

Publication Characteristics and Academic Impact of International Comprehensive Geriatrics Journals: Analysis and Implications

Authors: Meng Li, Shi Jing, Chen Shuqiang, Zhou Baiyu, Li Jiawei, Zhou Ziyi, Duan Chunbo, Yu Pulin, Yu Pulin

Date: 2024-01-23T00:00:00+00:00

Abstract

[Objective] To compare the publication characteristics and academic influence of foreign comprehensive geriatric medicine journals across different JCR quartiles, explore effective pathways for enhancing the sustainable development of Chinese geriatric medicine journals, and provide a reference basis for the high-quality development of comprehensive scientific journals.

[Methods] Six comprehensive geriatric medicine journals sponsored by foreign geriatrics societies were selected, with three journals each from the Q1/Q2 and Q3/Q4 zones. Based on citation metrics from the Journal Citation Reports (JCR)/Web of Science (WoS) databases and relevant journal websites, we primarily analyzed the contribution of different article types to academic influence and differences in publication themes, and proposed recommendations for strengthening the academic influence of Chinese comprehensive scientific journals by integrating the development status of comprehensive journals and disciplinary characteristics.

[Results] Compared with Q3/Q4 zone journals, Q1/Q2 zone journals exhibited a broader geographic distribution of contributing countries, higher publication volumes, and Chinese scholars ranked higher in publication output. Q1/Q2 zone journals demonstrated higher actual citation rates and lower zero-citation rates. Although the proportion of original articles and reviews in Q1/Q2 zone journals was not substantial, their publication volumes and academic citation frequencies for feature-type and special-topic articles were higher than those of Q3/Q4 zone journals. The academic quality of guideline/consensus-type articles in Q3/Q4 zone journals also required improvement. Q1/Q2 zone journals covered fewer subspecialty themes and were more oriented toward multidisciplinary comprehensive problem themes compared with Q3/Q4 zone journals.

[Conclusion] To enhance the academic influence of comprehensive scientific journals, it is necessary to strengthen holistic management of both quantity and quality across different article types, emphasize the construction of feature-type columns, enhance multi-dimensional thematic solicitation planning, and focus on reporting directions of multidisciplinary comprehensive themes.

Full Text

Preamble

Analysis on the Publishing Characteristics and Academic Influence of Foreign Comprehensive Geriatric Journals and Its Implications

MENG Li¹), SHI Jing¹), CHEN Shuqiang¹), ZHOU Baiyu¹), LI Jiawei¹), ZHOU Ziyi¹), DUAN Chunbo¹), YU Pulin¹)*

¹) Editorial Office of Beijing Hospital, National Center of Gerontology, Institute of Geriatric Medicine, Chinese Academy of Medical Sciences, No.6 Dafosi East Street, Dongcheng District, Beijing 100010, China

Abstract

[Purpose] By comparing the publishing characteristics and academic influence of foreign comprehensive geriatric journals across different academic zones, this study explores effective pathways to enhance the sustainable development of geriatric journals in China and provides reference for the high-quality development of comprehensive scientific and technological journals. **[Methods]** Six comprehensive geriatric journals sponsored by foreign geriatrics societies were selected, with three journals each from Q1/Q2 and Q3/Q4 zones. Based on citation metrics from the Journal Citation Reports (JCR)/Web of Science (WoS) databases and relevant journal websites, we analyzed the contribution of different publication types to academic influence and differences in publication topics, proposing recommendations to strengthen the academic influence of China's comprehensive scientific and technological journals in light of disciplinary characteristics. **[Findings]** Compared with Q3/Q4 zone journals, Q1/Q2 zone journals exhibited broader geographic distribution of contributing countries, higher publication volumes, and prominent rankings for Chinese scholars' contributions. Q1/Q2 zone journals demonstrated higher actual citation rates and lower zero-citation rates. While the proportion of original articles and reviews was not high in Q1/Q2 zone journals, their publication volumes and citation frequencies for feature columns and special topics surpassed those of Q3/Q4 zone journals. The academic quality of guideline/consensus publications in Q3/Q4 zone journals also requires improvement. Q1/Q2 zone journals covered fewer subspecialty themes but focused more on multidisciplinary comprehensive issues compared to Q3/Q4 zone journals. **[Conclusions]** To improve academic influence, comprehensive scientific and technological journals must strengthen holistic management of publication quantity and quality across different types,

emphasize feature column construction, enhance multi-dimensional special topic planning, and focus on reporting multidisciplinary comprehensive themes.

Keywords: Comprehensive scientific and technological journals; Academic influence; Publication characteristics; Column; Topic planning; Geriatrics

Funding: National Key R&D Program “Active Health and Aging-Related Scientific and Technological Responses” (2020YFC2009000).

