

A Systematic Review on Inter-Relationship of Residential Neighborhood Characteristics on Quality of Life of Elderly

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ABSTRACT

The aspects of spatial planning have been aimed at supporting older people to stay healthy and active in their daily lives, as well as to improve their overall quality of life. Older people require accessible and functional venues and social environments that suit their emotional needs and goals. However, there has been limited study on the most significant characteristics of residential settings that impact the well-being of elderly inhabitants. This study aims to provide a comprehensive review of neighborhood residential environment elements and various Quality of Life (QOL) attributes, as well as their interrelationships, to encourage healthy aging. A framework for analyzing neighborhood features was developed as part of this critical analysis through extensive analysis of chosen articles. According to the review, social life is the most influential component of QOL, followed by neighborhood living settings and housing layouts that promote mobility features to participate in physical activities, generating a feeling of community and belonging and leading to a healthy life. Further research should be conducted to investigate the influence of these characteristics on the overall satisfaction level of the elderly in later life.

Keywords: Healthy aging, quality of life, residential environment, sense of community

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INTRODUCTION

While the worldwide population of older adults is growing, some countries have a much larger proportion of older individuals than others. According to the WHO, the number of individuals over 60 worldwide will nearly double from 12% to 22% between 2015 and 2050. By 2020, children under five will outnumber people aged

60 and up (WHO, 2015). The primary challenge for ensuring the elderly's healthy aging process is improving their quality of life inside their home environment, which is one of the major concerns in the global aging process (Hooper et al., 2020). Numerous studies have focused on "aging-friendly communities," which established a link between residents' environment and well-being (Zheng & Chen, 2021).

Many studies have been conducted in western and eastern countries on the influence of neighborhood factors on healthy aging (Yu & Zhang, 2020). Furthermore, it has been demonstrated that, in the context of rapid urbanization, there is a link between neighborhood characteristics (such as building density, floor area ratio, mixed land use, and green space) and inhabitants' physical and mental health (Liu et al., 2018). Furthermore, according to Luo et al. (2019), essential neighborhood infrastructures significantly influence residents' cognitive performance in their immediate surroundings (Luo et al., 2019). Therefore, in recent years, one of the primary goals of municipal and urban planning policies has been to improve the environmental quality of the built environment around residential neighborhoods.

Numerous residential environment study approaches have introduced the concept and developed associated issues from the perspectives of several disciplines, such as anthropology, architecture, economics, geography, psychology, and sociology (Xiaoyu et al., 2007). Based on the concept of social-ecological models for the elderly,

many researchers have researched the impact of the elderly's living environment on their health and how it impacts their behavior (Zheng et al., 2020). Neighborhood spaces, comparable to residential settings, are defined as constructed and unbuilt, open and semi-open spaces that correlate with built-up regions and serve as facilities for interaction, community bonding, and other support activities within a community (Gulati, 2019). Because these areas enable socially engaged, invading populations that have previously worshipped, hugged, or wept in an informal community, they are in charge of the residents' holistic growth and general comfort (Hooper et al., 2020). However, due to rapid population growth, dispersed settlement, and developers' indifference, most modern housing complexes do not provide long-term, sustainable living conditions, particularly in urban areas (Gulati, 2019). Most prior research focused on the significance of neighborhood context and environmental quality for healthy aging and well-being. Researchers have also highlighted the numerous aspects impacting inhabitants' overall comfort for their well-being. However, the physio-social aspects of a residential neighborhood that promote elderly well-being are not explored.

Additionally, it is unclear what factors influence a person's quality of life as they age. Furthermore, exploring how the residential neighborhood environment influences how the elderly behave and perceive their quality of life at this stage is critical. There is also a need to critically review the most influential neighborhood

characteristics that affect the quality of life for the elderly to enable future designers and planners to propose design interventions that take these factors into account as part of an inclusive design approach for the elderly.

People attain physical and social well-being within the resources and limitations they encounter; therefore, achieving a certain degree of well-being may be more difficult for others (such as those who live in a socially depressed neighborhood, have chronic health concerns, or are hospitalized). Specifically, this study sought to (i) examine neighborhood characteristics as an instrumental tool toward achieving well-being among community-dwelling older people; (ii) identify various factors that impact the quality of life of the elderly within their residential neighborhood; and (iii) critically review the neighborhood characteristics that influence the quality of life for older adults. The research will focus on a critical review of the extracted major variables from a literature review that focuses on the characteristics of the residential environment to enable quality of life for older adults. In addition, it will emphasize determining the key elements of neighborhood characteristics that improve the elderly's quality of life. The systematic literature review is carried out to answer the following research questions:

RQ-1: What are the characteristic features of residential neighborhoods that have been addressed in literature?

