



Summary of the Best Evidence for the Implementation Effects of Integrated Chinese and Western Medicine Health Management of Chronic Non-Communicable Diseases

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Abstract

Background and Aim: Chronic non-communicable diseases (NCDs) are a major global health threat, accounting for 88.5% of all deaths in China. Although integrated Chinese and Western medicine health management has demonstrated unique advantages in the prevention and control of chronic diseases, there is currently a lack of a scientific, effective, and operational evaluation indicator system. This study aims to summarise the evidence-based indicators of the implementation effects of integrated traditional Chinese and Western medicine health management for chronic diseases, providing an evidence-based foundation for grassroots practice.

Materials and Methods: This study systematically searched relevant domestic and international databases and websites from October 2014 to September 2024 to include literature on guidelines, evidence summaries, expert consensus, systematic evaluations, and clinical original studies. AGREE II and the Australian JBI Evidence Synthesis Manual were used to evaluate the quality of the literature, and the evidence was classified according to the JBI Evidence Pregrading and Recommendation Level System.

Results: A total of 35 articles were included, and 29 indicators were extracted, covering seven themes, including community TCM resources, patient self-management efficacy, TCM health service participation, effectiveness of collaborative management between TCM and Western medicine, patient knowledge, physiological indicators, and patient satisfaction.

Conclusion: This study summarizes the best evidence on the effectiveness of the implementation of integrated Chinese and Western medicine health management for chronic diseases, constructs a systematic assessment framework, and provides a theoretical basis and practical tool for promoting the integration of Chinese medicine into chronic disease management at the grassroots level.

Keywords: Chronic Disease; Integrative Medicine; Health Management; Summary of Evidence

Introduction

Chronic non-communicable diseases (NCDs) are the leading health threat worldwide. According to the World Health Organization (WHO)'s 2023 World Health Statistics Report, chronic diseases (including cardiovascular diseases, cancer, chronic respiratory diseases, and diabetes) account for 74% of global deaths. In China, the situation is even more severe, with chronic diseases accounting for 88.5% of total deaths and contributing to 70% of the country's total disease burden, posing a major challenge in the field of public health (Zhang et al., 2024).

To address this challenge, the Chinese government has placed high priority on the prevention and control of chronic diseases, proposing strategies such as the 'Healthy China Action (2019–2030)' to emphasize a health-centric, prevention-oriented approach and promote the standardization and scientific development of chronic disease management. In recent years, as traditional Chinese medicine services have been incorporated into the national basic public health service program, integrated traditional Chinese and Western medicine health management has emerged as a unique medical service model. Combining the traditional Chinese medicine concept of 'preventing disease before it occurs' with the evidence-based medical methods of Western medicine, this approach has demonstrated significant advantages in chronic disease management. However, there currently lacks a scientific, effective, and operational evaluation

[1207]

Citation



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indicator system for assessing the implementation outcomes of this model, which has significantly limited its further promotion and optimization.

Although previous studies have examined the theory and practice of integrated Chinese and Western medicine (ICWM) health management, existing research has primarily focused on single disease types or specific regions, lacking a comprehensive and systematic review and summary. Additionally, there is no consensus on evaluation criteria for the implementation outcomes of ICWM health management, leading to significant variations in practices across regions and making effective comparisons and scaling difficult. This study will adopt the Structure-Process-Outcome (SPO) model as its theoretical framework, systematically review relevant guidelines and research literature from both domestic and international sources, conduct a literature quality assessment, identify key themes and relevant evidence, and develop a scientific, systematic, and operational evaluation indicator system for the implementation effectiveness of integrated traditional and Western medicine health management for chronic disease patients. This study aims to provide a theoretical basis and practical guidance for the standardization and integration of traditional and Western medicine health management, promote its widespread application nationwide, and enhance the overall level of chronic disease management.

Objectives

1. To identify high-quality evidence indicators for evaluating the effectiveness of ICWM in chronic disease management.
2. To develop a preliminary framework for evidence-based implementation assessment.

Literature review

The Structure-Process-Outcome (SPO) model, proposed by Donabedian, has been extensively used to evaluate healthcare service quality, especially in chronic disease management. By linking healthcare structure, intervention process, and health outcomes, the model provides a comprehensive theoretical basis. In the context of integrated Chinese and Western medicine (ICWM), the SPO model serves not only to identify key intervention components but also to construct a systematic framework for effectiveness evaluation.

In recent years, with the accumulation of evidence-based medical evidence, the advantages of integrated traditional Chinese and Western medicine health management in the prevention and control of chronic diseases have become increasingly evident. Multiple studies have confirmed that this model has significant effects in improving clinical outcomes, reducing adverse reactions, and enhancing patients' quality of life. In the field of hypertension treatment, a meta-analysis (Li, J.T., 2024) showed that compared with conventional Western medicine treatment alone, integrated traditional Chinese and Western medicine treatment can improve blood pressure-lowering efficacy, reducing systolic blood pressure by an additional 11.07 mmHg and diastolic blood pressure by 6.89 mmHg in patients with hypertension caused by liver yang hyperactivity, while reducing the incidence of adverse reactions by 62%. A randomized controlled trial (Jiang, J.Y. et al., 2023) demonstrated that patients managed using an integrated traditional Chinese and Western medicine approach for chronic diseases, which included traditional Chinese medicine dietary therapy, traditional Chinese medicine constitution regulation, and appropriate traditional Chinese medicine techniques, achieved a total effective rate of 89.36% for systolic and diastolic blood pressure control, significantly outperforming the control group that received conventional Western medicine treatment alone. A randomized controlled (Zhu, Y.Q. et al., 2022) trial conducted in Shanghai included 872 community-dwelling middle-aged and elderly individuals at high risk of stroke. The intervention group received conventional treatment supplemented with traditional Chinese medicine (TCM) health education and TCM health exercises. After 12 months, the intervention group showed significantly greater improvements in key

[1208]

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risk factors such as systolic blood pressure, diastolic blood pressure, blood urea nitrogen, and creatinine compared to the control group ($P < 0.05$), suggesting that integrated traditional and Western medicine health management plays a positive role in primary stroke prevention. The above studies confirm that the integrated traditional Chinese and Western medicine health management model has significant effects in the prevention and control of various chronic diseases, improving physiological indicators, delaying disease progression, and enhancing patients' quality of life and self-management capabilities.