Scientific journal work represents both the “dragon’s tail” and “dragon’s head” of scientific research, directly reflecting national scientific competitiveness and cultural soft power. While China’s scientific journals have achieved considerable development in recent years, their overall quality lags behind economic and scientific advancement, with certain gaps remaining compared to developed countries in academic influence, quality, and competitiveness, resulting in substantial outflow of high-level scientific papers. Comprehensive scientific journals, covering numerous disciplines and subspecialties, face dual pressures competing with international English journals and domestic specialized journals for academic resources, drawing widespread attention. Accurately grasping the functional positioning of scientific journals in academic evaluation, enhancing the core competitiveness of domestic journals, and strengthening their status in the international academic community constitute a social responsibility and important task for scientific journal practitioners in the new era.

Improving the core competitiveness of China’s scientific journals critically depends on enhancing academic influence, with publication types and editorial planning serving as essential measures to highlight competitive advantages. Numerous scholars have explored advantages in publication planning among international journals, demonstrating that constructing feature columns, optimizing column settings, and focusing on high-quality content effectively enhance academic influence. Addressing issues such as broad disciplinary scope, similar column settings, content homogenization, and declining academic quality in comprehensive journals, researchers have analyzed disadvantages and advantages in editorial planning, examined the role of special topics/columns in improving quality and brand influence, and highlighted the importance of strategic theme selection, providing references for China’s comprehensive journals. Studying the relationship between publication characteristics and academic influence can assist editorial planning and manuscript management, thereby enhancing quality and impact. However, previous studies have mostly focused on individual journals or disciplines, or used several high-level international journals as models, with few conducting objective comparisons of publication characteristics and thematic reporting across journals in the same field but different academic influence zones.

Both the Fifth Plenary Session of the 19th CPC Central Committee and the 20th CPC National Congress report proposed implementing a national strategy to actively respond to population aging. The “Four Orientations” guiding ideology for scientific and technological innovation points the way for using science and

technology to support high-quality development of aging-related undertakings and achieve healthy aging, creating a favorable policy environment for geriatric medical research and journal development. Facing new opportunities and challenges, geriatric medical journals in China should identify gaps and accurately position themselves, formulate scientific strategic positioning and development plans, and explore a suitable path for high-quality development. Numerous scientific achievements in promoting healthy aging internationally have facilitated the development of journals in this field. According to WoS Core Collection statistics, there are 52 geriatric journals, including 17 comprehensive journals (32.7%). The World Journal Clout Index (WJCI) Report 2021 included 88 geriatric journals, 38 of which (43.2%) are comprehensive journals. *Chinese Journal of Geriatrics*, a comprehensive journal launched in 1982 by the Geriatrics Branch of Chinese Medical Association and currently ranked in Q4 zone of WJCI Report, launched its English edition *Aging Medicine* in 2018, which has been indexed in PubMed and Scopus but not yet included in JCR or WJCI reports. To macroscopically position and identify development gaps in China's geriatric journals and clarify development directions, this study analyzed publication characteristics and citation patterns of six foreign comprehensive geriatric journals, focusing on how different publication types and thematic directions affect academic influence, providing objective references for China's geriatric journals to identify development priorities and offering lessons for comprehensive medical journals to promote sustainable, high-quality development.

1.1 Research Subjects

This study selected journals based on their basic information and academic influence zones in the WoS/JCR databases and WJCI Report. Among 52 geriatric journals included in JCR 2021, 17 (32.7%) were comprehensive (covering multiple clinical subspecialties, basic science, public health, or psychosocial aspects), with the remainder being subspecialty or review journals. China's WJCI Report promotes fair evaluation and equivalent use of world scientific journals, with its December 2021 edition including 88 geriatric journals (covering JCR-indexed journals), comprising 38 comprehensive journals (43.2%), 5% subspecialty journals (e.g., neuropsychiatry, rehabilitation, aging fundamentals, oncology, immunology, orthopedics, caregiving), and the remainder review journals. The United States published the most geriatric journals (31, 35.2%), followed by the United Kingdom (25, 28.4%), and the Netherlands and Switzerland (7 each). Sixteen journals were sponsored by societies or associations. This study selected comprehensive journals sponsored by geriatrics societies from countries/regions with severe aging or those that entered aging societies earlier and achieved outstanding medical and scientific achievements, particularly those with expert organizational advantages. The six selected foreign comprehensive journals were sponsored by geriatrics societies from the United States, United Kingdom, Japan, European Union, Australia, and Canada, with three journals each from Q1/Q2 and Q3/Q4 zones in JCR (WoS) and WJCI Report.

