Mental health of older migrants migrating along with adult children in China: a systematic review

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Abstract

Due to urbanisation in China, about 7.74 million older people have migrated to urban centres, where their adult children reside and work, to care for their grandchildren. While older migrants may benefit from family reunion and mutual support, empirical studies have identified challenges to adaptation, integration and mental health. Employing a systematic literature review approach, this paper examines recent empirical studies on the mental health of older migrants migrating along with adult children in China, focusing on mental health and wellbeing outcomes and determinants and directions for social work interventions. It identifies directions for considering diversity in conceptualisations of mental health and in theoretical perspectives to enrich understanding of the experiences of Chinese older migrants migrating along with adult children and potential interventions.

Keywords: mental health; Chinese older migrants; migrating along; systematic review

Introduction

Due to urbanisation in China, about 7.74 million older people have left their hometowns for urban centres, where their adult children reside and work, to care for grandchildren (National Health and Family Planning Commission, 2016). These older people migrating along with adult children are generally of retirement age, from 50 to over 70 years old, and live in cities for an indefinite period of time without changing their registration status from their hometown.

This group of older migrants is a population with particular experiences, motivations, challenges and needs. Their motivation for migration is mainly to take care of grandchildren without payment, and their migration pattern is in line with that of their adult children: from rural areas to urban areas, from small cities to large cities, and from economically undeveloped areas to economically developed areas (Zhang and Zhou, 2013). To some extent, migration to care for grandchildren is attributed to insufficient resources for child care in Mainland China and seen as a kind of sacrifice of self-interest (Wang, 2015) as older people bear the double

burden of care-giving and adaptation to a new environment. Therefore, they are quite different from other younger migrants who experience migration at a younger age for better jobs and socio-economic promotion. They also differ from other older migrants in 'developed' countries and areas who move to better climate or lower-cost areas for a better retirement life (Zhang and Zhou, 2013).

Given the cultural virtues of filial piety and familial care, the phenomenon of older people migrating along with adult children in China is often considered a positive manifestation of traditional support and values. These older migrants may be viewed as a happy group due to benefits associated with family reunion and reciprocal support from adult children. However, an increasing number of studies (Yao and Wang, 2010; Chen, 2014; Liu and Chen, 2015b; Bao, 2017; Xu, 2017a) describe challenges facing these older migrants and resultant mental health impacts. This group's social adaptation difficulties have become an important area of focus for researchers, social workers and other social actors in Mainland China.

However, there is a lack of national-level surveys or systematic reviews about these older migrants' mental health and systematic national or local government services and policies for them. Therefore, a systematic review of mental health outcomes and determinants and suggestions for interventions can encourage government and organisations to develop targeted policy and services to support this group of older people. This is an important issue given that the migration of older people to urban settings is a growing trend, given the increasing number of older people in Mainland China moving to urban centres and the prevailing familial culture of maintaining close connections within extended families, especially as a result of the one child policy in China (Wu, 2013).

Previous research in China has predominantly focused on mental health problems and negative experiences of these older migrants (Liu and Chen, 2015b; Guo, 2016) and the different migration patterns from the perspective of demographic studies (Zhang and Zhou, 2013; Dou and Liu, 2017; Liang and Guo, 2018), or perspectives on social integration and social adaptation (Liu and Chen, 2015a; Liu, 2016). This systematic review aimed to enrich migration research on the ageing population in China by capturing both the positive and negative mental health outcomes reported in ageing migrants.

Conceptualisations of mental health

Mental health or mental wellbeing, reflecting the equilibrium between an individual and their environment in a broad sense (Dodge *et al.*, 2012), is an important topic in social science research and policy making. The World Health Organization (WHO) defines mental health as a state of wellbeing in which an individual realises their own abilities, copes with life stresses, works productively and fruitfully, and contributes to community (Stenius, 2007; WHO, 2018). The WHO explains that mental health is an integral part of health and involves more than the absence of mental illness. Mental health can be understood in terms of either negative mental health or positive mental health, with the former encompassing mental disorders, symptoms and problems, and the latter considering mental health as a resource enabling individuals to experience life as meaningful and to be creative and productive members of society (Stenius, 2007).

As a broad concept, positive mental health is often considered to include emotional (affect/feeling), psychological (positive functioning), social (relations with others and society), physical (physical health) and spiritual (sense of meaning and purpose in life) aspects of wellbeing (Barry, 2008). Keyes (2013), for example, conceptualises positive mental health as including three dimensions of emotional, psychological and social wellbeing, which can be assessed according to three statuses: flourishing, moderate and languishing. Emotional wellbeing is defined in terms of perceptions of happiness and satisfaction with life and the balancing of positive and negative affect. Conceptualised as a primarily private phenomenon, psychological wellbeing focuses on challenges encountered by individuals in their personal lives, including self-acceptance (evaluation of oneself and one's past life), self-growth (sense of continued growth and development), purpose in life (belief that one's life is purposeful and meaningful), positive relations with others, environmental mastery (capacity to manage one's life and surrounding world effectively) and autonomy (sense of self-determination). As a more public experience, social wellbeing focuses on tasks encountered by individuals in their social structures and communities, including social integration, contribution, coherence, actualisation and acceptance (Keyes, 2013). Keyes (2013) suggests that positive mental health and mental illness constitute distinct axes, rather than opposite ends of a single continuum.

