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Global warming, ageing of population, reduction of energy consumption, immigration flows, optimization of land use, technological innovation

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TeMA Journal was established with the primary objective of fostering and strengthening the integration between urban transformation studies and those focused on mobility governance, in all their aspects, with a view to environmental sustainability. The three issues of the 2024 volume of TeMA Journal propose articles that deal the effects of global warming, the ageing of population, the reduction of energy consumption from fossil fuels, the immigration flows from disadvantaged regions, the technological innovation and the optimization of land use.

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The cover image shows heavy damage from floods in the Valencia, eastern Spain in October 2024
(Source: t.me/beholdisraelchannel/43470?single). The cover image was elaborated on to improve the resolution quality using free AI software.

TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include: engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science and complex systems.
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REVIEW NOTES – Urban planning literature review

Exploring approaches and solutions for urban safety: a focus on the elderly

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Abstract

Starting from the relationship between urban planning and mobility management, TeMA has gradually expanded the view of the covered topics, always remaining in the groove of rigorous scientific in-depth analysis. This section of the Journal, Review Notes, is the expression of continuously updating emerging topics concerning relationships between urban planning, mobility, and environment, through a collection of short scientific papers written by young researchers. The Review Notes are made of five parts. Each section examines a specific aspect of the broader information storage within the main interests of TeMA Journal. In particular, the Urban planning literature review section presents recent books and journals on selected topics and issues within the global scientific panorama.

For the third issue of TeMA magazine, volume 17th, this section provides a comprehensive overview of the challenges and solutions related to creating safe and accessible cities for older people. Various scientific sources and practical resources are used to illustrate effective approaches and innovative strategies. The contribution aims to examine these challenges and proposed solutions in the scientific literature, with a special focus on books, journal articles and reports. In particular, the difficulties related to the walkability of urban spaces will be analysed, with a focus on the perception of safety, not only in terms of the prevention of acts of violence, but also with regard to the safety of the physical conditions of streets and roads, as well as the risks arising from traffic.

Keywords

Urban safety; Urban planning; Literature review; Elderly; Walkability.

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1. Introduction

The safety of the elderly in urban areas is an issue of growing relevance, reflecting an increasingly pressing demographic and societal challenge globally (Callista et al., 2021). Increasing life expectancy and an ageing population confront cities with the need to create safer and more inclusive environments for a population that, despite the passing of years, wishes to continue to actively participate in the life of the urban community (UN-Habitat, 2020).

By 2030, three out of five people will live in cities, and it is estimated that 22% of the global population will be over 60 years old by 2050 (World Health Organisation, 2007). It is therefore becoming increasingly urgent to plan more accessible and safer cities for the elderly in order to reduce risks such as accidents, social isolation and vulnerability to crime (Cialdea, 2023). Most elderly people wish to remain in their homes and neighbourhoods, but many health and social care systems are unable to support alternative solutions (Gargiulo et al., 2021; Lord et al., 2018). Mobility is considered essential to ensure the independence and safety of older people, and the perception of safety plays a central role in this, wich is influenced by the urban system, which is based on the physical, functional and socioeconomic characteristics of the context (Gaglione et al., 2019). So, it is necessary adopting an integrated perspective that considers three areas of safety: personal safety, road safety and safety from crime (Won et al., 2016). Personal safety concerns the risk of falls, which are the leading cause of hospitalisation of the elderly in North America (Pillay et al., 2021). Lighting, safe paving and frequent benches reduce the perceived risk of falling. In fact, road safety is related to the risk of collisions, intersections and interactions with other users, which are increased in the elderly due to lower responsiveness and frailty (Kim, 2019). Finally, the perception of safety versus crime influences movement choices (Patil et al., 2024).