1.2.1 Publication Type and Citation Analysis

We accessed the official websites of the six journals to compile publication data from 2018-2021, classifying and organizing publication types and volumes. Following reference [17], publication types were categorized into fixed columns (including original articles and reviews) and non-fixed columns (including commentaries, guidelines/consensus, special topics, feature columns, correspondence, case reports, etc.). We retrieved citation metrics (impact factor, JCR zone, impact factor contribution distribution, country distribution) for geriatric journals from JCR 2021. Since papers published in 2020-2021 may not have been widely read or cited, we searched WoS database for articles published in 2018-2019 and their citations in 2020 to reflect contributions to the 2020 impact factor. Specifically, we logged into WoS, used advanced search to input journal names, selected the 2018-2019 timeframe to retrieve all documents published in those two years, created citation reports to obtain citation frequencies in 2020 and up to the search date, and analyzed characteristics of the top 10 most-cited articles in each journal. Using 2018 publications as an example, we refined literature to obtain citation data by publication type. Data were collected through May 10, 2022.

1.2.2 Publication Theme Analysis

Using WoS database as the data source and referencing journal official websites, we downloaded subject keywords for all articles published in 2018-2021. We eliminated non-substantive keywords without research significance (e.g., influence, measures, causes) and merged similar keywords with different expressions to analyze journal thematic reporting directions [18].

1.2.3 Data Organization and Analysis

Microsoft Excel was used for data compilation. Citation metrics were analyzed using descriptive statistics, with data analysis and graphing performed using GraphPad Prism 5 software.

2.1 Basic Information of Selected Foreign Comprehensive Geriatric Journals

Among the six selected journals, the three Q1/Q2 zone journals included two monthlies and one bimonthly, while the three Q3/Q4 zone journals comprised two quarterlies and one bimonthly (see Table 1). The three Q1/Q2 zone journals and the first two Q3/Q4 zone journals were SCI-indexed; only *Canadian Geriatrics Journal* was not SCI-indexed but had entered ESCI with citation data available in WoS. Although WJCI comprises WAJCI (representing academic influence based on citation data) and WI (representing social influence based on web usage data), the ranking of the six journals by JCR impact factor and WJCI was largely consistent. Comparing WJCI zones with JCR zones, the three Q1/Q2 zone journals showed consistent rankings, while the first two Q3/Q4 zone

journals were ranked Q3 in WJCI Report, higher than their Q4 ranking in JCR. *Canadian Geriatrics Journal* was ranked Q4 in WJCI Report but unranked in JCR. Table 1 compares author country distribution: although most publications originated from the home country, Q1/Q2 zone journals showed broader international distribution, with contributions from 49-70 countries, while Q3/Q4 zone journals had narrower distribution (6-58 countries). Chinese authors ranked 2nd-10th in publication volume in Q1/Q2 zone journals, indicating significant outflow of high-quality geriatric manuscripts from China.

Table: Basic Information of Six Foreign Comprehensive Geriatric Journals

Journal	Major Database SponsoIndexing	JCR 2021 Report	WJCI 2021 Report	Publication Volume	Country Ranking
J Am Geriatr Soc	American Geriatrics Society Wiley-Blackwell	SCIE, SSCI, Scopus	Q1	Monthly	1st (USA)
Age Ageing	British Geriatrics Society Oxford University Press	SCIE, Scopus	Q1	Bimonthly	1st (UK)
Geriatr Gerontol Int	Japanese Geriatrics Society Wiley-Blackwell	SCIE, SSCI, Scopus	Q2	Monthly	1st (Japan)
Eur Geriatr Med	European Geriatrics Society Springer	SCIE, Scopus	Q3	Quarterly	1st (EU)
Austral J Ageing	Australian & New Zealand Society for Geriatric Medicine Wiley-Blackwell	SCIE, SSCI, Scopus	Q3	Quarterly	1st (Australia)

Journal	Sponsor	Major Database Indexing	JCR 2021 Report	WJCI 2021 Report	Publication Volume	Country Ranking
Can Geriatr J	Canadian Geriatrics Society	Canadian Geriatrics Society	ESCI, Scopus	Q4	Quarterly	1st (Canada)

