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The Status Quo and Influencing Factors of Community TCM Utilization in China

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Doctor of Management

Supervisor:
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BUSINESS
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Abstract

In order to improve the community service of the Traditional Chinese Medicine (TCM), this study focuses on citizen’s utilization behavior of TCM and has built its research model for the empirical study based on Andersen medical utilization model and characteristics of the community.

The empirical study involved 1200 residents in designated areas of Guangzhou city in the Guangdong Province, namely, the districts of Baiyun, Yuexiu, Tianhe and Panyu. The research tool was a questionnaire on the utilization of TCM community services, administered in person.

As results, presently, the coverage rate of community Chinese medicine service providers is close to 100%, but the residents' awareness rate and enthusiasm for the use of community Chinese medicine services are still relatively inadequate. There are also differences in the utilization of community Chinese medicine services among residents of different genders, ages, educational levels, occupations, monthly family income, regular physical check-ups, chronic diseases, heard of services, trust services, nearby communities, and nearby community service groups.

Based on the research results, this study puts forward specific strategies, including policy guarantees and capacity building, can serve as a blueprint for developing and optimizing TCM services to better meet residents' needs and preferences.

Keywords: Traditional Chinese medicine; China; health care; community service
JEL: L1; L18

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Resumo

Com o propósito de melhorar o papel comunitário da Medicina Tradicional Chinesa (MTC), este estudo foca-se no comportamento do cidadão na utilização da MTC e, para o efeito, construiu-se o seu modelo de investigação para o estudo empírico a partir do modelo de Andersen de utilização de serviços médicos e das características da população das regiões escolhidas.

O estudo empírico foi conduzido em quatro distritos distintos da cidade de Guangzhou da província de Guangdong, a saber, Baiyun, Yuexiu, Tianhe and Panyu. O questionário sobre a utilização de serviços comunitários de MTC foi administrado a mais de 1200 residentes nos mencionados distritos.

Como resultados, no momento presente, a cobertura de serviços comunitários de medicina tradicional chinesa está quase nos 100%, porém, o conhecimento e o interesse da população em relação a este serviço são bastante desinteressantes. A procura é também muito diferenciada no que respeita ao género, à idade, educação, ocupação profissional, rendimento familiar mensal, capacidade de controlo de saúde regular, se possui doenças crónicas, conhecimento prévio do serviço, níveis de confiança nos serviços comunitários e ainda da oferta local de serviços comunitários.

Com base nos resultados desta investigação são propostas estratégias de promoção do serviço comunitário de MTC que incluem políticas de garantia de qualidade e de construção de capacidades internas de serviços.

Palavras-chave: Medicina Tradicional Chinesa; China; cuidados de saúde; serviço comunitário

JEL: L1; L18

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摘 要

为了提高社区中医药服务利用水平，本研究以社区居民的中医利用行为为重点，基于安德森模型和结合社区中医药服务的特点构建研究模型进行实证研究。

本研究利用自行设计《居民对社区中医药服务利用情况调查问卷》对广东省广州市内 4 个区 （白云、越秀、天河、番禺）的 1200 名居民进行现场调查。

结果显示，目前社区中医药服务提供者的覆盖率接近 100%，但居民对社区中医药服务的知晓率和使用率仍相对不足。不同性别、年龄、文化程度、职业、家庭月收入、定期体检、患有慢性病、听说过服务、信任服务、附近社区有中医馆和附近社区提供服务的群体在对社区中医服务的利用行为存在差异。

在研究结果的基础上，提出了政策保障和能力建设等具体战略，可为发展和优化中医服务，更好地满足居民的需求和偏好提供蓝图。

关键词：中医药；中国；卫生健康服务；社区

JEL: L1; L18

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Acknowledgements

I got much help from many professors and classmates with my graduation thesis, of which the care and support of my thesis guide Professor Rosa is particularly important. Whenever I encountered difficulties, I asked Professor Rosa for help. Professor Rosa's profound knowledge, approachable personality and rigorous academic attitude have impressed me a lot. I have consulted with Professor Rosa many times through emails and videos at each stage of my thesis. He gave me careful guidance on topic selection, the research proposal, model construction, literature review, and the analysis of the questionnaire data in the progress report. Here I would like to express my sincere gratitude to Professor Rosa!

I would also like to thank Professor Virginia and Professor Nelson, as well as the leaders, teachers, and students in the School of Health Management of Southern Medical University for their care and support over the years, which I will always remember.

Due to my limited academic level, there must be many shortcomings in the thesis I wrote. I sincerely hope that my tutor can criticize and correct me. At my 40s, I will continue to apply what I have learned in my future work practice with all my gratitude.

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致 谢

我的毕业论文在各位教授和同学中得到了很多帮助，其中，我的导师罗莎教授对我的关心和支持尤为重要。每当我遇到困难时，我就向罗莎教授求助，他渊博的知识、平易近人的个性和严谨的学术态度给我留下了深刻的印象。在我的论文的每个阶段，我都曾多次通过电子邮件和视频咨询过罗莎教授，他在课题选择、研究方案、模型构建、文献综述、进度报告中对问卷数据的分析等方面给了我仔细的指导。在此，我要向罗莎教授表示我诚挚的感谢！

我还要感谢并将永远铭记弗吉尼亚教授和纳尔逊教授，以及南方医科大学健康管理学院的领导、教师和学生们多年来的照顾和支持。

由于我的学术水平有限，在我所写的论文中一定有很多缺点，我真诚地希望我的导师能批评和纠正我。我将用我在 40 多岁时所学到的知识和收获的感动，继续在我未来的工作实践中应用。

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List of Acronym

BMHSU	Behavioral Model of Health Services Use
CPC	Communist Party of China
HBM	Health Belief Model
ICD-11	The Eleventh Revision of the International Classification of Diseases
PRC	People’s Republic of China
TCM	Traditional Chinese Medicine
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
WHA	World Health Assembly

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Chapter 1: Introduction

1.1 Research background

1.1.1 Value of traditional Chinese medicine

Traditional Chinese medicine (TCM) is the general name of the medicine of all ethnic groups in China, including the medicine of the Han nationality and minority nationalities. It reflects the Chinese nation's understanding of life, health and diseases. It is a medical and pharmaceutical system with a long historical tradition and unique theories and technical methods. TCM has comprehensive advantages in disease prevention, health care, medical treatment, health preservation, rehabilitation and other aspects. With the overall concept of "putting people first" and the characteristic advantages of being "simple, convenient, cheap and effective", it can well fit the function of the "patient-centered" integrated medical and health service system, which is conducive to responding to a series of health problems and challenges brought by industrialization, urbanization, alterations in the spectrum of diseases, aging society and great changes in lifestyle. In addition to its significant role in common diseases, frequently occurring diseases, chronic diseases and difficult and complicated diseases, TCM has demonstrated its unique edges in the prevention and treatment of major infectious diseases such as the COVID-19 which swept the world. Since the COVID-19 outbreak, China has released a multilingual version of the TCM treatment plan for it, shared the experience of Chinese medicine in fighting the pandemic with more than 150 countries and regions, and sent TCM experts to 28 countries for assistance. The "three finished TCM drugs and three herbal formulas" and other effective anti-epidemic TCM prescriptions have been used by many countries for reference, playing a positive role in this global fight against the pandemic (The "three finished TCM drugs" refer to Jinhua Qinggan Granules, Lianhua Qingwen Granules and Capsules, and Xuebijing injection, and the "three herbal formulas" refer to Lung Cleansing and Detoxifying Decoction, Huashibaidu Formula and Xuanfei Baidu Prescription). Currently, TCM has been spread to 196 countries and regions, and is now an important area for regional and institutional cooperation between China and ASEAN, EU, AU, CELAC, as well as the collaboration of the Shanghai Cooperation Organization and the BRICS countries, Cooperation between China and Central and Eastern European Countries,

Forum for Economic and Trade Cooperation between China and Portuguese-speaking Countries and other regional and organizational cooperations. The Eleventh Revision of the International Classification of Diseases (ICD-11), reviewed and adopted by the 72nd session of the World Health Assembly (WHA), for the first time added the chapter of traditional medicine with TCM being the main body. Thus, Traditional Chinese medicine has historically entered the world mainstream medical system.

1.1.2 Development of traditional Chinese medicine

1. Development status of traditional Chinese medicine

When the "13th Five-Year Plan for National Economic and Social Development of the People's Republic of China" (2016-2020) (hereinafter referred to as the "13th Five-Year Plan") was carried out, the top-level design for the development of TCM was accelerated, the policy environment was continuously optimized, and the support received kept growing. In 2017, the Law of the People's Republic of China on Traditional Chinese Medicine was implemented. In 2019, the CPC Central Committee and the State Council issued the Opinions on Facilitating the Inheritance, Innovation and Development of Traditional Chinese Medicine, and the State Council held the National Congress of TCM to vigorously promote its advancement.

(1) The TCM service system was further improved.

By the end of 2021, the total number of TCM institutions nationwide reached 77,336, an increase of 4,981 over the previous year, and the number of non-TCM institutions with TCM clinical departments reached 45,341, growing by 2,216 compared to the previous year. The number of beds in Chinese medical and health institutions amounted to 1.148 million, with a year-on-year rise of 489 thousand, and the number of beds in TCM clinical departments of non-TCM institutions over the last year increased by 230,000 to 307,000. Since the "13th Five-Year Plan" unfolded, the number of TCM institutions and non-TCM institutions with TCM clinical departments have risen by 56.15% and 42.07% respectively, and the corresponding number of beds has grown by 36.44% and 97.29% respectively, see Table 1.1.

Table 1.1 Situation of Chinese medical institutions in recent years

Item	2016	2017	2018	2019	2020	2021
Number of TCM institutions	49527	54243	60738	65809	72355	77336
Number of beds in traditional Chinese medical and health institutions	877313	951356	1021548	1091630	1148135	1197032
Number of non-TCM institutions with TCM clinical departments	19471	20308	21451	22604	26075	27663
Number of beds in TCM clinical departments of non-TCM institutions	155773	183765	212141	236586	284327	307330

Source: NHC (2022)

(2) The TCM talent team is on a steady rise.

In 2021, the total number of TCM personnel in China's medical and health institutions topped 885,000, including 732,000 licensed (assistant) doctors of TCM and 137,000 Chinese medicine practitioners. Since the "13th Five-Year Plan" was carried, the number of Chinese medicine practitioners in medical and health institutions across the country has surged by 44.4%, and the number of licensed (assistant) doctors of TCM has grown from 0.35 to 0.48 per 1000 people, accounting for 15.1% to 17.1% of the total figure of China's licensed (assistant) doctors. Among them, the number of licensed (assistant) doctors of TCM in TCM institutions and non-TCM institutions reached 313,000 and 419,000 respectively, up 60.4% and 61.4%. The number of their traditional Chinese (assistant) pharmacists came to 58,000 and 58,000 respectively, up 32.2% and 8.4%, see Table 1.2.

Table 1.2 Development of TCM talent team in recent years

Institution type	Personnel type (/10,000)	2016	2017	2018	2019	2020	2021
Total	Total number of TCM personnel (/10,000)	61.3	66.4	71.5	76.7	82.9	88.5
	Licensed (assistant) doctors of TCM (/10,000)	45.5	49.7	57.5	62.4	68.2	73.2
	Number of traditional Chinese (assistant) pharmacists (/10,000)	11.7	12.0	12.4	12.7	13.1	13.7
TCM institutions	Licensed (assistant) doctors of TCM (/10,000)	19.5	21.7	24.1	26.5	28.9	31.3
	The proportion of licensed (assistant) doctors of TCM for the total in medical institutions (%)	52.7	53.6	54.8	55.8	56.5	57.4
	Number of traditional Chinese (assistant) pharmacists (/10,000)	4.4	4.6	5.0	5.2	5.5	5.8
	The proportion of traditional Chinese (assistant) pharmacists for the total in medical institutions (%)	57.8	57.8	58.5	58.3	58.6	58.5
Non-TCM institutions	Licensed (assistant) doctors of TCM (/10,000)	25.9	28.0	33.4	35.9	39.3	41.9
	The proportion of licensed (assistant) doctors of TCM for the total in medical institutions (%)	9.7	9.9	10.5	10.6	11.0	11.2
	Number of traditional Chinese (assistant) pharmacists (/10,000)	7.3	7.4	7.4	7.5	7.6	5.8
	The proportion of traditional Chinese (assistant) pharmacists for the total in medical institutions (%)	20.1	20.0	19.0	19.0	18.9	18.7

Source: NHC (2022)

(3) The service capacity of TCM continued to improve.

In 2021, the total number of people diagnosed and treated at TCM institutions attained 1.2

billion person-times, an increase of 140 million over the previous year; The number of discharged patients was 38.002 million, a year-on-year growth of 2.96 million. Among them, the overall number of diagnosis and treatment at TCM clinical departments in non-TCM institutions was 310 million person-times (accounting for 25.7%), rising by 40 million, with the figure of inpatients adding up to 6.479 million (accounting for 17.0%) and registering an increase of 510,000 over the previous year. Since the "13th Five-Year Plan" was implemented, the total diagnosis and treatment volume and discharge volume of TCM institutions nationwide have expanded by 24.9% and 28.4% respectively, and the total diagnosis and treatment volume and discharge volume of TCM clinical departments of non-TCM institutions have soared by 28.6% and 66.1% respectively, see Table 1.3.

Table 1.3 Diagnosis and treatment of TCM institutions in recent years

Institution type	2016	2017	2018	2019	2020	2021
Total diagnosis and treatment volume of TCM institutions (100 million person-times)	9.6	10.2	10.7	11.6	10.6	12.0
Among them, TCM clinical departments in non-TCM institutions (100 million person-times)	2.4	2.6	2.6	2.9	2.7	3.1
Hospitalization in TCM institutions (10,000 person-times)	2959.0	3291.0	3584.7	3858.9	3504.2	3800.6
Among them, TCM clinical departments of non-TCM institutions (10,000 person-times)	390.2	473.7	542.9	584.3	596.8	647.9

Source: NHC (2022)

2. Current situation of TCM development at the community level

(1) The significant improvement of TCM service capacity at the community level

By the end of 2021, there were 4,944 community health service centers with TCM clinical departments nationwide, accounting for 65.8% of the total, and the number of beds in TCM clinical departments reached 18,756, accounting for 7.5% of the total. The proportion of community health service centers and community health service stations providing TCM services reached 99.6% and 93% respectively. China's communities are now equipped with 56,000 licensed (assistant) doctors of TCM and 11000 traditional Chinese (assistant) pharmacists. Since the implementation of "13th Five-Year Plan", the number of community health service centers that set up TCM clinical departments has surged by 56.8%, the number of beds in TCM clinical departments has increased by 125.5%, the number of community health service centers (stations) providing TCM services has climbed by 34.7%, and the number of licensed (assistant) doctors of TCM and traditional Chinese (assistant) pharmacists at the community level has risen by 46.6% and 18.7% respectively, see Table 1.4.

Table 1.4 TCM service capacity of communities in recent years

Item	2016	2017	2018	2019	2020	2021
Number of community health service centers with TCM clinical departments	3154	3391	3630	3940	4590	4944
Proportion of the total number of that in similar institutions (%)	51.9	53.1	54.7	56.3	63.1	65.8
Number of beds in TCM clinical departments of community health service centers (stations)	8316	10264	12362	13678	16167	18756
Proportion of the total number of that in similar institutions (%)	4.1	4.7	5.3	5.8	6.8	7.5
Community health service centers (stations) providing TCM services	14094	15066	16030	16859	18069	18989
Including: community health service centers	5930	6274	6540	6878	7201	7480
Proportion of the total number of that in similar institutions (%)	97.5	98.2	98.5	98.3	99.0	99.6
Community health service stations	8164	8792	9490	9981	10868	11509
Proportion of the total number of that in similar institutions (%)	83.3	85.5	87.2	85.9	90.6	93.0
The number of licensed (assistant) doctors of TCM equipped	38496	41563	45023	48626	53090	56421
Including: Allocation for community health service center	27082	29128	31737	34541	37753	40631
Proportion of the total number of licensed (assistant) doctors of TCM in similar institutions (%)	18.9	19.3	19.7	20.3	20.8	21.1
Number of community health service stations	11414	12435	13286	14085	15337	15790
Proportion of the total number of licensed (assistant) doctors of TCM in similar institutions (%)	25.7	26.5	27.4	28.1	29.5	29.9
Traditional Chinese (assistant) pharmacists equipped	9272	9617	9835	10106	10513	11004
Including: the allocation for community health service centers	7649	7928	8137	8354	8706	9192
Proportion of the total number of traditional Chinese (assistant) pharmacists in similar institutions (%)	25.7	26.5	27.4	28.1	29.5	29.9
Number of community health service stations	1623	1689	1698	1752	1807	1812
Proportion of the total number of traditional Chinese (assistant) pharmacists in similar institutions (%)	28.1	29.1	30.5	31.6	33.0	33.2

Source: NHC (2022)

(2) The low utilization efficiency of TCM services at the community level

Since the “13th Five-Year Plan” was carried out, the number of TCM services in China’s community health service centers (stations) has been increasing year by year. At the end of 2021, the number of Chinese medicine diagnosis and treatment in China’s community health service centers (stations) was 82.861 million, an increase of 21.076 million person-times over 2016, and the number of hospital admissions was 252000, an increase of 126000 person-times

over 2016. However, on the whole, the total diagnosis and treatment and hospital admission of TCM services at the community level accounted for only 9.9% and 7.7%. The utilization efficiency of community TCM services still needs to be improved, see Table 1.5.

Table 1.5 Utilization of community TCM services in recent years

Service volume	2016	2017	2018	2019	2020	2021
Number of people diagnosed and treated with TCM (10,000 person-times)	6178.5	6611.4	6939.4	8018.7	7299.2	8286.1
Proportion of the total number of that in similar institutions (%)	8.6	8.6	8.7	9.3	9.7	9.9
Number of people admitted to hospital with TCM (10,000 person-times)	12.6	16.4	19.1	20.3	22.1	25.2
Proportion of the total number of that in similar institutions (%)	3.8	4.5	5.4	5.8	7.4	7.7

Source: NHC (2022)

1.1.3 Summary

Community TCM service lays the foundation of TCM development and offers the basic guarantee for safeguarding the health of the people. The TCM health promotion project featuring preventative treatment of diseases and related technologies are also very suitable for community health services and management. During the “13th Five-Year Plan” period, under the strong leadership of the Central Committee of CPC and the State Council, all regions and departments in China fully implemented Law of the People’s Republic of China on Traditional Chinese Medicine, and the central government’s various policy requirements on promoting the development of TCM. With TCM-related work being strengthened at the community level, the community service capacity of TCM has been obviously enhanced, and the fairness, accessibility and convenience of TCM for the people have been significantly improved accordingly. The community health service center constitutes the cornerstone of China’s urban medical and health service system, and serves as the main body in providing comprehensive, convenient, accessible and economical medical prevention and treatment, rehabilitation and health promotion services for residents. On the other hand, however, from the perspective of actual utilization, there still exists the phenomenon of inefficient utilization of community TCM health services, regardless of the large demand. The prevention, health care and rehabilitation services of TCM are difficult to meet the needs of community residents. Moreover, the advantages of TCM are yet to be prominent in the prevention and treatment of major infectious diseases and the diagnosis and treatment of difficult and complicated diseases. In order to further promote the development of TCM in China, facilitate the

combination of TCM with health management, and give full play to the advantages of TCM in disease prevention and treatment, it is necessary to explore the utilization of TCM services in China and its influencing factors.

1.2 Research purpose and significance

1.2.1 Research purpose

To give full play to TCM in disease prevention and treatment, this study focuses on analyzing the supply capacity of TCM health services, and is intended to introduce the Behavioral Model of Health Services Use (BMHSU) through analysis of community residents' motivation to choose TCM health services, to explain how the residents enjoy TCM health services. By fully considering the impact of multiple factors on the final medical and health care behavior of individuals, the research aims to find out the main factors that affect the choice of TCM by community residents, thus providing reasonable suggestions for the resource optimization and service capacity improvement of TCM health service institutions, and providing policy reference basis for health policy makers to improve the community health governance model and develop community TCM services.

1.2.2 Research significance

1. Theoretical significance

The current study expands the application of Anderson model in the field of TCM service in communities. Based on the theoretical framework of the Behavioral Model of Health Services Use (BMHSU), this study introduces the Theory of Planned Behavior (TPB) and Value Based Model (VBM). After selecting the corresponding factors to develop the indicators, this study explores the construction of the theoretical model framework of the utilization of TCM services, which offers vital theoretical guidance for the research on China's localization of the medical service utilization behavior model and the utilization of TCM services.

2. Practical significance

After the founding of the People's Republic of China (PRC), especially since the reform and opening up, the CPC Central Committee and the State Council have attached great importance to the work of TCM and formulated a series of policies and measures to continuously promote its development by improving the legal system, policy support, and

talent team building. Especially since the 18th CPC National Congress, the Party Central Committee with comrade Xi Jinping at its core has attached great importance to the development of TCM, and clearly proposed to promote the revitalization and development of TCM. In 2016, the State Council issued and implemented the Outline of the Strategic Plan on the Development of Traditional Chinese Medicine (2016-2030) and the Law of the People's Republic of China on Traditional Chinese Medicine, and the General Secretary Xi Jinping even proposed at the National Health and Wellness Conference the health work policy of "putting prevention first, attaching equal importance to both TCM and Western medicine, integrating health into all policies, and jointly building and sharing a healthy country". In the Outline of the Healthy China 2030 Plan, a special chapter on "giving full play to the unique advantages of TCM" was set up to clarify the key tasks of TCM which include integrating it into all aspects of the construction of a healthy China. In addition, a series of measures were put forward in the report of the 19th National Congress of the Communist Party of China (CPC), such as the policy of "attaching equal importance to TCM and western medicine, inheriting and developing the TCM industry". All the above marks that TCM development has become an important part of the Healthy China Initiative. In other words, TCM has ushered in a major development opportunity.

The theory and related technologies of "preventative treatment of diseases" of TCM are very suitable for community health services and management. However, there still exists the contradiction of insufficient actual utilization and large demands for community health services of TCM among residents. In order to further promote the development of TCM in China, facilitate the combination of TCM and health management, and give full play to the advantages of TCM in disease prevention and treatment, this study is intended to take Guangzhou City, Guangdong Province, as an example, against the backdrop of China's efforts to promote the revitalization and development of TCM, to conduct an empirical study on the residents' demand for community TCM services and actual utilization behavior through the medical service utilization behavior model. By analyzing and summarizing various influencing factors, targeted policy recommendations based on the empirical analysis results can be proposed, thus stimulating the greater value of TCM in community health services, pushing forward the construction of a healthy China and meeting the growing health needs of the people.

1.3 Research problem and questions

Based on the research background, it is noted that the utilization of community TCM health services is still insufficient. The prevention, health care and rehabilitation services of TCM are difficult to meet the needs of community residents. The advantages of TCM are yet to be prominent in the prevention and treatment of major infectious diseases and the diagnosis and treatment of difficult and complicated diseases.

This study proposes the following research questions:

1. What is the status-quo of residents' utilization of traditional Chinese medicine services?

2. What factors influence residents' utilization of traditional Chinese medicine services?

3. How do these factors influence residents' utilization of traditional Chinese medicine services?

4. How can the utilization of traditional Chinese medicine services by residents be improved?

1.4 Research method

1.4.1 Literature analysis

The researcher widely collects and sorts out the research progress in China and abroad on the utilization of TCM services and the influencing factors of medical treatment behavior by means of CNKI, Wanfang Database, Vip Database, PubMed, SCI, Cochrane Library and other Chinese and foreign literature databases, as well as the Duxiu and Bailian Knowledge Bases. Drawing on the previous research results and methods, the researcher determines the research model and analysis method.

1.4.2 Interview

Through consulting relevant experts in the field of health services, the researcher gets an understanding of the development status of TCM in China, common evaluation indicators and main contents of health services. At the same time, an advance survey was conducted to visit some communities in Guangzhou to preliminarily understand the residents’ willingness to use TCM health services, thus providing a foundation for the preparation of the questionnaire and model assumptions.

1.4.3 Questionnaire survey

After the literature research and expert consultation, the research questionnaire is developed according to the relevant scales in the field of health service survey, and relevant items are set based on the theoretical research assumptions. After the pre-test of the questionnaire, the reliability (see Table B.1) and validity (see Table B.2) of the results were tested, and the items of the questionnaire were properly revised with reference to the feedback of the residents' interviews to create a formal questionnaire. The overall number of samples in this study is large, and the internal differences are unknown. Therefore, stratified and proportional random sampling is adopted in the formal survey.

1.4.4 Mathematical statistics

A database of the survey results is established. With SPSS 22.0 software and AMOS 22.0, the researcher carries out descriptive statistical analysis, reliability analysis, analysis of variance, regression analysis, structural equation model analysis and other statistical analysis on the survey data, thus obtaining the research results.

1.5 Research route

On the basis of fully consulting the literature, this study determines the research theme and research direction, analyzes the relevant theoretical research, determines the theoretical model suitable for the study of residents' utilization of community TCM service, puts forward the key influencing factors and research hypotheses, and constructs the research model of residents' utilization of community TCM service behavior. After that, the study draws on the related research questionnaire of residents of community service utilization questionnaire, through the field investigation distribution and recycling questionnaire, using SPSS 20.0 and AMOS 21.0 questionnaire data statistical analysis, verify the key factors affecting the residents of community Chinese medicine service utilization behavior, according to the analysis results revised hypothesis model, and put forward the strategy and suggestion to promote residents of community Chinese medicine service utilization. The research route is shown in Figure 1.1.

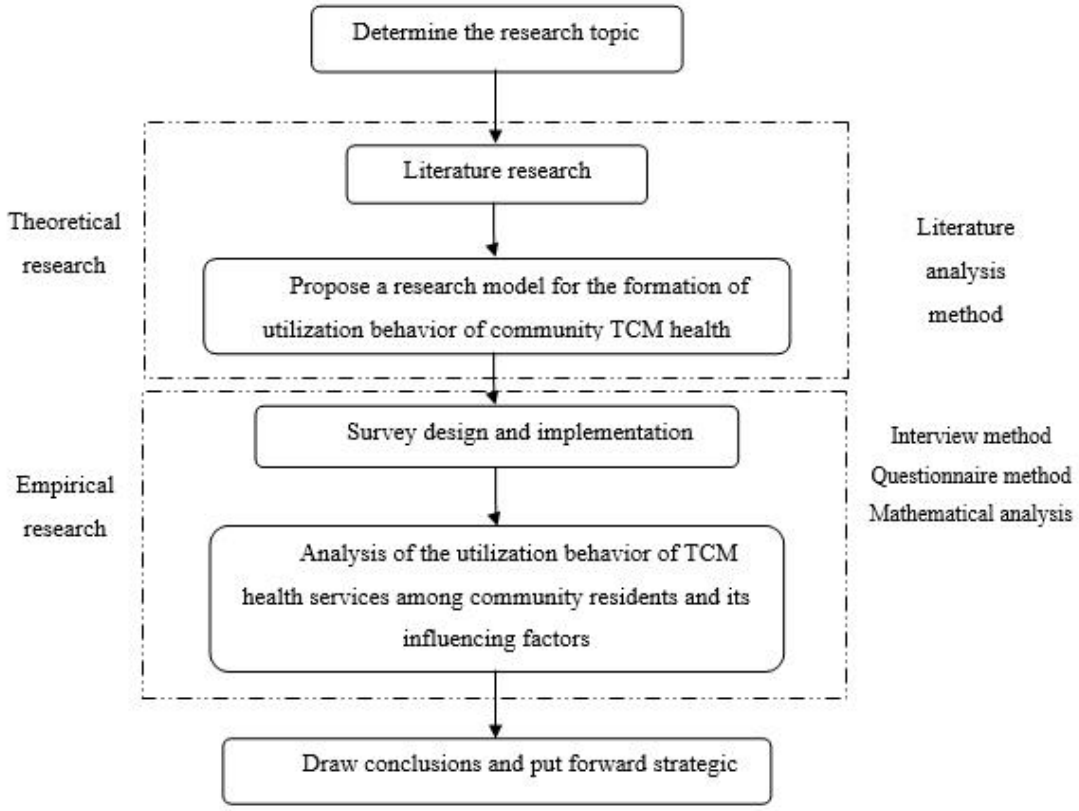

Figure 1.1 Technology roadmap

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Chapter 2: Literature Review and Theoretical Research

2.1 Definition of relevant concepts

2.1.1 The concept of community

The concept of “community” originated from the German sociologist Tennis. In his book Community and Society published in 1887, he formally put forward “community”, which divides the development history of human society into two stages: from community to society. The community stage refers to the social connection and organization mode driven by “essential or natural will” (in the representation of instinct, habit and memory) and characterized by unity and solidarity. It takes blood bond (family), geographical closeness (village) and spiritual community (friendship or belief group) as its basic form. The social stage refers to the social connection and organization mode driven by “will of choice or rationality” (in the representation of deliberation, decision and concept) with clear purpose and based on interests and contracts, such as modern government political parties, military forces and enterprises. In his view, with the urbanization and modernization of society, the naturally formed “community” will inevitably be replaced by the artificially designed “society”. It explains the bipolar characteristics of agricultural society and industrial society in the process of human evolution, and defines “community” as a vital academic concept (Y. J. Li, 2019).

The term “community” in Chinese was first coined by some sociology students of Yanjing University led by Fei Xiaotong in the 1930s according to Tennis’ original intention. Fei mentioned in his paper “On Chinese Communities in the Past 20 Years” that when the word “community” was introduced to China, it was translated into “Difangshehui”, literally meaning “local society”. Later, when they translated the two different concepts of “community” and “society” in Tennis’ work, they felt that the Chinese word “Difangshehui” was inappropriate, so they used the Chinese word “Shequ” to describe community. This is the origin of the word “community” in Chinese.

As a basic concept of sociology, it is fair to say that “community” has diverse definitions. Different scholars have given their own versions, but their focus is different, mainly including the following three situations. First, some emphasize the connotation of “social relations”. In

the new edition of Introduction to Sociology, H. Zheng (1987) defined "community" as a human group who enjoys certain interaction and common cultural sustenance along with their activity area where certain social activities are carried out. Tang also made a similar definition of community: community is the population living in a certain region who form a variety of social relationships and social groups. Second, some place their emphasis on the connotation of "community". Xi (2002) defined community as a living community of people living in a certain region in his Community Research. The Opinions on Promoting Urban Community Construction Nationwide (Ministry of Civil Affairs, 2000) pointed out that "community refers to the social life common entity composed of people living in a certain geographical area". In Sociology, Lu (1991) defined community as a social entity formed by combining social groups and social organizations gathered in a certain geographical range according to a set of norms and systems, which is a regional common entity of social life. Third, others regard community as a microcosm of society. This is also the concept that L. Xiao (2011) pointed out: "community" is regarded as a special social field of multi-agent interaction game and the "lens" to understand other theoretical issues. X. Y. Yu (2016) pointed out in the Introduction to Community that community is a regional society. Fei Xiaotong, a famous sociologist, believes that "community is a society within a certain geographical range", and is a regional society based on geographical social relations.

The term "community" in this study is based on the concept of operability put forward in the Opinions on Promoting Urban Community Construction Nationwide (Ministry of Civil Affairs, 2000). It refers to the jurisdiction of the urban community residents committee established by the civil affairs department under the reform of the Chinese community management system.

2.1.2 Related concepts of health services

1. Health service needs

Health service needs are the objective needs for medical care, prevention, health care, rehabilitation and other health services based on the gap between people's actual health status and "ideal health status" (L. Li, 2018). It includes the needs perceived by individuals and the needs determined by medical and health professionals. The two are sometimes consistent, sometimes inconsistent. Only when a person is aware of the need for health services, it is possible to seek to use health services.

