HAPI Health And Places Initiative

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Global Household Changes, Aging, Health, and Place

A RESEARCH BRIEF
VERSION 1.0

Photo by Ann Forsyth

The HEALTH AND PLACES INITIATIVE (HAPI) investigates how to create healthier cities in the future, with a specific emphasis on China. Bringing together experts from the Harvard Graduate School of Design (HGSD) and the Harvard School of Public Health (HSPH), it creates a forum for understanding the multiple issues that face cities in light of rapid urbanization and an aging population worldwide.

Health and Places Initiative
http://research.gsd.harvard.edu/hapi/
Harvard Graduate School of Design

The Research Briefs series summarizes recent research on links between human health and places at the neighborhood or district scale and provides background for a number of other products—a set of health assessment tools, planning and urban design guidelines, urban design prototypes, and neighborhood cases. While the Research Briefs draw out implications for practice, it is these other tools that really provide specific, real-world guidance for how to create healthy places.

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Big Ideas

- With a few exceptions in low-income countries, people worldwide are living longer, having fewer children (or not having them at all), and having them later in life than ever before.
- Family structure is also becoming more complex. Marital disruptions such as divorce, remarriage, or nontraditional living arrangements change the capacity for providing or receiving informal care, particularly between generations.
- Generally, there has been a shift away from intergenerational living towards older individuals and households living without younger generations.
- These trends mean there is an increased burden on a smaller number of family members to provide informal caretaking for older family members. This has profound consequences on the types of housing and services older adults require.
- The main takeaway for planners is there is a growing need for housing and service options for aging adults, along with access to transit and community support (especially for more rural areas).
- Housing/service options should cater to those living independently without family care support: strategies include shared housing arrangements, elder villages, and service delivery approaches.

What the Research Says

Health issues

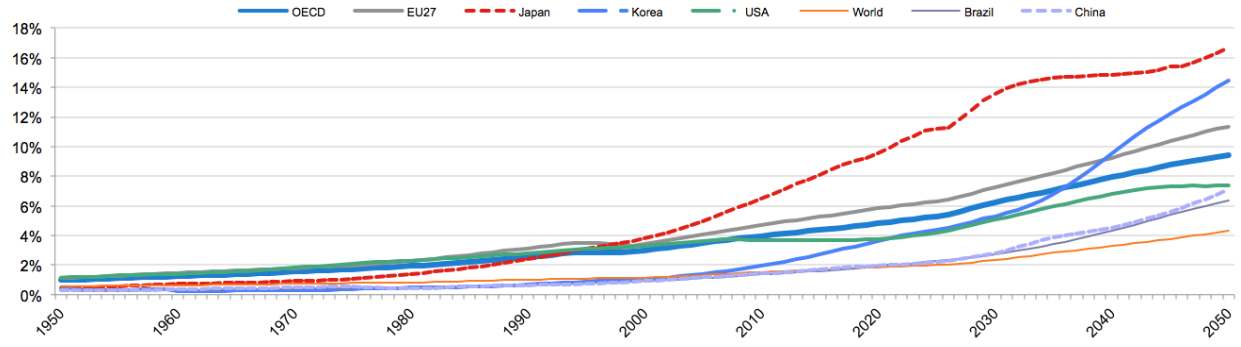
Absolute and proportional numbers of older people are increasing worldwide. Both total lifespans and years in good health are increasing.

Example: The figures below illustrate data compiled from national surveys by the Organization for Economic Co-operation and Development (OECD). It includes composite data for the European Union (EU27) and the number of member states at the time (2010).

Family structure is shifting significantly. People are having fewer children, having them later in life, or not having children at all. Fewer children and siblings mean fewer family members to share care for aging parents and relatives.

Example: The U.S. National Institute of Health (NIH) report "Why Population Aging Matters: A Global Perspective" found increased longevity and decrease in the number of people in each generation contributes to a vertical "beanpole family" structure, with many living generations, but few persons in each generation (Dobriansky et al. 2007, 16).

Figure 1. The share of the population aged over 80 years old will increase rapidly.



Source: OECD Labour Force and Demographic Database, 2010.

Source: Colombo et al. 2011, 62.

Photo by Ann Forsyth

Female adult children have traditionally provided informal care to aging parents, but this will likely decrease in the future.

Example: Similarly, the 2011 World Health Organization (WHO) "Global Health and Aging" report summarized findings and recommendations from health and aging trends across nationally representative surveys worldwide. They found with fewer children and siblings in each generation, there is less potential care and support for parents and siblings as they age (WHO 2011, 22). Therefore, more than ever, there is a need for long-term care infrastructure (WHO 2011, 22).

Adult children may face greater care demands for their parents earlier in life because the gap between generations is larger.

Example: Murphy et al. (2006) compiled data of births (by age of mother) and mortality rates from published national data in Britain, Finland, and France from the early 1900s to 2003. They found that the proportion of those over 80 years old with adult children is increasing – but also that the children are likely to be younger when their parents die compared to previous generations. Thus adult children may face greater demands on providing care for their parents at an earlier stage in their life, at least in the next 20-30 years until the decline in fertility rates has an impact (Murphy et al. 2006, 235). For example, when their parents are 80 and start needing much greater care (on average), a child may only be 40 years old. Greater longevity and health longer in life may help to counteract this.

There is gender inequality in providing informal care to aging parents. This will present a major challenge in the future.

Example: The OECD report "The Future of Families to 2030: Projections, Policy Challenges and Policy Options" predicts that while female adult children (more than male adult children) have traditionally provided informal care to aging parents, this will likely continue to decrease as growing numbers of women enter the labor market, coupled with the increase in childless households, divorce, remarriage, and stepfamilies (Stevens et al. 2011, 13-14).

Family members provide differing amounts of informal and formal care for each other that varies by location.

