad & Voruganti, (2008) (529 citations), Szmukler et al. (1996) (347 citations) and Penn & Mueser, (1996) (266 citations). Of the 752 articles included in the analysis, 319 received 20 or more citations. Figure 2 shows the network link map of the most cited articles.

The countries and network connections that have published the most and received the most citations on the care burden of individuals providing care to patients with schizophrenia are given in Table 2 and Figure 3. A total of 68 countries have conducted studies on the relevant subject, and the top 3 countries with the most publications are the USA (145), the UK (81) and China (80), respectively. Out of a total of 68 countries, 21 countries have at least 10 publications and at least 10 citations. In terms of the number of publications, number of citations and total link strength, the USA ranks first with 145 publications, 4577 citations and 1277 links. A total of 58 publications have been published on the care burden of individuals providing care to schizophrenia patients in Turkey, the number of citations is 574 and the total link strength is 616.

Publications on the care burden of individuals caring for patients with schizophrenia were published in a total of 271 different journals. The journals with the most publications and

the most citations on the subject are given in Table 3. The network connection map of journals with 5 or more publications and citations is given in Figure 4. "Social Psychiatry and Psychiatric Epidemiology" is the journal with the most publications (40), the most citations (2488) and the most connections (776) on the subject. In terms of the number of publications and connections, the International Journal of Social Psychiatry (40 publications, 2488 citations) ranks second; in terms of the number of citations, the British Journal of Psychiatry (10 publications, 1020 citations) ranks second.

Co-Word Analysis Result: The most frequently used keywords in publications on the care burden of individuals caring for patients with schizophrenia were identified (Table 4) and the relationships between these words are presented in the network map in Figure 6. A total of 1025 keywords were used in the 752 publications analyzed, and 76 of these words were used at least 5 times in the articles. As a result of the analysis, the most frequently repeated word with the highest connection strength is "schizophrenia" with 330 occurrences and 1288 connection strengths. The second most frequently repeated word is "caregiver" (132 times) and the third is "caregiver burden" (109 times) (Figure 5).

Co-Citation Analysis Result: As a result of the co-citation analysis, a total of 17888 citations were found in 752 articles. Of the cited sources, 146 with at least 20 citations were included in the analysis. The network map of the co-citation analysis is given in Figure 6. As a result of the analysis, 5 clusters were obtained. These studies created a total of 7638 connections. The top three articles with the most co-citations are Awad & Voruganti, 2008 (134 citations), Zarit, Reever, & Bach-Peterson, 1980 (93 citations) and Pai & Kapur, 1981 (88 citations) respectively. The largest cluster (cluster 1) is centered around the articles Awad & Voruganti, 2008 and Zarit, Reever, & Bach-Peterson, 1980. In the second largest cluster, studies such as Hoenig & Hamilton, 1966 (82 citations) and L. Magliano et al., 1998 (76 citations) stood out.

Table 1. Top 10 most cited publications

Title of Publication	Authors	Journal	Citations
The burden of schizophrenia on caregivers: a review	(Awad & Voruganti, 2008)	Pharmacoeconomics,	529
Caring for relatives with serious mental illness: The development of the Experience of Caregiving Inventory	(Szmukler et al., 1996)	Social Psychiatry and Psychiatric Epidemiology	347
Research update on the psychosocial treatment of schizophrenia	(Penn & Mueser, 1996)	The American Journal of Psychiatry	266
Factors associated with caregiver burden in mental illness: A critical review of the research literature	(Baronet, 1999)	Clinical Psychology Review	251
Burden on the families of patients with schizophrenia: Results of the BIOMED I study	(Magliano et al., 1998)	Social Psychiatry and Psychiatric Epidemiology	213
Interventions to improve the experience of caring for people with severe mental illness: systematic review and meta-analysis	(Yesufu-Udechuku et al., 2015)	The British Journal of Psychiatry	200
Burden assessment scale for families of the seriously mentally ill	(Reinhard et al., 1994)	Evaluation and Program Planning	200
Cost effectiveness of clozapine in neuroleptic-resistant schizophrenia	(Meltzer, 1993)	American Journal of Psychiatry	192
Family burden in long-term diseases: a comparative study in schizophrenia vs. physical disorders	(Magliano et al., 2005)	Social Science & Medicine	171
Humanistic burden in schizophrenia: A literature review	(Millier et al., 2014)	Journal of Psychiatric Research	169

Table 2. Countries with the most publications and most citations on the care burden of individuals caring for people with schizophrenia

Country	Publication Count	Citation Count	Link Strength
USA	145	4577	1277
England	81	3276	1157
Peoples R China	80	1715	853
India	74	1746	830
Australia	59	1826	612
Turkey	58	574	616
Spain	43	1396	669
Canada	35	1287	497
Italy	33	1769	707
Germany	28	1386	681