2. Health service demand

Health service demand refers to the total amount of health services that consumers are willing and able to purchase over a given period of time. This includes demand for personal health services and market demand. Personal health service demand refers to the type and amount of realization of a certain health service that consumers are willing and able to purchase within a certain period of time and at various possible prices, depending on factors such as consumer preferences, income level, health status and the price of the health service.

3. Health service utilization

Health service utilization is one of the objective indicators to comprehensively describe the work of the health service system. It is a common and practical means to analyze the degree of health service utilization to check the efficiency and potential of health services. It refers to the actual use of health services by health service demanders, and is the result of mutual restriction between the demand for health services and the supply of health resources. It directly reflects the quantity and efficiency of health services provided by the health system for residents' health, while indirectly reflects the impact of health services provided by the health system on residents' health status (H. Fu, 2010).

4. Health care utilization behavior

Health care utilization behavior refers to the behavior of people using services of public health, clinical prevention or medical treatment. It covers many medical processes from receiving preventive services, outpatient service, surgery, and hospitalization. It is affected by many factors and is very complex. The definition of health service utilization behavior in this study mainly refers to the behavior of seeking medical help from health service institutions for the purpose of identifying diseases, alleviating pain and recovering health when residents are aware of their ill health (X. D. Fu, 2011). It includes the active behavior of residents who go to the health service institutions by themselves, and the passive behavior of patients who go to the hospital with the assistance of their guardians or agents.

2.1.3 Utilization of traditional Chinese medicine services

In the 2015-2020 Development Plan of Traditional Chinese Medicine Health Service (State Council, 2015), it is mentioned that TCM health service is an activity that employs TCM concepts, methods and technologies to maintain and improve the physical and mental health of the people, mainly including TCM health preservation, health care, medical treatment, rehabilitation services, and related services such as the elderly's health care, TCM culture, and health tourism. At present, there lacks relevant research on the concept of TCM service

utilization. On one hand, in the context of modern science, the academic community is still unable to accurately understand and elaborate the theory of TCM; On the other hand, modern medical technology has penetrated most of the process of TCM medical services. Many TCM diagnosis and treatment technologies (such as surgery) have been replaced by modern technology, so it is difficult to define the boundary between TCM and western medicine in offering health services. Modern medical services provided by medical institutions at all levels include both western medicine and modernized Chinese medicine technology. The diagnosis, treatment and health care based on the theory of TCM, as well as the traditional medicine used under the guidance of the theory of TCM, should be classified into the category of traditional medicine corresponding to modern medicine.

Therefore, the definition of TCM service utilization used in this study is relatively broad (C. Y. Song et al., 2005). First, from the perspective of service utilization providers, it includes both TCM services provided by TCM doctors and non-TCM doctors, also TCM services provided by organizations from primary health care institutions to tertiary medical institutions, and TCM services used by families and individuals themselves. Second, from the perspective of service content, it includes TCM diagnosis and treatment services, TCM use services and integrated TCM and Western medicine services. Finally, from the perspective of service functions, it includes medical services for disease diagnosis, treatment and rehabilitation using the theory and technology of TCM, as well as health promotion services for preventive health care and leisure health preservation using the theory and technology of TCM.

2.2 Development and research of traditional Chinese medicine in China

2.2.1 Development of the theoretical system of traditional Chinese medicine

Traditional Chinese medicine originated and thrived in the geographical background of China. Under the influence of Chinese philosophy, social environment and natural science for thousands of years, a unique theoretical system, namely the TCM theoretical system, has gradually taken shape. With the Theory of Essential Qi and the Theory of Yin-Yang and Five Elements as philosophical basis, the system has gradually been improved through thousands of years of medical practice, which, guided by the concept of holism and dynamics, takes the physiological and etiological pathogenesis of internal organs and meridians as core, and is characterized by dialectical treatment (J. P. Hu et al., 2015; Y. M. Cui, 2001).

1. Budding stage (the Spring and Autumn period and Warring States period)

During the Spring and Autumn period and Warring States period, iron tools were widely used, which greatly improved productivity. In this case, significant progress was made in various fields such as agriculture, astronomy, philosophy, and phenology, providing prerequisites for TCM to develop. During this period, the field of thought ushered in a new era of prosperity, historically known as "The Contention of a Hundred Schools of Thought", in which different academic schools such as Confucianism, Mohism, Legalism, Taoism, the School of Logicians, Political Strategists, the Eclectics, and Agriculturist came into being. The ideas of these schools had a great impact on the society at that time, as well as the field of TCM, contributing to the formation of basic medical theories. For example, the Yin-Yang School's theory of Yin-Yang and Five Elements, Taoism's discussion on the relationship among essence, Qi and spirit, Confucianism's theory of visceral manifestation, Legalism's understanding of vitality, became the source of TCM theory (C. L. Ma, 2016).

2. Initial stage of development (Qin and Han Dynasties)

Since Shang Yang's political reform, the national strength of the state of Qin had been increasing. In 221 BC, Emperor Qin put an end to overlord politics by unifying the whole state, and established the first feudal authoritarian state in Chinese history. From the founding of the Qin Dynasty to the Eastern Han Dynasty, on the whole, the economic life and social order at this stage developed steadily though being briefly stagnant due to political factors such as dynastic succession. Against this background, TCM had undergone fundamental changes. Basic medicine, clinical medicine and pharmacology have all moved from the simple accumulation of medical experience to the stage of theoretical summary (X. F. Ma, 2008). During this period, with regard to the field of thought, the Idealism of Manifest Destiny represented by Dong Zhongshu, the moral ethics of Confucianism, the Prophet Latitude Theology, the Materialism of Wang Chong and the establishment of Taoism all had a profound impact on the development of TCM. The extensive medical experience accumulated during the Spring and Autumn period and the Warring States period needed to be sorted out, summarized, systematized and theorized. In addition, during this period, great progress was made in classical philosophy and natural sciences such as astronomy, climatology, chronology and mathematics. All these provided favorable conditions for the formation of basic theories of TCM. Under these favorable conditions, through the joint efforts by many medical scholars, four major medical classics were published, namely, The Yellow Emperor's Classic of Internal Medicine (including Suwen and Lingshu), Classics on Eighty One Problems of the Yellow Emperor, Treatise on Typhoid Fever and Miscellaneous Diseases (including Treatise

on Cold Diseases and Synopsis of the Golden Chamber) and Agriculture God's Canon of Materia Medica, which marked that the theoretical system of TCM was initially formed, i.e., the formation of the system of principle, method, prescription and medicine. This is also the most important symbol in the initial development of TCM.

(1) The Yellow Emperor's Classic of Internal Medicine and Classics on Eighty One Problems of the Yellow Emperor laid the foundation of the TCM theory system

The Yellow Emperor's Classic of Internal Medicine, finished in the Western Han Dynasty, is the earliest collection of medical theories in existence in China. Its publication marked a rise of Chinese medicine from empirical medicine to theoretical medicine. The book summarizes the medical achievements and clinical experience of the Spring and Autumn period and Warring States period, absorbs the achievements of natural science and ancient philosophy before the Qin and Han dynasties, and, under the theoretical guidance such as uniting human and universe, the holism of body and spirit, the monism of Qi and the theory of Yin-Yang and Five Elements, determines the main theoretical principles of TCM. It elaborates in detail the anatomy, physiology, and meridians of human beings, the etiology and pathogenesis of diseases, and issues concerning diagnosis, treatment, and disease prevention, which initially establishes a systematic and unique theoretical system of TCM, becoming the basis and theoretical source of its development. The subsequent book, Classics on Eighty One Problems of the Yellow Emperor, not only solves the difficult problems in The Yellow Emperor's Classic of Internal Medicine from the aspects of physiology, etiology, pathogenesis, diagnosis and treatment, but also supplements its shortcomings, especially in the aspects of pulse diagnosis and acupuncture treatment. It is more detailed than The Yellow Emperor's Classic of Internal Medicine. For example, it establishes the Theory of Eight Extra Meridians, and improves the theories of specific acupoints, the acupoints matching method, and the theories of acupuncture and moxibustion. It is a classical medical book comparable to The Yellow Emperor's Classic of Internal Medicine at that time. The two works marked the initial formation of the basic theories of TCM (X. X. Sun, 2017).

(2) Treatise on Typhoid Fever and Miscellaneous Diseases laid the foundation of the theoretical system of clinical syndrome differentiation and treatment in TCM

Inheriting the basic theories of previous medical books, such as Neijing, Classics on Eighty One Problems of the Yellow Emperor, and Great Theory of Yin and Yang, Zhang Zhongjing, a famous medical expert in the Eastern Han Dynasty, wrote Treatise on Typhoid Fever and Miscellaneous Diseases, a masterpiece in clinical medicine, where he extensively absorbed the clinical achievements of the Han Dynasty and before, and combined his own

experience in diagnosis and treatment accumulated over a long time. The book uses the methods of syndrome-differentiation of the six meridians and viscera syndrome differentiation to treat exogenous diseases and internal injuries. It establishes the system of syndrome differentiation and treatment in TCM clinical diagnosis and treatment as well as the rules of application for principles, methods, prescriptions and medicines, laying a foundation for the further development of TCM clinical practice. Wang Shuhe, a medical scholar in the Jin Dynasty, classified Treatise on Typhoid Fever and Miscellaneous Diseases into Treatise on Cold Diseases and Synopsis of the Golden Chamber. Treatise on Cold Diseases focuses on the diagnosis and treatment of exogenous diseases, which summarizes the general law of occurrence and development of exogenous diseases, analyzes the characteristics of changes in different stages of diseases and the key points of diagnosis, puts forward the syndrome differentiation of six meridians for exogenous diseases, and records 113 prescriptions. Synopsis of the Golden Chamber focuses on the diagnosis and treatment of internal injuries and miscellaneous diseases. The book is divided into different chapters according to the types of diseases, expounding on the characteristics and syndromes of more than 40 diseases, analyzing their pathological mechanism, and pointing out the keys in diagnosis. The methods for viscera syndrome differentiation of internal injury and miscellaneous diseases run through the book, involving 262 prescriptions, and putting forward the three causes of disease. The principle of “Thousands of diseases do not go beyond three causes” has a profound impact on the future development of etiology and pathogenesis. Treatise on Typhoid Fever and Miscellaneous Diseases laid the theoretical foundation for the clinical medicine in TCM, and facilitated the integration of TCM theories and clinical practices.

(3) Agriculture God’s Canon of Materia Medica marked the initial establishment of the theoretical system of Chinese pharmacy

In the Eastern Han Dynasty, people’s understanding of the types, properties, collection, toxicity and side effects of drugs continued to deepen, and their experience in clinical drug use was enriched. Agriculture God’s Canon of Materia Medica, the first monograph that systematically summarized the early TCM theories and the experience in clinical drug use, was published. It is the groundbreaking work in Chinese pharmacy, which systematically summarizes the drug use experience of medical practitioners and the folks since the Qin and Han dynasties, thus having a great influence on future generations. The book divides drugs into three categories according to their different performance and efficacy, and summarizes some pharmacological theories, such as the special therapies of quaternity named Monarch, Minister, Assistant and Guide, the harmony of seven emotions, four properties and five tastes,

the matching of Yin and Yang, dialectical medication, and incompatibility of drugs, thus initially forming basic TCM theories and setting the medication guidelines for TCM differentiation. Most of the drugs included in this book are accurate and reliable. For example, ephedra cures asthma, dichroin stops malaria, coptis prevents dysentery, seaweed cures gall, and thunder pills kill insects. This book provides systematic knowledge of pharmacology for the academic system of TCM (H. J. Wu & Zhou, 2017).

3. The stage of improvement (from Wei and Jin Dynasties to Ming and Qing Dynasties)

The theoretical system of TCM has been developing in aspects such as theory and clinical practice, disease differentiation and synthesis, as well as tradition and innovation. From Jin and Tang Dynasties to Ming and Qing Dynasties, medical scholars have put forward many innovative views and theories, summarized valuable clinical experience, and developed the theoretical system of TCM from different perspectives based on classic works such as The Yellow Emperor's Classic of Internal Medicine, Classics on Eighty One Problems of the Yellow Emperor and Treatise on Typhoid Fever and Miscellaneous Diseases.

(1) From the Wei and Jin Dynasties to Five Dynasties -- the development of differentiation, integration and clinical practice

Since the end of the warlord regime of the Eastern Han Dynasty, China's history has entered the era of Wei, Jin, Southern and Northern Dynasties, where the state was constantly at war, and had long been divided and confronted, with constant regime changes, wars and social turmoil. In 618 AD, Li Yuan and Li Shimin overthrew the Sui Dynasty, which reunified the north and the south of the state, and established the regime of Tang Dynasty, where they adopted the policy of gentle concessions to restore production and develop economy. Owing to this policy, the social productivity of the early Tang Dynasty was rapidly improved, and domestic economy experienced unprecedented prosperity, with significant progress made in science and technology, culture and Chinese medicine. The Tang Dynasty also implemented an open foreign policy, and foreign economic and cultural exchanges became more frequent. All these created favorable conditions for TCM to absorb foreign medical experience and promote the extensive dissemination of Chinese and foreign medical knowledge. After the mid-Tang Dynasty, the problem of separatist regime was serious and wars continued. Land annexation was rampant and class contradictions became increasingly acute. In 907 AD, the Tang Dynasty completely collapsed. Since then China had fallen into a chaotic state of five dynasties in the north and ten states in the south. During this period, the literature on basic theories and medical classics was less than that on prescriptions and materia medica, but the great contribution made by some medical scholars in this field could not be ignored. For

example, Wang Shuhe, a medical scholar in Jin Dynasty, was the first to comprehensively summarized the achievements of pulse science since the Qin and Han Dynasties in a systematic manner, and, combining his own clinical experience, wrote China's first monograph on pulse science -- Pulse Classic. This marked the initial formation of the theoretical system of TCM (W. K. Fu, 1990). Lu Guang's Commentaries on the Classics on Eighty One Problems of the Yellow Emperor and Quan Yuan's Interpretation of the Yellow Emperor's Classic of Internal Medicine set a precedent where medical scholars began to annotate classic medical works (B. Q. Chen, 2010). Chao Yuanfang's Treatise on the Causes and Manifestations of Diseases made extraordinary achievements in the studies of etiology, pathogenesis and symptoms of diseases, and occupies an important position in the academic field of TCM. This is the first book that systematically expounds on the theory of phlegm disease in TCM, which can be called a major theoretical breakthrough in the studies of etiology and pathogenesis in TCM. Prescriptions and traditional Chinese pharmacology developed rapidly during this period. According to preliminary statistics, there were nearly 500 kinds of medical works published in the Wei, Jin, Southern and Northern Dynasties, among which works on prescriptions (Z. Liu, 2017). The compilation styles of these works were complete, their types of compilation were diversified and they were compiled in a well-organized manner. Many prescriptions in this period were recorded in Suishu · Jing Ji Zhi, such as Fan Dongyang's Fan Dongyang Prescriptions, Wang Qiao's Typhoid Fever Body Prescriptions, Chen Yanzhi's Sketch Prescriptions, Ge Hong's Handbook of Prescriptions for Emergencies (Ai, 2012; X. X. Wu, 2006). Inheriting previous experience in medical prescriptions, medical scholars would continue to innovate based on their own clinical experience, and their books on prescription used to focus on the accumulation of clinical experience in prescription and emphasize simplicity, convenience, appropriateness and efficacy (Jiao, 2014; X. X. Wu, 2006). Centering on disease, the books describe symptoms in greater detail, deepening people's understanding of the causes and pathogenesis, and making the methods of prevention and treatment more effective. Due to frequent wars, political turmoil, ethnic integration, and cultural exchanges, medical practitioners had more opportunities to conduct treatments, so that clinical medicine enjoyed rapid development in this period. According to Suishu · Jing Ji Zhi, medicine in the Southern Dynasty had already been subdivided into many branches, such as otology and ophthalmology, gynecology, obstetrics, pediatrics, traumatology, veterinary medicine, soft foot disease, tuberculosis, malaria, dietary methods, Indian medical prescriptions, human body diagrams, and coition medicine (Z. D. Shang, 1980). As medical disciplines became more sophisticated in the Wei

and Jin Dynasties, some early monographs on gynecology, obstetrics, pediatrics, otology and ophthalmology came into being. In this period, the prosperity of clinical medicine was seen not only in the increasing medical specialization, the monographs that came into being and the differentiation of various disciplines, but also in the comprehensive medical works compiled during this period, such as Miscellaneous Prescriptions, Sihai Leiju Prescriptions, Handbook of Prescriptions for Emergencies, Precious Essential Formulary for Emergency and Medical Secrets of an Official.

(2) Song, Jin and Yuan Dynasties - the emergence of schools and theoretical breakthroughs

During the Song and Yuan Dynasties, with growing economic prosperity and remarkable progress in science and culture, the government paid great attention to TCM, as it established a special agency to strengthen the management of TCM, set up the Bureau for Revising Medical Books to collate and publish ancient medical books on a large scale, organized the compilation of works on TCM, and established a TCM education institution “Imperial Medical Service” to cultivate TCM talents. The development of TCM in this period was influenced by multiple factors, including the changes of political pattern, the impact of the thinking of ethnic minorities in the ideological field, the liberal and relaxed academic atmosphere, the emergence of Confucian medicine, and the thinking of proper mindset in learning through investigation. Under the influence of the Neo-Confucianism school and with the needs for the development of TCM, more and more medical scholars paid attention to the research of basic TCM theories, and their research was becoming more in-depth, which brought about substantial progress in basic TCM theories compared with the previous period. For example, in terms of diagnosis, medical scholar Shi Fa in the Southern Song Dynasty compiled the 33 pulse graphs for the first time, and depicted the pulse graphs including “Eight Internal Meridians”, “Nine Categories of Meridians”, and “Seven Moribund Meridians” mentioned in the books of pulse science of the past dynasties based on his intuition and imagination (C. W. Li & Si, 2010), which became an innovative move in the history of pulse science in China and even in the world. In terms of etiology, Chen Yan, a medical scholar of the Song Dynasty, blazed a trail by proposing the “triple pathogeny” of disease, that is, all pathogenies are divided into three categories: internal causes of seven emotions, external causes of six desires, and non-endo-non-exogenous causes. This theory changed the situation that etiology research had lagged behind for hundreds of years, and became the theoretical basis for later generations of medical scholars to classify the causes of diseases. In terms of the pathogenesis, there emerged multiple academic schools represented by Liu Wansu (the

school of cold and cool), Zhang Congzheng (the school of purgation), Zhu Zhenheng (the school of nourishing the essence), and Li Qiao (the school of invigorating the spleen earth). These experience and ideas formed in the different perceptions of medical theories and clinical practice, not only enriched the content of TCM and promoted the great academic development of TCM, but also brought profound influence to future generations of medical scholars, including foreign medical scholars, such as the medical system of "Gosei School" established in Japan's Oriho period and Edo period; in the late Goryeo period of Korea, the theories of four eminent physicians of the Jin and Yuan Dynasties were widely disseminated, and the "Lisyu Medicine" gradually took shape. Due to the medical trend and clinical needs of the Song and Yuan Dynasties, clinical medicine was further sub-divided based on previous divisions: the Song set up 9 medical departments (department for adults, department of wind, department for children, obstetrics department, department for sore, swelling and fractures, acupuncture and moxibustion department, ophthalmology department, oral and laryngeal medicine, and department of war-wound and incantation); the Yuan set up 13 departments (department for adults, miscellaneous medicine, department for children, department of wind, department of maternity and miscellaneous gynaecological diseases, ophthalmology department, otology department, oral and laryngeal medicine, department of bone setting and war-wound treatment, department for sore and swelling, acupuncture and moxibustion department, department of incantation and psychology, and incantation department). With the sub-division of medicine and theoretical development and innovation, clinical medicine enjoyed more comprehensive development in this period, with achievements made in various disciplines.

(3) The Ming and Qing Dynasties -the stage of academic integration and further development

The Ming government paid great attention to education and the academic development of TCM. The development of TCM in the Ming Dynasty was also affected by multiple factors: further economic development, remarkable progress in science and technology, frequent medical exchanges between China and foreign countries, the introduction of Western medicine and the promotion of various philosophical ideas. In the early Qing Dynasty, China underwent two stages of prosperity, the High Qing Era and the Flourishing Age During the Rein of Qianlong and Jiaqing. However, in the subsequent years, the Qing government closed its doors to the outside world, promoted literary prosecution, suppressed intellectuals who refused to obey its rule, and advocated cumbersome imperial examination systems. Besides, the trend of worshiping classics and restoring antiquity was in vogue. All these, to some

extent, affected the development of TCM. Influenced by various factors such as politics, economy, science and technology, culture, thoughts and ideologies of the Ming and Qing Dynasties, the development characteristics of TCM in this period were closely related to the historical backgrounds. Since important classic medical books such as The Yellow Emperor's Classic of Internal Medicine, Treatise on Febrile and Miscellaneous Diseases, and Classics on Eighty One Problems of the Yellow Emperor in the pre-Qin and Han Dynasties were published, there have been numerous medical scholars who studied these classics, but under the influence of the trend that "internal" and "difficult" diseases must be referred to, and the clinical experience of Zhang Zhongjing must be observed the research of these medical classics reached an unprecedented height in history, which greatly improved medical scholars' understanding of human body and diseases, and further developed the theoretical system of TCM. The theory of warm diseases proposed in the Ming and Qing Dynasties was another outstanding achievement in the development of TCM. The warm disease is a general term for a variety of acute warm diseases caused by different febrile diseases in the four seasons. In the Song, Jin and Yuan Dynasties, warm disease was excluded from the category of typhoid, and it was pointed out that exogenous febrile diseases in the early stage should be treated with pungent and cool herbs to relieve exterior symptoms, which changed the original treatment of warm disease. In the Ming and Qing Dynasties, due to the influence of pragmatism and practical learning, coupled with the needs of prevention and treatment of epidemic febrile disease, medical scholars had to carry out extensive and in-depth research on warm disease from the aspects of basic theory, diagnosis and treatment, among which the contributions of Wu Youke (Infectious Epidemic Disease), Ye Tianshi (Theory of Warm Febrile Diseases), Xue Xue (Differentiation of Wet Febrile Diseases), Wu Xuan (Medical Records for Clinical Guidance) and Wang Shixiong (Theory of Febrile Diseases) were particularly prominent. The Ming and Qing Dynasties were a period of extensive medical exchanges between China and foreign countries. During this period, China had active exchanges with Korea, Japan, South Asian countries and Western European countries in terms of medical records, drug trade and clinical technology, the scale of which was unprecedented in history (Y. Hou & Li, 2021). For example, TCM classics such as The Yellow Emperor's Classic of Internal Medicine and Treatise on Febrile and Miscellaneous Diseases, which had been introduced from China, were spread to Korea, Vietnam, India and other countries. Some of these TCM works were once designated as official medical textbooks by local governments (J. W. Li & Lin, 2000), or translated into various languages. For example, Compendium of Materia Medica, a treatise on Chinese medicine written by Li Shizhen in the Ming Dynasty, was translated into French,

Italian and English in 1671. Clinical techniques such as pulse science, acupuncture therapy, alchemy and human pox inoculation originating from China were more widely spread around the world. TCM materials such as aconite, poria, and bezoar were also brought to European countries.

4.Reconstruction and development (from the Opium War to now)

After the Opium War, Western science, technology and humanistic ideas were introduced into China on a large scale, especially Western medicine, which had an important and far-reaching influence on TCM. After the long-term development and constant debate, Huitong Medicine, a medical school advocating the integration of Chinese and Western medicine, had a great influence in the medical field, which was represented by scholars such as Tang Zonghai, Zhu Peiwen, Yun Shuyu, and Zhang Xichun. Yun Shuyu held that both Chinese and Western medicine had their own strengths and weaknesses, and they can achieve the same therapeutic goal through different treatment methods. He emphasized that "medical scholars should not be limited to The Yellow Emperor's Classic of Internal Medicine", but develop TCM by drawing from Western medicine. Zhang Xichun's Integrating Chinese and Western Medicine is a valuable monograph on the integration of Chinese and Western medicine. Due to the limitations of objective conditions, coupled with the fact that the two major medical systems at that time did not really integrate, and that there was a lack of practical and scientific research methods, little was achieved in the integration of Chinese and Western medicine. In the 1930s, the Grant Collection of Chinese Medicine edited by Cao Bingzhang was a masterpiece that summarized the achievements of TCM made before the 1930s, and the trial edition of the textbook Basic Chinese Medicine was written in the 1970s, laying the foundation for the systematization and standardization of TCM theories. By insisting on the integration of TCM and Western medicine as a national health policy, and advocating the application of modern science and technology in TCM studies, the theoretical system of TCM will secure rapid development.

2.2.2 Review of the development of TCM policies

1. The development of TCM policies in China

(1) Exploration and establishment period (1949-1977)

After the founding of the PRC in 1949, China's various undertakings were yet to be revived. The Party and state leaders attached great significance to the role of TCM in restoring health care. Chairman Mao Zedong wrote an inscription for the first National Health Work

Conference held in 1950 and instructed that China should "unite the medical and health workers of all parts of China, old and new to form a consolidated united front that strives to carry out the great cause for people's health (W. K. Zhang, 1993)." This meeting also confirmed "Uniting Chinese and Western medicine" as one of the principles of national health work. In 1954, under the replies and instructions of Chairman Mao Zedong, the CPC Central Committee approved and forwarded the Report on Improving the Work of Traditional Chinese Medicine Issued by the Party Group of the Central Committee for Cultural Affairs. The report proposed a series of policies and measures to improve the work of TCM, incorporating the medical cause of TCM into China's major national development, and proposed to absorb TCM practitioners to participate in the work of large hospitals, hereby expanding the business scope of TCM (Ministry of Health, 1985).

Under the guidance of the report and the promotion of follow-up policies, the efficacy of TCM has been clinically verified, and the comprehensive treatment of TCM and western medicine has been extended to almost all clinical departments and diseases, and to medical institutions at all levels (J. P. Zhu, 2016). By 1970, the number of TCM hospitals in China had grown from almost zero to 171, and a large number of TCM outpatient departments, TCM departments and integrated traditional Chinese and western medicine wards in general hospitals had been established. The attention of national leaders and practical policy measures have promoted the establishment of the medical work of TCM, and the political and social status of TCM has been basically established.

(2) Adjustment and recovery period (1978-1991)

In order to solve the problem that China's TCM and medical service suffered serious damage during the "Cultural Revolution", the CPC Central Committee forwarded the Report on Implementing the Party's Policies Regarding TCM and Cultivating TCM Practitioner in September 1978 in document No. 56. The report puts forward eight suggestions on training new forces for the TCM talent team, involving personnel, policies, management, funds and other aspects. It is far-sighted and looks forward to the future (CPC Central Committee, 1978). This document is a programmatic one for the development of TCM in the new era. Its promulgation made the TCM industry adjusted and restored, but the westernization of Chinese medicine then became a prominent problem. To this end, the CPC Central Committee and the Ministry of Health adopted and promulgated the Opinions on Strengthening the Rectification and Construction of TCM Hospital and the Decision on Health Work respectively during from 1982 to1985. At the fourth session of the seventh National People's Congress in April 1991, it was formally defined as a policy of national health work that equal

importance should be attached to TCM and western medicine. From maintaining the characteristics of TCM to paying equal attention to TCM and western medicine, the relationship between TCM and western medicine had been gradually clarified. From then on, TCM has been given an independent status (Sang, 2006). To strengthen the organization and management of specific affairs of TCM, in January 1986, the 94th executive meeting of the State Council decided to establish State Administration of Traditional Chinese Medicine (in 1988, the State Council decided to also put the cause of traditional Chinese pharmacy under it, and renamed it as China's National Administration of Traditional Chinese Medicine [NATCM]), which was a "historic turning point" in the administration of TCM (NATCM, 1990). So far, TCM has an independent management organization with more authority and resources, and the principle of "equal emphasis on TCM and western medicine" has also clarified the status of Chinese medicine. This means that the work of TCM would enter a period of relatively independent development, and the medical cause of TCM would enter a new stage of development.

(3) Consolidation and development period (1992-2011)

In the 1990s, the overall level of diagnosis and treatment and service capacity of TCM had been greatly improved, but it was difficult to achieve the same emphasis on Chinese and Western medicine. In order to solve the problems that hinder the sound development of TCM, such as the irrational allocation of TCM resources, the weakening of TCM characteristics, the weakening of its advantages, and the low contribution rate to health work, the CPC Central Committee and the State Council issued the Decision on Health Reform and Development in January 1997, continuing to ensure the health work policy of "paying equal attention to TCM and western medicine", and emphasizing "correctly handling the relationship between inheritance and innovation". It was pointed out that China should combine the means of diagnosis and treatment of TCM with modern science and technology, realize the modernization of TCM, and improve the medical service capacity of TCM. After years of cultivation, China's TCM medical service made great strides. In 2003, "SARS" ravaged China, and TCM was involved in the diagnosis and treatment process (58% of patients were treated by TCM). The combined treatment of TCM and western medicine played a special role. The medical service capacity of TCM had been recognized by experts of the World Health Organization

To promote the reform of the medical and health system and further the development of TCM medical services, the CPC Central Committee and the State Council issued the Opinions on Deepening the Reform of the Medical and Health System in April 2009, proposing to

"establish and improve the basic medical and health system covering urban and rural residents, and provide safe, effective, convenient and affordable medical and health services for the masses" (J. P. Zhu, 2016) to build a medical and health system with Chinese characteristics (State Council, 2009a). In the same year, the State Council issued Several Opinions on Supporting and Promoting the Development of Traditional Chinese Medicine as one of the important supporting documents for deepening the reform of the medical and health system (State Council, 2009b). This is an important supporting document of the Opinions on Deepening the Reform of the Medical and Health System, emphasizing the important role of TCM in deepening the reform of the medical and health system. The document points out the development direction of the TCM industry from the macro level, and emphasizes the management and development of TCM according to the characteristics and laws of TCM. It insists on the combination of TCM and western medicine, equal emphasis, mutual complement and coordinated development. Since then, in order to implement the planning of the CPC Central Committee and the State Council on TCM and ensure the development of TCM, the National Administration of Traditional Chinese Medicine (NATCM) issued the "12th Five-Year Plan" for the Development of TCM and the Opinions on the Implementation of the Project to Improve the Service Capacity of Traditional Chinese Medicine at the Community Level and other documents, detailing the relevant security policies and measures (NATCM, 2011). Under the impetus of the new medical reform, the characteristics of being "simple, convenient, effective and cheap" of TCM had been fully developed, and the medical service of TCM had received social attention and recognition. This period was an important period for China's economic and social development, as well as the consolidation and development of TCM.

(4) Reform and improvement period (2012 to date)

Since the 18th National Congress, the CPC Central Committee with General Secretary Xi Jinping as its core has made a series of important discussions on the development of TCM from the perspective of China's overall development. In the new era, the Party and the country are striving to improve the development policy and mechanism of TCM on the basis of continuing to implement the health work policy of "paying equal attention to TCM and western medicine". In 2016, the state established a policy and regulation system of TCM with "one law, one outline and one plan". In February of the same year, the State Council issued the Outline of the Strategic Plan on the Development of Traditional Chinese Medicine (2016-2030), defining the goals and tasks of developing TCM in the new era, which is a programmatic document to promote the development of TCM in the new era (State Council,

2016). In October, the CPC Central Committee and the State Council issued the "Healthy China 2030" Planning Outline, which systematically deployed the promotion of the construction of a healthy China by TCM and medical services (State Council, 2016). In December, the 25th session of the Standing Committee of the National People's Congress adopted the first Chinese medicine law, Law of the People's Republic of China on Traditional Chinese Medicine, which provides support for the development of TCM medical cause from the legal level (NATCM, 2016). Meanwhile, the State Council issued the white paper "Traditional Chinese Medicine in China", which is the first white paper on TCM in China, indicating that the policy and regulation system of TCM is gradually improving. On July 24, 2019, at the ninth meeting of the Central Committee for Comprehensively Deepening Reform, the Opinions on Promoting the Inheritance, Innovation and Development of Traditional Chinese Medicine was reviewed and adopted, which made a comprehensive and detailed deployment and arrangement for the medical work of TCM, further focusing on the inheritance and innovation of TCM, and promoting its contribution (State Council, 2019). This document is the first comprehensive deployment of TCM in the form of a central document since the founding of the PRC, and has far-reaching significance. In 2020, COVID-19 unexpectedly swept the world, during which China has made great contributions to the fight against it and provided valuable experience for the world. It's worth mentioning that TCM played an important role and became a highlight of the epidemic prevention and control. See Table 2.1 for the main development policies of TCM since the new medical reform.

