Psychogeriatrics

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The Prevalence of Dementia Among the Elderly in China: A Meta-Analysis

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ABSTRACT

Objective: The prevalence of dementia among the Chinese is controversial. To explore a precise estimation of the prevalence, a meta-analysis was conducted in the present study.

Methods: The relevant studies were identified by searching PubMed, Cochrane Library, Embase, CNKI, VIP Database and Wanfang Database up to January 2025. The pooled analysis, subgroup analysis, and sensitivity analysis were all conducted. Subgroup analysis was conducted by age, sex, education level, region and investigation time to explore the sources of heterogeneity. All analyses were performed with STATA 16.0.

Results: Eighty-five studies with a total of 435 476 participants, including 25 550 patients with dementia were included. Pooled analysis found elderly dementia prevalence was 6.0% (95% CI: 5.4%–6.6%) in China. Subgroup analysis by age indicated that the prevalence of dementia was 2.5% among individuals aged 60–69, 6.1% among those aged 70–79, and 17.0% among those 80 years old or above. Subgroup analysis by sex showed that the prevalence of dementia was 4.8% in males and 7.3% in females. Subgroup analysis by education level found that the prevalence of dementia was 10.9% among those who were illiterate, 4.1% among those with primary education, 3.9% among those with secondary education, and 2.2% among those with college education or above.

Conclusion: The prevalence of dementia among the elderly in China is 6.0%. Moreover, with each additional decade of age, the prevalence of dementia rises significantly. Females and individuals with lower education levels have a higher prevalence.

1 | Introduction

Dementia refers to a disease that affects various advanced brain functions due to the degeneration of brain function, and it ultimately seriously affects the life and work ability of patients. Dementia is mainly divided into Alzheimer's disease, vascular dementia and mixed dementia [1]. With the increasing proportion of the elderly, dementia has become a serious public health issue in the world.

The number of dementia patients worldwide increased from 2.02 million in 1990 to 4.38 million in 2016, representing a rise of 116.8% [2]. In addition, the number of patients is expected to surge from 5.74 million in 2019 to 15.3 million in 2050, representing an increase of 116.6% [3]. The main reason for this rapid growth is the growing aging population. China, which has a quarter of the dementia patients in the world, is one of the most severely aged countries [4]. According to data from the Seventh National Population Census, the number of

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elderly individuals with dementia in China was estimated to be around 15.84 million by the end of 2020 [5], which makes it the country with the highest number of dementia patients globally. Dementia has emerged as a health issue that we cannot afford to overlook. It not only diminishes the well-being of elderly individuals afflicted with the condition but also exacerbates the burden on their families, the healthcare system, and society at large. Consequently, it is imperative that we accord greater attention to and conduct more research on dementia among the elderly.

Therefore, a meta-analysis was conducted to evaluate the prevalence of dementia in the elderly in China to enhance public awareness and provide guidance for prevention in addressing the challenge of dementia.

2 | Methods

2.1 | Searching Strategy

A literature search from PubMed, Cochrane Library, Embase, CNKI, VIP Database, and Wanfang Database was conducted to identify the relevant studies up to January 2025. The following terms were used during the search: 'dementia' AND ('Chinese' OR 'China') AND ('prevalence' OR 'rate'). The searching strategy terms were applied to search for full-text articles. No language or other restriction was used. Meanwhile, the references used in the eligible articles were also reviewed as sources to identify potential studies.

2.2 | Inclusion and Exclusion Criteria

The studies included in the meta-analysis had to meet the following criteria: (1) cross-sectional studies aiming at dementia; (2) participants were the elderly (≥ 60 years old) in China [6, 7]; (3) providing the number of people with and without dementia. Studies were excluded if they were: (1) duplicate publications; (2) conference abstracts, guidelines, letters, reviews, meta-analyses, animal experiments or case reports; (3) studies with important data missing or unavailable even after contacting the corresponding author.

2.3 | Data Extraction

Information was extracted independently by two experienced investigators and any discrepancy was resolved by the third investigator. The following data were collected: first author's name, publication year, province/municipality, age, sex ratio, sample size, education level, and the number of patients with dementia.

