

Modern Literature Analysis of Liangdi Tang

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Abstract: Objective: To analyze the modern distribution characteristics of Liangdi Decoction, explore its research development trend, find out the problems in its research, and put forward suggestions. Methods: Based on the full-text database of CNHJ, the literature of Liangdi Decoction from 1977 to 2020 was selected as the research object, and the literature age, author distribution, periodical distribution, literature type, literature source journal type and disease type were statistically analyzed by using the method of Bradford's literature discrete rate measurement. Results: From 1977 to 2020, there was a spiral increase in the number of literatures about Liangdi Decoction. The authors with higher frequency of Liangdi Decoction were all from the areas visited by Fu Qingzhu. The types of literatures were mainly clinical application-oriented research. The types of articles were mainly published in general journals. The most widely used diseases were gynecological diseases, especially menstrual irregularity and deficiency-heat type collapse. Conclusion: There is an increasing trend of literature research on Liangdi Decoction. Although the depth, breadth and angle of research are still lacking, the research space and value of Liangdi Decoction are relatively large, which is worth further research.

Keywords: Classical formula; Liangdi decoction; Literature analysis; Literature metrology

Fund Project: Construction of TCM Science and Technology Document Sharing Service Platform in Shanxi Province (201605D121011); Key Research Base of Humanities and Social Sciences in Colleges and Universities in Shanxi Province (2017337); Chinese Medical Collection Project (KJS-ZHYC-2020-017).

Liangdi Decoction is derived from Fuqingzhu Nvke Volume ^[1], which is composed of raw rehmannia root, cortex rehmanniae, donkey-hide gelatin, radix scrophulariae, radix paeoniae alba and radix ophiopogonis. It has the effect of nourishing yin and clearing heat, and is used for treating patients with insufficient kidney water, deficiency of heat and internal burning, early menstruation, less color red, sticky texture, accompanied with hot tide and night sweat, dry throat and dry mouth, less red tongue and moss, and weak pulse count. It can cool blood and clear away heat, relieve kidney fire through cortex lycii and cortex lycii, remove bone steaming, and nourish blood and yin with donkey-hide gelatin and white peony root. Combined with the prescription, it can nourish yin and enrich blood, cool blood and clear heat ^[2]. Modern pharmacological studies show that Liangdi Decoction can reduce blood glucose and blood lipid, improve immunity and anticoagulation, and adjust its endocrine and reproductive functions ^[3-5]. Later generations of doctors are flexible to this prescription, continuous research, so that it is not only used to treat gynecological diseases, in andrology, psychiatry, medical diseases also have significant effect ^[6-11].

Mastering the academic research trends of Liangdi Decoction is helpful to its further development and application. In this paper, the literature on Liangdi Decoction from 1977 to 2020 was analyzed by using the dispersion rate of Bradford's literature from the point of view of bibliometrics, and the method of quantitative description and statistics was used to further understand the research development trend and clinical application of Liangdi Decoction, find out the existing problems in the research and put forward suggestions.

1. Materials and methods

Literature data source: Based on the full-text database of CNHW, this paper searches and downloads the literatures related to "Liang Di Tang" from 1977 to 2020.

Research methods: Using the method summarized in Bradford's "literature dispersion rate", quantitative statistical analysis was conducted on the literature age, author distribution, periodical distribution, literature type, literature source periodical category and disease type of Liangditang ^[12].

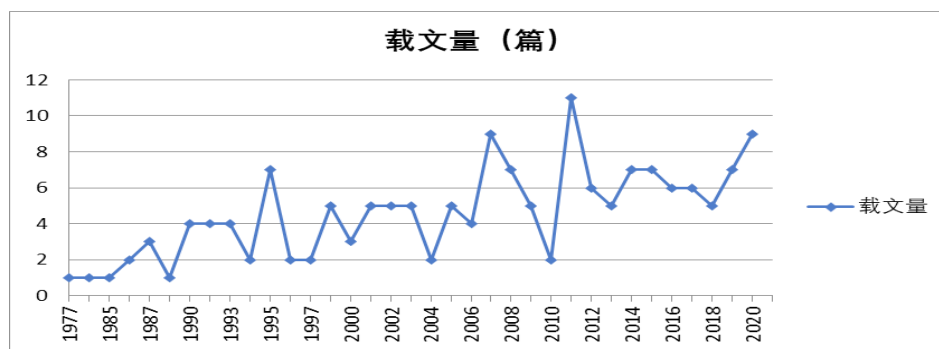
2. Results

2.1 Document chronological distribution

160 Literatures on Liangdi Decoction from 1977 to 2020 were retrieved by the above method. See Fig.1 and Table 1 for the distribution of document ages and the trend of document load.