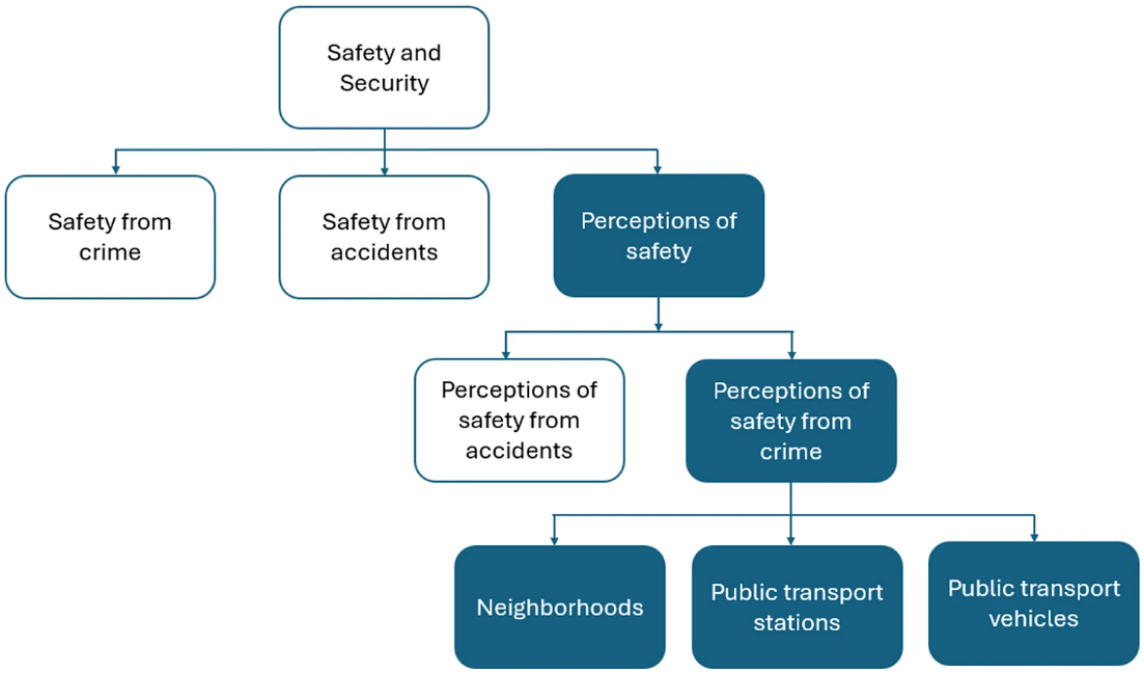


Fig.1 Source: The concepts of safety and security in urban transportation. (Masoumi & Fastenmeier, 2016)

The presence of high-density housing and services promotes mobility, while vandalism and incivility increase the sense of insecurity and the risk of avoiding certain areas (Marquet & Miralles-Guasch, 2015). Neighbourhood social cohesion contributes to improved physical and mental health (Ruijsbroek et al., 2016). Furthermore, the sense of insecurity among the elderly is particularly high, approaching that found in women. According to the ISTAT data, 26.9 per cent of men and 40.4 per cent of women aged 75 and over avoid going out alone at night out of fear, percentages well above those of younger age groups. Moreover, when they find

themselves alone outside the home at night, the elderly show greater insecurity: 19.6 per cent of men and 38.7 per cent of women over 65 say they feel little or no security. The influence of fear of crime is also significant for this age group: 27.7 per cent of men and 35.8 per cent of women over 65 believe that crime affects their habits "a lot" or "quite a lot" (ISTAT, 2018).