2.4 | Quality Assessment

The Agency for Healthcare Research and Quality was used to assess the quality of the included studies [8]. The assessment scale included 11 items. If an item was answered 'Yes', it would get one point; no point would be given if the answer was 'NO' or 'UNCLEAR'. A study was considered of high quality with 8–11 points, of moderate quality with 4–7, and of low quality with 0–3.

2.5 | Statistical Analysis

Data management and prevalence calculation of dementia were conducted by STATA 16.0 for Windows (Stata, College Station, TX, USA). Since meta-analysis of prevalence generally has significant heterogeneity, a random effects model was chosen [9]. To explore sources of heterogeneity, subgroup analyses were performed by age (60–69 years old, 70–79 years old, and 80 years old or above), sex (male and female), education level (illiteracy, primary school, secondary school, and college or above), region (south, midland, and north), investigation time (1984–1993, 1994–2003, 2004–2013, and 2014–2024). To evaluate the influence of each study on the pooled prevalence of dementia, a sensitivity analysis was conducted. A $p < 0.05$ was considered statistically significant.

3 | Results

3.1 | Characteristics of the Eligible Studies

According to our searching strategy, 13 214 potentially relevant studies were identified. Finally, 85 studies met all the inclusion criteria. A flow diagram summarising the whole process of selection procedures was shown in Figure 1. A total of 435 476 participants were collected, and 25 550 were diagnosed with dementia. The baseline characteristics of the included studies were shown in Table 1.

3.2 | Quality Assessment

The quality score of each study was presented in Table 1. There were 31 studies with high quality, 54 studies with moderate quality, and no study with low quality. The quality assessment showed reasonable study design and clear results. No study was excluded on grounds of quality.

3.3 | Pooled Analysis

The prevalence of dementia in China was calculated and ranged from 0.7% to 22.0%. The pooled prevalence of the studies was 6.0% (95% CI: 5.4%–6.6%). The results were shown in Figure 2.

3.4 | Subgroup Analysis

In the subgroup analysis, studies were categorised by age, sex, education level, region, and investigation time. The results were shown in Table 2.

In the subgroup analysis by age, the study participants were divided into three groups: 60–69 years old, 70–89 years old, and 80 years old or above. The data demonstrated that as the age level gradually climbed, the prevalence of dementia showed

