Construction of Interdisciplinary Columns in Medical Journals of Comprehensive Universities in the Context of New Medical Education: A Case Study of Five Domestic Medical College Journals

Authors: Guo Xin, Chen Siying, Guo Xin

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Abstract

Objective: The new medical education initiative proposed by the Ministry of Education has opened up new directions and ideas for column construction in comprehensive medical journals. This study investigates the current status of interdisciplinary column construction in the medical editions of five domestic comprehensive university journals, analyzes their influence and contributing factors, and provides reference for the characteristic development of medical journals in other comprehensive universities. Methods: Through information search methods, we investigated the establishment of emerging interdisciplinary columns in comprehensive university medical journals, including column topic orientation and preferences, download counts and citation frequencies of column papers, and their corresponding WeChat Official Account communication strategies. Results: The column settings of comprehensive university medical journals focus on reporting interdisciplinary research achievements in the direction of new medical education, which effectively promotes the discipline construction of new medicine. However, articles published in interdisciplinary columns do not have an absolute advantage in influence compared to other articles within the same journals. New media communication is primarily one-way, though some journals have adopted relatively innovative operational strategies. Conclusion: Factors such as topic planning orientation, publication timing, granularity of article topics, expert contributions, duration of column publication, and communication strategies are all important elements affecting article influence in interdisciplinary columns of comprehensive university medical journals. Comprehensive medical journals should ground their special topics and column settings in the frontiers, achieve characteristic and differentiated development,

while actively enhancing editorial service capabilities and exploring new media promotion pathways in conjunction with new medical specialty column content.

Full Text

Construction of Cross-disciplinary Columns in Medical Journals of Comprehensive Universities Under the Background of New Medical Education—A Case Study of Five Medical University Journals in China

GUO Xin[1]), CHEN Siying[2]) [1]) Periodicals Agency of Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu 212013, China [2]) School of Liberal Arts, Jiangsu University, 301 Xuefu Road, Zhenjiang, Jiangsu 212013, China

Abstract

The Ministry of Education's initiative on new medical education has opened new directions for column construction in comprehensive medical journals. This study examines the current state of cross-disciplinary column development in five major comprehensive university medical journals in China, analyzing their influence and underlying factors to provide reference for the distinctive development of similar journals. Through information search methodology, we investigated emerging cross-disciplinary columns, including their thematic orientations, article download and citation metrics, and associated WeChat public platform communication strategies. Our findings indicate that while these journals have focused their column settings on reporting cross-disciplinary research aligned with new medical education directions—thereby effectively promoting new medical discipline development—the articles published in cross-disciplinary columns do not hold absolute influence advantages over other articles in the same issues. New media communication remains predominantly one-directional, though some journals have adopted innovative operational strategies. Factors significantly affecting article influence include column topic planning direction, publication timing, article granularity, expert contributions, publication duration, and communication strategies. Comprehensive university medical journals should ground their special columns and topic settings in cutting-edge research to achieve distinctive and differentiated development while actively enhancing editorial service capabilities and exploring new media promotion pathways tailored to new medical specialty content.

Keywords: comprehensive medical journals; cross-disciplinarity; column construction; topic construction

Introduction

In April 2019, the Ministry of Education established the New Medical Education Construction Working Group at the launch conference of the "Six Excellence and One Top-notch" Plan 2.0, marking a milestone in Chinese medical educa-

tion. In July 2020, the General Office of the State Council issued the "Guiding Opinions on Accelerating the Innovative Development of Medical Education," explicitly proposing to "plan medical development with new concepts, advance medical education development with new positioning, strengthen medical student cultivation with new connotations, and lead medical education innovation with new medical education," thereby propelling new medical education construction into a new stage of upgrading [1].

