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The effect of long-term pediatric tuina on physical growth in children: A protocol for a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Data extraction.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202420116

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 February 2024 and was last updated on 28 February 2024.

INTRODUCTION

Review question / Objective The aim of this systematic review is to evaluate the effectiveness and safety of long-term pediatric tuina on physical growth in children.

Condition being studied As a key indicator of children's overall health, physical growth reflects their linear growth and nutritional status. It is influenced by various factors such as genetics, intrauterine factors, environment, nutrition, diseases, and psychology, and may be improved through correct and timely intervention at an early stage. Pediatric tuina is an external treatment method of traditional Chinese medicine with a long history. Based on TCM theory and clinical facts, it studies the manipulation on children's acupoints to prevent and treat common pediatric diseases. This study aims to evaluate the effectiveness and safety

of long-term pediatric tuina on physical growth in children.

METHODS

Search strategy Taking PubMed as an example, the search strategy is as follows:

#1 Controlled Clinical Trial[Publication Type] OR Randomized Controlled Trial[Publication Type] OR Observational Study[Publication Type]

#2 (Controlled Clinical Trials as Topic[MeSH Terms]) OR (Epidemiological Studies[MeSH Terms])

#3 randomized[Title/Abstract] OR placebo[Title/Abstract] OR randomly[Title/Abstract] OR trial[Title/Abstract] OR groups[Title/Abstract] OR observational[Title/Abstract] OR case-control[Title/Abstract] OR retrospective[Title/Abstract] OR cohort[Title/Abstract] OR follow-up[Title/Abstract] OR longitudinal[Title/Abstract] OR prospective[Title/Abstract] OR retrospective[Title/

Abstract] OR cross-sectional[Title/Abstract] OR controlled[Title/Abstract] OR comparison[Title/Abstract] OR epidemic*[Title/Abstract] OR real world[Title/Abstract] OR registration[Title/Abstract] OR single arm[Title/Abstract]
 #4 #1 OR #2 OR #3
 #5 ((Infant[MeSH Terms]) OR (Child[MeSH Terms])) OR (Adolescent[MeSH Terms])
 #6 infant[Title/Abstract] OR baby[Title/Abstract] OR newborn[Title/Abstract] OR neonate[Title/Abstract] OR premature[Title/Abstract] OR toddler[Title/Abstract] OR child[Title/Abstract] OR kid[Title/Abstract] OR preschool[Title/Abstract] OR school[Title/Abstract] OR teenager[Title/Abstract] OR adolescent[Title/Abstract] OR juvenile[Title/Abstract] OR youth[Title/Abstract]
 #7 #5 OR #6
 #8 ((Acupuncture Therapy[MeSH Terms]) OR (Therapeutic Touch[MeSH Terms])) OR (Musculoskeletal Manipulations[MeSH Terms])
 #9 acupoint[Title/Abstract] OR "acupuncture point"[Title/Abstract] OR acupressure[Title/Abstract] OR massage[Title/Abstract] OR tuina[Title/Abstract] OR "tui na"[Title/Abstract] OR anmo[Title/Abstract] OR chiropractic[Title/Abstract] OR manipulate[Title/Abstract] OR "manipulative therapy"[Title/Abstract] OR "therapeutic touch"[Title/Abstract] OR massotherapy[Title/Abstract]
 #10 #8 OR #9
 #11 #4 AND #7 AND #10

We also searched the following databases: (1) Cochrane Library. (2) Embase. (3) CNKI. (4) Wanfang Data. (5) VIP Database. (6) SinoMed. (7) ClinicalTrials.gov. (8) WHO ICTRP.

Participant or population Children aged 0-14 years. Restrictions on gender or race were not applied during study selection. Children with congenital metabolic disorders are excluded.

Intervention Any form of pediatric tuina including manipulation on any part of the body, acupressure, abdominal massage and spine manipulation. Studies that adopted topical message such as oral message, tuina for cerebral palsy and tuina for torticollis were not included. Pediatric tuina for diseases in surgery, orthopedics and ophthalmology was excluded.

Comparator No intervention, comprehensive health care, conventional therapy, or touching. Studies in which pediatric tuina was combined with other TCM therapies were excluded.

Study designs to be included Randomized controlled trials.

Eligibility criteria RCTs reported as full text or unpublished. Restrictions on language, time frame or country were not applied during study selection.

Information sources Electronic databases including PubMed, Cochrane Library, EMBASE, CNKI, Wanfang Data, VIP Database and SinoMed were searched for the systematic review. We also conducted a search of ClinicalTrials.gov and the World Health Organization trials portal (WHO ICTRP) for ongoing studies.

Main outcome(s) Height.

Additional outcome(s) (1) Weight. (2) BMI. (3) Head circumference. (4) Waist circumference. (5) Chest circumference. (6) Growth curves. (7) Effective rate. (8) Satisfaction. (9) Medical costs. (10) Adverse events.

Data management Two review authors will independently scan and screen the studies with the software of NoteExpress. We will extract the data of included trials with a structured data extraction form, including the study design, sample size, participants' baseline characteristics, intervention, control and outcome measures. Disagreements will be resolved through discussion or by consultation with a third review author.

Quality assessment / Risk of bias analysis Two review authors will independently assess the risk of bias for the included studies using the Cochrane Collaboration Bias Risk Assessment tool. The evaluation content will include the following domains:

(1) Random sequence generation. (2) Allocation concealment. (3) Blinding of participants and personnel. (4) Blinding of outcome assessment. (5) Incomplete outcome data. (6) Selective outcome reporting. (7) Other bias.

Strategy of data synthesis We will use Review Manager Software 5.4 to conduct meta-analyses. Risk ratios (RRs) will be applied for dichotomous data and mean differences (MDs) for continuous data, both with 95% confidence intervals (CIs). As disparity in tuina forms and medications between different studies may exist, a random-effect model will be applied in meta-analyses. The I² statistic will be used to assess heterogeneity. Values of 50% or higher suggest heterogeneity, and causes for it will be explored by subgroup analyses. If I² is lower than 50%, we will then conduct meta-analyses with a fixed-effect model for sensitivity analyses.

Subgroup analysis We will conduct a priori subgroup analyses according to the intervention.

Sensitivity analysis We will conduct sensitivity analyses to assess the impact of risk of bias on main outcomes by including or excluding trials judged as “high risk of bias”. If there are different studies regarding disease status, sample size, intervention, comparator or outcomes, we will also carry out sensitivity analyses to test the robustness of the meta-analysis result.

Language restriction No language restriction was imposed on the search.

Country(ies) involved China.

Keywords Pediatric Tuina; physical growth; randomized controlled trial; systematic review; meta-analysis.

Contributions of each author

Author 1 - Huimin Su - Conceptualization, Methodology, Validation, Writing – original draft.

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