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## Introduction

The world is currently experiencing two demographic transitions: population ageing and urbanisation. By 2050, the global population of people over the age of 60 years is expected to reach almost two billion (UNDESA, 2013). However, ageing populations are not just restricted to the developed world: it is estimated that in five decades, over 80% of the global older population will be living in developing countries compared with 60% in 2005 (UNDESA, 2009). At the same time, there has been a shift towards urbanisation: as of 2007, more than half of the world's population now live in cities (WHO and Fund, 2008). Current trends suggest that the number and proportion of urban dwellers will continue to rise over the coming decades, with growth occurring more rapidly in developing countries (Montgomery and Ezeh, 2005).

As issues involving ageing society in each country are unique, growing older requires a flexible and evolving environment to compensate for physical and social changes associated with ageing (Beard and Petitot, 2010). Therefore, it is important to consider the impact of the urban and rural environments on older people. This is especially relevant in the current economic climate, where service providers face a difficult challenge in trying to provide for the needs of older people in a time of austerity and budget reductions.

As they age, older people's requirements for more specialised and resource intensive services increase. In recent years, there have been a variety of strategies and policies that meet the specific needs of older people. The terms 'age-friendly' and 'active ageing' have been used to describe some these initiatives. These terms arise from an ecological perspective of ageing that suggests a link between an individual and their physical and social environment. In this review, the term 'age-friendly' encompasses this perspective and is defined as ageing initiatives which are based on the idea that places should enable older persons to be able to participate in their community.

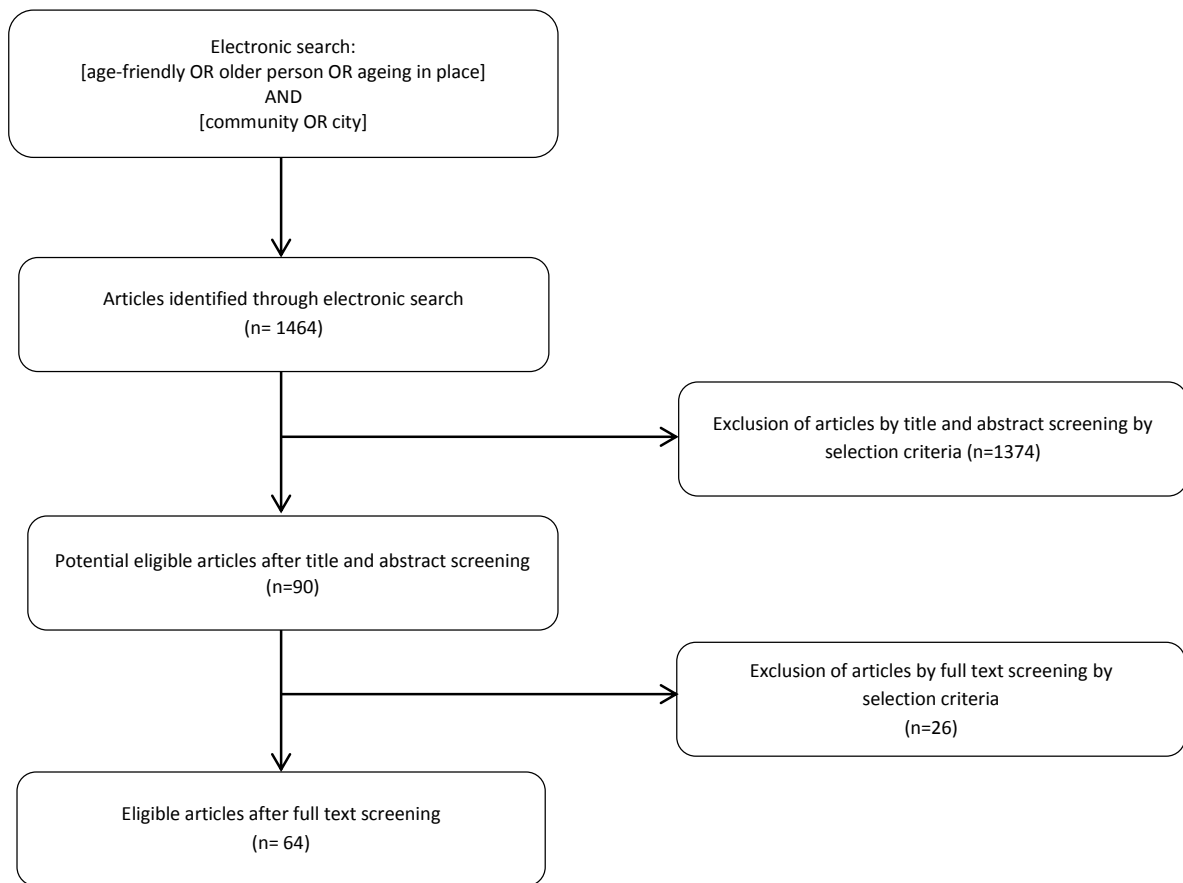
The focus on ageing populations in cities is because in recent years, the urban environment presents a complex setting in which to promote the wellbeing and contributions of older people (WHO, 2007a). As urban living becomes the predominant social context for most of the world's population, it has the potential to both directly and indirectly shape a variety of factors within populations (Galea and Vlahov, 2005). This article will focus on the urban environment and will summarise the current evidence of approaches and interventions used to make our cities more supportive of older persons.

