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Resilience, mental health and urban migrants: a narrative review

Introduction and background

This review sets out to survey the literature on resilience approaches to mental health for urban/internal migrants in LMICs (Lower Middle Income Countries) and NICs (Newly Industrialised Countries). Such a review appears timely; for while much of the mental health literature around migration seeks to better understand the biological, psychological or environmental risk factors for mental ill-health, there is increasing recognition that focusing on negative risk factors can sometimes obscure awareness of people's assets and resources for positive mental health, and thereby also lead to over-emphasis on expert-based interventions (Becker, Glascoff *et al.*, 2010). For that reason, this paper sets out to investigate findings on what sources and resources for mental health resilience might have been identified thus far among urban migrant communities. This appears to be an untold story and a perhaps surprising lacuna given the increasing attention paid to resilience concepts within the international development field more broadly. Exploration of the mental health resilience of internal migrants thus appears to be both an important and timely topic. This rapid review was conducted by universities from the UK and India as part of the preliminary phase of a collaborative mental research project based in a *basti*, or slum, in Pune, India (UK Research and Innovation, 2017).

This review is structured as follows. First, the review strategy is outlined. Second, definitions of 'resilience' and findings concerning mental health resilience and internal migrants in LMICs are explored. Third, the contextual relevance to urban migration of recent cross-disciplinary studies in 'neuro-urbanism' and the urban mind ~~to urban migration~~ is outlined; these research themes were encountered while conducting this review and explore, among other things, the distinctive mental health challenges of urban settings. Further

positive and negative factors for mental health are then explored. Consideration is also given to some recent research undertaken in the Indian context. Finally, several recommendations for future research are suggested.

1. Literature review strategy

We are aware of the large and differentiated literature about different kinds of mental health difficulties and distress in LMICs – addressing conditions from psychosis, to drug problems, to mood disorders. Meanwhile, it is appropriate to note that people sometimes receive multiple diagnoses, on different occasions and often from different diagnosticians, and that in some cases this is the norm rather than the exception (Gaderman *et al*, 2012). In addition to which, in LMICs it's more likely than in OECD countries that people may not, or may not yet, have been in receipt of any mental health care or specialist diagnoses at all. For these reasons, we have cast the net of our literature review widely.

Data sources comprised the results of a literature search of Pubmed, Scopus and Web of Knowledge. The literature search was deliberately wide ranging and multidisciplinary. While there is much quantitative work available, it was felt important that an initial review on this broad topic – mental health resilience in relation to internal migration in LMICs – should include qualitative studies, review studies as well as more conceptual material germane to our question. Given the conceptual richness and diversity of material we sought to examine, and given that relevant resilience and positive mental health texts are not confined to clinical literature, we did not want to restrict the search by adherence to a predetermined protocol, when we did not know what the literature might cover and what material such a protocol might rule out. We feel that avoiding a predetermined protocol, in which procedural rigour might be won at the expense of sensitivity to the source material, makes for a stronger review

at this stage. The collection and selection of articles for the narrative review took place between January 2018 and May 2018, and studies published up to 2017 were included.

The primary search aim was to find literature on the mental health of internal migrants in LMICs which discussed resilience. The terms 'internal migration' and 'urban migration' are often used interchangeably so both terms were included (Table 1, search term 'P').

Search term 'Q' was used to restrict the results to India and other Lower Middle Income Countries (LMICs). The list of LMICs used in the search was derived from World Bank data (World Bank, 2017). As can be seen from column 'P *AND* Q' in Table 1, restricting the search to LMICs reduced the number of 'hits' considerably. In order to broaden the search, newly industrialized countries (NICs) were also included (search term 'R'), on the grounds that many of these countries have also experienced significant internal migration and urbanisation in recent decades. There remains some debate, however, as to which countries should be included in the NIC category. The NIC list used here for search term 'R' was derived from Guillen (2008). Table 1, column 'P *AND* (Q *OR* R)' shows the number of references found for this search and, as can be seen, the inclusion of NICs more than doubled the number of papers satisfying the criteria; ignoring repeats (from papers found in more than one database) this search yielded 125 papers in total.

Table 1. Number of hits for selected search terms and databases search

Database	Number of 'hits' with the search terms in abstract, title or keyword		
	P	P *AND* Q	P *AND* (Q *OR* R)
Pubmed	73	10	58
Scopus	126	17	93
Web of Knowledge	108	24	98

KEY: search terms

P ('mental health' OR 'mental resilience') AND ('internal migrant' OR 'internal migration' OR 'urban migrant' OR 'urban migration')

Q LMIC* OR 'lower middle income countries' OR Kosovo OR 'El Salvador' OR Tunisia OR Samoa OR Armenia OR Mongolia OR 'Sri Lanka' OR Guatemala OR Micronesia OR Philippines OR Indonesia OR Kiribati OR Egypt OR 'Cabo Verde' OR Swaziland OR Vanuatu OR Palestine OR Morocco OR Bolivia OR Nigeria OR Ukraine OR Congo OR Bhutan OR 'Timor Leste' OR Honduras OR 'Papua

New Guinea' OR Moldova OR Uzbekistan OR Vietnam OR Nicaragua OR Sudan OR 'Solomon Islands' OR Syria OR 'São Tomé and Príncipe' OR Laos OR India OR Zambia OR Ghana OR Pakistan OR 'Côte d'Ivoire' OR 'Ivory Coast' OR Mauritania OR Kenya OR Cameroon OR Lesotho OR Tajikistan OR Bangladesh OR Kyrgyzstan OR Myanmar OR Yemen OR Cambodia OR Djibouti OR Senegal

R NIC* OR 'newly industrialized countries' OR 'South Africa' OR Mexico OR Brazil OR China OR India OR Indonesia OR Malaysia OR Philippines OR Thailand OR Turkey

To narrow down our list of 125 articles to a more manageable number for full text scrutiny, we scored the abstracts using an approach closely related to our research question – concerning resilience and mental health of urban migrants in LMICs – and prioritised papers according to their focus on one or more of the following three relevant themes:

(A) Mental health resilience (and/or other positive mental health factors) for internal migrants [score=+3]

(B) identification and/or exploration of research gaps and future research agendas concerning mental health of internal migrants [score=+2]

(C) negative mental health factors for internal migrants [score=+1]

Abstracts of each paper were examined for the above three features and a score recorded for each, up to a maximum of 6 points (i.e. 1 + 2 + 3) as indicated in Table 2 below:

Table 2. Tally chart

Score		Themes covered	No. of papers
6	= 3 + 2 + 1	ALL themes (A, B and C)	11
5	= 3 + 2	themes A and B	1
4	= 3 + 1	themes A and C	37
3	= 3, *or* 2 + 1	theme A only *OR* theme B and C	7
2	= 2	theme B only	1
1	= 1	theme C only	31
0		no themes	27

It was found that 49 papers had abstracts that scored 4 or more in the above tally (see

Appendix: Table 4) and this was a manageable number for full text examination. The full text of each of these 49 articles was examined in more detail to ~~examine~~explore their themes and key findings (apart from four papers for which full text was found to be unavailable). The references of retrieved articles were also scanned for additional relevant material, which yielded useful contextual and conceptual material – on 'neurourbanism' and the 'urban brain', for example. Meanwhile, broader literature dealing with resilience is less easily captured in a database, so this area relied on background knowledge and hand searching. In addition, several of the co-authors were able to source other relevant supplementary material. For example, two of our co-authors are of Indian parentage, fluent in Indian languages, and with extensive networks and contacts among Indian mental health scholars and clinicians e.g. at the National Institute of Mental Health and Neurosciences, Bangalore and the Tata Institute of Social Sciences, Mumbai. And these contacts yielded further material, particularly on mental health and urban migration in India.

