

TIP-CARD Online Research Seminars

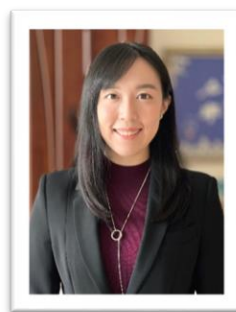
Dementia interventions in Chinese populations

Feb 15, 2023



Dr Cheng Shi

Research Assistant Professor
School of Graduate Studies and Institute
of Policy Studies, Lingnan University



Dr Dara Leung

Research Assistant Professor
Department of Social Work and
Social Administration, HKU



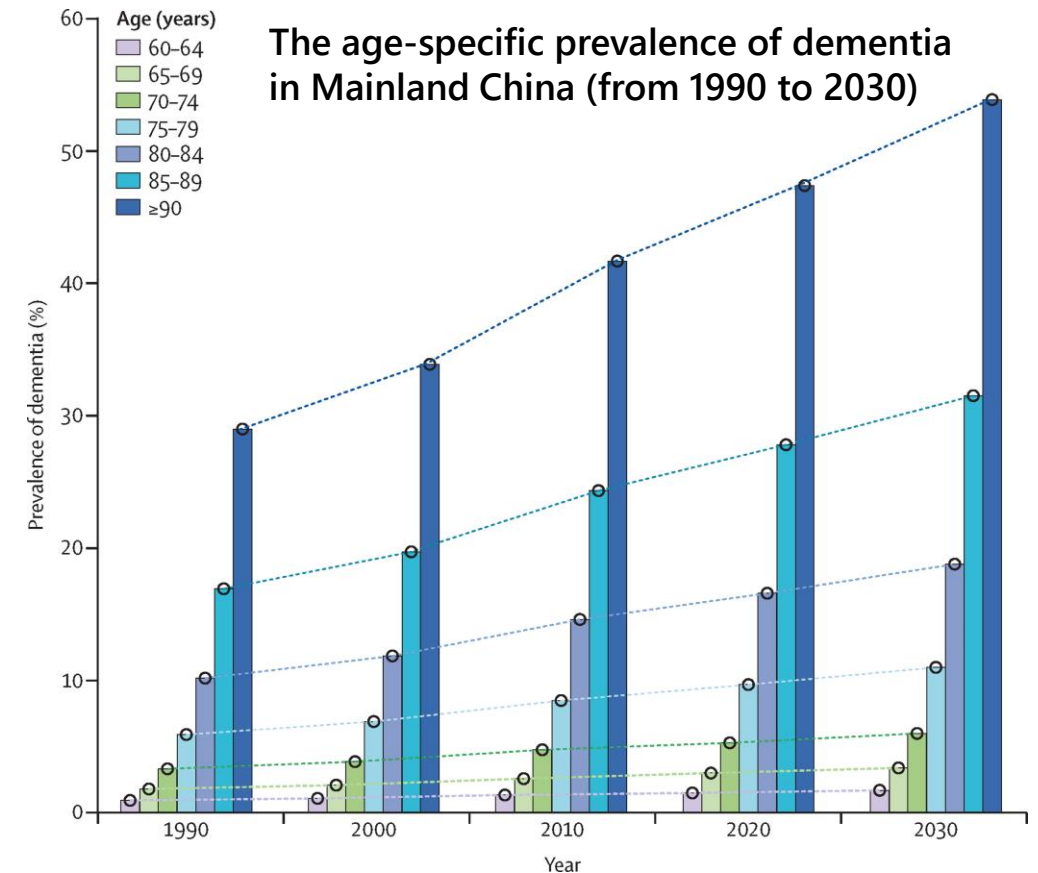
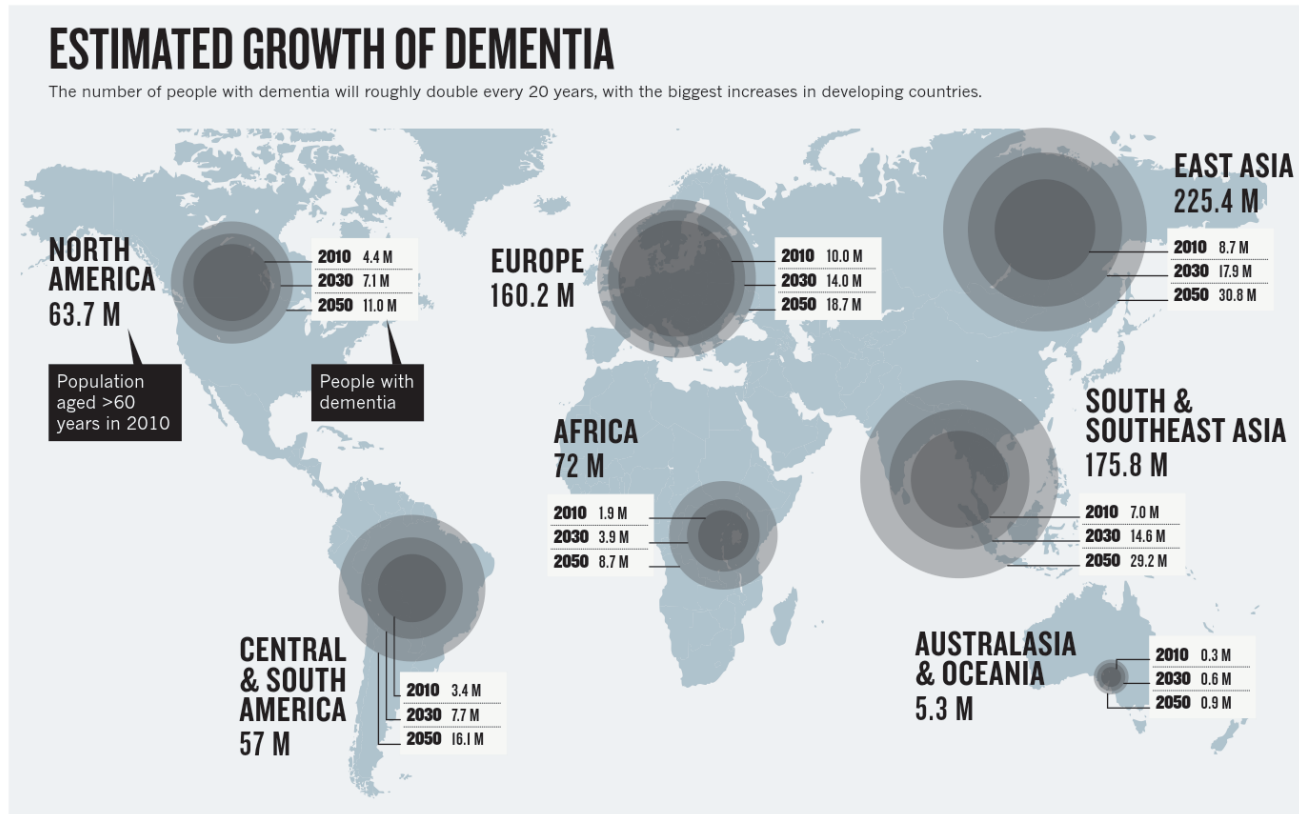
Dr Qi Wang