2. Challenges and solutions developed at international level

Today's cities face a number of challenges related to the urban and public spaces for older people: mobility, accessibility to services, road safety, quality of street lighting and access to emergency services (Gargiulo et al., 2021). In recent years, many urban governments and international organisations have adopted an integrated approach, combining prevention and social support interventions and strategies (Callista et al., 2021). Many countries at the international level have prioritized accessibility and mobility in their urban planning, without focusing solely on safety measures (Gargiulo & Sgambati, 2022). The growth of the elderly population in most European countries poses a challenge to health and care systems, but also to urban safety for the elderly (Battarra et al., 2018). The perception of safety and the ability to move independently in public space are crucial elements in promoting active and healthy ageing, and local authorities are crucial in promoting interventions and solutions that ensure this (Mariotti et al., 2018; Arup, 2019). These interventions can include, for example, street lighting, efficient public transport, inclusive public spaces and the integration of assistive technologies that can support the mobility and perceived safety of older people (Masoumi & Fastenmeier, 2016; Papa et al., 2018). It is equally crucial to recognise the different needs of urban and rural areas in order to develop flexible and tailor-made solutions (Savino, 2023). Ensuring urban safety for older people in a rapidly changing demographic society means not only improving the physical accessibility of cities, but also promoting their well-being and social inclusion. Nations with ageing populations need to create urban environments that are conducive to healthy ageing, i.e. 'healthy ageing', and improve the quality of life of older people by integrating their well-being as a priority in urban development policies (Arup, 2015; Duc-Nghiem et al., 2016). Technology is playing an increasing role in urban safety for the elderly (Battarra, 2018), with the development of assistive tools such as GPS monitoring systems for the elderly with dementia and the use of smart cameras in high-density housing areas, in fact, some cities are experimenting with the use of sensors and wearable devices to monitor and protect older people living alone (University of Waterloo, 2022). Moreover, according to the Global AgeWatch Index 2014, the quality of life of older people varies widely according to local socio-economic conditions, and where older people benefit from strong public services, secure pensions and a safe environment, the perception of security is high (Cecchini, 2023). In contrast, in low-income states, often in Africa and Asia, the life experience of the elderly is completely different (Monti, 2023). Only a minority receive a pension and many work in informal sectors, without any structured social support (Global AgeWatch, 2014) and in these conditions, old age is often synonymous with insecurity and dependency, and the perception of stability is minimal (UN-Habitat, 2012). Social pensions, on the rise in many emerging countries, represent an important change, offering a minimum of economic security. This suggests that the perception of security in old age is closely linked not only to national wealth, but also to political commitment to ensure support for the elderly (Global AgeWatch, 2018).

2.1 New Urban Agenda (2016)

The New Urban Agenda addresses the issue of the safety and security perception of older people in urban space by recognising the importance of creating cities that respond to the specific needs of older people. In particular, the Agenda emphasises the need to adopt governance policies that include older people in decision-making processes related to urban and territorial development and this inclusion implies the promotion of fair and safe access to physical and social infrastructure, with a special focus on ensuring that these services are designed with the specific needs of older people in mind, both in terms of safety and accessibility. The agenda

adopts an integrated approach, taking into account not only age, but also gender and socio-economic status. This approach is crucial to enable a better understanding of the context and conditions of older people. In addition, the specific vulnerabilities of the elderly female population are addressed, and it recognises that elderly women often experience a greater perception of insecurity in urban space because elderly women not only live longer, but often face more precarious living conditions, such as living alone or with limited economic resources (United Nation, 2016).

2.2 Sustainable Development Goals (2015)

In 2015, the United Nations promoted 17 goals for sustainable development, known as the Sustainable Development Goals (SDGs). These aim to safeguard the planet and the well-being of its inhabitants (Stiuso, 2024). They leverage a novel economic approach. The SDGs concerning gender equality and citizens' safety are three, specifically referring to their sub-goals:

- Goal 03: Ensure healthy lives and promote well-being for all at all ages:
  - Target 3.4 is a sub-goal to reduce premature mortality from non-communicable diseases and promote mental health.
  - Target 3.6 is a sub-goal to halve global deaths and injuries from road traffic accidents.
  - Target 3.8 aims to achieve universal health coverage.
- Goal 10: Reduce inequalities:
  - Target 10.3 is a sub-goal to ensure equal opportunities and reduce inequalities.
- Goal 11: Sustainable cities and communities:
  - Target 11.2 entails ensuring accessibility to transportation and safety on streets;
  - Target 11.7 aims to provide universal access to green and public spaces, making them accessible and safe for women, children, and the elderly.