The structure of this paper is as follows. First an overview of the literature review methodology is presented. Next, a summary of age-friendly models and frameworks will be outlined. Then, the key findings of the ageing literature are discussed with reference to specific ageing initiatives and interventions within the urban environment. Finally, the concluding critique provides recommendations for potential future research on older persons within the urban environment.

## **Methodology**

The structured review focused on international literature and where possible, included ageing studies from low and middle income countries. Articles for inclusion were identified through a search of PubMed, Web of Knowledge and PAIS international (Figure 1). Articles were searched from January 1<sup>st</sup> 2009 to September 31<sup>st</sup> 2014, including the following key words in the title or abstract field: 'age-friendly', 'older person', 'ageing in place', 'community' and 'city'. A search of the World Wide Web using the search engine Google was used to obtain grey literature such as policy papers, government reports and reports by other research institutions. The University of Leeds library was also utilised to search for literature. Relevant materials were also selected through examining references in review articles and reports.

The search identified 1,464 articles. The abstracts and titles were reviewed by one reviewer according to the following inclusion and exclusion criteria that had been decided prior to conducting the article search: English language studies set within the general older population with a focus on community-based interventions or approaches within the city context that are associated with creating an age-friendly city or community. Articles were excluded where the study population did not include adults described as older persons, elderly or senior; studies based in rural areas; conference proceedings; and abstracts without full text articles. If it could not be determined from the abstract whether or not the article met all selection criteria, the article was accepted for further review. Ninety articles were reviewed in full. A total of 64 articles were finally identified. Identified age-friendly models and frameworks found are presented in Table 1.