RQ-2: What are the various attributes of quality of life influenced

by the neighborhood's residential characteristics?

A systematic literature review of 45 papers has been undertaken to address the abovementioned research questions. The findings from the literature are evaluated using a contextual analysis framework to extract various factors, analyze these factors using the evaluation framework, and conclude with a set of development principles and guidelines derived to assist Urban Designers, Architects, and Planners in developing future neighborhood residential settlements in an urban context. Firstly, the paper explores the various definitions of "residential neighborhood" in an urban environment to comprehend the neighborhood's complete meaning and its various determinants. The study's second objective is to comprehend the "Quality of life" features for residents, including its threads, structure, and substance, as well as its relationship to the health dimensions of the aged. Secondly, the paper discusses the research methodology, elaborating on the contextual analysis framework to extract factors for the evaluation framework to analyze the various attributes of Quality of Life (QOL) and Neighborhood characteristics (NC) and their influence on the life and well-being of the elderly. Thirdly, the paper summarizes the findings of the literature reviews and provides a thorough analysis of the various factors and their effects on the well-being of the elderly. Finally, the study concludes with a discussion of the potential gaps that need to be addressed as a basis for future research in this field.

LITERATURE REVIEW

Understanding the Fundamental Concepts of “Residential Neighborhood” and “Quality of Life”

In the previous documented literature, the researchers sought to comprehend the principles of a residential neighborhood and the concept of quality of life (Tables 1 and 2). This study intends to the various qualities of both variables that have already been studied to determine whether there is a link between them. If a relationship exists, what are the primary issues or challenges highlighted in the research to establish the link? The first part of the study is full knowledge of the idea of a “residential neighborhood” with its accompanying anchoring services. It also contained a summary of the social and cultural features of community life that individuals in these communities build through time. However, it is difficult to find a theoretical definition of a “neighborhood unit” that applies to all neighborhoods (Feng et al., 2018). Several approaches have been used to develop an idealized neighborhood definition; every urban dweller perceives the city to be large; the magnitude of the community inhabitants’ perception of size and scale is limited by well-defined natural or built boundaries, such as lakes, parks, gardens, and others (Table 1). Urbanists have defined the scale of an ideal community in a variety of ways. A person living in a city may perceive the scale of their neighborhood differently. Residents’ perceptions of neighborhood size and scale vary, even when clearly marked by natural or artificial boundaries such as highways, lakes, gardens, and others.

Any study of residential segregation, on the other hand, is reliant on a well-defined, uniform, and similar concept of an “analytic neighborhood” (spatial unit of analysis) (Bharathi et al., 2018). Residential communities are progressively becoming aware of the impact of location and space on human well-being. Environments are likely to impact people’s health-related lives (Zasada et al., 2020). The paucity and poor quality of open space in urban settings may be a substantial barrier to inhabitants’ well-being (Lestan et al., 2014). According to Lestan et al. (2014), the quality of life in new residential communities is insufficient for some user groups (for example, the elderly) and is not long-term sustainable. Residential areas are not merely for the active and wealthy, who can function independently of their surroundings.

As a result, they must provide a safe environment for disadvantaged groups whose way of life is influenced by physical and social activity in their immediate surroundings (Thompson et al., 2012). When they arise from the ideological dispositions of practitioners in society, the notion of neighborhood tends to be a convenient and efficient approach that recognizes neighborhood planning as a subjective preference (Kallus & Law-Yone, 2000). The most desirable advantages, quality, safety, and security were not recognized as tangible in the community, particularly among the elderly, emphasizing the importance of developing an appropriate local management system. There is no option for the appropriate urban form: each

has advantages and disadvantages (Conde & Pina, 2014). The “context” is the key determinant and includes a broad variety of social, fiscal, geographic, physical, and ethical characteristics (Shirazi, 2020).