2.2 Publication Volume and Trends by Type in Foreign Comprehensive Geriatric Journals

Q1/Q2 zone journals published 150-711 articles annually from 2018-2021, with *Age Ageing* and *J Am Geriatr Soc* showing year-over-year increases, while *Geriatr Gerontol Int* exhibited a declining trend. Q3/Q4 zone journals published 16-156 articles annually with varying fluctuations. Q1/Q2 zone journals consistently outperformed Q3/Q4 zone journals in total publication volume. Table 2 presents publication data by type from 2018-2021. Q3/Q4 zone journals published higher proportions of original articles and reviews compared to Q1/Q2 zone journals, with relatively stable proportions of original articles, while Q1/Q2 zone journals showed declining trends in original article publications. Review article volumes fluctuated across all journals regardless of zone. Commentary and guideline/consensus categories varied in nomenclature and annual volume across the six journals. Q1/Q2 zone journals featured more special topics: *J Am Geriatr Soc* focused on geriatric service models, geriatric management, and COVID-19; *Age Ageing* began COVID-19 special coverage in 2020; *Geriatr Gerontol Int* organized content by research field sections. Among Q3/Q4 zone journals, *Eur Geriatr Med* published 1-2 special topics annually, *Australas J Ageing* had low special topic proportions, and *Can Geriatr J* published very few special topics, with fluctuations across zones. Q1/Q2 zone journals offered richer feature column varieties: *J Am Geriatr Soc* had eight types (methodology, academic debate, education/training, policy/economics, international exchange, ethics, senior life, arts), *Age Ageing* had three (new horizons, qualitative research, research methods), and *Geriatr Gerontol Int* had one (methodology). Among Q3/Q4 zone journals, *Australas J Ageing* had two feature columns (innovation translation, talent cultivation), while *Eur Geriatr Med* (geriatric classics) and *Can Geriatr J* (life garden) each had one. All Q1/Q2 zone journals included correspondence sections, while among Q3/Q4 zone journals, only *Australas J Ageing* added correspondence after 2020; other journals rarely published correspondence. Q1/Q2 zone journals (except *Age Ageing*) had higher correspondence proportions than Q3/Q4 zone journals. Only *J Am Geriatr Soc* and *Age Ageing* published case reports.

Table: Publication Volume by Type in Six Foreign Comprehensive Geriatric Journals, 2018-2021 (Count, %)

Zone	Journal	Original Article	Reviews	Comments	Guideline/Consensus	Special Column	Feature Correspondence	Case Reports	
Q1/Q2	Am Geriatr Soc Ageing	222 (51.5)	25 (5.8)	43 (9.9)	19 (4.4)	35 (8.1) (8 types)	23 (5.3)	48 (11.1)	16 (3.7)
	Geriatr Soc Ageing	248 (50.9)	22 (4.5)	43 (8.8)	31 (6.4)	20 (4.1) (3 types)	22 (4.5)	12 (2.5)	89 (18.3)
	Geriatr Gerontol Int	257 (39.1)	19 (2.9)	38 (5.8)	37 (5.6)	135 (20.5) (4 types)	21 (3.2)	21 (3.2)	129 (19.6)
Q3/Q4	Eur Geriatr Med	257 (36.7)	28 (4.0)	53 (7.6)	17 (2.4)	197 (28.1) (4 types)	25 (3.6)	20 (2.9)	104 (14.8)
	Austral J Ageing	18 (47.8)	28 (17.2)	24 (14.7)	2 (1.2)	4 (2.7)	97 (49.2)	14 (7.1)	32 (16.2)
	Can Geriatr J	87 (58.0)	8 (0.5)	23 (15.3)	2 (1.2)	4 (2.7)	97 (49.2)	14 (7.1)	32 (16.2)

2.3 Citation Status and Academic Influence by Publication Type in Foreign Comprehensive Geriatric Journals

Table 3 presents citation data for 2018-2019 publications. Q1/Q2 zone journals had lower proportions of citable academic articles than Q3/Q4 zone journals, indicating greater emphasis on non-academic articles in non-fixed columns (e.g., education/training, humanities/history, news reports) to attract diverse readership and promote journals, thereby enhancing social influence. Q1/Q2 zone journals demonstrated higher actual citation rates and lower zero-citation rates, while Q3/Q4 zone journals showed the opposite pattern. Q1/Q2 zone journals also exhibited higher average citations per article in 2020 and up to the search date. Although *Geriatr Gerontol Int*, *Eur Geriatr Med*, and *Can Geriatr J* had low average citations in 2020 for 2018-2019 publications, their average citations up to the search date were relatively high, indicating lower short-term but higher long-term citation impact. The H-index reflects the quality of most published papers rather than just highly cited outliers, and our results indicate

that Q1/Q2 zone journals published higher-quality papers overall than Q3/Q4 zone journals.