**Figure 1. Flow chart of article selection**

**Table 1. Key features of an age-friendly city or community by selected models and frameworks**

Name of framework/model	Author (Year)	Country	Key features of age-friendly framework/model
WHO Active Ageing framework	World Health Organisation (2002)	Global	<ul style="list-style-type: none"> <li>• Centred on promoting and encouraging active ageing.</li> <li>• There are three pillars of active ageing: health, participation and security.</li> <li>• Guided by the UN principles for older people.</li> <li>• Policy decisions should be based on determinants of active ageing (health and social services, behavioural determinants, personal determinants, physical environment, social determinants and economic determinants).</li> </ul>
Positive Ageing framework	New Zealand Ministry of Social Development (2007)	New Zealand	<ul style="list-style-type: none"> <li>• Devised to improve opportunities for older people to participate in the community.</li> <li>• Framework allows ageing policies to be understood and developed.</li> <li>• Includes ten areas of policy focus: income, health, housing, transport, living in the community, Māori cultural identity, access to facilities and services, attitudes, employment, and opportunities.</li> <li>• Each policy focus has a central outcome.</li> <li>• Indicators allocated to each area of focus.</li> </ul>
Social Connectivity framework	Menec et al., (2011)	Canada	<ul style="list-style-type: none"> <li>• Use an ecological perspective to form their framework</li> <li>• The framework is centred on the older person, followed by family and friends, the community environment and the policy environment.</li> <li>• The concept of social connectivity as a basic beneficial outcome is used to connect the person to the policy environment.</li> <li>• The community environment is made up of the following areas: physical environment; housing; social environment; communication and participation; transportation options; informal and formal community supports and health services; and opportunities for participation.</li> </ul>
Healthy Ageing in Canada framework	Health Canada (2006)	Canada	<ul style="list-style-type: none"> <li>• Three mechanisms (supportive environments, mutual aid and self-care) in centre of framework are used to pursue vision.</li> <li>• Includes five principles: dignity, independence, participation, fairness and security.</li> <li>• Includes five areas of policy focus: social connectedness, physical activity, healthy eating, falls prevention and tobacco control.</li> </ul>
The AdvantAge framework	The AdvantAge Initiative (2002)	U.S.A	<ul style="list-style-type: none"> <li>• Has a primary goal: to create an elder friendly community.</li> <li>• Uses four categories/domains of activities and services: address basic needs, promotes social and civic engagement, optimises physical and mental health and well-being, and maximises independences for frail and disabled.</li> <li>• Outcomes measured by 33 indicators.</li> <li>• Indicators grouped according to domains.</li> </ul>

Conceptual Process framework	Greenfield et al., (2012)	U.S.A	<ul style="list-style-type: none"> <li>• Process driven framework based on grassroots/age-friendly community programmes.</li> <li>• Internal and external resources include staff, volunteers, service delivery and planning entities.</li> <li>• Resources feed into activities and services which are grouped into 3 categories: Civic engagement and empowerment activities, social relationship building activities and services to enhance access to resources.</li> <li>• Activities and services feed into initial and intermediate outcomes, which enhance capacity to age in place (long term goal).</li> </ul>
Manchester Valuing Older People	Manchester City Council (2009)	U.K	<ul style="list-style-type: none"> <li>• Focused on a community-centred approach with older person participation.</li> <li>• Encourages multi-stakeholder engagement, developing academic, local authority and expert partnerships.</li> <li>• Activities focus on six key areas: outdoor spaces and building, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health services.</li> <li>• Outcomes measured using ten indicators.</li> </ul>

## Results and discussion

The literature review identified different terminologies were used to describe and define the age-friendly environment. These include 'age-friendly city', 'age-friendly community', 'liveable city' and 'active ageing'. The difference in terminologies is not problematic but illustrates the range of policies and initiatives emphasised by policy makers, local community programmes and researchers. The difference in terminology used is also illustrated in the age-friendly models and frameworks that were identified. Some were designed to guide or 'frame' a topic of enquiry whilst others described a more conceptual process through which age-friendly research enquires could be made. For example, Greenfield et al. (2012) provide a process driven conceptual framework which focuses on ageing in place. This framework draws on activities and services provided by two programmes which emphasize and promote ageing in place in the U.S. These two programmes are: Naturally Occurring Retirement Community Supportive Service Programmes (NORC programmes) and Villages. The conceptual framework identifies three categories of activities and services that could potentially lead to different levels of outcomes: initial, immediate and long term. This was completed by summarising the evidence linking the activities and services to likely outcomes (Greenfield et al., 2012).

Elsewhere, Menec et al. (2011) build on the WHO framework through the application of ecological theory to provide a general framework for understanding the interrelationships between the environment and the person living within it. In conceptualising age-friendly communities, the authors choose social connectivity as a cross-cutting benefit of an age-friendly community environment. This theme links the policy environment to the older person through the community environment, family and friends. This allows for all levels of influence to be important through focusing on maximising social connectivity via the different domains within the community environment (Menec et al., 2011).

Although these frameworks and models could be thought of as simplifying the complex reality of ageing in an urban area, they cover a range of ageing concerns that cut across the social and physical aspects of the environment. Specific areas outlined in models and frameworks include: the physical environment, housing, transportation, economic determinants, social determinants, health and social services, communication, information, social connectedness, social participation, physical activity, civic engagement, personal determinants and further education (Ng et al., 2009, Oxley, 2009, Lui et al., 2009, Ambigga et al., 2011, WHO, 2007b, NZMoSD, 2007).