Table 2.1 Main development policies of TCM since the new medical reform in 2009

Time	Policy	Major content
April, 2009	Opinions on Supporting and Promoting the Development of Traditional Chinese Medicine (GF [2009] No. 22)	It aims to: Emphasize the complementary and coordinated development of TCM and western medicine; Emphasize the principle of attaching equal importance to TCM and western medicine; Stress the management and development of TCM according to its characteristics and laws; Develop preventive health care services and appropriate technologies of TCM in primary medical and health institutions.
June, 2012	The 12th Five-Year Plan for the Development of Traditional Chinese Medicine	It aims to: Promote the inheritance and innovation of TCM science and technology; Accelerate the development of ethnic medicine and the integration of TCM and western medicine; Promote the prosperity and development of TCM culture; Actively carry out foreign exchanges and cooperation of TCM.
August,	Opinions on the	The government leads and organizes forces to

2012	Implementation of the Project of Improving the Service Capacity of TCM at the Community Level (GZYYZF [2012] No. 31)	build a complete community TCM service network.
June, 2013	Several Opinions of the State Council on Promoting the Development of Health Service Industry (GF [2013] No. 40)	It requires the comprehensive development of medical and health care services of TCM, and emphasizes improving the service capacity of TCM at the community level
March, 2015	Outline for the Planning of the National Medical and Health Service System (2015-2020) (GBF [2015] No. 14)	The allocation of TCM medical service resources should adopt the policy of attaching equal importance to TCM and western medicine, to improve the comprehensive service capacity of basic western medicine and TCM.
February, 2016	Outline of the Strategic Plan on the Development of Traditional Chinese Medicine (2016-2030) (GF [2016] No. 15)	The goal is to achieve full coverage of TCM services by 2030 and establish a community health management model integrated with TCM.
August, 2016	The 13th Five-Year Plan for the Development of Traditional Chinese Medicine (GZYGCF [2016] No. 25)	It is intended to improve the medical service system of TCM covering both urban and rural areas, which increases the strength of TCM services in society.
December, 2016	Law of the People's Republic of China on Traditional Chinese Medicine	For the first time, the important position, development direction and supporting measures of TCM have been clarified in terms of law, providing legal guarantee for the development of TCM
March, 2017	Implementation Plan for the "Hundred, ten thousand and hundred thousand" Talent Project for the Inheritance and Innovation of Traditional Chinese Medicine (as known as the Qihuang Project)	It aims to: Increase funding and formulate supporting policies; Promote the combination of talent with project and platform construction; Innovate training mode and strengthen team building; Accumulate talent to create a good social atmosphere
April, 2018	Guiding Opinions on Deepening the Education of Traditional Chinese Medicine Teachers	It is intended to: Construct an organic combination of teacher education and college education, post-graduation education and continuing education; Build a system of TCM teacher education that runs through the whole process of the development of TCM talent; Basically establish a system of TCM teacher education with clear connotation, rich models and sound mechanism.
October, 2019	Opinions on Promoting the Inheritance, Innovation and Development of Traditional Chinese Medicine	Relevant parties should: Carry out collaborative research between Chinese and Western medicine, and establish the consultation system of Chinese and Western medicine in general hospitals and specialized hospitals; Strengthen the training of TCM thinking and reform the education of TCM colleges and universities;

December, 2020	Implementation Opinions on Promoting the Inheritance, Innovation and Development of Traditional Chinese Medicine	Establish a multi-disciplinary integrated scientific research platform, and improve the innovative model of integrated production, teaching and research of TCM. Relevant parties should: Promote the innovation of TCM while carrying forward the good traditions; Improve the review and approval system in line with the characteristics of TCM: Strengthen the quality and safety supervision of TCM; Promote the modernization of the regulatory system and capacity of TCM; Pay attention to coordination and linkage of multiple parties.
January, 2021	Notice of the General Office of the State Council on Several Policies and Measures for Accelerating the Characteristic Development of Traditional Chinese Medicine (GBF [2021] No. 3)	Promote the complementary and coordinated development of TCM and Western medicine; Strengthen the evaluation and encouragement of Chinese medicine talents; Optimize the management of the review and approval of TCM; Innovate the integrated medical model of TCM and Western medicine, and improve the mechanism of coordinated epidemic prevention and control of TCM and Western medicine; Implement the training project of talents with Chinese medicine characteristics.
December, 2021	Guiding Opinions of the National Healthcare Security Administration and the National Administration of Traditional Chinese Medicine on Medical Insurance to Support the Inheritance, Innovation and Development of Traditional Chinese Medicine (YBH [2021] No. 229)	Include the eligible TCM medical institutions in the designated medical insurance points; Strengthen price management of TCM services; Include appropriate Chinese medicines and TCM medical services in the scope of medical insurance payment; Improve payment policies suitable for the characteristics of TCM.
December, 2021	Promoting the High-quality Integration of Traditional Chinese Medicine into the Development Plan of the Belt and Road Initiative (2021-2025)	By 2025, the intergovernmental cooperation mechanism of TCM will be further improved; pragmatic cooperation in the fields of health care, education and training, scientific and technological research and development, and cultural dissemination will be solidly promoted; the internationalization level of the TCM industry will be continuously enhanced; and the high-quality integration of TCM into the joint construction of the “Belt and Road” will achieve obvious results.
March, 2022	14th Five-Year Plan for the Development of Traditional Chinese Medicine	Adhere to the equal importance of Chinese and Western medicine, and implement major projects for the revitalization and development of TCM; Promote the integration of TCM and modern science; Promote the complementary and coordinated development of TCM and Western medicine; Promote the modernization and industrialization of

		TCM.
March, 2022	14th Five-Year Plan for Improving the Service Capacity of Grassroots Traditional Chinese Medicine	By 2025, grassroots TCM will achieve five "full coverage": County-run TCM medical institutions (hospitals, outpatient departments, clinics) have basically achieved full coverage; Community health service centers and TCM centers in township hospitals have achieved full coverage; The provision of grassroots TCM services has basically achieved full coverage; The allocation of grassroots TCM talents has basically achieved full coverage; Grassroots TCM health education has achieved full coverage.
April, 2022	Opinions of the National Administration of Traditional Chinese Medicine, Ministry of Education, Ministry of Human Resources and Social Security, and National Health Commission on Strengthening the Work of Traditional Chinese Medicine Talents in the New Era (ZYYRJF [2022] No. 4)	Further implement the strategy of giving priority to TCM talents; Strive to innovate the system and mechanism for the development of TCM talents; Strive to optimize the structure layout of TCM talents; Strengthen the ability and quality of TCM talents; Strive to promote the construction of high-level and grassroots TCM talents.
September, 2022	Implementation Plan of Healthy China Initiative to Promote the Traditional Chinese Medicine Health	Give full play to the unique advantages of TCM in preemptive prevention, promote the upgrading of the health project of TCM in preemptive prevention, and better provide people with all-round and full-life cycle TCM health services.
October, 2022	14th Five-Year Plan for the Development of Traditional Chinese Medicine Talents	Establish a team of TCM talents to meet the needs of TCM inheritance, innovation and development; Implement the TCM Characteristic Talent Training Project (Qihuang Project); Strengthen the training of high-level and grassroots talents; Strengthen the construction of talent training platforms; Improve the talent development system and mechanism.

(5) Summary

With the successive introduction of national policies, local governments are also continuously supporting the development of local TCM in policy and finance, and actively exploring the development model of community-level TCM. By the end of 2017, 98.2% of the community health service centers, 85.5% of the community health service stations, and 96.0% of the township health centers in China were able to provide TCM services. The volume of TCM diagnosis and treatment services accounted for 15.9% of the total medical services (NHC, 2018). From the perspective of service provision, the allocation of TCM

service resources at the community-level has been greatly improved. However, compared with the whole medical and health system, the development of TCM services is still relatively slow. Many researchers still believe that the government pays insufficient attention to the development of TCM. In contrast, the proportion of financial investment in TCM in the total national medical and health investment has been less than 10%, and the supply of TCM health resources is significantly lower than that of western medicine (Z. M. Pang et al., 2019). The growth of diagnosis and treatment volume in some community-level TCM institutions tends to slow down (Y. Zhao et al., 2018). Community-level TCM resources and services are not correspondingly equal, and service demand is not stimulated. It is required to continue to increase financial investment and improve the allocation of TCM resources at the community level. Therefore, in the reform of the whole medical and health service system, how to use the limited government resources to improve the development level and utilization efficiency of TCM still poses a difficulty to policymakers and industries, which needs to be explored and studied scientifically and systematically in practice to find an effective way to improve the total amount and efficiency of TCM services at the community level.

2.Implementation of TCM policies in Guangdong

Guangdong is the birthplace as well as one of the most productive areas of Lingnan medicine. Lingnan TCM culture, with a long history, has been well inherited. As a big province of TCM, Guangdong took the lead in implementing the strategy of a strong province of TCM as early as 2016, comprehensively improving the TCM services, and promoting the coordinated development of the medical treatment, health care, education, scientific research, industry, culture, and foreign exchange of TCM. In 2014, Guangdong issued the Action Program of Guangdong Province to Construct a Strong Province of TCM (2014-2018), aiming to build export bases for TCM products, encourage pharmaceutical enterprises with independent intellectual property rights to simultaneously carry out clinical research in foreign countries, and accelerate the construction of an international certification system. In 2017, Guangdong province released the Guangdong Provincial Action Plan for Promoting the Belt and Road Development of TCM (2017-2020) to strengthen policy research, improve the mechanism of TCM “Belt and Road” construction, deepen regional cooperation, and concretely promote the development of TCM in the Guangdong-Hong Kong-Macao Greater Bay Area.

After years of development, TCM in Guangdong has made remarkable achievements. At present, the province has 21,000 TCM medical institutions, including 184 TCM hospitals, and has set up 1,682 grassroots TCM comprehensive service areas (TCM halls), covering all areas

in the eastern, western and northern parts of Guangdong. In 2018, the number of TCM visits in Guangdong reached 193 million, and the amount of the annual service for preventative treatment reached 10 million, leading China in scale. According to the China Hospital Competitiveness Ranks 2019 released by HK Asclepius Institute of Hospital Management, Guangdong has nine TCM hospitals among the top 100 TCM hospitals in China, ranking the first.

On April 24, 2020, Guangdong Provincial Party Committee and Government issued Measures to Promote the Inheritance, Innovation and Development of TCM (hereinafter referred to as the Measures). At the same time, a notice was also issued, requiring all regions and departments of the province to take the opportunity of promoting the comprehensive TCM reform to try, explore and innovate in the service mode, industrial development and quality supervision, so as to jointly promote the high-quality development of TCM industry in Guangdong province. According to the Measures, by 2022, TCM services will cover all the listed tertiary TCM hospitals in cities at or above the prefectural level, the county-run TCM hospitals in the province, the Grade-A secondary TCM hospitals in counties with a permanent population of over 300,000, and villages (communities). There will be 0.70 TCM beds per thousand permanent residents in the province, and 0.50 TCM (assistant) practitioners per thousand residents. It is clear that Guangdong will build a high-quality TCM service system, improve the capacity of grassroots TCM services, enrich the services of TCM halls, encourage TCM doctors to serve at grassroots hospitals, and create a regional hierarchical diagnosis and treatment model with TCM characteristics.

2.2.3 Health management in Chinese medicine related research

1. Health

Health is the basis for the progress of civilization in human society and a necessary condition for the survival and development of human beings. On April 7, 1948, the World Health Organization (WHO), whose purpose is to enable people all over the world to obtain the highest possible level of health, was founded. According to the Charter of the World Health Organization, the concept of health was defined for the first time as not merely the absence of disease and infirmity, but rather as a state of physical, mental, and social integrity (Norio & Zhang, 1990). In 1978, WHO reaffirmed the meaning of health in the Declaration of Alma-Ata adopted by the International Conference on Primary Health Care, stating that "health is not merely the absence of disease and suffering, but encompasses a state of

perfection in all aspects of physical, mental and social functioning" (WHO, 1978). The goal of achieving "health for all" in the values of primary health care requires that the health system be "people-centered in health care. In 1986, the Ottawa Charter issued by the first International Conference on Health Promotion, which WHO co-sponsored, stated that health is a resource for society and the individual, and an expression of individual capabilities; good health is a major resource for social, economic and personal development, and an important aspect of the quality of life (WHO, 1986). In 1989, the WHO (1989) further improved the concept of health, stating that health should be "a state of physical, mental, social adjustment and moral well-being".

2. Health management

Health management is a comprehensive concept that involves the continuous monitoring, assessment, intervention and promotion of the health status of an individual or a group of people in order to prevent disease, minimize health risks, and improve quality of life and work efficiency. The core objective of health management is to help people achieve optimal health and prolong healthy life through scientific methods and strategies. The earliest country to put forward the concept of health management is the United States. In the late 1950s, the concept of health management began to be emphasized in health insurance, and its core content is that health insurance institutions and medical service providers carry out systematic health management for insurance coverage clients (including patients with illnesses or high-risk groups) or healthcare clients to achieve effective control of the occurrence or development of diseases, significantly reduce the probability of risk and the actual medical costs, thus achieving the purpose of insurance organizations to reduce health insurance claims (Kong, 2010). With the transformation of the medical model and changes in the health concept of the population, health management has developed rapidly, and both the extension and connotation of the concept of health management have changed rapidly. It is now generally accepted that health management not only focuses on the treatment of diseases, but also emphasizes prevention as the mainstay, and reduces the occurrence and development of diseases through early intervention and continuous management. It applies to all populations, especially patients with chronic diseases, the elderly, children and adolescents, and individuals with specific health needs. With the development of medical technology and increased health awareness, health management has become an important part of the modern healthcare system.

Health management is still a new thing in China, but with the economic and social development of China and the improvement of people's living standards, health management,

as an emerging health service mode, is gradually being recognized and accepted by more and more people. The concept of health management in China has also basically formed a consensus. Prof. Zhang Kaijin and others synthesize the representative definitions of health management at home and abroad, and define health management as the following: using modern biomedical and informatization management technology, comprehensively monitoring, analyzing and evaluating the health status, lifestyle and social environment of an individual or a group of individuals from the social, psychological and biological perspectives, providing health consultation and guidance, and intervening and managing health risk factors in a comprehensive way. The whole process of intervention and management of health risk factors (K. J. Zhang & Xia, 2013). Chinese medicine is rooted in Chinese culture, as the crystallization of the wisdom of the Chinese people, after five thousand years of development, it has become an important health resource in China, which, by virtue of its unique concept of treating the future disease, holistic outlook and identification of evidence and treatment, personalized health management, etc., makes it valuable in health promotion, so the concept of health management in China should be supplemented with the relevant content of traditional Chinese medicine, i.e., health management is the process of "The modern concept of health (physiological, psychological and social adaptability) and the new medical model (physiological-psychological-social) as well as the treatment of disease in Chinese medicine" as a guide, through the use of theories, techniques, methods and means of modern medicine and modern management science, the overall health condition of individuals and groups and their influence on health promotion, and the importance of its value in health promotion. By adopting the theories, techniques, methods and means of modern medicine and modern management science, the overall health status of individuals and groups and their risk factors affecting health are comprehensively detected, assessed, effectively intervened and continuously tracked (Peng & Sun, 2014).

3. Chinese medicine health management

The concept of TCM health management originates from health management, which is an important content of health management and a category of health management with Chinese characteristics and advantages. The definition of TCM health management refers to the health promotion process of collecting, monitoring, analyzing and evaluating comprehensive health information on individuals or groups, providing health consultation and guidance on TCM, and intervening in the management of health risk factors with the aim of improving the health level of the whole population throughout the life cycle by applying the theories, methods and practices of TCM and combining them with the concepts and techniques of modern health

management. The core concepts of TCM health management include "treating the disease before it occurs", "holistic concept" and "diagnosis and treatment", aiming to maintain and promote the health status of individuals and groups.

(1) The concept of treating the future illness

The concept of "treating the disease before it occurs" is an important concept in Chinese medicine, and is the basis of the TCM concept of health, which originates from the ancient TCM classics, and was first mentioned in the Yellow Emperor's Classic of Internal Medicine (HUNDI NEIJING). This concept emphasizes prevention and intervention before the onset of disease in order to avoid its occurrence. It embodies the medical thinking of Chinese medicine that emphasizes prevention and focuses on the whole and individual differences. The core idea of "treating the disease before it occurs" is "preventing the disease before it occurs, and preventing the disease before it occurs"; preventing the disease before it occurs emphasizes health maintenance, and preventing the disease before it occurs means that the disease should be treated in a timely manner to prevent the disease from progressing further (Y. C. Wang, 1992). "Treating the disease before it occurs" emphasizes the importance of caring for the positive qi, improving the body's ability to resist evil spirits, and controlling the initiative of the disease, so as to achieve the purpose of preventing the occurrence of the disease before becoming ill, preventing the further development of the disease after becoming ill, and preventing the recurrence of the disease after it has been cured; it also advocates the use of early intervention to interrupt the disease, and adopts the concepts and methods of early intervention in the areas of health maintenance, health care, treatment, and rehabilitation to effectively prevent the disease and prevent its recurrence. Advocating early intervention to cut off the disease, adopting the concept and method of early intervention in health care, health maintenance, treatment and rehabilitation, effectively realizing the purpose of maintaining health, preventing and treating diseases, and improving the quality of life. As a tool for disease prevention and health protection, the concept of health management is similar to the concept of "treating the disease before it occurs", and the combination of Chinese medicine theory and health management theory provides a new direction and path for health management. Carrying out TCM services in health management is very important for promoting residents' health literacy and building a health system where everyone enjoys health care services (Du et al., 2020; Shen et al., 2014).

(2) Holistic concept

The holistic concept of Chinese medicine is one of the core principles of the theoretical system of Chinese medicine, which emphasizes that the human body is an organic whole, and

that there are close links and mutual influences between various organs, tissues and functions, and this concept is reflected in the following aspects: first, the harmony between the human body and the natural environment, that is, Chinese medicine believes that the human body and the natural world are a unified whole, and that people's life activities are affected by the natural environment (e.g., changes in the four seasons, Therefore, when treating diseases, Chinese medicine practitioners will consider the impact of the natural environment on the human body and advocate conforming to the laws of nature to maintain health. Secondly, the interconnection of the five viscera and six bowels: the five viscera (heart, liver, spleen, lungs and kidneys) and six bowels (gallbladder, stomach, small intestine, large intestine, bladder and triple jiao) in Chinese medicine not only bear specific physiological functions, but also have complex connections with each other. For example, Chinese medicine believes that "the liver opens the orifices of the eyes", meaning that the condition of the liver affects the health of the eyes. Third, the balance of qi, blood and fluids: qi, blood and fluids are the basic substances that maintain the life activities of the human body, and they circulate in the body, transforming and depending on each other. Chinese medicine emphasizes that a balanced state of qi, blood and fluids is the key to good health, and that imbalance may lead to disease. Fourth, the balance of yin and yang, yin and yang, five elements doctrine is an important part of Chinese medicine, it will be the universe of everything into two categories of yin and yang, and the five elements (gold, wood, water, fire, earth) to explain the relationship between the things of each other. In the human body, the balance of yin and yang and the five elements is considered the foundation of health. Fifth, the relationship between emotions and internal organs, Chinese medicine believes that people's emotional activities (joy, anger, anxiety, thoughts, sadness, fear, shock) and internal organs function is closely related to the abnormal fluctuations in emotions will affect the function of internal organs, which in turn affects health. The holistic concept of Chinese medicine emphasizes that in the treatment and prevention of disease, the overall state of the individual and internal and external environmental factors should be taken into account, and comprehensive interventions should be taken to achieve the purpose of restoring and maintaining health. This concept has also been increasingly emphasized in modern medicine, especially in the areas of chronic disease management, mental health and holistic medicine.

(3) Diagnosis and Treatment

Diagnosis and treatment is the core treatment method of Chinese medicine, which is a process of determining the treatment plan based on the patient's specific symptoms, signs and physical state. This approach reflects the principle of individualized treatment in Chinese

medicine, emphasizing a comprehensive analysis of the cause, location, nature and mechanism of the disease in order to develop a treatment strategy that best suits the patient's current condition. The process of diagnosis and treatment usually consists of the following steps: First, the four diagnostic methods, i.e., TCM collects information about the patient's health through the four diagnostic methods of looking (observation), smelling (hearing and smelling), questioning (asking about the history and symptoms), and cutting (pulse diagnosis). Second, identification, i.e., after collecting sufficient information, the TCM practitioner will analyze the symptoms according to TCM theories to identify the cause of the disease (e.g., external wind, internal injury to emotions, etc.), the location of the disease (in which organ or meridian the lesion occurs), the nature of the disease (cold, heat, emptiness, actuality, etc.), and the mechanism of the disease (the course of the pathological changes and the mechanism). Thirdly, treatment, i.e. based on the results of the diagnosis, the Chinese medicine practitioner will formulate treatment principles and methods. This may include a variety of treatments such as herbal treatments, acupuncture, tuina, cupping, dietary therapy, etc. Fourth, prescription, i.e. after determining the principles of treatment, the Chinese medicine practitioner will prescribe Chinese medicines and select medicines that are suitable for the patient's constitution and condition. A Chinese medicine prescription usually contains a variety of medicines designed to work synergistically to achieve the therapeutic goal. Fifthly, adjustment, i.e. during the course of treatment, the Chinese medicine practitioner will adjust the treatment plan in a timely manner according to the patient's response and changes in his/her condition, which is a dynamic process requiring continuous observation and assessment by the practitioner. The purpose of diagnosis and treatment is to restore the balance of yin and yang in the human body and to promote the normal operation of qi, blood and fluids, so as to achieve the goal of curing diseases and restoring health. This approach emphasizes individual differences, believing that even the same disease may have different manifestations and treatment needs in different people. Therefore, evidence-based treatment is the embodiment of individualized treatment in TCM and an important feature of TCM clinical practice.

4. Chinese medicine health management services

China's TCM health management services are an important part of the national basic public health service program, aiming to provide comprehensive health management services for the public through the concepts and methods of TCM, mainly including TCM constitution identification (providing TCM constitution identification services for specific groups of people, such as the elderly and children, and providing personalized health guidance

according to the type of constitution), TCM health care guidance (providing guidance on emotional regulation, dietary regimen, daily living regimen, exercise health care, acupoint health care and other aspects according to different constitution), and TCM health management for children (providing guidance for children's 6, 12, 18 and 20 years of age, and for children's 6, 12 and 18 years of age). (providing guidance on emotional regulation, dietary regulation, daily living regulation, exercise health care and acupoint health care according to different body types), Chinese medicine health management for children (providing guidance on Chinese medicine regulation for parents of children at 6, 12, 18, 24, 30 and 36 months of age, including dietary regulation, guidance on daily living and activities, as well as teaching specific Chinese medicine massage methods), Chinese medicine health management for the elderly (providing Chinese medicine health management services for the elderly aged 65 and above), and Chinese medicine health management for the elderly (providing Chinese medicine health management services for the elderly aged 65 and above). Chinese medicine health management for the elderly (providing Chinese medicine health management services for the elderly aged 65 and above, including Chinese medicine physique identification and guidance on Chinese medicine health care), Chinese medicine rehabilitation services (providing rehabilitation services featuring Chinese medicine, such as external application of Chinese medicine and acupressure, etc., in the stage of recovery from diseases), Chinese medicine health education (popularizing the knowledge of Chinese medicine health and enhancing the public's awareness of health and ability of self-care), and participation of Chinese medicine in the emergency response to public health incidents (providing guidance on emergency response to new and unexpected infectious diseases and major public health incidents). The implementation of these services will help enhance the role of Chinese medicine in prevention, treatment and rehabilitation, as well as its ability to respond to emergencies in public health incidents.

According to the 14th Five-Year Plan for the Development of Chinese Medicine, the Chinese Government will further promote the development of Chinese medicine health management services, including upgrading the capacity of Chinese medicine health services, building a high-quality Chinese medicine workforce, and promoting the high-quality development of the Chinese medicine industry. By 2025, the rates of TCM health management for the elderly and children will reach 75% and 85% respectively. In addition, it will strengthen the capacity of Chinese medicine for emergency treatment and enhance the role of Chinese medicine in the prevention and treatment of new and sudden outbreaks of infectious diseases and in the emergency response to public health incidents. Through these

measures, the Chinese government hopes to better meet the health needs of the people and promote the construction of a healthy China.

5. Summary

With the change of medical model and the change of health concept, health has become the most concerned area for the residents, and health management has been widely concerned and emphasized by the society. As a traditional medical system, Chinese medicine's unique advantages in preventing disease, promoting health, treating disease and rehabilitation process make it play an increasingly important role in modern health management. The development of community TCM health management services is of great significance in meeting the growing health needs of the people, promoting the development of the health industry and realizing the strategic goal of a healthy China.

2.3 Theoretical basis

2.3.1 Health service demand theory

1. Needs and demands

Needs are the basic requirements of individuals or groups of individuals in physiological, psychological, social and other aspects of certain things or conditions, which are designed to meet their survival, development and well-being Needs are an internal state, which is often manifested in the form of internal lack or imbalance in the state of dependence of their survival and development on objective conditions (D. J. Guo, 2005). Demand refers to economics will be in a certain period of time, a certain price level, individuals or groups are willing and able to exchange (usually through the payment of money) to obtain a certain good or service willingness. Demand is a concept in economics that has two necessary conditions for its formation: first, the consumer's desire to buy; second, the consumer's ability to pay. If there is only the desire to buy without the ability to pay, or although there is the ability to pay without the desire to buy, can not constitute the consumer's demand for a certain good or service . The relationship between the two is that need is an intrinsic, basic, desire for the fulfillment of a condition, while demand is the manifestation of a need into an actual willingness to purchase under specific economic conditions. However, the difference between the two is that needs are the basis of market transactions, and the ability to pay is a necessary condition for their consideration; whereas needs focus more on the basic requirements of an individual or group of individuals, do not depend entirely on market transactions, and involve

broader criteria such as morality, ethics, and social justice.

2. Demand and health service demand

Demand is an economic principle referring to a consumer's desire to purchase goods and services at given prices and his or her ability to pay a price for a specific good or service in a certain period of time. It can be seen that there are two necessary conditions for the formation of demand. One is the purchase desire of consumers; the other is the consumers' ability to pay. The lack of either of these two conditions does not constitute a consumer's demand for a good or service (H. X. Zheng, 2016).

Health service is a special kind of goods for human survival and development, and its products appear in the form of services. Consumers need to pay for health services. The demand for health services is constituted when consumers have the desire to obtain health services and also have the ability to pay for health services. In practice, health service demand is usually measured by the amount of health services actually used by consumers. Analyzed from a structural perspective, health services demand includes individual demand and market demand. Individual demand refers to health services and the quantity that a person purchases in a certain period of time and at various possible price levels. The type and quantity of individual demand depend on the consumer's income level (budget constraint) relative to the price and security status, the effect of health services and the consumption goals and preferences of the individual or the household. Market demand for health services is the quantity of a certain health service that will be purchased by all consumers in a given market, over a certain period of time and at various possible price levels, and it is the sum of individual demand. Therefore, any factor affecting individual demand will affect market demand. In addition, market demand is influenced by the number of consumers. When the price of a certain health service decreases, the market demand may increase due to the increase in the demand by each consumer. For example, it is not possible for an individual to have the same surgery multiple times because of the reduced cost of the operation, but it is possible for those who in the past could not afford to use the health service. In this case, the increase in market demand is the result of a growth in the number of consumers.

3. Health service need

(1) Concepts

Health service needs are the amount of health services that a consumer should receive in terms of his or her health status to maintain or make himself or herself as healthy as possible, without regard to the ability to pay. Whether consumers should receive health services and what is a reasonable quantity of such services are usually determined by medical

professionals mainly based on the residents' own health status, that is, the objective needs for medical, prevention, health care, rehabilitation and other services proposed by the gap between people's actual health status and their ideal status. The fulfillment of health service needs usually relies on public health policies, health insurance systems, government inputs and social support, etc., to ensure that all people have access to necessary health services.Health service needs in a broad sense include needs recognized by individual consumers and needs determined by medical (H. X. Zheng, 2016), as shown in Table 2.2.

Table 2.2 Determination of health service needs by individual consumers and medical experts

Medical experts	Individual consumers	
	Have health service needs	No health service needs
Have health service needs	A	C
No health service needs	B	D

They can be divided into four categories. A means that experts and individuals agree that there is a need for health services, so it is necessary to obtain health services. B means that people subjectively think that they have a disease or should get some health services to prevent the disease, but medical experts believe that there is no need for such services, in which case there is a discrepancy between the perceived needs of individuals and the needs determined by medical experts. For example, if a consumer feels that he or she should receive health services because of a hypochondria or a very minor health problem, but medical experts judge from a medical point of view that there is no need to use health services, there is an inconsistency between the two. Whether consumers need to receive health services should be judged by medical experts, but the actual use of health services often depends on the consumers' perception. C refers to the medical and health services that should be obtained and utilized by consumers based on medical experts' analysis of consumers' health status with available medical knowledge, but customers do not recognize their health problems. D means that both medical experts and individual consumers believe that there is no need for health services.

(2) Characteristics

1) Lack of consumer information. Whether in the commodity market or in the service market, usually, consumers can buy goods or services according to their own knowledge and wishes, and this kind of consumption is purposeful and targeted. However, in the health service market, due to the specialization and complexity of health services, consumers lack medical knowledge and information, and it is difficult for them to make a correct judgment on the quantity and quality of health services in advance, so they tend to be blind when choosing health services. Firstly, it is difficult for consumers to judge whether they are sick and what

kind of disease they are suffering from, and they are unable to determine what kind of services they need and the quantity of services they need. Secondly, in order to minimize the health risks of diseases, consumers need to have access to health services in a timely manner and usually do not have time to estimate the effectiveness of health services and compare their prices. In this sense, there is an obvious asymmetry of information between the supply and demand sides of health services, and consumers do not have enough information to make their own consumption choices.

2) Passivity of health service demand. Since consumers lack knowledge of health services, the demand for health services that they can perceive is always limited. Patients can only really use health services effectively after they have been examined by a doctor and after the doctor's approval. Although the consumers' desire to seek medical treatment is active, the kind of service they receive is mainly decided by the doctor, and most of the examinations and treatment plans they receive are carried out under the doctor's arrangement, so it is in a clearly passive state for consumers to utilize health services. Thus, health services are a special kind of industry that is influenced by the judgment of physicians with consequent changes in demand. The reason why patients are at the mercy of doctors is not just a lack of medical knowledge, but the fact that when consumers visit a health facility for an illness they tend to do so with a desire for help. Since doctors can help patients to relieve their illnesses, the relationship between the two exists as a relationship of aid and aid, and there is no equal exchange relationship between the demander and the supplier of health services.

3) Benefit externality of health service utilization. The utilization of health services is different from the consumption of other ordinary goods or services. After a consumer purchases an ordinary good in the market and consumes such good, the benefits or advantages that such good brings to the consumer can only be enjoyed by the consumer himself, the consumption of health services is different. An example is the control of infectious diseases. When susceptible people are vaccinated or patients with infectious diseases are cured, it is the same as cutting off the transmission of infectious diseases and eradicating the source of infection, then the beneficiaries are not simply the individuals who receive the service, but the people who are in contact with it, that is to say, the use of health services outside the consumer to achieve positive benefits, that is, it embodies the benefits of the use of health services externality. In this case, if the consumers themselves do not realize the seriousness of the disease or do not have the ability to pay, resulting in a lack of demand for health services, the government or society has the responsibility to take certain measures to ensure that these patients receive the necessary health services in order to protect the health of others.