The new medical education initiative aims to deepen interdisciplinary integration and industry-education fusion, accelerating progress by actively breaking disciplinary barriers and optimizing disciplinary structures. It promotes large-span cross-fertilization and large-scale integration of advantageous and distinctive disciplines in medicine-engineering, medicine-science, and medicine-humanities. Medicine-engineering integration provides momentum for the growth of strategic emerging industries in biomedicine, medicine-science integration lays the foundation for original innovation in medical science and technology, and medicine-humanities integration implements the fundamental task of moral education. Specifically, this involves deeply promoting the integration of medicine with intelligent engineering, mechanical engineering, network engineering, and pharmaceutical engineering to facilitate the formation of new business forms such as smart healthcare, telemedicine, high-end medical device manufacturing, and biopharmaceuticals. It also involves deeply promoting integration with mathematical, chemical, physical, biological, information, materials, and environmental sciences to initiate forward-looking, pioneering, and disruptive transformations in the field of life and health science original innovation "from 0 to 1." Furthermore, it involves deeply promoting integration with humanities and social sciences to highlight medicine's significant role, historical value, and contemporary significance in politics, economy, society, and culture, thereby fostering medical students' development of benevolence, research ethics, and comprehensive qualities.

Comprehensive medical journals, grounded in their comprehensive nature, possess fertile soil for showcasing emerging medical cross-disciplinary achievements. On one hand, the breadth of content in comprehensive medical journals aligns naturally with the complexity of medical systems and the richness of medical cross-disciplines. On the other hand, influenced by factors such as the comprehensive nature of their host institutions, the multidisciplinary composition of editorial boards, and the diversity of author sources, these journals hold certain developmental advantages in capturing cross-disciplinary hotspots, setting up cross-disciplinary columns, and conducting peer review.

Current academic discussions on "new medical education" primarily approach from macro-policy perspectives and case studies of institutions and disciplines, focusing on talent cultivation mechanisms. For instance, Wang Yaxia et al. [2] emphasized the importance of medical humanities courses, proposing strategies combining explicit and implicit curricula to cultivate "new medical education" talent. Song Yuanming [3] analyzed key issues in new medical education talent

cultivation and proposed strategies for curriculum system reform, university-enterprise collaboration, and optimizing teaching staff. Research on medical cross-disciplines mainly focuses on overall development status and trends, discipline construction, talent cultivation mechanisms, and quantitative measurement of cross-disciplinarity. Discussions concerning journals are limited. Liu Ying et al. [4] analyzed the interactive development between traditional Chinese medicine journals and network pharmacology, examining the advantages and dilemmas of scientific journals in leading cross-disciplinary development and proposing optimization suggestions for collaborative innovation, journal construction, and disciplinary layout. Qi Yuan et al. [5] selected the top eight universities in terms of "Medicine+X" discipline construction quantity, pointing out that current university medical journals are not synchronized with "new medical education" discipline construction and have low correlation. Jiang Xin et al. [6] conducted questionnaire surveys on editorial staff attitudes and practices regarding topic construction, identifying dilemmas from an editorial perspective. However, discussions on the influence of articles after publication in special columns remain scarce. Some scholars have noted that "new medical education construction requires comprehensive universities to leverage multidisciplinary advantages" [7]. In light of this, this study selects five comprehensive university medical journals with medical cross-disciplinary columns, examining their cross-disciplinary column construction, influence, and matched communication strategies to analyze experiences and propose recommendations for building emerging cross-disciplinary columns, thereby promoting the distinctive and high-quality development of comprehensive university medical journals under the new medical education background.

1.1 Research Objects and Methods

As important components of comprehensive medical journals, comprehensive university medical journals possess significant advantages in cross-disciplinary column construction due to their complete disciplinary coverage. The "Guiding Opinions of the General Office of the State Council on Accelerating the Innovative Development of Medical Education" emphasizes promoting deep cross-fusion between medicine and multiple disciplines while specifically pointing out that comprehensive universities "should leverage their comprehensive disciplinary advantages to establish 'Medicine+X' multidisciplinary cross-fusion platforms and mechanisms."

Accordingly, this study selected five comprehensive university medical journals: *Journal of Sichuan University (Medical Science Edition)*, *Journal of Shandong University (Health Sciences)*, *Journal of Zhejiang University (Medical Sciences)*, *Journal of Xi'an Jiaotong University (Medical Sciences)*, and *Journal of Central South University (Medical Sciences)*. This research primarily employs network literature investigation and content analysis methods to study the medical cross-disciplinary columns in these five journals.

1.2 Data Sources and Content

Data sources primarily include CNKI, CNKI Citation Database, and the official websites and WeChat public accounts of each journal. The specific procedures and key dimensions for data and public account content 梳理 (organization) and statistics are as follows:

(1) Integrated journal tables of contents from April 2020 to April 2023, identifying cross-disciplinary columns based on column names, and selecting those with clear "medicine-engineering," "medicine-science," and "medicine-humanities" orientations under the new medical education direction as primary research objects.