Table 1

Definition of “residential neighborhood” (summarized by author)

Residential Neighborhood		
1	Kallus and Law-Yone (2000)	As a comprehensive residential system, the neighborhood is a complex and multi-faceted phenomenon.
2	Novikova (2022)	Residential neighborhood emphasizes—public spaces, public buildings, and public services—offer a third framework for understanding and anchoring neighborhood: the “local public realm.”
3	Clark (1980)	The neighborhood is a sociological and geographic concept playing an increasingly vital role in research, government policy, and urban citizen well-being practices. The land, buildings, people, and organizations that comprise a neighborhood give it its identity. Geography determines the origins of neighborhoods.
4	Dannreuther (2004)	A residential neighborhood is essentially the region where people live. Communities arise when people from various regions of a city or town live close to one another. However, physical or sociological barriers separate these places from the rest of the towns. When applied to the notion of a neighborhood, the term "community" refers to a social group that exists in a specific area and shares resources and values.
5	Bergström et al. (2013)	Five characteristics comprise a neighborhood: accessibility to the city center, communications and services, quality and accessibility of services and facilities, social environment, and individual site and dwelling characteristics. Therefore, the neighborhood is comprised of these five characteristics.

Table 2

Definition of “Quality of Life” (summarized by author)

Quality of Life (QOL)		
1	Wijngaards et al. (2022)	The extent to which a person's bodily, psychological, social, occupational, material, and structural needs are met.
2	Gotay and Moore (1992)	A person's assessment of the overall quality of life and whether it meets one's expectations.
3	Spilker and Ph (1990)	“...a state of well-being which is a composite of two components: 1) the ability to perform everyday activities which reflects physical psychological, and social well-being and 2) patient satisfaction with levels of functioning and the control of disease and/or treatment-related symptoms.”
4	World Health Organization, Quality of life [WHO QOL] (1998)	“...the satisfaction of an individual’s values, goals and needs through actualizing their abilities or lifestyle.”
5	Kirschbaum and Knafelz (1996)	“...the individuals’ perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns.”
6	Wolf-Branigin et al. (2001)	“The value assigned to the duration of life as modified by impairment, functional status, perception and opportunity influenced by disease, injury, treatment, and policy.”
7	Kirschbaum and Knafelz (1996)	“There is broad agreement that health-related quality of life (HRQOL) is the functional effect of a medical condition and/or its consequent therapy upon a person. HRQOL is thus subjective and multidimensional, encompassing physical and occupational function, psychological state, social interaction, and somatic sensation.”
8	Kaplan and Ries (2007)	“Subjective quality of life reflects an individual’s overall perception of and satisfaction with how things are in their life.”
9	Shepherd et al. (2010)	The overall enjoyment of life.
10	Theofilou (2013)	Changes throughout time in how someone or a group views their physical and emotional well-being.
11	Haraldstad et al. (2019)	Quality of life (QOL) is an essential endpoint in medical and health research, and there are several target populations and study strategies for QOL.

a. On the other hand, many techniques for describing QOL have been developed, representing various approaches to the theme. Table 2 includes an incomplete set of definitions. Most definitions are specific to a person's evaluation ("satisfaction": numbers 1–5) (Post, 2014). Others apply to numerous domains (Kaplan & Ries, 2007), and others are more generic assessments (Haraldstad et al., 2019). One definition (WHO QOL, 1998) is more function-oriented than the others, while another focuses on cultural and social norms influencing the QOL experience (Gotay & Moore, 1992). One description considers objective and subjective QOL (Theofilou, 2013). Post (2014) combined four major health elements into a multidimensional conceptual framework. Physical health includes somatic stimuli, medical symptoms, and adverse drug reactions. Mental well-being can range from a sense of general happiness to non-pathological types of mental disease to a clinical disorder that can be diagnosed and treated

b. The promotion of social welfare via quantitative and objective assessments of social connections and relationships. Functional well-being refers to a person's physical functioning (including their ability to care for themselves, be independent, and engage in physical activities), as well as their social position functioning (relationships with family and work). As a result, quality of

life is often regarded as an important healthcare metric. This definition is becoming more popular in conjunction with long-term therapy. However, because of imprecise definitions and assessment procedures, increasing or optimizing QOL, in the long run, appears to be in long-term care activities (Panday et al., 2015).

