



Dyadic Coping of Chronic Illness Patients and Their Spouses: A Bibliometric Analysis

Lin Zhang^{1,2}, Yang Li^{1,2}, Renqiong Tian², Shaolin Chen², Xiaohua Wang^{3*}

¹ General Surgery Department, Affiliated Hospital of Zunyi Medical University, Guizhou, China

² Department of Nursing, Affiliated Hospital of Zunyi Medical University, Guizhou, China

³ Information Department, Affiliated Hospital of Zunyi Medical University, Guizhou, China

* Correspondence Author

DOI: 10.32629/ajn.v5i2.2450

Abstract: Objective: To understand the research hotspots and development trends of binary coping in chronic disease patients and their spouses, and to provide ideas and references for future related research. Methods: Literature on binary coping in patients with chronic diseases and their spouses included in the Web of Science Core Collection database was analysed visually in terms of the number of articles, countries and keywords using CiteSpace software. Results: A total of 4138 valid articles were included, and the country with the largest number of articles was the United States. The main research populations were breast cancer, dementia, and prostate cancer patients and their spouses; and the research hotspots were quality of life, diabetes, stroke, and multimorbidity, etc. Conclusion: Most of the intervention studies on the dyadic coping of patients with chronic diseases and their spouses are in developed countries, and scholars in China can learn from the international research hotspots, combine with China's national conditions, and construct a management program suitable for the cultural needs and psychological needs of chronic disease patients and their spouses in China.

Keywords: chronic diseases; couples; dyadic coping; CiteSpace software; visual analysis

1. Introduction

Chronic non-communicable diseases (NCDs) primarily encompass cardiovascular and cerebrovascular diseases, cancers, diabetes, and mental illnesses. Due to the persistent and intractable disease characteristics of chronic diseases, spouses not only have to shoulder the main caregiving responsibilities and the burden of financial stress for a long period of time, but also face the challenge of facing the disease and long-term treatment together with the patient. Several studies have indicated a higher incidence of anxiety, depression, and distress in spouses compared to patients [1-2]. So in recent years, research on chronic diseases has gradually shifted from the individual to the dyadic level of couples, and more and more studies have shown that positive dyadic coping can enhance the functioning of the couple relationship, can improve the quality of life and the ability of disease self-management, reduce the burden of caregiving at home, promote intimacy and enhance psychological resilience, among others [3-6]. In this context, there are more and more relevant studies on dyadic coping in chronic disease patients and their spouses in China, but there is a lack of systematic literature on specific research hotspots and trends as a reference. Therefore, this study will utilize the CiteSpace software to perform a visual analysis with objective of gaining an in-depth comprehension of research hotspots and development trends of dyadic coping in chronic disease patients and their spouses, and to provide relevant research in the future with ideas and references.

2. Data and Methods

2.1 Sources

The Web of Science (WOS) core collection served as the data source, and "TS= (chronic disease OR noncommunicable diseases OR chronic illness) AND TS= (couple* OR spouse* OR partner* OR caregiver* OR close relative*) AND TS= (dyadic coping OR coping)" as the search formula for advanced search, the search period extended from 1 January 2001 to 31 December 2022. The document type was restricted to Article and Review, and the language type was set to English.

2.2 Research Methods

CiteSpace 6.2 R2 software was utilized for perform knowledge graph analysis, and then visualisation of the number of publications, countries and keywords were performed separately to illustrate the hotspots and development trends of the research related to dyadic coping among chronically ill patients and their spouses.

3. Results

3.1 Analysis of annual publications

A total of 4138 publications were included in this study, and descriptive statistics were conducted to analyse the annual publications in this field, which showed an increasing trend year by year in Figure 1.