To assess chronic disease interventions, the Chronic Disease Self-Management Study Measurement Scale (CDSMS), developed by Lorig et al. in the 1980s, is a widely recognized tool. It includes subscales on self-management behavior and self-efficacy and has been validated in various international studies (Lorig et al., 1996). Additionally, tools like the Health Promotion Lifestyle Profile (HPLP) and the Chronic Disease Self-Efficacy Scale (CDESES) have become essential in measuring health behavior changes and confidence in disease management. Although these tools have demonstrated good applicability in Western medicine-dominated interventions, their sensitivity and adaptability in ICWM interventions have not yet been systematically validated. ICWM interventions often include traditional Chinese medicine non-pharmacological therapies (such as acupuncture, TCM constitution identification, and care) and Western medicine behavioral guidance. Existing tools are primarily based on the bio-behavioral medicine paradigm and may not fully capture the characteristic outcomes of TCM interventions (such as constitution improvement, overall functional status, etc.), which, to some extent, limits their promotion and reliability support in ICWM research. In particular, there is a lack of standardized tools that can reflect the synergistic mechanisms of ICWM in the intervention of chronic diseases, especially in terms of the comprehensive effects of traditional Chinese medicine.

In China, community health services are evaluated through national indicators focusing on diseases such as hypertension and diabetes. Performance is often measured by health management rate, standardized management rate, and control rate. Wang F. (2007) constructed a performance evaluation index system for community health services, emphasizing support, service function, and performance. However, most indicators still stress service quantity rather than multidimensional effectiveness or patient outcomes.

In summary, while evaluation theories and tools have evolved, the ICWM field still faces systemic gaps. This study adopts the SPO model as its theoretical framework, combined with the evidence hierarchy standards of the Evidence-Based Medicine Pyramid 5.0. Through systematic literature searches, quality evaluations, and evidence grading, it extracts core performance indicators for chronic disease ICWM health management, aiming to construct a set of indicators that are structurally sound, operationally feasible, and applicable to grassroots practice and policy evaluation.

[1209]

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Conceptual Framework

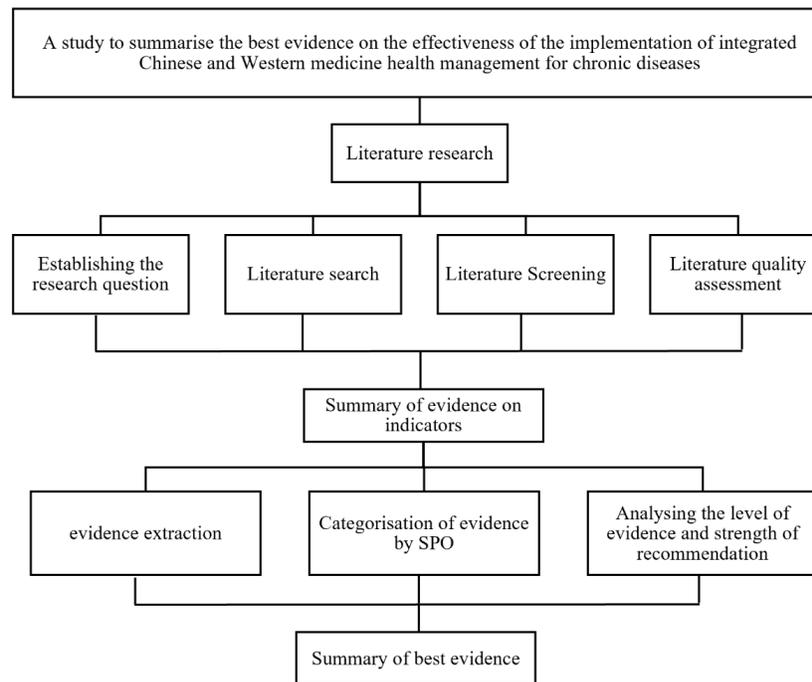


Figure 1 Conceptual Framework

Note: Constructed by the researcher

This study uses the SPO model as its theoretical framework to systematically summarize the best evidence on the implementation outcomes of integrated traditional Chinese and Western medicine health management for chronic diseases. Within this framework, the Structure dimension primarily refers to the availability of health resources and service configurations within the community, including the accessibility of traditional Chinese medicine services and the basic conditions, such as the allocation of traditional Chinese and Western medicine personnel. These structural elements form the foundation for the implementation of ICWM interventions and also provide the basis for subsequent processes. The Process dimension focuses on the specific implementation content and management methods of intervention activities, such as the participation rate of TCM health services and the frequency of integrated TCM-Western medicine interventions. These reflect the quality of doctor-patient interaction and the degree of service integration, making them important factors influencing outcomes. The Outcome dimension reflects the effectiveness of services, including improvements in patients' physiological indicators (such as blood pressure and blood sugar), changes in health behaviors (such as diet and exercise adherence), and patient satisfaction. These outcomes reflect the ultimate effectiveness of health management.