Table 3. Journals with the most publications and the most citations

Journal Name	Publication Count	Citation Count	Total Connection
Social Psychiatry and Psychiatric Epidemiology	40	2488	776
International Journal of Social Psychiatry	23	525	168
BMC Psychiatry	19	583	259
Archives of Psychiatric Nursing	16	807	284
Acta Psychiatrica Scandinavica	15	358	205
Psychiatry Research	15	221	124
Community Mental Health Journal	12	509	110
Schizophrenia Research	11	71	51
Frontiers in Psychiatry	10	1020	221
British Journal of Psychiatry			

Table 4. The 15 most frequently occurring keywords

Keyword	Total Usage	Link Strength
schizophrenia	330	1288
caregiver	132	534
caregiver burden	109	451
burden	101	416
family burden	66	235
family	54	219
family caregiver	47	212
quality of life	46	182
mental health	43	173
mental illness	34	135
coping	33	141
psychoeducation	31	142
expressed emotion	28	114
psychosis	27	123
caregiving	25	105

Figure 3. Network connection map of countries broadcasting on the subject

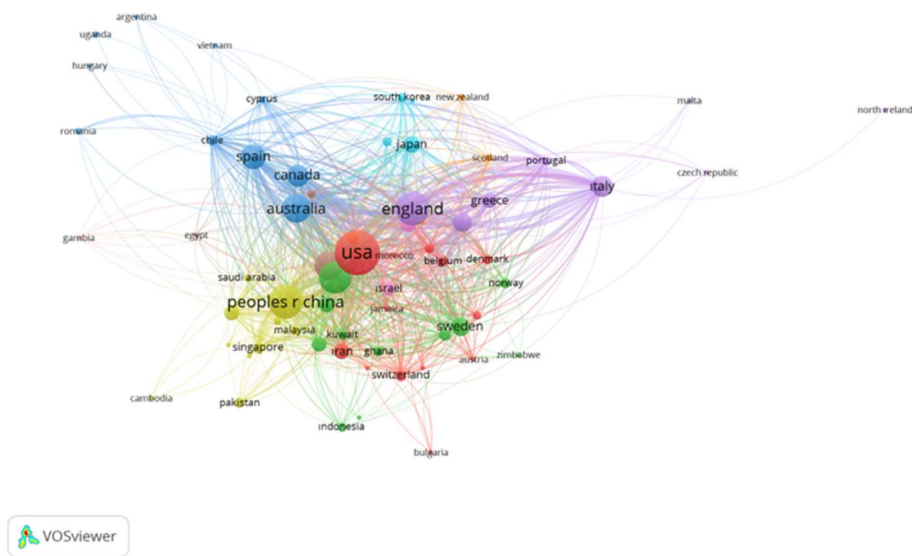
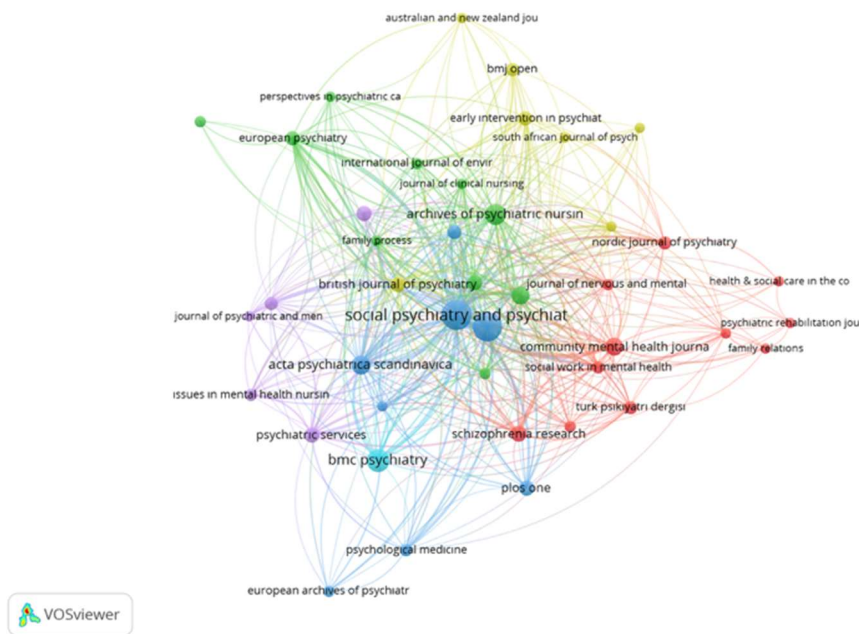


Figure 4. Network connection map of journals publishing on the subject



Discussion

Schizophrenia is a chronic mental illness that causes many difficulties and burden of care both in the patient due to the symptoms of the disease and in the caregivers as a result of the shift of care from hospital to families (Awad & Voruganti, 2008). Caring for a patient with schizophrenia affects the daily life of carers and requires the use of physical, psychological, social and financial resources and thus creates a burden (Andualem et al., 2024; Awad & Voruganti, 2008; Villena Jimena et al., 2024). The concept of burden of care has been addressed in many studies (Andualem et al., 2024; Chakraborty et al., 2024; Maan et al., 2024; Magliano et al., 1998; Onyia et al., 2024).