(2) Examined cross-disciplinary column settings, longitudinally tracking the continuity and richness of cross-disciplinary topic establishment, and horizontally comparing commonalities in cross-topic establishment across journals. Analyzed characteristics and causes of high-attention topic columns and articles.

(3) Through CNKI and CNKI Citation Database, statistics on downloads, citations, and funding status of cross-disciplinary topics and columns were collected and compared with annual average downloads and citations of articles published in the journals, serving as a major indicator for evaluating column and topic influence.

(4) Selected WeChat public accounts as the communication medium to 梳理 (organize) each journal's communication strategies for cross-disciplinary topic columns.

1.3 Survey Results

1.3.1 Cross-disciplinary Topic Setting Under the "New Medical Education" Background Emerging cross-disciplinary topics have been presented to varying degrees in major journals' publishing practices, with details shown in Table 1. Cross-disciplinary column and topic settings demonstrate certain commonalities, primarily drawing from new trends in medicine, clinical challenges, social hotspots, and practical concerns. Directions such as artificial intelligence and related emerging technologies, as well as mental health, are particularly favored in topic column settings. Cross-disciplinarity demonstrates considerable breadth, covering "medicine-engineering," "medicine-science," and "medicine-humanities" directions. Additionally, cross-topic settings vary by journal, with specific preferences and focus areas, emphasizing different aspects of continuity and richness. Notably, some cross-topics in comprehensive university medical journals are associated with their host universities' cross-disciplinary research, such as the "Brain Science and Brain-Inspired Intelligence Research" topic in *Journal of Shandong University (Health Sciences)*, as Shandong University hosts the Brain and Brain-Inspired Science Research Institute. Regarding author groups, the journals under comprehensive university medical journals feature

diverse author pools, including non-medical discipline researchers. For instance, the "Stem Cells, Biomaterials and Regenerative Medicine" column in *Journal of Sichuan University (Medical Science Edition)* involves collaboration among scholars from multiple fields.

Table 1 Overview of Emerging Cross-disciplinary Topic Column Settings in Comprehensive University Medical Journals

Journal	"New Medical Education" Cross-disciplinary Columns	Cross-disciplinary Orientation	Cross-topic Setting Characteristics	Total Articles
Journal of Sichuan University (Medical Science Edition)	1) Stress Medicine; 2) AI Impact and Pathology; 3) Stem Cells, Biomaterials and Regenerative Medicine	Medicine-Engineering, Medicine-Science	Focus on relatively cutting-edge fields	Rich column settings, large number of articles
Journal of Shandong University (Health Sciences)	1) Brain Science and Brain-Inspired Intelligence Research; 2) COVID-19 Epidemic Spatiotemporal Dynamics, Risk Assessment and Emergency Management; 3) New Advances in Ophthalmic Artificial Intelligence; 4) Environmental Health Risk Assessment (Special Issue); 5) Artificial Intelligence and Digital Orthopedics (Special Issue)	Medicine-Engineering, Medicine-Science, Medicine-Humanities	Distinctive column orientation, each issue includes academic dynamics section showcasing 本校 (host institution) research progress	High proportion of funded articles

Journal	"New Medical Education" Cross-disciplinary Columns	Cross-disciplinary Orientation	Cross-topic Setting Characteristics	Total Articles
Journal of Zhejiang University (Medical Sciences)	1) Pediatric Use of Aromatase Inhibitors; 2) Disease Surveillance and Health Management; 3) Cellular Immunotherapy; 4) Plateau Pharmacy	Medicine-Science, Medicine-Humanities	Continuous topic setting, focus on mental health and psychological well-being fields	Virtual topics established
Journal of Xi'an Jiaotong University (Medical Sciences)	1) Precision Radiotherapy; 2) Prostate Cancer PET/CT Targeted Imaging; 3) Mental Health, Adolescent Physical and Mental Health	Medicine-Engineering, Medicine-Science		
Journal of Central South University (Medical Sciences)	1) COVID-19 Mental Health; 2) Artificial Intelligence and Medical Imaging	Medicine-Engineering, Medicine-Science, Medicine-Humanities		

Comprehensive university medical journals have relatively concentrated cross-disciplinary topic construction, and articles in cross-disciplinary columns receive high levels of funding support. However, from an influence perspective, download and citation performance does not hold absolute advantage compared with

annual journal averages. This indicates that establishing cross-disciplinary topics is not a one-time solution; factors such as topic selection, content quality of published manuscripts, and corresponding communication strategies cannot be ignored.