Methodology

1. Research questions

In evidence-based research, a clear and structured research question is a key step in ensuring the scientific validity of the search strategy. The PIPST model proposed by the Evidence-Based Nursing Centre at Fudan University is widely used in the construction of clinical practice questions. It systematically defines the content of the intervention, the implementation environment, and the evaluation outcomes,



laying the theoretical foundation for high-quality evidence-based research (Zhu et al., 2017). In this study, the PIPOST model was used to construct the research question with the following elements:

P (Population): Chronic disease patients receiving health management services in the community.

I (Intervention): Comprehensive health management interventions guided by the concept of integrated Chinese and Western medicine, covering dietary adjustments, exercise interventions, sleep guidance, psychological counselling, etc.

P (Professional): Medical personnel responsible for health management.

O (Outcome): The effectiveness of health management implementation, including health knowledge awareness, physiological indicators, self-management efficacy, lifestyle improvements, and patient satisfaction.

S (Setting): Community health service centers and their respective residential areas.

T (Type of evidence): Publicly published guidelines, expert consensus statements, evidence summaries, systematic reviews, randomized controlled trials, etc.

Through the above structured research questions, this study aims to systematically retrieve and integrate the current best evidence on the evaluation indicators of the implementation effectiveness of integrated Chinese and Western medicine health management in patients with chronic diseases, to provide a theoretical basis and practical guidance for the construction of a scientific, systematic, and operable evaluation indicator system.

2. Search Strategy

In Evidence-Based Healthcare (EBHC) research, developing a scientific retrieval strategy is a critical step in ensuring access to high-quality evidence. This study was guided by the theory of SPO modelling and followed the principles of the EBHC evidence pyramid 5.0 model (Alper & Haynes, 2016), whereby searches were conducted from the top of the pyramid downwards, layer by layer, around relevant search terms. Clinical decision support systems searched included BMJ Best Practice, UpToDate. Comprehensive abstract database searches, Essential Evidence Plus (EEP), Joanna Briggs Institute (JBI). Guidelines websites include the National Institute for Health and Care Excellence (NICE), Guidelines International Network (GIN), Scottish Intercollegiate Guidelines Network (SIGN), and the World Health Organization (WHO). Comprehensive databases include Cochrane Library, PubMed, Web of Science, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Public Health Electronic Library, and SAGE Deep Backfile Package, China National Knowledge Infrastructure (CNKI), Chinese Science and Technology Journal Database (VIP), Wanfang Data, and Chinese Medical Association (CMA).

Literature search was conducted to collect academic literature related to the study of evaluation of the implementation effect of health management of chronic diseases, as well as information related to China's basic public health service program and health management of traditional Chinese medicine. This study focuses on the evaluation of the implementation effect of combined Chinese and Western medicine health management in patients with chronic diseases, combining MeSH terms and free terms for the search, the main keywords include: noncommunicable diseases, combined Chinese and Western medicine, health management, lifestyle intervention, Chinese medicine intervention, outcome assessment, evidence, guideline, systematic review, meta, consensus, etc. The search period was from 1 October 2014 to 30 September 2024. Figure 2 demonstrates the search strategy using PubMed as an example.

3. Inclusion/Exclusion Criteria





Literature inclusion criteria:(1) It must be full-text published literature. (2) Patients participating in the study should be patients with diagnosed chronic diseases. (3) The study contains evaluation indicators related to the effectiveness of health management.

Literature exclusion criteria: (1) The content of the study is the medical staff's job performance evaluation indicators. (2) The study's outcome indicators only show physiological indicators, or the content of the relevant indicators and the way of measurement are not described. (3) Literature of studies in which pharmacological treatment was the main intervention. (4) Duplicate publications. (5) Unavailability of full text. (6) Literature quality evaluation failed.

4. Literature Screening

The retrieved literature was first imported into Note Express and duplicates were deleted, and then 2 researchers independently carried out step-by-step screening based on pre-set inclusion and exclusion criteria. In the initial screening stage, the researchers read the titles and abstracts of the literature and excluded literature that was inconsistent with the research objectives; for literature that was not sure whether it met the inclusion criteria, it was reviewed in the full-text review stage. In the full-text screening stage, the literature was analyzed for core information such as study population, intervention content, outcome indicators, study type, etc., to determine whether it met the inclusion criteria.

5. Quality Assessment

Literature quality evaluation was based on the principles of evidence-based priority, high-quality evidence priority, and the latest publication of authoritative literature priority, and was conducted by 2 researchers. When there was a disagreement, a third researcher was invited to participate in the discussion and reached a consensus by mutual agreement. Currently, Appraisal of Guidelines for Research & Evaluation II (AGREE II) and the Australian JBI Manual for Evidence Synthesis are more widely recognized internationally as evaluation tools (Zhu, Z. et al., 2020).

(1) The methodological quality of the guidelines was evaluated using the AGREE II tool, which consists of 23 main entries in 6 domains, and 2 overall assessment entries (Brouwers et al., 2010). Each entry was scored on a scale of 1-7, and the level of recommendation was based on the scores of each domain; the higher the score, the better the quality of the guideline; if the standardized percentage of scores in all 6 domains was $\geq 60\%$, the guideline was graded A and could be recommended directly; if ≥ 3 domains scored a standardized percentage of $\geq 30\%$, and there were domains scored a standardized percentage of $< 60\%$, the guideline was graded B, and it could be modified to different degrees improvement and then recommended; if there are ≥ 3 domain scores with a standardized percentage of $< 30\%$, then it is grade C not recommended (Liu et al., 2023).