RESEARCH METHOD

Selection Criteria

According to a wide range of studies, health and well-being are directly linked to an individual's neighborhood. In addition, many studies have looked at the impact of life quality on other elements of health and well-being. However, there are still many unknowns regarding what makes people happy in their lives. Niknejad's et al. (2020) review methodology was employed in this study because the researchers thought it was the most appropriate research approach for undertaking the critical review. We did a Google Scholar search using the terms "elderly," "older adult," "senior citizen," "aging process," "healthy aging," "residential neighborhood," "community living," "quality of life," and "residential housing" (Levy & Ellis, 2006). Articles concentrating on design and built environment qualities were evaluated to comprehensively analyze neighborhood residential settings, emphasizing older persons' well-being and quality of life. Several evaluations have been written in the social sciences, the humanities, and

other academic disciplines on the residential community for older individuals. However, locating a significant quantity of systematic research in the design domain about the quality of life in residential settings for older individuals was challenging. Since the number of older individuals in their target group was insufficient to focus just on one demographic, this study set comprised studies from both residential communities and neighborhood settings. We analyzed 45 publications on residential features and quality of life published in the sphere of architecture since 2011, which are used to categorize issues that should be considered when developing a pleasant home environment for older persons. Table 1 lists the publications selected for critical assessment and their conclusions. The conclusion of each evaluation is classified into two categories: (1) Neighborhood Characteristics (NC) and (2) Quality of Life (QOL).

Contextual Analysis

For the first stage of the critical assessment, we created a framework for contextual analysis to extract key aspects that focused on characteristics of the residential environment to enable senior citizens’ quality of life (Table 3). We focused on the following aspects for each selected paper: Title of the paper, Outcome of the paper, Source Database, Findings, and Parameters extracted NC/QOL. Residential features and quality of life are the two primary focuses of this study. The most important components of both aspects were expected to be extracted from the articles. Each component has addressed RQ-1 and RQ-2. Despite the fact that other studies did not specifically target the needs of the elderly, older persons are nonetheless included in the findings of some of those studies. Self-reporting studies outnumber exploratory investigations in terms of percentage.

Table 3
Summary of literature findings

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S1	Hooper et al. (2020)	Living livable? RESIDE’s evaluation of the “Livable Neighborhoods” planning policy on the health-supportive behaviors and well-being of residents in Perth, Western Australia	Walking, a sense of community and safety-related outcomes were linked to a variety of urban design aspects.	Elsevier (Scopus)	impact of the planning policy on a range of health-supportive behaviors and well-being	NC- Built environment features: Well-being attributes

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S2	Joon (2020)	A Study on POE according to the residential environment of mixed-used apartment complexes in Seoul	User research analysis to evaluate POE demonstrates the character of spaces in a residential environment.	Elsevier (Scopus)	Safety, satisfaction, and security are important Residential environment of the mixed-used apartment	NC- Experience: Positive and Accepted
S3	Zhong et al. (2020)	Community Environments That Promote Inter-Generational Interactions vs. Walking Among Older Adults	walking, walking with children, walking with older adults, intergenerational community	Frontiers in Public Health (Google Scholar)	Two of the most helpful activities for elderly individuals are intergenerational contact and walking.	QOL- Wellness: Social Interaction
S4	Wei-Lun et al.(2020)	How do natural features in the residential environment influence women's self-reported general health? Results from cross-sectional analyses of a U.S. national cohort.	Ecosystem services, Ecological health, and Climate Change A dense, impenetrable canopy of trees Physical activity, social support, and Air quality	ScienceDirect	Analyze the potential health benefits of living near nature to understand better.	QOL- Wellness: health benefits
S5	Lee and Kim (2020)	A Critical Review of Smart Residential Environments for Older Adults With a Focus on Pleasurable Experience	Aging in place, elders, and a delightful experience are all synonyms for "smart environment" and "smart home."	Frontiers of Psychology (Open Access) (Google Scholar)	Smart environments emphasize efficiency, effectiveness, and satisfaction	NC- Experience: perceived usefulness