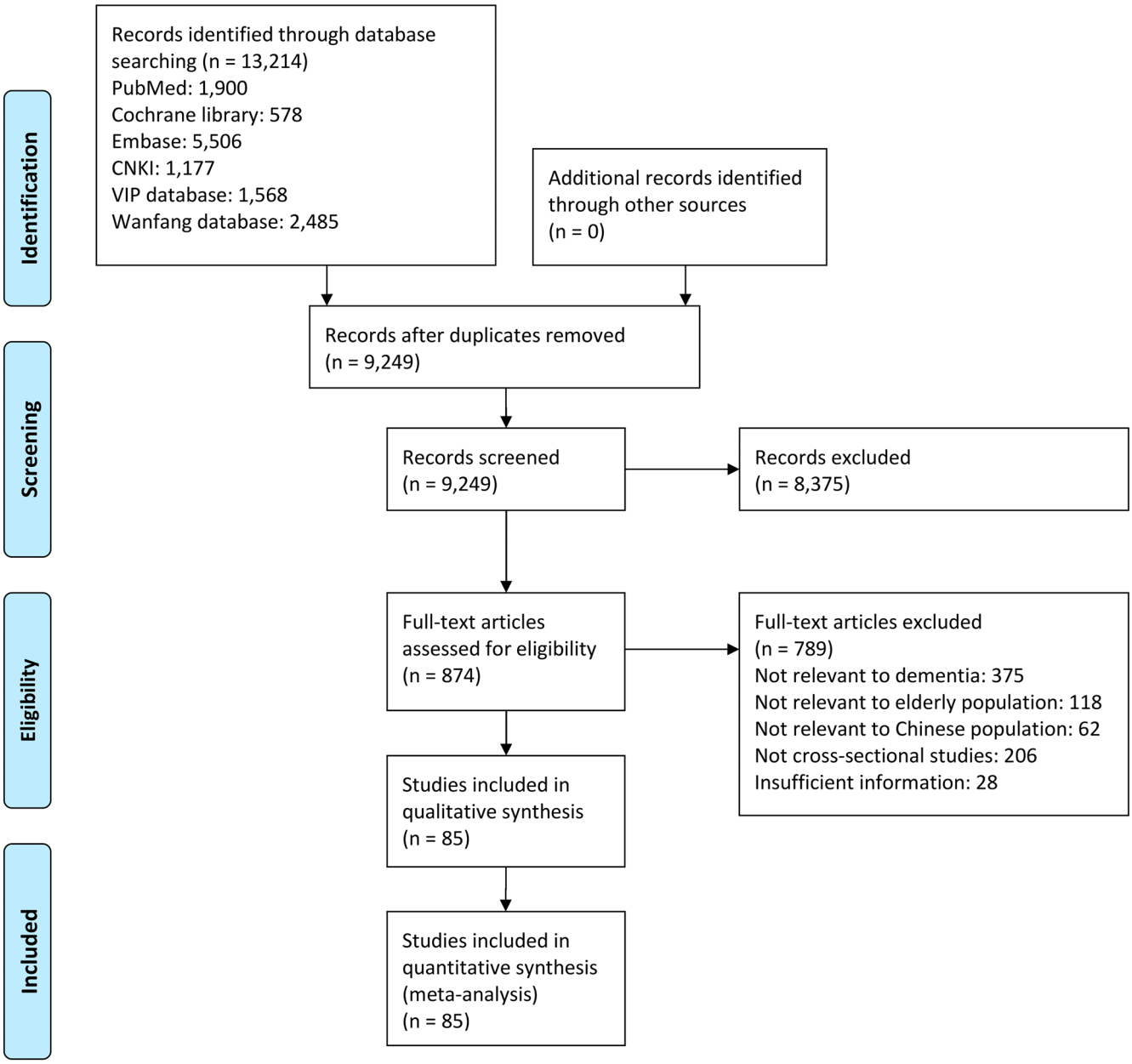

FIGURE 1 | Flow diagram of study selection.

a significant upward trend. The prevalence of dementia was highest among those aged 80 or above, reaching 17.0% (95% CI: 15.3%–18.7%).

In the subgroup analysis by sex, the study participants were divided into two groups: male and female. The data demonstrated that females had a higher prevalence of dementia than males, with the prevalence being 4.8% (95% CI: 4.2%–5.4%) in males and 7.3% (95% CI: 6.4%–8.1%) in females.

In the subgroup analysis by education level, the study participants were divided into four groups: illiteracy, primary school, secondary school, and college or above. The data demonstrated that the prevalence of dementia was highest in the illiterate group, reaching 10.9% (95% CI: 9.4%–12.4%). In addition, the prevalence of dementia was lowest among those with a college education or above, at only 2.2% (95% CI: 1.3%–3.0%).

In the subgroup analysis by region, the study participants were divided into three groups: south, midland, and north. Based on the included studies, no statistically significant differences in the prevalence of dementia were observed among these regions. In the subgroup analysis by investigation time, the study participants were divided into four groups: 1984–1993, 1994–2003, 2004–2013, and 2014–2024. The data demonstrated that although there was some overlap in the prevalence intervals of dementia in adjacent time periods, the prevalence of dementia among the elderly population in China generally exhibited an upward trend.

3.5 | Sensitivity Analysis

The sensitivity analysis was performed to evaluate the influence of each individual study on the pooled prevalence by omitting

TABLE 1 | Characteristics of all studies included in the meta-analysis.

