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Addressing Methodological Challenges: Topic Redundancy and Study Overlap in TCM Overviews of Systematic Reviews- A Methodological Scoping Review

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INTRODUCTION

Review question / Objective To investigate title redundancy and primary study overlap among overviews of systematic reviews (OoSR) on Traditional Chinese Medicine (TCM) interventions, focusing on efficacy evaluation across various complex categories.

Background With the growing number of systematic reviews and meta-analysis, the study type often named the Overviews of Systematic Review (OoSR) that summarizes and evaluates them gradually arrived. This type of review is also known as umbrella review, review of review, meta-reviews and so on. It can help the researchers and clinicians conveniently grape the complete picture of the raining systematic reviews in the same theme and make decisions in the clinical environment (Wang, 2021). The quantity of the OoSR related to the TCM therapy has increased rapidly in recent years. Variety of TCM interventions are evaluated especially within the theme of efficacy assessment (Ji, 2020). The rising trend of OoSR has also called the development of the reporting guidelines and methodology for better quality and clinical transformation. Overlap of the primary studies in OoSR is also a challenge for reviews synthesis and is especially strict for the secondary meta-analysis of the primary studies. It may magnify the efficacy size of intervention (Thomson, 2010). Pieper (2014) proposed to calculate corrected covered area (CCA) to evaluate the degree of overlap, which is a method to estimate the overlap after inclusion. From the view of the inclusion to lower the overlap, Pollock (2019) put forward a decision tool to help researchers make better inclusion decision because of the complexity and comprehensiveness in healthcare intervention-based overviews. Another study addressed that the management of overlap from the view of data analysis should clarify the research objectives of OoSR. Especially for the situation of second meta-analysis, the exclusion of overlapping primary studies should be taken into account (Han, 2020). Lunny (2021) stressed that

the multiple overlap reviews is kind of waste and may confuse the doctor which intervention to adopt. She summarized types of overlap management within different stages in methodological process including stages of eligibility and exclusion criteria, data extraction and comprehensive analysis such as decision rules, statistical method, visual representation like CCA and so on. In order to evaluate the frequency and characteristics of overlapping overviews, she defined overlapping overviews share the same PICO eligibility criteria and classified the overlapping into four types: identical, nearly identical, partial or subsumed overlap. She found that nearly one third of overviews overlap each other especially within broad topics (Lunny, 2020).

From the side of the reporting standards for the overall content, several studies explored reporting guidelines for OoSRs of healthcare interventions, such as the PRIO-harms and PRIOR statement for healthcare interventions. Researchers applied the PRIO-harms scale in evaluating the reporting quality of TCM OoSR (Wang, 2018). PRIOR statement is a report guideline for OoSR related to health intervention. There exist items for management of overlap like 8b and 9a belonging to the methods and item 11 related to the part of results. PRIOR states that the OoSR should report the overlap situation of research objects, interventions, controls and outcomes during the screening process. If appropriate, the methods for identifying and managing the overlap should be elucidated in the process of data extraction. In the part of result, the overlap of the primary studies should be reported(Gates, 2022). PRIO-Harms is a previous report guideline for OoSR but not comprehensive and well-rounded than the PRIOR. It mainly focuses on the safety of the interventions (Bougioukas, 2019).

Rationale Some researchers applied PRIO-Harms to TCM and one study found that all 21 studies didn't report the methods and basic condition for managing the overlap (Wang, 2018). Another study focused on the report standardization of OoSR related to the acupuncture and moxibustion. It divided the studies by languages and found that 100% studies written in Chinese didn't report the overlap and only 25% studies in English report this situation (Wang, 2020). The phenomenon of non-reported overlap indicates that the researchers may overlook the significance of overlap report and management. Another reasons for it may be attributed to the complexity of TCM interventions. The complexity of the TCM interventions refers to the types and ranges of interventions in TCM can be large or small especially when they are embodied in the titles of efficacy evaluation related to the overviews. The types of interventions within titles can be broadly named such as traditional Chinese medicine which includes not only herbal medicine but also acupuncture, massage and so on. They can also be concrete like the detailed name of Chinese patent medicine like Xiaoyao pills. This condition of overlap across complexity in TCM interventions is able to confuse researchers during primary studies selection of overviews. Li (2025) made an overview related to the Chinese patent medicine for covid-19. If the overlapping primary studies were overlook, the systematic reviews that met the inclusion criteria were 59. After identifying the overlapping randomized controlled trials (RCT), the number of left systematic reviews was 11. Ji (2020) has done a review to grasp the development of OoSR related to TCM at home and abroad using the methods of bibliometrics and reviews analysis . He mainly summarized the current situation of TCM OoSR from titles and authors to the level of evidence. But he only counted the frequency of extracted key elements and summarized the current situations and limitations of different studies in reporting standards. Though there are actually studies abroad stressing the importance of managing studies, they summarized the overlapping condition from a broad health intervention view. The main characteristic of TCM OoSR is the complexity in its intervention, embodying within the titles selection, overlap management and so on. Accordingly, the main condition of redundancy among overviews' titles and primary studies included systematic reviews need to be investigated within OoSR related to TCM interventions.