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S6	Miyazaki and Ando (2020)	Hierarchical Structure Analysis on Health Determinants of Living Environment Defining Social Capital	Either directly or indirectly, communal components and the facility's residence impact the SC's health and well-being.	IOP Publishing (Scopus)	A living environment that promotes SC may help with health improvement and maintenance.	NC-Living Environment: Safety and health
S7	Lauwers et al. (2020)	Urban environment and mental health: the NAMED project, protocol for a mixed-method study	the relationship between mental health and urban living	BMJ Open (WoS)	links between elements of the urban environment and mental health	NC-Wellness: Nature's impact and mental health
S8	Segaran et al. (2020)	Traffic Noise Assessment among Residential Environment in Batu Pahat, Johore, Malaysia	determination and evaluation of noise indices; traffic noise effect assessment.	IOP Publishing (Scopus)	Noise pollution has been a major issue in the neighborhood.	NC-built environment: Noise impact
S9	Zasada et al. (2020)	Home gardening practice in Pune (India), the role of communities, urban environment and the contribution to urban sustainability	Sustainable urban environments, food production, and biodiversity may all be achieved via urban agriculture and home gardens.	Springer Nature	conserving and building home gardens can contribute to urban sustainability	NC-Sustainability: Environmental attributes and nature, landscaping.
S10	Kristiyantoro et al. (2019)	Self-governing "Green Alley" implementation as the Solution to address the environmental challenge of public housing in Depok City	social capital is the neighborhood's self-reinforcing nature.	IOP Publishing (Scopus)	We may find innovative ways to transform the area between buildings and streets into a green corridor by working collaboratively.	NC-Sustainability: Green corridor

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S11	Gulati (2019)	Neighborhood spaces in residential environments: Lessons for contemporary Indian context	Traditional Indian housing, Residential neighborhoods, Contemporary Indian housing.	Elsevier (WoS/ Scopus)	Factors affecting comfort in the neighborhood the spaces	QOL- Sense of belongingness
S12	Chen et al. (2019)	Environmental Satisfaction, Residential Satisfaction, and Place Attachment: The Cases of Long-Term Residents in Rural and Urban Areas in China	Applied environmental psychology; place attachment; urban and regional planning; place satisfaction.	Elsevier (WoS/ Scopus)	rural and urban areas have considerable disparities, with home satisfaction mediating factors.	QOL- environmental psychology and place attachment
S13	Hwang et al. (2019)	Research on Housing for Older Adults: 2001 to 2018	An analysis of the present housing stock and the potential for technological transformation to fulfill the increasing demand.	Elsevier (WoS/ Scopus)	housing behavior perception, policy and design features.	NC- Livability: Housing options
S14	Valibeigi (2020)	Enhancing urban local community identity in Iran based on perceived residential environment quality	residents' perceptions of environmental quality in their neighborhoods; ULCI; urban identity; ULCI	Elsevier (WoS/ Scopus)	neighborhood attachment (NA) is an important component of local urban identity	QOL- cultural identity
S15	Robinson et al. (2019)	Housing options for older people in a reimagined housing system: a case study from England	Neoliberalism in England; the aging population; the property market; the elderly	Taylor and Francis	New groups and situations will benefit from the neoliberal approach to the right to housing.	NC- Livability: housing options

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S16	Awad (2019)	Sustainable Urban Growth of Neighborhoods-A Case Study of Alryad-Khartoum	Compact neighborhood, Land uses Residential area, Transformation, Mixed use.	Elsevier (Scopus)	External influences initiated the neighborhood transformation process.	NC- Design: residential layouts
S17	Bivoltsis et al. (2019)	The evolution of local food environments within established neighborhoods and new developments in Perth, Western Australia	Food environment Health inequalities Urban planning policy Socio-economic status	ScienceDirect	"Livable Neighborhoods Community Design Guidelines"	NC- Design: livable communities
S18	Bamzar (2019)	Assessing the quality of the indoor environment of senior housing for better mobility: a Swedish case study	As the elderly population grows, so does the need for housing modifications to ensure their safety.	Elsevier (WoS/Scopus)	seniors' indoor living environment	NC- Built environment design attributes: Safety
S19	Kaczynski et al. (2018)	Relationship of objective street quality attributes with youth physical activity: findings from the Healthy Communities Study	Specific street quality attributes may be associated with youth PA.	Pediatric Obesity SUPPLEMENT ARTICLE (Google Scholar)	Residential environments may significantly influence youth's physical activity (PA).	NC- Well-being: Activity physical
S20	Paine et al. (2018)	Learning from lived experience for the improvement of health-supportive built environment practice	design and management of built environments promote health and well-being	Routledge (Scopus)	Building environment planning, design, construction, and management	QOL- Built environment design attributes: health aspects