[Diagram 1 here]

2. Resilience

For the purposes of this review 'resilience' is defined, in part, empirically via the various different definitions given in the papers studied.

According to the Oxford English Dictionary, the earliest known use of the term was in the early seventeenth century (Oxford English Dictionary, 2010). The term derives from the Latin 'resilire', meaning 'to leap back'. As Windle notes, dictionary definitions of 'resilient' tend to emphasize two related but slightly different meanings: '1. (of a person) recovering easily and quickly from misfortune or illness; 2. (of an object) capable of regaining its original shape or position after bending or stretching.' Contemporary ideas about resilience

have drawn from several academic areas including engineering and social-ecological systems theory but the use of resilience concepts in other fields has risen rapidly in recent years. Definitions can differ between disciplines and sometimes within them and many authors acknowledge difficulties in giving a precise definition of resilience (Windle, 2011). According to Lovell *et al*, the number of scholarly articles discussing 'resilience' increased from roughly zero in 1997 to some 30,000 in 2015.

Resilience ideas have had considerable influence within international development studies, and for two main reasons. First, they can be used across disciplinary, sectoral and institutional boundaries. Second, ideas about resilience appear to offer a 'positive language that speaks to improvement, as opposed to the concept of '-vulnerability' which can carry more negative connotations' (Lovell, Bahadur *et al.*, 2016).

In mental health studies, resilience concepts were largely pioneered within developmental psychology and studies of stress-resistant children (Garmezy, 1985). And while definitions of resilience in healthcare vary, they usually include three key features: a) identification of risks or adversity, b) identification of sources or resources to help offset the effects of that adversity, c) avoiding the effects of the adversity or adapting positively to it. Drawing on these three features, Windle offers the following summary definition of resilience in health contexts:

> Resilience is the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity. Across the life course, the experience of resilience will vary. (Windle, 2011)

The appearance of resilience as an important concept in health can be viewed as part of a 'paradigm shift from pathological focus to the positive aspect' (Chen, Wang *et al.*, 2016) and

the growing recognition that focusing too much upon conceptions of pathology can all-too-often lead to an over-reliance on prescriptive expert-driven interventions:

> Interventions that are based on the deficit, problems, or pathologies of individuals tend to direct the attention of professionals to only one view of the person … The emphasis on deficits or what a person is lacking leads to a cycle of focusing only on what needs to be repaired followed by reliance on prescribed resources or assumed solutions… (Hammond and Zimmerman, 2012).

On the other hand, more positive resilience and strengths-based approaches are more likely to explore the extent to which people and communities might possess capacities, skills, knowledge and potential for self-reliance or to become 'co-producers' of their own support instead of mere passive recipients (Pattoni, 2012).

Windle notes two distinct ways of understanding resilience in health contents. Firstly, the lifespan developmental approach to resilience tends to focus on psychological resources from earlier life and how those can mediate adversity in later life. On the other hand, Ecological Systems Theory appears to offer a very different way of understanding resilience, by suggesting that people need to be understood

> in the environments in which they live … People do not exist in isolation but interact with, and are influenced by, their physical, social and environmental contexts. Thus the functioning of the defining attributes of resilience can be further explained within this theoretical framework. (Windle, 2011)

Windle suggests that any complete account of resilience would need to be informed by both the lifetime development and Ecological Systems Theory perspectives ~~(Windle, 2011).~~

In healthcare, resilience can also be explored at different levels~~—~~, from the individual to the population level. Considering a public health and whole population perspective, Seaman *et al* define resilience as

> the capacity for populations to endure, adapt and generate new ways of thinking and functioning in the context of change, uncertainty or adversity … The resilience perspective offers value to public health through supporting the development of strong communities … the resilience perspective provides a framework for enabling people and communities to not only bounce back but crucially, thrive beyond crisis. (Seaman, McNeice *et al.*, 2014)

Also writing from a public health perspective, Wulff *et al* suggest the

> broader vantage point of community resilience—with its concern for health systems, social connectedness, psychological health, and vulnerable populations—encourages actions that build preparedness while also addressing the underlying social determinants of health. (Wulff, Donato *et al.*, 2015)

Resilience is increasingly explored in relation to those populations—, such as migrants—, who are facing frequent and particular challenges or adversities.

So what factors in particular have been found to influence resilience among migrants? Cheung *et al* suggest some migrants may actually have improved their resilience through successfully negotiating the often considerable challenges involved in their migration:

> more challenges and greater life stress due to migration may not necessarily compromise migrants' mental functioning; instead such experiences may hone their personal growth, allowing them to develop a resilience that manifests as eudaimonic well-being.

The authors posit that such 'migrant resilience' may help explain why some migrant adolescents exhibit greater resilience than other adolescents in their urban destination (Cheung, 2013, Cheung, 2014).

Fang *et al* note that migrants are often more likely to report higher levels of resilience, hope, self-esteem and life satisfaction if they become well assimilated to the society and culture they arrive at (Fang, Sun *et al.*, 2017).

A number of scales for measuring resilience have been developed. According to Siriwardhana *et al*, the RS 25 scale was the first. This 25 item scale explores five different

facets related to resilience: a purposeful life, perseverance, equanimity, self-reliance and "existential aloneness". A shorter 14 item scale, RS 14, was developed subsequently ~~developed~~ based on the same five characteristics, ~~and~~which is scored on a seven point Likert scale (Siriwardhana, Abas *et al.*, 2015). Meanwhile, Ye *et al* use the 27 item 'Resilience scale for Chinese adolescents' which explores two aspects of resilience: personal assets, or the individual's ability to cope with adversity~~;~~, and social resources, the individual's perceived support from family members and peers. This scale has also been used in several previous studies exploring resilience of children (Ye, Chen *et al.*, 2016).

Although our primary research focus was mental health resilience of internal migrants in LMICs, only 10 of the LMIC studies retrieved from our main literature search explicitly referred to "resilience," alongside one additional article concerning the Indian context. For these papers, Table 3 summarizes the definitions of resilience used in each article and their main findings in relation to resilience. The plurality of definitions of resilience is acknowledged by some; and the conceptualization of resilience as a "protective factor" is common to several papers – from both China and India. Interestingly, one of these studies – conducted in a slum in Mumbai, India (Subbaraman, Nolan *et al.*, 2014) – refers to "joy" in relation to the lives and mental health resilience of slum dwellers; "joy" or "delight" was not explicitly mentioned in any of the remaining papers we examined in relation to migrant mental health in LMICs ~~(Subbaraman, Nolan *et al.*, 2014).~~.