First author, published year	Province/municipality	Age (yr)		Male ratio (%)	Dementia	Sample	Diagnosis criteria	*
		Inclusion criteria	Mean age					
Hu S.M. (2024) [10]	Beijing	≥65	74.3	46.1	167	2935	MMSE	8
Gan J.H. (2024) [11]	Tianjin	≥65	—	43.9	1868	20438	—	8
Jiang B. (2024) [12]	Fujian	≥65	78.6	38.0	1082	20070	MMSE, CDR	8
Pan P. (2024) [13]	Tianjin	≥65	—	41.1	140	1023	MMSE, DSM-IV	7
Yao X.H. (2024) [14]	Anhui	≥65	73.7	49.8	230	1761	ICD-10	8
Xiong Y.B. (2024) [15]	Sichuan	≥60	—	46.0	183	5917	CSI-D	7
Zhao X.L. (2024) [16]	Guizhou	≥65	74.3	50.1	671	2712	MMSE, DSM-IV	8
Xu T.Y. (2024) [17]	Hunan	≥60	—	—	150	2598	MMSE, CDR	7
Yang M.L. (2023) [18]	Hebei	≥65	—	—	865	10829	CMDS	6
Zhou F.K. (2023) [19]	Hebei	≥65	—	45.9	595	8221	China's Dementia and Cognition Obstacle diagnosis guide	9
Liu R. (2023) [20]	Shandong	≥65	—	42.9	173	4742	DSM-IV	9
Chen H. (2023) [21]	Zhejiang	≥60	—	—	638	8546	CHARLS-HCAP	4
Xu S. (2023) [22]	Shandong	≥65	—	—	199	3189	DSM-IV, SYS-AD	9
Song Y.H. (2023) [23]	Fujian	≥65	—	—	490	6430	MMSE	4
Cheng M.H. (2023) [24]	Gansu	≥60	—	48.8	81	3346	—	7
Yu Y.X. (2023) [7]	Inner Mongolia	≥60	68.0	—	103	1120	China's Dementia and Cognition Obstacle diagnosis guide	7
Gan J.H. (2022) [25]	Tianjin	≥65	74.9	42.6	919	7528	DSM-IV	8
Wang W. (2022) [26]	Shanxi	≥60	—	—	59	939	MMSE	8
Yan P.T. (2022) [27]	Hubei	≥65	72.0	45.9	595	8221	China's Dementia and Cognition Obstacle diagnosis guide	9
Shi L.Y. (2022) [28]	Guizhou	≥65	—	46.5	131	665	DSM-IV-TR	8
Wu Y.H. (2022) [4]	Jiangxi	≥60	—	—	66	2713	ICD-10	6

(Continues)

TABLE 1 | (Continued)

First author, published year	Province/municipality	Age (yr)		Male ratio (%)	Dementia	Sample	Diagnosis criteria	*
		Inclusion criteria	Mean age					
Wang R.J. (2022) [29]	Yunnan	≥60	—	59.6	103	1097	NIA-AA, DSM-5	4
Liu B.H. (2022) [30]	Heilongjiang	≥60	—	48.6	56	1752	—	5
Wang Q.Y. (2021) [31]	Zhejiang	≥60	—	42.5	148	2454	DSM-IV	6
Qi S.G. (2021) [32]	Beijing, Shanghai, Hubei, Sichuan, Guangxi, Yunnan	≥60	—	44.5	740	24117	DSM-IV	9
Huang X.Y. (2021) [33]	Zhejiang	≥60	—	50.0	431	10000	DSM-IV-TR	6
Yin L. (2020) [34]	Shandong	≥60	70.3	43.0	147	5173	DSM-IV-R	7
Jia L.F. (2020) [35]	Three main geographical domain (South, North and West)	≥60	70.3	49.7	2766	46011	DSM-IV-R	9
Huang (F.Y. 2019) [36]	Henan	≥60	67.1	43.2	245	6419	DSM-I, CCMD-3	9
Xing A.Q. (2019) [37]	Hainan	>60	—	50.0	415	10000	DSM-IV-R	5
Deng J. (2018) [38]	Chongqing	≥60	—	39.5	186	1781	MMSE	9
Qu L.K. (2017) [39]	Hubei	≥60	69.6	49.0	71	1901	MMSE	7
Liu Y. (2017) [40]	Hunan	≥65	73.7	47.0	140	2600	DSM-IV	8
Lou Y.J. (2016) [41]	Guangdong	≥60	73.7	56.5	137	3224	ICD-10	5
Yang L. (2016) [42]	Zhejiang	≥65	79.5	42.2	444	2015	NIA-AA	8
Ji Y. (2015) [43]	Tianjin	≥60	—	44.5	429	5578	DSM-IV	8
Chu A.Q. (2015) [44]	Shanghai	≥65	—	48.8	50	842	MMSE	4
Li C.H. (2015) [45]	Tianjin	≥60	—	43.1	228	2532	DSM-IV	6
Li H.H. (2015) [46]	Guangxi	≥60	68.4	43.8	59	889	DSM-IV-TR	7
Liao J. (2015) [47]	Jiangxi	≥60	72.3	49.2	612	9733	ICD-10	6
Shang Y. (2015) [48]	Qinghai	≥60	—	—	61	3982	DSM-IV	9
Wang Z.Q. (2014) [49]	Zhejiang	≥60	—	48.3	132	1906	ICD-10	6
Ge X.P. (2014) [50]	Hunan	≥60	—	—	349	8204	DSM-IV-TR	7
Ding D. (2014) [51]	Shanghai	≥60	72.3	45.8	156	3141	DSM-IV	7