(2) The JBI Manual for Evidence Synthesis (Aromataris et al., 2024) was used to evaluate the methodological quality of the literature on the types of studies, such as expert consensus, systematic evaluation, qualitative studies, randomized controlled trials, class experiments, case-control trials, and cross-sectional studies. Clinical decision-making and evidence summaries, for which there is no recognized evaluation tool, were directly included for those originating from international authoritative evidence-generating bodies, while such evidence from other sources was traced back to the original literature they cited, and the appropriate evaluation tool was selected for quality evaluation according to the type of research in the original literature (Xiong et al., 2022). In the process of literature quality evaluation, each evaluation item was scored as 'yes', and the score of each literature evaluation was calculated. When the evaluation score reached 50% or more of the full score, the literature was included in the study (Wahyuni et al., 2022).





6. Evidence extraction and summary

This study strictly follows the principles of evidence-based medicine to extract and integrate the evaluation index data in the included literature, and follows the following principles in the process of evidence collation and summary: (1) when there are evaluation indexes with the same content or highly similar content, priority is given to selecting the entries that conform to the professional expression and are easy to understand; (2) when the indexes from different sources are complementary, they will be merged into one entry according to the logical relationship; (3) for cases where there is conflict in the content of the indexes from different sources, priority is given to evidence-based evidence and high-quality evidence and the latest published evidence. (2) When the contents of indicators from different sources are complementary, they will be merged into one entry according to logical relationships; (3) When the contents of indicators from different sources conflict, they will be screened and adopted according to the principles of giving priority to evidence-based evidence, high-quality evidence, and the latest published evidence.

The classification of evidence levels was referred to the Pre-grading of Evidence and Recommended Levels of Evidence System (2014 version) published by JBI (Wang & Hu, 2015). Based on the type of design of the included studies, the extracted evidence was preliminarily graded into Level 1 to Level 5, with Level 1 being the highest level. Then, the strength of recommendation of each piece of evidence was further determined by combining JBI's FAME structure of evidence and JBI's criteria for determining the level of recommendation of evidence: a Level A recommendation is a strong recommendation, and a Level B recommendation is a weak recommendation.

Results

1. Results of Literature Search

A total of 3601 relevant literature articles on the evaluation of the implementation effects of integrated traditional Chinese and Western medicine health management for chronic diseases were identified, including 26 articles from evidence-based resources and guideline websites and 3575 articles from multiple Chinese and English databases (such as CNKI, Wanfang, PubMed, Web of Science, etc.). After using NoteExpress software to identify duplicate documents, 1139 duplicate documents were excluded, leaving 2462 documents for the initial screening of titles and abstracts. By reviewing the titles and abstracts, an additional 372 documents unrelated to the topic and 492 documents with abstracts that did not match the content were excluded, leaving 1598 documents for the full-text retrieval stage.

During the full-text retrieval and reading process, 265 articles with unavailable full-text were excluded, 462 articles lacking relevant indicators were not included, and 836 articles with inconsistent research content were excluded. Ultimately, 35 articles met the inclusion criteria and advanced to the literature quality evaluation and evidence extraction stage. The literature screening process is shown in Figure 3.



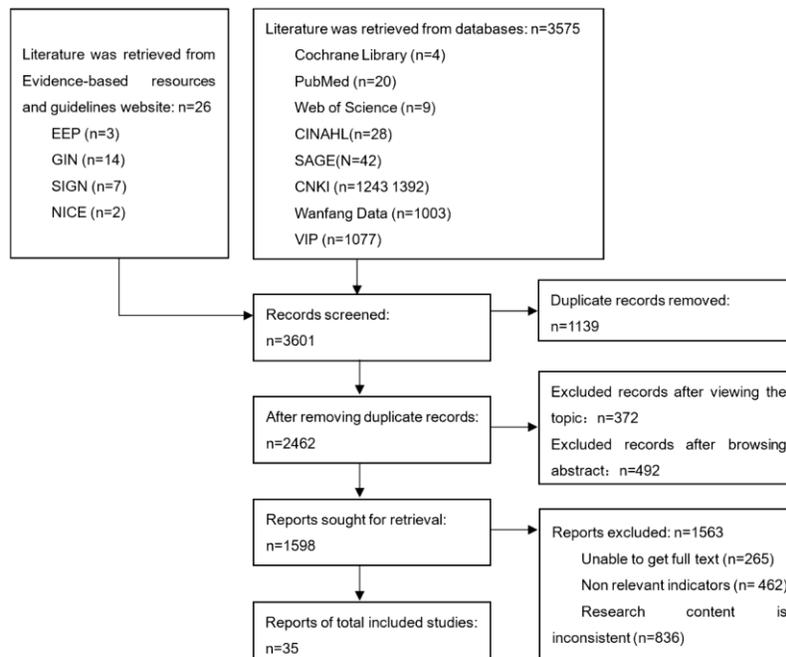


Figure 2 Flow diagram

Note: Constructed by the researcher

A total of 35 articles were included, including 11 guidelines, 2 evidence summaries, 2 expert consensus, 5 systematic evaluations, 1 qualitative study, 8 randomized controlled trials, 4 case-experimental studies, 1 case-control trial, and 1 cross-sectional study. The general characteristics of the included literature are shown in Table 1.