4) Uncertainty in the demand for health services. If the demand for health services can be reflected by the prevalence rate or attendance rate of a population, then it is possible to predict the level of demand for health services of a particular population. However, it is very difficult to predict that a particular individual is going to become ill and needs to utilize health services. The occurrence of illness and injury in an individual is an episodic event, and because of individual differences, even for people with the same illness, the health services they need and the results they produce will be different, so there is uncertainty in the demand for health services.

5) Multi-source of payment for health services. Diseases not only bring physical pain to people, but also bring different degrees of economic burden to families and society. In order to protect the health of the whole population and reduce the economic risks that diseases bring to individuals, so that all people can enjoy the basic right to health protection. All economic agents in society have invested in the field of health services, and medical insurance, social assistance, and government and corporate intermediaries have partially transferred social wealth to consumers of health services, changing the purchasing power of consumers of health services and their sensitivity to the price of health services, and thus changing the consumer behavior of consumers of health services to satisfy their demand for health services. The quantity and quality of demand for health services have also changed.

(3) Factors influencing the demand for health services

1) Economic influencing factors. According to the traditional economics consumer theory, the demand for health services is influenced by the price of health services, consumer income, individual subjective preferences, the price of relevant health goods (services), expectations about the future availability of goods (services), and the health care security system.

First, the price of health services. With reference to the demand curve, the demand for health services is affected by the price of health services, i.e. the higher the price, the lower the demand; the lower the price, the higher the demand.

The second is consumer income. When the income level of consumers changes, their purchasing power will change, which will affect their demand for health services. The higher the income, the stronger the purchasing power of consumers for health services and the more demand for health services; conversely, the lower the income, the weaker the purchasing power of consumers for health services and the less demand for health services.

Third, individual subjective preference. Consumers have their own subjective evaluations of various types of health services. For example, consumers in different regions and of different age groups have different preferences for Chinese medicine and Western medicine

services; for the same disease, some people think that Western medicine is more effective, while others think that Chinese medicine is more comprehensive. Of course, this preference of consumers changes over time.

Fourth, the price of relevant health goods (services). Generally speaking, the demand for health service goods (services) changes positively with the prices of their substitutes, e.g., for people with vitamin A deficiency, when the price of vitamin A-rich food rises, consumers will use vitamin A medicines more, and the consumption of health service goods (services) will increase. Demand for health services moves inversely with the price of the complementary good (service); when the price of the complementary good (service) rises, people will demand less health services. For example, syringes and injections. As a complementary product of injections, an increase in the price of syringes will affect the demand for injections.

Fifth, the expectation of the future supply of health goods (services). Expectations about the future supply of health goods (services) also affect the quantity demanded now. If consumers anticipate that health care costs are likely to rise in the future, they will increase their current demand for health services. For example, in areas of China where health care reforms are being carried out under the "individual account and disease management" system, consumers expect to pay more out-of-pocket for health care in the future, so before the reforms are carried out, they will increase their consumption of health services, and treat what they should and can, thus increasing their current demand for health services.

Sixth, the health care security system. Different health care security systems affect patients' ability to pay and thus their demand for health services. If under a system where people do not have to pay out-of-pocket for health care, the demand of this group is equal to the need; whereas patients who need to pay out-of-pocket are affected by their ability to pay, and may be in a situation where they have a medical condition that they do not treat, the need of this group cannot be transformed into a demand.

2) Non-economic influences.

One is social factors. Among the factors affecting the demand for health services, demographic socio-cultural factors include many aspects such as population size, age composition of the population, gender, marital status, years of education, and housing conditions.

A. Population size. Considered from a demographic point of view, the size of the population is one of the most important determinants of the demand for health services, all other factors being equal. An increase in the size of the population inevitably leads to an increase in the utilization of health services.

B. Age composition of the population. Different age groups have different needs for health services. An increase in the proportion of elderly people in the population will lead to an increase in the demand for health services, mainly because the frequency and types of illnesses of the elderly are different from those of the young and the strong, and elderly people have a higher prevalence of illnesses and more chronic diseases, and their utilization of health services is also relatively high In addition, infants in the composition of the population have a low resistance to disease, and their utilization of health services is also relatively high. Therefore, the impact on the demand for health services is insufficient when viewed purely in terms of changes in absolute population size.

C. Gender. The impact of gender on the demand for health services is uncertain. From the point of view of occupational characteristics, some dangerous or occupationally toxic jobs are more often performed by men, who therefore have more chances to suffer from productive disasters and occupational diseases. However, from the point of view of women's physiological characteristics, raising children also increases the demand for health services, which of course is mainly for women of childbearing age. From the point of view of the number of years of service utilization, the average life expectancy of women is again longer than that of men, and all other things being equal, the potential demand for health services is also higher for women.

D. Marital status. Marital status has an impact on the demand for health services. The length of hospitalization is shorter for those with spouses, especially when home beds are available in lieu of hospitalization, and there is an increase in the number of people accompanied to outpatient treatment in lieu of hospitalization or in need of convalescence at home. In turn, single, widowed and divorced persons have a greater need for health services than those with spouses. In addition, a portion of this population is more prone to physical and mental illnesses than those with spouses due to physical and mental injuries, leading to an increase in the utilization of health services.

E. Years of education. There is an effect of the level of education on the demand for health services. People with more education have more knowledge of preventive health care and early diagnosis and treatment, thus increasing the demand for health services; as they have more knowledge of preventive health care, they will use self-medication more often, thus reducing the utilization of health services in health institutions. Less educated people have less knowledge of preventive health care and early diagnosis and treatment, and less need for general health services, but once they have health problems they tend to be more serious, so these people will also make more use of health services in health institutions.

F. Housing conditions. Consumers' housing layout, structure, size and other conditions also have an impact on the demand for health services. Poor housing conditions, such as living in back-lit, poorly ventilated, damp and cold environments, predispose consumers to rickets, asthma, etc., as well as infectious diseases, which will lead to an increase in the utilization of health services.

The second is health status and health perceptions. According to Mike Grossman, demand for health services comes from a more basic need for health. According to him, consumers demand health for two reasons: ① Health is a consumption good (service) that makes consumers feel good. ② Health is an investment good (service), and the state of health will determine the amount of time available to the consumer. A decrease in the number of sick days will increase the amount of time spent on work and leisure activities, and the reward for investing in health is the monetary value of the decrease in the number of sick days. A decline in health status makes consumers feel ill and they face various losses, both monetary and emotional, for consumers. Therefore, people in poor health need to utilize health services to improve their health and reduce losses.

The occurrence of disease is an episodic event for an individual. However, when viewed in the context of the population as a whole, the occurrence of disease is largely predictable, and some diseases can be prevented by taking measures, for example, some infectious diseases can be controlled by vaccination. However, regardless of the measures taken, many diseases remain inevitable. Therefore, with a relatively high incidence or prevalence of various diseases in the population, there are bound to be many people in poor health, thus directly affecting the demand for health services.

With the progress of the times and the development of science, people have a more scientific and comprehensive understanding of health, and WHO's definition of health considers that health is not only the absence of disease and infirmity, but also an intact state in terms of physical, mental, moral and social adaptability. The concept of health means that people are not only able to carry out early diagnosis and treatment of diseases through regular medical checkups, but also seek psychological counseling to alleviate the pressure of work and life and prevent the occurrence and development of diseases. The change in the concept of health has also led to an increased demand for health services.

3) Value of time

In a system of free or essentially free health services, where the monetary price to the consumer is low, the cost of time is likely to be a larger proportion of such health services.

Because time is finite, time for illness has an opportunity cost and should be considered one of the limited resources of the consumer. When a greater proportion of time costs are utilized for a particular service, the predicted price elasticity of demand coefficient will be smaller.

The finding that the cost of time has a significant impact on the demand for health services has three policy implications:1) The demand for health services will become more sensitive to the cost of time as the monetary price of the service decreases. If the volume of health services provided is not sufficient to meet consumer demand, a possible rationing method is to allocate health services to those who can afford to wait for a consultation. People with low time costs are more likely to receive health services than people with high time costs. (ii) To increase the utilization of health services by certain populations, in addition to lowering the monetary price, it is necessary to increase their utilization of health services by lowering the cost of time. For example, locating clinics or hospitals closer to these populations to reduce travel time to and from the clinic, or having more consultation rooms in clinics to reduce their waiting time. (iii) In addition to the price charged for health services, i.e., the monetary price, the cost of the consumer's time should also be taken into account in the development of the health service system. For example, medical insurance designated hospitals should choose medical institutions that are closer to their units or families.

4) Health service suppliers

In the non-health service market, consumers with different levels of knowledge can pick and choose the goods or services they want, but in the health service market, patients' consumption of health services is determined by doctors. Doctors, when providing health services, not only take into account the interests of patients, but also their own financial interests therefore, under certain conditions, they can induce consumers to consume more of a certain health service, creating the phenomenon of induced demand. Doctors, whether from the hospital's point of view or from the point of view of personal income, always want to provide patients with as many checkups and medicines that are priced higher than the cost as possible within the permissible range, so that on the one hand they can increase their income, and on the other hand they can avoid some misdiagnosis and prevent unnecessary medical disputes. This kind of behavior may increase services that are beneficial to patients, but more often than not, it increases unnecessary health services, which not only wastes health resources, but also may lead to more serious consequences, such as performing unnecessary surgical operations.

4. The relationship between health service need and health service demand

Health service need is a prerequisite for health service demand. The ideal state between

them is that people's health service needs are all transformed into health service demands and all demands are services that reasonably meet the people's health needs, that is, the needs for health services are met by using health services, while there is no waste of resources. However, this is not the case in reality. Sometimes there is unreasonable use of resources: some health service needs cannot be met. The relationship between health service need and health service demand can be illustrated in Figure 2.1.

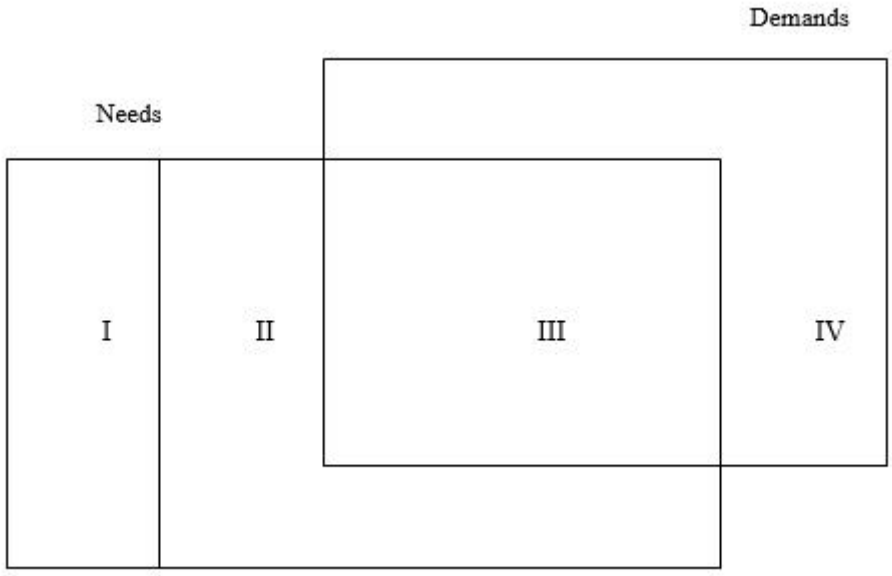

Figure 2.1 The relationship between health service need and health service demand

Source: X. H. Zheng (2016)

In the Figure 2.1, the area I indicates that the health service need is not recognized, that is, the individual does not recognize or feel his or her health problems, and then does not use health services. Area I is a recognized need, but it is not transformed into a demand for various reasons such as self-perceived mild illness, financial difficulties, inconvenient transportation, poor quality or attitude toward demanded services. Area III is the subject of health service utilization when consumers are willing and able to purchase health services, and doctors consider it necessary to provide health services from a professional point of view. Area IV is the health service demands without need, such as those created or induced by doctors. These are unnecessary demands, which are used to compete for limited health services resources with people who really need them, leading to the waste and lack of health service resources. Reflecting the barriers to the utilization of health services to a certain extent, the area I and II constitute the potential demand for health services, and measures should be taken to transform them into demand. For example, poor rural areas have a high potential demand for health services due to low health awareness, economic difficulties and other factors, affecting farmers' health service utilization and health improvement. However, the

potential demand can be reduced by improving the level of education, strengthening health education, providing medical coverage and controlling medical costs.

5. Policy significance of health service need and health service demand

Need and demand are the original driving force of social and economic life, and health service need and health service demand are also the starting point for formulating health policies and plans, which can be used as the basis for health resource allocation.

Health plans are developed based on health service needs, and such plans have better equity. However, whether people utilize health services is influenced by a variety of factors, including health needs, the price and quality of services, consumers' income and consumer preferences. If health resources are allocated based on needs alone, there is a risk that the allocated resources will be underutilized. That is to say, the amount of allocated resources is greater than the actual use, and there is a surplus of resources. If the allocated resources are lower than the actual use, there is a shortage of resources, resulting in longer waiting time or delayed access to needed services.

By allocating resources according to actual demands, limited health resources can be allocated to more efficient places so as to improve the efficiency of resource utilization, meet people's demands for health services and enhance the vitality of health institutions. However, health services have their particularities, so citizens should be guaranteed to equally enjoy the most basic health services regardless of ethnicity, income and status. If health plans are formulated based on demands only, a portion of low-income people will not be able to use health services because of their low ability to pay, leading to a reduction in the equity of health service distribution and affecting the health of those people. In addition, formulating plans in this way will also take some unnecessary health demands into consideration, resulting in a waste of health resources. Only by analyzing the influencing factors and adopting corresponding countermeasures can we reduce the use of unreasonable health resources and improve the degree of meeting the health service needs.

2.3.2 Behavioral model of health services utilization

In 1968, Dr. Andersen, a professor at the University of Chicago, proposed the behavioral model of health services utilization (BMHSU), also known as the Andersen Model (Andersen, 1995). The model aims to explain why households utilize health services, and to define and measure the equitable access of health services. It is one of the three classic models of health services utilization and is widely used in health services research and health system

evaluation (Nie & Jin, 2017; Shan, 2013).

Health service access is one of the most important indicators for measuring and evaluating the equity, efficiency, and quality of health service systems by linking the services, populations, and outcomes of health. Therefore, the access of health services has often become one of the key factors in formulating public health policies. The 2004 edition of the American Health Association's glossary of health care terms defines health service accessibility as individuals' ability to obtain appropriate health care services. The World Health Organization defines accessibility of health services as: the convenience degree for residents to go to primary health care service institutions (the degree of difficulty in meeting people's most basic medical and health service demands in space).

Andersen classifies health service access as potential, realized, equitable, inequitable, effective, and efficient access. (1) Potential access refers to the organization of health services, the supply of resources and the facilitation factors that affect the utilization of health services by consumers. A common evaluation indicator is the coverage of health services or insurance. (2) Realized access is the actual utilization of health services, including medical technicians and service provision. (3) Equitable access refers to the differences in the utilization of health services caused by factors such as personal characteristics and health service needs. It is inequitable access if social factors or enabling resources determine the availability of health services. (4) Effective access means linking the realized access with health outcomes (health status and patient satisfaction) and assessing the effectiveness of health services by improving health outcomes. (5) Efficient access is to evaluate the relationship between the resources consumed by health services and health outcomes. The maximization of health outcomes should be at the cost of minimizing the consumption of resources (costs).

Andersen's behavioral model of health services utilization is the theoretical basis of the research on health service utilization and access. Since the model was put forward in the 1960s, scholars from various countries have continued to develop and improve it. A large number of empirical studies have used this model for more than 30 years, and the questions raised in these empirical studies have further enriched and perfected the model. Finally, the model in the fourth stage has become perfect and mature. The model development is roughly divided into the following five periods chronologically:

(1) The 1960s - 1970s

Andersen initially tried to explain the behavior of medical services use by integrating a group of variables related to population and social psychology from the perspective of equity in the accessibility of health services, and proposed that the behavior of medical services use

depends on the three factors of forward-orientation, enablement and demand. The forward-orientation factor refers to the tendency to affect individuals' demand for health services, that is, the individuals' tendency of use behaviors. It is mainly dominated by demographic characteristics (such as age and gender), while the social background variable is mainly dominated by education level and occupation, and the health belief is an individual's attitude, value and knowledge towards health and health services. The enablement factor includes personal and household resources, such as income, health insurance, and resources for consistent health care; community resources include the number of doctors per unit of population, the number of beds per unit of population, population density, geographical location, transportation, service cost, distance from resources, waiting time for medical treatment, and informal family assistance. The operationalization and measurement of the demand factor include subjectively perceived needs and professional assessment needs. The former includes self-reported health status, overall health measurement indicators, and the number of symptoms occurring on self-reported days of inability to work; the latter is operationalized as situations of limited capacity (such as indicators of ability to perform basic daily activities), and diagnoses made by medical personnel. This model mainly predicts and explains the reasons why individuals approach health services. However, the whole model can jump out of the perspective of individual behavior only and study individual behavior from a systematic point of view, which is a sociological perspective and makes a beneficial attempt to integrate the relationship between micro individual actions and macro social structure. It provides important enlightenment for subsequent related research.

(2) The 1970s and 1980s

By the 1970s, Andersen and his collaborators further improved the original model (Aday & Andersen, 1974; Andersen & Newman, 1973), expanded the framework of health services use, made reference to the relevant research on "access" to actually conceptualize and operationalize the concept of equitable "access" to health resources, and established a set of the integrated theoretical framework and empirical indicators for measurement, which mainly includes indicators and outcome indicators. Process indicators refer to health service system characteristics (including macro-structural factors such as policies, resources, and organizations) and demographic variables; outcome indicators are actual use of the health service system (further operationalized to distinguish the four variables of type, location, goal and time interval) and post-use satisfaction (including convenience, availability, finance, provider characteristics, and quality of services). The biggest improvement in the model at this stage is the further extension of health services use to include outcome indicators of

health services use behavior. This lays the foundation for subsequent research to form a research model with loops.

(3) The 1980s and 1990s

This model in this period of time retains the original variables in the health care service use model, and also adds the external environment (such as physical, policy and economic components) as an important input variable in understanding the use of health services (Aday et al., 1980).It has also identified that individual health behaviors (such as diet, exercise and self-care) and use of health services influence health outcomes (self-evaluation of health status, objective assessment of health status and satisfaction).

(4) The 1990s to 2000

The model at this stage further divides the forward-orientation factors into macro-level environmental factors and individual-level socio-demographic factors, which makes the whole model more logically clear (Andersen, 1995). In addition, the biggest difference between this model and the previous model is the emphasis on the dynamic and loop morphological characteristics of the model. Arrows are used to indicate the interaction between individual actions and structural elements from the appearance of the model; from the content of the model, the effects of health service system and environmental factors on service outcomes and the interaction between individual health behavior and population social characteristics are confirmed. In this way, the interaction between individual behavior and social structure (policy system, environmental factors) of Andersen's model is actually reflected, rather than staying at the level of theoretical hypothesis. At this stage, the basic framework of Andersen model has been greatly improved, including the health services use behavior and its related influencing factors and results in the model, and describing the relationships among these factors in detail. Therefore, this model has been widely applied in practical research.

(5) From 2000 to present

The latest version of Andersen's model contains four main dimensions: situational characteristics (such as original environmental factors), individual characteristics, health behaviors, and health outcomes. Andersen lays emphasis on situational characteristics and individual characteristics in the latest model, and further divides situational characteristics into tendency situational characteristics, enablement situational characteristics and demand situational characteristics. In the same way, individual characteristics are also divided into tendency individual characteristics, enablement individual characteristics and demand individual characteristics. Because the model was published in a book rather than a journal

paper, this version is rarely cited and verified by the academic circle at present.

Therefore, this study mainly adopts the phase four model, which has been applied and verified relatively mature, as the research framework. The model includes four important components: environmental factors, personal characteristics, health behaviors, and health outcomes (Details are shown in Figure 2.2). It also includes a feedback loop: environment and personal characteristics determine healthy behaviors; healthy behaviors determine health outcomes; environment and personal characteristics directly affect people's health outcomes; and healthy behaviors in turn affect personal characteristics. The main purpose of the development of BMHSU is to improve the equitable access to health services. The model defines the concepts of equitable access and inequitable access, suggesting that equitable access is determined by population and needs, while inequitable access is the result of a combination of social structure, health beliefs, and enabling resources. After nearly 50 years of development, Andersen's BMHSU has become an internationally accepted theoretical model for analyzing factors influencing health service utilization and health service accessibility. Many studies have applied the model as a theoretical framework to analyze the causes of differences in health service utilization, patient satisfaction, and health outcomes through predisposing factors, enabling factors, and need factors in personal characteristics.

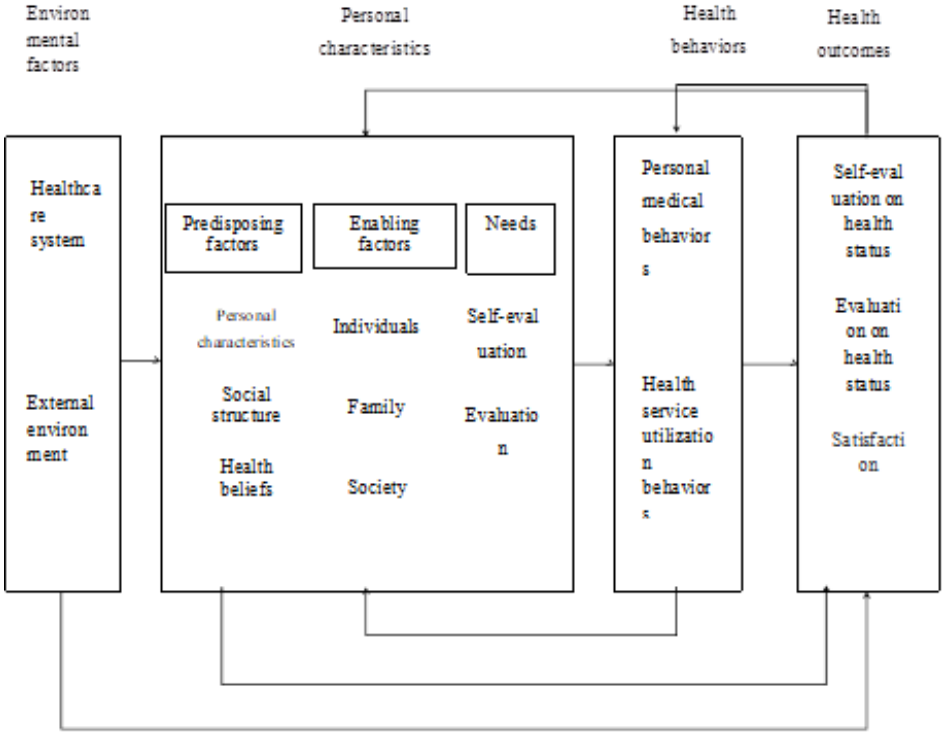

Figure 2.2 Behavioral model of health services utilization

Source: Babitsch et al. (2012)

① Environmental factors

Environmental factors include the healthcare system and the external environment. The healthcare system refers to the policies, resources, organization, and financing arrangements that affect the access, availability, and acceptability of health services. The external environment includes natural, political, and economic factors that are important in understanding health services utilization.

② Personal characteristics

In terms of personal characteristics, it can be seen through the model that people's health services use the predisposing factors, enabling factors that facilitate or impede the use of health services, and need factors for medical services. These three levels of variables are used to predict and explain health service utilization, which in turn affects health outcomes and service satisfaction. This is also the basic content of the first stage of the health services utilization model proposed by Anderson in 1968 (Anderson, 1965).

The first level is predisposing factors, among which demographic factors such as age and gender indicate that people need health services from their physiological characteristics. Social structure is measured by a series of indicators including education, occupation, race, social networks, social relations and culture to reflect an individual's position in the society and ability to deal with problems. Health beliefs refer to people's attitudes, values, and knowledge about health and health services. And these factors affect their use of health services and their perception of demand intensity. Health beliefs can also explain why social structure may affect enabling factors, the need for self-evaluation, and the use of health services. In addition, some genetic characteristics and physiological characteristics such as mental disorders and cognitive impairment are later added to the predisposing factors.

The second level of variables is the enabling factors that facilitate or impede people's use of health services, including individual, family, and community resources. First, there must be specialized medical personnel and medical institutions where people live and work; second, people must know how to reach these institutions and how to utilize them. Important variables at this level include income, medical insurance, time to reach medical institutions, and time to wait for services. Since social relations can promote or hinder people's access to health services, it is very appropriate to use social relations as a variable of enabling factors. As difficulties in the conceptual definition and measurement of social relations have been gradually overcome, social relations have been added to this level of variables.

The third level of variables is need factors, the direct cause of the utilization of health services. Therefore, a health service utilization model must first consider how people perceive their physical condition and functional status, how they experience symptoms and pain, and

worry about their health, and whether they can tell if an illness is serious enough to require professional medical treatment. In fact, this self-perception can be explained to a large extent by social structures and health beliefs, but the predisposing and enabling factors still have great limitations. It cannot reflect the necessity of a physical health condition, and self-evaluation needs to explain to a certain extent the reasons why people seek help and consume health services. The need for evaluation represents a professional judgment of people's health status and needs for health services. It is a reliable and valid measurement from the perspective of biological sciences, and it also varies according to the competence of the evaluation experts and changes in medical science. Therefore, the need for self-evaluation can help us better understand treatment methods and the behavior of seeking medical treatment, and the need for evaluation may be more closely related to the type and quantity of treatment received by patients after they go to a medical institution.

The model assumes that predisposing factors, enabling factors that facilitate or impede the use of health services, and need factors have different explanatory power according to the different types of health services examined. In addition, the amount of health services used by individuals will vary depending on the predisposing factors, enabling factors, and need factors. Among these three factors, because need factors are directly related to the utilization of health services, they have a greater impact on health services than predisposing factors and enabling factors.

③ Health behaviors

Health behaviors include personal medical behaviors and health service utilization behaviors. Personal medical behavior is the behavior of individuals to maintain and improve their health through appropriate diet, exercise, and self-medication. Therefore, its interaction with health service utilization also affects health outcomes.

④ Health outcomes

Health results can be evaluated from three aspects: personal self-perception of health status (cognitive health status), health status evaluated by professional medical personnel (objective health status), and patient satisfaction. Satisfaction is the evaluation of health services after the patients have used them. It can be evaluated from the perspectives of convenience, cost coordination, information, quality and attitude. In practice, waiting time, transportation and technical services are mostly evaluated.

After decades of substantial empirical support in and outside China, Andersen's behavioral model of health services utilization has been revised and supplemented for five

times, and has gradually become the mainstream model for health service research recognized as applicable to health service research in the international health service research field. As a reliable tool based on the social system research approach, it is the authoritative health service research model preferred by researchers in the field. Majaj et al. (2013) conducted a qualitative survey on the health-seeking behaviors of Palestinian rural women, and semi-structured interviews based on the Anderson behavior model. The research results showed that elements such as the socio-cultural roles of gender, health beliefs, economic level and geographical accessibility, cognitive level, and health needs jointly affect their medical seeking behaviors. Accordingly, it is suggested that the sociocultural dimensions that are directly related to the elements above should be considered in health policy planning. Trinh et al. (2007) studied the determinants of antenatal care (ANC) application by taking Vietnamese rural women as subjects. By using BMHSU to select explanatory variables and using multivariate regression to analyze data, it was found that external environment, susceptibility and the needs for ANC were most related to the choice and gestational age when receiving ANC, and that ANC treatment was most related to its continuity and overall utilization rate. In China, scholars also use BMHSU as theoretical basis in relevant research to select research factors and construct index systems. S. F. Guo et al. (2001) used the Anderson behavior model to investigate the medical behavior of rural women with genital tract infections, and found that their medical behavior was affected by their knowledge of disease and treatment, perceived stigma, economic factors, and the burden from work and family. Based on the Anderson behavior model, G. H. Liu (2016) constructed a medical behavior index system from four dimensions: environmental factors, population characteristics, health behaviors and health outcomes, and an evaluation index system for maternal medical behavior with strong expert representation, high authority and good coordination. J. W. Hu et al. (2016) used quantitative methods to study people's preference for basic drug use, and selected research variables from four dimensions based on the Anderson model: environmental factors, population characteristics, health behaviors and health outcomes. Their results showed that health beliefs, ability and environmental factors have significant influence, but the influence of needs is not significant, and on this basis, it is suggested that government should pay attention to the role of health beliefs in the preference of basic drug use, strengthen health education and publicity, and increase efforts in the research of the formation mechanism of medication behavior and the response mechanism of basic drug policy, so as to construct a good policy environment.

2.3.3 Individual behavior theory

1. Theory of Reasoned Action

Based on social psychology, the Theory of Reasoned Action (TRA) was proposed by Fishbein and Ajzen in 1975 to explain the relationship between attitudes and behaviors (Hill et al., 1977). The theory holds that individual behavior can be reasonably inferred from behavior intention to some extent, and that individual behavior intention is determined by the attitude and subjective criteria of behavior. People's behavior intention is a measure of people's intention to engage in a certain behavior, while attitude is people's positive or negative feelings about engaging in a certain target behavior. It is determined by the main belief of the result of behavior and the estimation of the importance of the result. Subjective norms (subjective criteria) refer to the degree to which people perceive that people who have a significant influence want them to use the new system, as determined by the degree to which individuals trust others in what they think should be done and their level of motivation to agree with the opinions of others. These factors combine to create behavior intention (tendency), which eventually leads to behavioral change.

TRA is one of the most basic and influential theories in the study of human behavior. TRA is a general model and it puts forward that any factor can only indirectly affect the behavior through attitude and subjective criteria, which makes people have a clear understanding of the rationality of behavior. The theory has an important implicit assumption: people have complete control over their actions. However, in the organizational environment, individual behavior is restricted by management intervention and atmospheric environment. Therefore, it is necessary to introduce some external variables, such as situational variables and self-control variables, to meet the needs of the research.

2. Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is proposed by Ajzen on the basis of TRA (Ajzen, 1991; Hill et al., 1977). Ajzen found that human behavior is not 100% voluntary but under control. Therefore, he extended TRA by adding a new concept of perceived behavioral control, thus developing it into a new behavioral theory research model-TPB.

According to this theory, all factors that may affect behavior indirectly affect the performance of behavior through behavioral intention. Among them, behavior intention refers to an individual's decision on the subjective probability of taking a certain behavior, which reflects an individual's willingness to take a certain behavior. Behavior refers to the actions that an individual actually takes. The behavior intention is influenced by three related factors.

One is the attitude of the individual, namely the attitude towards a certain behavior, which refers to the positive or negative feeling of the individual towards the behavior, and the attitude formed after the conceptualization of the individual's evaluation of the specific behavior. Another is the external subjective norm, which refers to the social pressure that individuals feel on whether to take a particular behavior, that is, the extent to which the salient individuals or groups influence whether the individual takes a particular behavior when predicting the behavior of others. The last one comes from Perceived Behavioral Control, which refers to one's past experience and expected obstacles. The more resources and opportunities one possesses and the fewer expected obstacles are, the stronger one's perceived behavioral control over one's behavior will be. There are two ways of its influence. One is that it has motivational implications for behavior intention. Second, it can also predict behavior directly.