(Continues)

TABLE 1 | (Continued)

First author, published year	Province/municipality	Age (yr)		Male ratio (%)	Dementia	Sample	Diagnosis criteria	*
		Inclusion criteria	Mean age					
Jia J.P. (2014) [52]	Jilin, Beijing, Henan, Guizhou, Guangdong	≥65	—	42.6	528	10276	DSM-IV	9
Sun Y. (2014) [53]	Taiwan	≥65	76.2	47.7	929	10432	NIA-AA	9
Xue H.B. (2013) [54]	Shanghai	≥65	—	—	1271	13942	DSM-IV	6
Ma Y. (2013) [55]	Shanghai	≥65	75.8	46.3	206	2442	DSM-IV, ICD-10	7
Sun H.X. (2012) [56]	Shanghai	≥60	69.7	45.2	79	1472	DSM-IV-TR	7
Chen R.L. (2012) [57]	Anhui, Shanghai, Shanxi, Guangdong, Heilongjiang	≥65	—	44.9	551	6244	GMS-AGECAT	7
Fan Q.H. (2011) [58]	—	≥60	—	61.7	64	1826	DSM-IV	6
Kang M.Y. (2011) [59]	Hebei	≥60	70.9	53.3	263	3632	DSM-IV	7
Zheng X.X. (2010) [60]	Beijing	≥60	—	42.0	126	1756	ICD-10	5
Ji M. (2010) [61]	Shanghai	≥65	75.2	43.7	1228	15129	DSM-IV	7
Li H. (2009) [62]	Fujian	≥65	—	40.9	197	2696	DSM-IV	9
Chen B. (2009) [63]	Fujian	≥60	71.1	43.8	141	2373	DSM-IV	9
Wang H.Y. (2009) [64]	Shandong	≥60	—	34.1	52	618	DSM-IV	7
Llibre R. (2008) [65]	Beijing, Heilongjiang	≥65	—	43.7	59	2162	DSM-IV	7
Yan F. (2008) [66]	Beijing	≥65	73.0	43.0	48	1160	ICD-10	7
Li K.Q. (2008) [67]	Hebei	≥65	—	51.7	218	2126	DSM-IV	7
Huang W.Y. (2007) [68]	Guizhou	≥60	70.2	38.0	64	3229	DSM-IV	8
Tang M.Y. (2007) [69]	Guangdong	≥60	—	41.2	183	4697	DSM-IV	9
Tan J.H. (2007) [70]	Hubei	≥60	—	—	102	2989	DSM-III-R	7
Yuan Y.F. (2005) [71]	Jiangxi	≥60	67.9	49.5	89	2126	ICD-10	7
Tang M.N. (2005) [72]	Sichuan	≥60	—	—	102	2989	DSM-III-R	7
Chen W.X. (2004) [73]	Hainan	≥60	70.3	49.0	92	12628	DSM-III-R	7

(Continues)

TABLE 1 | (Continued)