Example: The OECD report "Help Wanted? Providing and Paying for Long-Term Care" compiled data from national sources and found that the intensity of informal care varies by country; for example, those providing informal care in Northern European countries average less than 10 hours per week, while in Spain and Korea over 50% of informal caregivers average more than 20 hours per week (Colombo et al. 2011, 20).

Example: Igel et al. (2009) studied the interaction between social support services and cultural norms around family responsibilities, using data from the Survey of Health, Aging, and Retirement in Europe (SHARE) survey of 28,517 adults aged 50 and over across eleven European countries. The study found that in countries where aging parental support is seen as a family responsibility, there is more intensive, daily care support, whereas in countries with a developed social service sector families did more sporadic short-term helping tasks, as opposed to intensive daily care (Igel et al. 2009, 214-215). Furthermore, across the eleven European countries surveyed, grandparents were more likely to care for grandchildren, if the parents were working and the child was younger than six years old (before the start of mandatory school) (Igel et al. 2009, 216).

The role of the aging population as caregivers to each other and grandchildren depends on their health, the age gap between generations, and provisions like childcare support.

Example: Haberkern et al. (2011) analyzed data from the SHARE survey (described previously) and found that on net, older people across 14 European countries provide more support (e.g. taking care of grandchildren, spouse) than they receive. Those aged 50-79 are net providers of care to family, while those aged 80 and over are net receivers of care from family. "The difference between those aged 65-79 and those aged 80 years and over indicates that the elderly take on the active role as provider of care and support as long as they have the physical and mental abilities to do so" (Haberkern et al. 2011, 193). Using Human Fertility Database statistics (2010), Haberkern et al. found the age of grandparents at the birth of grandchildren has been increasing, so that it might be close to 60 years in 2030. But increased longevity and health means "grandmothers can expect to live for up to 30 years in good health after the first grandchild is born" (Haberkern et al. 2011, 199).

Example: The WHO "Global Health and Aging" report (2011) suggests that if declining disability in older age continues, older people could provide increased informal care for spouses or for younger generations (WHO 2011, 23).

Family structure is becoming more complex. Marital disruptions such as divorce, remarriage, or nontraditional living arrangements change the capacity for traditional intergenerational forms of informal care, and can result in reduced informal care for older family members.

Example: In a study using telephone interviews of 1,025 adults across the U.S., Ganong et al. (2009) found that adults tended to feel fewer obligations to provide support to divorced or remarried parents and stepparents.

Example: Glaser et al. (2006) analyzed longitudinal data of adults over age 50 between 1991 and 2003, drawn from an annual survey conducted across Great Britain, ranging from 10,000 to 18,000 adults. They found that marital disruptions tended to decrease family support and care at home, particularly for men (Glaser et al. 2006, 212, 214).

In many countries, older adults have been shifting away from intergenerational living towards independent living. This changes the extent and form of care between family members.

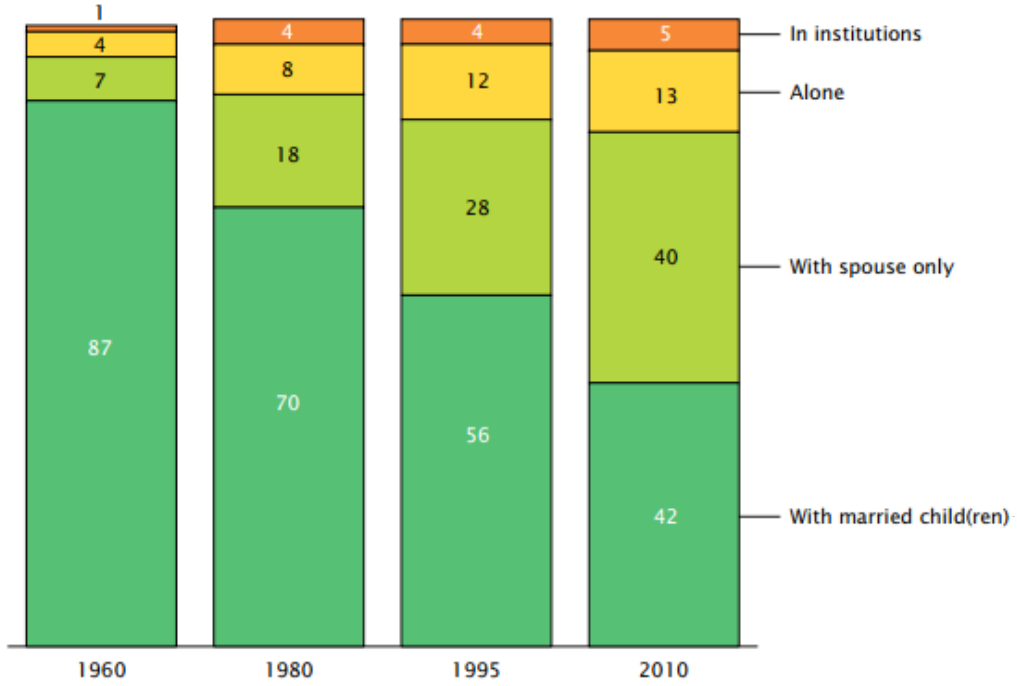
Example: In Japan, Godzik (2010) analyzed official demographic statistics and found that three-generation households have declined by 58% between 1986 and 2008, while older couple households and one-person households have increased over that same time (Godzik 2010, 2). This has the effect of increasing demand for care as people age in independent living situations. Figure 2 shows in the case of Japan, increasingly older adults are living alone or with a spouse only.

Example: According to the World Health Organization (2011), the decrease in intergenerational living by choice or necessity is reinforced by greater longevity, more social benefits, increased home ownership, more elder-friendly housing, and increasing emphasis on community care (WHO 2011, 22).

Photo by Ann Forsyth

In many countries, adults are shifting from intergenerational living toward independent living.