Table: Citation Status of 2018-2019 Publications in Six Foreign Comprehensive Geriatric Journals

Zone	Journal	Citable Articles (n, %)	Cited Articles (n, %)	Zero-Citation Articles (n, %)	Total Citations 2020	Avg. Citations 2020	Total Citations to Date	Avg. Citations to Date
Q1/Q2	Am Geriatr Soc	671 (73.1)	588 (87.6)	83 (12.4)	129-1259	12.9-125.9	-	-
	Ageing Gerontol	238 (76.0)	207 (87.0)	31 (13.0)	-	-	-	-
	Int J Geriatr	422 (81.3)	327 (77.5)	95 (22.5)	-	-	-	-
Q3/Q4	Geriatr Med	444 (76.8)	374 (84.0)	70 (16.0)	56-102	5.6-10.2	-	-
	Austral J Ageing	216 (81.4)	116 (55.2)	94 (44.8)	-	-	-	-
	Can Geriatr J	135 (92.5)	89 (65.9)	46 (34.1)	-	-	-	-

Note: Citation data from JCR Report and WoS database. Average citations = total citations/number of articles. Search cutoff: May 10, 2022.

Using 2018 publication citations in WoS as an example, Table 4 illustrates differences in academic influence by publication type. Q1/Q2 zone journals published fewer review articles but with higher average citations; original articles were numerous with substantial average citations; guideline/consensus articles were few but highly cited; commentaries were numerous but less cited; special topics ranked mid-to-upper in both volume and citations; feature columns ranked lower in both metrics; correspondence was numerous but ranked low in citations;

case reports were few with low citations. In Q3/Q4 zone journals, original articles dominated in volume and citation metrics; *Australas J Ageing* published few reviews but with high average citations, while other journals showed less pronounced gaps between volume and citation rankings; guideline/consensus articles were few but highly cited; commentary rankings varied by journal; feature columns and special topics showed similar rankings for volume and citations; correspondence ranked low in both metrics.

Comparisons of fixed and non-fixed columns across zones appear in Table 4. The ratio of non-fixed to fixed column articles ranged 0.29-0.74 in Q1/Q2 zone journals and 0.11-0.38 in Q3/Q4 zone journals, indicating greater non-fixed column content in Q1/Q2 zone journals. Most journals showed higher average citations for fixed versus non-fixed columns, except *Eur Geriatr Med*, where non-fixed columns outperformed fixed columns due to highly cited guideline/consensus articles. Both fixed and non-fixed columns in Q1/Q2 zone journals achieved higher average citations than their Q3/Q4 counterparts.

These results indicate: (1) Guideline/consensus columns in all six journals, reviews in Q1/Q2 zone journals, and reviews in Q3 zone *Australas J Ageing* achieved high citation rankings despite low volumes, suggesting these categories receive significant clinical and expert attention and effectively enhance journal influence; (2) Special topics showed aligned volume and citation rankings, demonstrating positive reference value and guidance for current research, warranting continued cultivation; (3) Q1/Q2 zone journals' feature columns showed aligned volume and citation rankings with citation rates significantly higher than commentaries and correspondence, indicating that feature columns not only attract readers and authors but also increase academic citations; (4) Q1/Q2 zone journals emphasized non-fixed columns, particularly feature columns, special topics, and guideline/consensus articles, achieving higher volumes and academic influence.

Table: Academic Influence by Publication Type in Six Foreign Comprehensive Geriatric Journals (2018)

	J Am Geriatr Type Soc	Age Ageing	Geriatr Gerontol Int	Eur Geriatr Med	Australas J Ageing	Can Geriatr J
Original Ar- ti- cle	222	248	257	257	78	87
Review	25	22	19	28	28	8
Commentary	43	43	38	53	24	23
Special Topic	35	20	135	197	4	4

Type	J Am Geriatr Soc	Age Ageing	Geriatr Gerontol Int	Eur Geriatr Med	Australas J Ageing	Can Geriatr J
Feature Column	23	22	21	25	97	97
Correspondence	18	12	21	20	14	14
Case Report	16	89	129	104	32	32

Note: Total citations in WoS database for 2018 publications as of May 10, 2022. Average citations = total citations/number of articles.

2.4 Comparison of Highly Cited Articles by Type in Foreign Comprehensive Geriatric Journals

Among the top 10 most-cited articles contributing to 2020 impact factors from 2018-2019 publications, Q3/Q4 zone journals' total citations (56-102) were far lower than Q1/Q2 zone journals (129-1259). Q1/Q2 zone journals' top 10 articles averaged 12.9-125.9 citations, compared to 5.6-10.2 for Q3/Q4 zone journals, revealing significant gaps in attention and citations for high-quality papers. Figure 1 [Figure 1: see original paper] shows the distribution of highly cited article types: besides original articles, reviews, and guideline/consensus articles, Q1/Q2 zone journals' highly cited articles included special topics (polypharmacy, management), while Q3/Q4 zone journals included feature columns (*Australas J Ageing's* translational innovation). Q1/Q2 zone journals lacked feature columns and commentaries among top-cited categories, while Q3/Q4 zone journals lacked special topics, and *Australas J Ageing* lacked guideline/consensus articles, indicating that Q3/Q4 zone journals need to emphasize special topics and improve guideline/consensus quality. Articles with >100 citations appeared only in the top two journals (*J Am Geriatr Soc* clinical research and *Age Ageing* guideline/consensus). Although *Geriatr Gerontol Int* had no >100-citation articles, its relatively uniform citation distribution contributed to its higher impact factor compared to Q3/Q4 zone journals.