First author, published year	Province/municipality	Age (yr)		Male ratio (%)	Dementia	Sample	Diagnosis criteria	*
		Inclusion criteria	Mean age					
Liang L.J. (2003) [74]	Guangdong	≥60	—	42.2	65	1418	DSM-IV	7
Wang D.Q. (2002) [75]	Guangdong	≥60	—	46.9	80	1524	DSM-IV	5
Zou K.L. (2002) [76]	Chongqing	≥65	—	40.2	87	1519	DSM-IV-R	7
Wang W.Z. (2000) [77]	Beijing	≥60	—	41.7	134	5003	DSM-III-R, ICD-10	7
Fan J.X., (2000) [78]	Jiangsu	≥60	69.7	48.6	48	3268	DSM-III-R	7
Li Z.J. (1999) [79]	Beijing	≥60	—	36.2	63	1027	DSM-III-R	7
Li S.R. (1999) [80]	Beijing	≥60	70.4	43.8	40	1593	ICD-10	7
Wang T.X. (1999) [81]	Anhui	≥65	—	36.3	145	2749	ICD-10, CCMD-II-R	7
Chiu H.F. (1998) [82]	Hong Kong	≥70	—	—	54	858	DSM-IV	8
Lv S.C. (1998) [83]	Zhejiang	≥60	—	48.7	119	1689	RDCD	9
Lin R.T. (1998) [84]	Taiwan	≥65	72.1	52.6	108	2915	ICD-10	8
Liu H.C. (1997) [85]	Taiwan	≥65	—	—	44	1736	DSM-III-R	6
Xue G.H. (1997) [86]	Guangdong	≥60	—	48.1	47	3285	DSM-III-R	8
Liu H.C. (1995) [87]	Taiwan	≥60	—	—	29	2288	DSM-III-R	6
Gao Z.S. (1994) [88]	Hunan	≥60	—	50.7	44	5125	DSM-III	6
Gao Z.X. (1993) [89]	Shanghai	≥60	—	39.7	159	3779	DSM-III-R	8
Kuang X.F. (1993) [90]	Jiangxi	≥60	—	—	85	2308	DSM—III	4
Mao R.H. (1993) [91]	Fujian	≥60	—	39.7	58	1982	DSM-III-R	7
Chen C.H. (1992) [92]	Beijing	≥60	68.9	46.1	39	5172	DSM-III	7

Abbreviations: CCMD, Chinese Classification of Mental Disorders; CDR, Clinical Dementia Rating; CHARLS-HCAP, China Health and Retirement Longitudinal Study and Harmonised Cognitive Assessment; CMDS, Comprehensive Medical Diagnostic System; CSI-D, Community Screening Instrument for Dementia; DSM, Diagnostic and Statistical Manual; GMS-AGECAT, General Movements-Automated Geriatric Examination for Computer Assisted Taxonomy; ICD, International Classification of Diseases; MMSE, Mini-Mental State Examination; NIA-AA, National Institute on Aging and the Alzheimer's Association; RDCD, Research Diagnostic Criteria for Dementia; SYS-AD, Shandong Yanggu Study of Aging and Dementia.