Figure 2. Living arrangements for people aged 65 and over in Japan 1960 to 2010 (in percent).



Source: Kinsella and He (2009, 72)

Place Issues

Preference among older adults is shifting towards "aging in place" in their own homes and communities.

Example: The WHO (2011) "Global Health and Aging" report concludes that increasing the availability of community care, senior-friendly housing, and home ownership (more generally) reinforces the preference for aging in place (WHO 2011, 22).

Urban migration trends have led to greater geographic distance between generations, as younger relatives seek jobs in cities and older family members remain in their communities.

Example: The WHO (2011) report goes on to state that globally, it is now more likely that generations live separately (WHO 2011, 22), in part because younger generations are more likely to seek jobs in cities or migrate internationally (WHO 2011, 23).

Example: Igel et al. (2009) used data from the SHARE survey (referred to previously) and found that generations living farther apart provided less informal care to family members: "the relation between family responsibility and care almost disappears when geographical distances between children and parents are controlled for. The correlation between family responsibility and distance points out that children tend to live close to their parents and care for them, when they feel responsible" (Igel et al. 2009, 217).

Older people often lack adequate transportation options for retaining their mobility and independence, particularly in areas with weaker infrastructure systems like rural and suburban regions.

Example: Bascu et al. conducted ethnographic interviews with 46 adults aged 65 and older in two rural communities in Saskatchewan, Canada, on supporting health needs in rural communities. Transportation is a particular concern in rural areas as seniors lose the ability to drive, and they need transportation services for medical appointments and other routine needs (Bascu et al. 2012, 81).

Example: Based on a series of focus groups led by the World Health Organization (N= 1,485 older adult participants), the WHO's "Global Age-Friendly Cities" research found even in cities with subsidized transport for seniors, affordability of public transportation was still a common concern, as was difficulty getting free or subsidized fares if they were available. Lack of adequate public transportation was a particular concern in developing countries. Finally, the focus groups cited the lack of public transportation service to important destinations like nursing homes and senior centers (WHO 2007).

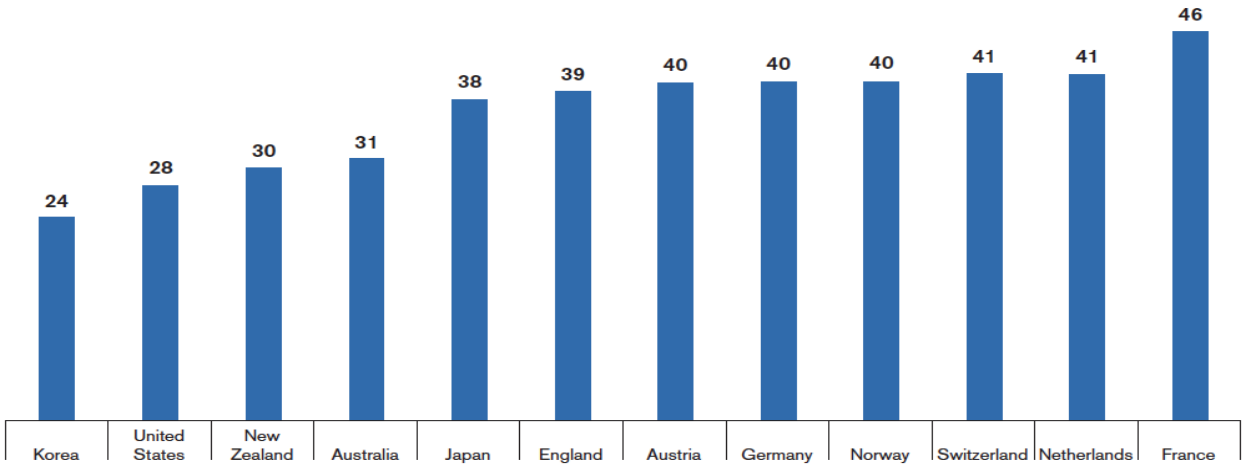
Example: A New Zealand study led by Davey (2007) involved interviews in 2004 with 96 older people across the country that had been without private transport for at least six months. Eighty-one percent (81%) of men and fifty-five percent (55%) of women described negative effects from giving up driving, such as being forced to rely on others and limited opportunities to leave home. Ability to cope without a car depended on location, such as flat terrain, the availability of alternative transportation, and their personal health (Davey 2007, 57).

There is a growing demand for accomdations for independent aging in place.

Example: "The Future of Families to 2030: Projections, Policy Challenges and Policy Options" report documents the increase in single-adult households, which will likely contribute to increased housing pressure (Stevens et al. 2011, 13). The figure below illustrates the predicted increase in proportions of single-adult households across OECD countries. Some of this will involve demand for small units but not all. For example, where people age in place in their existing home they may in fact inhabit a very large house or apartment.

Example: Based on their interviews (N=42) in two rural Saskatchewan communities, Bascu et al. (2012) conclude these rural areas lack enough affordable senior housing across different levels of care needs, from independent living to full support. "The demand for rural seniors' housing will continue to increase from seniors' desire to age within their communities, in-migration of seniors retiring from urban communities, people moving in from farms and seniors retiring in the towns where they were raised" (Bascu et al. 2012, 81).

Figure 3. Projected share of one-person households 2025-2030 as a percentage of all households.



Source: Stevens et al. 2011, 12. Data compiled from country-level demographic reports.

Vulnerable Groups

Socioeconomically disadvantaged seniors and their families are at risk for remaining in poverty.

Example: The OECD report "Help Wanted? Providing and Paying for Long-Term Care" compiled data from household surveys from Australia, the United Kingdom, and South Korea with data from the SHARE survey and U.S. Health and Retirement Survey. Their analysis found informal caregivers, "… of working age, caring is associated with a higher risk of poverty" except in southern Europe. This may be due to lower employment rates or household composition with few wage-earners (Colombo et al. 2011, 97).