Table 2 Academic Influence Data of Topics in Comprehensive University Medical Journals (As of July 18, 2023)

Journal	Average Downloads per Topic Article vs. Three-year Average	Average Citations per Topic Article vs. Three-year Average	Proportion of Funded Articles
Journal of Sichuan University (Medical Science Edition)	95.83%	84.81%	88.46%
Journal of Shandong University (Health Sciences)	95.83%	90.48%	

Note: Annual average download/citation data excludes news, calls for papers, and other message-type articles. Data sourced from CNKI Citation Database.

1.3.2 WeChat Public Account Communication Strategies With broad audiences and high daily active user rates, WeChat public accounts have become important content dissemination platforms, and most journals have established official accounts that play a significant role in further disseminating journal articles. Therefore, this survey 梳理 (organized) the operation and promotion of cross-disciplinary topics on each journal's public account as another major dimension of cross-disciplinary column construction. Overall, public accounts

primarily feature one-way communication with prominent information dissemination functions and relatively weak interactivity, though all allow access to official websites and related platforms for reading articles and understanding journal details through menu bars.

Comprehensive university medical journals attach high importance to topic (special issue) column communication, with varying operation conditions and strategies across journals, as detailed in Table 3. For example, *Journal of Sichuan University (Medical Science Edition)* prioritizes and refines its operational strategy for topic article dissemination, featuring both topic introductions for macro-level grasp and high-readership push articles. Each topic article is promoted through individual push articles, with settings in menu bars and collections for better reader experience and facilitating individual article forwarding and promotion. Under this refined operational strategy, public account readership is significantly higher. Additionally, *Journal of Central South University (Medical Sciences)* establishes virtual topics, continuously integrating relevant field paper resources to make the influence of essential papers more enduring.

Table 3 WeChat Public Account Operation Status of Comprehensive Medical Journals

Journal	Public Account Topic/Column Content Format	Situation and Characteristics
Journal of Sichuan University (Medical Science Edition)	Each issue's table of contents push includes contents, topic introduction, and cover image sources. Push articles primarily promote topic papers, with each topic paper receiving individual push articles. Topic paper pushes are collected into collections, with topic columns listed in the menu bar's journal channel, including topic calls for papers and related conference notifications.	Relatively high WeChat push frequency, cover images vary by topic or come from experts, each issue has introductions, public account focuses on promoting topic papers, topics receive emphasis. Convenient browsing experience.
Journal of Shandong University (Health Sciences)	Topics (special issues) release separate push articles beyond the table of contents, including column host expert introductions, topic article titles, keywords, abstracts, and full-text links. Key topics/special issues are displayed as collections, with topics/special issues separately listed in the menu bar's basic information section for convenient reading experience.	Concise and clear push articles, emphasizing topics (special issues), push titles clearly mark key topics/special issues.

Journal	Public Account Topic/Column Content Format	Situation and Characteristics
Journal of Zhejiang University (Medical Sciences)	Each issue's table of contents and call for papers requirements, with menu bar linking to official website including topic calls for papers and academic dynamics.	Includes call for papers requirements, concise and clear push articles.
Journal of Xi'an Jiaotong University (Medical Sciences)	Each issue's table of contents and article recommendations, convenient QR code reading, publishes news such as topic planning meetings and conference call for papers.	Features topic previews.
Journal of Central South University (Medical Sciences)	Each issue's table of contents, each paper published as individual article, "Old Xiangya Stories" column.	Virtual topic construction with certain cultural construction components.