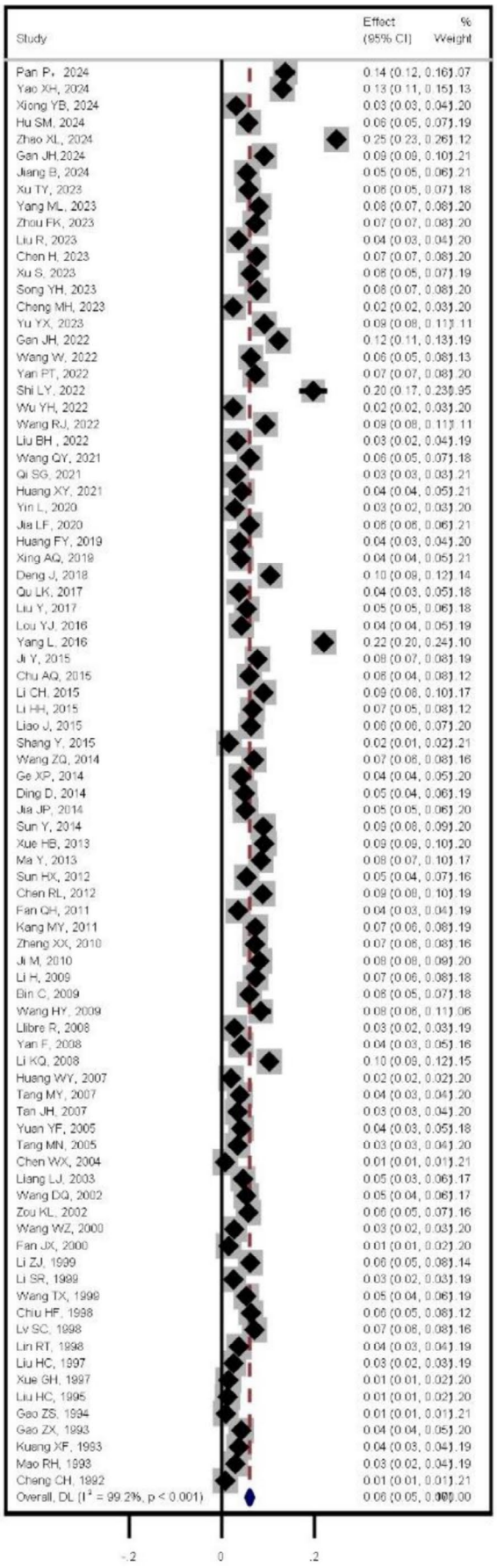

FIGURE 2 | Forest plot of the prevalence of dementia among the elderly in China.

every single study. The results indicated that the pooled prevalence was not unduly influenced by any single study.

3.6 | Publication Bias

Publication bias was assessed using a funnel plot and Begg's test. Both methods suggested the presence of publication bias, as indicated by significant asymmetry in the funnel plot and a statistically significant result from Begg's test ($z = 3.59$, $p < 0.01$).

4 | Discussion

The dementia among the elderly in China is concerning, and addressing this pressing public health crisis is urgent. This issue not only concerns the physical and mental well-being of the elderly population but also is closely linked to the clinical practice of psychogeriatrics and the establishment of multidisciplinary care systems, requiring coordinated responses across medical, psychosocial and other dimensions. At the individual level, dementia often leads to rapid loss of cognitive and self-care abilities in the elderly, but also triggers mental and behavioural symptoms such as depression and anxiety [93]. This situation underscores the necessity of providing targeted psychogeriatric interventions and psychosocial support. On the economic and social fronts, dementia among the elderly imposes a heavy burden. This includes direct costs from diagnosis, treatment, medication, and professional care, as well as the loss of caregivers from the workforce [94]. To address these issues effectively, building a multidisciplinary collaboration system that integrates medical care, nursing, psychology, and social work is a feasible path to enhance prevention and treatment efficacy and reduce the overall disease burden [95]. Therefore, the findings of this study can serve as a valuable reference for understanding the prevalence of dementia among older adults in China, while also providing a theoretical foundation for developing comprehensive intervention strategies rooted in the framework of psychogeriatrics and integrated with psychosocial support—holding promise to provide effective backing for alleviating the disease burden and improving health outcomes in this population.

In recent years, dementia has become increasingly prevalent among the elderly. A 2013 systematic review indicated that 5%–7% of the global population aged 60 and above suffered from dementia. Furthermore, in 2010, 58% of all people with dementia lived in countries with low or middle incomes, with this proportion anticipated to rise to 63% in 2030 and 71% in 2050 [96]. Moreover, it may be expected to double every 20 years. As a result, dementia has been recognised as a public health priority [97]. At present, China, still at the middle-income level, is among the countries with the most serious aging populations in the world. According to the 2019 Global Burden of Disease Study, the number of dementia patients in China had reached 15.6 million, surpassing one-quarter of the global total [3]. Therefore, it is imperative to comprehensively understand the prevalence of dementia among the elderly population in China. Currently, though the prevalence of dementia among the elderly population in China has been reported by numerous researchers, the results vary. This is because different studies have incorporated different factors, such as surveyed regions, research protocols, sample

TABLE 2 | Subgroup analysis of dementia prevalence among the elderly in China.

Subgroup	Number of studies	Prevalence (%)	95% CI (%)		Heterogeneity	
			Lower	Upper	*p*	I^2 (%)
Age (years)						
60–69	55	2.5	2.1	2.8	<0.001	97.1
70–79	54	6.1	5.3	6.8	<0.001	97.2
≥80	54	17.0	15.3	18.7	<0.001	95.6
Sex						
Male	65	4.8	4.2	5.4	<0.001	97.9
Female	65	7.3	6.4	8.1	<0.001	98.8
Education level						
Illiteracy	35	10.9	9.4	12.4	<0.001	97.9
Primary school	31	4.1	3.4	4.8	<0.001	96.1
Secondary school	21	3.9	3.0	4.8	<0.001	96.6
College or above	16	2.2	1.3	3.0	<0.001	86.7
Region						
South	46	6.0	5.1	6.9	<0.001	99.2
Midland	23	5.8	4.6	7.1	<0.001	98.8
North	10	5.9	4.6	7.2	<0.001	97.0
Investigation time (year)						
1984–1993	7	2.5	1.5	3.4	<0.001	97.2
1994–2003	15	4.2	3.1	5.3	<0.001	98.1
2004–2013	21	6.8	5.7	7.9	<0.001	98.0
2014–2024	33	7.1	6.2	8.1	<0.001	99.1

sizes, and diagnostic criteria for dementia. At this juncture, it is necessary to employ a representative and reliable analytical method to conduct a comprehensive assessment of the prevalence of dementia among the elderly population in China.