In Chinese contexts, mental health is a 'borrowed' concept and often used to refer to the presence or absence of psychopathology (Yin *et al.*, 2013). However, according to the WHO's definition and broader conceptualisations of mental health, mental health ought to be understood in terms of not only negative mental health but also holistic wellbeing that includes emotional, psychological and social dimensions. To review comprehensively the wellbeing of older people migrating along with adult children in China, this study adopted the WHO's perspective of mental health. It reviewed two aspects of mental health: positive mental health, based on indicators such as subjective happiness or wellbeing, life satisfaction and quality of life, and negative mental health, based on indicators such as depression or anxiety. In addition, literature on emotional, psychological and social wellbeing as main dimensions of positive mental health within Keyes' framework was reviewed. An integrated conceptual framework of mental health and mental ill-health of Keyes (2013) and Stenius (2007) that guided this review is shown in Table 1.

Review objectives and procedures

This paper reviews recent empirical research on the mental health of older people migrating along with adult children in China. It aims to: (a) review mental health and wellbeing outcomes associated with migration; (b) examine determinants related to the wellbeing of older people migrating along with adult children; and (c) identify social work interventions or strategies for addressing needs and challenges facing these older migrants.

Review strategies and processes

Literature search
Literature was identified from ten journal databases: CAJ Full-text Database (in Chinese), CINAHL Complete, Medline via EbscoHost, PsycInfo, Sociological

Table 1. Conceptual framework of mental health

	Sub-dimensions	Elements	Definitions/explanations
Mental ill-health			Mental ill-health is about mental disorders, symptoms and problems
Positive mental health	Emotional wellbeing		A specific dimension of subjective wellbeing that consists of perceptions of avowed happiness and satisfaction with life and the balancing of positive and negative affects
	Psychological wellbeing (self-report about the quality with which they are functioning in their lives)	Self-acceptance	A positive evaluation of oneself and one's past life
		Self-growth	A sense of continued growth and development as a person
		Purpose in life	The belief that one's life is purposeful and meaningful
		Positive relations with others	The possession of, or the ability to cultivate, warm, trusting, intimate relationships with others
		Environmental mastery	The capacity to manage effectively one's life and surrounding world
		Autonomy	A sense of self-determination
	Social wellbeing (a more public experience that is focused on the social tasks encountered by individuals in their social structures and communities)	Social integration	The evaluation of the quality of one's relationship to society and community, including feeling something in common with others who constitute their social reality, as well as degrees to which they feel that they belong to their communities and society
		Social contribution	The evaluation of one's value to society, including the belief that one is a vital member of society, with something of value to give to the world
		Social coherence	The perception of the quality, organisation and operation of the social world, including a concern for knowing about the world
		Social actualisation	The evaluation of the potential and the trajectory of society
		Social acceptance	The construal of society through the character and qualities of other people as a generalised category

Source: Stenius (2007) and Keyes (2013).

Abstracts, Social Services Abstracts, Social Sciences Citation Index (SSCI), Science Direct, Scopus and Web of Science. Chinese key words *sui qian lao ren* (*i.e.* older people migrating along) and *lao piao zu* (*i.e.* a group of older people drifting along), which are the only two major Chinese terms referring to older people in China moving from place to place along with or due to their adult children, were used to search the CAJ database, and English key words (mental health or depression or depressive or anxiety or life satisfaction or life quality and ageing or older or elderly and migrant or migration and China) were used to search the other databases. Search-refining conditions included peer-reviewed English-language and Chinese-language articles published from 2008. In China, the first published paper using the term *sui qian lao ren* (*i.e.* older people migrating along) and *lao piao zu* (*i.e.* a group of older people drifting along) appeared in 2010 and 2011, respectively. As scholars might have published in non-Chinese journals earlier than 2010, the search for this current study covered the ten-year period from January 2008 to January 2018 when this study was completed. A total of 226 titles were identified through database searches and screened (Figure 1). Based on Stage 1 exclusion criteria (*i.e.* duplicate articles, articles not related to the mental health of older people migrating along with adult children in China), 201 articles were identified as potentially relevant after a brief review of titles and abstracts, a process adopted in other systematic reviews (Evans *et al.*, 2012; Peek *et al.*, 2014; Lai *et al.*, 2017; Xiao and Watson, 2017).

Assessment of eligibility

After screening the abstracts and full texts of these 201 articles, 163 articles were excluded that did not meet Stage 2 inclusion criteria: (a) original empirical studies with research methods explicitly reported; (b) focus on older people migrating along with adult children and their wellbeing, including at least one research objective; (c) either qualitative or quantitative studies; and (d) full text was accessible. Thirty-eight articles were retained. Different Chinese and English names used for this older migrant group were noted. In addition to *sui qian lao ren* and *lao piao zu*, terms such as *yi ju lao ren* ('migrating older people') and *liu dong lao ren* ('mobile older people') were used in studies of elderly migration in Mainland China. A 'forward and backward search' was conducted to identify papers that may have been missed in Stage 1, by identifying references cited in the 38 reviewed papers (forward search) and papers citing these 38 publications (backward search). No new articles were found.

All strategies and processes conducted in this review complied with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher *et al.*, 2009).