2.5 Thematic Direction Distribution in Foreign Comprehensive Geriatric Journals

Keyword frequency reflects core and popular thematic directions, with articles often containing multiple keywords. Therefore, we used both absolute keyword frequency and relative frequency (frequency/articles) to represent thematic distribution. Table 5 lists the top 10 thematic directions by frequency from 2018-2021, covering 19 areas. Top themes included geriatric syndromes/comprehensive assessment, neurodegenerative diseases/cognitive

function, infections (especially pulmonary), physical function (gait speed, grip strength, balance), multimorbidity, geriatric service models, degenerative osteoarthritis, and nutrition, indicating substantial research on older adults' overall conditions. Analysis revealed that Q1/Q2 zone journals had more zero-frequency subspecialty themes, while Q3/Q4 zone journals had more zero-frequency comprehensive themes. The ratio of comprehensive to subspecialty themes ranged 3.0-4.0 (3.6-4.0) in Q1/Q2 zone journals (inter-journal difference \$ \$1) and 0.9-4.8 (3.2-4.8) in Q3/Q4 zone journals (inter-journal difference >1). Q1/Q2 zone journals showed higher comprehensive-to-subspecialty ratios (absolute 3.5, relative 3.9) than Q3/Q4 zone journals (absolute 3.2, relative 3.6), demonstrating greater emphasis on comprehensive themes.

Table: Thematic Direction Distribution in Six Foreign Comprehensive Geriatric Journals, 2018-2021 [Frequency (Times/Article)]

Theme Category	J Am Geriatr Soc	Age Age-ing	Geriatr Gerontol Int	Eur Geriatr Med	Australas J Ageing	Can Geriatr J
Comprehensive Themes						
Syndromes & Assessment Service Models	612 (26.9)	631 (27.7)	208 (9.1)	133 (5.8)	146 (6.4)	743 (32.6)
Physical Function	67 (7.0)	90 (15.8)	33 (31.1)	14 (13.2)	131 (14.9)	70 (7.3)
Multimorbidity	111 (7.2)	16 (1.8)	17 (1.8)	81 (8.5)	47 (5.3)	32 (3.3)
Nutrition	147 (16.7)	11 (1.1)	23 (2.6)	45 (7.9)	14 (2.5)	27 (4.7)
Subspecialty Themes						
Neurodegeneration & Cognition	628 (27.6)	238 (27.0)	71 (7.4)	10 (1.1)	10 (1.0)	5 (0.5)
Cardiovascular	72 (3.2)	32 (1.4)	19 (2.2)	27 (3.1)	46 (5.2)	13 (1.4)
Comprehensive/ Subspecialty Ratio	3.6 (3.5)	3.9 (3.9)	3.0 (4.0)	4.0 (4.0)	0.9 (3.2)	3.2 (3.6)
Total Articles	732 (32.2)	402.3 (28.3)	1075 (162.1)	467 (48.7)	436 (76.5)	406 (112.1)

3 Discussion and Recommendations

Building a strong Chinese science and technology journal system with distinctive characteristics requires unique contributions from journals at different pyramid levels. Many countries' scientific journals are continuously improving content and publication quality. Chinese scientific journals must benchmark against world-class standards, learn from outstanding journals, address weaknesses, pursue catch-up and surpassing strategies, and find suitable development paths. Chinese researchers' publications in Q1/Q2 zone journals have made important contributions to international geriatric research, yet this has also resulted in publication rights for numerous high-quality papers flowing to Western journals. Given China's rapidly aging population, growing demand for elderly healthcare, and production of high-level scientific achievements based on Chinese developmental practices, there is urgent need to enhance the academic level and influence of China's geriatric journals to effectively disseminate outstanding research findings. China's geriatric journals must analyze peer journals' status and publication characteristics to target learning from world-class journals' concepts and methods, combining their own advantages to achieve differentiated development. This study analyzed publication characteristics and citation patterns of six foreign comprehensive geriatric journals, focusing on how different publication types and thematic directions affect academic influence. Results show that compared with Q3/Q4 zone journals, Q1/Q2 zone journals feature more diverse columns, lower proportions of original articles and reviews, higher volumes and citations for feature columns and special topics, higher-quality guideline/consensus articles, and greater emphasis on multidisciplinary comprehensive themes. Based on these findings and China's journal development status, we propose the following recommendations for comprehensive journals' editorial planning.