Research Assistant Professor
School of Graduate Studies and Institute
of Policy Studies, Lingnan University

Chinese population

- The world's greatest number of people with dementia (20% of total persons with dementia)
- Major drive in continued growth in global dementia prevalence

Source: World Alzheimer Report 2009, Alzheimer's Disease International



Abbott, A. (2011). Dementia: A problem of our age. *Nature Outlook*, 475(7355), S2-S4. Alzheimer's Disease International. (2013). *Policy Brief for Heads of Government: The Global Impact of Dementia 2013-2050*. London: ADI.

Jia, L., Quan, M., Fu, Y., Zhao, T., Li, Y., Wei, C., ... & Jia, J. (2020). Dementia in China: epidemiology, clinical management, and research advances. *The Lancet Neurology*, 19(1), 81-92.

Introduction

- Most evidence on interventions for people with dementia and their caregivers have been generated in western countries, although Chinese communities are where more dementia occur.
- An intervention's effect may differ due to **cultural differences** or **pharmacogenetic factors** between Chinese and Western populations;
- Higher level of evidence for effective dementia-related interventions for Chinese populations is needed to inform policymaking and practice, such as dementia national strategy, regular care plan (e.g., Cognitive Stimulation Therapy in England).
- Meanwhile, the value of Chinese databases has been long neglected.

What interventions have been studied in Chinese communities? what are their effectiveness?

Effectiveness of interventions for PLWDs & their carers in Chinese communities: A systematic review & meta-analysis of randomized controlled trials

Review question:

Which dementia interventions work in Chinese communities?

- (1) To map interventions for dementia studied in Chinese communities
- (2) To compare the effectiveness of those interventions for achieving desired outcomes



Informed by evidence

TIP-CARD Study 3: Simulation modelling

- What interventions should be included in future care pathway?
- What is the expected impact of changing care pathway?

Methods: Eligible Criteria






Eligible criteria

- **Population**
 - Adults living with dementia (incl. **MCI**) and their carers in Chinese communities
- **Interventions**
 - All interventions aiming to improve lives of people living with dementia, and their formal and informal carers
- **Comparators**
 - Any
- **Outcomes**
 - Any
- **Study designs**
 - Randomized controlled trials (RCTs)
 - Sample size of each study arm(group) ≥ 50
 - A clear diagnostic criteria for dementia
 - Low risk of bias(RoB) in generating random allocation sequence
- Language: English and Chinese publications
- Publication period: Jan 2008 - June 2020

Open access

Protocol

BMJ Open Effectiveness of interventions for people living with dementia and their carers in Chinese communities: protocol for a systematic review and meta-analysis of randomised controlled trials

Cheng Shi ^{1,2} Shuangzhou Chen,¹ Maximilian Salcher-Konrad ³,
Jacky C P Choy,¹ Hao Luo ¹, Dara Kiu Yi Leung ¹, Xinxin Cai,¹ Yue Zeng,¹
Ruizhi Dai,⁴ Adelina Comas-Herrera,³ David McDaid,³ Martin Knapp,³
Gloria Wong ¹

To cite: Shi C, Chen S, Salcher-Konrad M, *et al.* Effectiveness of interventions for people living with dementia and their carers in Chinese communities: protocol for a systematic review and meta-analysis of randomised controlled trials. *BMJ Open* 2021;**11**:e047560. doi:10.1136/bmjopen-2020-047560

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2020-047560>).

Received 02 December 2020
Accepted 29 July 2021

ABSTRACT

Introduction As the largest and most rapidly ageing population, Chinese people are now the major driver of the continued growth in dementia prevalence globally. The need for evidence-based interventions in Chinese communities is urgent. Although a wide range of pharmacological and non-pharmacological interventions for dementia have been trialled in Chinese populations, the evidence has not been systematically synthesised. This systematic review and meta-analysis aims to map out the interventions for people living with dementia and their carers in Chinese communities worldwide and compare the effectiveness of these interventions.

Methods and analysis This protocol followed the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols checklist. We will search Chinese (China National Knowledge Infrastructure, WanFang DATA) and English bibliographical databases (MEDLINE, EMBASE, PsycINFO, CINAHL Plus, Global Health, WHO Global Index Medicus, Virtual Health Library, Cochrane CENTRAL, Social Care Online, BASE, MODelling Outcome and cost impacts of interventions for DEMentia (MODEM) Toolkit, Cochrane Database of Systematic Reviews), complemented by hand searching of reference lists. We will include studies evaluating the effectiveness of interventions for dementia or mild cognitive impairment in Chinese populations, using a randomised controlled trial

Strengths and limitations of this study

- This systematic review and meta-analysis will be the first review of randomised controlled trials (RCTs) on the effectiveness of both pharmacological and non-pharmacological interventions for people living with dementia and their carers in Chinese communities worldwide.
- We will use a comprehensive search strategy of publications in both Chinese bibliographical databases (China National Knowledge Infrastructure, WanFang DATA) and English bibliographical databases (MEDLINE, EMBASE, PsycINFO, CINAHL Plus, Global Health, WHO Global Index Medicus, Virtual Health Library, Cochrane CENTRAL, Social Care Online, BASE, MODelling Outcome and cost impacts of interventions for DEMentia (MODEM) Toolkit, Cochrane Database of Systematic Reviews).
- We will narratively synthesise the collected data to map out the dementia-related interventions studied in Chinese communities and conduct pairwise and network meta-analyses to compare the effectiveness of interventions.
- This review will be limited by the number and quality of RCTs conducted in Chinese communities.