Statistical analysis shows that from 1985 to 2011, it began to rise in waves. After reaching the peak in 2011, it declined from 2011 to 2013. From 2013 to 2020, it presented a fluctuating development trend. The literature research on Liangditang generally showed a spiral upward trend. It can be seen that the discipline research of this field is paid attention by scholars and researchers in the research

field.



2.2 Distribution of Literature Authors and Institutions

1 Author of 4 documents, 9 authors of 3 documents and 11 authors of 2 documents were published. The research units were mainly represented by Baoding No.1 Traditional Chinese Medicine Hospital, Henan College of Traditional Chinese Medicine, Guizhou College of Traditional Chinese Medicine, Dalian Women and Children Medical Center and Changchun University of Traditional Chinese Medicine. It should be noted that the authors of high frequency literature mainly come from the places where Fu Qingzhu visited the doctors, such as Henan, Hebei, Jilin and Liaoning. (See Table 2)

Table 2 Distribution of Literature Authors of Liangdi Decoction from 1977 to 2020

Author	Author Unit	Sending volume (Chapter)	Author	Author Unit	Sending volume (Chapter)
Zhang Xiaodan	Henan College of Traditional Chinese Medicine	4	Ding Lixian	Guizhou College of Traditional Chinese Medicine	2
Gao Yanli	Baoding No.1 Traditional Chinese Medicine Hospital	3	Fan Daoyan	Henan College of Traditional Chinese Medicine	2
Ji Chunhong	Dalian Women and Children Medical Center	3	Guanyu	Changchun University of Traditional Chinese Medicine	2
Jin Jiling	Tianjin College of Traditional Chinese Medicine	3	Gong Meili	Affiliated Hospital of Shanxi College of Traditional Chinese Medicine	2
Lv Lijuan	Baoding No.1 Traditional Chinese Medicine Hospital	3	Guo Haifeng	Pingyin County Hospital of Traditional Chinese Medicine, Shandong Province	2
Miao Yu	Dalian Women and Children Medical Center	3	Huahong	Gansu College of Traditional Chinese Medicine	2
Shang Jing	Baoding No.1 Traditional Chinese Medicine Hospital	3	Li Qiong	Guizhou College of Traditional Chinese Medicine	2
Shen Jianhua	Guangzhou Jinhua Hospital	3	Zhang Zongsheng	Tai'an First People's Hospital	2
Zhang Jun	Xinjiang Wujiaqu Rural Sixth Division Hospital	3	Zheng Lili	Changchun University of Traditional Chinese Medicine	2
Zhang Ying	Baoding No.1 Traditional Chinese Medicine Hospital	3	Zhou Huifang	Affiliated Hospital of Nanjing University of Traditional Chinese Medicine	2
Chenzhuohao	Xinjiang Production and Construction Corps Sixth Division Hospital	2			

2.3 Distribution of periodicals

From 1977 to 2020, there were 160 articles about Liangditang, which were published in 86 journals respectively. (See Table 3)

Table 3 Distribution of periodicals

Journal Name	Load capacity	% (%)	Journal Name	Load capacity	% (%)
Zhejiang Journal of Traditional Chinese Medicine	7	4.38	Sichuan Traditional Chinese Medicine	3	1.88
New TCM	7	4.38	The World's Latest Medical Information Digest	3	1.88
Modern Distance Education of Chinese Medicine	6	3.75	Shanxi Traditional Chinese Medicine	3	1.88
Shaanxi Traditional Chinese Medicine	6	3.75	Inner Mongolia Traditional Chinese Medicine	3	1.88
Clinical Study of Traditional Chinese Medicine	5	3.13	Jilin Traditional Chinese Medicine	3	1.88
Journal of Practical Traditional Chinese Medicine	5	3.13	Journal of Traditional Chinese Medicine	3	1.88
Modern Journal of Integrated Traditional Chinese and Western Medicine	4	2.50	Henan Traditional Chinese Medicine	3	1.88
Hubei Journal of Traditional Chinese Medicine	4	2.50	Journal of Guiyang College of Traditional Chinese Medicine	3	1.88
Gansu Traditional Chinese Medicine	4	2.50	Guangming TCM	3	1.88