Furthermore, although these frameworks and models were created for specific ageing programmes, some, like the AdvantAge Initiative and New Zealand Positive Ageing framework address the need to monitor and evaluate interventions utilising a set of indicators to measure progress (Feldman and Oberlink, 2003, NZMoSD, 2007). Others, such as the model by Greenfield et al. (2012), describe some of the processes that link the social and physical environment in policy formation. Despite these differences, all frameworks and models identified are centred on creating an age-friendly community.

Another key feature of these frameworks and models is consideration of partnerships, including community participation and stakeholder involvement. Engagement with other stakeholders is noted in the literature which calls for multi-level and multi-sector stakeholder engagement (Buffel et

al., 2012, Smith et al., 2013, Naaldenberg et al., 2009, Plouffe and Kalache, 2011), including the concerns of older persons to ensure relevant age-friendly interventions (Beard and Petitot, 2010). However, it was noted that not all frameworks and models utilise government (either local or national) involvement due to the community led focus of the age-friendly programmes.

In comparing different frameworks and models, the majority identified originated from the developed world (New Zealand, U.S.A, U.K and Canada). Furthermore, these frameworks and models are based on ageing studies or initiatives in the developed world. Only the WHO Active Ageing framework provided a global perspective in tackling ageing populations from a variety of settings. However, this framework lacks the user-friendliness noted in other frameworks and would benefit from more clearly defined actions and outcome measures within the guide. It also focuses on many health and ageing issues in the developed world rather presenting a balanced view of ageing issues.

What is lacking is an ageing framework or model that can be used in both the developed and developing worlds. Such a framework could be used to assist governments, policy makers and local communities to address ageing issues. By combining elements of best practice from existing ageing frameworks, a global framework could provide guidance to encourage potential ageing policies and interventions. This would be useful for those new to the age-friendly concept or those who are starting to address the older population in their cities or communities.

#### *An interconnected physical and social environment*

While studies have focused on particular issues related to the physical or social environment (for example, access to green spaces, home adaptations and volunteering), some studies bridge concerns in both physical and social aspects of the environment. For example, the provision of reliable, affordable and accessible public transportation is an important factor in encouraging and enabling older persons to participate in family and community life (Zeitler et al., 2012, Rosenbloom, 2009), as well as assisting older persons to remain mobile and independent (Coronini-Cronberg et al., 2012, Pangbourne et al., 2010, Broome et al., 2012, Broome et al., 2010b). Furthermore, well-maintained footpaths, the provision of bus shelters and nearby bus stops can result in older persons feeling less isolated, as well as enabling mobility and walkability. This can result in positive health benefits and increase feelings well-being through social inclusion and participation (Zeitler et al., 2012).

Other studies have noted the complex and multifactorial relationship between housing and health in older people (Rioux and Werner, 2011, Pérez Martín et al., 2012). In particular, there have been multiple studies testing interventions to enable older persons to age in place. These interventions centre on adaptations within the home, such as the placement of handrails, bathroom modifications and non-slip steps, can further enable older persons to age in place (Boldy et al., 2011, Costa-Font et al., 2009). Modifications within the home can also reduce hazards which can lead to the hospitalisation of older people (Donald, 2009). Home care assistance and technological devices (such as panic buttons) can also reduce injuries and other risks to enable older persons to age in place and retain independence for longer (Simpson, 2010). This is because relocating to a care home can bring about feelings of disempowerment as independence is lost through have to adhere to new routines, decisions with consultations and negative attitudes of care home staff (Cheng et al., 2011, Hellstrom and Sarvimaki, 2007).