3.1 Enhance Holistic Quantity-Quality Management and Strengthen Column Diversity

Improving academic influence requires coordinated development of academic quality and publication volume, necessitating management of their relationship throughout the journal lifecycle. Non-fixed columns with lower volumes may positively contribute to citation metrics through successful planning and sharp topic selection, while high-volume fixed columns in saturated or declining research phases may show stable or decreasing metrics, demanding higher editorial management skills for better column planning and decision-making to enhance quality and influence. Zero-citation rate reflects journal attention to some extent, negatively correlating with impact factor. Reducing low-quality zero-citation papers is crucial for improving influence, as citation rates cannot increase without expanding information capacity and academic quality. Column planning based on publication types significantly influences impact factors and serves as an important content organization tool. This study found Q1/Q2 zone journals had higher annual volumes than Q3/Q4 zone journals,

with Q3/Q4 zone journals publishing higher proportions of original articles and reviews. Q1/Q2 zone journals published more special topics and richer feature column varieties, with higher actual citation rates, suggesting that comprehensive scientific journals should appropriately increase publication volumes of high-influence non-fixed columns like feature columns, special topics, and guideline/consensus articles while improving their overall academic quality. Most Chinese medical journals have relatively few column types, often categorized crudely by document type (original articles, reviews) or research type (basic research, clinical research), lacking guiding functions. Research shows non-fixed columns like feature columns, special topics, guideline/consensus articles, and commentaries have greater disciplinary guidance value and better reflect differentiation and characteristic levels. Although some publication types have lower average citations, their strong information integration and news value can increase social influence, creating a butterfly effect for academic influence. Therefore, fixed and non-academic columns should complement each other, requiring holistic perspective and top-level design to form a publication column system combining fixed columns with differentiated, characteristic non-fixed columns, integrating differentiation awareness with brand strategy to build a rich information dissemination and exchange platform for researchers.

3.2 Cultivate Feature Columns and Emphasize Guideline/Consensus Quality

Feature columns are crucial for enhancing journal innovation and competitiveness, occupying important positions in overall design. Editors should develop feature columns based on understanding peer journals and leveraging their own advantages. China's geriatric journals can optimize column settings by learning from international geriatric development and research frontiers, establishing suitable feature columns such as methodology, innovation translation, management services, and ethics. China has made strategic deployments in geriatric basic and clinical research, smart medical care, and health industry development, yet still lags behind other aging countries in core patents for emerging technologies, supply of innovative entities, and technological precision, with relatively weak scientific foundations and international competitive advantages in addressing population aging. Therefore, establishing methodology columns guided by world scientific frontiers can strengthen frontier technology deployment, improve research efficiency, rapidly breakthrough cutting-edge core technologies in elderly health, and promote major original achievements. Innovation translation columns can advance large-scale application of geriatric health technology achievements, promoting deep integration and high-quality development of technological innovation and aging industries. Management services columns can help disseminate Chinese-characteristic geriatric service management practices and increase international attention, addressing uneven development between urban/rural areas and regions, unmet diverse community elderly care needs, and information barriers in smart elderly care.

Additionally, traditional Chinese culture necessitates greater humanistic care in elderly medical care and research. As an ideological front, scientific journals can establish humanities/ethics columns to publicize and guide new-era social values. Although guideline/consensus articles occupy small proportions in medical journals, they represent best research evidence and authoritative viewpoints. Our results show that regardless of zone, geriatric journals published few guideline/consensus articles but with high average citations, with Q1/Q2 zone journals having more guideline/consensus articles among top-cited works, suggesting Q3/Q4 zone journals need quality improvement. Society-sponsored comprehensive journals have expert think-tank advantages in developing guidelines/consensus, yet only about one-fifth of guidelines in Chinese Medical Association journals in 2020 graded evidence quality and recommendation strength, requiring improvement in evidence retrieval/evaluation and independent review/quality control. China's severe aging situation makes cost-effective medical interventions and healthcare strategies through guidelines/consensus crucial for optimizing resource utilization and improving elderly health outcomes, particularly benefiting regional hospitals and tiered diagnosis/treatment systems. Medical journal editors should not only serve as editors but also understand problems and latest progress in guideline/consensus articles, formulate reasonable review strategies, participate more in guideline/consensus development and revision, and apply STAR rating tools to adjust reporting checklists and publication requirements, improving academic quality.