[*Table 3 here*]

As 'resilience' concepts become increasingly influential or fashionable they are also attracting increasing critical attention. For example, according to a recent ODI report, potential problems of using resilience concepts in international development work include:

- Resilience is often **defined in different ways**, both within and beyond mental health. Is this a strength of resilience or a weakness?
- Some argue resilience concepts **lack explicit values** and they should thus be treated with caution when used as guiding framework.
- Emphasising resilience **can depoliticise** by indicating that vulnerable populations confronted by stressors should largely be responsible for their own wellbeing.
- In international development, practitioners considering resilience sometimes find they have to make **trade-offs** between different groups, locations and timescales. (Tanner, Bahadur *et al.*, 2017)

Although these are criticisms of resilience approaches more broadly, they clearly have relevance to considerations of mental health resilience of vulnerable populations. For example, it could be argued that mental health research exploring the sources or resources of resilience for internal migrants which overlooks – whether deliberately or not – the political dimensions of the situation would appear naïve at the very least, or grievously short-sighted were it to imply urban migrants are wholly responsible for their own wellbeing.

Firdaus (2017) notes the scarcity of literature exploring the impact of migration on the mental wellbeing of rural to urban migrants. And Li and Rose observe how

> The focus of most conceptual work on migration and mental health from the 1930s to the present has been on transnational migration, yet the mental health consequences for 'internal' migrants – who have made up the greater part of population movements both historically and today – has been less explored (Li and Rose, 2017).

The majority of literature on migration and mental health located via our literature search on Scopus, Web of Knowledge, and PubMed related to China. In addition, relatively few of the empirical papers report longitudinal studies which might have yielded more robust insights into causal relations between factors and their impact on mental health (Qiu, Caine *et*

al., 2011). More commonly found were cross-sectional studies describing associations between factors and their apparent effects.

3. Neuro-urbanism and the urban mind

Li and Rose insist that '[i]nterdisciplinary research involving sociologists, historians, anthropologists, urban geographers, psychiatrists, neuroscientists and others' is needed if we are to understand the mental health challenges of urban migration, particularly given such a high proportion of that migration is to 'the rapidly expanding megacities in developing countries such as China, Brazil and India' where relatively little is known about the mental health challenges of such migrations. An example of the kind of collaborative work on urban mental health that Rose and Li propose was the series of international and interdisciplinary workshops on 'the urban brain', hosted in London from 2013. One outcome of these workshops was a call for 'conceptually informed empirical studies of the "neuropolis" and a programme of research on mental health, migration and megacities' (Li and Rose, 2017). Other scholars in the novel field of neurourbanism have expressed similar concerns (Adli, Berger *et al.*, 2017).

Such studies indicating the merits of ~~situ~~location mental health research about urban migration within broader cross-disciplinary contexts, sometimes situate urban migration against a broader background of global historical and cultural transformations. Adli *et al* suggest public mental health practitioners should engage with cross-disciplinary work on neuro-urbanism in order to improve the wellbeing of individuals and communities and to 'strengthen the resilience of' urban migrants and other high-risk individuals. And they insist that

> City life and mental wellbeing are interdependent in many ways. However, this web of interdependencies is far from being sufficiently understood. Urban planners and health providers have so far largely failed to develop strategies coordinating the bidirectional interaction between urban life and mental wellbeing… (Adli, Berger *et al.*, 2017)

While migration scholars often draw attention to the unique aspects of each person's experience and their potentially unique factors for both positive and negative mental health, scholars of the urban mind identify certain stressors and modulators of health that may be common aspects of urban living. Indeed, commentators have long been aware of how urbanization shapes people's minds and their experience:

> by the 1980s, the idea that the physical and political contours of urban space shape the interior world of city dwellers was well established. A thick, multi-stranded literature showed, in many different ways, how the encounters experienced by those who live in urban environments (of many different sorts) actually moulded their interior worlds, leaving durable impressions upon their souls. And this process was well charted at multiple levels, from the ethnographic to the epidemiological. 'The city' had stopped being only a geographical, spatial, political, commercial and economic reality. It had become a psychological and psychiatric phenomenon too. (Fitzgerald, Rose *et al.*, 2016)

In a recent review of the impact of social exclusion on the mental health of urban migrants in China, Rose and Li suggest the need for much more detailed 'close-up, street-level ethnographic data on the daily experience of being a migrant in the mega-city' (Li and Rose, 2017).

Ash Amin's 2006 study of 'the good city', which has been a lasting influence on contemporary scholars of the urban mind, forcefully counters any naïve notions of city life as

> managed by an enlightened urban elite that attends to the interests of all … The idea of good urban governance is an illusion not only for all that it cannot capture, but also for its panoptic authoritarianism veiled as stakeholder democracy.

Amin's work indicates a potential challenge confronting those who might seek to improve mental health for urban migrants~~. That is,~~; how are we to avoid complicity in 'panoptic authoritarianism veiled as stakeholder democracy' when developing interventions to improve mental health?

Amin's recommendation was to focus on four key aspects of human solidarity: repair, relatedness, rights and 're-enchantment':

> Together, they shape state and civic orientations to multiplicity in urban life, by defining access to the basics of existence, attitudes to strangers, rights of presence and expression, and the scale and purpose of the shared commons.

Amin also insists on the need for *hopefulness* – not in the sense of false promises handed down from on high or as a way of ignoring persiste~~d~~nt inequities and hardship – but borne out of 'an ethic of care that delivers on the ground … based on the rights of recognition'. For 'vibrant democracy' to be restored to the life of our cities, Amin argues, such hopefulness needs to be shared more widely and fairly ~~(2006)~~(Amin, 2006).

The growing literature on 'neurourbanism', 'the urban mind' and 'neuropolis' offers several key insights relevant to research into internal migration, mental health and resilience. These include: the need for greater cross-disciplinarity; the need for close up, 'street level' ethnographic research on the daily experience of urban migrants; and the need for a renewed vibrancy in, and 're-enchantment' of, civic life for *every* citizen.

4. Additional positive mental health factors highlighted in the literature

Although resilience is not explicitly mentioned in many of the studies we examined on internal migration in LMICs, several related terms and ~~phraseology –~~as well as factors which might contribute to resilience –are sometimes ~~are~~ explored. For example, as early as 1981 Beiser and Collomb had pointed out the need to ~~recognize how~~acknowledge the ways in

which individual mental health outcomes for urban migrants are inevitably modified by social contingencies, including spiritual or religious influences ~~as well as~~and 'personal assets which individuals bring with them.' Such assets might include 'skills such as literacy and the ability to integrate elements of the old and new cultures' (Beiser and Collomb, 1981). More recently, Seeberg *et al* insist that a more capability based, rather than deficit based, approach to the mental health of migrants would have the benefit of being more holistic *and* more female-centric (Seeberg and Luo, 2017).