To sum up, our study aims to find the similarities and overlapping situation of key elements within the titles among different TCM overviews. The current situation and management of overlapping primary studies will also be investigated. If the topics of overviews are similar to each other especially the same title of interventions and disease, it may cause the redundancy of resources and challenges during the process of screening and selection. At the same time, the overlook of reporting the overlap may reflect the less attention paid to the overlap management. Therefore, this study will help researchers realize the situation of topic redundancy and importance of smart topic selection. The mitigation of the same titles will make the researchers quicker to find a clear topic. Analyzing the overlap among primary overviews can help researchers identify its significance and apply more effective strategies to mitigate its impact.

METHODS

Strategy of data synthesis The main databases will be systematically searched are CNKI, WangFang, VIP, Sinomed, Yiigle, Pubmed, Embase, Cochrane Library. The search date will be restricted in recent 5 years, from 2020 to October 2025. The search strategy takes the search in Pubmed as an example.
#1 (overviews of systematic review*[Title/Abstract]) OR (umbrella review*[Title/Abstract]) OR (umbrella assessment [Title/Abstract]) OR (umbrella evaluation [Title/Abstract]) OR (meta-review*[Title/Abstract]) OR (reviews of review*[Title/Abstract]) OR (reviews of meta-analyses [Title/Abstract])
#2 (Traditional Chinese Medicine[Title/Abstract]) OR (TCM[Title/Abstract]) OR (Chinese herbal medicine[Title/Abstract]) OR (Chinese patent medicine[Title/Abstract]) OR (acupuncture[Title/Abstract]) OR (moxibustion[Title/Abstract]) OR (needling[Title/Abstract]) OR (acupoint[Title/Abstract]) OR (cupping[Title/Abstract]) OR (medicine, Chinese traditional[MeSH Terms]) OR (Drugs, Chinese Herbal[MeSH Terms]) OR (acupuncture[MeSH Terms]) OR (acupuncture therapy[MeSH Terms]) OR (moxibustion[MeSH Terms]) OR (acupuncture, ear[MeSH Terms]) OR (electroacupuncture[MeSH Terms]) OR (tai ji[MeSH Terms]) OR (massage[MeSH Terms]) OR (Qigong[MeSH Terms])
#3 #1 AND #2.

Eligibility criteria The eligibility criteria are presented as the form of population, intervention, control, outcomes and study design
Inclusion
(1) Population: The gender, age, ethnicity are not restricted, but one overview only investigate one type of disease.
(2) Intervention: The interventions include traditional Chinese medicine therapies which mainly contain pharmacological and non-pharmacological therapies such as Chinese herbal medicine, Chinese patent medicine, acupuncture and moxibustion, massage and so on. The TCM intervention is the main intervention which can be in combination with other therapies.
(3) Control: There are no limitations on the control group.
(4) Outcome: The main outcome should be clear and complete.
(5) Study design: Already published overviews of systematic reviews and umbrella reviews related to efficacy evaluation. This OoSR need to include the basic information of included systematic reviews.
Exclusion criteria
(1)The full texts only have the title and abstracts such as conference proceedings will be excluded
(2)Duplicated and highly similar literature published in both Chinese and English will be excluded
(3)The protocol and methodological guidance of OoSR will be excluded.

Source of evidence screening and selection All articles retrieved from the databases will be exported into the Endnote25 to delete duplicate and go through the screening process which will be divided into two stages: (1) title and abstract screening and (2) full-text screening. All these two screening will be implemented by two people referring to inclusion and exclusion criteria. All the divergencies produced in the process will be discussed. If the consensus cannot be reached, a third reviewer will be consulted. The entire screening process, including the number of articles searched, included and excluded will be documented using a PRISMA-ScR flow diagram to promote the transparency.

Data management Data extraction will be conducted independently by two researchers. The data extracted will be recorded in an Excel form. All the disagreement during extraction will be resolved through discussion with a third researcher. Extracted data will include: basic study characteristics, title of study, study objective, type of intervention, type of disease, the current situation of overlap management, the form of result presentation, method of data analysis.

Language restriction Articles will be published in Chinese or English.

Country(ies) involved China.

Keywords Overviews of systematic reviews; Topic redundancy; Study Overlap; Traditional Chinese Medicine; Complexity of intervention.

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