3.3 Build Multi-Dimensional Planning Models and Strengthen Comprehensive Theme Construction

Publishing special issues/columns is crucial for securing excellent manuscripts, enhancing influence, attracting quality submissions, and creating journal characteristics. In the current era of big science, continuous interdisciplinary crossing and integration produce many multi-disciplinary research results, providing broader development space and dissemination advantages for comprehensive journals' special topic planning. However, special topic planning requires scientific treatment. Ren Jin found that special issues significantly enhance influence for new or low-impact journals but do not significantly increase citations for high-impact international journals, which should focus on hot topics and high-level expert-organized special issues. This study found Q1/Q2 zone journals had richer special topic content with more top-cited articles, suggesting low-impact journals need strengthened special topic construction. China's geriatric research has developed rapidly, with geriatric projects included in National Natural Science Foundation, 973 High-Tech Program, and national key projects from the 10th to 14th Five-Year Plans, plus the Ministry of Science and Technology's National Key R&D Program "Active Health and Aging-Related Scientific and Technological Responses." In this favorable policy environment, medical journal editors must proactively track national academic frontiers and major practices, highlight new theories/technologies/methods, guide special topic research toward valuable achievements, follow international trends while maintaining Chi-

nese characteristics, expand development space, formulate differentiated and precise solicitation strategies and planning schemes, and leverage the comprehensive, comprehensive yet flexible characteristics to build multi-dimensional planning models involving authors, editorial board members, readers, partner institutions, and bibliometric analysis, creating positive effects for enhancing academic influence.

High-quality content construction drives sustainable development and continuous innovation. Compared with other medical disciplines, geriatrics' primary goal is maximizing functional status maintenance/improvement, enhancing independent living and quality of life, and emphasizing older adults' overall conditions. This study found Q1/Q2 zone journals focused more on multidisciplinary comprehensive themes and fewer subspecialty themes than Q3/Q4 zone journals, suggesting comprehensive themes may be weak points for low-influence comprehensive journals. Lower-impact comprehensive journals should leverage their broad, flexible scope to transcend subspecialty boundaries, cultivate new growth points characterized by multidisciplinary and interdisciplinary integration, and sensitively grasp hot and difficult issues related to comprehensive directions, forming differentiation from most specialized journals' deep but fixed-scope coverage to win competitive advantages and enhance disciplinary influence.

To strengthen multidisciplinary comprehensive theme construction, comprehensive journals should: (1) Form editorial boards comprising representative experts from diverse disciplinary backgrounds; (2) Address impacts of interdisciplinary integration on peer review quality and processes by conducting strategic assessments and exploring multidisciplinary review models; (3) Improve editorial team structure to build multidisciplinary backgrounds, forming forward-looking multidisciplinary perspectives, aiming for "scholar-editors" who continuously adjust cognitive frameworks, actively learn new interdisciplinary knowledge, and strive to become versatile talents. Comprehensive journal editors require overall control, predictive ability, and rapid responsiveness, plus open minds and cross-boundary thinking to adapt to development demands.

4 Summary and Outlook

This study analyzed differences in academic influence of foreign comprehensive geriatric journals from perspectives of publication types and thematic construction. Results indicate that Q3/Q4 zone journals have considerable room for improvement in holistic quantity-quality management of different publication types, feature column cultivation, guideline/consensus quality, and multidisciplinary comprehensive theme construction. These findings provide references for China's geriatric journals to identify international positioning and differentiation priorities, offering multi-dimensional considerations for enhancing academic influence and lessons for sustainable development of China's comprehensive medical journals. Under global knowledge economy integration and the "Internet Plus" background, healthy aging and Healthy China construction demand higher-quality scientific research, urging geriatric and other comprehensive med-

ical journals to base themselves on China's outstanding research achievements, discover and utilize domestic disciplinary development advantages, enhance academic quality with objective and wise perspectives, and strive to become better academic homes and higher-quality platforms for scientific communication. It should be noted that academic influence involves many aspects; this study mainly analyzed inter-journal gaps using citation data but lacked analysis of publication models and integrated media promotion. Additionally, only six foreign geriatric society-sponsored journals were selected. Future research will expand scope for deeper data mining and analysis to propose more comprehensive improvement ideas for high-quality development.

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Author Contributions:

MENG Li: Conducted research, analyzed data, wrote manuscript;
SHI Jing, CHEN Shuqiang: Conducted research, analyzed data;
ZHOU Baiyu, LI Jiawei, ZHOU Ziyi: Conducted research, collected materials;
DUAN Chunbo: Supervised research, revised manuscript;
YU Pulin: Provided guidance, reviewed manuscript.

Note: Figure translations are in progress. See original paper for figures.

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