Search results

Thirty-eight studies were reviewed, including three English and 35 Chinese articles (Table 2). Only nine studies directly examined mental health and influencing factors (based on key words such as depression, quality of life, subjective happiness, *etc.*) and 23 referred to at least one dimension of positive mental health (emotional wellbeing, psychological wellbeing or social wellbeing). The other six papers focused on general wellbeing or living status with reference to the mental status
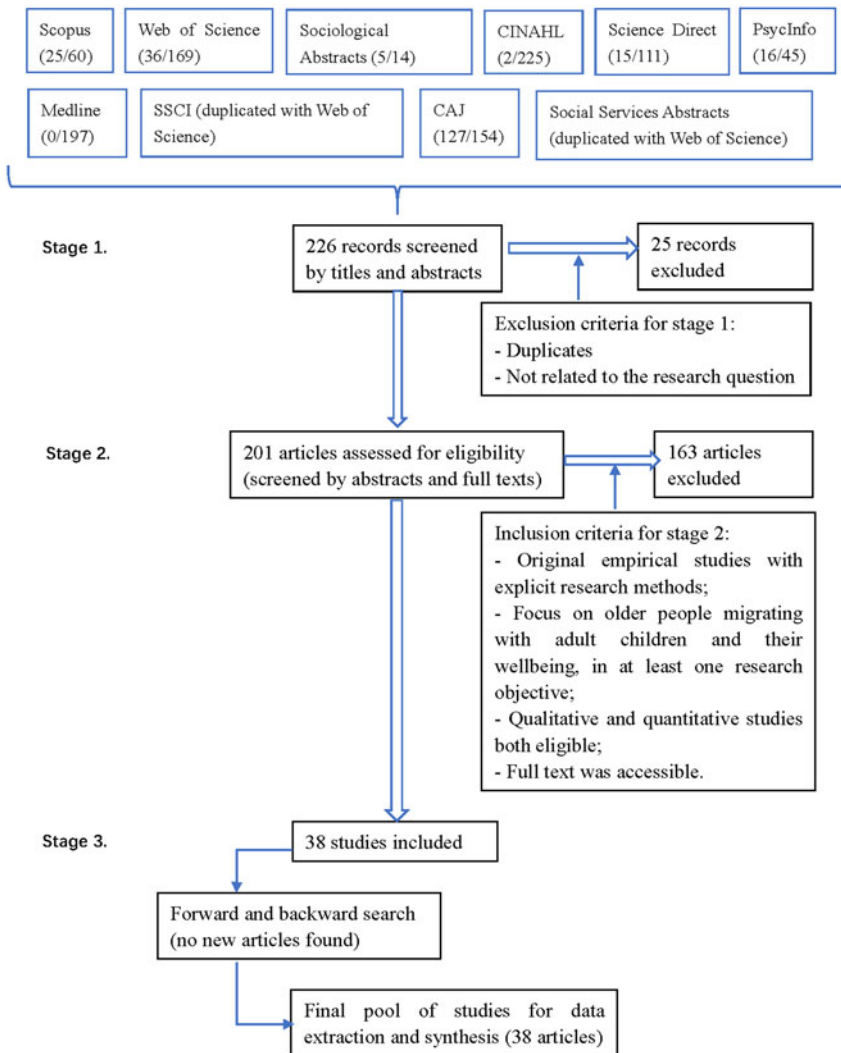
Figure 1. Literature search review diagram.
Note: SSCI: Social Sciences Citation Index.

and surroundings of the studied group. Seventeen studies used quantitative methods and 20 used qualitative methods, with only one using mixed methods. Samples in these 38 studies were mainly from economically developed areas and large cities, reflecting labour migration trends in China: from rural areas to urban areas, from small cities to large cities, from economically undeveloped areas to economically developed areas (Zhang and Zhou, 2013). For example, 26 studies were carried out in Beijing and south-east coastal areas (such as Shanghai, Jiangsu Province, Zhejiang Province, Fujian Province and Guangdong Province) and ten were

Table 2. General description of reviewed articles

No.	Source	Research method	Geographical location	Mental ill-health Indicator(s)	(Positive) mental health Indicator(s)	Emotional wellbeing	Psychological wellbeing	Social wellbeing	Others
1	Bao (2017)	Qualitative interview (N = 20)	Lanzhou, Gansu Province					✓	
2	Chen (2015)	Quantitative questionnaire (N = 280) and qualitative interview (N = 30)	Fuzhou, Fujian Province				✓	✓	
3	Chen (2014)	Qualitative interview (N = 30)	Fuzhou, Fujian Province					✓	
4	Chen et al. (2017)	Qualitative interview (N = 18)	Fuzhou, Fujian Province						Self-report of adaptation
5	Deng and Wang (2016)	Quantitative questionnaire (N = 50)	Hangzhou, Zhejiang Province		Quality of life				
6	Di and Fu (2017)	Quantitative questionnaire (N = 429)	Xian, Shanxi Province					✓	
7	Guo and Wei (2015)	Quantitative questionnaire (N = 190)	Guangxi Province			✓			Self-report of mental life satisfaction
8	Guo (2016)	Qualitative, ethnography	Shanxi Province			✓	✓		

9	He (2014)	Qualitative interview (N = 20)	Shanghai		✓	✓	✓	
10	Hu et al. (2013)	Quantitative questionnaire (N = 568)	Wuxi, Jiangsu Province	Quality of life				
11	Li et al. (2011)	Quantitative questionnaire (N = 180)	Nanjing, Jiangsu Province				✓	
12	Li (2017)	Qualitative interview	Changsha, Hunan Province		✓	✓	✓	
13	Li et al. (2017)	Quantitative questionnaire (N = 2,570)	Hangzhou, Zhejiang Province	Depression				
14	Liu (2014)	Quantitative questionnaire (N = 712)	Wuhan, Hubei Province				✓	
15	Liu and Chen (2015b)	Quantitative questionnaire (N = 1,000)	Shenzhen, Guangdong Province	Depression and anxiety				
16	Liu et al. (2015)	Quantitative, data-sets analysis	Shanghai					Wellbeing
17	Liu (2016)	Qualitative interview (N = 24)	Beijing		✓		✓	
18	Song et al. (2017)	Quantitative questionnaire (N = 200)	Suzhou, Jiangsu Province				✓	

(*Continued*)

Table 2. (Continued.)