A positive social environment can provide social support, opportunities for education, learning, employment and volunteering, and participation in community activities (Scharlach and Lehning, 2013). Participating in a range of activities can assist in fostering and maintaining supportive relationships with both family members and the local community (Yur'yev et al., 2010). For example, remaining engaged in life-long learning or undertaking further training through formal or informal courses can also assist older people in developing new skills. New skills can create or enhance self-confidence and coping strategies, allowing older persons to stay independent as they age. Further training and changes to the level of work in employment can help retain older people in the workforce (Yazaki, 2002). In particular, reduced or flexible working hours have been shown to maintain the health and lifestyle of older persons (Sato, 2001, Kang et al., 2013), whilst enhancing job satisfaction and a sense of value and usefulness within the community (Moranda, 2011). This suggests that an enabling social environment is as important as the physical environment in determining well-being in late life (Lui et al., 2009).

More recently, some studies have emphasised the importance of intergenerational opportunities for social integration and interaction between older and younger persons (Engels and Liu, 2011, Scharlach and Lehning, 2013, Emlet and Mocerri, 2012). This is shifting the age-friendly focus away from elderly persons to one where social and physical facilities centred on older persons are mutually beneficial to all persons regardless of age. For example, a study by Broome et al (2010b) of younger and older adult bus users found that both age groups shared barriers and facilitators to bus use. The study suggested that the creation of an age-friendly bus service would also provide benefits for bus users in other age groups (Broome et al., 2010a). In Brazil, a study by de Souza and Grundy (2007) found that structured intergenerational activities may have positive benefits on some aspects of social capital for both adolescents and elderly people.

Social inclusion is a key theme identified within the literature of intergenerational interaction. There is a focus on changing the behaviour and education of younger generations, as well as the physical environment and the positive effects of this on older people (Yur'yev et al., 2010) and in other age groups (Emlet and Mocerri, 2012). Furthermore, there is a large body of research that shows how important social relationships are to the well-being of people of all ages (Eheart et al., 2009). As an example, Generations of Hope Community (GHC) is a programme set up in Illinois, U.S, where children adopted from foster care can find permanent homes and develop intergenerational relationships in a specially designed community. Residents of GHC are a mix of older persons and families with children or young persons. GHC changes the concept of interventions within a community to the community *as* the intervention, through intergenerational relations and community engagement (Eheart et al., 2009). However, the challenge is to be able to replicate this concept outside of the small community context to that of the urban setting.

On a smaller scale of the GHC project, participating in social, cultural, leisure and religious activities both the community and with family can assist in fostering and maintaining supportive relationships. Linked to the notion of social participation was affordability of community programmes. Age-friendly community initiatives identified often relied on private funding or donations, such as the Naturally Occurring Retirement Community Supportive Service Programs (NORC). Integrating these activities with public services and funding would allow long term sustainability of such activities. These studies demonstrate not only the importance of the role played by supportive friends and family,

but how access to formal support services and resources can encourage and facilitate intergenerational integration within communities

#### *Intersectoral collaboration and political commitment*

It was found that age-friendly initiatives were characterised by intersectoral collaborations. In particular, national governments, research institutions and grassroots organisations play an important role in developing and implementing age-friendly initiatives. Within government organisations, collaborations often involved regional or national government and local authority officials from a variety of government sectors and ministries such as education, employment, housing, social security and urban planners, as well as health and social services. It was noted that changes in the role of government at both the national and local levels (such as the shift from an authoritarian to representative democracy) and level of influence by other factors (such as reduced financial resources or political influences) can also affect the success and support of age-friendly initiatives (PHAC, 2006). Furthermore, it is important to acknowledge that international and national trends can influence ageing interventions and policies at the urban level (Galea et al., 2005).

Outside of government, the involvement of non-governmental organisations (NGOs), not-for-profits and other forms of civil society organisations were a feature of some age-friendly initiatives. Multi-stakeholder collaborations can enable different groups of people with a common goal to work together. The literature suggested that these collaborations included activities that are targeted specifically to those approaching old age or older persons themselves (Tam, 2013, Simpson, 2010, Masotti et al., 2006, Hanson and Emler, 2006, Alpay et al., 2004, Paganini-Hill, 2013). For example, the Healthy Ageing in Canada report illustrates the importance of national governments working with regional governments, research institutions and other organisations to address ageing issues (PHAC, 2006). This provides a supportive environment in which different stakeholders can work together to achieve the same outcomes, exchange knowledge and combine resources. Thus, seeking out and engaging with multiple stakeholders allows the age-friendly agenda to be integrated into different sectors and should be continued and encouraged.