2.1 Characteristics and Causes of High-Influence Columns and Articles

Medicine-humanities integrated columns demonstrate relatively high influence. By addressing real-world concerns and having lower professional barriers compared to other cross-disciplinary directions, they reach broader audiences and achieve higher influence. Taking psychology-related cross-disciplinary topics in comprehensive university medical journals as an example, average downloads per article exceed the journal's annual average. Except for topics newly published in 2023 (which have insufficient time for citation accumulation and thus show below-average citation performance), all others exceed average levels. Ad-

ditionally, columns integrating emerging technologies such as big data and artificial intelligence also achieve high influence, as these cross-disciplinary fields are particularly popular. Topics that publish earlier in relevant fields, have higher influence, or further explore valuable similar and sub-fields perform better in influence metrics. Furthermore, topics that develop continuously into characteristic columns and even regular columns demonstrate good influence, such as *Journal of Xi'an Jiaotong University (Medical Sciences)*'s sustained focus on the "medicine-humanities" direction.

Regarding specific article influence, the correlation between funding status and article influence is not significant. This is primarily because, for comprehensive university medical journals, topic manuscript sources mainly comprise commissioned articles, organized contributions, and open submissions through multiple channels, with column chief editors ensuring certain quality standards. Content quality remains the lifeline of journal quality, and advantageous columns inevitably benefit from high-quality articles.

Moreover, review articles, research progress reports, trend forecasts, and survey articles on emerging cross-disciplines achieve relatively high influence, especially when authored by experts. Notably, article granularity affects article influence, with appropriately coarse-grained articles achieving higher influence. In the artificial intelligence field, for example, topics titled "Research Progress in Artificial Intelligence" are too coarse-grained and lack specificity. Appropriate granularity involves AI applications in specific medical fields and diseases; further granularity to specific disease stages may limit influence. However, granularity's impact is bidirectional—some coarser-grained papers show average download performance, but due to their in-depth specialization and limited competition in relevant fields, they may achieve good citation performance if quality is high. Meanwhile, in survey articles, incorporating further cross-disciplinarity such as bibliometrics into scales and questionnaires also yields good influence performance. Therefore, cross-disciplinary column construction should include both coarse-grained and fine-grained articles. In summary, content quality, cutting-edge topic direction, cross-disciplinary degree, cutting-edge methods, article authors, and article granularity are all crucial factors determining article influence.

2.2 Characteristics and Causes of Low-Influence Columns or Articles

As previously discussed, hot topics often receive significant attention, placing higher demands on journals' ability to capture hotspots promptly, publication timeliness and efficiency, and paper quality. For example, *Chinese Medical Journal* published the column "Application of Artificial Intelligence in Medical Imaging" in Issue 7, 2021, with average citations reaching 11 times. As China's most authoritative comprehensive medical journal, its influence is self-evident. However, when *Journal of Central South University (Medical Sciences)* published the artificial intelligence and medical imaging topic in Issue 8, 2022, discussion in this field had already become popular, thus limiting its influence.

Simultaneously, cross-disciplinary columns show a tendency toward excessive granularity, but inappropriate granularity directions also affect influence. Disadvantageous articles relate to the aforementioned article granularity issue, particularly evident in some survey articles. When survey scope and population granularity are too small, reader appeal is relatively limited. Additionally, current search mechanisms constitute a major reason limiting cross-disciplinary column influence. Most retrieval systems use article titles and themes as search conditions, often retrieving only individual relevant field articles rather than entire columns. Although cross-disciplinary column construction integrates articles in relevant fields through special topics, it does not align well with search mechanisms, making it difficult to leverage column integrity during searches and thus hindering interlinkage among articles within topics. This cannot be ignored, along with the fact that some discussed columns have short publication histories with considerable uncertainty in their influence, and some innovative cutting-edge content may not have fully realized its influence potential.

2.3 Impact of Editorial Planning and WeChat Communication Methods on Columns

According to the survey, journals with relatively mature column construction and large numbers of published articles also have more refined WeChat public account operations. Comprehensive university medical journals attach considerable importance to topic articles, exploring innovations in column hosting, commissioned contributions, and communication display to varying degrees, and employing multimedia technologies to display column content and latest research findings. Having relevant field experts serve as column hosts benefits commissioned and organized contributions, with some journals marking column host candidates in call for papers notices and relevant research institutions promoting call for papers requirements, helping ensure manuscript relevance to topics. As previously mentioned, topic continuity also affects influence.