Table 1 General characteristics of the included literature (n=35)

N o.	First author/ organization	Year of publication	Title	Database	Type of document
1	Yu Wei	2024	Code of Practice for Primary Health Management of Hypertension, Hyperglycemia, and Hyperlipidemia	CNKI	Guideline
2	China Hypertension Prevention and Treatment Guidelines Revision Committee	2024	Guidelines for the Prevention and Control of Hypertension in China (Revised 2024)	Wanfang	Guideline
3	National Centre for Geriatrics	2024	Chinese Guidelines for Exercise Therapy in Type 2 Diabetes Mellitus (2024 Edition)	Wanfang	Guideline
4	Suomalaisen Lääkäriseuran Duodecim	2024	Tyyppin 2 diabetes	GIN	Guideline
5	National Institute for Health and	2023	hypertension-in-adults-diagnosis-and-management	NICE	Guideline



N o.	First author/ organization	Year of publication	Title	Database	Type of document
	Care Excellence				
6	Writing Group	2023	Guidelines for therapeutic intervention in hypertension	Wanfang	Guideline
7	National Institute for Health and Care Excellence	2022	type-2-diabetes-in-adults-management	NICE	Guideline
8	National Centre for Cardiovascular Diseases	2020	National Guidelines for the Management of Hypertension at the Primary Level (2020 Edition)	Wanfang	Guideline
9	NHFPC	2017	National norms for basic public health services (third edition)	Wanfang	Guideline
10	SIGN	2017	Management of diabetes - A national clinical guideline	SIGN	Guideline
11	SIGN	2017	Risk estimation and the prevention of cardiovascular disease	SIGN	Guideline
12	Denise L	2024	Hypertension (essential)	EEP	Summary of evidence
13	Sandy Robertson	2023	Diabetes mellitus (type 2)	EEP	Summary of evidence
14	Beijing Hypertension Prevention and Control Association	2024	Chinese Expert Consensus on Primary Prevention and Treatment of Hypertension Combined with Type 2 Diabetes Mellitus and Dyslipidaemia in Adults (2024 Edition)	Wanfang	Expert consensus
15	Group of Experts	2023	Chinese Expert Consensus on Standardised Diagnosis and Treatment of 'Three Highs' Co-management (2023 Edition)	Wanfang	Expert consensus
16	Tao Qing	2024	Research on the design and application strategy of Chinese medicine health management service packages for chronic diseases in urban communities	CNKI	Systematic Review
17	Xu Chunlei	2019	A systematic evaluation of the effectiveness of empowerment theory education as an intervention for patients with type 2 diabetes mellitus	Wanfang	Systematic Review
18	Halimatou Alaofè	2017	Community Health Workers in Diabetes Prevention and Management in Developing Countries	web of science	Systematic Review
19	Aimee Afable	2016	Evidence-based review of type 2 diabetes prevention and management in low and middle-income countries	web of science	Systematic Review
20	Temesgen Anjulo Ageru	2014	Diabetes self-care intervention strategies and their effectiveness in Sub-Saharan Africa_ A systematic review	PubMed	Systematic Review

[1215]

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N o.	First author/ organization	Year of publication	Title	Database	Type of document
21	Yan Guanyun	2018	Study on the construction of an evaluation index system for the effect of community diabetes mellitus health education	CNKI	Qualitative research
22	Xia Shenglan	2024	Evaluation of the effect of the hospital-community-family three-level health education model on the quality of life of diabetes mellitus patients in the context of 'Internet+'	CNKI	RCT
23	Ma Huihui	2024	Evaluation of the Effectiveness of a Personal Health Record-Based Total Management Model Intervention in Elderly Patients with Diabetes Mellitus	Wanfang	RCT
24	Cai Yi	2021	Evaluation of the application effect of the 'Internet+' Chinese medicine health management model in elderly hypertensive patients in the community	CNKI	RCT
25	Daniel Nogueira Cortez	2017	Evaluating the effectiveness of an empowerment program for self-care in type 2 diabetes: a cluster randomized trial	PubMed	RCT
26	Lu Junping	2016	Evaluation of the effectiveness of the dual-track interactive nursing intervention model in the management of patients with diabetes mellitus in the community	CNKI	RCT
27	Jan van Lieshout	2016	Tailored implementation of cardiovascular risk management in general practice: a cluster randomized trial	PubMed	RCT
28	Wu Jun	2014	Evaluation of the effectiveness of a community-based chronic disease management model in the management of hypertension in the elderly	CNKI	RCT
29	Shi Zhaowei	2024	Evaluation of the effectiveness of the hospital-community linkage health education model in the management of type 2 diabetes mellitus patients in the community	CNKI	RCT
30	Huang Shuwei	2024	Construction and empirical study of an intervention programme for patients with type 2 diabetes mellitus based on IMB theory in the context of Internet+	CNKI	Quasi experimental
31	Guan Bing	2023	Evaluation of the Effectiveness of Family Physician Contracting Service in the Health Management of Chronic Diseases in Elderly People	CNKI	Quasi experimental
32	Liu Shenglan	2018	Effectiveness of Self-Management Behavioural Interventions for Diabetes Mellitus Based on Self-Determination Theory	Wanfang	Quasi experimental
33	Li Yuqin	2016	A study of the effectiveness of the general practice team service model in the management of diabetes mellitus	CNKI	Quasi experimental
34	Wang Shihong	2024	Risk factor analysis and screening model construction for type 2 diabetes mellitus based on particle swarm optimisation algorithm, BP neural network	CNKI	Case control
35	Wei Yilin	2023	Development of the Active Health Behaviour Scale for Hypertensive Patients	CNKI	Cross sectional

2. Literature Quality Evaluation Results

[1216]

Citation



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To ensure the scientific validity and applicability of the included literature, this study conducted a systematic quality evaluation of 35 articles. The results are as follows:

2.1 Clinical Practice Guidelines (n=10)

The AGREE II tool was used to evaluate the quality of 10 clinical practice guidelines related to chronic disease management and integrated traditional and Western medicine:

Grade A guidelines (n=3): Guidelines [5,7,11] scored $\geq 60\%$ in all six evaluation domains, indicating high overall quality, and were directly included.