Another theme to emerge through the literature was the involvement and consultation of older persons in age-friendly initiatives. Including older people and their caregivers in the development process has the potential to create useful local interventions. The literature review reported successful initiatives involving older persons in the planning, implementation and evaluation process (Hanson et al., 2007, Zeitler et al., 2012, McGarry and Morris, 2011). For example in Manchester, consultations with older persons were included as part of Manchester's ageing strategy (McGarry and Morris, 2011). In New York, local authorities, the police and community organisations worked closely with older persons residing on the Westside to identify and secure resources for the neighbourhood. This support resulted in older residents feeling safe and more engaged and informed as a community (Kopper, 2009). Thus, the 'bottom-up' approach of including older persons in the planning, implementation and evaluation process can allow relevant age-friendly programmes and activities to be formulated.

#### *Critique*

From examining the literature on age-friendly cities, the review identified several gaps in the literature. First, most of the research published is focused on the urban setting in the developed

world. There were few studies that focussed on age-friendly initiatives in the developing world, particularly in what are described as low income countries. Low and middle income countries will experience the most rapid and dramatic demographic change: it is estimated that in five decades, just over 80 % of the world's older people will be living in developing countries compared with 60% in 2005 (UNDESA, 2013). Where studies discussed age-friendly initiatives from the context of the developing world, similar ageing issues were reported, but with fewer resources to tackle these issues. Furthermore, it was apparent that cultural and socioeconomic influences can influence the success of age-friendly interventions in low and middle income countries (Cheng et al., 2011, Ambigga et al., 2011, Glass et al., 2013, Rose et al., 2008, James et al., 2012). For example, a study in China by Glass et al., (2013) found that family oriented long term care is no longer sustainable. Changes in Chinese society such as the one child policy, rural to urban migration and the increase of female working professionals have reduced the availability of traditional family care givers. Therefore long term care will need to be formally supplemented by formal health and social care services. However, cultural influences (most notably filial piety) will need to be considered when developing these services to ensure both the older service user and the family are supported through the process (Glass et al., 2013).

Elsewhere, a study by Ng et al., (2011) of elderly persons in Singapore suggested that religious beliefs could affect health beliefs and the use of mental health services. Compared to those with no religious affiliation, elderly persons with religious affiliations showed higher prevalence of mental health problems, yet reported less frequent treatment by healthcare professionals. However, education was reported as a factor in whether older persons sought treatment. Those less formally educated were found to have stronger religious affiliations (Ng et al., 2011). Level of education was also found to be an important factor in Minhat and Amin's (2012) study of leisure participation of elderly persons in Malaysia. Compared to those with low educational levels, better educated elderly persons were found to engage in leisure participation and have better health status (Minhat and Amin, 2012). These findings suggests that policy makers and healthcare providers should be mindful when delivering information to the elderly, especially to those with lower education levels or cognitive impairment. Therefore, it is important to consider the cultural and socioeconomic influences of local populations when determining types of age-friendly initiatives.

Second, much of the global literature that specifically discusses 'age-friendly communities' is within the context of building 'lifetime homes' and 'lifetime neighbourhoods'. Examples include the AdvantAge Initiative and the Naturally Occurring Retirement Supportive Service Programmes (NORC programmes). These neighbourhoods are focused on supporting older persons at the community level by adapting and changing the urban environment to enable older persons to remain mobile and independent (Buffel et al., 2012).

Some of these initiatives are linked to government policy, ranging from top-down to bottom-up approaches. Furthermore, a number of approaches have been used when looking more broadly at ageing studies within the urban environment. Whilst some initiatives are focused on the physical environment, others are focused on the social environment. However, a common link between many of these initiatives is the intersectoral collaboration and commitment between authorities, local communities and other stakeholders.