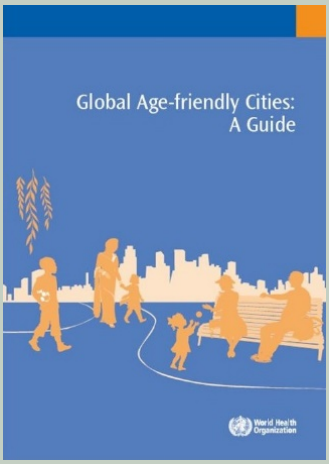
The 2030 agenda with the Sustainable Development Goals seeks to address the challenges that the elderly population will face in the future, facing increasingly populated cities and, ensuring not only access to health services and mobility infrastructure, but working on inclusion within public spaces, favouring the active participation of the elderly. It is also necessary to take into account the perception of safety in urban spaces, which for this vulnerable segment of the population is compromised by the fear of accidents, overcrowded streets and hard-to-access spaces, and only in some cases the fear of theft and muggings (Bennet, 2022).

3. Best practices

It is, therefore, a global challenge that simultaneously sees the ageing and urbanisation of the population and in this context, there have been many studies and programmes that have tried to address the problem, so that the inclusion, participation and security of this vulnerable segment of the population can be promoted. The good practices examined in this work provide an overview of the solutions adopted at international level to create more accessible and safe urban environments for older people. The issue of elderly safety in cities is mainly addressed in relation to aspects such as accessibility, mobility and health but with few direct references to real and perceived safety. Policies tend to focus on improving urban infrastructure, such as safe and accessible roads, efficient public transport systems and healthy environments that promote active ageing. However, the perceived safety of older people, their sense of vulnerability in the urban environment, is often only a secondary aspect of policies and the debate tends to focus on the physical characteristics of cities, rather than on the social factors that influence their emotional and psychological well-being. There has been a growing focus on large urban centres, since most of the issues to be addressed relate to the physical characteristics of the urban system, i.e. density of the built environment, poor lighting on pedestrian routes, and traffic, all of which contribute to the perceived insecurity of spaces.

This is also confirmed by an ISTAT study from 2018, which shows that fear increases in municipalities with more than 50,000 inhabitants.

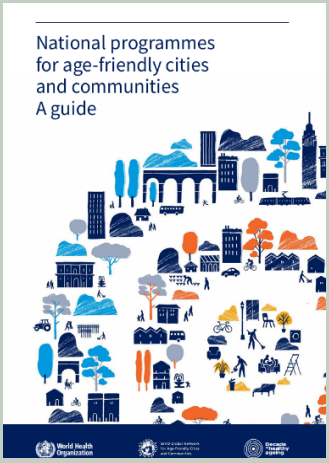
Global age-friendly cities: a guide - World Health Organization



Editor: World Health Organization
Pubblication year: 2007
ISBN code: 9789241547307
Retrieved from:
https://iris.who.int/handle/10665/43755

The document "Age-friendly Cities: A Guide", developed by the World Health Organization (WHO), responds to the global challenges of population ageing and urbanization, proposing a model of "age-friendly" cities, to improve the quality of life of older people and promote their health, participation and safety, making them a valuable resource for families, communities and the economy. To develop concrete criteria, WHO has involved groups of elderly people in 33 cities around the world. The feedback gathered was complemented by the views of caregivers and public and private service providers and led to the creation of a set of checklists to assess cities' suitability for older people.

National programmes for age-friendly cities and communities: A guide - World Health Organization



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The programme is part of the UN Decade for Healthy Ageing, which promotes actions to change the perception of safety in cities, ensure access to people-centred health services and foster environments that enable older people to live independently. Cities that are friendly to the elderly are designed to be inclusive and to support active ageing. The programme encourages older people to participate in urban planning, access essential services and create safe, healthy and accessible spaces for all.

Safety Programs for Older Adults - New York City Department of Transportation's (NYC DOT)

Retrieved from: https://www.nyc.gov/html/dot/html/about/olderadults.shtml

The Office of Safety Education and Outreach of the New York Department of Transportation (NYC DOT) Senior Road Safety Program is designed to support older adults in safe driving in the urban environment. Through a series of workshops and the publication of the Streetwise newsletter, the initiative provides practical advice and raises awareness on road safety, addressing specific dangers for older people. In addition, workshops organised by the NYC DOT discuss the principles of Vision Zero, an initiative focusing on safety, engineering and traffic control to improve road safety in general. The programme therefore not only provides information, but also works to listen to the concerns of older people, making the city safer and more accessible for them. In addition, NYC DOT has developed a Senior Pedestrian Zones map and 17-point action plan to reduce these risks, also collaborating with the NYPD for education and enforcement. Since 2009, the programme has made

improvements in over 41 priority areas, with significant results in terms of reducing accidents, confirming the effectiveness of interventions aimed at making urban spaces safer and more inclusive for older people.