Grade B guidelines (n=7): Guidelines [1-4,6,8,10] scored $\geq 30\%$ in at least three domains, indicating acceptable quality, and were also included.

Grade C guidelines (n=1): The guideline [9] scored $< 30\%$ in ≥ 3 domains, indicating lower quality, and was not included in the research system.

2.2 Evidence summaries (n=2)

Two evidence summaries [12,13] from the Essential Evidence Plus platform were both authoritative documents and were directly included.

2.3 Other types of research literature (n=23)

Quality review was conducted using the JBI Evidence Synthesis Tool, and the results are summarized below:

Document type	Total number	Number included	Brief description of inclusion criteria
expert consensus	2	2	All evaluation items are 'yes', and the quality is high.
System evaluation	5	5	Three of the articles listed 'unknown' as item 6, and the overall quality was high.
qualitative research	1	1	Score $\geq 50\%$, meets the inclusion criteria.
randomized controlled trial	8	7	There were 7 articles with a score of ≥ 8 points, and 1 article [22] was of poor quality and was not included.
experimental research	4	4	Overall score of 5–8 points. Although there are limitations, it generally meets the inclusion criteria.
case-control study	1	1	Only one item was marked as 'unknown,' with the rest marked as 'yes.' The quality is good.
cross-sectional study	1	1	All evaluation items are 'Yes', and the quality is excellent.

2.4 Integration of Key Points

Based on the comprehensive quality evaluation results, the high-quality literature included in this study mainly focused on the following aspects:

Indicators with high recommendation strength and applicability include: patient self-management efficacy, improvement in physiological indicators, increased patient satisfaction, and participation in traditional Chinese medicine health services.

Sources with higher levels of evidence mainly include systematic reviews, randomized controlled trials, and authoritative guidelines, which form the core support of the indicator system.

Some evidence has limitations, such as poor independence of interventions in some quasi-experimental studies and unclear follow-up completeness in individual RCTs. These limitations should be considered in practical applications.

3. Evidence description and summary

[1217]

Citation



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After extracting and integrating the evidence, 29 pieces of evidence were finally formed, of which 15 were recommended at level A and 14 were recommended at level B, as shown in Table 2.

Table 2 Summary of the best evidence on the effectiveness of the implementation of integrated Chinese and Western medicine health management for chronic diseases

Theme	Indicator Evidence	Level of evidence	Recommended Levels
Community Chinese medicine resources	1. Provision of Chinese medicine practitioners: The community is provided with at least one Chinese medicine practitioner to carry out Chinese medicine health guidance. ^[6]	Level 5	B
	2. Chinese medicine equipment configuration: The community is equipped with Chinese medicine diagnostic and treatment equipment, such as acupuncture and moxibustion apparatus, Chinese herbal pharmacy, and physiotherapy equipment. ^[6,24]	Level 5	B
Patient self-management effectiveness	3. Reasonable diet: follow the dietary principles of food variety, appropriate energy, quantitative staple food, light diet, food nourishment, and regular meals. Salt intake is limited to 5 g/d. ^[1,2,4-11,15,18, 23,26,28-31,35]	Level 1	A
	4. Smoking cessation: It is recommended to refrain from smoking or to quit smoking completely and to avoid passive smoking. ^[1,2,6,8-13,15,18,26,28,30]	Level 1	A
	5. Alcohol intake control: It is recommended to abstain from alcohol or limit the maximum daily alcohol intake to no more than 25g for adult males and no more than 15g for adult females, which can be calculated by the formula 'Alcohol intake = Alcohol intake × Alcohol concentration×0.8'. ^[1,2,5,6,8-11,15,26,28,30]	Level 1	A
	6. Scientific Exercise: Exercise at least 5 days a week for at least 30 minutes at a time, at a moderate intensity, such as running, swimming, and working out. ^[1-6,8-11,15,18,19,25,27,28,30,32,35]	Level 1	A
Participation in Chinese medicine health services	7. Exercise and health care: Chinese traditional physical exercise, such as Tai Chi, Ba Duan Jin, Yi Jin Jing, etc., ≥3 times per week, ≥30 minutes each time, moderate intensity. ^[3,6,8,24]	Level 2	A
	8. Emotional regulation: maintain psychological balance without significant psychological stress or anxiety. ^[2,4,6,8-11,17, 23,29,30,35]	Level 2	B
	9. Dietary modification: The dietary modification of Chinese medicine is based on the core of 'identification of evidence and diet', and the dietary program is formulated according to the individual's physique and symptoms. ^[6,8,10,24,32]	Level 3	A
	10. Regulate daily living: Healthy sleep, develop the habit of sleeping 7~8h per day. ^[4,6,15]	Level 2	B
	11. Acupoint health care: Acupoint health care is carried out by stimulating acupoints through acupuncture, sticking, massage, and other methods to dredge the meridians and channels and regulate qi and blood, so as to achieve the purpose of preventing and controlling diseases. ^[6,8,24]	Level 3	A
Effectiveness of collaborative management of Chinese and Western medicine	12. Traditional Chinese Medicine (TCM) Physique Identification: Completion of TCM Physique Identification and formulation of a health improvement plan for those whose physique is judged to be biased. ^[6,8,24]	Level 3	A
	13. Accessibility of integrated Chinese and Western medicine services: patients receive integrated Chinese and Western medicine services in the context of chronic disease health management, and individualized integrated Chinese and Western medicine treatment plans are developed. ^[6,16,24]	Level 3	B
	14. Adherence to Chinese and Western medicine interventions: Patients' adherence to the combined Chinese and Western medicine program was good, e.g., taking medication as prescribed, attending follow-up appointments on time, participating in health education, taking medication as prescribed, and undergoing regular check-ups. ^[3,4,6,7,17,18]	Level 3	B