Example: An analysis of U.S. Census data from 2000 found that the population aged 65 years and older had the greatest income inequality gap among all age ranges, "reflecting in part different retirement resources as well as the cumulative effect of different lifetime earnings" (Riche 2003, 141).

Older renters and those still paying off mortgages are more likely to be burdened by housing costs.

According to the Joint Center for Housing's report (2014), *Housing America's Older Adults,* "Today, a third of adults aged 50 and over – including 37 percent of those aged 80 and over – pay more than 30 percent of income for housing that may or may not fit their needs. Among those aged 65 and over, about half of all renters and owners still paying off mortgages are similarly housing cost burdened. Moreover, 30 percent of renters and 23 percent of owners with mortgages are severely burdened (paying more than 50 percent of income on housing)" (JCHS 2014, 3).

Those age 80 and above, low-income, and women are at the highest risk of living in poverty in old age.

Those age 80 and above are particularly at risk for the financial strain of long term care costs.

Example: The "Help Wanted? Providing and Paying for Long-Term Care" OECD report analyzed long-term care needs and found "average [long-term care] expenditure can represent as much as 60% of disposable income for all but those in the upper quintile of the income distribution. The oldest old [age 80 and above] and those with severest healthcare needs are especially at risk" (Colombo et al. 2011, 29).

Strong support networks can protect against some of the negative impacts of poverty on health.

Example: An interview-based study of 3,050 Mexican Americans aged 65 and older in the southwestern U.S. indicated that higher density Mexican American neighborhoods may mitigate the effect of poverty on health, measured by depressive symptoms. One possible reason is the strong social support available from a dense, close community (Ostir et al. 2003).

Example: Lamura et al. (2008) conducted a comparative study of six European countries' (Germany, Greece, Italy, Poland, Sweden, and the U.K.) caregiver support service use (e.g. day care centers, information and counseling, "granny-sitting", weekend breaks, monetary transfers) with national samples of approximately 1,000 family carers per county (using SHARE data, described elsewhere). The authors found, "Service use is more prevalent among wives and carers with stronger support networks and less frequent among working daughters with high levels of burden, suggesting the need for a reconsideration of eligibility criteria and better targeting of service responses. Access to and use of services is characterized by a divide between carers in northwestern Europe, who experience few difficulties other than the older person's refusal to accept the support offered, and carers in southeastern Europe, where service affordability and poor transportation present remarkable barriers" (Lamura et al. 2008, 752).

However, individual-level characteristics still play a major role.

Example: However, individual-level characteristics may still determine the presence of depressive symptoms more so than neighborhood context. A longitudinal study of 1,871 adults in the U.S. 70 years or older in 1993 found that once individual-level characteristics were controlled, there were no significant associations of depressive symptoms with neighborhood characteristics (Wight et al. 2009).

Women have much higher risk of living in poverty in old age, compared to men.

Example: The NIH report "Why Population Aging Matters: A Global Perspective" (2007) found that unmarried women or widows without children are particularly at risk, as "non-married women are less likely than non-married men to have accumulated assets and pension wealth for use in older age" (Dobriansky et al. 2007, 16).

Example: In his European Centre policy brief on poverty risks for older people in European Union countries, Zaidi (2010) analyzed 2008 EU-SILC survey data for comparative statistics of poverty. He found, "On average, older women have a poverty risk rate of about 22% as compared to an older men poverty risk rate of about 16%... the oldest age cohorts, aged 75+, have a higher risk poverty risk rate than those aged 65-74. This is principally because women…live longer than men. One added reason for the high risk of poverty attaching to the oldest age cohort – who joined labour markets in the 1950s and 1960s- is that during this period pension systems coverage was rather low for most groups" (Zaidi 2010, 8-9).

Like many countries, China has inadequate housing and affordability challenges for older adults.

China

The majority of older people in China are living independently. However, there is a strong desire to live with adult children.

Example: Li and Chen conducted a study involving in-person surveys across China with 692 adults across income levels, aged 60 and above. They found of those currently not living with their children (68% of sample) 45% would like to, indicating that more hope to live with their adult children than actually do (Li and Chen 2011, 464 and 467).

In general, housing in Chinese cities is inadequate. Households are facing an increasing affordability challenge and limited options.

Example: Li and Chen's (2011) national study found that while 98% of older adult households had electricity and 94% had a kitchen, "only 52% had grab bars installed in their homes. The percentages of homes with a bathroom, tap water, and gas were all too low" at 77%, 79%, and 67%, respectively (Li and Chen 2011, 468). They also found a significant gap in the value of homes, based on occupation before retirement. "Data show that former government officials and staff were rewarded with the largest amount of profit from their housing properties, while former peasants and the unemployed made the least profit" (Li and Chen 2011, 471). The study also found that "no significant group difference was found in the utilization of public facilities" such as senior centers, fitness facilities, and community clinics (Li and Chen 2011, 472).

The rapidly aging populations of countries like China offer an opportunity to adopt notions of age-friendliness.

Example: The World Economic Forum's book, *Global Population Ageing: Peril or Promise*, reviews the age-friendly cities movement (such as the WHO Global Network), and how this has primarily been centered in developed economies. A major challenge is to encourage age-friendliness in less developed places. They suggest that factors like the availability of new

resources and economic growth, along with the rapid change of urban form, offers opportunities for new intervention, particularly for the poorest populations in large cities, and provide several case examples such as Shanghai, China and Sao Paulo in Brazil (Beard et al., 2011, 94–95). But they say, "What is lacking so far is hard evidence of a positive impact of these initiatives and models that can be adopted in even the poorest settings" (Beard et al. 2011, 96).