Methods: Study Identification

Information Sources

- Chinese bibliographical databases: China National Knowledge Infrastructure (CNKI) and WanFang DATA
- English bibliographical databases: MEDLINE, EMBASE, PsycINFO, CINAHL Plus, Global Health, WHO Global Index Medicus, Virtual Health Library, Cochrane CENTRAL, Social Care Online, BASE, MODEM Toolkit, Cochrane Database of Systematic Reviews
- Hand searching of reference lists of review studies



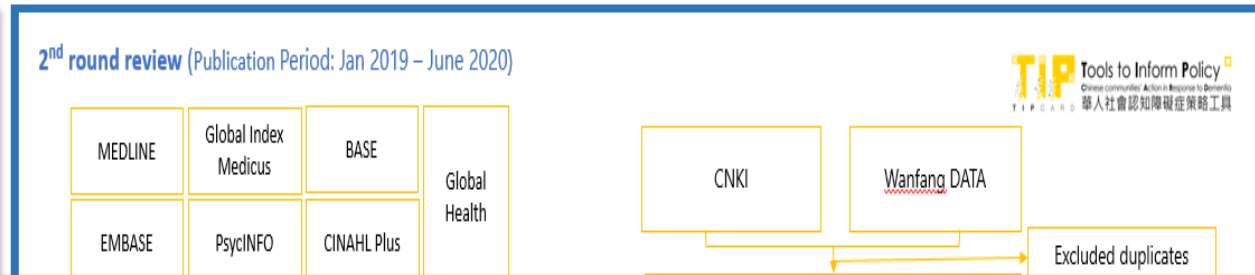
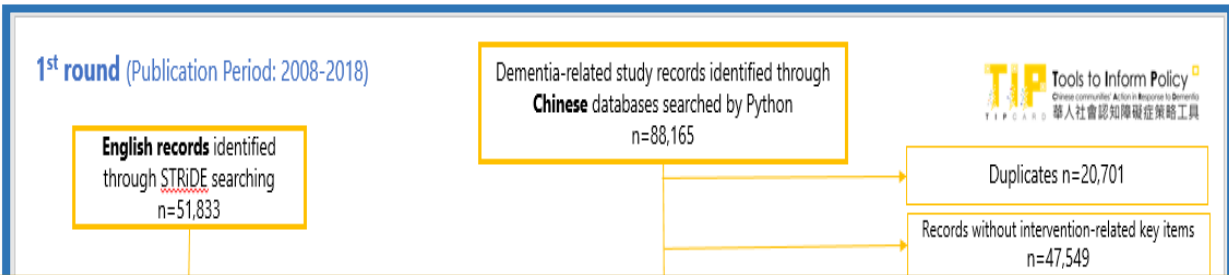
Search strategy:

- **53** search terms related to dementia and intervention in English and simplified Chinese

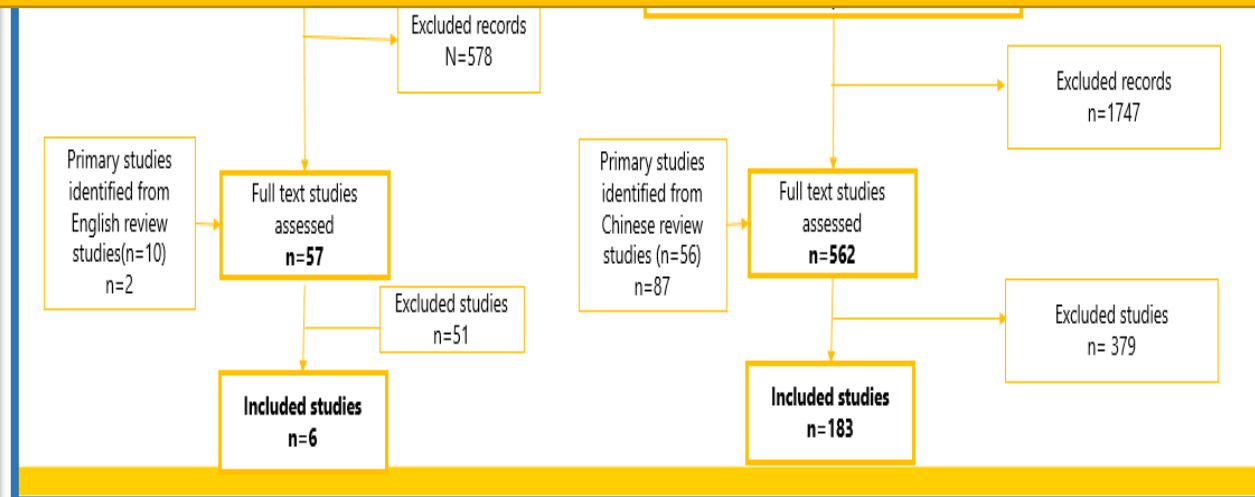
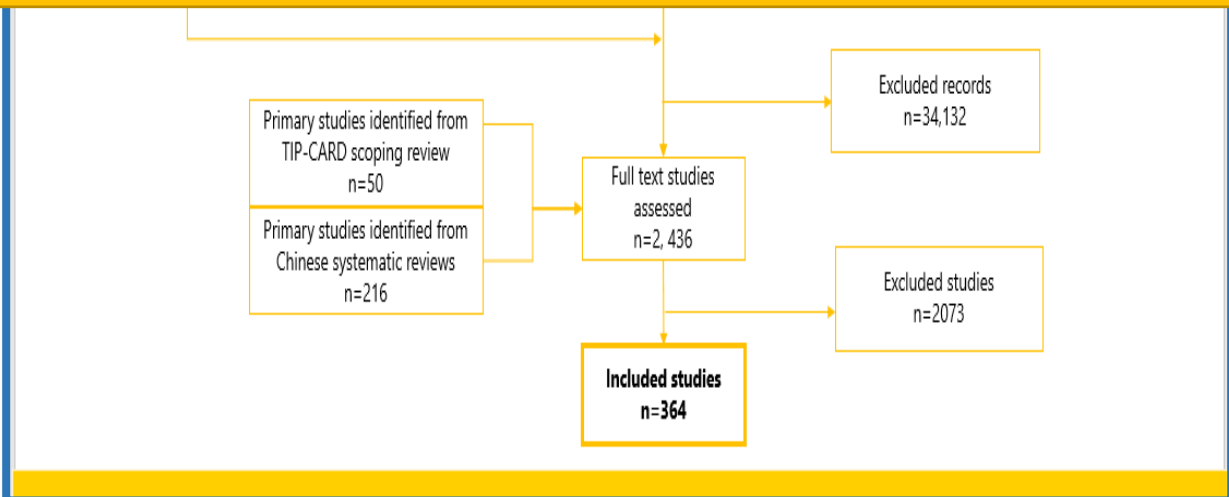
Examples of search terms in English and simplified Chinese