Theme	Indicator Evidence	Level of evidence	Recommended Levels
	15. Frequency of collaborative interventions between Chinese and Western medicine: frequency of combined Chinese and Western medicine health management guidance interventions ≥ 4 times/year. ^[3]	Level 5	A
	16. Perceived complementarity of the strengths of Chinese and Western medicine: Patients agree that combined Chinese and Western medicine is more effective than monotherapy in improving the symptoms of chronic diseases. ^[3,24]	Level 3	B
	17. Disease-related knowledge: knowledge of diagnostic criteria, symptoms, and complications. ^[1,3,4,7,10,17,18, 24,25]	Level 1	B
Patient knowledge	18. Health-related knowledge: knowledge of treatment goals, condition monitoring, lifestyle interventions, and medication. ^[1,3,4,7,10,11, 24]	Level 1	B
	19. Acceptance of TCM health care knowledge: Patients can accept the concept of TCM health care and understand the related knowledge, such as the four seasons, acupoint health care knowledge. ^[3,24]	Level 3	B
Physiological indicators	20. Body mass index (BMI): 18.5~24.0 kg/m ² ^[1,4,6,7,10,11,15,30]	Level 1	A
	21. Waist circumference: Men <90 cm, Women <85 cm ^[1, 6, 15]	Level 1	A
	22. Blood pressure: blood pressure reaches below target, e.g., clinic blood pressure target <130/80 mmHg, BP <140/90 mmHg in 65~79-year-olds, BP <150/90 mmHg in ≥ 80 -year-olds ^[1, 5,6,10,11-13]	Level 1	A
	23. Fasting blood glucose: FPG 5.0~7.0 mmol/L ^[1,10,11,13, 23,30]	Level 1	A
	24. Glycosylated hemoglobin: HbA1c<7.0% ^[1,3-5,7,10,11,13, 23,30]	Level 1	A
	25. Lipids: LDL-C<1.8 mmol/L ^[1,3,10,11,15,23]	Level 1	B
Patient satisfaction	26. Lung function index: FEV1/FVC ≥ 0.7 ^[20]	Level 1	A
	27. Treatment effect: Satisfied with the treatment effect of the disease and self-efficacy, and feeling that the health condition has improved. ^[3,7,24]	Level 3	B
	28. Quality of life: satisfaction with somatic functioning, emotional state, social functioning, and will to live. ^[3,4,7,17]	Level 2	B
	29. Chinese medicine cultural identity: recognition of integrated Chinese and Western medicine health management services, such as the Chinese medicine identification process. ^[3,24]	Level 3	B

Discussion

This study is based on the SPO model and systematically distills 29 evaluation indicators for the implementation effectiveness of integrated traditional Chinese and Western medicine chronic disease health management, covering three dimensions: structure, process, and outcome. The indicator extraction process integrates the traditional Chinese medicine concept of 'preventing disease before it occurs' with Western medicine evidence-based standards, balancing policy orientation and academic basis, aiming to provide a scientific tool for evaluating the effectiveness of integrated traditional Chinese and Western medicine in community health management at the grassroots level. The following sections will explore the scientific validity, evidence strength, and mechanisms of integrated traditional Chinese and Western medicine collaboration.

1. Scientific Rationale of Indicators

The evidence-based indicators summarized in this study cover the entire process of health management, demonstrating strong scientific rigor and comprehensiveness. The structural dimension emphasizes the allocation of traditional Chinese medicine (TCM) resources in communities, the process dimension reflects patient behavior changes, participation in integrated TCM and Western medicine services, and management coordination, while the outcome dimension uses physiological indicators and patient satisfaction as endpoint evaluations. While incorporating the TCM concept of 'preventing disease before it occurs,' the study also emphasizes evidence-based medicine, fully reflecting the complementary advantages of TCM's individualized treatment principles and Western medicine's standardized management. Some indicators, such as TCM constitution identification, emotional regulation, and cultural identity, highlight the important role of TCM in behavioral change and daily health maintenance. Although





these aspects are not the primary focus of modern biomedicine, they hold irreplaceable value in health promotion and long-term behavioral intervention.

2. Strength of Evidence

In the study, all indicators were subjected to evidence grading and recommendation strength assessment to ensure a balance between scientific rigor and practical applicability. The results showed that high-level evidence was primarily concentrated in physiological indicators and lifestyle interventions, such as ‘balanced diet,’ ‘scientific exercise,’ ‘body mass index (BMI),’ and ‘blood pressure control.’ These indicators were predominantly rated as Grade A, reflecting their consistent recognition in domestic and international guidelines. Some indicators, such as ‘availability of traditional Chinese medicine (TCM) practitioners’ and ‘frequency of integrated TCM and Western medicine interventions,’ although classified as Level 5 evidence, are recommended in guidelines and have strong practical necessity. In contrast, the evidence base for TCM service process indicators is relatively weak, with most recommendations rated as Level B. Additionally, TCM-specific interventions such as ‘acupoint health preservation’ and ‘TCM constitution identification,’ although widely applied in clinical practice, have evidence levels mostly at Level 3 and recommendation strengths at Grade B. This distribution pattern, to some extent, reflects the current lack of research support for TCM interventions in terms of evidence-based practice, suggesting that future efforts should focus on strengthening evidence-based research in the mechanisms of TCM interventions, service models, and TCM-specific techniques.