Among the several factors associated with better mental health that Li *et al* ~~identified were~~identify are: migrating with a partner, higher salary (if in employment), good self-reported health and cordial relations with fellow workers. ~~The migrants~~Migrants in their own study did not appear unduly vulnerable to mental health problems; and the authors speculate this might be because of improved opportunities and upward economic mobility after migration, as well as their relatively high 'social capital' (Li, Wang *et al.*, 2007). Other studies have reiterated the relevance of socioeconomic status to the mental health of urban migrants (Cheng, Wang *et al.*, 2017, Zhang, Liu *et al.*, 2015).

In order to improve the mental health of urban migrants, Wen *et al* suggest ~~improvements to~~that improving working conditions, living environment, neighbourhood amenities and helping families live together can have a significant effect (Wen and Wang, 2009). Li and Wu, drawing on their own case study of a migrant community in Beijing, examined the impact of social networks on health and found the~~y~~se can provide a wide range of support, including emotional and spiritual sustenance (Li and Wu, 2010). Other studies have found likewise ~~found~~ that local ties to their host city and trans-local ties to rural home communities can be associated with a protective effect on mental health and help alleviate stress among urban migrants (Cheung, 2013). Wen *et al* highlight the positive impact of

neighbourhood social cohesion and satisfaction on health and note the significant importance for good mental health of feeling safe in one's neighbourhood (Wen, Fan *et al.*, 2010).

Hoi *et al* found an association between a greater sense of belonging and lower rates of reported depression among urban migrants (Hoi, Chen *et al.*, 2015). Exploring a similar theme, Liang explores the role of trust as 'a type of social capital' and found that different types of trust (family, relative, neighbour, friendship, workmate, schoolmate) had different impacts on self-reported quality of life depending on the age of the migrants (Liang, 2015). Li *et al* found that money earned from employment, the number of friends a person has, and the quality of their neighbour relationships were significant factors in self-reported good health (Li, Meng *et al.*, 2017).

Chen *et al* explored the role of coping strategies in the mental health of migrants and found that those migrants who are best able to deploy mature coping strategies, such as problem solving rather than self-blaming, tend to be significantly less liable to mental illness (Chen, Li *et al.*, 2012).

Some authors highlight the importance of having realistic expectations prior to migrating and that unrealistic expectations can lead to subsequent mental distress. Wang *et al* particularly emphasize the need for prior awareness of the discrimination urban migrants may subsequently suffer at their destination (Wang, Li *et al.*, 2010).

While earlier studies exploring positive factors for health and mental health often tended to foreground ~~basic~~ material factors such as earnings, recent literature has begun to explore a wider range of factors. For example, ~~optimism is~~Wen *et al* singled out ~~for its~~the importance ~~by Wen *et al*~~of optimism for its association with fewer psychological distress symptoms and the way it seems to reduce the negative mental health impacts of long work hours:

> Optimism taps a person's resilience, hardiness, or a sense of coherence. These psychological traits seem predictive of better health and life outcomes especially among individuals who have suffered extremely traumatic life hardships such as those who survived Nazi concentration camps… Optimistic people tend to see, or believe in, 'light at the end of the tunnel,' and are equipped with greater intra-personal capacity to rebound from crisis. (Wen, Zheng *et al.*, 2017)

One intriguing finding from Li *et al* was that respondents who consumed alcohol were more likely to report good health: most other previous studies have usually found alcohol consumption to be associated with poor self-reported health (Li, Meng *et al.*, 2017).

5. Additional negative mental health factors highlighted in the literature

Many factors understood as impacting negatively on mental health among migrants – including loneliness, low socioeconomic status, poor social resources and friendships, separation from family members, and alcohol abuse – are familiar and echoed in the literature surveyed here.

For example, Wen *et al* found the different levels of psychological distress among internal migrants in two different cities (Shenzen and Shanghai, in China) appeared to be explained, at least partly, by lower earnings and longer working hours in Shenzen (Wen, Zheng *et al.*, 2017).

Lu notes that many of the same stressors which impact on transnational migrants also confront internal migrants, including physical and social changes, stress and feelings of alienation (Lu, 2010a). For Wen *et al*, loneliness and perceived stress are among the most significant factors associated with negative mental health (Wen, Fan *et al.*, 2010). Firdaus found that adult migrants who were single, widowed, divorced or separated were significantly more likely to suffer from poor mental health (Firdaus, 2017). Meanwhile, for Hu *et al*, the most notable stressors on internal migrants included separation from family, separation from familiar surroundings, low social status, high mobility and high risk (Hu, Cook *et al.*, 2008).

Li and Wu highlight the negative effects of having limited social networks (Li and Wu, 2010). Lu reports that the strong evidence of negative psychological impacts of migration were particularly acute for migrants moving alone, supporting the view that separation from family can have a considerable psychological cost (Lu, 2010b).

Wen and Wang highlight the overwhelmingly negative effect of discrimination on mental wellbeing among migrants (Wen and Wang, 2009).

Qiu *et al* found factors associated with reported depression included self-rated health, economic status, and adaptation to their new environment; meanwhile, social support, length of residence and job satisfaction could also influence depression (Qiu, Caine *et al.*, 2011).

Yang *et al* found work stress, ~~employment~~and working with machinery or transportation to be negatively associated with mental health and wellbeing (Yang, Xu *et al.*, 2012) while Chen *et al* found unemployment to be a significant risk factor, with the long-term unemployed most at risk of psychiatric symptoms (Chen, Li *et al.*, 2012).

Chen *et al* discovered that environmental risk factors severely affect migrant mental health and called for efforts to mitigate adverse environmental health effects (Chen, Chen *et al.*, 2013). Zhang *et al* catalogue the negative mental health impacts of occupational hazards ~~at work~~in the workplace (Zhang, Liu *et al.*, 2015).

6. Mental health and migration in Indian context

A 2013 UNESCO report on migration in India suggests some 326 million, or 28.5% of the national population, are internal migrants, significantly outnumbering the country's 11.4 million transnational migrants (UNESCO, 2013). Akinola *et al* point out that if health care as a human right is to be realised in India then it needs to reach all citizens including internal migrants. And to achieve this, future healthcare planning will need to include interventions tailored specifically toward internal migrants (Akinola, Krishna *et al.*, 2014).

In a 2016 cross-sectional study, Albers *et al* examined the frequency and severity of depression among internal migrants and found no greater evidence of depressive symptoms than could be found among permanent urban~~,~~ or rural~~,~~ residents. They conclude that while migration may often be a risk factor for depression, researchers should always be wary of making over-hasty generalisations, since any particular group of migrants may consist of ~~people~~ widely diverse ~~in many ways~~individuals (Albers, Kinra *et al.*, 2016).