				Indicators/dimensions of mental health					
				Mental ill-health	(Positive) mental health				
No.	Source	Research method	Geographical location	Indicator(s)	Indicator(s)	Emotional wellbeing	Psychological wellbeing	Social wellbeing	Others
19	Sun (2015)	Qualitative interview (N = 20)	Langfang, Hebei Province				✓	✓	
20	Tong et al. (2017)	Quantitative questionnaire (N = 61)	Hangzhou, Zhejiang Province	Depression					
21	Q Wang (2017)	Quantitative questionnaire (N = 11,111)	China						Health
22	XY Wang (2017)	Quantitative questionnaire (N = 381)	Jiangsu Province		Happiness index				
23	Wang and Li (2017)	Quantitative questionnaire (N = 381)	Jiangsu Province			✓	✓		
24	Wang and Yin (2016)	Quantitative questionnaire (N = 401)	Guangzhou, Guangdong Province					✓	
25	Wen and He (2016)	Qualitative interview (N = 10)	Luzhou, Sichuan Province			✓	✓	✓	

26	Xia and Xia (2015)	Qualitative interview (N = 174)	Hefei, Anhui Province		✓	✓		
27	Xu *et al.* (2014)	Quantitative questionnaire (N = 725)	Beijing	Subjective happiness				
28	Xu (2017*a*)	Qualitative interview (N = 10)	Jiangsu Province		✓	✓	✓	
29	Xu (2017*b*)	Quantitative questionnaire (N = 452)	Jiangsu Province			✓	✓	
30	Yang and Zhang (2015)	Qualitative interview (N = 10)	Guangzhou, Guangdong Province					Subjective feelings of policy exclusion
31	Yao and Wang (2010)	Qualitative interview (N = 18)	Nanjing, Jiangsu Province				✓	
32	Yi and Xue (2017)	Quantitative questionnaire (N = 154)	Chongqing		✓	✓	✓	
33	Zeng (2017)	Qualitative interview (N = 18)	Guangzhou, Guangdong Province				✓	
34	Zhang and Xi (2015)	Qualitative interview (N = 36)	Jinan, Shandong Province		✓	✓	✓	
35	Zhang and Hu (2016)	Qualitative interview (N = 15)	Shanghai		✓	✓	✓	

(*Continued*)

Table 2. (*Continued.*)

| | | | | Indicators/dimensions of mental health | | | | | |
| | | | | Mental ill-health | (Positive) mental health | | | | |
| | | | | | | Emotional | Psychological | Social | |
No.	Source	Research method	Geographical location	Indicator(s)	Indicator(s)	wellbeing	wellbeing	wellbeing	Others
36	Zhang (2017)	Qualitative interview (N = 17)	Beijing			✓		✓	
37	Zhao (2013)	Qualitative interview (N = 12)	Nanjing, Jiangsu Province					✓	
38	Zou *et al.* (2013)	Quantitative questionnaire	Beijing						Physical environment

Note: N = 38.
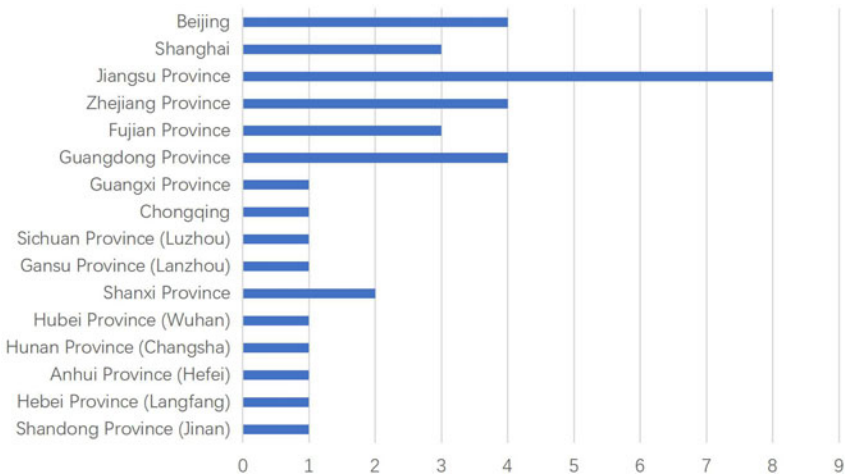
Figure 2. Distribution of the sampling areas.

conducted in western China and central China, primarily in major cities, as shown in Figure 2.

Results

Mental health and wellbeing outcomes

Negative mental health indicators

Depression was a frequently used indicator for mental health in previous literature. Three studies measured depression among older people migrating along with adult children (Liu and Chen, 2015*b*; Li *et al.*, 2017; Tong *et al.*, 2017), using the Geriatric Depression Scale (GDS-30) or Hopkins Symptoms Check List. One survey of 61 older people migrating along with adult children in Hangzhou (Tong *et al.*, 2017) reported that 41 per cent of respondents experienced some degree of depression (as measured by the GDS-30). Another study of 2,570 respondents in the same city (Li *et al.*, 2017) found that older people migrating along with adult children reported higher depression than local elders (also measured by the GDS-30), while rural–urban migrants experienced higher depression than urban–urban migrants.