Journal of Traditional Chinese Medicine	3	1.88	Changchun University of Traditional Chinese Medicine	3	1.88
Chinese Society of Traditional Chinese Medicine	3	1.88			

The analysis shows that there are 21 kinds of journals with more than 3 articles (84 articles in total, accounting for 52.50% of the total), among which 4 kinds have 6 articles or more, including 7 articles in Zhejiang Journal of Traditional Chinese Medicine, 7 articles in New Traditional Chinese Medicine, 6 articles in Modern Distance Education of Traditional Chinese Medicine in China, 6 articles in Shaanxi Traditional Chinese Medicine, 2 articles in 5 articles, 10 articles in total; 3 articles in 4 articles, 12 articles in total; 12 articles in 3 articles, 36 articles in total; 12 articles in 2 articles, 24 articles in total. There were 53 kinds of periodicals with 1 article in total. There were 65 kinds of periodicals published 1~2 articles, 77 of which accounted for 48.13% and 75.58% of the total number of periodicals, and 21 kinds of periodicals with more than 3 articles (including 3 articles), 84 of which accounted for 53.50% and 24.42% of the total number of periodicals.

2.4 Distribution of document types

Liangdi Decoction plays a leading role in clinical application literature, with 111 articles in total, accounting for 69.38% of the total. It can be seen that the research on Liangdi Decoction is mainly clinical application. Meanwhile, the pharmacological experimental research and review research on Liangdi Decoction account for 4.38% and 0.63% of the total, respectively. It shows that the pharmacological research on Liangdi Decoction and the review research on Liangdi Decoction are too little. In the process of pharmacological research on Liangdi Decoction and comprehensive literature arrangement, it is necessary to cultivate the thinking of multidisciplinary integration and broaden the research thinking of Liangdi Decoction.

Table 4 Distribution of Literature Types of Liangdi Decoction from 1977 to 2020

Literature type	Number of documents (pieces)	Composition (%)
Clinical Application Study	111	69.38
Pharmacological Experimental Study	7	4.38
Summary	1	0.63
Other	41	25.63
Total	160	100

2.5 Distribution of Literature Source Periodicals

Among the literature sources of the journals of Liangditang, the types of the journals of Liangditang were mainly general journals (145 articles in total, accounting for 90.63% of the total literature), 10 articles from the core journals of science and technology in China (6.25% of the total literature), 5 articles from CSCD journals (3.13% of the total literature), and articles from CSSCI, SCI and EI journals. It shows that the research level and depth of Liangdi Decoction is far from enough, the quality of literature is not high, and there is still a lot of research space. (See Table 5)

Table 5 Types of source journals of Liangdi Tang from 1977 to 2020

Periodical Source Category	Number of documents (pieces)	Composition (%)
SCI Journal	0	0
EI Journal	0	0
China Science and Technology Core	10	6.25
CSSCI	0	0
CSCD	5	3.13
General journal	145	90.63

2.6 Distribution of literature studies

Liangditang is widely used in clinic, mainly for gynecological diseases. In addition, it can effectively treat diseases including andrology, psychiatry and internal diseases. Statistical analysis shall be conducted for the types of diseases in various clinical departments with higher frequency. (See Table 6-10)

Results: The most common gynecological diseases were irregular menstruation, deficiency of heat, intermenstrual hemorrhage, followed by deficiency of yin and fever after delivery and perimenopausal syndrome. Most of the andrology diseases are semen immaturity syndrome; mental diseases such as insomnia syndrome, premenstrual tension syndrome, autonomic nervous dysfunction; internal diseases such as cerebral arteriosclerosis syndrome, purpura nephritis, hemoptysis, etc.