On the other hand, results from a different study, ~~of~~conducted in a Mumbai slum area, found the severity of common mental disorders reported was greater than had ever been reported in any previous population-based study in India. Mental health stressors identified by the researchers included:

> having to sleep sitting up or outside one's home and frequent exposure to rats and insects cause stress in and of themselves, ~~they~~[and] may also serve as markers of underlying structural deprivation – such as extreme housing density, living next to a solid waste dump, or having a home built of low-quality materials that provide poor barriers against rodents. Also, there is a complex interplay among some stressors, such as income poverty, having a loan, the cost of water, and food security. The qualitative data suggest that the poor experience great stress from trying to decide which basic need (e.g., food or water) should be prioritized, in situations of limited monetary means and sometimes severe debt.

The residents are often all too well aware of the mental health hazards of living in such conditions. As one resident put it:

> There is so much tension in this community; I hope you are able to do something about it … Many people have died because of tension. After all no one will admit that a person in their family died because of tension. It's common for people to silently drink poison or hang themselves. It's a big problem (Subbaraman, Nolan *et al.*, 2014)

A 2016 survey in the *Indian Journal of Social Psychiatry* notes that problems such 'loneliness, frustration, increased household and social burdening are common among the

migrants' and that factors ~~that can have an impact on the~~impacting their mental wellbeing ~~of migrants~~ include: age, differences in climate between place of origin and destination, language, food, culture, whether one has migrated alone and whether migration was forced or voluntary. The authors also note how vulnerability to mental health problems appears most acute in the period immediately after arrival but also several years after settling at their destination. Seeking to explain this, the authors suggest many who migrate can be

> disheartened by the lack of achievement they had anticipated. This disappointment may result in lower self esteem increasing susceptibility to depression or other psychiatric disorders.

Certain categories ~~appear~~of people appeared particularly susceptible to mental health problems. These include~~d~~: women, children, old people, gay, lesbian, bisexual and transgender migrants~~. And~~, with some groups ~~were~~ susceptible to post traumatic stress syndrome. The authors also highlight a relationship between urban dwelling and increased susceptibility to psychosis:

> Urbanization is associated with a two-fold increased risk of psychosis. There are speculations that this may be due to loss of social capital and social fragmentation. Rates of schizophrenia and other psychoses are elevated in migrant and minority ethnic populations … 'Nuclearization' of families and change in family structure may reduce social support for patients with psychosis. (Prasad, Angothu *et al.*, 2016)

In a separate study, failure to adjust to the new destination environment was particularly strongly correlated with psychological distress among newly arrived migrants. In order to address this, the authors ~~suggest~~recommend training for migrants prior to their migration with the aim of developing 'strategies to adjust with the new urban environment and find strength in their cultural heritage, families, and broader social networks' (Agrawal, Taylor *et al.*, 2015).

Virupaksha *et al* note that, while efforts to provide health support for migrants either locally and internationally have often been inadequate, many migrants fail to take up health options even when they are on offer—; this is often because of cultural or language barriers. To address theis problem, these authors suggest the need for trained interpreters and 'culture brokers" and foralongside inclusive and culture specific health interventions (Virupaksha, Kumar *et al.*, 2014).

7. Recommendations for further investigation

The literature we surveyed included a range of recommendations for future research including, as noted already, the need for further longitudinal research into risk factors and resilience and other protective factors for mental health (Qiu, Caine *et al.*, 2011) Similarly, Aikins *et al* point tooout the need for longitudinal research to examine strategies for coping and life-transforming strategiestransformation in order to help provide context-specific psychosocial models of support and action (Aikins and Ofori-Atta, 2007). Meanwhile, Ng arguesinsists that effective healthcare planning requiresbe underpinned by robust data from high quality epidemiological studies (Ng, 2010).

Firdaus calls for further in-depth research into a) the socioeconomic and environmental problems faced by migrants, but also b) the socioeconomic and environmental problems caused *by* migrants in order that more comprehensive policy-making might be constructed (Firdaus, 2017).

Chen *et al* recommend further research on the relationship between individual psychological resilience – measured according to a resilience scale – and other health outcomes (Chen, Wang *et al.*, 2016). Ng notes that while it might be tempting to try to save time and money by trying to extrapolate from existing research in the west and applying it to the Asian context this may be a mistake since migration is a unique process with distinctive

cultural and political dimensions such that different regions may have very different protective and risk factors for mental health in relation to migration (Ng, 2010).

As noted above, Li and Rose ~~point~~draw attention to the inadequacy of current social epidemiological research on urban migration and call for more 'close-up, street-level ethnographic data on the daily experience of being a migrant' (Li and Rose, 2017).

8. Some concluding remarks

Research into the mental health of internal migrants, as distinct from transnational migrants, appears to have attracted too little attention thus far. And among research that has been undertaken, relatively little attention has been paid to potential resilience or protective factors against mental health risks for migrants.

Nevertheless, there are some signs that things may be changing. Certainly in the Chinese context, a small but growing number of researchers are beginning to explore resilience and other positive aspects of mental health for internal migrants. But, as with much of the broader psychological resilience literature, the common tendency is to assume resilience is best understood as a purely individual~~,~~ rather than a communal~~,~~ matter~~—~~; or to understand ~~it~~resilience as a trait, in much the same way that 'character' or 'grit' are often commonly understood. And while such personal capacities should not be underestimated, we have also noted that Ecological Systems Theory reminds us how resilience can be multi-layered: relevant ~~to~~ not only to individual lives but also relevant to, and impacted by, communities and the wider social and environmental contexts.

We suggest further research into the positive mental health capacities and resources for resilience of internal migrants may be appropriate, not least since professional 'expert' mental health provision for internal migrant communities can sometimes be absent or unaffordable. However, we also recognize that an over-reliance on resilience concepts can

have shortcomings – particularly ~~if~~, for example, if they are at the expense of understanding other dimensions of social problems, including the political dimensions. Indeed, researchers exploring resilience among vulnerable groups should be aware of the potential misuses of their work e.g. is there a danger that their work might potentially support or give licence to the idea that vulnerable people are wholly responsible for their own well-being?

The literature of neuro-urbanism suggests common features to the mental health challenges of living in urban environments. To repeat Amin's summary of the urban condition for the vast majority:

> cities are polluted, unhealthy, tiring, overwhelming, confusing, alienating. They are the places of low-wage work, insecurity, poor living conditions and dejected isolation for the many at the bottom of social ladder daily sucked into them (Amin, 2006).

Moreover, and echoing sentiments expressed in the recent literature on the urban mind, there is a need for more joined-up cross disciplinary thinking – not only about the mental health challenges and opportunities of vulnerable urban populations, but also about the need for mentally healthy cities. A dialogue between mental health expertise and urban planners is suggested. Such thinking would need to embrace, as the resilience literature suggests, a systems level understanding that includes not only the style of people's interpersonal interactions, but also their interactions with their environments. Indeed, the resilience and ecological sustainability of cities are themselves ~~need to be resilient and ecologically sustainable long-term if~~essential aspects of protecting the physical and mental health of ~~their~~urban residents ~~is to be likewise protected~~. (Girardet, 2015, p. 71; Lang & Rayner, 2012, p. 353).