In this study, a total of 752 research and review articles published between 1987 and 2025 on the subject through the Web of Science (WoS) database were analysed in order to determine the trends and general characteristics of the studies related to the care burden of individuals caring for schizophrenia patients. As a result of the search with the determined keywords, the first article on the subject was published in 1987. However, it is stated that the negative effects of schizophrenia on caregivers and family members and the concept of care burden have been researched since the 1950s (Awad & Voruganti, 2008). The studies examined were published in many different categories, more than half of them were in the psychiatry category, while the nursing category came second. In addition, when the journals with the most publications and citations were examined, "Archives of Psychiatric Nursing" was in fourth place. Therefore, it can be said that the concept of care burden in schizophrenia is an important topic addressed in nursing research.

The most cited article in this study is the review article titled "The burden of schizophrenia on caregivers: a review" by Awad & Voruganti, (2008) in 2008. The article includes the definition and development of the concept of care burden, the role of family interventions in coping with care burden, the assessment of care burden and the economics of care burden (Awad & Voruganti, 2008). This article can be considered as the primary source that

addresses the burden of schizophrenia on the caregiver. The second most cited article is a study on developing an inventory measuring the experience of caring for a relative with serious mental illness (Szmukler et al., 1996). The third most cited article summarizes the literature on psychosocial treatment of schizophrenia, such as social skills training, family interventions, cognitive rehabilitation, and coping with residual positive symptoms (Penn & Mueser, 1996). When these most cited publications are examined, it is seen that the concept of care burden and psychosocial treatments that will support the reduction of care burden are explained, suggestions for future studies are made, and the evaluation of the caregiving experience is addressed. When the first 3 articles with the most common citations are examined in the study, it can be said that these studies are fundamental references especially in the subjects of caregiver burden, care burden in schizophrenia, and the burden on the families of schizophrenia patients (Awad & Voruganti, 2008; Pai & Kapur, 1981; Zarit et al., 1980). As a result, it can be said that the most cited publications are the main sources regarding caregiver burden in schizophrenia.

The country with the highest number of publications, citations and total link strength is the USA, while Turkey ranks sixth. Since the USA has a large number of research institutions and universities, it ranks first among the countries with the highest number of publications in general (Martínez-Martínez et al., 2022). The result obtained in this study also supports this information. The lifetime prevalence of schizophrenia in Turkey is 8.9 per 1000 people (Binbay et al., 2011). Considering the prevalence of schizophrenia and being the sixth country with the highest number of publications, it can be said that the issue of burden of care in schizophrenia is important in Turkey. According to the results of a study, it was found that caregiving was perceived as a great burden by caregivers and they could not use effective coping methods (Ozdemir & Gençarslan, 2024). In another study, it was stated that the burden of care affected the mental health status of the caregiver and that the caregiver being a woman, having a low level of education and income, having insufficient family support in patient care, and not receiving sufficient

information or support from health professionals were associated with high levels of care burden (Kizilirmak & Küçük, 2016).

In the study, according to the most frequently used keywords, schizophrenia and carer burden are especially focused on families, quality of life, coping and emotional expression are also highly researched topics. Psychoeducation has also been used as part of the research. While the issue of care burden of individuals providing care to schizophrenia patients has been examined in the relatively recent past with the terms “family burden”, “family”, and “expressed emotion”, more recently it has been studied in terms of topics such as “anxiety”, “depression”, “stress”, “social support”, “psychosocial intervention”, and “caregiver burden” (Figure 5). It can be said that recently, there has been a focus on the psychological problems experienced by caregivers and importance has been given to interventions and social support that can be made to eliminate the problems and burden of caregivers. Psychoeducation programs, psychosocial interventions and rehabilitation services for patients and caregivers are highly effective in reducing the burden of care (Ata & Dogan, 2018; Awad & Voruganti, 2008; Chow et al., 2024; Lok et al., 2023).

Limitations: The data were obtained only from the Web of Science database with the specified search terms. Therefore, different articles in databases such as Scopus and Google Scholar were ignored. In addition, the limitations of this study are that publications other than research articles and review articles and publications whose publication language is not English and Turkish are not included.

Conclusion and recommendations: The issue of care burden of individuals caring for schizophrenia patients is a current issue that has been increasingly studied from past to present. This study provides important data to understand research trends related to the care burden of individuals caring for schizophrenia patients. As a result of the study, a general perspective on the relevant issue was presented and thematic topics were determined. In this study, it was concluded that the publications were mostly in the psychiatry and nursing categories, the country with the most publications was the United States, Turkey was in the sixth place, and the

journal *Social Psychiatry and Psychiatric Epidemiology* was the journal with the most publications on the subject. According to the most frequently used keywords, the subject of schizophrenia and caregiver burden is particularly focused on families, and quality of life, coping and emotional expression are also widely researched topics. Psychoeducation has also been used as part of the research. Recently, there has been a focus on topics such as anxiety, depression, stress, social support, and psychosocial intervention. It can be recommended that intervention studies be conducted to reduce the burden of care. The results of this study provide information about trends in the subject to authors who want to conduct in-depth research on the care burden of caregivers of schizophrenia patients. The study results can guide future research on the care burden of individuals providing care to schizophrenia patients.

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