Ageing and the City: Making Urban Spaces Work for Older People - HelpAge International

Editor: Siôn Eryl Jones
Publisher: HelpAge International
Pubblication year: 2016
ISBN code: 978-1-910743-17-1

The report "Ageing and the City: Making Urban Spaces Work for Older People" examines the unique challenges to the quality of life of older people in cities caused by urbanization and aging of the world's population, especially in low- and middle-income countries. The report focuses on three key themes: inclusive use of urban spaces, healthy ageing and urban safety for older people. The report highlights the need to reduce traffic and promote safe, accessible public spaces that encourage physical activity and socialisation. The final recommendations of the report include creating inclusive urban spaces, enhancing public transport and integrating older people into safety planning.

Elderly on Track - EIT Urban Mobility

Retrieved from: https://www.eiturbanmobility.eu/projects/elderly-on-track/

The Elderly on Track (ElTra) project promoted active mobility among older people to improve their physical and mental health and foster social cohesion. Given the increase in the elderly population in Europe and the impact of the pandemic on the social networks of older people, the project aimed to reconnect older people with their communities and natural environment. Implemented in Rubí, in the Metropolitan Region of Barcelona, the project examined the relationship between the comfort and perception of older people and various physical and environmental parameters during their walks. Rubí is part of the World Health Organization's "Cities for the Elderly" programme and has developed a strategic plan for the elderly.

Shaping Ageing Cities: 10 European case studies - Arup, Help Age International, Intel and Systematica

Editor: Siôn Eryl Jones
Publisher: HelpAge International
Pubblication year: 2015
ISBN code: 978-1-910743-17-1
Retrieved from: https://ifa.ngo/publication/demographics/shaping-ageing-cities-10-european-case-studies/

Shaping Ageing Cities explores the social and physical structure of ten European cities to analyse the influence of ageing populations and urban growth on the lives of older people. The research, conducted by Arup, HelpAge International, Intel and Systematica, focuses on themes such as society, mobility, built and digital environments. With global ageing and increasing urbanization, the study aims to understand how to address these changes. The safety of older people is addressed through inclusive urban design, which aims to improve accessibility, safe mobility and the creation of protected public spaces, reducing social and physical vulnerability.

4. Conclusion

The ageing of the population and the increasing concentration of inhabitants in large cities lead to a focus on the consequences that these phenomena will have on all segments of the population (Busi, 2023). In particular, the elderly, who belong to the weakest segment of the population, together with women, children, etc. (Stiuso, 2024), are more vulnerable to the risks present both in terms of safety and crowding, thus compromising their perception of public space, which for this reason very often becomes inaccessible. Their perception of safety is influenced by the availability and accessibility of health services, the existence of infrastructures designed to facilitate mobility and the presence of spaces that reduce the risk of social isolation, The latter can increase feelings of insecurity and vulnerability. To increase the perceived safety of older people, it is necessary to invest in accessible infrastructure such as wide and well-maintained sidewalks, ramps, pedestrian traffic lights well visible and adapted to the needs of those who move with less agility. The literature emerges that, the perception of safety and safety in the urban environment can be influenced both by the absence of facilities and services and by the socio-economic situation. Indeed, older people with fewer resources live in neighbourhoods where transport and infrastructure are poor and less efficient. This situation leads to isolation and, due to fear of accidents and difficulty in calling for help, reduced freedom of movement. Thus, improving accessibility to public transport and creating safe and adequate housing would strengthen the sense of security and belonging, helping to reduce the sense of exclusion. Therefore, it becomes necessary to collect age-disaggregated data in order to know the needs and problems of all population groups and to be able to intervene in a targeted manner (Aurigi, 2023; Cutini, 2023), making urban space more inclusive and safer. Furthermore, it is necessary to take a holistic approach to understanding the entire urban system, since influences take into account many factors that change according to area, neighbourhood, time of day or population segment.

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