Example: Residential care has become an increasingly popular alternative option for providing care. Cheng et al. (2011) conducted interviews at residential care facilities (RCF) in Beijing, conducting 46 in-depth interviews with elder residents, family members, and RCF managers. The study found that most residents were satisfied with living in their RCF. Overall, respondents' "well-being was highly related to the physical and social attributes of the RCF in which they lived," including quality of the physical environment and quality staff and services (Cheng et al. 2011).

Things for Certain (or semi-Certain)

While household structure projections are a little more uncertain than population projections, they are nonetheless still likely to be accurate in the short-term.

Example: "The Future of Families to 2030" report projects, "in the absence of extreme events, population aging, urbanization, life expectancy, union formation and dissolution, for example, can be viewed as both relatively certain and slow-moving, at least over what is a relatively short period of 20 years" (Stevens et al. 2011, 27).

Researchers don't yet agree how changing family patterns will ultimately impact health and poverty risk.

Things up in the Air

There is still a lack of data to determine the health impacts of family patterns and residential settings over time (Stevens et al. 2011, 38).

Example: The WHO (2011) "Global Health and Aging" report acknowledged that researchers still do not have a consensus on the ultimate impact of evolving family patterns on health and risk of poverty (WHO 2011, 22).

Example: Haberkern et al. (2011) debate the challenges and opportunities for older people in light of changing future trends in family structures and living arrangements. They discuss how the net effect of age-segregated residential settings compared to mixed-aged neighborhoods is unclear, noting the trade-off between formal service provisions in retirement communities and intergenerational social life. "The increasing popularity of retirement villages raises questions about the integration of elderly people in, or separation from, the wider community" (Haberkern et al. 2011, 210).

It is still unclear what demographic patterns best predict the availability and need for care.

Example: In the literature review for a study comparing mortality and fertility rates, Murphy et al. (2006) found there is not enough generally data known about how many surviving children older adults have, and conversely the proportion of the younger generation with an older parent alive (Murphy et al. 2006, 220).

Grandparents providing full-time care to grandchildren may be more likely to have low incomes, although the research varies by location, cultural norms and values, and childcare systems.

Example: In a study of U.S. grandparents providing care to grandchildren, Fuller-Thomson and Minkler (2001) analyzed a representative sample of 3,260 responses to a U.S. survey conducted from 1992-1994. The study found that extensive caregivers providing 30 hours or more of care per week, "had a lower mean income… and were more than twice as likely to live below the

poverty line" when compared against occasional caregivers (Fuller-Thomson and Minkler 2001, 204). One possible reason may be "grandparents who are poor are more likely to have grandchildren who also live in low-income households… the former's heavy involvement in child care provision reflects, in part, the prohibitive costs of much organized child care" (207). The study also found extensive caregivers were also more likely to be African American and less likely to be a high school graduate (204).

Example: However, in the literature review for a study on the characteristics of grandmothers providing childcare for grandchildren, Lee and Bauer note that "previous research has found contradictory findings when it comes to the role of grandparents' financial situations" (Lee and Bauer 2010, 457). Their own study in South Korea, using survey data from the Korean Longitudinal Study of Aging, sampled 3,329 female respondents aged 45-79 years old who had at least one grandchild. They found that grandmothers with both high- and low-income levels were likely to provide full-time or more hours of care to the grandchildren (Lee and Bauer 2010, 469).

Example: Hank and Buber (2009) used 2004 SHARE data (described previously) to analyze the role of grandparents in caring for their grandchildren in Europe. They found that Nordic countries had young children in full-time daycare at much higher rates than southern Europe or western Germany. They also found that maternal participation in the labor force was much lower in Mediterranean countries than in Scandinavian countries. "In Greece, Italy, and Spain, on the other hand, the lack of public day care for children inhibits maternal employment, and there is only limited demand for grandparents to step in because mothers tend to be full-time carers. If, however, a Mediterranean mother decides to seek gainful employment, she has to rely on grandparents' support on a regular basis" (Hank and Buber 2009, 69). The authors conclude "Rooted in long-standing family cultures, these European patterns of grandparent-provided child care suggest a complex interaction between services provided by the welfare state and intergenerational family support in shaping the work-family nexus for younger parents" (Hand and Buber 2009, 69).

Photo by Ann Forsyth

Grandparents often provide caretaking to grandchildren - how much and how this relates to povery varies by place.

Implications

Creating an age-friendly city requires a comprehensive approach across many domains of the built environment and services, as well as social inclusion, communication, and participation.

Example: The World Health Organization (WHO) led an international study of older people and care providers in 33 cities in developing and developed countries and in cities of varying size. After conducting semi-structured focus groups totaling 1,485 older adults and 765 care providers, the WHO published the *Global Age-Friendly Cities Guide* (Plouffe and Kalache 2010, WHO 2007).

The WHO's "Global Age-Friendly Cities: A Guide" provides a comprehensive framework for assessing the age friendliness of a city, that includes eight domains (WHO 2007):

1. Outdoor spaces and buildings
2. Transportation
3. Housing
4. Social participation
5. Respect and social inclusion
6. Civic participation and employment
7. Communication and information
8. Community support and health services

Despite the need for a comprehensive approach, there are a few areas that need prioritized improvements to accommodate the growing numbers of aging adults. These include changes to available housing types, increased access to services and transportation, and related policy reforms.

Creating an age-friendly city requires a comprehensive approach, but housing types, increased transportation and services need to be prioritized.

Housing

Planners can support a diversity of housing types to meet the needs of a variety of household types, particularly given older people's increasing preference for independent living and "aging in place", as well as the increasing numbers of single-adult households.

Example: Wiles, et al. (2012) studied how older people understand the term "aging in place" by conducting focus groups and interviews (N=121 adults, ages 56–92 years old, New Zealand). Aging in place does not necessarily mean in the same house, but in the same neighborhood or community. They found that "older people want choices about where and how they age in place. 'Aging in place' was seen as an advantage in terms of a sense of attachment or connection… in relation to both homes and communities. Aging in place related to a sense of identity both through independence and autonomy and through caring relationships and roles in the places people live" (Wiles et al. 2012, 357).