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S21	Xiaoyu et al. (2018)	Residential Environment Evaluation Model and Residential Preferences of the Changjiang Delta Region of China	appraisal of the residential environment, residential preference; residential choice; and contentment with the residential environment are all factors in this evaluation.	Taylor and Francis (Scopus)	residential attributes, residential satisfaction, residential preferences and residential selection factors	QOL-Environmental quality
S22	Houle et al. (2017)	An intervention strategy for improving the residential environment and positive mental health among public housing tenants: rationale, design and methods of Flash in my neighborhood!	An intervention approach based on location a healthy state of mind Empowerment program Public housing as a place to live	BMC Public Health (Google Scholar)	an effective strategy for promoting mental health and social cohesion in a large group setting	QOL-Wellness: mental health
S23	Feng et al. (2018)	The impact of neighborhood environments on quality of life of older adults: Evidence from Nanjing, China	the built environment, quality of life	SAGE (WoS/ Scopus)	neighborhood environments and the quality of life	QOL-neighborhood environments
S24	Coulombe et al. (2018)	Using a neighborhood observation to support public housing tenants empowerment	Triangulating findings from numerous sites is required to prove the added value of this action research project's observation approach more accurately.	SAGE (WoS/ Scopus)	Having a strong sense of belonging to a group benefits both the person and the group.	QOL-sense of community

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S25	Khosravi et al. (2016)	An Exploratory Research on the Structure of Perceived Residential Environment Quality	Individual housing happiness as a distinct aspect of life pleasure	Elsevier (WoS/Scopus)	include hedonic and predictive approaches, as well as look at the connections between values in satisfaction	QOL-satisfaction level
S26	Onunkwor et al. (2016)	A cross-sectional study on quality of life among the elderly in non-governmental organizations' elderly homes in Kuala Lumpur	Elderly, Nongovernmental Organizations, Senior Living Facilities, Quality of Life	Elsevier (WoS/Scopus)	Public health challenges include ensuring the health and well-being of the elderly, preventing their institutionalization, and enhancing their quality of life.	QOL-social participation
S27	Riley et al. (2016)	Racial Differences in the Effects of Neighborhood Disadvantages of Residential Mobility in Later Life	Neighborhood inequality— Person— environment fit— Race differences	Oxford, Gerontological Society of America (Google Scholar)	The role of the home environment in explaining the mobility of older adults living alone is well-documented.	NC-Design: mobility aspects
S28	Foster et al. (2016)	Safe Residential Environments? A longitudinal analysis of the influence of crime-related safety on walking	Increase levels of physical activity, community social and physical interventions, and environmental interventions that build a sense of safety among residents.	Bio MED	pedestrian activity and neighborhood inhabitants' sense of safety from criminal activity.	NC-Design: safety aspects

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S29	Burholt et al. (2016)	Older People's External Residential Assessment Tool (OPERAT): A complementary participatory and metric approach to the development of an observational environmental measure	Through environmental aesthetics, environmental stress, and neighborhood disorder, local neighborhoods can impact the lives of residents of any age.	BMC Public Health	In the face of a rapidly aging population, environmental interventions to enhance health and well-being have become more significant.	QOL- Local neighborhood
S30	Miller et al. (2017)	Energy efficiency of housing for older citizens: Does it matter?	Aging in place, Wellness, Thermal Comfort, Morbidity, Mortality, Financial Prosperity	Elsevier (WoS/ Scopus)	Energy efficiency and thermal comfort	QOL- comfort level
S31	Panday et al. (2015)	A study on the quality of life between older adults living in nursing homes and within family setup	Those elderly individuals who resided in a nursing home had a higher quality of life than those who lived with their families.	Research Gate	analyze and compare the quality of life of older adults in old homes and those in their families.	QOL- family set up
S32	Farzianpour et al. (2015)	Quality of Life for Elderly Residents in Nursing Homes	Quality of Life, elderly, nursing homes, (SF36) and (CPSC) Questionnaires, Iran	Elsevier (Scopus)	effective QoL dimensions, especially mental health	QOL- social life