Positive mental health indicators

Unlike 'Western' studies that often use diverse indicators to assess positive mental health, quality of life and subjective happiness were the only two positive indicators identified among studies of mental health of older people migrating along with adult children in China. As with results from depression measures, two surveys (Hu *et al.*, 2013; Deng and Wang, 2016) in Hangzhou and Wuxi found that older people migrating along with adult children had low quality of life. However, a survey on subjective happiness in Beijing (Xu *et al.*, 2014) showed different results, reporting significantly higher subjective happiness scores among

older people migrating along with adult children compared with local elders, although no specific explanation for this finding was provided.

Emotional wellbeing

Qualitative and quantitative studies described negative emotions affecting older people migrating along with adult children, including feelings of rootlessness produced by drifting (Liu, 2014; Guo, 2016; Wen and He, 2016; Li, 2017; Wang and Li, 2017), loneliness (Guo and Wei, 2015; Liu, 2016; Wang and Yin, 2016; Zhang and Hu, 2016; Wang and Li, 2017; Zhang, 2017), depression (Chen, 2015; Liu and Chen, 2015b; Zhang, 2017), poor self-esteem and uselessness (Sun, 2015; Zhang and Xi, 2015), frustration and anxiety (Xu, 2017a), and helplessness and confusion (Liu and Chen, 2015b). These may involve physical manifestations, such as insomnia, physical and mental exhaustion, or uncontrolled anger. In a survey of 912 older people migrating along with adult children in Shenzhen, more than 60 per cent reported at least one physical manifestation (Liu and Chen, 2015b).

Psychological wellbeing

Poor self-acceptance was frequently mentioned in previous research. Five studies (He, 2014; Sun, 2015; Zhang and Xi, 2015; Xu, 2017a, 2017b) described how older people migrating along with adult children felt they were ageing and running out of time or that they could do nothing but housework in their new place of residence (Sun, 2015). Others felt incompetent or valueless when they faced criticism or neglect by their adult children (He, 2014; Zhang and Xi, 2015; Xu, 2017a), or felt inferior when interacting with local older adults (Xu, 2017a). In one survey of 452 older people migrating along with adult children in Jiangsu Province, only 12 per cent felt satisfied with their identity (Xu, 2017b).

Another frequently mentioned issue among older people migrating along with adult children was difficulties in family and neighbourhood relationships. In one survey of 280 older people migrating along with adult children, 87 per cent of respondents reported that they rarely interacted with others in the community (Chen, 2015). Poor interactions with adult children also created feelings of loneliness, rather than intimacy (He, 2014). With respect to environment mastery, older people migrating along with adult children expressed that they could bear some kinds of inconvenience but encountered difficulties in dealing with modern household appliances and urban traffic (Xia and Xia, 2015; Zhang and Hu, 2016). They viewed their migration as an unwilling action that undermined autonomy (Guo, 2016). None of the 38 reviewed studies mentioned life growth or life purpose from the standpoint of older people migrating along with adult children, although these are two key dimensions of psychological wellbeing in Keyes' (2013) framework.

Social wellbeing

Twelve studies examined subjective feelings on social integration, although no studies referred to any of the four other dimensions of social wellbeing in Keyes' (2013) framework (social contribution, coherence, actualisation and acceptance). Eleven out of the 12 studies found that older people migrating along with adult children reported feeling no or little integration or belonging in their city of residence.

Some felt exclusion and discrimination when interacting with local older adults (Yao and Wang, 2010; Chen, 2014, 2015; Zhang, 2017) and others (especially rural–urban migrants) felt that they were 'outsiders' (Zhao, 2013; Liu, 2014; Sun, 2015; Wen and He, 2016; Xu, 2017b; Yi and Xue, 2017; Zeng, 2017). Only one survey in Xi'an, north-west China, reported different results, with 81.6 per cent of respondents self-reporting that they had integrated into the city (Di and Fu, 2017).

Determinants of mental health

Drawing on multi-level determinants in previous studies, this review adopts a systems theory framework (Gupta, 2009) to understand the determinants related to older people's mental health. These determinants are classified into five categories: individual level, family system, social system, community and residential system, and government and policy system (Table 3).

Individual-level determinants

Individual determinants included personal character, income and economic status, and physical health.

Personal character. Some qualitative studies (Liu, 2016; Bao, 2017; Zhang, 2017) suggested that older people migrating along with adult children who had an open mind and were optimistic were more likely to adapt and integrate into their new environments by attending social activities, making friends, and so on. In contrast, those who felt 'inferior' or pessimistic would be more likely to focus on their troubles and be unwilling to engage in social interaction (Zhang and Hu, 2016; Bao, 2017). However, no further quantitative studies examining this topic were available.

Income and economic status. Older people migrating along with adult children with a higher income (including salaries, pension income or support from children) were more likely to feel happy (Wang, 2017b). Those with independent income (mainly from pensions) were more likely to have harmonious relationships with co-residential adult children and report better adaptation and mental wellbeing (Zhang and Hu, 2016; Chen *et al.*, 2017). However, perceptions of relative economic status can affect mental health (Liu and Chen, 2015b). When older people migrating along with adult children perceived a gap between their economic status and the superior economic status of local elders, they felt a sense of non-belonging to their residential area.

Physical health. Qualitative studies (Liu, 2016; Zhang and Hu, 2016; Chen *et al.*, 2017) reported that older people migrating along with adult children with better physical health status were more socially adaptive and happier than those in poor health. Healthy migrants could cope better with housework and do more outside activities, which enhanced self-confidence, while those in poor health tended to feel guilty because they might be a burden to adult children.