Appendix

[*optional Table 4 here*]

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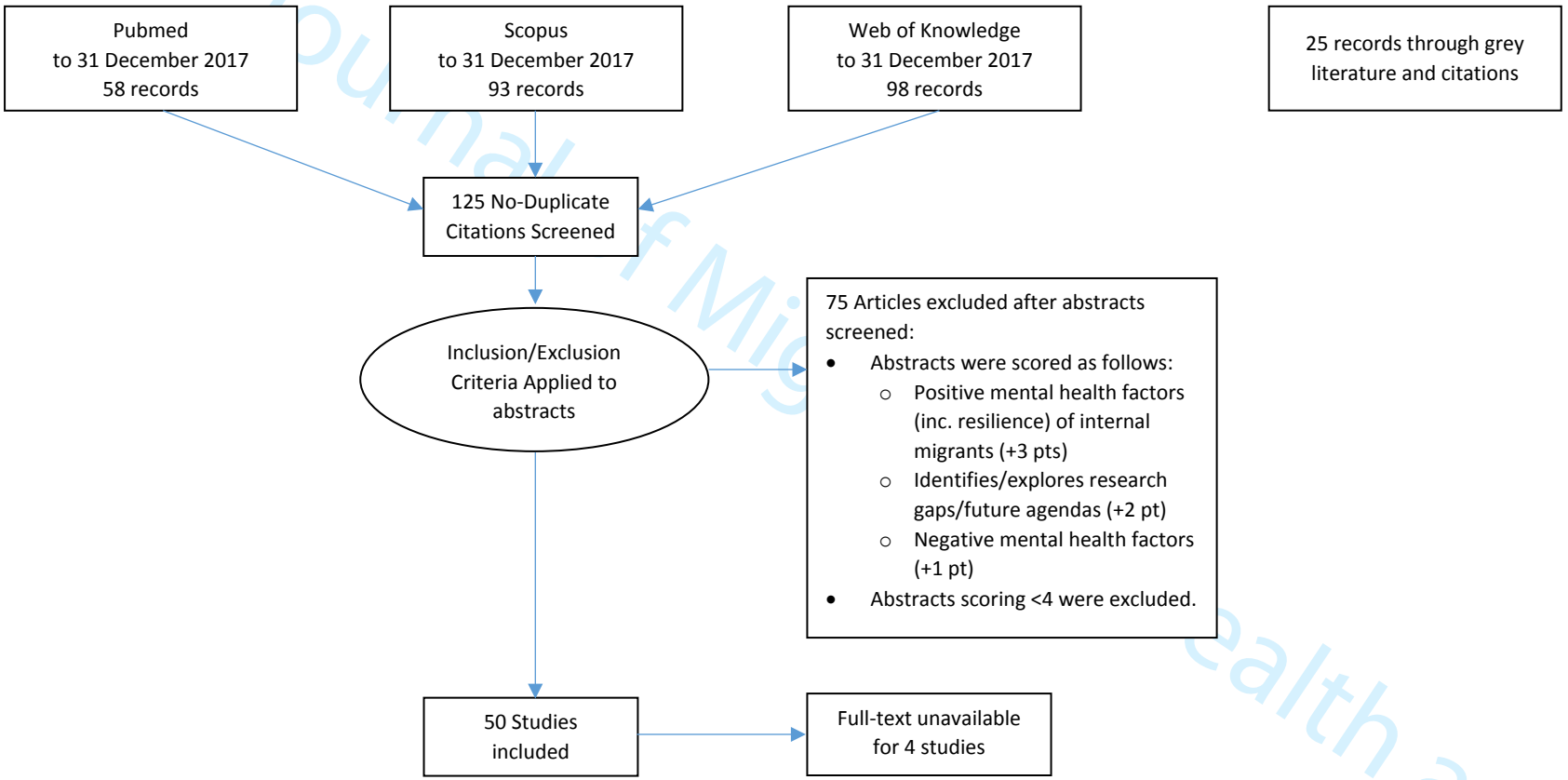
Diagram 1. Flow diagram.



Please note: this table is an optional addition to the article

Table 3. How mental health resilience is conceptualized in selected studies on internal migration in LMICs

COUNTRY	AUTHORS	TITLE	STUDY TYPE	HOW RESILIENCE IS CONCEPTUALIZED	CONCLUSIONS OR DISCUSSION ABOUT MENTAL HEALTH RESILIENCE IN RELATION TO MIGRATION/INTERNAL MIGRATION
China	Cheung, N (2013)	*Rural-to-urban migrant adolescents in Guangzhou, China: Psychological health, victimization, and local and trans-local ties*	Cross-sectional	• Resilience = "protective" • Resilience may "offset … social stress" • Resilience can manifest as "eudaimonic well-being" (p.128)	"A migrant-specific mechanism of protective resilience" may explain smaller effect of victimization on migrant adolescents compared with urban native teenagers. (p.128)
China	Fang et al (2017)	*Development and preliminary validation of an acculturation scale for China's rural to urban migrant children*	Cross-sectional		"Assimilated individuals tend to report high levels of hope and resilience". (p.2)
China	Chen et al (2016)	*The Essential Resilience Scale: Instrument Development and Prediction of Perceived Health and Behaviour*	Cross-sectional	• Resilience = "an individual's capability to anticipate, be flexible with and bounce back from three types of traumatic and adverse events (physical, emotional and social)" (p.533) •	
China	Cheung, N. (2014)	*Social stress, locality of social ties and mental well-being: The case of rural migrant adolescents in urban China*	Cross-sectional	• Resilience = "protective" against stress • Resilience can manifest as "eudaimonic well-being" (p.152)	"The role of migrant resilience in the management of stressful experiences is worthy of future inquiry." (p.152)
China	Ye et al (2016)	*Peer Victimization and Depressive Symptoms Among Rural-to-Urban Migrant Children in China: The Protective Role of Resilience*	Cross-sectional	• 27-item Resilience Scale for Chinese Adolescents • two subscales: one measures person's internal capacity to cope; the other assesses peer and family support. (p.4)	• Resilience a protective factor for depressive symptoms. • Resilience-based interventions to improve "ability of migrant children to cope with daily challenges, many negative cognitions, and maintain hope for the future may be useful in equipping this population with the "ordinary magic" of resilience. (p.7)