In the study, 85 articles were included with a total of 435476 participants. The heterogeneity test results indicated significant heterogeneity, which was consistent with other meta-analyses regarding the prevalence of dementia. The pooled prevalence of dementia was 6.0% (95% CI: 5.4%–6.6%). A meta-analysis of 48 articles in China in 2020 showed that the prevalence of dementia in the elderly was 5.3% (95% CI: 4.5%–6.0%) [98], which was lower than the results of this study. It demonstrates that the prevalence of dementia among the elderly population has increased, and it warrants greater attention from us.

In the subgroup analysis by age, the prevalence tended to increase with age, which is consistent with previous research results [6, 99]. In the subgroup analysis by sex, the prevalence of dementia in females was higher than that in males. It indicates that females have a higher risk of dementia than males in the elderly population. This is consistent with the research results of Podcasy J et al. [100] and Mielke M et al. [101], as well as the global trend [3]. In the subgroup analysis by education, the prevalence of dementia in illiterate individuals was the highest. This is consistent with the research results of Dong Y et al. [6]. In the subgroup analysis by region, no statistically significant difference was observed in the prevalence of dementia among the south, midland, and north. This is consistent with the research conducted by Wu Y et al. [102]. In the subgroup analysis by investigation time, even though there was some overlap in the prevalence intervals of dementia in adjacent time periods, the prevalence of dementia among the elderly population in China generally exhibited an upward trend. However, this trend is likely the result of a combination of genuine changes in the prevalence of dementia and methodological advancements, the latter including the update of diagnostic criteria, advancements in case identification, and increased public participation. However, the respective contributions of these factors cannot be quantified based on existing data.

Although this study has ensured the standardisation of all operations during the use of meta-analysis, there may still be issues that may affect the research results. Firstly, the high heterogeneity observed in this study is a well-established limitation in the field of dementia prevalence research. While subgroup analyses were conducted to explore these sources of heterogeneity, the impact of fundamental differences in diagnostic approaches

could not be fully resolved. This situation reveals that dementia prevalence is influenced by a range of highly complex factors. Therefore, future research designs need to be more refined, such as standardised diagnostic criteria and finer population stratification, to yield more actionable findings. Secondly, the literature included mainly focuses on the southern region of China, with relatively few in the midland, which may limit the assessment of regional differences. Additionally, the results of Begg's test and the asymmetry of the funnel plot suggest the potential existence of publication bias, meaning that small-sample studies with negative results or non-significant effect sizes may not have been published. This situation could lead to an overestimation of the pooled effect size. Notably, the high heterogeneity observed in this study is another known factor that may cause funnel plot asymmetry. Therefore, the observed asymmetry may reflect the combined effects of both publication bias and heterogeneity, and caution should be exercised when interpreting it. Furthermore, as the demarcation of education level in some literature is ambiguous, making it difficult to determine the exact education level of patients, we did not include such studies in the subgroup analysis regarding education level. This situation may have an impact on the exploration of the relationship between education level and the prevalence of dementia. Finally, we found some studies cannot obtain complete information on age, sex, education level, region, and investigation time, which may affect the exploration of heterogeneity sources. Despite these limitations, our large sample study included 85 studies and 435 476 participants, providing strong statistical power. Therefore, this study provides a valuable estimate of dementia prevalence among the elderly in China, but this estimate should be interpreted with caution due to the observed heterogeneity.

5 | Conclusion

In conclusion, the prevalence of dementia among the elderly in China is 6.0%. Moreover, taking 10 years as an age group, we find that as the age level gradually climbs, the prevalence of dementia shows a significant upward trend. Females have a higher prevalence than males, and individuals with lower education levels have a higher prevalence than those with higher education levels.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author.

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