Third, much of the literature examined about ageing initiatives are based on descriptive studies. The discussion of age-friendly communities has given rise to research that has investigated a range of strategies and practices to meet the needs and life situations of older people in a variety of settings. A key task in monitoring and determining the success of policy implementation is through a form of evaluation or evaluative process. Whilst the studies identified provide substantial detail about the different types of age-friendly initiatives, findings from this review found that there was a lack of documentation on the effectiveness of these specific approaches, as well as the specific evaluation of age-friendly policies and interventions. Without rigorous evaluation, it is impossible to assess the impact of these programmes.

However, evaluations of age-friendly initiatives are possible. For example, the AdvantAge Initiative developed a monitoring framework by synthesising responses from focus group studies conducted with older people and community leaders in the U.S. A set of 33 indicators were developed to enable the evaluation of their initiatives through tracking and benchmarking (AdvantAge, 2002, Feldman and Oberlink, 2003). This demonstrates that the systematic evaluation of age-friendly initiatives can guide and improve existing programmes.

Finally, linked into this theme of evaluation is the concept of outcome measures. The use of indicators was suggested in the literature as a way of evaluating and measuring age-friendly interventions and activities (Plouffe and Kalache, 2011, Beard and Petitot, 2010, Lui et al., 2009). In their description of global age-friendly community initiatives, Plouffe and Kalache (2011) suggest the use of outcome indicators to track changes and effects of age-friendly community initiatives. These could then be used to demonstrate the effectiveness of these initiatives as policy interventions to promote health and active ageing.

Some initiatives have utilised or developed indicators to measure ageing related outcomes. As part of their housing research, the Canada Mortgage and Housing Corporation developed a set of indicators to measure the effects of the built environment on older person's independence, health, quality of life and well-being. These indicators were devised for local planner in Canada as a tool to monitor and set goals related to the needs of an ageing population. These indicators are focused on six areas: neighbourhood walkability, transportation options, access to services, housing choice, safety and community engagement in civic activities (CMHC, 2008).

Elsewhere, the New Zealand Ministry of Social Development have established a regular monitoring of older persons as part of the New Zealand Positive Ageing Strategy. The indicators used form part of their monitoring framework, using a wide range of readily available data sources, such as census data to inform these indicators. The indicator framework is based on ten domains including income, health, housing, transport, living in the community, Māori cultural identity and access to facilities and services. Each domain has a desired outcome, with indicators allocated to each domain (Development, 2007). The New Zealand Office for Senior Citizens reports annually on the progress and achievements related to the priority goals and action plans (NZMoSD, 2007).

In linking ageing indicators to existing data sources, Kendig et al. (2012) were able to link population survey data to administrative data at the local level. Although no indicator framework was developed, the study showed a novel approach to using service data at the local level to inform policy and planning. These studies illustrate the potential of utilising existing sources of data and

information to assist in monitoring ageing interventions, activities and services. However, these indicators and frameworks are limited to the monitoring and evaluation of programme specific age-friendly initiatives and outcomes which will limit their utility for investigating ageing issues in the broader urban, rural and suburban contexts.

The development of indicators should be robust and rigorous to ensure that they are sustainable and used themselves by policy makers, government, local communities and other organisations. Guidance should be given in how to interpret indicators and any methods or data used should be open and accessible to all. This will ensure that the misinterpretation of data or indicator is limited or eliminated, as well as ensuring transparency. Indicators could be informed by readily available data. This has many benefits as the validity and reliability of those indicators are likely to have been validated, with no additional data gathering needed. Furthermore, reductions in resources and finances can influence the sustainability of data collection for indicators as well as the upkeep of them.

Summative measures at the macro level can conceal disparities within a city which are important to identify and address. Where possible, indicators should be sensitive to this. If not, indicators that can be disaggregated and stratified (e.g. gender, age, socio-economic statuses) are needed. It is suggested that repeated measurements should be allowed to determine trends and monitor progress towards age-friendliness. Beyond the subject of ageing, international and regional institutions as well as policy makers and governments have been actively promoting the use of indicators to monitor their populations. Thus there is scope for the transferability of such indicators to monitor ageing interventions and policies.