Table 3. Key findings on determinants of mental health and wellbeing

System	Determinants	Association	References	Methodological robustness
Individual-level system	Personal character	Open mind and optimistic + Pessimistic – (to social adaptation)	Bao (2017); Liu (2016); Zhang (2017); Zhang and Hu (2016)	Qualitative findings, without quantitative confirmation
	Income and economic status	Objective income + Subjective income –	XY Wang (2017); Liu and Chen (2015b)	Regression analysis
	Physical health	Healthy physical status +	Chen et al. (2017); Liu (2016); Zhang and Hu (2016)	Qualitative findings, without quantitative confirmation
Family system	Spousal relationships	Those living together feel happier than those living apart	Liu (2016); Chen (2015)	Qualitative findings, without quantitative confirmation
	Intergenerational conflict	As a main source of stress	Bao (2017); Chen (2014, 2015); He (2014); Hu et al. (2013)	Qualitative and quantitative analysis based on self-reported results
	Family support and care-giving	As the main support source for older people migrating along, with positive effects	Bao (2017); Chen (2015); He (2014); Yi and Xue (2017)	Qualitative findings, without quantitative confirmation
Social system	Social interactions	Interaction with local elderly people – Interaction with other older migrants +	Li et al. (2017); Liu and Chen (2015b); Bao (2017)	Qualitative findings, quantitative findings without regression analysis
	Social activities	Enjoyable activities + Labour activities –	Xu et al. (2014)	Pearson analysis
Community and residential system	Community services	Lacking community services restricts social engagement as well as serving older migrants	Zhao (2013); Song et al. (2017)	Qualitative findings
	Building design and facilities	Insufficient facilities hindered interactions among older people migrating along	Zou et al. (2013)	Survey report

	Residential segregation	Residential segregation between local and migrant older adults produced disparities in wellbeing	Liu *et al.* (2015)	Quantitative analysis
Government and policy system	Medical insurance system	The most important factor among all public policies to influence the subjective happiness of older people migrating along	Wang and Li (2017)	Regression analysis
	The *hukou* system	Inequalities in *hukou* leads to social exclusion that aggravates older migrants' feelings of non-belonging and integration	Xu (2017*b*)	Survey report but without status analysis/confirmation
	Pension disparities	Disparities in pension make those with pensions more likely to be happy than those without pensions	Zhang and Hu (2016); Wang and Li (2017)	Regression analysis

Family system determinants
Family-level determinants included spousal relationships, intergenerational conflict, and family support and care-giving.

Spousal relationships. Studies of older people migrating along with adult children reported that marital partnerships influenced social adaptation (Chen, 2015; Zhang and Hu, 2016) and integration (Liu, 2016). Qualitative (Liu, 2016) and quantitative (Chen, 2015) studies found that older people migrating along with adult children and living with marital partners were more adaptive and happier than those without partners due to greater feelings of safety and belonging, and social engagement and fewer negative emotions (Chen, 2015).

Intergenerational conflict. Qualitative (Chen, 2014; He, 2014; Bao, 2017) and quantitative (Hu *et al.*, 2013; Chen, 2015) studies identified family conflict as the main source of stress for older people migrating along with adult children, hindering adaptation through negative impacts on self-esteem and withdrawal behaviours. Women tended to report conflicts with daughters-in-law over child care, educational styles and consumption behaviours (He, 2014; Zhang and Hu, 2016; Xu, 2017a).

Family support and care-giving. Due to reduced social support from friends and other relatives after migration, emotional support from adult children may become the main support source for these older people. This can have positive effects on social adaptation (He, 2014; Chen, 2015; Bao, 2017), through economic support, care in daily life activities and spiritual comfort (He, 2014). Relationships with grandchildren were also significant and meaningful for older people, providing emotional comfort and connection with adult children (Yi and Xue, 2017).

Social system determinants
Social system determinants included social interactions and social activities.

Social interactions. A survey in Hangzhou (Li *et al.*, 2017) found that lower cognitive social capital (generalised trust and reciprocity) was associated with depression and that cognitive social capital mediated the relationship between migration and depression for older people migrating along with adult children. Another survey in Shenzhen (Liu and Chen, 2015b) found that social capital affected mental health (notably depression) across three dimensions. While social engagement and trust contributed to mental health, more interactions with local older adults were associated with greater depression among older migrants due to perceptions of social inferiority and exclusion. Meanwhile, deeper interactions with other older migrants may be beneficial for adaptation (Bao, 2017).

Social activities. Only one survey in Beijing (Xu *et al.*, 2014) examined social engagement and reported that for older people migrating along with adult children, spending more time on enjoyable activities was associated with greater happiness, while spending more time on labour activities was associated with less happiness.

Community and residential determinants

Community-level determinants included community services, building design and facilities, and residential segregation.

Community services. A study in Nanjing (Zhao, 2013) reported that a lack of organisations and professional human resources hindered services for older people migrating along with adult children and restricted their social engagement. A survey in Suzhou (Song *et al.*, 2017) indicated that the biggest barrier to social interaction was not language but a 'lack of chances' in community activities.

Building design and facilities. Only one study (Zou *et al.*, 2013) in Beijing directly examined the effects of design on mental health, reporting that the needs of older people migrating along with adult children were ignored when outdoor spaces were designed. For example, a lack of marked buildings reduced their sense of direction, and insufficient facilities (*e.g.* public chairs and tables) hindered interactions among older migrants who needed to sit for a break.

Residential segregation. One study (Liu *et al.*, 2015) in Shanghai found that increased residential segregation between local and migrant older adults produced disparities in wellbeing between these two groups, although this study did not focus specifically on older migrants caring for grandchildren.