Example: A policy issue paper to the U.S. Department of Housing and Urban Development studied the impact of an aging population on national housing demand. It recommends "[building] flexibility into new or existing housing, to accommodate a variety of uses" such as spaces serving as offices or semi-independent living for other family members (Riche 2003, 133). It also recommends building flexibility into housing financing, to allow for changing and varied household types (Riche 2003, 133).

Example: The Joint Center for Housing Studies report on housing for America's older adults describes how, despite aging in place being the preference of most people, "Much of the nation's housing inventory lacks basic accessibility features, preventing older adults with disabilities from living safely and comfortably in their homes" (JCHS 2014, 1-2). They recommend both the public and private sectors ensure all new residential construction include certain accessibility features, as well as state and local governments incentivize modifications of existing homes for those with disabilities (JCHS 2014, 6).

Mutigenerational living will likely continue to be a popular option for many families. Housing arrangements should continue to offer and improve upon multigenerational living options, both within the same dwelling and integrated into the nearby community.

Example: Based on a series of focus groups led by the WHO (N= 1,485 older adult participants), the "Global Age-Friendly Cities" guide found several of the groups had a preference for senior housing to be integrated throughout the community and avoiding "ghettos of older people in large seniors' housing complexes" (WHO 2007, 35).

Example: In 1997, Hong Kong incentivized public housing adult applicants to live with their parents, by prioritizing those who demonstrate a willingness to live with their elder dependents. Some public housing estates allowed applicants to jointly apply for separate units on the same block, allowing young couples to live adjacent to older adults (Chi 1997, 70).

Example: Choi (2013) surveyed (N=242) differences between two co-housing arrangements: exclusively age 40+ co-housing and mixed generational cohousing in Sweden. He found that there were different motivations to move into different co-housing types. Namely, women, singles, academics, and small dwellings preferred the 40+ cohousing to the mixed-age cohousing for social reasons (e.g. sharing common activity, idea of cohousing). Those preferring mixed-age cohousing (e.g. more often dual income families with young children living with older adults) were more focused on the practical advantages than social interaction. The authors conclude, "cohousing design has to be tailored to adapt residents' specific needs of different life-stages" (Choi e2013, 77).

For older people who choose to live independently, building modifications and technology innovations may improve ability to age in place.

Older adults will need a variety of options: aging-in-place, independent living, and multigenerational housing.

Example: Haberkern et al. (2011) describe temporary, modular homes that incorporate new technologies, such as MEDcottage or uHouse in Korea, which provide some substitutes for hospital services. This allows for privacy and independence while remaining on-site, and may be beneficial to those in rural areas, as they can monitor a patient's condition and activity (Haberkern et al. 2011, 210).

Example: Using data from the U.S. Census Bureau in four states, Smith et al.'s (2012) results "suggest that most local areas will exhibit at least a modest need for accessible housing and many will exhibit a strong need" (Smith et al., 2012, 263). For the U.S. as a whole, the study found a 60% probability that a resident of the household would be disabled at some point.

Example: According to the JCHS report on housing for older Americans, "Many state and local governments are now recognizing the growing need for accessible housing and are either incentivizing or mandating certain universal design features–particularly a no-step entry, a main-floor accessible bathroom, and wide interior doors–that ensure residents and guests alike can navigate the home" (JCHS 2014, 23).

Example: Hwang et al. (2011) analyzed the relationship between home modifications and aging-in-place using the ENABLE-AGE United Kingdom sample (N=376). The authors found "a positive relationship between home modifications and aging-in-place. The results underscore the importance of supportive environment to prolong living in housing settings" (Hwang et al. 2011, 246).

Photo by Ann Forsyth

Many older people will seek communal living arragements: either for only older adults, or intergenerational.

Communal living arrangements or service cooperatives offer many benefits, such as both privacy and social opportunities.

Example: Godzik (2010) documents forms of communal housing for older people in Japan since the 1970s, both rented and owned. He conducted in-depth interviews at five different houses with 12 residents, in ongoing research. Some are multi-generational, in which each household has a private living space but share a large common space for meals or gatherings, while others are elderly-only communal housing. "Despite the fact that the interviewees chose communal housing projects that charge higher rents than ordinary single-person flats, they opted for a communal form of living and sold their owned house or flat in a number of cases… A well-balanced mix of privacy on the one hand and communality on the other, seemed to be one of the determining factors for choosing communal housing" (Godzik 2010, 10-11).

Example: Elder service cooperatives are a growing movement internationally: whether a virtual 'village to village network' or a naturally occurring retirement community with supportive service programs. Although these are not yet well assessed, these models are promising options. For example, the Filo d'Argento (Silver Thread) in Italy, Protocol 3 in Belgium, or Passion for Life program in Sweden (http://www.changemakers.com/innovationinageing). The Village-to-Village network has 150 villages operating in the United States, Australia, and the Netherlands, with over 120 other villages in development (http://www.vtvnetwork.org/).

Example: Similarly, Bedney et al. (2010) describe a model of supporting aging through supportive service programs in naturally occurring retirement communities (NORC) – the NORC Supportive Services Program (NORC-SSP). This model "is a community-level intervention in which older adults, building owners and managers, service providers, funders, and other community partners create a network of services and volunteer opportunities to promote aging in place among older adults who live in 'naturally occurring retirement communities,' housing developments and residential areas not planned for older adults but in which large numbers of older adults reside" (Bedney et al. 2010, 304).

Planners and policymakers should prepare for increased need for quality assisted living and institutional facilities as the older population ages.