Future developments of age-friendly evaluations and outcome measures would need to consider the wider application of such tools and their application in both the developing and developed world. This is because urbanisation and ageing populations are increasing affecting low/middle-income countries. This would also allow for cross-national comparability. However, whilst ageing is mainly occurring in urban areas, rural populations are undergoing similar demographic changes. For example, 33% of Canadian older adults live in rural areas (Dandy and Bollman, 2008). In recent years several provinces in Canada have launched age-friendly initiatives in rural areas after discussions with rural communities identified age-friendly features that were similar to those in cities (MENEK et al., 2013). Transportation issues were found to be magnified in rural areas, as well as a lack of access to social and healthcare services (Canada, 2006). Therefore, it is important that policy makers consider their ageing populations in both urban and rural areas.

## **Conclusion**

The urban living environment presents a complex setting in which to promote the well-being and contributions of older people in both the developed and developing world. The WHO Global Network of Age-Friendly Cities and Communities has encouraged cities to adopt an age-friendly approach to urban interventions. However, to meet the challenges of ageing in the urban environment, it is important that policy makers create supportive and enabling environments through interventions for their older population. It is these urban structures and services that can affect the way older people age within the urban environment, making the difference between independent or dependent living. To better understand the challenges posed by governments and local authorities in the developing world, more research and discussion is needed on how to manage

an ageing population in a resource scarce setting. These factors will assist and facilitate decision making on the creation of age-friendly policies by highlighting which ageing issues may be of concern in developing countries.

The review of the literature on age-friendly initiatives demonstrated that age-friendly initiatives in the social and physical environment alongside multi-stakeholder collaborations are important factors that will help to build a mutually enhancing environment for older people. In particular, policy makers and city planners should be encouraged to take a proactive approach and engage with the older people themselves to create age-friendly cities. However, the author noted a number of gaps in the setting of age-friendly interventions. These settings are limited to small older person communities in small towns or districts of a city (such as the AdvantAge Initiative) or the city as whole. Cities are a diverse mix of communities including different ethnic groups, social and private housing communities and socioeconomic groups. Further research that considered these different groups would allow decision and policy makers to explore how ageing affects these communities and whether age-friendly interventions need to be adjusted to ensure success.

In addition, the variable geographical locations of cities bring about other factors that should be considered within age-friendly interventions. Though winter deaths amongst older persons have been discussed in the literature (such as Healy, 2003) these are derived from general population-based studies. Research specific to seasonal changes, both summer and winter as well as dry and wet, and how they may affect older persons would allow for specific interventions to be incorporated into the age-friendly city agenda. Linking into seasonal changes, further research should consider the needs of older persons residing in cities that need to adapt to climate extremes: is there anything that can be done to ensure cities remain age-friendly when faced with climate change? What can be put in place to ensure that cities can quickly respond or adapt to extreme seasonal changes? How might these responses be modified for older populations? Are there any cities that can serve as best practice?

Although some of the studies discussed in this article could be shown to illustrate 'best practice' of age-friendly interventions in a variety of cities, further research is required to determine what elements of these interventions make them successful. In particular, are multi-stakeholder collaborations the key to age-friendly city success? Perhaps it is political involvement and financing; or investment in the social environment? And how does a city ensure that these interventions become sustainable? Further research could start to answer these questions.

To ensure that cities understand the extent of their successes and weaknesses, it is crucial that age-friendly interventions are subject to rigorous evaluation. It was found that existing frameworks and models were specific to the studies that they were designed to monitor and had limited generalizability. The identification and use of indicators for monitoring and evaluation can assist cities understand the extent of their success in carrying out age-friendly interventions and to map out the next steps for further progress. Given that population ageing is already affecting much of the developed world and growing in the developing world, it is important that policy makers and decision makers are better placed to address the implications of ageing populations.

However, regarding the global situation of increasing ageing populations, a common set of indicators that are both applicable and adaptable to a range of country contexts does not yet exist. Nor does a global framework tool exist to support in the monitoring and evaluation process. As a result, further research and development in the creation of a framework tool adaptable to the needs of cities globally would be useful in assisting policy makers and planners evaluate existing age-friendly initiatives. A framework tool could also allow decision making to take place that would help ensure efficient, effective and equitable use of resources in the best age-friendly policies.

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