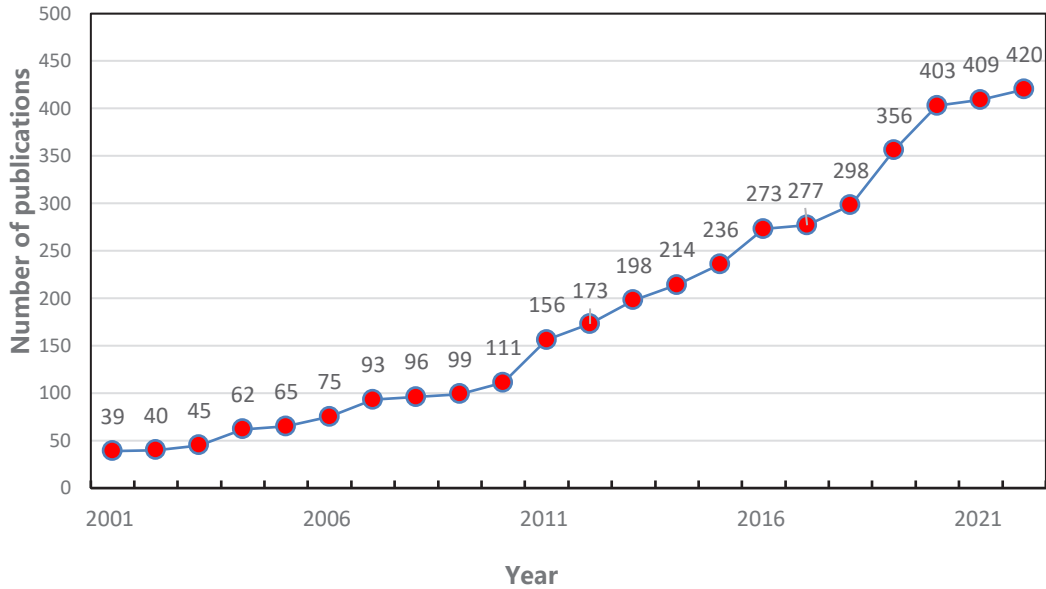


Figure 1. Number of publications per year in studies related to dyadic coping in patients with chronic diseases and their spouses

3.2 Distribution of research countries

The data were statistically analysed using CiteSpace software to generate a map of the national cooperation network, see Figure 2.

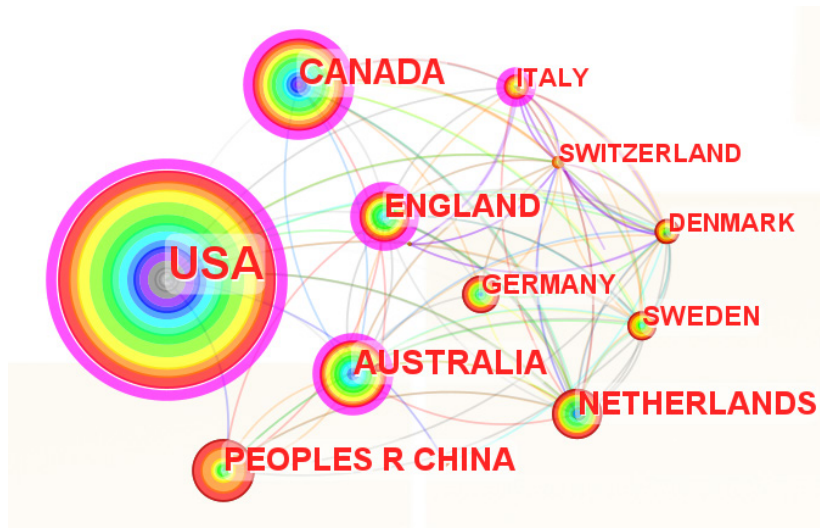


Figure 2. Mapping of country cooperation networks

3.3 Keywords

3.3.1 Keyword clustering analysis

Clustering of keywords highlights the research hotspots and directions in the field, and the larger the cluster, the smaller the cluster ordinal number. The Q value of the clustering module in this study = 0.7453, and the average profile S value = 0.8962, which indicates that the clustering module is divided reasonably and has high reference value, see Figure 3.



Figure 3. Knowledge network mapping for keyword clustering

3.3.2 Keyword emergence analysis

The greater the emergence intensity of the emergent word indicates that the frontier hotspot and development trend of research based on the keyword is more obvious [7], this study analyses 20 emergent words see Figure 4.