Government and policy determinants

Policy-level factors included medical insurance, *hukou* and pension systems.

Medical insurance system. One study (Wang and Li, 2017) found that, among all public policies, medical insurance was the most important factor influencing subjective happiness among older people migrating along with adult children as they may be afraid to get sick and go to hospital due to a lack of insurance and costly medical expenses. Even for those with medical insurance in their hometowns, complicated reimbursement procedures and costs of travel present significant difficulties. These institutional barriers affect the quality of life and mental health of older migrants (Yang and Zhang, 2015; Zhang and Xi, 2015; Wang, 2017*a*; Zeng, 2017).

The hukou system. Due to the institutional constraints of the *hukou* (household registration) system, older migrants are not entitled to the benefits enjoyed by local older adults, such as free public transportation and free or preferential tourist attractions. These inequalities reflect social exclusion that can aggravate feelings of non-belonging and negatively affect integration (Xu, 2017*b*).

Pension disparities. There are significant disparities in pension access in China, with older migrants from urban areas more likely to have pensions as their main source of income, and those from rural areas having no or limited pensions (Zhao *et al.*, 2016). However, this was not explicitly discussed in studies of older people migrating along with adult children. One study (Zhang and Hu, 2016) reported that rural–urban migrants without pensions depend on adult children economically,

aggravating older migrants' stress and mental burden, while urban–urban migrants with fixed monthly pensions can maintain independence and be respected as parents. Another quantitative study (Wang and Li, 2017) confirmed that older migrants with pensions are more likely to be happy than those without pensions.

Interventions and suggestions

None of the reviewed studies introduced or assessed concrete mental health interventions for older people migrating along with adult children, although some emphasised the importance of social work interventions (Zhang and Xi, 2015; Chen *et al.*, 2017; Xu, 2017*a*). Xu (2017*a*), for example, discussed social work interventions for this group of older people at three levels: (a) case work focused on psychological adaptation, using lifecourse narrative treatment and family support, (b) group work such as learning groups for urban adaptation and peer support groups, and (c) community work linking community resources and supporting engagement in social activities.

While few studies examined specific interventions, some identified suggestions for improving mental health among older people migrating along with adult children. At the *individual level*, older migrants could actively engage in social interaction and community activities to adapt to urban life (Yao and Wang, 2010; Li *et al.*, 2011; Xia and Xia, 2015; Di and Fu, 2017). At the *family level*, family members should offer more emotional support to older parents (Chen, 2014; Xia and Xia, 2015; Tong *et al.*, 2017; Zeng, 2017), encourage social activities, and teach older parents to use electronic devices to maintain connections with friends and relatives. At the *community level*, enhanced services should be established to enrich leisure time and social engagement, such as 'acquaintance communities' providing social support (Chen, 2014), self-benefit activities to empower older people to join activities (Song *et al.*, 2017) and self-aid organisations managed by older migrants themselves (Yao and Wang, 2010; Zhao, 2013; Zhang and Hu, 2016). At the *local government level*, more resources (financial and human) should be allocated to communities, to provide professional services to help older migrants rebuild social capital and improve mental and social wellbeing (Zhao, 2013; Li *et al.*, 2017). At the *national government level*, efforts should be made to eliminate discriminatory policies and improve local economic status. Institutional barriers could be reduced by improving medical insurance and *hukou* policies, through local preferential policies for older people (Zhang and Xi, 2015; Zhang and Hu, 2016; Xu, 2017*b*) and child-care policies, which support young families, prevent involuntary migration and relieve child-care duties imposed on older people (Li *et al.*, 2017).

Discussion

Mental health, a challenge for older people migrating along with adult children, has largely been overlooked by the public and in policy and research. Although no national-level survey data provide insight into the mental health of this group of older people, this systematic review showed that these older migrants face significant challenges. They reported high levels of depression, low quality of life, and negative experiences across dimensions of emotional, psychological and social

wellbeing, including feelings of rootlessness, loneliness, poor self-acceptance, lack of quality family and neighbourhood relationships, and non-belonging to their place of residence.

It is noteworthy that only two comparison studies identified in our review compared the mental health of older migrants with local older adults. While one study (Li *et al.*, 2017) showed that higher prevalence of depressive symptoms was found in migrant elderly people (31.2%; Li *et al.*, 2017), another one showed that older migrants had higher levels of subjective happiness than their local counterparts (Xu *et al.*, 2014). The contradictory results indicate that mental health should be measured by multiple indicators and consistent measurement tools. More comparison research is needed to understand better the relationship between mental health and older migrants with different socio-cultural and geographical backgrounds.

The challenges facing these older migrants have not earned sufficient attention from family members, the public, policy makers and researchers for several reasons. Firstly, older people migrating along with adult children may be labelled as a 'happier' group compared to other older groups in China (such as the 'empty-nest' elderly people, 'left-behind' elderly people who are taking care of grandchildren in rural China or older drifting workers who have to earn a living). Secondly, having no mental illness may be understood as being mentally healthy without the need for intervention. Thirdly, while most previous research has focused on adaptation or integration and the holistic status of older people migrating along with adult children, mental health as a concept is rarely mentioned and mental health problems facing these individuals are often overlooked in China. Therefore, more studies are needed to address mental health problems confronting this group of older people.