China	Wen et al (2017)	*Psychological distress of rural-to-urban migrants in two Chinese cities: Shenzhen and Shanghai*	Cross-sectional	• "Optimism taps a person's resilience, hardiness, or a sense of coherence. These psychological traits seem predictive of better health and life outcomes". (p17)	
China	Zhuang et al (2017)	*Differential impacts of social support on mental health: A comparison study of Chinese rural-to-urban migrant adolescents and their urban counterparts in Beijing, China*	Cross-sectional	• Resilience = "a dynamic process wherein individuals display positive adaptation despite experiences of adversity or trauma." (p.49)	
Ghana	Aikins et al (2007)	*Homelessness and Mental Health in Ghana: Everyday Experiences of Accra's Migrant Squatters*	Cross-sectional	• resilience = "psychological strength"	destitute demonstrated resilience "through the strategies they adopted to address daily insecurities. However these strategies were insufficient to transform their lives in the way they desired." (p.773)
India	Subbaraman (2014)	*The psychological toll of slum living in Mumbai, India: a mixed methods study*	Mixed methods study	• Resilience = "protective factors"	"While this paper sheds light on their tribulations, it fails to capture the joy and resilience that also constitute their lived reality." (p.155)
India	Virupaksha et al (2017)	*Migration and mental health: An interface*	Review article		Evidence suggests children of transnational migrants have "poor resilience" compared with children of non-migrant families. (p.236)
Sri Lanka	Siriwardhana et al (2015)	*Dynamics of resilience in forced migration: a 1-year follow-up study of longitudinal associations with mental health in a conflict-affected, ethnic Muslim population*	Cross-sectional	• Resilience = "construct of psychological resistance against adversity." • recognition that definition and conceptualization of resilience are "limited by inherent construct issues and non-uniformity" • communal as well as individual • uses 14-item Resilience Scale (RS 14) built on five underlying characteristics: a purposeful life, perseverance, equanimity, self-reliance and existential aloneness RS 25 resilience scale is also referred to. (pp.1-3).	"resilience was more strongly and robustly associated with economic and social factors than with the presence of mental disorder." (p.1)

Table 4. Articles selected

No.	WHERE?	is resilience referred to in full text?	YEAR	AUTHORS	TITLE	JOURNAL	STUDY TYPE	QUANTITATIVE / QUALITATIVE	DATA TYPE	(A) +ve mental health factors?	(B) identify research gaps / future agendas?	(C) -ve mental health factors?	Tally score (eg 3+2+1)
1	China (NIC)	No	**2008**	Hu et al	Internal migration and health in China	The Lancet	Commentary			3	2	1	**6**
2	China (NIC)	No	**2010**	Wen et al	Neighborhood effects on health among migrants and natives in Shanghai, China	Health & Place	Cross-sectional	Quantitative	Secondary data	3	2	1	**6**
3	China (NIC)	No	**2011**	Qiu et al	Depression and associated factors in internal migrant workers in China	Journal of Affective Disorders	Cross-sectional	Quantitative	Primary data	3	2	1	**6**
4	China (NIC)	Yes	**2013**	Cheung, N	Rural-to-urban migrant adolescents in Guangzhou, China: Psychological health, victimization, and local and trans-local ties	Social Science & Medicine	Cross-sectional	Quantitative	Primary data	3	2	1	**6**
5	China (NIC)	No	**2013**	Mou et al	Health of Chinas rural-urban migrants and their families: a review of literature from 2000 to 2012	British Medical Bulletin	Literature Review			3	2	1	**6**
6	China (NIC)	No	**2015**	Liang et al	Utilization of Health Services and Health-Related Quality of Life Research of Rural-to-Urban Migrants in China: A Cross-Sectional Analysis	Social Indicators Research	Cross-sectional	Quantitative	Secondary data	3	2	1	**6**
7	China (NIC)	No	**2016**	Lin et al	Association between Social Integration and Health among Internal Migrants in ZhongShan, China	Plos One	Cross-sectional	Quantitative	Secondary data	3	2	1	**6**
8	China (NIC)	Yes	**2017**	Fang et al	Development and preliminary validation of an acculturation scale for China's rural to urban migrant children	International Journal of Intercultural Relations	Cross-sectional (two phase)	Quantitative	Primary data	3	2	1	**6**
9	India (LMIC)	No	**2017**	Firdaus	Mental well-being of migrants in urban center of India: Analyzing the role of social environment	Indian Journal of Psychiatry	Cross-sectional	Quantitative	Primary data	3	2	1	**6**
10	China (NIC)	No	**2017**	Li et al	Association between sociodemographic, psychosocial, lifestyle factors, and self-reported health among migrant laborers in China	Journal of the Chinese Medical Association	Cross-sectional	Quantitative	Secondary data	3	2	1	**6**
11	China (NIC)	abstract only	**2017**	Seeberg et al	Young Women Rural Migrant Workers in China's West: Benefits of Schooling?	Frontiers of Education in China	Longitudinal (prospective)	Quantitative	Primary data	3	2	1	**6**
12	China (NIC)	Yes	**2016**	Chen et al	The Essential Resilience Scale: Instrument Development and Prediction of Perceived Health and Behaviour	Stress and Health	Cross-sectional	Explores reliability and validity of scale	Primary data	3	2		**5**
13	Senegal (LMIC)	abstract only	**1981**	Beiser et al	Mastering change. Epidemiological and case studies in Senegal, West Africa	American Journal of Psychiatry		Qualitative		3		1	**4**
14	Brazil (NIC)	abstract only	**1982**	De Almeida-F'	Internal migration and mental disorders: new evidence for an old hypothesis	Acta Psiquiatrica y Psicologica de America Latina	Cross-sectional	Quantitative	Primary data	3		1	**4**
15	Ghana (LMIC)	Yes	**2007**	Aikins et al	Homelessness and mental health in Ghana - Everyday experiences of Accra's migrant squatters	Journal of Health Psychology	Cross-sectional	Qualitative	Primary data	3		1	**4**
16	China (NIC)	No	**2007**	Li et al	The mental health status of Chinese rural-urban migrant workers : comparison with permanent urban and rural dwellers	Soc Psychiatry Psychiatr Epidemiol	Cross-sectional	Quantitative	Primary data	3		1	**4**
17	China (NIC)	No	**2009**	Wen et al	Demographic, Psychological, and Social Environmental Factors of Loneliness and Satisfaction among Rural-to-Urban Migrants in Shanghai, China	International Journal of Comparative Sociology	Cross-sectional	Quantitative	Secondary data	3		1	**4**
18	China (NIC)	No	**2010**	Li et al	Social networks and health among rural-urban migrants in China: A channel or a constraint?	Health Promotion International	Cross-sectional	Qualitative	Primary data	3		1	**4**
19	Indonesia (LMIC)	No	**2010**	Lu, Y	Mental health and risk behaviours of rural urban migrants: Longitudinal evidence from Indonesia	Population Studies	Longitudinal (retrospective)	Quantitative	Secondary data	3		1	**4**
20	Indonesia (LMIC)	Yes	**2010**	Lu, Y	Rural-urban Migration and Health: evidence from longitudinal data in Indonesia	Social Science & Medicine	Longitudinal (retrospective)	Quantitative	Secondary data	3		1	**4**
21	China (NIC)	No	**2010**	Wang et al	The influence of social stigma and discriminatory experience on psychological distress and quality of life among rural-to-urban migrants in China	Social Science & Medicine	Cross-sectional	Quantitative	Secondary data	3		1	**4**
22	China (NIC)	No	**2012**	Chen et al	Mental health, duration of unemployment, and coping strategy: a cross-sectional study of unemployed migrant workers in eastern china during the economic crisis	Bmc Public Health	Cross-sectional	Quantitative	Primary data	3		1	**4**
23	China (NIC)	No	**2012**	Mao et al	The effects of social connections on self-rated physical and mental health among internal migrant and local adolescents in Shanghai, China	BMC Public Health	Cross-sectional	Quantitative	Primary data	3		1	**4**
24	China (NIC)	No	**2012**	Yang et al	Mental health status and related characteristics of Chinese male rural-urban migrant workers	Community Ment Health J	Cross-sectional	Quantitative	Primary data	3		1	**4**
25	China (NIC)	No	**2012**	Zhu et al	Correlates of quality of life in China rural-urban female migrate workers	Quality of Life Research	Cross-sectional	Quantitative	Primary data	3		1	**4**
26	China (NIC)	No	**2013**	Chen et al	Migration, environmental hazards, and health outcomes in China	Social science & medicine	Cross-sectional	Quantitative	Secondary data	3		1	**4**
27	China (NIC)	No	**2014**	Chen et al	How Dynamics of Urbanization Affect Physical and Mental Health in Urban China	China Quarterly	Cross-sectional	Quantitative	Primary data	3		1	**4**