Search number	Search terms in English	Search terms in simplified Chinese
1	Dementia	痴呆或失智或认知症
2	Cognitive disorder	认知障碍或认知功能障碍或认知紊乱或认知功能紊乱
3	Alzheimer	茨海默或兹海默
4	((cognit* or memory or cerebr*) adj3 (impair* or los* or declin* or deteriorat* or degenerat*)).mp.	(认知或记忆或脑)(缺损或缺失或退化或衰退或下降或损伤或恶化或损害或退化)
5	(Intervention* or therap* or treatment* or program* or manage* or prevent* or diagnos* or polic*).mp.	干预或介入或治疗或疗法或方案或处理或预防或诊断或措施或手段或政策或应用或支持或效果或疗效或观察或价值或临床或分析
6	Cognitive therapy	认知(治疗或疗法)
7	Cognitive stimulation	认知(刺激或促进)
8	Cognitive training	认知训练
9	Cognitive rehabilitation	认知(复康或复健或康复)
10	Drug therapy or pharmacotherapy	*药*
11	Cholinesterase inhibitors	胆碱分解抑制剂或胆碱酯酶抑制剂或胆碱酶抑制剂
12	Cholinesterase agent	胆碱分解剂或胆碱酯酶剂或胆碱酶剂
13	(Sedative or tranquil* adj3 (agent* or drug*)).mp.	(镇静或镇定或安神或安定)(药或剂)
14	Antipsychotic or neuroleptic (agent* or drug*)	抗精神病(药或剂)
15	exp Serotonin Reuptake Inhibitors or ssri	(血清素或5-羟色胺)(再摄取或再吸收或回收)抑制剂
16	Benzodiazepines	苯二氮平或苯二氮卓
17	(memantine or donepezil or rivastigmine or galantamine or souvenaid or risperidone or haloperidol or olanzapine or quetiapine or citalopram or dextromethorphan or carbamazepine or mirtazapine or sertraline or moclobemide or trazodone or melatonin or ramelteon or methylphenidate).mp.	(美金刚或美金刚)(多奈哌齐或多奈哌齐)(卡巴拉汀或利斯的明)(加兰他敏或加兰他敏或格兰他敏)(智敏捷)(利培酮或利培酮)(氯吡啶或氯吡啶或氯吡啶或氯吡啶)(奥氮平)(唑嗪平)(西酞普兰)(右美沙芬或右旋美沙芬或右旋美沙芬或右甲吗啉)(卡马西平或卡马平或卡巴氮平或卡巴马平)(米氮平)(舍曲林)(吗氯贝胺)(曲唑酮)(褪黑素或褪黑素)(雷美替胺或拉米替胺)(哌甲酯或派甲酯或盐酸甲酯)
18	Movement Therapy	(运动或动作)
19	(Physical activit* or physical training).mp.	(运动或体育或体能)(活动或训练)
20	(social adj3 activit*).mp.	社交活动或社会活动
21	Psychotherapy	心理(治疗或疗法)
22	(behavio?r* adj3 therap*).mp.	行为(治疗或疗法)
23	Counseling	辅导或咨询

Methods: Study selection



525 unique studies are included for data synthesis after linking relevant studies



Methods: risk of bias assessment



Version 2 of the Cochrane risk-of-bias(RoB) tool for randomized trials

Five risk of bias(RoB) domains

Signalling questions for each

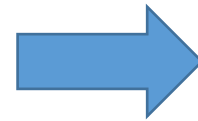
1.Risk of bias arising from the randomization process

2.Risk of bias due to deviations from intended interventions

3.Bias due to missing outcome data

4.Bias in measurement of the outcome

5.Bias in selection of the reported result



Overall judgement

Low risk of bias if all 5 domains are judged at low risk

Otherwise "some concerns"

High risk of bias if any one of the 5 domains is judged at high risk

Study 1:

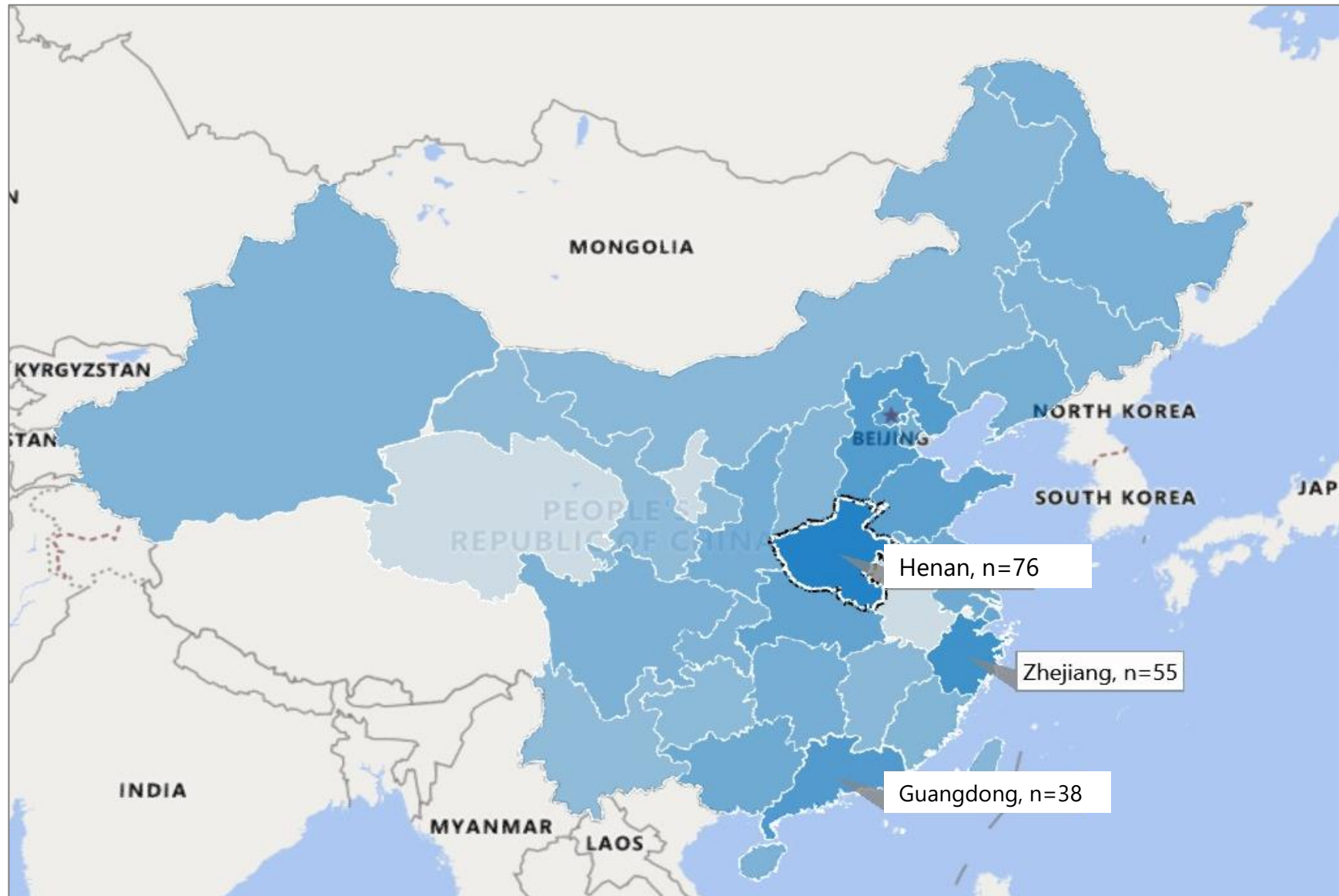
A systematic mapping review of 525 randomised controlled trials on pharmacological and non-pharmaceutical interventions for people living with dementia and their formal and informal caregivers in Chinese communities

Research aim:

(1) To map interventions for dementia studied in Chinese communities

(2) To compare the effectiveness of those interventions for achieving desired outcomes

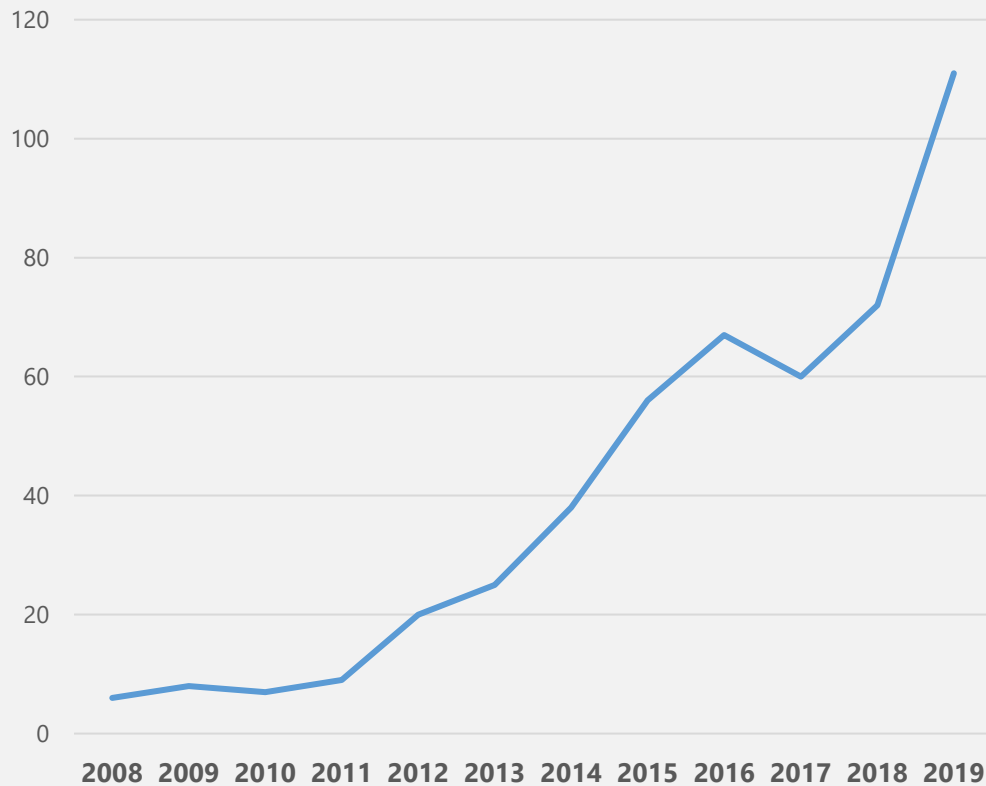
Geographical location of included RCTs (N=525, Jan 2008 – June 2020)