3. Synergistic Mechanisms of ICWM

3.1 Advantages of Personalized Intervention in Traditional Chinese Medicine

Traditional Chinese medicine emphasizes a holistic view and personalized treatment, enhancing patients’ self-regulatory abilities through methods such as syndrome differentiation and treatment, constitution identification, and emotional regulation. This helps improve sub-health conditions. For example, combining traditional Chinese medicine constitution identification with personalized health education prescriptions enables targeted personalized intervention, which helps improve quality of life and enhances patients’ enthusiasm for participating in health management.

3.2 Targeted Effects of Standardized Western Medical Treatment

Western medicine has clear pharmacological mechanisms and standardized treatment pathways in the management of chronic diseases, particularly in disease control and complication prevention. Western medicine can effectively control core indicators such as blood pressure, blood glucose, and blood lipids in the short term, serving as a necessary foundation for achieving long-term health goals.

3.3 Synergistic Intervention Mechanisms of Integrated Traditional and Western Medicine

The integration of traditional Chinese and Western medicine can produce synergistic effects through the following mechanisms: (1) Traditional Chinese medicine’s holistic intervention improves patients’ physical and mental states, enhances health awareness and treatment compliance, thereby enhancing the efficacy of Western medicine treatment; (2) Traditional Chinese medicine can alleviate some of the side effects of Western medicine, thereby improving the tolerability and safety of treatment drugs; (3) Individualized traditional Chinese medicine intervention can address the inadequacy of standard Western medicine pathways in adapting to diverse populations, thereby extending the sustainability of Western medicine treatment effects.

Conclusion

1. Application prospects for evidence summarization

Based on the SPO model, this study systematically refined and summarized the evidence on the effectiveness of the implementation of integrated Chinese and Western medicine health management for chronic diseases, covering the three dimensions of structure, process, and outcome, resulting in seven themes and 29 indicators. The summary of evidence combines theoretical science, empirical evidence, and policy appropriateness, and has preliminary potential for operationalization and promotion. The results of the study provide a systematic framework for evaluating the effectiveness of integrated Chinese and Western medicine in the management of chronic diseases, as well as a theoretical basis and practical tool for promoting the integration of Chinese medicine into the management of chronic diseases at the grassroots level, and realizing the strategy of comprehensive prevention and control of chronic diseases.

2. The innovation and practical significance of this study

This study is the first attempt to systematically integrate the effect assessment indicators of Chinese medicine characteristic interventions and western medicine routine management, which fills the gap in the





assessment of the effect of combined Chinese and western medicine health management of chronic diseases, and at the same time provides a scientific basis for policymakers to optimize the service supply, resource allocation and performance assessment. The construction of the indicators is closely aligned with the national public health service norms and policy guidance, and strengthens individual behavioral interventions and the improvement of health literacy, echoing the concept of 'people's health as the center' advocated by the 'Action for a Healthy China (2019-2030)'. Therefore, the index system not only has strong theoretical value but also has high practical feasibility and promotion value.

3. Research Limitations and Prospects

This study primarily integrates evidence from existing literature and policy documents, and although it has established a relatively systematic indicator framework, its adaptability across different regional and community contexts requires further attention. China exhibits significant urban-rural disparities, with uneven distribution of TCM resources among grassroots healthcare institutions and varying levels of patient health literacy, which may impact the practical application effectiveness of certain indicators (e.g., TCM cultural identity recognition rate, TCM constitution identification rate). Future research should conduct empirical tests in different regions, such as rural and urban environments, to assess the applicability and sensitivity of the indicators among populations with varying service capacities, cultural backgrounds, and economic levels, thereby enhancing the universality and promotional value of the indicator system. Additionally, the Delphi method should be employed to further optimize the content and weighting of the indicators. Long-term tracking and evaluation of the effects of ICWM interventions should also be strengthened, while encouraging multi-departmental and multidisciplinary collaboration to promote the sustainable development of ICWM health management in grassroots communities.

Recommendations

The evidence summarized in this study on the implementation outcomes of integrated Chinese and Western medicine health management for chronic diseases provides a theoretical basis for practical application and promotion.

1. At the policy level, it is recommended that the 29 indicators proposed in this study be incorporated into the relevant public health service management system as reference standards for primary healthcare institutions to conduct integrated traditional Chinese and Western medicine health management. Additionally, a dynamic adjustment mechanism for the indicators should be established to update the content promptly based on practical feedback and new evidence, thereby enhancing the scientific rigor and adaptability of the indicator system.

2. At the practical level, it is recommended that primary healthcare institutions form multidisciplinary collaborative teams to promote the deep integration of traditional Chinese medicine and Western medicine in chronic disease management. Through TCM constitution identification, individualized interventions, and health education, patient compliance and health management outcomes can be improved. Additionally, efforts should be made to strengthen the dissemination of TCM culture to enhance residents' awareness and acceptance of TCM services.

3. At the research level, future efforts should focus on evidence-based studies of TCM intervention mechanisms and service models. Prioritizing high-quality randomized controlled trials and cohort studies is a key step toward establishing a more robust evidence base. Additionally, multi-center, large-sample study designs should be encouraged to address regional and population differences, thereby enhancing the external generalizability of research findings. Particularly for TCM-specific intervention measures such as emotional regulation and constitutional identification, there is an urgent need to strengthen mechanism research and standardization efforts, continuously refine practice guidelines for integrated TCM and Western medicine health management, and promote the widespread application of TCM in public health and chronic disease management.

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