Example: Crisp et al. (2013) used mailed questionnaires to survey 517 adults aged 55-94 years old in the Australian Capital Territory, identifying factors that encourage or discourage relocation to a retirement village. The perceived benefits that encouraged relocation were "'assistance in the case of declining health', 'family doesn't have to look after you', 'convenient location to facilities', 'assistance with household/gardening chores', 'having some independence', 'space to get out and walk around', an 'assisted living component' and 'access to medical facilities'" (Crisp et al. 2013, 166). Significant factors discouraging relocation included fear of losing independence and privacy concerns (Crisp et al. 2013).

Transportation

Transportation options should be accessible and increase passengers' mobility, enhancing riders' independence. This is particularly critical for rural and suburban populations with a high proportion of older people.

Example: The World Economic Forum (WEF) report on global aging gives an overview of a variety of age-friendly city and business models. Based on these models, they make the following general recommendations: when planning infrastructure and transport links take into account the relative locations between amenities and services like healthcare, grocery stores, and pharmaceutical services, as well as general social networks. Streets and other infrastructure should be barrier-free, well-marked, and well-lit (Beard, et al. 2011, 95).

Example: "The Future of Families to 2030" OECD report connects demographic and intergenerational household shifts with greater geographic distance. Informal caretakers will therefore need high levels of transportation, particularly in low-infrastructure places like rural and some suburban areas. Policymakers and planners can redesign road systems to improve safety for older drivers, provide better public transport for those with disabilities, and improve service provision in low-density areas (Stevens et al. 2011, 37).

Services

For greater efficiency and cost-effectiveness, policies and programs should integrate services across generations.

Example: "The Future of Families to 2030" (2011) report recommends that local services increase efficiencies in care and health services through "'cascading' of universal services, integrated service delivery, or co-location of service delivery on physical sites such as clinics, schools and childcare centers" (Stevens et al. 2011, 35).

Example: The OECD's (2011) "Help Wanted? Providing and Paying for Long-Term Care" report recommends increasing attention on the needs and training of family care-givers, developing a system of formal long-term care that encompasses institutional, home-based, and community services, training for and valuing a workforce to provide long-term care, moving towards universal long-term care benefits, and improving efficiency and value in care (Colombo et al. 2011).

Photo by Ann Forsyth

The main takeaway for planners is there is a growing need for housing and service options for aging adults, along with access to transit and community support (especially for more rural areas).

Policies

The greatest positive changes for older people will come from a variety of comprehensive and integrated interventions not only in the built environment (housing, transportation), but also in service provision, technologies, and policy changes.

Example: Beard, et al. (2011) in a report for the World Economic Forum describe strategies applied across the Andalucía Region of Spain, the State of Sao Paulo in Brazil, and the State of South Australia, which established integrated formal working parties including government representatives, civil society organizations, and academic institutions (Beard, et al. 2011, 95).

Example: Similarly, the OECD's "The Future of Families to 2030" report recommends more comprehensive policies for families. As an example, it suggests coherent care leave arrangements – such as a Netherlands savings scheme that allows financing for unpaid leave in the future - throughout the overall life cycle, versus the current tendency towards partial approaches (Stevens et al. 2011, 36).

Example: The OECD/European Commission's book (2013) *A Good Life in Old Age? Monitoring and Improving Quality in Long-term Care* provides an overview of best- policy practices to promote quality long-term care for aging individuals. These include discussing the importance of measuring the quality and effectiveness of long-term care (e.g. establishing information systems and systematically collecting information on quality of care, clinical quality, and quality of life), regulations to improve quality in long-term care (e.g. accreditation, certification, and review of facilities, etc., regulations to prevent elder abuse including ombudsman, adult guardianship, and complaint mechanisms), standardization and monitoring of care processes (e.g. comprehensive care needs assessment, standardized tools and scales, and quality indicators), and incentives for providers and choice for consumers (e.g. cash-for-care, vouchers, or consumer-directed benefits, etc.).

Photo by Ann Forsyth

The greatest positive changes for older people will come from a variety of comprehensive and integrated interventions.

Sources

Bascu, Juanita, Sylvia Abonyi, Bonnie Jeffrey, Shanthi Johnson, Diane Martz, and Nuelle Novik. 2012. "Healthy Aging in Place: Supporting Rural Seniors' Health Needs." *Journal of Rural Nursing and Health Care* 12(2): 77-87. Accessed January 27, 2015.

Beard, John R., Mario Delgado, Terry Hill, and Alexandre Kalache. 2011. "Ageing and Urbanization." In *Global Population Ageing: Peril or Promise*, edited by John Beard, Simon Biggs, David E. Bloom, Linda P. Fried, et al., 93-96. Geneva: World Economic Forum. Accessed January 27, 2015. http://www.weforum.org/reports/global-population-ageing-peril-or-promise.

Bedney, Barbara Joyce, Robert Bruce Goldberg, and Kate Josephson. 2010. "Aging in place in naturally occurring retirement communities: transforming aging through supportive service programs" *Journal of Housing for the Elderly* 224: 304-321.

Bemelmans, Roger, Gert Jan Gelderblom, Pieter Jonker, and Luc de Witte. 2012. "Socially assistive robots in elderly care: a systematic review into effects and effectiveness." *Journal of the American Medical Directors Association* 13: 114-120.

Chi, Iris, and Nelson Chow. 1997. "Housing and Family Care for the Elderly in Hong Kong." *Ageing International* (Winter/Spring): 65-77.

Cheng, Yang, Mark Rosenberg, Wuyi Wang, Linsheng Yang, and Hairong Li. 2011. "Aging, health and place in residential care facilities in Beijing, China." *Social Science and Medicine* 72(3): 365-372.

Colombo, Francesca, Ana Llena-Nozal, Jerome Mercier, and Frits Tjadens. 2011. "Help Wanted? Providing and Paying for Long-Term Care." OECD Health Policy Studies, OECD Publishing. http://dx.doi.org/10.1787/9789264097759-en.