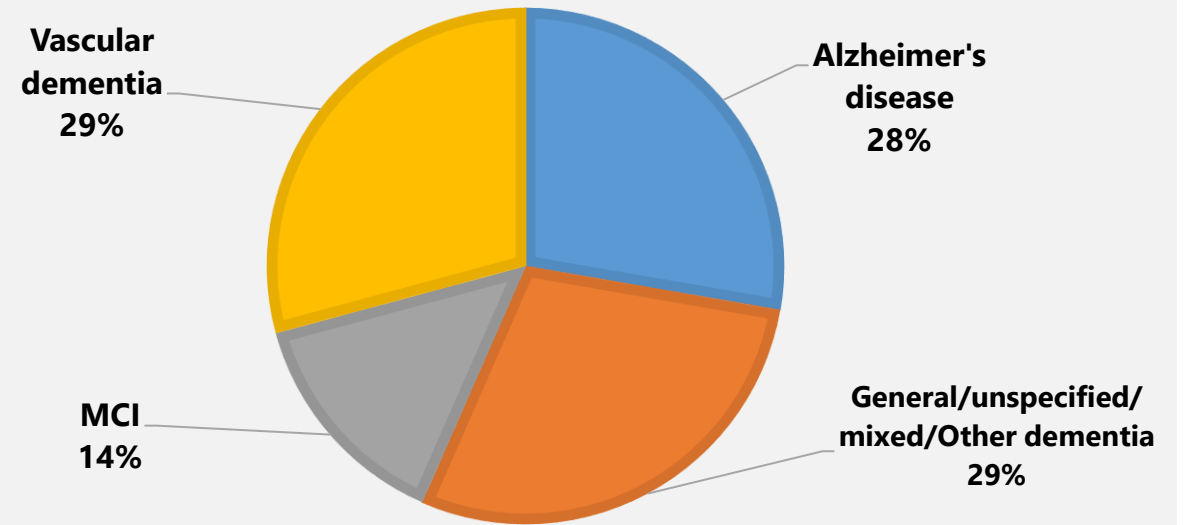
Region	No. of RCT
Henan	76
Zhejiang	55
Guangdong	38
Hebei	37
Shandong	32
Beijing	30
Hubei	29
Shanghai	23
GuangXi	19
Jiangsu	19
Tianjin	16
Shaanxi	15
Hunan	15
Liaoning	13
Hong Kong	12
Heilongjiang	12
Sichuan	11
Hainan	10
Chongqing	9
Jilin	8
Xinjiang	7
Shanxi	6
Fujian	6
Taiwan	5
Jiangxi	4
Inner Mongolia	4
Guizhou	3
Yunnan	2
Gansu	2
Qinghai	2
Anhui	1

Characteristics of included RCTs (N=525)

Number of included RCTs by publication period (2008-2019)



Dementia type



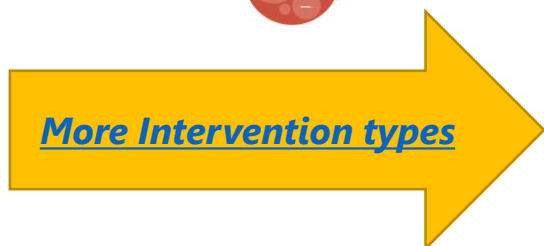
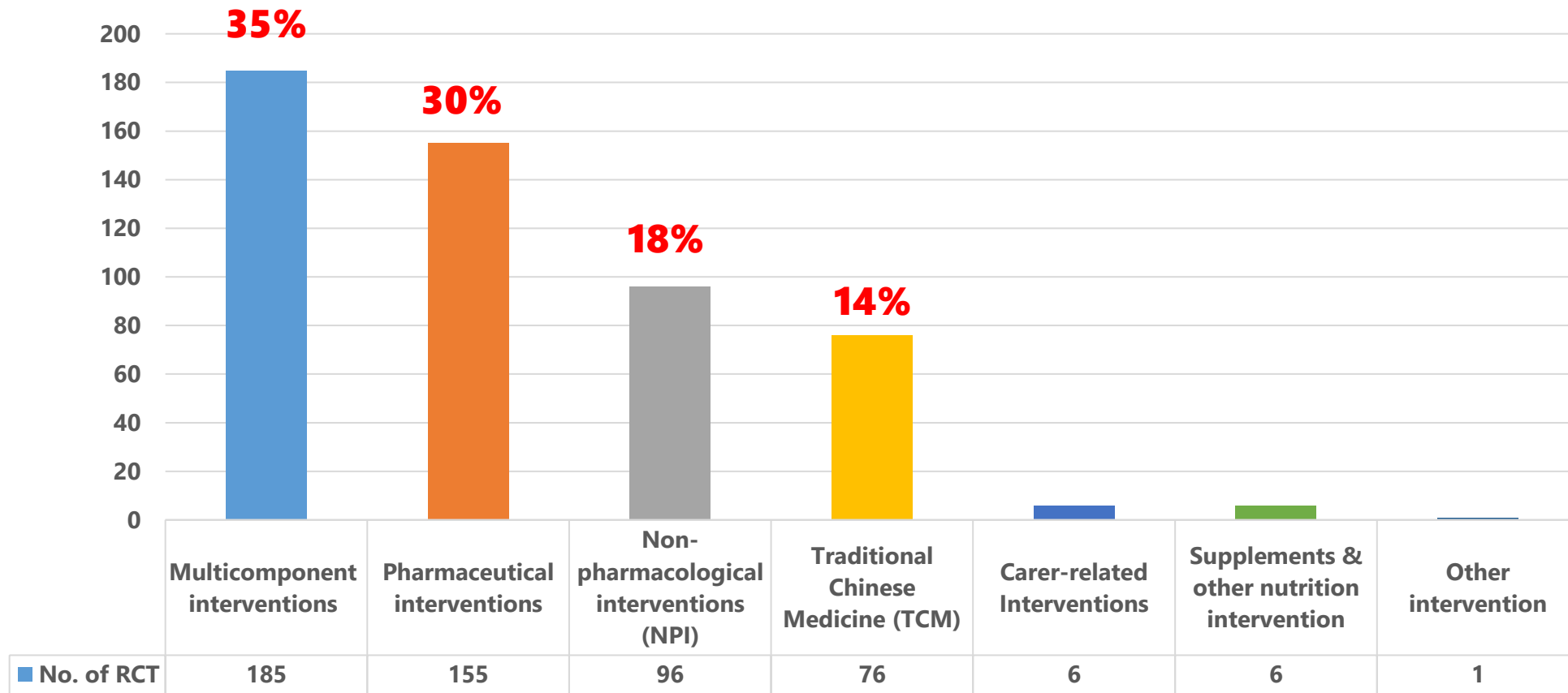
Sponsorship source