Table 6 Distribution frequency of diseases treated by Liangditang in literature from 1977 to 2020

Periodical Source Category	Number of documents (pieces)	Composition (%)
Gynecology	117	73.13
Andrology	8	5.00
Psychiatry	3	1.88
Internal Medicine	6	3.75

Table 7 Distribution Frequency of Gynecological Diseases Treated by Liangdi Decoction from 1977 to 2020

Disease name	Frequency	Disease name	Frequency
Menstrual irregularity	42	Postpartum peeling	1

Virtual heat collapse	28	Meridional chyme	1
Intermenstrual hemorrhage	16	Female sexual dysfunction	1
Postpartum yin deficiency and fever	6	Amenorrhea	1
Perimenopausal syndrome	6	Pelvic inflammation	1
Recurrent abortion	2	Hypothermic luteal insufficiency	1

Table 8 Distribution frequency of andrology diseases treated by Liangdi Decoction from 1977 to 2020

Disease name	Frequency	Disease name	Frequency
Semen immaturation syndrome	4	Male infertility	2
Low semen volume	2		

Table 9 Distribution Frequency of Liangdi Decoction for Mental Disorders from 1977 to 2020

Disease name	Frequency	Disease name	Frequency
Insomnia syndrome	1	Premenstrual tension syndrome	1
Autonomic nervous dysfunction	1		

Table 10 Distribution Frequency of Internal Medicine Diseases Treated by Liangdi Decoction from 1977 to 2020

Disease name	Frequency	Disease name	Frequency
Cerebral arteriosclerosis syndrome	1	Purpura nephritis	1
Hemoptysis	1	Stool blood	1
Tooth bump	1	Palpitation of yin deficiency	1

3. Discussion

From 1977 to 2020, the literature volume of Liangdi Decoction has been on the rise. It can be known that more and more medical workers and relevant researchers will pay attention to the research of Liangdi Decoction in the next few years, and the research will be more in-depth, especially in the field of clinical application research. It can be seen from the distribution of the journals published in Liangditang that the journals published in Liangditang at present are represented by 21 journals such as Zhejiang Journal of Traditional Chinese Medicine, New Traditional Chinese Medicine, Modern Distance Education of Traditional Chinese Medicine in China, Shaanxi Traditional Chinese Medicine and Clinical Research of Traditional Chinese Medicine, which are the main carriers of studying Liangditang literature. It can be seen from the authors of the literature and the distribution of the institutions that Fu Qingzhu was the main doctor in the area where the two local soup issued documents. Clinical application-oriented research is the most important research form in the distribution of literature types of Liangdi decoction, which indicates that the research focus of Liangdi decoction from 1977 to 2020 is clinical. It can be seen from the types of literature sources that the general periodicals are the main ones, while the Chinese sci-tech core periodicals and CSCD periodicals are few. Liangdi Decoction is mainly used to treat gynecological diseases, and can also be used to treat andrology, psychiatry, internal diseases. According to statistics, the treatment of gynecological diseases such as irregular menstruation, deficiency-heat-type metrorrhagia, etc. is used most frequently. Due to its few modern pharmacological research and review research, the further research of Liangdi Decoction is largely limited.

Liangdi Decoction is one of the hundred classic prescriptions issued by the state in 2018. Because of its wide application, exact curative effect and obvious characteristics and advantages, it has certain research value to carry out in-depth research on it. However, there are some problems in the research on Liangdi Decoction at present. The author suggests that the following aspects should be studied in the future. (1) Strengthening the pharmacological experiment and literature review of Liangdi Decoction. The research of Liangdi Decoction is mainly focused on clinical application, and there is a great shortage in pharmacological experiment and review literature research, so it is suggested that the combination of pharmacological experiment, review literature research and clinical application can make the research of Liangdi Decoction more abundant. (2) The modern pharmacological experimental research of Liangdi decoction should be combined with modern technology to broaden the depth and breadth of research. We should use modern laboratory equipment to study the drug composition, action site, action mechanism and optimal effective dose of Liangditang prescription, so as to provide quantitative objective data to better guide clinical prescription. (3) In the process of research, we should integrate multi-disciplines, study from the angle of molecule, cell and tissue, improve the research depth of Liangdi Decoction, and use new technology to open up a new perspective for the research of Liangdi Decoction. (4) Through data mining to study the medicine law of Liangdi Decoction, summarize and analyze the guiding theory, medicine basis and related diseases of Liangdi Decoction used by famous doctors.

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