Crisp, Dimity, Tim D. Windsor, Kaarin J. Anstey, and Peter Butterworth. 2013. "What are older adults seeking? Factors encouraging or discouraging retirement village living." *Australian Journal on Ageing* 23(3): 163-170.

Davey, Judith A. 2007. "Older people and transport: coping without a car." *Ageing and Society* 27(1): 49-65.

Dobriansky, Paula J., Richard M. Suzman, and Richard J. Hodes. 2007. "Why population aging matters: A global perspective." *National Institute on Aging, National Institutes of Health, US Department of Health and Human Services, US Department of State.*

Fuller-Thomson, Esme, and Meredith Minkle. 2001. "American Grandparents Providing Extensive Child Care to Their Grandchildren: Prevalence and Profile." *The Gerontologist* 41(2): 201-209.

Ganong, Lawrence H., Marilyn Coleman, and Tanja Rothrauff. 2009. "Patterns of assistance between adult children and their older parents: Resources, responsibilities, and remarriage". *Journal of Science and Personal Relationships* 26(2-3): 161-178.

Glaser, Karen, Cecilia Tomassini, Filomena Racioppi, and Rachel Stuchbury. 2006. "Marital disruptions and loss of support in later life: a longitudinal study of the United Kingdom." *European Journal of Ageing* 3(4): 207-216.

Godzik, Maren. 2009. "Choosing new places to live: Alternative housing solutions for the elderly in Japan," in Randolph, B et al. (eds.), Refereed Papers Presented at the 4th Australasian Housing Researchers Conference, Sydney. 5-7 August 2009. Sydney, City Futures Research Centre, University of New South Wales.

Haberkern, Klaus, Michel Grignon, Franz Neuberger, and Tina Schmid. 2011. "The Role of the Elderly as Providers and Recipients of Care." In OECD, *The Future of Families to 2030*, 189-257. OECD Publishing. http://dx.doi.org/10.1787/9789264168367-6-en.

Hank, Karsten, and Isabella Buber. 2009. "Grandparents caring for their grandchildren findings from the 2004 Survey of Health, Ageing, and Retirement in Europe." *Journal of Family Issues* 30, no. 1 (2009): 53-73.

Hwan, Eunju, Linda Cummings, Andrew Sixsmith, and Judith Sixsmith. 2011. "Impacts of home modifications on aging-in-place." *Journal of Housing for the Elderly* 25: 246-257.

Igel, Corinne, Martina Brandt, Klaus Haberkern, and Marc Szydlik. 2009. "Specialization between Family and State Intergenerational Time Transfers in Western Europe." *Journal of Comparative Family Studies* 40(2): 203-226.

Joint Center for Housing Studies of Harvard University. 2014. *Housing America's Older Adults–Meeting the Needs of an Aging Population.* Harvard Joint Center for Housing Studies.

Kinsella, Kevin, and Wan He. 2009. *An Aging World: 2008.* International Population Reports, P95/09-1. U.S. Census Bureau, U.S. Government Printing Office: Washington, DC.

Lee, Jaerim and Jean Bauer. 2010. "Profiles of Grandmothers Providing Child Care to Their Grandchildren in South Korea." *Journal of Comparative Family Studies* 41(3): 455-475.

Li, Bin, and Sheying Chen. 2011. "Aging, Living Arrangements, and Housing in China." *Ageing International 36*: 463-474. http://dx.doi.org/10.1007/s12126-010-9094-8.

Murphy, Michael, Pekka Martikainen, and Sophie Pennec. 2006. "Demographic Change and the Supply of Potential Family Supporters in Britain, Finland, and France in the Period 1911-2050." *European Journal of Population* 22(3): 219-240.

OECD/European Commission. 2013. *A Good Life in Old Age? Monitoring and Improving Quality in Long-term Care.* OECD Health Policy Studies, OECD Publishing. http://dx.doi.org/10.1787/9789264194564-en.

Ostir, G.V., K. Eschbach, K.S. Markides, and J.S. Goodwin. 2003. "Neighborhood composition and depressive symptoms among older Mexican Americans." *Journal of Epidemiology and Community Health* 57(12): 987-992.

Plouffe, Louise and Alexandre Kalache. 2010. "Towards Global Age-Friendly Cities: Determining Urban Features that Promote Active Aging." *Journal of Urban Health* 87(5): 733-739.

Riche, Martha Farnworth. 2003. "How changes in the nations' age and household structure will reshape housing demand in the 21st century." In "Issue Papers on Demographic Trends Important to Housing," 125-147. Washington D.C.: Policy Development & Research, U.S. Dept. of Housing and Urban Development.

Smith, Stanley K., Stefan Rayer, Eleanor Smith, Zhenglian Wang, and Yi Zeng. 2012. "Population Aging, Disability, and Housing Accessibility: Implications for Sub-national Areas in the United States." *Housing Studies* 27(2): 252-266.

Stevens, Barrie, Pierre-Alain Schieb, and Anita Gibson. 2011. "The Future of Families to 2030: Projections, Policy Challenges and Policy Options." Organization for Economic Co-operation and Development: OECD International Futures Programme. *The Future of Families to 2030* 1: 47. http://www.oecd.org/futures/49093502.pdf.

Wight, Richard G., Janet R. Cummings, Arun S. Karlamangla, and Carol S. Aneschensel. 2009. "Urban Context and Change in Depressive Symptoms in Late Life." *Journal of Gerontology* 64B(2): 247-251.

Wiles, Janine L., Annette Leibing, Nancy Guberman, Jeanne Reeve, and Ruth E.S. Allen. 2012. "The Meaning of 'Aging in Place' to Older People." *The Gerontologist* 52(3): 357-366.

World Health Organization. 2007. "Global Age-Friendly Cities: A Guide." World Health Organization. Accessed February 15, 2015. http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf.

World Health Organization. 2011. "Global health and ageing."