3 Strategies for Establishing Cross-disciplinary Columns in Comprehensive University Medical Journals

The above analysis reveals that comprehensive medical journals have explored cross-disciplinary column construction to varying degrees, matched with certain communication strategies, and are continuously exploring unique development paths. However, they still face numerous challenges, such as considerable uncertainty in topic effectiveness, the dilemma between broad coverage and sustained deep cultivation in topic development path selection, and relatively formulaic WeChat operations with weak interactivity. Therefore, how comprehensive university medical journals can better construct emerging cross-disciplinary medical columns becomes a concern worthy of attention. The authors propose the following recommendations:

3.1 Leverage Comprehensive Positioning to Promote Cross-disciplinary Development

The "2022 Chinese S&T Paper Statistics Report—Research Institution Innovation Development Report" released by the Institute of Scientific and Technical Information of China identified the correlation between interdisciplinary integration and frontier breakthroughs. According to statistics, most major breakthroughs and innovative achievements at disciplinary frontiers result from interdisciplinary fusion. Comprehensive university medical journals, due to their host institutions' comprehensive nature, possess rich disciplinary and information resources. Cross-disciplinary development now holds great potential, with relevant cross-disciplinary research institutes being established successively, offering journals opportunities to actively explore cooperation pathways with major research institutes.

"University journals should actively participate in university cross-disciplinary discipline construction, providing support for breaking traditional disciplinary barriers and promoting interdisciplinary integration" [8]. Comprehensive university medical journals can collaborate with university-related research institutions, such as the aforementioned linkage between Shandong University's Brain and Brain-Inspired Research Institute and the Brain Science and Brain-Inspired Intelligence Research topic column. Regarding current cross-topic paper author composition, manuscripts from host institutions and related units account for a limited proportion, but different journals adopt various cooperation methods with their host institutions, such as featuring specific academic dynamics columns to showcase host institution research achievements or implementing preferential policies for host institution manuscripts—for example, *Journal of Xi'an Jiaotong University* accepts host institution submissions without funding requirements and is willing to receive achievements from small disciplines within the host institution, thereby maintaining the basic function of showcasing host institution research achievements. Additionally, "the emergence of multidisciplinary cross manuscripts poses new challenges for scientific journal editors in selecting 'small peer' reviewers; selecting reviewers based solely on first-level disciplines will hardly meet the needs of precise peer review" [9]. Comprehensive university medical journals' reviewer pools possess considerable breadth and comprehensiveness, better matching authors' research in peer review and other stages.

Moreover, column settings in comprehensive university medical journals can effectively address the lack of special issues for emerging cross-disciplines. If a comprehensive university medical journal establishes a relatively influential cutting-edge cross-disciplinary column, it can continuously explore this direction and related fields, developing it into a characteristic column, gradually a regular feature, and even a brand column to exert sustained influence. Consequently, evolving from single-journal commissioned contributions to establishing close and sustained cooperative relationships builds a tight-knit community of reviewers, authors, and readers, greatly benefiting expert participation and user

stickiness.

3.2 Rely on the Academic Community to Publish High-level Papers

Column establishment represents editorial strategy exploration, but paper content quality remains the lifeline of journals. The academic community primarily comprises journal editors, authors, readers, editorial board teams, and relevant field reviewers. Comprehensive university medical journals can fully leverage the academic community's role by inviting relevant field experts to serve as column editors, write expert reviews, and organize industry conferences and forums to build bridges for communication among paper authors, reviewers, and experts, enabling information exchange and on-site paper presentation and review mechanisms. Academic journals can also play the role of guiding paper topic selection and writing, forming an academic production chain of author creation, expert review and guidance, and journal facilitation, thereby better ensuring published paper quality, improving publication efficiency, and safeguarding the quality and communication effectiveness of cross-disciplinary topic articles.

Meanwhile, while reviewers and editors ensure quality control, most journals have adopted online-first publication to expand influence. Journals can also actively explore enhanced publication pathways. International authoritative comprehensive medical journals have mature explorations in this area, while the journals surveyed in this study have limited development in this regard. Enhanced publication can help researchers systematically understand the generation, application, and innovation processes of research data and information, facilitating users' rapid utilization of resource maps and permanent identifiers to quickly retrieve and locate needed resources across different resource types [10]. Actively implementing enhanced publication for high-quality papers helps present the complete logic of published achievements and better satisfies researchers' needs for complete academic information, which benefits academic exchange and promotes paper influence.