Specifically, the more positive an individual's attitude toward a certain behavior is, the stronger the individual's behavior intention will be. The more positive the subjective norm is for a certain behavior, the stronger the individual behavior intention will be. The more positive the attitude and subjective norm and the stronger the perceived behavioral control are, the stronger the individual behavior intention will be. As for the basic assumptions of TRA, Ajzen argues that the individual's volitional control over behavior is seen as a continuum, with behaviors that are completely under volition-based control at one end and behaviors that are completely out of volition-based control at the other. Most human behavior falls somewhere between these two extremes. Therefore, to predict behavior that is not entirely under volition-based control, it is necessary to add the variable of behavioral perceived control. However, the predicted effect of TPB is similar to that of TRA when the individual's control over the behavior is closer to the maximum, or when the control problem is not a factor of the individual's consideration. With the introduction of external variable perceived behavioral control, the shortcomings of TRA limited to the premise that "individual behavior depends entirely on the individual will" have been compensated, and TPB has been confirmed by a number of studies to have good predictive and explanatory power for individual behavior in many fields. In the field of consumption, some reseachers found in the study of purchasing intention of Indian luxury consumers that consumers' subjective norms have the greatest impact on luxury purchasing behavior, and cognitive behavioral control also has a certain positive effect (Jain et al., 2017).

When predicting online shopping behavior, A study stressed that risks should be paid attention to when doing online shopping: in the analysis of influencing factors under the

relevant independent variable dimension, the prediction of consumers' behavioral intention of online shopping is very close (Dan & Hansen, 2008).

In the field of transportation, J. Chen et al. (2017) built the framework and model of TPB theory to solve the current problem of urban public transport mode selection, determined the specific measurement variables in the model, and found that perceived behavioral control factors had the greatest impact on travel mode selection through case verification. In the study of taxi drivers' searching behavior, Si and Guan (2016) took TPB as the research framework and selected different regions as destinations to study the searching behavior of taxi drivers in Beijing. The key reason for the influence of psychological factors is that in terms of the attitude evaluation of destinations, the selection of regions is mostly resident areas, which results in more purposeful operation and improved efficiency of urban taxis.

In the field of tourism, B. Hu et al. (2014) explored low-carbon tourism intention and found that tourists' attitudes and self-efficacy had a positive and significant impact on low-carbon tourism intention, while subjective norms had no direct impact. H. Y. Tian (2018) studied the influencing factors of rural tourism behavior intention based on TPB, so as to build and promote the development of rural tourism, feel the rural life and harvest happiness at the same time. Urban residents are the main body of consumption, and in the process of studying their rural tourism behavior, we can explore the existing problems and deficiencies, and understand the relationship between market supply and demand, which plays a significant role in opening and expanding the rural tourism market. Attitudes, subjective norms and perceived behavioral control will all have a significant positive impact on the tourism behavior intention. In the medical field, some researchers studied patients with type 2 diabetes and explored their psychosocial determinants of taking hypoglycemic drugs. They found that past behaviors were the only key to compliance behavior, and compliance behavior was predicted by intention. In the results, attitude and subjective norms were the key factors for compliance behavior intention (Jannuzzi et al., 2020).

S. Y. Huang (2012) studied patients' intention to see a doctor to determine the way doctors choose to diagnose patients. Through the research data, patients' attitudes to seeing a doctor and perceived behavioral control can have a direct impact on the intention and behavior. Bohon et al. (2016) used TPB to predict the medical behavioral intention of college students with depression, and the results showed that the more positive the patient's behavioral attitude and the stronger the perceived behavioral control are, the stronger the patient's medical behavioral intention will be.

T. Sun (2012) studied the medical intention of female urinary incontinence patients in the

community based on TPB, and proved that subjective norms negatively affected the medical intention of patients, and perceived behavioral control had a positive effect, while behavioral attitudes had no significant effect. By using TPB, Z. Xie and Xu (2010) analyzed the influencing factors of rural residents' medical treatment behavior and found that the obstructive factors among the perceived behavioral control factors had a negative impact on rural patients' medical treatment behavior to a certain extent. J. Ma and Chang (2011), under the guidance of the Theory of Planned Behavior, investigated the expectation factors of the degree of disease cure and constructed a behavioral model of medical treatment choice. Based on the Theory of Planned Behavior, Y. Liu (2011) analyzed the influence of Internet use on college students' health behavior.

3. Health belief model

The Health Belief Model (HBM), first proposed by psychologist Hochbaum (1958) in the 1950s, is the first theory specifically used to explain and predict health behavior, and is one of the oldest and most widely used health behavior theories. It is considered to be the starting point for a systematic and theoretical approach to health behavior. HBM has been developed as a systematic method to identify, interpret and predict preventive health behaviors. Its core idea is that the implementation of health behaviors is determined by individuals' beliefs and perceptions of diseases and strategies aimed at reducing the occurrence of diseases. This model was first used to explain the theoretical model of people's preventive health care behavior by hand. Later, Becker and Maiman further revised and improved the model, and gradually proposed such concepts as susceptibility, severity, benefits and obstacles.

HBM holds that belief is the basis of people's certain behaviors. If people have beliefs related to disease and health, they will adopt healthy behaviors and change risky behaviors. Specifically, whether people adopt healthy behaviors or not is related to the following factors. In short, the basic idea of the HBM is that whether an individual adopts healthy behaviors (or abdicates unhealthy behaviors) depends on the following aspects: (1) perceived susceptibility and perceived severity: recognizing that one is at a higher risk of a negative sexual health outcome and that this negative outcome poses a serious threat to one's health and interests (economic, family, social status, and others.); (2) perceived benefits and perceived expectations: generating positive expectations, that is, the belief that results from negative health outcomes can be avoided; (3) action cues: the belief that the negative health outcome can be avoided by implementing a behavior recommended by a professional organization or person; (4) high self-efficacy, that is, believing that you can overcome difficulties, adhere to the recommended behavior and achieve success (J. H. Huang, 2006; Lv, 2002).

However, the process of behavioral change may be influenced by individual characteristics such as gender, age, socioeconomic status and others. At present, this model has become one of the important theoretical models to explain and guide the intervention of health-related behaviors, and has been successfully applied to promote the use of car seat belts, compliance behavior, health screening and other aspects of health education.

Jennifer et al. (2002) used this model to send questionnaires through emails and found that perception of the threat of foodborne diseases was positively correlated with safe food handling behavior, and awareness of the severity of foodborne diseases was a positive aspect of safe food handling behavior.

Some study found that healthy belief patterns play a crucial role in stroke prevention, and self-efficacy may be the most effective factor in reducing the risk of stroke (Sullivan et al., 2008). Some study applied the health belief model to the Medline and Psycinfo databases to search for behavioral factors influencing screening for breast and cervical cancer in Hispanic women, and found that the common barriers to screening were: fear of cancer, shyness about screening, fatalistic views about cancer and language barriers among Hispanic women, as well as a general feeling of being less vulnerable to cancer; positive factors were: physician recommendations, health programs for Hispanic leaders outside the community, materials printed in Spanish; it is also pointed out that in order to increase the screening rate of breast and cervical cancer in women, it is necessary to conduct culturally appropriate interventions for women (Hill et al., 1977). Phuanukoonnon et al. (2006) reported that the health belief model had been adopted in Thailand as the main theory of health education for the prevention and control of dengue transmission, focusing on convincing people about their own vulnerability and susceptibility.

M. Lin et al. (2012) applied the health belief model to conduct health education for patients with end-stage kidney disease, focusing on improving patients' diet and treatment compliance to effectively prolong patients' lives. D. D. Liu (2012) applied the health belief model to carry out health promotion interventions in patients with coronary heart disease, which enhanced the conscious health responsibility consciousness and conscious behavior of maintaining health in patients with coronary heart disease to varying degrees, promoted the patients to establish a good healthy life style, and created favorable conditions for comprehensive rehabilitation. Q. Y. Liang et al. (2012) found that the health belief model can change the behavior of patients with simple obesity, help obese patients establish healthy behaviors, and effectively control obesity. Wen et al. (2011) applied health belief model education to intervene in patients with acute stage of deep venous thrombosis of lower limbs,

effectively enhancing patients' health belief, self-efficacy and disease-related knowledge, thereby improving patients' absolute bed compliance, reducing the occurrence of complications and promoting patients' recovery. Y. Q. Chen et al. (2011) found that the application of health belief model could promote the change of lifestyle and prevent adverse events in patients with lower limb deep vein thrombosis. Y. Wang et al. (2011) found that the application of health belief model in follow-up after liver transplantation can significantly reduce the incidence of unhealthy events in patients with liver transplantation. T. L. Fan et al. (2011) applied health belief model education to significantly improve the functional exercise compliance of patients with lumbar disc herniation. Q. S. Wu et al. (2011) believed that the application of health belief model education can improve the understanding of their own diseases in patients with clinically impalpable and suspicious breast masses, change their behavior on the disease, and promote them to choose effective treatment methods, so that more patients with suspected breast masses can be diagnosed and treated early. H. Q. Wang et al. (2011) applied health belief model education to improve parents' disease cognition and treatment compliance of children with amblyopia, trying to improve the treatment effect. L. Y. Yan (2012) application of health belief model education significantly improved the awareness rate and treatment rate of diabetic patients in the community, and reduced the incidence of diabetes. It can significantly improve the compliance behavior of patients with coronary heart disease in the community.

4. Summary

Andersen Model is one of the classical models of health service utilization, which has a mature theoretical analysis framework, and provides a macro-analysis idea for the formation mechanism and explanation of the TCM service utilization behavior in the residents' community in this study. However, from the perspective of a specific operation, although Andersen Model puts forward four dimensions of environmental factors, personal characteristics, health behaviors and health results, and defines the influence path among the four dimensions, from the actual research and analysis process, each model dimension (that is, latent variables) lacks an operational index system that can manifest and quantify them. As a classic theory of individual behavior research, TPB has been widely introduced into various fields and gradually formed a relatively mature index system and research questionnaire. Meanwhile, HBM can better explain the mechanism of individual influence on health behavior. Therefore, TPB and HBM are introduced into the Anderson health service utilization model. It can make up for the shortcomings of weak maneuverability in microanalysis.

2.4 Current status and review of relevant research on the utilization of community Chinese medicine services

2.4.1 Current status of domestic research

1. Research on residents' medical behavior

The research on residents' behaviors in medical services in China mainly focuses on service accessibility, medical choice and its influencing factors. Since the 18th National Congress of the CPC, with the deepening of healthcare reform, health investment has continued to increase, resource allocation has been continuously optimized, the construction of the health service system has been strengthened with improved service capacity and service accessibility, and residents have more convenient access to medical services. By the end of 2018, there were 6.04 sick beds per 1,000 people, 1.49 more than in 2013; there were 6.82 health technicians for a population of 1,000, an increase of 1.51 over 2013. The survey showed that 89.9% of families spent less than 15 minutes getting to the nearest medical institution, an increase of 5.9% compared with 2013, and the improvement was more obvious in rural areas and western China. Among them, in rural areas of western China, the proportion of families with access to the nearest medical center within 15 minutes increased from 69.1% in 2013 to 82.6% in 2018. In addition, residents' average waiting time for hospitalization was about 1.5 days (X. Q. Xie & Wu, 2021).

From the perspective of Symbiosis Theory, W. J. Shi et al. (2020) analyzed the utilization status of community health services in China by using the TOPSIS method and RSR comprehensive evaluation method. The average increase rate of patients was 6.85%, and the average increase rate of doctors' daily visits was 13.91%. The RSR value of bed utilization in township health centers was greater than that in community healthcare centers (stations).

Zeng et al. (2019) adopted the joint modeling method to establish a multiple regression model for the utilization of medical services. Based on the Social-ecological Theory, they discussed the factors affecting the utilization of community medical services for patients with chronic diseases from five aspects, including individual characteristics, individual behaviors, family, communities and policies.

P. J. Yan et al. (2021) randomly selected five demonstration community healthcare centers (stations) by adopting stratified random sampling in Fuzhou, the capital city of Fujian province, and found that massage (77.3%) and acupuncture (70.8%) were the items in high demand, their utilization rate among hypertension patients was the highest (95.1%), and

77.6% residents believed that the advantage of TCM lies in its healthcare effect.

Yang et al. (2020), through the investigation and analysis of the work status of grassroots TCM medical personnel in 16 administrative districts of Beijing, found that there is a wide demand for TCM in the treatment of cerebrovascular diseases, gastrointestinal diseases, respiratory diseases, bone injuries and hepatobiliary diseases at the grassroots level, and that medical staff urgently need to get general practice training, specific skills training and disease-specific training.

H. W. Qin et al. (2020) investigated the selection rate of appropriate TCM techniques in community medical institutions, and found that the selection rate of TCM was 62.41%, acupuncture 40.77%, and massage and other items 28.61%, indicating that the selection rate of appropriate TCM technique was not high, especially the selection rate of massage and other items was low. Further efforts should be made to publicize appropriate TCM technologies in community medical institutions.

Using relevant data from China Health Statistical Yearbook, Fang and Wu (2020) found that from 2013 to 2017, the proportion of TCM medical services in community health centers (stations) increased by 1.7%, and the proportion of TCM medical services in village clinics increased by 7.1%, indicating the continuous increase in the utilization of TCM medical services. However, there are still many problems, such as limited functions and unbalanced development, which cannot fully meet the requirements of giving full play to the distinctive advantages of TCM services in the construction of Healthy China 2030.

K. L. Li et al. (2020) investigated the diagnosis and treatment environment, construction of TCM technology and allocation of TCM diagnosis and treatment equipment in TCM comprehensive service areas (TCM halls) of 150 grassroots medical institutions in Guangdong province. It was found that 100% of the institutions provided basic medical services, and 96.67% of the institutions provided preventive healthcare and rehabilitation services; that 80.67% of institutions focused on strengthening the standardized operation of at least six TCM techniques and methods and 49.33% of medical institutions were equipped with more than ten types of necessary TCM equipment. However, there are still some problems in medical institutions at the grassroots level, such as the need to strengthen the promotion and application of appropriate TCM techniques, the shortage of TCM diagnosis and treatment equipment, and the backward informatization equipment. A Chinese researcher made a survey on the community-level TCM service capacity of Hunan province, and found that 87 counties and cities of Hunan possessed public hospitals of TCM, and that the proportion of TCM halls in community health centers and township health centers was 76%

and 63% respectively. Other institutions without TCM halls could also provide TCM services, and 60% of village clinics were capable of providing TCM services. There were more than 60,000 practitioners of TCM, the number of beds in TCM medical institutions accounted for 22.1% of the total number of beds in Hunan province, and TCM medical services accounted for about 30% of all medical services. However, the imbalance and inadequacy of TCM development at the grassroots level are still prominent. The development of TCM is quite well in areas such as Changsha, Zhuzhou and Xiangtan, while it is relatively insufficient in the west Hunan area (H. Y. Huang, 2019).

Z. Xu et al. (2018) conducted an empirical survey on the subjective willingness and actual utilization of TCM services among 5430 residents in Gansu and Jiangsu provinces to know the demand and utilization of TCM health services in the two regions. It was concluded that the public's choice of TCM service institutions was not rational, and that various supporting policies were needed to improve the utilization of TCM services. By comparing the differences in demand and utilization between different groups in the two regions, it was found that there were obvious regional differences in the willingness of using TCM services, but no significant differences in actual utilization. The influencing factors of the willingness of using TCM services and utilization were not only overlapping but also different. Habitual residence, age, income, gender and education background affect the utilization of TCM services, while region, habitual residence, age and income affect the willingness of seeking TCM services.

Through a random questionnaire survey of 95 community residents in Changsha, Dai et al. (2017) found that TCM beliefs, defined by three dimensions of attention to TCM services, the convenience of using TCM services, and perceived direct benefits of TCM services by individuals, have a very positive significance for improving health conditions of the elderly.

Z. Y. Lin et al. (2017) pointed out that the most prominent problem in community health institutions was the weak technical skills of TCM doctors, and that the role of TCM in health preservation and health care was not given full play based on the investigation and analysis of the capacity of TCM in community health institutions in Guangdong. It was suggested that maternal and child health care and elderly health maintenance should be taken as the new development direction of community-level TCM services.

T. Sun et al. (2016) randomly selected two community health centers in provinces or municipalities directly under the central government in east, central and west China as the survey subjects, and investigated the allocation of TCM resources and the development of TCM services in communities. The results showed that the network and function of TCM

services in community health centers in China were gradually improved, the TCM income and TCM outpatient volume increased year by year, and the healthcare services for key groups including pregnant women, the elderly and children were gradually developed.

TCM plays an important role in community health care, and the development of community TCM conforms to national policies and guidelines. Through the multistage stratified cluster sampling, Jin and Qiu (2015) selected 1800 residents from Hangzhou communities to carry out the research and found that residents held positive views on TCM, with 43.5% of them having attended TCM lectures and 42.3% having received TCM services in the community hospitals.

Shen et al. (2014) studied the implementation path of TCM participation in community preventive healthcare services, proposing that the characteristics and advantages of TCM services are highly consistent with the requirements of community health management, but the traditional community governance model is not conducive to introducing TCM services into the community. It is suggested that health education with TCM characteristics should be taken as the breakthrough point to promote the spread of TCM prevention and healthcare in the community, and to cooperate with multiple health intervention programs such as diet, sports, psychology and environment. At the same time, the government should be encouraged to combine with the market so as to strengthen the initiative of non-governmental organizations and carry out the path innovation of TCM participation in community health services through the multi-center governance mechanism.

Qiu et al. (2010) conducted a sample survey on 1063 urban residents from nine economically developed areas, including Guangzhou, Foshan, Zhuhai, regarding their trust in TCM and its influence on their behaviors when using TCM services. The results showed that the public trust in TCM services is related to the age, educational background of the respondent and the regional economy and culture of the city. Multivariate analysis showed that age had the greatest impact on the factors of trust and belief, and medical intention.

2. Research related to community Chinese medicine services

(1) Study on the problems of community Chinese medicine services

First, the problem of insufficient human resources. J. He (2020), through field research on a street community health service center in Guangzhou City, concluded that the supply of community TCM healthcare services has the problem of insufficient supply of human resources in terms of insufficient number of medical personnel with low educational level, insufficient number of general practitioners and nurses, and so on.

Y. Huang (2013) found that the retirement of the old generation of famous Chinese

medicine doctors and the loss of some Chinese medicine talents due to income and other reasons are the reasons for the fault of Chinese medicine talents in primary health organizations.

B. Y. Fan (2011) investigated the medical staff of some community health centers in Suzhou City and found that the lack of high-quality talents in community TCM is an important reason for the difficulty of providing effective and continuous TCM services for community residents.

Second, the problem of insufficient financial input. X. Y. Zhang (2019), in her research on community health service organizations in Yong'an City, found that insufficient funding is the main reason for community TCM healthy aging services, due to the insufficient funds raised, resulting in a low standard of subsidies for community TCM healthy aging services, thus making it difficult to meet the actual service needs of the elderly.

Shao et al. (2014) conducted a research on grassroots health organizations in some areas of Hunan Province and found that due to insufficient funding, the promotion and use of simple techniques of Chinese medicine increased the burden on the organizations, which made it difficult for Chinese medicine to play an advantageous role.

Wei et al. (2014) investigated 100 community health service centers in Hebei Province and found that financial constraints were an important reason for the inadequacy of hardware facilities related to Chinese medicine in some community health service organizations.

Third, the problem of ineffective policy implementation. Han (2021) conducted a survey with a city in Northeast China, due to the lack of relevant policies and institutional safeguards to encourage the community to carry out TCM health management services, most of the TCM health management services provided by the city's primary healthcare institutions are national basic public health service programs, and the actual needs of local residents do not match. In her research, J. Zhu (2010) found that the shortcomings of community-based TCM services for the elderly population were, firstly, the lack of policy implementation, i.e., the imbalance between supply and demand, and secondly, the instability of the policy, i.e., the lack of systematic regulatory guidance.

Fourth, the problem of lack of innovation in service programs. X. F. Xu and Hu (2010) found in their research that it is believed that the community Chinese medicine service program has not yet formed a system, mainly in the part of the service has not yet been able to be reimbursed through the health insurance, Chinese medicine appropriate technology and equipment has not yet been widely used, and Chinese medicine medical equipment has not yet met the needs of residents. S. Y. Xie and Cao (2009) researched community health service

organizations in Guangzhou City and found that there were many problems with the appropriate technology of Chinese medicine and the gradual loss of characteristic therapies, which resulted in the Chinese medicine service program not being able to meet the diversified needs of the residents.

(2) Research on the content of demand for community Chinese medicine services

S. T. Xiao et al. (2021) found in a research on patients in a certain area that the overall satisfaction of patients with community TCM services was low, but the demand was high, of which the services with higher demand included TCM medication and medicinal dietary guidance.

You and Meng (2020) surveyed residents of 12 communities in Ningbo City, and the results showed that 89.84% of the respondents recognized the knowledge and technology related to TCM; 85.84% of the respondents wished to receive education and services related to TCM; and 92.54% of the respondents wished to be guided in their daily lives by the theory of TCM health maintenance and prevention of diseases.

T. Li et al. (2019) conducted a survey of some community residents in Anhui Province, and the results showed that the TCM services provided by the community had not yet met the needs of the residents; 92.7% of the survey respondents hoped that the community health service centers would carry out TCM characteristics such as guidance on therapeutic food and medicinal diets and regulation of emotions and moods to maintain their health and health care services, and 91.1% of the respondents hoped that the community health service centers would carry out acupuncture, cupping, and other TCM treatment services carried out by community health centers.

J. D. Li et al. (2015) conducted a survey on Minglou Street Community in Jiangdong District, Ningbo City, and the results showed that the greatest demand for TCM appropriate technology was for drug therapies such as proprietary Chinese medicines (98.40%) and Chinese medicinal tablets (53.00%).

Gai (2012) conducted a survey with elderly people in six communities in Zhongshan City, and the results showed that drug therapies such as proprietary Chinese medicines (51.1%) and Chinese medicinal tablets (20.4%) were the services most needed by the survey respondents. Feng (2009) investigated community health centers in Chongqing and found that drug therapies such as proprietary Chinese medicines (47.08%) and Chinese medicinal tablets (16.04%) were the TCM services that the survey respondents most wanted to be provided in the community; traditional therapies (39.34%) and health care (22.36%) were the forms of TCM services that the survey respondents most wanted to be provided in the form of TCM

services.

(3) Study on factors influencing the demand for community TCM services

First, demographic characteristics. X. Zhang et al. (2020) used logistics regression analysis to analyze the factors influencing the community TCM health care services for the elderly in Changqing Street in the downtown area of Hangzhou City, and found that age is an important factor influencing demand, i.e., the older the age, the greater the demand for community TCM health care services.

C. L. Yan (2021) conducted a research on middle-aged and elderly people in the downtown area of Hangzhou City, and the results of the chi-square test analysis found that marital status affects their demand for community-based Chinese medicine and health services, which is mainly manifested in the fact that those who are widowed or divorced have a higher demand.

J. Ma et al. (2018) investigated some community elderly people in Shanghai, and after spearman correlation and logistics regression analysis, it was found that literacy was positively correlated with demand.

H. Z. Tang and Yang et al. (2008) found that the occupation of some community residents in Nanning City affects the willingness to demand Chinese medicine services, and workers and scientists are more willing to choose community Chinese medicine services.

L. Y. Liu (2018) used the rank sum test to analyze the demand for primary Chinese medicine services of permanent residents in Miyi County, and found that the demand of residents who live in towns for a long time is slightly higher than that of residents who live in rural areas for a long time.

Secondly, economic status. X. Y. Zhang (2019) used the chi-square test to analyze the effect of the average monthly personal income of the elderly in Yong'an City on the demand for community-based TCM health and aging services, and the results showed that the effect of income on the demand for community-based TCM health and aging services among the elderly was not significant.

K. Song and Yin (2019) investigated some community-based elderly people in Nanjing, and the results of univariate analysis found that the per capita monthly household income of elderly people could significantly affect their demand for community-based TCM appropriate technology services.

Y. Sun (2017) studied the impact of different household incomes of elderly people in five administrative districts of Harbin City on the demand for Chinese medicine for the elderly,

and the results of descriptive statistics and analysis of variance found that household income was positively related to demand.

Zeng (2011) conducted a survey on some residents of Pudong New Area in Shanghai, after descriptive statistics, it was found that the payment method affects the residents' demand for medical treatment, the residents who enjoy public medical care preferred the combination of Chinese and Western medicine treatment, while those who pay for their own medical care tended to choose the more inexpensive Chinese medicine treatment.

Third, health status. Y. Qin et al. (2021) investigated the willingness of some community residents in Tianjin to have first consultation for TCM services, and logistic regression results showed that self-perceived health status positively influenced community residents' willingness to have first consultation for TCM services.

Zhou et al. (2017) used logistic regression analysis to explore the significant factors affecting TCM services for residents in a community in Gongshu District, Hangzhou City, and the findings showed that physical activity affected the demand for TCM services, and the demand of residents who exercised once a week was 2.054 times higher than that of residents who did not exercise.

Z. R. Liang et al. (2014) conducted a research on community residents in Shandong Province, and the chi-square test results showed that the results showed that the worse the self-assessed health status of the community residents, the more willing to utilize the community Chinese medicine services.

Fourth, the TCM service itself is a factor. T. Li et al. (2019) found that the main reasons affecting residents' demand for community TCM services were insufficient TCM publicity and the practicality of the service program after conducting a research on some community health centers in Anhui Province. S. P. Xiao et al. (2018) investigated the factors influencing the demand for grassroots TCM services of residents in Shandong Province, and the results of regression analysis showed that the significant factors influencing the demand were the distance between the residents and the institutions, the evaluation of the efficacy of TCM, and whether or not the institutions had well-known TCM doctors and specialty departments were.

2.4.2 Current status of relevant research abroad

1. Status of community health services.

Although the scope of application of Chinese medicine is relatively narrow in the international arena, with the advancement of globalization and the diversification of people's

health needs, Chinese medicine, as a branch of complementary and alternative medicine, is gradually being accepted by more countries and regions. Preventive health care, disease treatment and rehabilitation services of Chinese medicine are beginning to be applied in community health services in some countries and regions.

First, the current situation of community health services in the United Kingdom. The National Health Service (NHS) was established in the United Kingdom in 1946, and since its inception, it has now become one of the most important components of the social welfare system in the U.K. The NHS is divided into two main levels: hospital services and community health services, and community health services, as a basic level of the NHS, undertake a wide range of preventive health care tasks and provide primary medical care for residents. In the United Kingdom, the community health service network includes organizations such as primary health care teams, health centers, community hospitals, and day centers. These services provide a wide range of services, such as health education and promotion, health care services for specific populations (e.g., women, children, the elderly, the disabled, etc.), the creation of family health records, and assistance with patient referrals to higher levels of care (Bao, 2007). General practitioners in the community act as "gatekeepers", providing services to residents who come to the clinic, and assisting in the referral of patients to higher-level healthcare facilities for emergencies and illnesses that are difficult to resolve in the clinic (Bao, 2007). This "gatekeeper" system helps to ensure the rational allocation and use of medical resources, avoiding unnecessary hospital visits, while also improving the efficiency of medical services.

Second, the current situation of community health services in the United States. Community health service in the United States is a diversified and market-oriented system, which includes various types of health professionals, such as family doctors, nurses, pharmacists, social workers, etc., who work in different organizations and work together to provide comprehensive medical services to the community residents, such as family doctors, who mainly come from private clinics and are responsible for the development of health care and rehabilitation programs for the patients, and nurses, who mainly come from the Health Care Management Centers. are responsible for implementing the programs developed by family physicians and maintaining contact with other agencies. Family physicians play a central role in community health services in the U.S. They have a high degree of freedom in their practice, and can decide whether to refer patients to partner hospitals and utilize hospital facilities and resources according to the needs of patients and the availability of medical resources. Unlike in China, the training of family physicians in the United States is more

rigorous, and is roughly divided into three stages: medical school curriculum education, post-graduation education and continuing education, which makes community family physicians in the United States gradually specialize on the basis of mastering general practice knowledge, and this trend of specialization helps family physicians better meet the needs of patients, while also improving the professionalism and efficiency of medical services..

Thirdly, there is the current status of community health services in Singapore. Community health services in Singapore are a highly organized and government-led system that is known for providing efficient and affordable healthcare services. Primary care services in Singapore are mainly provided by private clinics and polyclinics, which are usually located near residential areas for easy access (J. Zhang & Hu, 2010). Among them, private clinics play an important role in Singapore's primary care system, and they are usually operated by individual doctors or small medical teams that provide services including treatment of common illnesses, management of chronic diseases, preventive care, and health education. Private clinics are strictly regulated by the government to ensure quality of service and reasonable fees, while polyclinics provide a more comprehensive range of medical services, including outpatient clinics, health check-ups, maternal and child health care, and vaccinations. These clinics are usually operated by the government or non-profit organizations and aim to provide one-stop medical services to residents. The establishment of polyclinics has helped to reduce the pressure on large hospitals and improve the accessibility and efficiency of healthcare services. Through the establishment of a tiered care system, the Singapore government encourages patients to first seek treatment at community clinics and then be referred to specialist hospitals when necessary. This two-way, step-by-step referral system helps to rationalize the distribution of medical resources, avoid unnecessary waste of medical resources and control the growth of medical costs.

Fourth, the current situation of community health services in Germany. Germany's community health service is a mature and diversified system that covers a wide range of health management services and aims to provide comprehensive medical and health support for residents. German communities provide a rich range of health management services, including not only basic medical services and health care, but also patient care, psychological counseling, healthy life guidance, community emergency services and labor health services. These services are designed to meet the needs of residents in different health states. Family doctors (general practitioners) play a central role in community health services in Germany. They are often the first point of contact for residents and are responsible for providing daily medical advice, treatment services and referrals. In addition, other healthcare professionals

such as specialists, nurses and pharmacists are also involved in service provision. The supply of services is ensured by contracts between family doctors and the social security sector, which define the scope, quality and payment rates of the services, guaranteeing the income of the doctors as well as ensuring that the population has access to the necessary healthcare services .

2. Research related to healthcare behavior

Due to the narrow concept of TCM in the world, mainstream Western medicine only regards TCM as a complementary and alternative medicine or traditional medicine. The application of Chinese medicine services in the international arena is relatively narrow, and there are few foreign language studies on the incorporation of Chinese medicine services into community health services.No country in the world has systematically incorporated TCM services into the community health system. Instead, research beyond China mainly focuses on the influencing factors of medical decision-making.

One is the cost of health care. The rising cost of health care in developed countries is forcing citizens to seek health care with comparable quality but at a lower cost (Vijaya, 2010). Studies have shown that medical cost has a greater impact on people's medical choices than any other factors, such as waiting time (Snyder et al., 2011). In the United States, people usually seek medical services at lower costs through international health care, and during the economic crisis, the cost of health care was even the only factor that American patients considered when forgoing normal access to health care (Carruth & Carruth, 2010).

The second one is availability, which is also an important factor concerned by patients. TCM in China or Ayurveda medicine in India also turn to be alternative medical approaches when modern medicine fails to treat certain diseases (Mucelli & Liakh, 2017).

The third one is the quality of medical services. The quality of medical services is more important to patients than the level of diagnostic technology, and good medical quality can even offset patients' dissatisfaction with the diagnosis (Ojo, 2010). Patients' perception of quality of medical services is reflected in such indicators as the operation success rate of the hospital, the medical education background and experience of doctors, the service ability of nursing staff, safety (Singh, 2013).

The fourth one is information acquisition. The most common way for people to get information is through the Internet. In addition, a survey showed that 81.4% of patients turned to their family doctors when seeking medical services (Johnston et al., 2012). Other ways to obtain information include hospital brochures, advertisements and news reports, and the influence effect of advertisements is weaker than that of news reports (Abd Manaf et al.,

2015).

In addition, other factors such as the patient's age, gender, medical history and cultural background also affect their medical choice. Studies have shown that people who are older, better off, or chronically ill are more likely to change their medical decisions, and that women are more likely than men to do so. If the patient has a history of failed medical treatment, his motivation to seek other medical services is even stronger, e.g., medical tourism (Johnson et al., 2015). In general, international studies have comprehensively considered the influencing factors, especially the external factors such as personal characteristics, economic level, policies and laws.