Top 20 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2001 - 2022
adjustment	2001	30.88	2001	2012	
social support	2001	14.5	2001	2009	
family	2001	9.66	2001	2006	
husbands	2001	9.11	2001	2012	
couples	2001	8.68	2001	2006	
stress	2001	7.01	2001	2007	
rheumatoid arthritis	2003	6.97	2003	2010	
gender differences	2003	5.24	2003	2010	
women	2001	12.41	2005	2012	
men	2005	7.93	2005	2007	
early stage breast	2007	8.82	2007	2013	
multiple sclerosis	2007	6.31	2007	2013	
physical health	2009	6	2011	2012	
disclosure	2015	7.44	2015	2019	
randomized controlled trial	2001	5.71	2016	2017	
cognitive behavioral therapy	2016	6.01	2018	2020	
individuals	2003	5.47	2018	2019	
multimorbidity	2016	11.02	2020	2022	
informal caregivers	2013	9.2	2020	2022	
transitional care	2020	6.04	2020	2022	

Figure 4. Keyword emergent knowledge network mapping

4. Discussion

4.1 Research Population and Methodological Analysis

From Figure 3, the main research populations in this field are breast cancer, prostate cancer, chronic obstructive pulmonary patients and their spouses. Additionally, emerging research populations include patients with diabetes, stroke, and multimorbidity, along with their spouses[8-10]. Figure 3 indicates that the predominant research methodology in this

field is qualitative, based on this observation, it was noted that the majority of studies are cross-sectional, with prospective studies being rare, but chronic disease is not a static concept, but changes according to the nature of the disease as well as the couple's psychological adjustments and information needs preferences. Tailoring individualized coping programs to accommodate individual differences and expanding the research type to quantitative, intervention trials, or mixed methods are anticipated trends in research methods.

4.2 Research Hot Spots and Trends

With a high multimorbidity intensity of 11.03 in Figure 3, it is clear that multimorbidity is an emerging research hotspot and cutting-edge trend in the field from 2016 to the present day, which may be attributed to the fact that Mieke Rijken et al. [11] noted that patients with multimorbidity have more complex healthcare needs, and Thomeer, MB et al. [12] suggesting that multimorbidity increase a person's depressive symptoms more than having a single chronic disease. The strong and solid positive relationship between patients' and spouses' depressive symptoms and the number of chronic conditions had a significant impact on their physical and mental health, consequently, consequently, this study underscores the necessity for more tailored and targeted interventions for couples dealing with multimorbidity and their spouses have since begun to receive a great deal of attention from the field [13-14].

4.3 Implications of foreign studies for domestic research

Boateng, G et al. [15] in a multidisciplinary joint effort, a novel open-source mobile wearable system was designed for dynamically assessing the effectiveness of dichotomous management of chronic diseases in couples. Rossetto, F et al. [16] conducted a six-week home-based tele-rehabilitation treatment for patients with Alzheimer's disease using the Digital Healthy Families Intervention Model not only maintained cognitive and behavioral abilities, but also improved home treatment adherence. Overall the research in this field is dominated by developed countries, and China ranks 6th in terms of the number of publications and centrality, suggesting that although China has a certain foundation for research in this field, it is in a developmental stage both in terms of the number of publications and influence in the field, and there is still a large gap compared with the international leading level, and there are few identified interventions in the country that use technology to support patients with chronic diseases and their spouses. In view of the continuous integration of AI technology with the medical field, in addition to strengthening the government's leading role, we should also consider the use of intelligent medical care, Internet + nursing service platform and other supportive interventions for patients with chronic diseases and their spouses, in order to improve the patient's ability to self-manage their illnesses and the quality of life, we can learn from foreign research methods, combined with China's national conditions, the needs of local cultures and psychological needs of the patients in order to enrich and improve the binary disease management. We can learn from foreign research methods and combine them with China's national conditions, local cultural needs and patients' psychological needs in order to enrich and improve the binary disease management theory and build a management model suitable for the needs of chronic disease patients and spouses in China.

5. Summary

Positive binary coping plays a crucial role in helping patients and their spouses to adapt to the chronic disease treatment process and to meet the related needs, and there is a need to develop effective binary interventions to address the specific challenges of chronic disease co-morbidities based on the preferred needs of a particular chronic disease.

Acknowledgments

This project has been funded by the Zunyi Science and Technology Program (grant number: Zunyi Kehe HZ Zi (2022) 216).