3.3 Strengthen Editorial Planning and Commissioning to Improve Column Academic Standards

The survey results show that cross-disciplinary column influence varies by topic, journal, and publication timing. Cross-disciplinary column construction is not a one-time effort; its post-publication influence faces considerable uncertainty. The investigation of cross-disciplinary column construction revealed that column names and paper granularity affect topic and paper influence to some extent, making topic direction and content formulation key considerations for editors when establishing topics. This places higher demands on editors' sensitivity to relevant hotspots and frontiers and their topic planning capabilities.

The survey also found that expert review articles have greater influence. Enhancing service capabilities to match appropriate experts for commissioned contributions represents another key to column construction. Situations where sig-

nificant effort in organizing and commissioning contributions results in papers that fail to meet expected quality or achieve average influence occur frequently. Constructing cross-disciplinary columns is merely a pathway and direction; the fundamental factor remains the published content itself. Editors should pay greater attention to manuscript quality control, as column construction should not be limited to form but must prioritize content construction as the key to improving column academic standards.

3.4 Leverage WeChat Public Account Advantages for New Discipline Content Dissemination to Expand Column Influence

The survey of WeChat channels shows that journals attach importance to topics, with some good practices such as topic introductions, journal culture construction, and video science popularization in specific fields. However, overall, the advantages of new cross-disciplinary content appeal are not highlighted, with monotonous communication content and forms, small audience scale, and lack of interaction. Establishing virtual collections and synchronizing their release on public accounts and other platforms demonstrates certain effectiveness for building sustained column influence and deserves promotion. "Virtual topics are digital albums synthesized by selecting representative papers with similar themes from already published papers" [11]. Compared with physical issues, virtual topics have the advantage of breaking time boundaries, better meeting readers' vertical information acquisition needs in corresponding fields, and extending the "life cycle" of published papers, which is significant for journals' long-term cross-disciplinary topic development, user stickiness establishment, and journal reputation building.

Comprehensive medical journals' WeChat communication methods and content for new cross-disciplines should break away from general medical paper communication models, following media biological clock communication patterns, paying attention to push density, popularity, and breadth, and caring for cross-disciplinary knowledge content construction. Public accounts can invite experts from different disciplines to interact with audiences through live broadcasts, employing diverse persuasion techniques for maximum effect. Particularly, medicine-humanities cross-disciplinary columns should highlight humanistic care, disseminating new knowledge of medical philosophy and medical aesthetics through vivid and interesting animation forms to meet different groups' needs. Most importantly, interaction with audiences should be strengthened, continuously adjusting column contribution directions based on audience feedback, and cooperating with other public accounts to meet readers' vertical content needs, forwarding topic papers to relevant field researchers and potential readers through reposts, thereby enabling WeChat public accounts to play a role in column dissemination and promotion.

Conclusion

Cross-disciplinary column construction represents an important pathway for comprehensive university medical journals to achieve distinctive and differentiated development in recent years, with the breadth of cross-disciplinarity matching the comprehensive positioning of these journals. Under the new medical education background, the development of cross-disciplinary columns also promotes the dissemination and development of cross-disciplinary knowledge and achievements. Each journal has distinctive development path choices for cross-disciplinary column construction and has achieved certain accomplishments. Communication platforms represented by WeChat public accounts are playing increasingly important roles in journal dissemination. However, in actual column construction, comprehensive university medical journals face considerable uncertainty regarding topic column paper influence. Journals still need to refine their sensitivity to disciplinary frontiers, topic column planning and commissioning, academic community building, editorial service capabilities, and new media communication strategies to achieve distinctive development and thereby contribute to the improvement and long-term development of new medical education.

Limitations of this study: Influence measurement primarily references CNKI data, excluding discussion of other databases and journal official website data. Additionally, constrained by the short construction time of journal cross-disciplinary columns, especially for recently published papers, download and citation performance has not been fully presented. Future research should focus on longer time spans of cross-disciplinary column construction and more detailed studies of various cross-disciplinary directions.

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Correspondence to: GUO Xin (ORCID: 0009-0004-5235-7981), Ph.D., Associate Editor, E-mail: guoxin@ujs.edu.cn; CHEN Siying, Class of 2020 undergraduate.

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