2.4.3 Review of current studies

From the viewpoint of domestic research, relevant research mainly focuses on the study of community Chinese medicine service problems, the study of demand content and the study of demand influencing factors. But the existing research still has deficiencies. First, the research on service problems mainly focuses on the supply side, in fact, China's investment in community Chinese medicine services, such as capital, manpower and policy support has been increased every year, if blindly invested resources may cause waste. Secondly, research on the content of demand shows that residents are more inclined to use simple and common medication, acupuncture, cupping and other services, while the demand for complex and rare services such as fumigation, compresses and acupoint injections is not high, and the existing research has not explored the reasons for the formation of this phenomenon; lastly, scholars, when researching on the influencing factors of the demand of residents for community traditional Chinese medicine services, have adopted the methods of simple descriptive statistics, chi-square tests, chi-square tests, and the method of the "community traditional Chinese medicine service". Finally, when scholars study the factors influencing residents' demand for community Chinese medicine services, most of the methods used are simple descriptive statistics, chi-square test, analysis of variance (ANOVA), logistic regression analysis, etc.

These methods can only explain the influence of a single factor on the demand, and cannot reveal the influence of the intricate relationship between factors on the demand, and they lack the support of theoretical models. From the point of view of foreign studies, the international application of Chinese medicine services is narrower, but reference to the advanced experience of community health services such as the United States also sheds light

on the development of community Chinese medicine services in China.

In summary, in order to explore the factors influencing residents' demand for community TCM services, it is proposed to define the research perspective as the demand side, use structural equation modeling to explore the influence of multiple factors on demand, and draw on domestic and foreign advanced experiences to promote the development of community TCM services in China.

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Chapter 3: Model Construction and Research Hypotheses

3.1 Design of the research model

3.1.1 Analytical framework

According to the above-mentioned BMHSU theory and the analysis of the influencing factors of community TCM services utilization, combined with the research background, object and scope of this study, the analytical framework of community TCM services utilization was constructed, as shown in Figure 3.1.

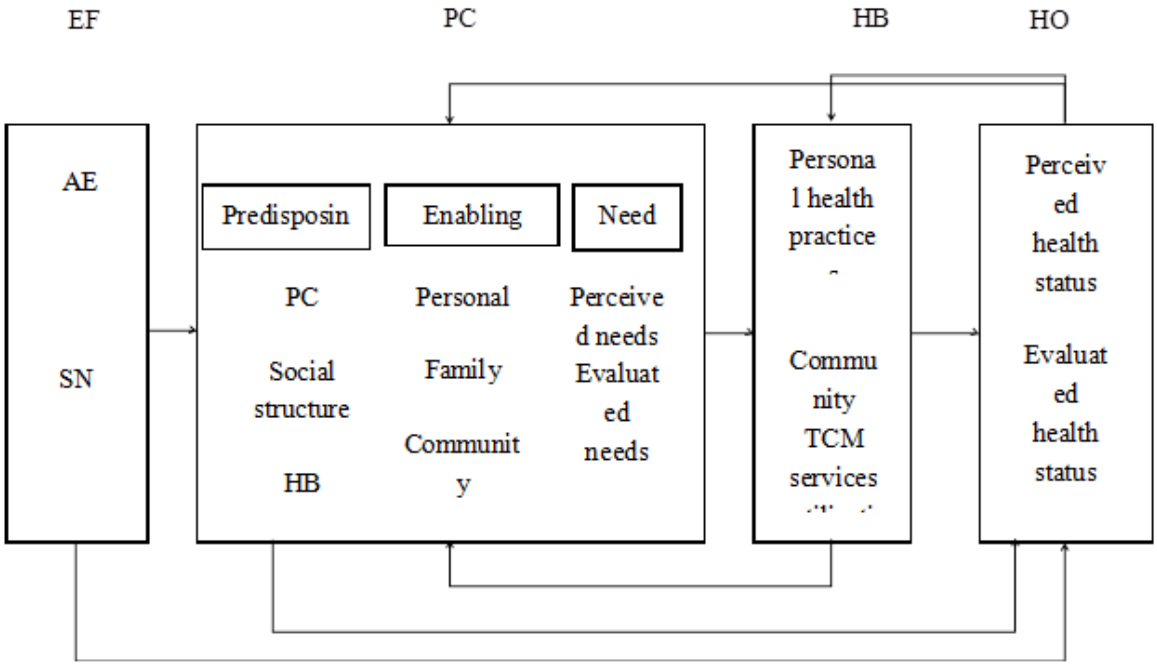

Figure 3.1 Analytical framework of community TCM services utilization

1. Environment factor (EF)

In recent years, China's natural, economic and other environmental factors have been generally stable, and the EF affecting the utilization of community TCM services are mainly the policy environment supporting the development of TCM services, such as the documents and policies cementing the overall development, talent and technological development, and medical insurance support of TCM, which have greatly promoted the improvement of service capacity of TCM, including a substantial increase in the number of TCM service providers and personnel, and the approximate 100% full coverage of community TCM services.

However, for residents, they need to know the policy environment, development, utilization, service modes and treatment effects of TCM services so that they can trust and continue to use this service. Therefore, this study will use the variable "AE" to explore the impact of residents' awareness of community TCM on the utilization under policy, social and family environment. In addition, considering that residents' utilization of community TCM services may be more subject to the influence of the intimacy of social relations, the variable "SN" of TRA is introduced to explore the social pressure of residents' utilization of TCM services.

2. Personal characteristics (PC)

In BMHSU, PC are mainly divided into personal predispositions, enabling factors, and needs. The variable, personal predispositions, mainly includes demographic, sociological and HB factors. In this study, demographic factors such as gender, age, marital status and educational background are included in this variable. HB means that residents' attitude, value and knowledge of TCM services would affect their use of TCM services. As the mastery of the knowledge of TCM services by the residents is difficult to measure, this study will not discuss this part. Instead, the study mainly measures residents' HB in TCM services and explores its influence on community TCM services. Enabling factors mainly include personal, family and community resources. This study will include personal and family factors such as medical insurance, residence, family income, and community resources in TCM services into this variable for exploration. In addition to the analysis of objective enabling resources, this study introduces the variable "PBC" of TRA, so that residents can subjectively perceive the impact of their own resources of TCM services on utilization. Needs are mainly divided into the objective physiological needs and the subjective cognitive needs. In this study, chronic diseases are included in the analysis as residents' objective physiological needs, and the variable "perceived susceptibility and severity (PS)" of HBM is used to explore the possibility and severity of acquired diseases felt by residents based on actual experience.

3. Health behavior (HB)

Personal health practices and medical services utilization are two major components of "HB" in BMHSU. In the current medical and healthcare system, compared with TCM services utilization, residents' personal medical practices are mainly healthy habits and behaviors based on Western medicine, which are measured and discussed in this study using the "healthy habits (HH)" variable. As for the dependent variable "community TCM services utilization", this study will explore and analyze residents' utilization of community TCM services in combination with the connotation and measurement method of the variable "usage behavior (UB)" of TRA.

4. Health outcome (HO)

The health outcomes of residents include not only the cognitive health status based on subjective feelings after the use of medical services and the objective health status based on the evaluation of medical staff, but also the satisfaction of medical services utilization and the efficacy of medical services. In our actual survey, due to the great differences in residents' health and illness status, it is difficult to measure HO. To ensure the comparability of data, this study mainly explores the impact of residents' cognitive health status and satisfaction of medical services utilization on community TCM services utilization, and introduces the "perceived benefits (PB)" and "perceived hindrance (PH)" of HBM to respectively measure and analyze the process and effect of community TCM services utilization.

3.1.2 Model structure

Based on the theoretical framework of BMHSU, this study initially establishes a relationship model to explain the formation of community TCM services utilization by introducing TRA and HBM. The model is divided into four parts: EF, PC, HB and HO. Considering that factors such as gender, age and other demographic factors, the resources of community TCM service, and chronic diseases cannot be independently determined by residents' utilization of TCM services, this study takes them as external variables, which are not used in the establishment of the model. Thus, the model includes 9 latent variables, i.e., 8 independent variables, namely AE, SN, HB, PBC, PS, HH, PB, and PH, and 1 dependent variable of UB. as shown in Figure 3.2.

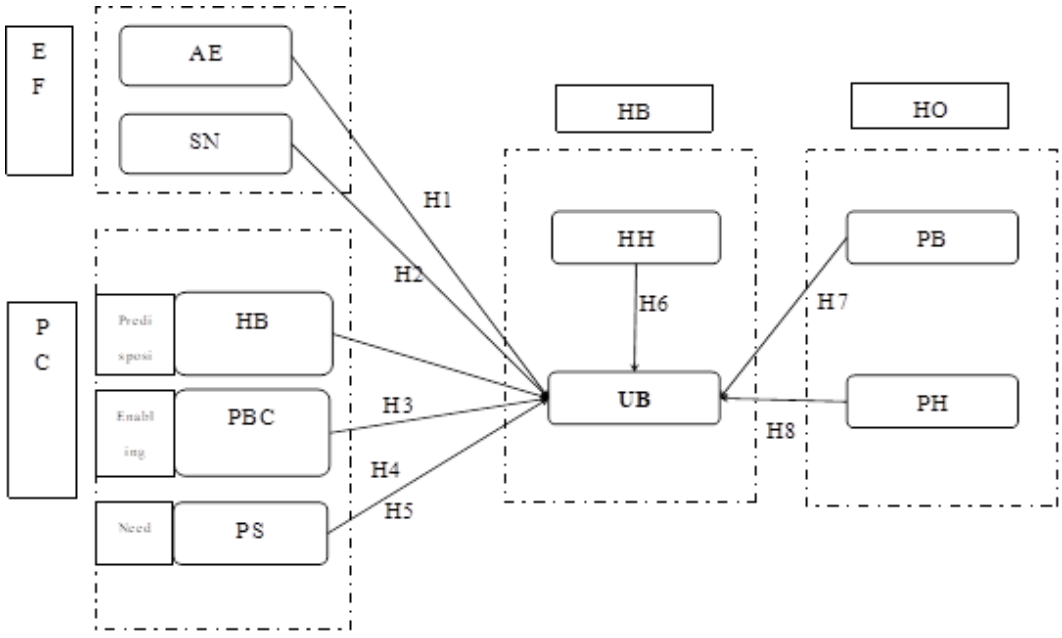

Figure 3.2 Formation model of community TCM services utilization

Note: Atmosphere environment (AE), Subjective norm (SN), Health belief (HB), Perceived behavioral control (PBC), Perceived susceptibility and severity (PS), Healthy habits (HH), Perceived hindrance (PH), Perceived benefits (PB).

3.2 Research hypothese

3.2.1 Atmosphere environment (AE)

Compared with the objective macro external environment such as the increase in the resources of community TCM service and the improvement of medical capacity owing to policy dividends, the stronger the atmosphere of TCM services that is close to people's life created through policy guidance, community publicity and family traditions, the more thoroughly they will understand community TCM services, the stronger their trust in them, and the more willing they are to use the services. In the research, some researchers also verified that residents' utilization of community TCM services is affected by policy environment, medical institutions and the cultural environment of family. As a result, this study proposes the following hypothesis (M. Hu et al., 2021).

H1: AE positively affects residents' utilization of community TCM services.

3.2.2 Subjective norm (SN)

In TPB, "SN" refers to the social pressure felt by individuals on whether to adopt a particular behavior, i.e., the impact of the individuals or groups that can have influence on behavioral decisions on whether to take a specific behavior when predicting the behaviors of other people (Ajzen, 1991). In real life, individuals' behavioral decisions are often affected by external social pressures such as the recommendation and encouragement of close relationships, and the publicity and guidance of the media. As a professional medical service, community TCM service is difficult for residents who are not specialized in TCM to have an in-depth understanding of its value in use, development and utilization. If the information about community TCM services conveyed by the outside world is more sufficient and positive, the residents will have a better understanding of the services and be more willing to use them. Consequently, the following assumption is proposed:

H2: SN positively affects residents' utilization of community TCM services.

3.2.3 Health belief (HB)

BMHSU suggests that personal predisposing characteristics will affect the utilization of

medical services. Among them, HB reflect individuals' subjective predisposition to health and medical services, including their attitudes to, and value perception and knowledge of TCM services (Andersen, 1995; Hochbaum, 1958). In this study, TCM services are highly professional medical services, and most of the service objects are residents who have not received any professional education on TCM. At this point, when residents obtain more knowledge of TCM services through various channels, the more thoroughly they understand the services, and the higher their recognition of the value of the service, the more willing they are to use community TCM services. Accordingly, the following hypothesis is proposed:

H3: HB positively affects residents' utilization of community TCM services.

3.2.4 Perceived behavioral control (PBC)

In TPB, "PBC" refers to the hindrance that reflects the past experience and expectations of an individual. The more resources and opportunities an individual thinks he has and the less obstacles he expects, the stronger the PBC over his behavior will be (Ajzen, 1991). Enabling resources affect individual's use of medical services, which is one of the main points put forward by BMHSU (Andersen, 1995). Among them, enabling resources are factors that affect the ability of individuals to facilitate or hinder the access to health services, and they include two levels of needs: the need for specialized medical personnel and facilities in the places where service objects live and work, and the need to know how to reach those service agencies and how to use them. In this study, only when residents fully realize that the more medical resources and the plans of TCM usage they have, and the less obstacles to the use of TCM services, will they be more willing to use community TCM services. Therefore, the following hypothesis is proposed:

H4: PBC positively affects residents' utilization of community TCM services.

3.2.5 Perceived susceptibility and severity (PS)

In BMHSU, individual "need" is one of the factors that affect the utilization of medical services, including objective physical needs and subjective cognitive needs (Andersen, 1995). Combined with HBM, PS refers to individual's subjective assessment of the probability of contracting diseases and the resulted consequences, which constitute individual's subjective cognitive needs for medical services (Hochbaum, 1958). In this study, TCM services is a health care service with dual functions of disease prevention and treatment. When individuals think that they are more likely to contract a disease and the consequences of the disease are

more serious, they will be more willing to use TCM services for health promotion and disease prevention. As a result, the following hypothesis is proposed:

H5: PS positively affects residents' utilization of community TCM services.

3.2.6 Healthy habits (HH)

Healthy habits (HH) refers to the stable behaviors, predispositions, and lifestyles that individuals develop over a long period of time to promote their own health (Hochbaum, 1958), such as regular health check-ups and timely medical treatment when getting sick. When individuals develop better HH, they will pay more attention to their health, and take the initiative to learn about and utilize healthy lifestyles and medical services. As health care services with dual functions of disease prevention and treatment, TCM services will also attract the attention of residents with good HH, so as to promote the understanding and utilization of this service. Therefore, the following hypothesis is proposed:

H6: HH positively affects residents' utilization of community TCM services.

3.2.7 Perceived benefits (PB)

HBM puts forward that individuals should not only recognize the harmfulness and severity of disease, but also realize that taking healthy behaviors can indeed get better health outcome (HO), and then they will accordingly take action (Hochbaum, 1958; J. H. Huang, 2006). When residents use community TCM services, they will be willing to use the services again only if they feel that their health is improved, and the stronger the benefits perceived by residents after using the services, the more willing they are to continue to use the services. Consequently, the following hypothesis is proposed:

H7: PB positively affects residents' utilization of community TCM services.

3.2.8 Perceived hindrance (PH)

HBM states that perceived hindrance (PH) refers to individuals' recognition of difficulty in adopting behaviors to promote health, which is the prerequisite for the consolidation and persistence of behaviors (Hochbaum, 1958; J. H. Huang, 2006). Compared with Western medicine, the way and process of TCM services utilization are more cumbersome and complex. When residents think that the time, energy and other costs of using community TCM services exceed the value they obtain after using the services, they will not use the services again. Thus, the following hypothesis is proposed:

H8: PH negatively affects residents' utilization of community TCM services.

3.3 Definitions and measurement of variables

3.3.1 Definitions of variables

On the basis of previous studies, this section puts forward the operational definitions of the nine variables in the hypothetical model of community TCM services utilization, namely, AE, SN, HB, PBC, PS, HH, UB, PB, and PH. The specific definitions of variables and references are shown in Annex B.

3.3.2 Measurement of variables

Based on the full review and analysis of relevant domestic and foreign literature and in combination with expert opinions, the measurement questionnaire of this study was initially drafted and the questionnaires were distributed on a small scale. After that, the questionnaire was revised according to the results of the pre-survey to eliminate some deficiencies. Then, the Measurement Form of TCM Service Utilization of Community Residents was finalized. Xx indicators are specifically set to measure AE, SN, HB, PBC, PS, HH, PB, PH, UB in this study, as shown in Table 3.1.

Table 3.1 Measurement indicators of measurement form

Latent variable	Definition	Number	Measurement indicator
AE	The atmosphere of TCM services perceived by residents in the community, family and other environments.	AE1	At present, the national policy vigorously promotes the development of TCM services.
		AE2	The cultural atmosphere of TCM services in my neighborhood is very strong.
		AE3	I have a family tradition of using TCM services.
SN	Residents' perception about whether others think they should use community TCM services.	SN1	I will use TCM services due to the guidance of the media and public opinion.
		SN2	I will use TCM services on the recommendation of the doctor.
		SN3	I will be recommended by the people around me (family, colleagues, friends) to use TCM services.
HB	Residents' attitude to, and value perception and knowledge of TCM services.	HB1	I will take the initiative to acquire the relevant knowledge of TCM services.
		HB2	I know TCM services.
		HB3	I acknowledge the efficacy of TCM services.
PBC	Resources and opportunities of community TCM services utilization that residents	PBC1	In the community near my home, I have access to TCM services at any time.
		PBC2	In the community near my home, I can easily find quality TCM services.

	perceive they have.	PBC3	I can easily use TCM services with my income.
PS	Residents' perceived probability of contracting disease and the severity of the disease.	PS1	I am prone to illness.
		PS2	If I don't go to the doctor and take medicine in time when getting sick, my illness will progress quickly.
		PS3	When I get sick, my daily life will be seriously affected.
HH	HH refer to the stable behaviors, predispositions and lifestyles that residents develop over a long period of time to promote their health.	HH1	I am very concerned about my health.
		HH2	I have the habit of self-care.
		HH3	When I feel unwell, I am used to going to the hospital.
PB	Positive results felt by residents, including that the utilization of community TCM services can promote health.	PB1	The use of TCM services is conducive to enhancing my physique and reducing the occurrence of illness (discomfort).
		PB2	The use of TCM services can relieve my condition (symptom) effectively.
		PB3	After using TCM services, I no longer need to receive Western medical treatment.
PH	Residents feel that the use of community TCM services may require them to spend more time and energy costs or bring negative results.	PH1	TCM service usage needs a long time to prove effective.
		PH2	The cost of TCM services is too high.
		PH3	Using TCM services is too cumbersome.
UB	Residents' actual utilization of community TCM services.	UB1	I have used TCM services before.
		UB2	I often use TCM services.
		UB3	I have used many types of TCM services.

Chapter 4: Survey Design and Empirical Study

4.1 Survey design

4.1.1 Questionnaire design

The questionnaire of this study mainly consists of three parts, including:

(1) The first part is the basic information, and the main purpose is to understand the demographic characteristics of the respondents, including gender, age, marital status, educational background, occupation, per capita monthly income of households, the types of medical insurance, residence, chronic diseases, and regular physical examinations.

(2) The second part is the awareness and utilization of community TCM services, which is mainly to understand the respondents' actual use of and their recognition of the needs for community TCM services, including awareness, trust, and use.

(3) The third part is the perception of community TCM services, which is the core of the survey. It is mainly to understand the respondents' actual perception and utilization of community TCM services. The research tool is generally a measurement table designed based on residents' utilization model of community TCM services in Guangzhou. The table is composed of four parts: EF, PC, HB and HO. EF includes 2 dimensions, AE and SN, with 6 measurement indicators. PC includes 3 dimensions, HB (personal predisposition), PBC (enabling factors), and PS (need), with 9 measurement indicators. HB includes 2 dimensions, personal HB and UB, with 6 measurement indicators. HO includes 2 dimensions, PB and PH, with 6 measurement indicators. This part uses the 5-point Likert scale, with a grading system ranging from 1 to 5, representing strongly disagree, disagree, neutral, agree, and strongly agree respectively.

4.1.2 Survey implementation

1. Respondents and survey method

The respondents are: ① community residents in Guangzhou; ② those who volunteer to accept the questionnaire.

Considering the objective factors such as human resources, financial resources and time, the size of survey sample is determined to be about 1,200.

This study adopts cross-sectional survey as survey method, and 300 community residents were selected from four districts in Guangzhou (districts of Baiyun, Yuexiu, Tianhe and Panyu) by area random sampling.

2. Questionnaire distribution and data collection

The survey was conducted from April to June in 2022. According to the statistics, a total of 1,200 questionnaires were distributed, and 1,164 were recovered, with a recovery rate of 97%. After removing invalid questionnaires, 1,137 are valid, with an effective response rate of 97.7%.

4.1.3 Analytical method

The survey data were mainly analyzed by SPSS 20.0. Major statistical analysis methods include descriptive analysis, reliability analysis, validity analysis, one-way analysis of variance, correlation analysis, and multiple linear regression analysis.

1. Descriptive analysis

Descriptive statistics is the measurement and description of the basic data of a sample in order to understand the quantitative characteristics of the sample and its distribution law. This study would use descriptive statistical methods to analyze the frequency and percentage of basic demographic characteristics of respondents, and the cognition and utilization of traditional Chinese medicine services in the community. For the variable part of the community TCM services utilization model, the mean and standard were used to analyze the sociodemographic characteristics of the survey population and the cognition and utilization of community TCM services of the population.

2. Reliability analysis

Reliability analysis is a test for the stability and consistency of questionnaire measurement results, and the higher the reliability is, the higher the confidence in the measurement results will be. Reliability is divided into external consistency and internal consistency. The external consistency aims to know whether the measurement results of different questionnaires or the same questionnaire are consistent at different times, while the internal consistency refers to whether different items of the same concept can produce similar results. Since this survey was a single questionnaire, the test for external consistency could not be done. So this study used Cronbach's α coefficient (Cronbach's α coefficient), which is mainly used in academia, to test the reliability of internal consistency of the questionnaire. Generally, the value range of Cronbach's α coefficient is [0,1]. If the value of Cronbach's α

coefficient is greater than 0.8, the internal consistency of the questionnaire is excellent; if it is less than 0.5, the reliability is insufficient. It is generally believed that Cronbach's α coefficient of 0.7 is sufficient for exploratory studies.

3. Validity analysis

Validity analysis is to evaluate the authenticity and accuracy of the underlying concepts reflected in the measurement questionnaire. The higher the validity is, the more consistent the measurement results are with the expected results. The commonly used validity mainly includes content validity and structure validity. The content validity refers to the extent to which the measured content covers the research category. Content validity is generally measured by reviewing relevant literature and consulting and discussing with experts on specific topics to determine whether the measurement questionnaire has covered the category to be measured. The structure validity refers to the degree to which the measurement results conform to the theoretical structure. Factor analysis is mainly adopted to conduct exploratory analysis of the measurement results. Bartlett's Test of Sphericity is the prerequisite for factor analysis. It is generally believed that if the KMO value is greater than 0.7 and the P value is less than 0.05, Bartlett's Test of Sphericity is passed. The structure validity is mainly judged on the same common factor as the questionnaire dimension, and the cumulative contribution rate of the common factor is more than 50%. This study would take content validity and structure validity to measure the validity and accuracy of this questionnaire.

4. One-way analysis of variance, correlation analysis, and multiple linear regression analysis

One-way analysis of variance is used to infer whether differences among groups are statistically significant. T test and F test were used in this study to explore whether demographic characteristics of residents would have significant differences in the utilization behavior of community TCM services.

Correlation analysis is used to analyze the correlation between two or more variables. The correlation coefficient r is used to measure the intensity and direction of the correlation among variables, which is [-1,1]. The greater the absolute value is, the closer the relationship will be. In this study, the Pearson correlation coefficient was used to conduct a bivariate correlation analysis to explore the correlation between variables in the community TCM services utilization model and use intention.

Regression analysis is used to study the linear relationship between a dependent variable and one or more independent variables. The determination coefficient R2 is used as the fitting index of the model, and its value is [0,1]. The closer its value is to 1, the better fitting degree

the model has to the data. In this study, multiple linear regression equations were used to construct a regression model of community TCM services utilization behavior to verify the research hypothesis proposed in this study.

5. Structural equation model

The structural equation model is a modeling method synthesized by multiple regression analysis, path analysis and confirmatory factor analysis, which is used to verify the relationship among observed variables, potential variables and unexplained variation in the model. It can be roughly divided into four steps: model construction, model fitting, model evaluation and model revision. The premise of using the structural equation model is to have a correct theoretical model as a guide, using the ML (Maximum likelihood), GLS (generalized least squares), and WLS (weighted least squares) for parameter estimation, to construct the measurement model and structural model of the structural equation, and then data should be fitted and the fitting results should be evaluated as a whole. The evaluation content generally includes: the significance of parameter test; the rationality of parameter estimation; determining the size of the coefficient value; the fitting index reaching the corresponding reference standard. According to the corresponding fitting results, the model is revised and reestimated. After repeated revisions-estimation-evaluation, a relatively ideal optimal model is finally obtained which is both theoretically and statistically significant. The final ideal model can be used to obtain the intricate relationship structure among observed variables, between observed variables and potential factors, and among multiple potential factors, and even to analyze the causal relationship among variables. The fitting effect of the model is evaluated by the fitness index, which is divided into absolute fitness index, value-added fitness index and reduced fitness index. However, there is no consensus in the academic circle on which index is the best model test standard, and scholars suggest that it is better to evaluate the model by combining multiple indexes. In this study, three absolute fitness indexes ($\chi 2$ /df、GFI、RMSEA), three value-added fitness indexes (CFI, NFI, IFI) and two reduced fitness indexes (PGFI, PNFI) were selected to evaluate the community TCM services utilization model. The influence of each model variable on community TCM services utilization behavior (including direct and indirect effects) was discussed, and its influence was evaluated.

4.2 Outcome analysis

4.2.1 Descriptive analysis

1. Demography

Among the 1,137 valid samples in this survey, the proportions of male and female respondents are 36.59% and 63.41% respectively. The age of the respondents ranges between 25-55 years old, with the 25-35 years old accounting for 39.31%, the 35-45 years old 36.5%, and the 45-55 years old 14.51%. In terms of marital status, most respondents are unmarried or married, with the unmarried and the married accounting for 24.54% and 72.03% respectively. The educational backgrounds of the respondents are mainly college graduates or above, with college graduates accounting for 19.26%, undergraduates 54.62%, and graduates and above 14.78%. In terms of occupation, there are many professional and technical personnel, accounting for 28.14%. In terms of the per capita monthly income of households, the income of most households is below 15,000 yuan, where 22.69% of the respondents earn less than 5,000 yuan a year, 33.33% of them earn 5,000 and 10,000 yuan a year, and 15.57% of them earn 10,000 and 15,000 yuan a year. In terms of the types of medical insurance, basic medical insurance constitutes the majority. 67.72% of the respondents have basic medical insurance for urban employees, and 13.37% of the respondents enjoy basic medical insurance for urban residents. Furthermore, most of the respondents have the habit of regular physical examination and have not suffered from chronic diseases, which account for 75.11% and 91.12% respectively. See Table 4.1 for details.

Table 4.1 Basic information of the respondents (N = 1,137)

Item	Option	Frequency	Proportion (%)
Gender			
	Male	416	36.59
	Female	721	63.41
Age			
	Under 25 years old	66	5.80
	25-35 years old	447	39.31
	35-45 years old	415	36.50
	45-55 years old	165	14.51
	Over 55 years old	44	3.87
Marital status			
	Unmarried	279	24.54
	Married	819	72.03
	Divorced	37	3.25
	Widowed	2	0.18
Education degree			
	High school or below	129	11.35
	College	219	19.26

	Undergraduate	621	54.62
	Graduate and above	168	14.78
Occupation			
	Manager of government agency, enterprise and institution	146	12.84
	Professional and technical personnel	320	28.14
	Employee in the commercial or service industry	164	14.42
	General clerk	186	16.36
	Self-employed and private entrepreneur	128	11.26
	Farmer engaged in non-agricultural labor	12	1.06
	Agricultural worker	5	0.44
	Other workers with professions difficult to classify	80	7.04
	School student	23	2.02
	Retiree	31	2.73
	The unemployed	42	3.69
Per capita monthly income of household (yuan)			
	≤5,000	258	22.69
	5,000-10,000	379	33.33
	10,000-15,000	177	15.57
	15,000-20,000	113	9.94
	> 20,000	210	18.47
Type of medical insurance			
	Basic medical insurance for urban employees	770	67.72
	Basic medical insurance for urban residents	152	13.37
	Free medical treatment	71	6.24
	The new rural cooperative medical insurance (NCMS)	61	5.36
	Commercial medical insurance	46	4.05
Whether having regular physical examination			
	Yes	854	75.11
	No	283	24.89
Whether suffering from chronic diseases			
	Yes	101	8.88
	No	1036	91.12

2. Awareness and utilization of community TCM services

Among the 1,137 valid questionnaires, more than half of the respondents have heard of community TCM services, accounting for 54.18%. 97.83% of the respondents have trust community TCM services, but only 35.27% of them have used the services. As for the convenience of community TCM services, 38.26% and 40.11% of the respondents respectively do not know whether nearby community healthcare centers have TCM clinics

and whether they provide TCM services. Among the 616 respondents who know about community TCM services, the majority of them learned about community TCM and Chinese medicinal materials (CMM) mainly through consultations with medical staff, TV, lecture, introduction by relatives and friends, and the Internet, which account for 52.60%, 41.07%, 38.31%, 36.85% and 34.42% respectively. The respondents believe that the major functions of community TCM services are rehabilitation physiotherapy, regulation (emotion, diet, living, and physique), disease prevention, health care, and treatment of chronic diseases, which account for 80.52%, 77.60%, 75.32%, 75.00% and 55.68% respectively.

Of the 563 respondents who know that nearby community healthcare centers provide TCM services, their answers indicate that acupuncture, manipulation and external treatment of TCM are the TCM services mainly provided by those centers, accounting for 83.66%, 83.13% and 78.86% respectively. Chinese herbal medicines, Chinese patent medicines and TCM prepared in ready-to-use forms are the CMM services mainly provided by those centers, accounting for 86.68%, 74.60% and 72.65% respectively.

Of the 401 respondents who have used community TCM services, their answers indicate that manipulation, acupuncture and external treatment of TCM are the services most commonly used, accounting for 68.58%, 65.84% and 55.86% respectively.

Among the 736 respondents who did not use community TCM services, the main reasons for not using the services are the long course of treatment, inconvenience, and the small reimbursement ratio of medical insurance, accounting for 41.44%, 33.02% and 21.60% respectively.

According to the 1,137 respondents, the main factors restricting the development of community TCM services are inadequate publicity of TCM services in the community and insufficient awareness of community TCM services among residents, accounting for 53.47% and 50.84% respectively. Increasing the reimbursement ratio of community TCM services, including more community TCM service programs into medical insurance (such as TCM health care), and improving the efficacy of community TCM are the main ways to promote residents to make more use of community TCM services, accounting for 67.46%, 63.85% and 62.53% respectively. See Table 4.2 for details.