References

- [1] Badr H, Federman AD, Wolf M, Revenson TA, Wisnivesky JP. Depression in individuals with chronic obstructive pulmonary disease and their informal caregivers. *Aging Ment Health*. 2017;21(9):975-982. doi:10.1080/13607863.2016.1186153
- [2] White DR, Palmieri PA. Women Caring for Husbands Living with Parkinson's Disease: A Phenomenological Study Protocol. *J Pers Med*. 2022;12(5):659. doi:10.3390/jpm12050659
- [3] Chen W, Qin N, Li H. Advances in research related to dichotomous coping in cancer patients and their spouses. *Journal of Nursing(China)*. 2022;29(11):31-35. doi:10.16460/j.issn1008-9969.2022.11.031

- [4] Kar MK, Soleimani F, Alizadeh A, Hajikarimi M. Associations of perceived and common dyadic coping with self-care in older couples with cardiovascular disease: A dyadic analysis. *Heart Lung*. 2023;57:229-235. doi:10.1016/j.hrtlng.2022.09.014
- [5] Cochrane A, Reid O, Woods S, Gallagher P, Dunne S. Variables associated with distress amongst informal caregivers of people with lung cancer: A systematic review of the literature. *Psycho-Oncology*. 2021;30(8):1246-1261. doi:10.1002/pon.5694
- [6] Cai XT, Lei LC, Zhang RW. Dyadic coping and related factors among patients with lung cancer and their Spouses. *Chinese Journal of Practical Nursing*. 2020;36(12):939-944. doi:10.3760/cma.j.cn211501-20191113-03325
- [7] Dong D, Shen CZ. Visualized analysis of nursing and rehabilitation for schizophrenia based on Citespace. *Journal of Nurses Training*. 2022;37(2):124-129. doi:10.16821/j.cnki.hsjx.2022.02.005
- [8] Tu J, Liu Y, Wu X, Xu D, Liao J. Dyadic appraisal and coping with illness among older Chinese adults with type 2 diabetes mellitus: a qualitative study. *Age Ageing*. 2021;50(3):928-935. doi:10.1093/ageing/afaa245
- [9] Mou H, Lam SKK, Chien WT. Effects of a family-focused dyadic psychoeducational intervention for stroke survivors and their family caregivers: a pilot study. *BMC Nurs*. 2022;21(1):364. doi:10.1186/s12912-022-01145-0
- [10] Thomeer MB. Multiple Chronic Conditions, Spouse's Depressive Symptoms, and Gender within Marriage. *J Health Soc Behav*. 2016;57(1):59-76. doi:10.1177/0022146516628179
- [11] Rijken M, Stussgen R, Leemrijse C, Bogerd MJL, Korevaar JC. Priorities and preferences for care of people with multiple chronic conditions. *Health Expect*. 2021;24(4):1300-1311. doi:10.1111/hex.13262
- [12] Thomeer MB. Multiple Chronic Conditions, Spouse's Depressive Symptoms, and Gender within Marriage. *J Health Soc Behav*. 2016;57(1):59-76. doi:10.1177/0022146516628179
- [13] Ellis KR, Cuthbertson CC, Carthron D, et al. A Longitudinal Observational Study of Multimorbidity and Partner Support for Physical Activity Among People with Osteoarthritis. *Int J Behav Med*. 2021;28(6):746-758. doi:10.1007/s12529-021-09985-x
- [14] McAiney C, Markle-Reid M, Ganann R, et al. Implementation of the Community Assets Supporting Transitions (CAST) transitional care intervention for older adults with multimorbidity and depressive symptoms: A qualitative descriptive study. *PLOS ONE*. 2022;17(8):e0271500. doi:10.1371/journal.pone.0271500
- [15] Boateng G, Santhanam P, Lüscher J, Scholz U, Kowatsch T. Poster: DyMand -- An Open-Source Mobile and Wearable System for Assessing Couples' Dyadic Management of Chronic Diseases. In: *The 25th Annual International Conference on Mobile Computing and Networking*. ACM; 2019:1-3. doi:10.1145/3300061.3343399
- [16] Rossetto F, Isernia S, Realdon O, et al. A digital health home intervention for people within the Alzheimer's disease continuum: results from the Ability-TelerehABILITation pilot randomized controlled trial. *Annals of Medicine*. 2023;55(1):1080-1091. doi:10.1080/07853890.2023.2185672