28	China (NIC)	Yes	**2014**	Cheung, N	Social stress, locality of social ties and mental well-being: The case of rural migrant adolescents in urban China	Health & Place	Cross-sectional	Quantitative	Secondary data	3	1	**4**
29	China (NIC)	No	**2014**	Li et al	Mental wellbeing amongst younger and older migrant workers in comparison to their urban counterparts in Guangzhou city, China: a cross-sectional study	BMC Public Health	Cross-sectional	Quantitative	Primary data	3	1	**4**
30	China (NIC)	No	**2015**	Hoi et al	The Association Between Social Resources and Depressive Symptoms Among Chinese Migrants and Non-Migrants Living in Guangzhou, China	Journal of Pacific Rim Psychology	Cross-sectional	Quantitative	Primary data	3	1	**4**
31	China (NIC)	No	**2015**	Liang, Y	Correlations Between Health-Related Quality of Life and Interpersonal Trust: Comparisons Between Two Generations of Chinese Rural-to-Urban Migrants	Social Indicators Research	Cross-sectional	Quantitative	Primary data	3	1	**4**
32	Sri Lanka (LMIC)	Yes	**2015**	Siriwardhana et al	Dynamics of resilience in forced migration: a 1-year follow-up study of longitudinal associations with mental health in a conflict-affected, ethnic Muslim population	BMJ Open	Cross-sectional but with follow-up	Quantitative	Primary data	3	1	**4**
33	China (NIC)	No	**2015**	Wu et al	Social capital and the mental health of children in rural China with different experiences of parental migration	Social Science & Medicine	Cross-sectional	Quantitative	Secondary data	3	1	**4**
34	Vietnam (LMIC)	No	**2015**	Yamada et al	Living Arrangements and Psychological Well-Being of the Older Adults After the Economic Transition in Vietnam	Journals of Gerontology Series B-Psychological Sciences and Social Sci	Cross-sectional	Quantitative	Secondary data	3	1	**4**
35	China (NIC)	No	**2015**	Zhang et al	Internal migration and the health of the returned population: a nationally representative study of China	BMC Public Health	Cross-sectional	Quantitative	Secondary data	3	1	**4**
36	China (NIC)	No	**2016**	Chen et al	Online Information Searches and Help Seeking for Mental Health Problems in Urban China	Administration and Policy in Mental Health and Mental Health Services Research	Cross-sectional	Quantitative	Secondary data	3	1	**4**
37	China (NIC)	No	**2016**	Chen et al	The Physical and Psychological Health of Migrants in Guangzhou, China: How Does Neighborhood Matter?	Inquiry : a journal of medical care organization, provision and financing	Cross-sectional	Quantitative	Primary data	3	1	**4**
38	China (NIC)	No	**2016**	Ni et al	Subjective well-being amongst migrant children in China: unravelling the roles of social support and identity integration	Child Care Health Dev	Cross-sectional	Quantitative	Primary data	3	1	**4**
39	China (NIC)	No	**2016**	Song et al	Health consequences of rural-to-urban migration: evidence from panel data in China	Health Economics	Cross-sectional	Quantitative	Secondary data	3	1	**4**
40	China (NIC)	Yes	**2016**	Ye et al	Peer Victimization and Depressive Symptoms Among Rural-to-Urban Migrant Children in China: The Protective Role of Resilience	Frontiers in Psychology	Cross-sectional	Quantitative	Primary data	3	1	**4**
41	China (NIC)	abstract only	**2016**	Yi	A improved statistical model analysis the mental health of rural-to-urban migrants in China	International Journal of Smart Home	Cross-sectional	Qualitative	Primary data	3	1	**4**
42	South Africa (NIC)	No	**2017**	Ajaero et al	The influence of internal migration on mental health status in South Africa	International Journal of Mental Health Promotion	Longitudinal (retrospective)	Quantitative	Secondary data	3	1	**4**
43	China (NIC)	No	**2017**	Cheng et al	U-Shaped Relationship between Years of Residence and Negative Mental Health Outcomes among Rural-to-Urban Children in Migrant Schools in Beijing, China	Frontiers in Public Health	Cross-sectional	Quantitative	Primary data	3	1	**4**
44	China (NIC)	No	**2017**	Guan	Measuring the effects of socioeconomic factors on mental health among migrants in urban China: A multiple indicators multiple causes model	International Journal of Mental Health Systems	Cross-sectional	Quantitative	Secondary data	3	1	**4**
45	China (NIC)	No	**2017**	Lin et al	The social income inequality, social integration and health status of internal migrants in China	International Journal for Equity in Health	Cross-sectional	Quantitative	Secondary data	3	1	**4**
46	China (NIC)	No	**2017**	Wang et al	Prevalence of mental health problems and associated risk factors among rural-to-urban migrant children in Guangzhou, China	International Journal of Environmental Research and Public Health	Cross-sectional	Quantitative	Primary data	3	1	**4**
47	China (NIC)	No	**2017**	Wang et al	Psychological adjustment and behaviours in children of migrant workers in China	Child Care Health and Development	Cross-sectional	Quantitative	Primary data	3	1	**4**
48	China (NIC)	Yes	**2017**	Wen et al	Psychological distress of rural-to-urban migrants in two Chinese cities: Shenzhen and Shanghai	Asian Population Studies	Cross-sectional	Quantitative	Secondary data	3	1	**4**
49	China (NIC)	Yes	**2017**	Zhuang et al	Differential impacts of social support on mental health: A comparison study of Chinese rural-to-urban migrant adolescents and their urban counterparts in Beijing, China	International Journal of Social Psychiatry	Cross-sectional	Quantitative	Primary data	3	1	**4**