Table 4. 2 Awareness and utilization of community TCM services (N = 1,137)

Item	Option	Frequency	Proportion (%)
Have you ever heard of community TCM service?			
	Yes	616	54.18%
	No	521	45.82%
Major channels to obtain			

knowledge about community TCM and CMM(N = 616)			
	Consultation with medical staff	324	52.60
	TV	253	41.07
	Lecture	236	38.31
	Introduction by relatives and friends	227	36.85
	Internet	212	34.42
	Broadcast	155	25.16
	Customs and traditions	128	20.78
	Others	71	11.53
Functions of community TCM services(N = 616)			
	Rehabilitation physiotherapy	496	80.52
	Regulation (emotion, diet, living, and physique)	478	77.60
	Disease prevention	464	75.32
	Health care	462	75.00
	Treatment of chronic diseases	343	55.68
	Treatment of incurable diseases	199	32.31
	Unclear	16	2.60
	No function	1	0.16
Do you trust community TCM services			
	Yes	1101	97.83%
	No	136	3.17%
Have you ever used community TCM services?			
	Yes	401	35.27%
	No	736	64.73%
Type of community TCM services used(N = 401)			
	Manipulation (tuina and massage)	275	68.58
	Acupuncture (acupuncture and moxibustion)	264	65.84
	External treatment of TCM (Scraping, cupping, medicine bath, and application therapy)	224	55.86
	Processing technology of CMM (CMM, TCM prepared in ready-to-use forms, and Chinese patent medicine)	204	50.87
	Moxibustion	161	40.15
	Internal administration of TCM (aerosol inhalation of CMM, medicinal liquor, tea, and food therapy)	153	38.15
	Modern auxiliary facilities (magnetotherapy and electrotherapy)	116	28.93
Reasons for not using services(N = 736)			
	The course of treatment is long	305	41.44

	and not easy to adhere to Inconvenience	243	33.02
	Heavy medical burden and small reimbursement ratio of medical insurance	159	21.60
	Poor taste of CMM and uncomfortable experience of TCM	124	16.85
	Doubt and distrust of traditional Chinese medicine	82	11.14
	Poor efficacy and great toxic and side effects	45	6.11
	Others	169	22.96
Does the nearby community healthcare center have a TCM clinic?			
	Yes	541	47.58%
	No	161	14.16%
	Unclear	435	38.26%
Does the nearby community healthcare center provide TCM services?			
	Yes	563	49.52%
	No	118	10.38%
	Unclear	456	40.11%
TCM services provided(N = 563)			
	Acupuncture (acupuncture and moxibustion)	471	83.66
	Manipulation (tuina and massage)	468	83.13
	External treatment of TCM (Cupping, blood-letting therapy, scraping, medicine bath, and application therapy)	444	78.86
	Modern TCM auxiliary facilities (infrared, atomization, magnetic, and electrical facilities)	320	41.03
	TCM surgery (such as bonesetting)	231	56.84
CMM services provided(N = 563)			
	Chinese herbal medicine	488	86.68
	Chinese patent medicine	420	74.60
	TCM prepared in ready-to-use forms	409	72.65
	Medicinal drinks	266	47.25
	Dietetic therapy	225	39.96
	Food therapy	224	39.79
Constraint			
	Inadequate publicity of TCM services in the community	608	53.47
	Insufficient awareness of community TCM services	578	50.84

	among residents		
	The atmosphere of TCM services in community healthcare centers is not strong	483	42.48
	Some TCM service programs (such as health care) are not included in medical insurance	479	42.13
	Low reimbursement ratio of community TCM services	369	32.45
	Low technical level of community TCM service	364	32.01
	Insufficient medical staff	305	26.82
	Poor efficacy of community TCM services	225	19.79
	The access to community TCM services is not easy enough.	218	19.17
	The venue for community TCM service is not spacious enough.	15	1.32
	Others	81	7.12
Methods for improvement			
	Increase the reimbursement ratio of community TCM services	767	67.46
	Include more community TCM service programs (such as health care) into medical insurance	726	63.85
	Improve the efficacy of community TCM	711	62.53
	Improve the characteristics of community TCM services	588	51.72
	Improve the convenience of community TCM services	562	49.43
	Strengthen the publicity of community TCM services	546	48.02
	Increase the number and staffing of community TCM service providers	501	44.06
	Others	19	1.67

4.2.2 Reliability and validity analysis

1. Reliability analysis

The reliability analysis of the measurement results of the questionnaire in this study is shown in Table B.1 in Annex B: the total Cronbach's α coefficient of the questionnaire is 0.819, and the Cronbach's α coefficients of the four measures of EF, PC, HB and HO are all greater than 0.6, ranging from 0.661 to 0.941.

2. Validity analysis

In this study, the KMO values of the four sub-questionnaires of EF, PC, HB and HO in the measurement table are respectively 0.805, 0.795, 0.754 and 0.71, and all pass the Bartlett's Test of Sphericity ($P < 0.05$), which is suitable for factor analysis. In this study, the principal component analysis (PCA) method was selected to extract factors with eigenvalues greater than 1, in which two common factors were extracted from EF, and the cumulative variance contribution rate is 67.7%. Three common factors were extracted from PC, and the cumulative variance contribution rate is 70.1%. Two common factors were extracted from HB, and the cumulative variance contribution rate is 77.08%. Two common factors were extracted from HO, and the cumulative variance contribution rate is 70.24%. Only factor loadings greater than 0.5 were selected, as shown from Table B.2 in Annex B.

4.2.3 Monofactor, correlation and regression analysis of community TCM services utilization

1. Differences in residents' utilization of community TCM services with different PC

In this study, independent samples t-test and one-way analysis of variance were used to analyze the differences in the utilization among residents with different demographic characteristics. Among them, in terms of utilization, there were significant differences among residents differing in gender, age, education degree, occupation, whether having regular physical examination and whether suffering from chronic diseases ($P < 0.05$); while marital status and the types of medical insurance did not show significant differences in usage intention (UI) ($P > 0.05$). In addition, residents who have heard of community TCM services, trust community TCM services, the nearby community healthcare center have a TCM clinic or the nearby community healthcare center provide TCM services are more willing to use community TCM services. See Table 4.3 for details.

Table 4.3 Analysis results of differences in UB of different demographic characteristics (N = 1,137)

Demographic characteristics		Average	Standard Deviation	t/F-value	Sig.
Gender					
	Male	8.75	3.44	4.765	0.029
	Female	9.23	3.63		
Age					
	Under 25 years old	9.05	3.29	2.984	0.018
	25-35 years old	8.77	3.56		
	35-45 years old	9.26	3.58		
	45-55 years old	8.95	3.68		
	Over 55 years old	10.52	3.21		
Marital status					
	Unmarried	9.10	3.62	0.096	0.962
	Married	9.05	3.53		

	Divorced	8.89	4.06		
	Widowed	8.00	7.07		
Education degree					
	High school or below	9.45	3.13	6.400	0.000
	College	9.19	3.54		
	Undergraduate	9.22	3.53		
	Graduate and above	7.96	3.89		
Occupation					
	Manager of government agency, enterprise and institution	8.80	3.70	2.731	0.003
	Professional and technical personnel	9.79	3.54		
	Employee in the commercial or service industry	8.21	3.59		
	General clerk	8.76	3.43		
	Self-employed and private entrepreneur	9.13	3.59		
	Farmer engaged in non-agricultural labor	9.33	4.44		
	Agricultural worker	9.20	3.56		
	Other workers with professions difficult to classify	8.88	3.35		
	School student	9.04	3.17		
	Retiree	9.65	3.60		
	The unemployed	8.57	3.37		
Per capita monthly income of household (yuan)					
	≤5,000	10.08	3.30	10.092	0.000
	5,000-10,000	9.16	3.44		
	10,000-15,000	8.64	3.54		
	15,000-20,000	8.78	3.70		
	> 20,000	8.12	3.79		
Type of medical insurance					
	Basic medical insurance for urban employees	9.07	3.61	1.660	0.141
	Basic medical insurance for urban residents	9.13	3.29		
	Free medical treatment	9.30	3.98		
	The new rural cooperative medical insurance (NCMS)	9.46	3.34		
	Commercial medical insurance	7.65	3.52		
	Not participating (at one's own expense)	9.08	3.28		
Whether having regular physical examination					

	Yes	9.29	3.63	14.923	0.000
	No	8.35	3.28		
Whether suffering from chronic diseases					
	Yes	9.88	3.58	5.939	0.015
	No	8.98	3.56		
Have you ever heard of community TCM services?					
	Yes	10.62	3.15	333.090	0.000
	No	7.21	3.13		
Do you trust community TCM services?					
	Yes	9.41	3.48	90.889	0.000
	No	6.42	3.14		
Does the nearby community healthcare center have a TCM clinic?					
	Yes	10.81	3.17	162.381	0.000
	No	7.99	3.18		
	Unclear	7.27	3.12		
Does the nearby community healthcare center provide TCM services?					
	Yes	10.81	3.18	180.833	0.000
	No	8.11	3.14		
	Unclear	7.14	3.02		

2. The correlation between the variables of the utilization model of community TCM services and utilization

In this study, Pearson's correlation coefficient was used to analyze the correlation between variables and UB. It can be seen from the analysis results that there is a significant correlation between each variable of the model and utilization ($P < 0.05$). Among them, the three variables most relevant to UB were PB, PBC, and HB, with correlation coefficients of 0.648, 0.566 and 0.505, respectively. See Table 4.4 for details.

Table 4.4 Results of correlation analysis between variables and community TCM services utilization (N = 1,137)

	AE	SN	HB	PBC	PS	HH	PB	PH	UB
AE	1								
SN	.557**	1							
HB	.651**	.624**	1						
PBC	.612**	.452**	.612**	1					
PS	.256**	.227**	.238**	.261**	1				

HH	.338**	.377**	.422**	.356**	.272**	1			
PB	.521**	.511**	.602**	.524**	.324**	.369**	1		
PH	-.216**	-.265**	-.227**	-.177**	-.321**	-.333**	-.404**	1	
UB	.490**	.345**	.505**	.566**	.353**	.306**	.648**	-.271**	1

Note: ** Correlation is significant at 0.01 level (bilateral). AE, SN, HB, PBC, PS, HH, UB, PB, and PH are atmosphere environment, subjective norm, health belief, perceived behavioral control, perceived susceptibility and severity, healthy habits, usage behavior, perceived benefits, and perceived hindrance, respectively.

3. Multiple linear regression analysis of the influencing factors of community TCM services utilization

Based on the above assumptions and the results of correlation analysis, this study constructs a regression equation for community TCM services utilization with AE, SN, HB, PBC, PS, HH, PB, and PH as independent variables, and uses stepwise regression to conduct multiple linear regression analysis to verify whether the hypotheses of this study are valid.

The analysis results show that PB (b = 0.667), PBC (b = 0.357), PS (b = 0.169), AE (b = 0.162), and SN (b = 0.152) have positive impact on utilization, among which PB has the greatest impact, and the influence of PBC, PS, AE, and SN is statistically significant ($P < 0.05$). The R2 of the regression model is 0.515, indicating that the explanatory degree of each influencing factor on community TCM services utilization is 51.3%. See Tables 4.5 and 4.6 for details. The regression equation is: UB = -2.794 + 0.667PB + 0.357PBC + 0.169PS + 0.152SN + 0.162AE

Table 4.5 Table of determining coefficients of the model of community TCM services utilization (N = 1,137)

Model	*R*	R^2	Adjusted R^2
1	0.648[a]	0.42	0.42
2	0.700[b]	0.491	0.49
3	0.711[c]	0.505	0.504
4	0.713[d]	0.509	0.507

Note: a Predictor: (constant), PB.
b Predictor: (constant), PB, PBC.
c predictor: (constant), PB, PBC, PS.
d predictor: (constant), PB, PBC, PS, SN.
e predictor: (constant), PB, PBC, PS, SN, AE.
f Dependent variable: UB.

Table 4.6 Table of regression coefficients of the influencing factors of community TCM services utilization (N = 1,137)

Model	Partial regression coefficient	Standard regression coefficient	t-value	Sig.
(Constant)	-2.794		-6.528	0.000
PB	0.667	0.461	17.079	0.000
PBC	0.357	0.271	9.812	0.000
PS	0.169	0.128	5.807	0.000
SN	0.152	0.103	3.895	0.000
AE	0.162	0.108	3.719	0.000

Note: a Dependent variable: UB. AE, SN, HB, PBC, PS, HH, UB, PB, and PH are atmosphere environment,

subjective norm, health belief, perceived behavioral control, perceived susceptibility and severity, healthy habits, usage behavior, perceived benefits, and perceived hindrance, respectively.

4.2.4 Construction and analysis of structural equation model (SEM) of community TCM services utilization

1. Construction of the initial model of community TCM services utilization

According to the framework of the model and research hypotheses of this study, AMOS 21.0 was used to establish the initial SEM of community TCM services utilization, and the variables of the model include 9 latent variables and 27 observed variables including AE, SN, HB, PBC, PS, HH, PB, PH and UB, as shown in Figure 4.1.

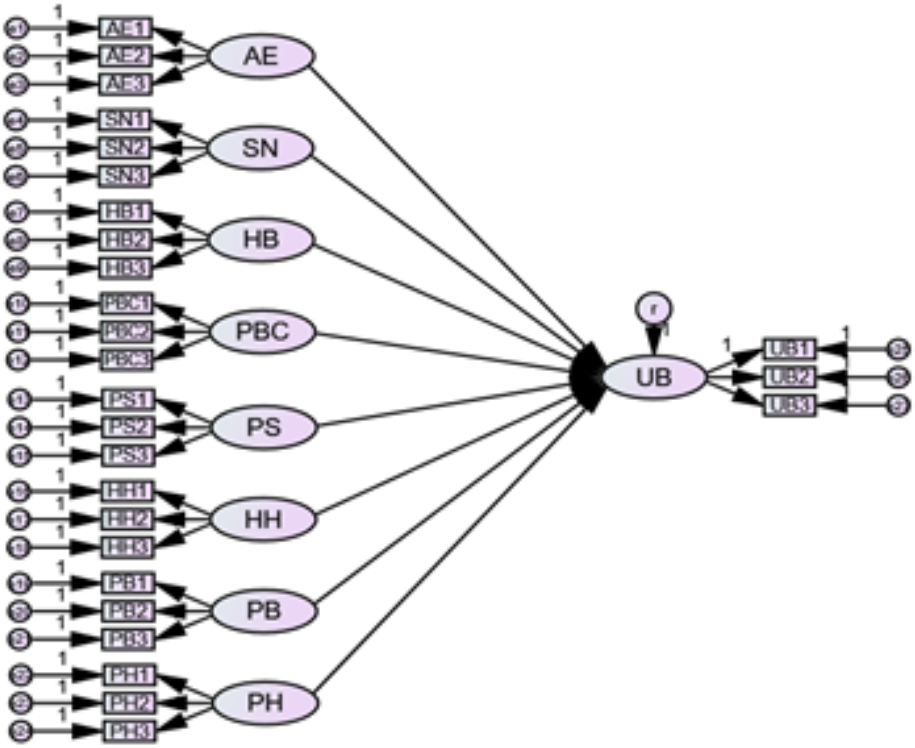

Figure 4.1 Initial SEM of community TCM services utilization

Note: Atmosphere environment (AE), Subjective norm (SN), Health belief (HB), Perceived behavioral control (PBC), Perceived susceptibility and severity (PS), Healthy habits (HH), Perceived hindrance (PH), Perceived benefits (PB).

The survey data was imported into AMOS 21.0, and the initial model was analyzed with the maximum likelihood estimation (MLE) method. The analysis results need to be tested for the fitness with the model first, that is, to test whether the hypothetical theoretical model is consistent with the actual data. From the test results in Table 4.7 it can be seen that except the two simple fitness statistics of PGEI and PNFI, the remaining six indexes are lower than the standard value of the test, indicating the poor fitness of the initial model, and it is necessary to modify the model to build a more suitable one.

Table 4.7 Fitness results of initial SEM of community TCM services utilization (N = 1,137)

	Absolute fitness index			Value-added fitness index			Simple fitness index	
	χ^2/df	GFI	RMSEA	CFI	NFI	IFI	PGFI	PNFI
Evaluation criteria	[1,3]	[0.9,1]	[0,0.08]	[0.9,1]	[0.9,1]	[0.9,1]	[0.5,1]	[0.5,1]
Initial model	15.107	0.682	0.111	0.738	0.723	0.739	0.570	0.653

2. Modification of the initial model of community TCM services utilization

According to the analysis results of the initial model, statistical tests were performed on each variable of the model, and it was found that the path coefficient of "UB←HH" was not statistically significant (P > 0.05), so the path of healthy habits to utilization behavior was deleted. According to the modification indices (MI), the paths between the five variables of PB, social influence, contributing factors, individual innovation, and self-efficacy were added, namely "AE↔SN", "AE↔HB", "AE↔PBC", "AE↔PS", "AE↔PB", "AE↔PH", "SN↔HB", "SN↔PBC", "SN↔PS", "SN ↔PB", "SN ↔PH", "HB ↔PBC", "HB ↔PS", "HB ↔PB", "HB ↔PH", "PBC ↔PS", "PBC ↔PB", and "PB ↔PH", and the modified model is shown in Figure 4.2.

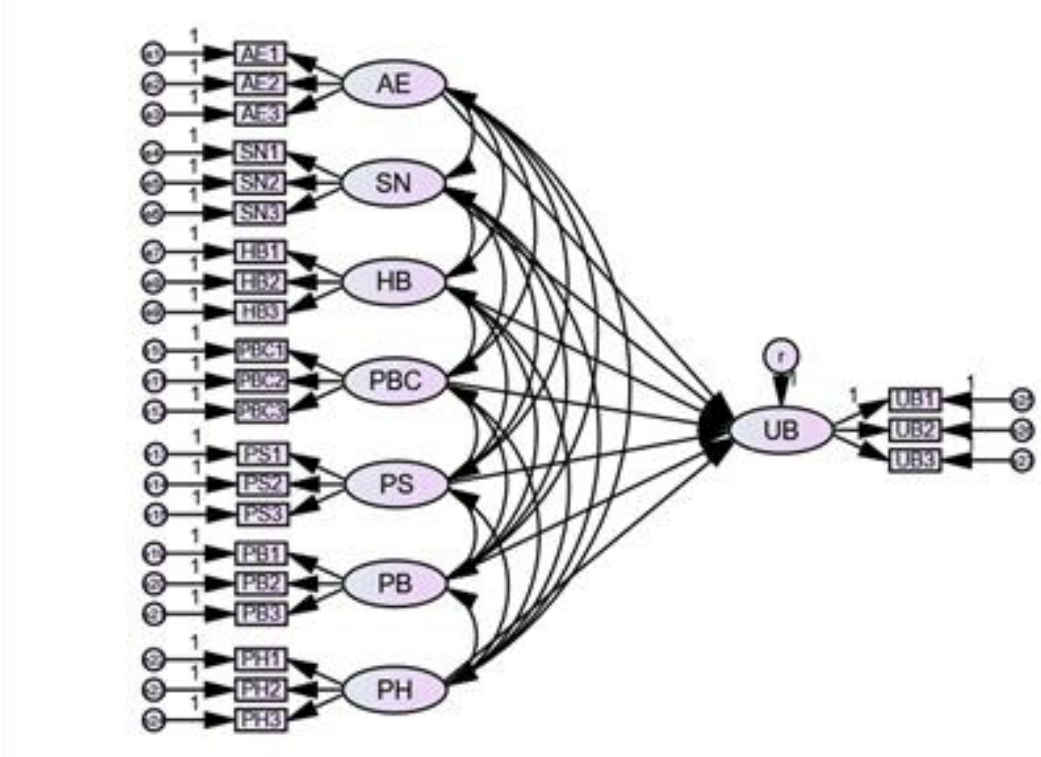

Figure 4.2 Modified SEM of community TCM services utilization

Note: Atmosphere environment (AE), Subjective norm (SN), Health belief (HB), Perceived behavioral control (PBC), Perceived susceptibility and severity (PS), Healthy habits (HH), Perceived hindrance (PH), Perceived benefits (PB).

Table 4.8 shows the fitness of the modified model. The test results show that the fitness statistics of the modified model is significantly improved compared with that of the initial

model, and all the statistics meet the fitness standards, indicating that the modified model achieves better fitness and can more accurately reflect the relationship between the theoretical hypothesis model and the actual data.

Table 4.8 Fitness results of modified SEM of community TCM services utilization (N = 1,137)

	Absolute fitness index			**Value-added fitness index**			**Simple fitness index**	
	χ^2/df	**GFI**	**RMSEA**	**CFI**	**NFI**	**IFI**	**PGFI**	**PNFI**
Evaluation criteria	[1,3]	[0.9,1]	[0.0.08]	[0.9,1]	[0.9,1]	[0.9,1]	[0.5,1]	[0.5,1]
Initial model	15.107	0.682	0.111	0.738	0.723	0.739	0.570	0.653
Modified model	5.447	0.913	0.0626	0.936	0.924	0.937	0.682	0.750

The test results of main path coefficients of the modified model show that in addition to HB (P = 0.965) and PH (P = 0.261), AE, SN, PBC, PS, and PB have significant impact on UB (P < 0.05), and their path coefficients are 0.306, 0.317, 0.719, 0.190 and 0.942, respectively, among which the path coefficient of PB on UI is the largest, indicating that PB has the greatest impact on UI, and AE, SN, PBC, and PS all positively affect UI. See Table 4.9 for details.

Table 4.9 Results of main path analysis of the modified model (N = 1,137)

Influence path			**Estimate**	**S.E.**	**C.R.**	**Sig.**
UB	<---	AE	0.306	0.150	2.0385	0.042**
UB	<---	SN	0.317	0.061	5.1757	0.000***
UB	<---	HB	-0.031	0.119	-0.259	0.796
UB	<---	PBC	0.719	0.136	5.294	0.000***
UB	<---	PS	0.190	0.046	4.1347	0.000***
UB	<---	PB	0.942	0.090	10.4457	0.000***
UB	<---	PH	-0.060	0.053	-1.1234	0.261

Moreover, the test results of path coefficients among the variables indicate that there are significant effects among the seven variables of AE, SN, HB, PBC, PS, PB, and PH (P < 0.05). Among them, the path coefficients between AE and SN, HB, PBC, PS, PB, and PH are 0.3972, 0.4983, 0.2725, 0.206, 0.2839 and -0.1136, respectively; those between social influence and contributing factors, individual innovation and self-efficacy are 0.298, 0.246 and 0.323, respectively; those between contributing factors and individual innovation and self-efficacy are 0.294 and 0.467 respectively; and the path coefficient between individual innovation and self-efficacy is 0.372. See Table 4.10 for details.

Table 4.10 Path analysis results between the variables of the modified model (N = 1,137)

Influence path			Estimate	S.E.	C.R.	Sig.
AE	<-->	SN	0.397	0.027	14.478	0.000***
AE	<-->	HB	0.498	0.031	16.270	0.000***
AE	<-->	PBC	0.273	0.025	11.060	0.000***
AE	<-->	PS	0.206	0.026	8.025	0.000***
AE	<-->	PB	0.284	0.023	12.184	0.000***

AE	<-->	PH	-0.114	0.020	-5.691	0.000***
SN	<-->	HB	0.411	0.025	16.385	0.000***
SN	<-->	PBC	0.158	0.016	9.665	0.000***
SN	<-->	PS	0.137	0.021	6.469	0.000***
SN	<-->	PB	0.236	0.019	12.185	0.000***
SN	<-->	PH	-0.112	0.018	-6.398	0.000***
HB	<-->	PBC	0.228	0.021	11.024	0.000***
HB	<-->	PS	0.166	0.022	7.520	0.000***
HB	<-->	PB	0.285	0.022	13.092	0.000***
HB	<-->	PH	-0.099	0.018	-5.658	0.000***
PBC	<-->	PS	0.105	0.015	7.190	0.000***
PBC	<-->	PB	0.144	0.015	9.662	0.000***
PBC	<-->	PH	-0.049	0.010	-4.669	0.000***
PS	<-->	PB	0.145	0.017	8.343	0.000***
PS	<-->	PH	-0.163	0.020	-8.118	0.000***
PB	<-->	PH	-0.114	0.014	-8.063	0.000***

3. The finalized model of community TCM services utilization

According to the test results of main path coefficients of the modified model, the paths of "UB←HB" and "UB←PH" were removed, and the model of community TCM services utilization in this study was finalized. See Figure 4.3 for details.

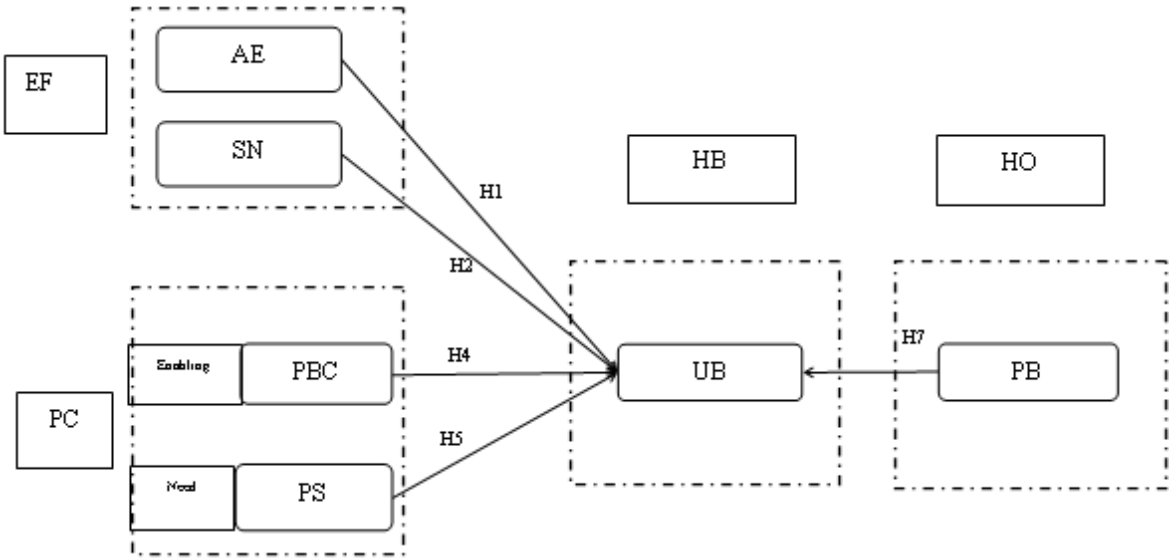

Figure 4.3 The finalized SEM of community TCM services utilization

Note: Atmosphere environment (AE), Subjective norm (SN), Health belief (HB), Perceived behavioral control (PBC), Perceived susceptibility and severity (PS), Healthy habits (HH), Perceived hindrance (PH), Perceived benefits (PB).

In the finalized model of community TCM services utilization, the seven indicators of $\chi 2/df$, GFI, RMSEA, CFI, NFI, IFI, PGFI, and PNFI used to measure the fitness of the model are close to the ideal standard, and the finalized model of community TCM services utilization has good fitness, indicating that the model can well reflect the real situation of residents' utilization of community TCM services. PB, PBC,AE, SN and PS, have significant impact on UB ($P < 0.05$), with path coefficients are 0.954, 0.671, 0.337, 0.334 and 0.201, respectively. See Table 4.11, Table 4.12, and Table 4. 13 for details.

Table 4.11 Fitness results of the finalized SEM of community TCM services utilization (N = 1,137)

	Absolute fitness index			Value-added fitness index			Simple fitness index	
	χ^2/df	GFI	RMSEA	CFI	NFI	IFI	PGFI	PNFI
Evaluation criteria	[1,3]	[0.9,1]	[0,0.08]	[0.9,1]	[0.9,1]	[0.9,1]	[0.5,1]	[0.5,1]
Finalized model	4.256	0.950	0.054	0.967	0.958	0.967	0.667	0.751

Table 4.12 Results of main path analysis of the finalized model (N = 1,137)

Influence path			Estimate	S.E.	C.R.	Sig.
UB	<---	AE	0.337	0.119	2.84	0.005***
UB	<---	SN	0.334	0.061	5.491	0.000***
UB	<---	PBC	0.671	0.144	4.671	0.000***
UB	<---	PS	0.201	0.043	4.656	0.000***
UB	<---	PB	0.954	0.087	11.073	0.000***

Table 4.13 Path analysis results between the variables of the finalized model (N = 1,137)

Influence path			Estimate	S.E.	C.R.	Sig.
AE	<-->	SN	0.366	0.026	13.852	0.000***
AE	<-->	PBC	0.262	0.024	10.874	0.000***
AE	<-->	PS	0.196	0.025	7.962	0.000***
AE	<-->	PB	0.266	0.022	11.854	0.000***
SN	<-->	PBC	0.153	0.016	9.56	0.000***
SN	<-->	PS	0.133	0.021	6.403	0.000***
SN	<-->	PB	0.23	0.019	12.041	0.000***
PBC	<-->	PS	0.103	0.014	7.142	0.000***
PBC	<-->	PB	0.141	0.015	9.568	0.000***
PS	<-->	PB	0.141	0.017	8.24	0.000***
PS	<-->	PB	0.141	0.017	8.24	0.000***

4.2.5 Verification results of the hypothetical model of community TCM services utilization

According to the analysis results of the multiple linear regression equation and SEM in this chapter, the research hypotheses of H1, H2, H4, H5 and H7 have all been verified, while H3, H6 and H8 have not. It means AE, SN, PBC, PS, and PB have significant impact on UB ($P < 0.05$), with regression coefficients of 0.162, 0.152, 0.357, 0.169 and 0.667, and their path coefficients are 0.337, 0.334, 0.671, 0.201 and 0.954, respectively. Specific results of verification are shown in Table 4.14.

Table 4.14 Verification of research hypotheses of community TCM services utilization (N = 1,137)

Item	Hypothesis	Verification results	
		Regression equation	Structural Equation
H1	AE positively affects residents' utilization of community TCM services	Supported	Supported
H2	SN positively affects residents' utilization of community TCM services	Supported	Supported
H3	HB positively affects residents' utilization of community TCM services	Rejected	Rejected
H4	PBC positively affects residents'	Supported	Supported

	utilization of community TCM services		
H5	PS positively affects residents' utilization of community TCM services	Supported	Supported
H6	HH positively affects residents' utilization of community TCM services	Rejected	Rejected
H7	PB positively affects residents' utilization of community TCM services	Supported	Supported
H8	PH negatively affects residents' utilization of community M services	Rejected	Rejected

Chapter 5: Analysis and Suggestions

5.1 Analysis

5.1.1 Analysis of cognition of community TCM services

By the end of 2021, the proportion of community health service centers that set up clinical departments of TCM reached 65.8%, and the proportion of community health service centers and community health service stations that provide TCM services reached 99.6% and 93% respectively. The survey results showed that the rate of respondents who knew there were community medicine services was only 54.18%, while the proportion of residents who did not know whether the community health service center nearby had a Chinese medicine hospital or whether it could provide Chinese medicine service was still 38.26% and 40.11% respectively. This indicated that although the current community Chinese medicine services developed rapidly and had wide coverage, the propaganda might not be strong, and the residents' awareness of it still needed to be improved. Consultation with medical staff, television, and lecture propaganda are the main ways for residents to obtain knowledge about TCM in the community. However, 52.6% of residents consulted with medical staff and less than 50% of residents knew about the services through other ways, which indicates that there are few ways of propaganda, the propaganda content has not yet won the heart of residents, and the propaganda effect needs to be improved. Besides, residents generally believed that the services could improve their health. The effect of the services on rehabilitation physiotherapy, regulation, disease prevention, and health care was relatively recognized by residents, with the recognition rate reaching more than 70%. However, few residents recognized the effect of the services on treating such diseases as chronic diseases, and difficult and complex diseases.

5.1.2 Analysis of the use of community TCM services

According to the survey results, only 35.27% of the respondents have used community TCM services. The types of services used are mainly manipulation, acupuncture, and external treatment of TCM, which are consistent with the types of services that the respondents know provided by the community health service centers nearby, indicating that the TCM services provided by the community can generally meet the needs of residents. The respondents who

have not used the community TCM service believe that the "long treatment course which makes it not easy to adhere to", "inconvenient use of TCM", "heavy medical burden, and a small proportion of medical insurance reimbursement" keep them from using these services. Besides, all the respondents think that the main factors that restrict the community TCM services at present are insufficient propaganda and inadequate awareness of the services, small proportion of medical insurance reimbursement (some items are not included in medical insurance). This suggests that the efficacy, characteristics, and utilization of community TCM services should be further publicized and popularized, and the support of medical insurance policies should be increased, which is consistent with how the respondents believe the development of community TCM services can be promoted.