	N	%
Without funding	178	34%
With funding	347	66%

Publication language

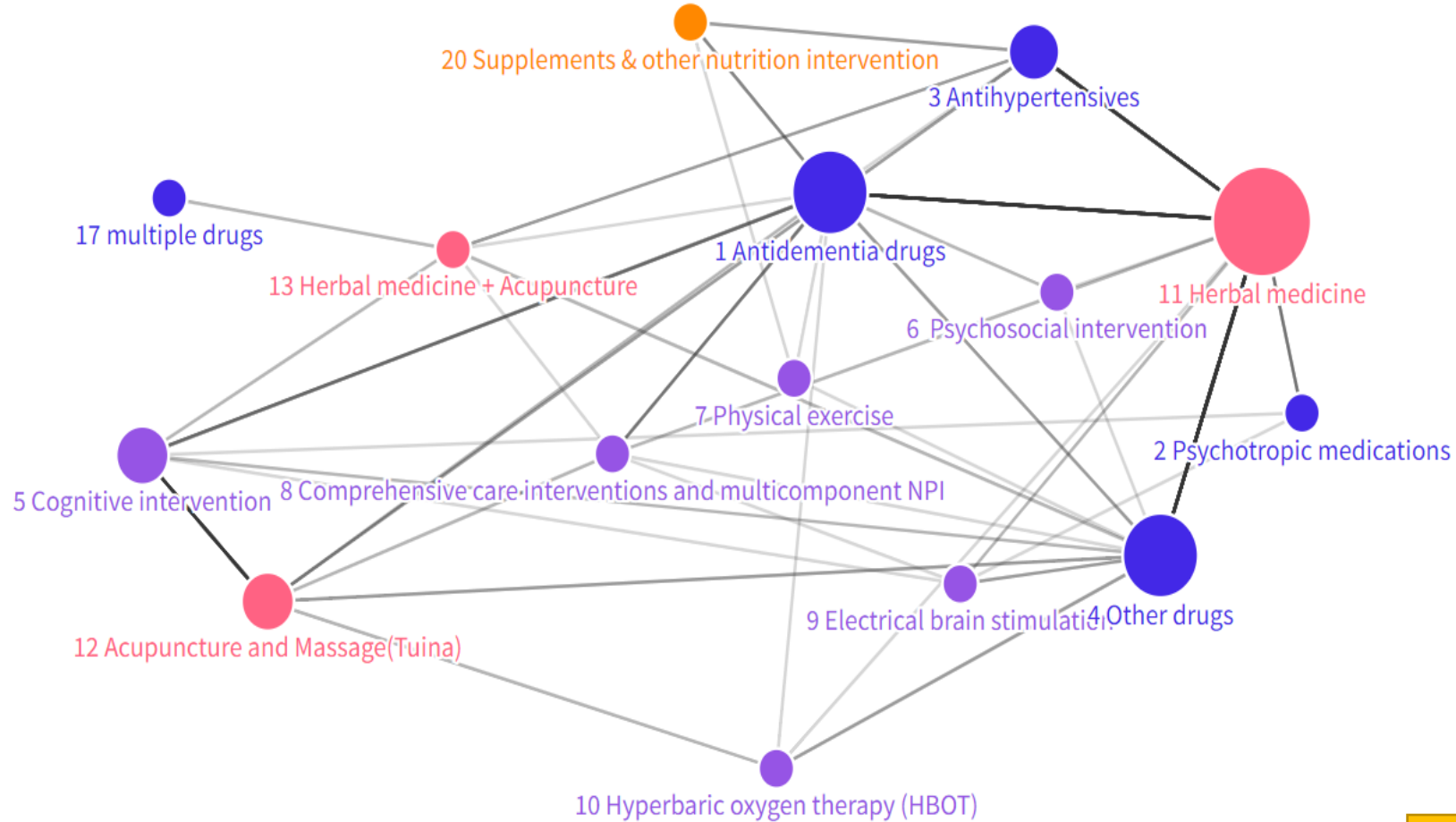
	N	%
English	36	7%
Chinese	489	93%

Included RCTs by intervention categories

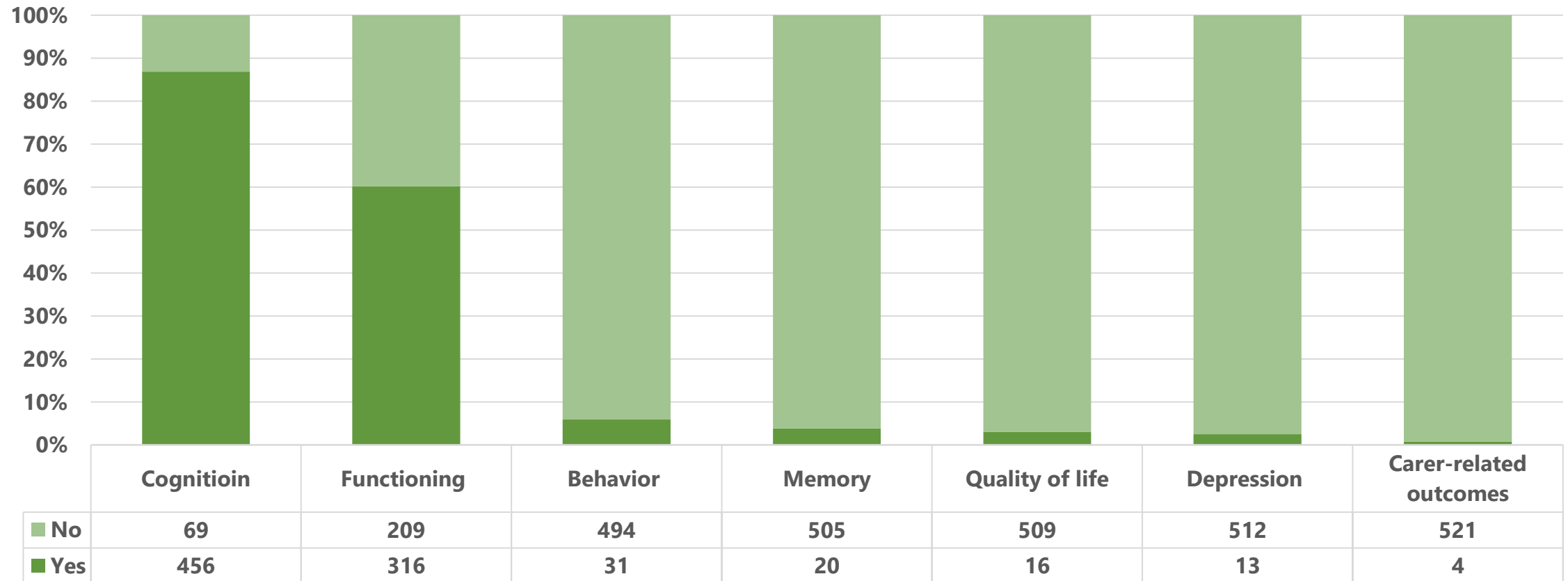


Combination of multicomponent interventions (n=185)

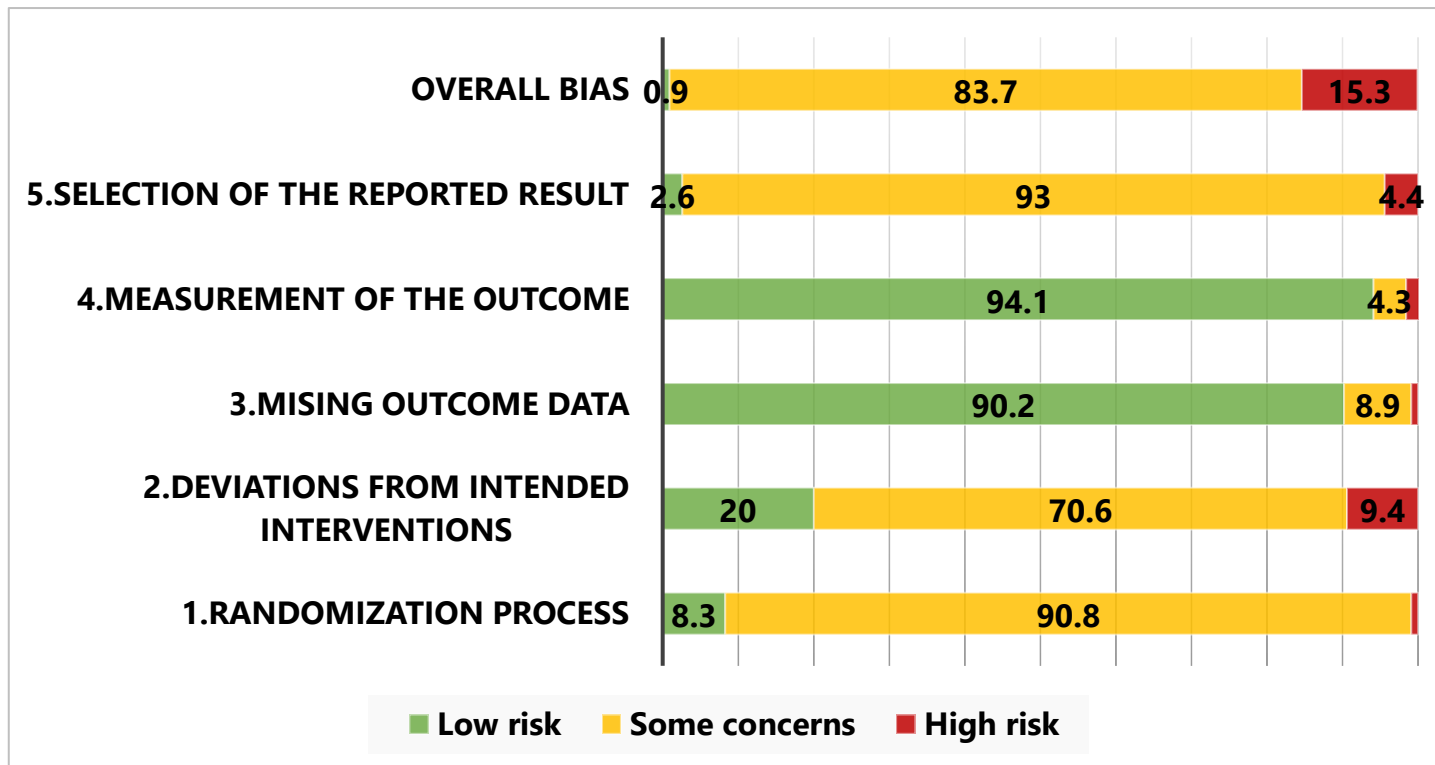
- TCM
- Pharm
- NPI
- Supplements



Outcomes measured in included RCTs



Risk of bias assessment



Overall bias

Low risk of bias if all 5 domains are judged at low risk

Otherwise "some concerns"

High risk of bias if any one of the 5 domains is judged at high risk

Over 80% RCTs are judged at some concerns;
Majority of RCTs are judged at low risk in domain 3 and 4, at some concerns in domain 1, 2 and 5.

Conclusions

1. Evidence on interventions for dementia among Chinese populations is dramatically increasing (particularly in Chinese publications), covering most regions in China.
2. RCTs have been conducted for a wide range of interventions in Chinese communities, including many **non-pharmacological treatments** and **traditional Chinese medicine**.
3. **Multicomponent interventions** were preferred.
4. Most interventions target improving **cognition and functioning ability**, while the quality of life and other outcomes were less considered.
5. Very few studies focused on **carer-related interventions and outcomes**.
6. Included RCTs are mostly subject to “**some concerns**” risk of bias, due to lacking information on randomization process, deviations from intended interventions, and selection of the reported result;