Determinants of mental health for older people migrating along with adult children require further research. Previous studies have identified positive determinants mainly at the individual and family levels: personal character, independent income, good physical health, social engagement, and familial economic and social support. Negative determinants included perceptions of inferior economic status compared with local elders, intergenerational conflict, and institutional or policy-level (medical insurance, *hukou* and pension) disparities. However, there is a need for further analysis of specific roles of key factors influencing mental health. Previous studies lack engagement with specific theoretical frameworks that could enable explanatory, rather than purely descriptive, analysis. Additionally, the lack of theoretical bases for explanatory analysis and insufficient comparative and regression analysis limit understanding of relationships and dynamics among determinants across different systems.

Strategies for addressing structural changes at community, societal and policy levels require more empirical evidence. Some studies identified recommendations to improve the wellbeing of older people migrating along with adult children: support for social engagement, community service provision (including peer support), provision of additional financial and human resources by local governments, and national efforts to eliminate discriminatory policies. These suggestions highlight the importance of older migrants' mental health as a social issue which requires changes at community, societal and policy levels. They also reflect a widening perspective on support for older migrants beyond the traditional expectation of care

responsibly borne by the family (Ngan and Kwan, 2002). However, previous studies overlook the disparities in pension institutions, while rural–urban migrants tend to have limited pension and independent income. Additionally, the necessity and priority of suggestions is weakened by the lack of supporting evidence based on explanatory or comparative analysis.

Suggestions for future research

Empirical research indicates that older people migrating along with adult children face significant challenges in emotional, psychological and social wellbeing. However, this body of research is limited given the small number of published studies (with no studies on older people migrating along with adult children published in top journals in Mainland China during review period) and lack of diversity in conceptualisations of mental health and theoretical perspectives. Four directions for future research are identified based on this review.

First, most previous research has framed older people migrating along with adult children as passive study subjects. Despite identifying a series of challenges, it has largely ignored older migrants' strength and resources. For example, as mentioned above, no reviewed studies explored how older migrants perceive their life purpose and meaning (*e.g.* how they value themselves for taking care of grandchildren) or successful cases or experiences of adaptation to a new environment in older age. Thus, future research should consider the strengths, agency and coping strategies of this group of older people.

Second, no specific research paradigms or frameworks were explicitly used in previous studies. While concepts of social integration and social capital were widely discussed, these are commonly used in studies on younger migrants. Older people migrating along with adult children have very different experiences as they are usually retired and closely bound with extended families, as discussed in overseas studies of immigrant grandparents (Chen and Lewis, 2015). Further conceptual work should examine how constructs of social integration and social capital are defined and applied in understanding older people migrating along with adult children in China, particularly given the growing phenomenon of migration and the government's aim for urbanisation covering 60 per cent of the Mainland Chinese population (Central Committee of the Communist Party of China and State Council, 2014).

Third, there is a lack of comparative analyses between sub-groups, such as rural–urban *versus* urban–urban migrants, migrant *versus* local elders and internal *versus* international older migrants who move for family reunion. More sub-group analyses could identify the uniqueness of different groups of older people migrating along with adult children and structural factors influencing mental health. This could inform more targeted policies and programmes to support older migrants better.

Finally, there is a lack of rigorous research on mental health interventions for older people migrating along with adult children and the evaluation of such intervention effects. Future research could explore the strengths and limitations of interventions for this group based on therapeutic theories (such as narrative theory, resilience theory, *etc.*) in order to understand the effects of interventions on older migrants' mental health and empowerment.

Limitations

Older people migrating along with adult children are a special group that has emerged through the process of urbanisation in China. This review identified key findings from existing research on the mental health experiences of this group, gaps in previous studies and potential directions for future research, thereby informing a better understanding of this important topic. However, some limitations should be noted. First, the number of reviewed empirical studies is relatively small, with only 38 indicating a focus specifically on the mental health of older people migrating along with adult children. Some studies lack robustness in terms of research methodologies and theoretical bases.

Another limitation concerns the different perceptions of mental health in Chinese and Western culture. The reviewed studies have not only focused on psychological health, but also extended the concept of mental health to consider individual adaptation to the new environment. Studies that focused on social adaptation, social integration and mental health of older people migrating along with adult children were included in this review and analysed based on Keyes' (2013) framework of positive mental health, which was considered suitable for a Chinese holistic perspective on mental health. However, this review does not examine potential differences in perceptions of mental health in Chinese and Western culture. It is well documented that ethnic and cultural factors would affect psychopathology, prevalence, presentation and causes of symptoms in psychiatric disorders and cognitive disorders (Trinh *et al.*, 2019). Cultural beliefs also affect how illnesses are explained and conceptualised, making the Western biomedical models of health not necessarily relevant to people of diverse ethnicity and culture (Suzuki *et al.*, 2015). Cultural values also dictate the attitudes towards various forms of mental health intervention and the stigma associated with the illness itself and the uptake of the interventions (Byers *et al.*, 2016). Given the knowledge about the cultural variations in mental health, future research should be extended to examine further the across-group and within-group variations in how mental health issues are manifested, predicated and addressed in Chinese societies given the vast amount of diversity within this huge ethnocultural social entity.

Conclusions

Existing studies on older people migrating along with adult children reveal concerns about mental health outcomes and challenges in social adaption and integration. They have located older migrants' wellbeing as a social issue which requires interventions beyond individuals and families. However, while services and policy measures are critically important to meet the specific mental health needs of this group of the population, there is a risk in labelling these older migrants as 'needy' or 'vulnerable', or overlooking the reality that care-giving roles may also be positively related to mental health (Sun, 2012; Tang *et al.*, 2016; Zhou *et al.*, 2017). While previous research has drawn attention to the issue of the mental health of older people migrating along with adult children, there are clear research gaps that should be addressed.

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