5.1.3 Analysis of the impact of residents' demographic characteristics on the use of TCM services in communities

1. Predisposing characteristics

Based on Andersen's Behavioral Model of Health Services Utilization (BMHSU), demographic factors such as age and gender, and social structural factors such as education and occupation, this research analyzes the impact of personal characteristics on health service use behavior from the perspective of individuals' physiological characteristics and their social status and ability to deal with problems. The survey results showed that there are significant differences in the use behavior of residents in terms of gender, age, education level and occupation. Among them, women and the elderly prefer to use community TCM services, which may be related to their relatively weak physique. Residents with master's degrees or below are more inclined to use community TCM services. It may be that the higher the education level is, the more opportunities to access medical resources in western medicine there will be, so the demand for community TCM services declines correspondingly. Residents of different occupations also have different preferences for the use of TCM services in communities, which suggests that the characteristics of different occupational groups should be fully considered when promoting TCM services in the community.

2. Enabling resources

According to BMHSU, enabling resources are one of the personal characteristics that promote or hinder people's ability to use medical services, including personal, family and community resources, that is, income, medical insurance, time to reach medical institutions. According to the survey results, the residents' monthly income per capita, the establishment of

TCM hospitals in the nearby community health service centers, and the provision of TCM services in the nearby community health service centers have significantly different effects on the use of TCM services in the community. Residents with lower monthly income per capita tend to use community TCM services, which may be because community TCM services with relatively low prices are more suitable for disease prevention and health promotion among low-income groups; residents who have a nearby community health service center that has a TCM hall or can provide TCM services prefer to use this service.

3. Need

The third variable in the personal characteristics that affect the use of health services is need. According to BMHSU, the need is the direct cause of the use of health services. It is mainly the health status of residents. According to the survey results, residents who have regular physical examinations are more inclined to use community TCM services. There may be two reasons. First, residents who have physical examination habits, and generally have a strong sense of health, will use the service of "preventative treatment of diseases" for disease prevention and health promotion. Second, after physical examination, health hazards can be found in time, so residents may use community TCM services for timely intervention. Residents with chronic diseases prefer to use community TCM services, which is consistent with the fact that individuals' health service use behavior is affected by their needs in BMHSU.

5.1.4 Analysis of influencing factors on the use behavior of community TCM services

According to the analysis results of multiple linear regression equation and structural equation model, perceived benefits, perceived behavioral control, atmosphere environment, subjective norms, perceived susceptibility, and severity are the key factors influencing residents' use of community TCM services, while healthy habits, health beliefs, and perceived hindrance have no significant impact on the use behavior. The specific analysis is as follows.

(1) Perceived benefits positively affect the use behavior. Perceived benefit refers to the degree to which residents perceive the positive results such as health promotion that can be brought to them by using community TCM services. The analysis results of the regression equation and structural equation models showed that the regression coefficient and path coefficient of perceived benefits to the use behavior are 0.667 and 0.954 respectively, indicating that perceived benefits are the biggest factor that affects the use behavior and have a positive effect on it, that is, the greater the benefits that residents think are brought by using

community TCM services, the more willing they are to use community TCM services. This is consistent with most research conclusions. Among the three survey items of perceived benefits in this research, physical enhancement scored 3.54, mild illness 3.52 and no need for western medicine treatment 2.94. In addition, there is a positive correlation between perceived benefits and perceived behavioral control, atmosphere environment, subjective norms, perceived susceptibility, and severity. Therefore, community medical institutions should, on the one hand, further improve the capability and level of TCM services, and on the other hand, fully mobilize the communities, doctors, and patients to publicize the services. In this way, residents' satisfaction and trust in community TCM services can be improved and their use of the services can be promoted.

(2) Perceived behavioral control has a positive impact on the willingness to use TCM services. Perceived behavioral control refers to the degree to which residents perceive the community TCM service resources and use opportunities they have. In this research, the regression coefficient and path coefficient of perceived behavioral control on the use behavior are 0.357 and 0.671 respectively. The positive impact of perceived behavioral control on the use behavior has been verified by regression equation and structural equation model, indicating that residents think that the more resources and use opportunities they have, the more willing they are to use community TCM services. The survey results showed that no economic pressure (3.42) scored the highest, convenience (3.39) scored the second, and high-quality service resources (3.32) scored the lowest. In addition, there is a positive correlation between perceived behavioral control and atmosphere environment, subjective norms, perceived benefits, perceived susceptibility and severity. Therefore, medical institutions should increase the convenience of community TCM services, especially the access to high-quality community TCM services.

(3) The atmosphere environment positively affects the willingness to use TCM services. The atmosphere environment refers to the degree to which residents perceive the atmosphere of TCM services in their communities, families, and other environments. In this research, the regression coefficient and path coefficient of atmosphere environment on the use behavior are 0.162 and 0.337 respectively, and their positive impact on the use behavior has been verified by regression equation and structural equation model, indicating that residents think that the stronger the atmosphere of TCM services in their environment is, the more willing they are to use community TCM services. The survey results showed that policy support (4.19) scored the highest, family tradition (3.60) scored the second, and community atmosphere (3.19) scored the lowest. In addition, there is a positive correlation between the atmosphere

environment and subjective norms, perceived behavioral control, perceived benefits, perceived susceptibility, and severity. Therefore, the community should strengthen the propaganda and education of TCM services, further enhance the atmosphere of TCM services in the community and guide the residents to increase the use of the services.

(4) Subjective norms have a positive effect on the use behavior. Subjective norms refer to the extent to which residents perceive whether others think they should use community TCM services. In this research, the regression coefficient and path coefficient of subjective norms on the use behavior are 0.152 and 0.334 respectively. The positive impact of subjective norms on the use behavior has been verified by regression equation and structural equation model, indicating that residents think that the more others recommend and advocate the use of community TCM services, the more willing they are to use the services. The survey results showed that doctors' recommendation (3.95) scored the highest, relatives and friends' recommendation (3.94) scored the second, and the guidance of media opinion (3.48) scored the lowest, indicating that the support of hospitals and relatives and friends has a greater impact on residents' use of community TCM services. In addition, there is a positive correlation between subjective norms and atmosphere environment, perceived behavioral control, perceived benefits, perceived susceptibility, and severity. Therefore, it is necessary to increase the social impact of residents' use of community TCM services, especially to increase the support of doctors and the promotion of patients.

(5) Perceived susceptibility and severity positively affect the use behavior. Perceived susceptibility and severity refer to the residents' perceived probability of suffering from diseases and their severity. In this research, the regression coefficient and path coefficient of individual innovation on willingness to use are 0.169 and 0.201, respectively. The positive impact of individual innovation on the willingness to use TCM services has been verified by regression equation and structural equation model, indicating that residents with poorer physical quality and more serious diseases are more likely to be interested in using community TCM services. Therefore, it is necessary to guide residents with perceived susceptibility and severity to use community TCM services, such as the elderly, and patients with chronic diseases, and play the role of these service users in the promotion and use of community TCM services.

However, contrary to the conclusions of relevant studies, the impact of health beliefs, healthy habit and perceived hindrance on the use behavior has not been verified by the two models. The possible reason is that residents with positive health beliefs in TCM prefer to see a doctor in the TCM hospitals or in the Department of Traditional Chinese Medicine in

general hospitals. Residents with good healthy habits often have relatively good physical fitness or have relatively fixed health intervention programs, so they have a relatively low demand for the use of community TCM services. Therefore, the influence of healthy habits on the use behavior is not significant. Besides, the perceived hindrance does not affect the use behavior. The possible reason is that with the increase of the support of the medical insurance policy for the community TCM services and the continuous improvement of the use mode of TCM services, the economic cost and time cost of TCM services use have also decreased.

5.2 Recommendations for health policies

5.2.1 Strengthen the policy guarantee for the development of TCM in communities

According to the empirical results of this study, the atmosphere environment is one of the influencing factors for residents to use community TCM services. Among them, policy support is the key to creating an atmosphere environment for community TCM services. Therefore, we should continue to attach importance to relevant policies, introduce more policy documents to promote community TCM services, and vigorously support the development of community TCM services.

1. Pay attention to the guiding role of environmental community TCM service policies.

According to Rothwell and Zegveld's (1984) classification of policy tools, environmental community TCM service policies refer to the macro guiding policies related to the development of TCM, that is, the guiding policies that the government indirectly promotes its development by improving the external environment for the development of TCM health services, such as Healthy China Initiative and the Outline of the Strategic Plan on the Development of Traditional Chinese Medicine. H. J. Wang (2021) found that the path coefficient of the impact of the promulgation of environmental policies on supply-oriented policies reached 0.717 when studying the impact mechanism of TCM development policies on TCM services in grassroots communities, indicating that these guiding policies have greatly affected the formulation and improvement of relevant infrastructure, medical insurance support, and talent training policies. Xia et al. (2022) found in the analysis of China's TCM health service policy that at present, China's environmental policies for TCM health services mainly focus on infrastructure construction, but they ignore the investment of capital and human resources. From the perspective of policy effect, 99.6% of the community health service centers and 93% of the community health service stations in China provide

TCM services in 2021, and the infrastructure construction of TCM services in the community has been greatly developed, but the proportions of licensed doctors of TCM and licensed assistant doctors of TCM are only 21.1% and 29.9% respectively, which is less than five percentage points higher than those in 2016. Therefore, relevant national departments in China should pay full attention to the guiding role of environmental policies, further strengthen the support of supply policies such as medical insurance payment by increasing the macro-guiding policy guidance on the development of TCM and put forward requirements for the development of TCM in the community, to make TCM reach and serve grassroots communities.

2. Strengthen the guarantee of medical insurance policies for community TCM services.

According to the empirical results of this research, the impact of medical insurance policies on residents' use behavior of TCM services in the community has no statistical significance. However, in the descriptive statistical analysis, it is found that the small number of medical insurance reimbursement items and the low proportion of reimbursement are the important factors that restrict the development of TCM services in the community at present. H. J. Wang (2021) also believe that medical insurance plays a fundamental role in medical reform and has a huge impact on primary medical services. Through empirical research, they found that medical insurance policies can positively affect the use of TCM services in grassroots communities. The path coefficient of its impact is 0.617, indicating that the effect is relatively significant. Therefore, it is necessary to give full play to the role of medical insurance and further improve the support policy for the medical insurance of TCM. First, it is necessary to improve the price management mechanism of TCM services, constantly improve the management policy for the new price items of TCM services, enrich the price items of TCM, simplify the review procedures for the new price items of TCM services with accurate curative effect and prominent economic advantages, and establish a sensitive and dynamic price adjustment mechanism, and give priority to the medical service items of TCM in the dynamic adjustment of medical service prices. Second, appropriate TCM and TCM service items should be included in the medical insurance, including the eligible TCM decoction pieces, Chinese patent medicine, and TCM preparations in medical institutions, increase the preference for the medical service items with TCM characteristics and advantages, and include the appropriate TCM technology with precise curative effect and reflecting the advantages of TCM characteristics in medical insurance. Third, the payment policy suitable for the characteristics of community TCM services should be improved. For example, we can try to include TCM services in the diagnosis and treatment of chronic and serious diseases in

the community medical insurance outpatient service, give full play to the role of TCM in the prevention and treatment of chronic and serious diseases, guide capitation in qualified grassroots medical and health institutions, encourage the community family doctor team to provide TCM services, and fully mobilize grassroots medical institutions to provide TCM services for community residents (W. D. Zhao et al., 2022).

5.2.2 Strengthen the capacity building of community TCM services

The empirical results of this study showed that perceived benefits and perceived behavioral control are important factors that affect residents' use of community TCM services. This suggests that we should further strengthen the capacity building of community TCM services, continue to increase the quality of community TCM service resources and enhance the medical effect of community TCM services, so as to promote community residents to make more full use of community TCM services.

1. Continue to improve the community TCM service network.

At present, the community health service centers that can provide TCM services are nearly across China, and the construction of a community TCM service network is sound. However, the survey results showed that the impact of a TCM hall in the community health service center nearby on the use behavior of community TCM services has a statistical significance. TCM hall is a relatively independent comprehensive service area of TCM in a community health service center. The hall has a strong atmosphere of TCM and can provide a variety of TCM diagnosis and treatment services. The standardized construction of a TCM hall plays an important role in improving the service capacity of TCM in the community (Qu, 2022). Therefore, it is recommended to continue to promote the construction of TCM halls in the community health service centers, improve the capacity of TCM services, continue to carry out the construction of service connotation, and focus on strengthening the provision of TCM personnel, technical service of TCM and equipment of TCM, so as to continuously improve the conditions of TCM services in the community and to meet the health needs of residents to obtain community TCM services nearby.

2. Continue to promote the construction of a community TCM talent team.

Talents are the first resource. Sufficient high-quality TCM medical staff is the key to the development of TCM services in the community and the improvement of the use effect of TCM services (X. Y. Wang et al., 2022). Therefore, there are two suggestions. First, expand the effective supply of TCM talents in the grassroots community. For example, we can guide

doctors practicing western medicine to learn TCM by carrying out standardized training for general practitioners of TCM and assistant general practitioners, and job-transfer training, train a few high-quality TCM talents for the community, and encourage retired TCM doctors and doctors with expertise in TCM to practice in the community. Second, improve the career development environment of community TCM personnel. Preferential policies can be given to community TCM personnel in terms of promotion of professional titles, salary, and further study to make community TCM posts more attractive. We should establish a performance distribution mechanism conducive to the improvement of the supply of TCM services and stimulate the community TCM personnel to provide TCM services.

3. Further promote appropriate technologies of TCM in communities.

According to the survey results, manipulations such as massage and acupuncture are the common types of TCM services for community residents. This may be because residents think that TCM services have a long treatment course and are not easy to adhere to and choose manipulations and acupuncture services that have a quick effect. In terms of perceived behavioral control, residents believe that it is not easy to find high-quality Chinese medicine service resources in nearby communities. Therefore, it is suggested that we should further strengthen the construction of platforms for the promotion of TCM, set up and improve the provincial centers for the promotion of appropriate technology in TCM, and enable each community health service center to provide TCM decoction pieces, acupuncture, moxibustion, scraping, cupping, minimally invasive TCM, massage, ironing, fumigation, bone injury, anorectal treatment by the technical norms of TCM. We should further improve the diagnosis and treatment capacity of TCM decoction pieces and non-drug treatment of TCM in community health service centers, expand the scale of TCM services, and improve the diagnosis and treatment capacity of TCM in community medical institutions (X. L. Shi & Hao, 2022). At the same time, we should also promote appropriate technologies among residents, and improve their awareness and trust of TCM services.

4. Innovate community TCM service mode.

The survey results showed that the inconvenient use of TCM is one of the main reasons why residents do not use TCM services. Therefore, on the one hand, it is suggested to strengthen the integration of community TCM services and the Internet (J. Tian, 2022; X. P. Wang et al., 2021). For example, we can use Internet technology to make appointments for diagnosis and treatment, provide multi-channel pre-diagnosis services such as time-phased treatment, wait for treatment reminders, and carry out price-based payment, report query, health consultation, drug distribution and follow-up based on mobile Internet and the Internet

of things. We should also actively promote e-payment, simplify the payment process, and realize the optimization of service processes such as real-time settlement and inter-diagnosis settlement, explore and promote the construction of "smart pharmacies" to provide TCM decoction pieces, formula granules, TCM decoction, cream preparation, drug distribution, and drug consultation. We can expand the scope of TCM telemedicine services, and encourage TCM hospitals to provide communities with services such as telemedicine, image diagnosis, pathological diagnosis, ECG diagnosis, TCM constitution identification, TCM "four diagnoses", TCM meridian diagnosis, macroscopic and microscopic tongue phase diagnosis, and distance education, so as to improve the access of high-quality TCM medical resources and the overall efficiency of services, and promote the vertical flow of TCM medical resources. On the other hand, we should include TCM services in the services of family doctors in the community, strengthen the staffing of the contracting team and the capacity building of TCM services, develop and promote appropriate TCM contracting service packages, improve the quantity and quality of TCM contracting services, provide full-lifecycle TCM contracting services, and give full play to function of "preventative treatment of diseases" of community TCM services (Y. F. Tian et al., 2021).

5. Pay attention to the satisfaction of community TCM service objects.

The medical effect of community TCM services, that is, the residents' perceived benefits after using community TCM services, are the most important influencing factor. Therefore, it is recommended that the residents' satisfaction with the service itself, service process and diagnosis and treatment effect of community TCM services should be included in the evaluation of the service capacity of community TCM hall and be an important factor of medical insurance payment. It is also suggested to guide the community medical institutions to pay attention to the post-diagnosis follow-up of community TCM service objects, introduce the SERVQUAL model to residents' evaluation of TCM service, provide better community TCM services for residents, and constantly promote their use of community TCM services (J. Hou et al., 2019; X. P. Yu, 2022).

5.2.3 Strengthen the propaganda and popularization of community TCM services

The results of the survey showed that the lack of propaganda of TCM services in the community, the lack of residents' awareness of TCM services in the community, and the lack of TCM service atmosphere in the community health service centers are the main factors, as residents believe, that hinder the development of TCM services in the community at present.

At the same time, according to the empirical research results, subjective norms positively impact residents' use of community TCM services, and the recommendation of doctors, relatives and friends is an important reason for their trust and use of the services.

1. Promote the construction of famous doctor studios of community TCM.

In March 2022, the General Office of the State Council (2022)issued the 14th Five-year Plan for the Development of TCM, which requires to continuously promote the construction of national and primary famous doctor studios to inherit TCM. Relevant research finds that the famous doctor studio provides the most advanced TCM knowledge recognized by the medical industry at present, and the most appropriate health knowledge for disease prevention and control and health care of residents. The TCM service knowledge in the famous doctor studio is accumulated and proved by famous doctors at all levels through decades of clinical experience. It contains a lot of hidden knowledge. Especially in the TCM services based on experience, the TCM service knowledge of famous doctors should be spread by giving the full role of famous doctor studio and the awareness and trust of TCM service among residents should be improved in virtue of the reputation of famous doctors. In addition, the key to the training of TCM talents lies in inheritance. The construction of famous TCM studios is a new method and a new form of modern TCM inheritance and education. Excellent primary TCM talents can be cultivated through the construction of primary famous TCM studios, which can effectively alleviate the shortage of grass-roots TCM talents. At the same time, the community TCM staff should also acquire the knowledge in famous doctor studio through various platforms and channels, constantly improve their own TCM service ability, publicize TCM services among residents when serving them, and guide the residents to be willing to use the services (G. J. Ma et al., 2023).

2. Exploit key groups of community TCM services.

The survey results showed that there are statistical differences in the utilization of TCM services in the community between patients with chronic diseases and residents with physical examination habits. Residents with perceived susceptibility and severity will use TCM services more in the community. Therefore, it is suggested that community medical institutions should fully explore the groups with high demand for community TCM services in their daily diagnosis and treatment activities, or in the process of providing family doctor services, and subdivide services for different groups, such as giving full play to the "preventive" role of TCM services, improving the ability of TCM health management services around children, the elderly, and chronic disease management, and improving the rate of TCM health management. In combination with the national basic public health service

projects, we will strengthen the integration of medicine and prevention for chronic diseases such as hypertension and diabetes, optimize the content of TCM health management services, and constantly expand the coverage of target groups. By increasing the number of service audiences, we will drive their relatives and friends to know and trust the community TCM services, so as to increase the use of community TCM services (Miao et al., 2023).

3. Innovate the propaganda channels of TCM in the community.

The survey results of this study showed that at present, residents mainly obtain knowledge about TCM in the community through consultation with medical staff, television, lectures, and other traditional propaganda channels, while they rarely obtain it through new media such as the Internet. It is suggested that the use of the Internet should be strengthened. We can attract more young people to love the culture of TCM by posting innovative publicity videos on various WeChat official accounts, applets, app software and other new media. In addition, it is necessary to take advantage of the strength of relevant administrative departments and grass-roots medical and health institutions with financial support from the government. TCM publicity teams should be established to carry out activities such as education on TCM prevention and treatment of common diseases and frequently occurring diseases at the grass-roots level, and free TCM clinics, so as to make residents feel the convenience and effectiveness of TCM services and create a good atmosphere of TCM (Y. X. Pang et al., 2022).

Chapter 6: Research Conclusions and Prospects

6.1 Research conclusions

This study reviewed literature and theories in and beyond China, and constructed a conceptual model of residents' use behavior of community TCM services based on BMHSU, the Planned Behavior Theory and the health belief model, studied and explained the mechanism of residents' use behavior of community TCM services, designed a research questionnaire and modified relevant indicators by referring to literature in and beyond China, and conducted empirical analysis on the sample data obtained from the questionnaire through correlation analysis, linear regression equation and structural equation. The research conclusions are as follows.

(1) Based on literature in and beyond China, taking BMHSU as the theoretical framework, combined with the TPB and the HBM, this research analyzes the application of the above theories, and constructs the corresponding theoretical guidance model for the use behavior of community TCM service, which lays a theoretical foundation for later research.

(2) Based on relevant theories and research in and beyond China, this study set up nine observation variables, including atmosphere environment, subjective norms, health beliefs, perceived behavioral control, perceived susceptibility and severity, healthy habits, perceived benefits, and perceived hindrance. A total of eight research hypotheses were put forward, and the reliability and validity of the questionnaire on the use of TCM services in communities were tested by using SPSS 23.0 software. One-way analysis of variance, correlation analysis and linear regression equation analysis of relevant influencing factors were conducted. And the survey data were verified by structural equation by using AMOS 21.0 software. Five hypotheses were verified. Among them, perceived benefits have the greatest impact on the use behavior, and the regression coefficient and path coefficient are 0.667 and 0.954 respectively; perceived behavioral control, atmosphere environment, subjective norms, perceived susceptibility and severity affect the use behavior, with regression coefficients of 0.357, 0.162, 0.152 and 0.169 respectively, and path coefficients of 0.671, 0.337, 0.334 and 0.201 respectively.

(3) Based on the results of empirical analysis, this study suggests that we should

strengthen the policy guarantee for the development of TCM in the community, pay attention to the guiding role of the environmental community TCM service policy and increase the security of the medical insurance policy for the community TCM service. It is necessary to strengthen the capacity building of community TCM services. It is suggested that we should continue to improve the community TCM service network, continue to promote the construction of community TCM talent team, further promote the appropriate technology of community TCM, innovate the community TCM service model and pay attention to the satisfaction of community TCM service objects. It is also necessary to strengthen the propaganda and popularization of community TCM services, promote the construction of "famous doctor studios" of community TCM, focus on key groups of community TCM services and innovate the propaganda channels of community TCM services, so as to improve residents' awareness and trust of community TCM services and to promote the use of the services.

6.2 Shortcomings and prospects

There are few studies on the use behavior of TCM services in the community. This study takes BMHSU as the theoretical framework, constructs a theoretical model based on the Planned Behavior Theory and the health belief model, and conducts empirical analysis by using mathematical statistical methods, which provides some reference for the follow-up research. However, this study still has the following shortcomings.

(1) The theoretical model needs to be further improved. Based on BMHSU, the Planned Behavior Theory and the health belief model, the study constructs a theoretical model and puts forward relevant hypotheses. However, some hypotheses have not been verified, so the model should be further optimized and improved in the follow-up study.

(2) The number of samples needs to be increased and the samples should be more representative. The survey was conducted in Guangzhou, Guangdong Province. Although it covers Baiyun District, Yuexiu District, Tianhe District and Panyu District in Guangzhou, the final effective questionnaires obtained were only 1131. The coverage of sample data still needs to be expanded, and the number of samples is insufficient. Therefore, the coverage of the questionnaire and the sample size should be increased in the follow-up study to improve the reliability of the research conclusions.

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Annex A: Questionnaire on the Utilization of Traditional Chinese Medicine Services by Community Residents in Guangzhou, China

1. Basic information

(1) Gender

○ Male ○ Female

(2) Age

○ Under 25 years old ○ 25-35 years old ○ 35-45 years old

○ 35-45 years old ○ Over 55 years old

(3) Marital status

○ Unmarried ○ Married ○ Divorce ○ Widow

(4) Education level

○ High school or below ○ College ○ Undergraduate ○Graduate and above

(5) Occupation

○ Manager of government agency, enterprise and institution

○ Professional and technical personnel

○Employee in the commercial or service industry

○ General clerk

○ Self-employed and private entrepreneur

○ Farmer engaged in non-agricultural labor

○ Agricultural worker

○ Other workers with professions difficult to classify

○ School student

○ Retiree

○ The unemployed

(6) Per capita monthly income of households (yuan/RMB)

○<5000 ○5000-10000 ○10000-15000 ○15000-20000 ○>20000

(7) Type of medical insurance

○ Basic medical insurance for urban employees

○ Basic medical insurance for urban residents

○ Public medical care

○ New rural cooperative medical system

○ Commercial insurance

○ None (at their own expense)

(8) Whether having regular physical examination

○ Yes ○ No

(9) Whether suffering from chronic diseases

○ Yes ○ No

2. Awareness and utilization

(1) Have you ever heard of community TCM service?

○ Yes ○ No--to (4)

(2)Major channels to obtain knowledge about community TCM and CMM?(multiple choice)

○ Consultation with medical staff ○TV ○ Lecture

○ Introduction by relatives and friends ○Internet ○ Broadcast

○Customs and traditions ○Others

(3)Functions of community TCM services??(multiple choice)

○ Rehabilitation physiotherapy

○ Regulation (emotion, diet, living, and physique)

○ Disease prevention

○ Health care

○ Treatment of chronic diseases

○ Treatment of incurable diseases

○ Unclear

○ No function

(4)Do you trust community TCM services?

○ Yes ○ No

(5)Does the nearby community healthcare center have a TCM clinic?

○ Yes ○ No ○ Unclear

(6)Does the nearby community healthcare center provide TCM services?

○ Yes ○ No--to 9) ○ Unclear--to (9)

(7)Which of the following TCM services are available at the Community Health Service Center??(multiple choice)

○ Acupuncture (acupuncture and moxibustion)

○ Manipulation (tuina and massage)

○ External treatment of TCM (Cupping, blood-letting therapy, scraping, medicine bath, and application therapy)

○ Modern TCM auxiliary facilities (infrared, atomization, magnetic, and electrical facilities)

○ TCM surgery (such as bonesetting)

(8)Which of the following CMM services are available at the Community Health Service Center??(multiple choice)

○ Chinese herbal medicine

○ Chinese patent medicine

○ TCM prepared in ready-to-use forms

○ Medicinal drinks

○ Dietetic therapy

○ Food therapy

(9)Have you ever used community TCM services?

○ Yes--to (11) ○ No

(10)Which of the following reasons makes you not choose community TCM services or have never used community TCM services?(multiple choice)

○ The course of treatment is long and not easy to adhere to--to (12)

○ Inconvenience--to (12)

○ Heavy medical burden and small reimbursement ratio of medical insurance--to (12)

○ Poor taste of CMM and uncomfortable experience of TCM--to (12)

○ Doubt and distrust of traditional Chinese medicine--to (12)

○ Poor efficacy and great toxic and side effects--to (12)

○ Others--to (12)

(11)Which of the following services type of community TCM services you havd used?(multiple choice)

○ Manipulation (tuina and massage)

○ Acupuncture (acupuncture and moxibustion)

○ External treatment of TCM (Scraping, cupping, medicine bath, and application therapy)

○ Processing technology of CMM (CMM, TCM prepared in ready-to-use forms, and Chinese patent medicine)

○ Moxibustion

○ Internal administration of TCM (aerosol inhalation of CMM, medicinal liquor, tea, and food therapy)

○ Modern auxiliary facilities (magnetotherapy and electrotherapy)

(12)Which of the following reasons restrict the development of community TCM services?(multiple choice)

○ Inadequate publicity of TCM services in the community

○ Insufficient awareness of community TCM services among residents

○ The atmosphere of TCM services in community healthcare centers is not strong

○ Some TCM service programs (such as health care) are not included in medical insurance

○ Low reimbursement ratio of community TCM services

○ Low technical level of community TCM service

○ Insufficient medical staff

○ Poor efficacy of community TCM services

○ The access to community TCM services is not easy enough.

○ The venue for community TCM service is not spacious enough.

○ Others

(13)Which of the following ways can encourage residents to make more use of community TCM services?(multiple choice)

○ Increase the reimbursement ratio of community TCM services

○ Include more community TCM service programs (such as health care) into medical insurance

○ Improve the efficacy of community TCM

○ Improve the characteristics of community TCM services

○ Improve the convenience of community TCM services

○ Strengthen the publicity of community TCM services

○ Increase the number and staffing of community TCM service providers

○ Others

3.perception

(1)AE

AE1 At present, the national policy vigorously promotes the development of TCM service.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

AE2 The cultural atmosphere of TCM services in my neighborhood is very strong.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

AE3 I have a family tradition of using TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(2)SN

SN1 I will use TCM services due to the guidance of the media and public opinion.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

SN2 I will use TCM services on the recommendation of the doctor.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

SN3 I will be recommended by the people around me (family, colleagues, friends) to use TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(3)HB

HB1 I will take the initiative to acquire the relevant knowledge of TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

HB2 I know TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

HB3 I acknowledge the efficacy of TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(4)PBC

PBC1 In the community near my home, I have access to TCM services at any time.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PBC2 In the community near my home, I can easily find quality TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PBC3 I can easily use TCM services with my income.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(5)PS

PS1 I am prone to illness.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PS2 If I don't go to the doctor and take medicine in time when getting sick, my illness will progress quickly.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PS3 When I get sick, my daily life will be seriously affected.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(6)HH

HH1 I am very concerned about my health.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

HH2 I have the habit of self-care.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

HH3 When I feel unwell, I am used to going to the hospital.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(7)PB

PB1The use of TCM services is conducive to enhancing my physique and reducing the occurrence of illness (discomfort).

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PB2The use of TCM services can relieve my condition (symptom) effectively.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PB3After using TCM services, I no longer need to receive Western medical treatment.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(8)PH

PH1 TCM service usage needs a long time to prove effective.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PH2 The cost of TCM services is too high.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

PH3 Using TCM services is too cumbersome.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

(9)UB

UB1 I have used TCM services before.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

UB2 I often use TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

UB3 I have used many types of TCM services.

○ Completely disagree ○ Disagree ○ Average

○ Agree ○ Completely Agree

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Annex B: Reliability and Validity Analysis Results

Table B.1 Reliability analysis results of samples (N = 1,137)

Factor variable	Number of items	Cronbach's α
AE	3	0.661
SN	3	0.818
HB	3	0.834
PBC	3	0.766
PS	3	0.722
HH	3	0.71
UB	3	0.941
PB	3	0.808
PH	3	0.683
TOTAL	27	0.819

Note: AE, SN, HB, PBC, PS, HH, UB, PB, and PH respectively refer to atmosphere environment, subjective norm, health belief, perceived behavioral control, perceived susceptibility and severity, healthy habits, usage behavior, perceived benefits, and perceived hindrance.

Table B.2 Validity analysis results of samples (N = 1,137)

Item	Component								
	1	2	3	4	5	6	7	8	9
AE1		0.593							
AE2		0.849							
AE3		0.719							
SN1	0.713								
SN2	0.893								
SN3	0.88								
HB1				0.858					
HB2				0.736					
HB3				0.777					
PBC1			0.871						
PBC2			0.885						
PBC3			0.582						
PS1					0.771				
PS2					0.835				
PS3					0.772				
HH1							0.863		
HH2							0.828		
HH3							0.672		
UB1						0.92			
UB2						0.944			
UB3						0.938			
PB1									
PB2								0.916	
PB3								0.922	
PH1								0.659	
PH2									0.594
PH3									0.842

Note: AE, SN, HB, PBC, PS, HH, UB, PB, and PH are atmosphere environment, subjective norm, health belief,

perceived behavioral control, perceived susceptibility and severity, healthy habits, usage behavior, perceived benefits, and perceived hindrance, respectively