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S33	Farahani et al. (2014)	A Framework for Exploring the Sense of Community and Social Life in Residential Environments	Neighborhood; Sense of community, Social life, locality.	ArchNet (WoS/ Scopus)	housing that fosters a sense of community	QOL- residential environment
S34	Li et al. (2012)	Neighborhood Type, Gated, and Residential Experiences in Chinese Cities: A Study of Guangzhou	Community attachment and neighborhood satisfaction are greater in commodity-housing estates, but gating appears to have a minor influence on community attachment.	Florida State University (Google Scholar)	community attachment and neighborhood satisfaction	QOL- community attachment
S35	Ochodo et al. (2014)	External Built Residential Environment Characteristics that Affect Mental Health of Adults	significant correlations between key urban living environment factors and the probability of specific mental health issues in adults	Bulletin of the New York Academy of Medicine (Google Scholar)	The external built environment characteristics were studied	NC- Design: external built environment
S36	Wu et al. (2014)	Assessing environmental features related to mental health: a reliability study of visual streetscape images	Development of auditing tools in the community, Mental wellness, Built environment, and Residential environmental assessment tool	BMC Public Health (Scopus)	Google Street View may examine environmental factors affecting mental health, such as pollution and noise.	QOL- Design: assessment of the built environment

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S37	Conde and Pina (2014)	Urban dimensions for neighborhoods with higher environmental value	urban environmental value, design, quality of urban life, and perception of the urban environment.	WIT Transactions on Ecology and The Environment (Google Scholar)	For the citizens surveyed, security is the most important feature, followed by mobility, a wide variety of stores and services, and convenience.	NC-Design: safety and security
S38	Roe et al. (2013)	Green Space and Stress: Evidence from Cortisol Measures in Deprived Urban Communities	urban deprivation; gender; stress; diurnal; saliva; cortisol; neighborhood; green space;	Elsevier (Scopus)	More green space in residential neighborhoods is needed for this underserved urban population of middle-aged men and women.	NC-Design: the need for open space
S39	Hooper et al. (2014)	Evaluating the Implementation and Active Living Impacts of a State Government Planning Policy Designed to Create Walkable Neighborhoods in Perth, Western Australia	Residents of walkable (i.e., livable) communities may be more physically active in accordance with the policy's goals.	American Journal of Health Promotion (Google Scholar)	Walking habits of inhabitants because of government policy (the Livable Neighborhood Guidelines)	NC-Design: activities making physically active
S40	Brody (2013)	The Neighborhood Unit Concept and the Shaping of Land Planning in the United States 1912–1968	Land planning conventions, regulations, and institutions were molded in this period by the neighborhood unit idea.	Routledge (Scopus)	The neighborhood unit idea changed land planning standards by providing substantive information and a normative paradigm.	NC-Design: residential layouts

Table 3 (Continue)

ID	Author(s)	Title of the paper	The outcome of the paper	Source Database	Findings	Parameters extracted NC /QOL
S41	Kesalkheh and Dadashpoor (2012)	Assessment of Residential Environmental Quality of Traditional and New Neighborhoods, in a Rapid-Grown City, Tehran	Residential surroundings can benefit from a more comprehensive evaluation method that utilizes subjective and objective data.	ISOCARP Congress (Google Scholar)	components of the quality of life in a residential environment	NC- Design: evaluation of the residential environment
S42	Auchincloss et al. (2012)	Neighborhood Health-Promoting Resources and Obesity Risk	Altering the residential environment to achieve new healthy behaviors.	Elsevier (Scopus)	healthier behaviors and lifestyles	QOL-related to lifestyle
S43	Cranley et al. (2011)	SCOPE: Safer care for older persons (in residential) environment: A study protocol	strategic planning with involvement from key stakeholders is necessary to ensure the long-term viability of an organization's workforce and infrastructure.	Implementation Science (Google Scholar)	challenges faced in this study include a lack of employee and leadership participation, as well as a lack of infrastructure.	QOL-healthcare
S44	Rioux et al. (2011)	Residential satisfaction among aging people living in a place	Elders' residential satisfaction Neighborhood satisfaction Well-being Aging in place	Science Direct	Several demographic and psychological factors explain residents' contentment with their living situation.	QOL-demographic and psychological variables
S45	Rosso et al. (2011)	The Urban Built Environment and Mobility in Older Adults: A Comprehensive Review	initiative to improve the health and well-being of older individuals in their communities	SAGE (WoS/Scopus)	Mobility constraints are widespread in older persons and raise the risk of bad health outcomes and early death.	NC- Design: mobility in communities

for environmental issues. Green space in the suburbs runs from motorways to sidewalks and encourages community initiatives that foster resourcefulness (Kristiyantoro & Simarmata, 2019).

There have been major benefits to older people’s well-being as a result of the “rolling back” of governmental interference in housing options for the elderly (Robinson et al., 2020). Local mobility is encouraged by neighborhood disadvantage, which weakens the person-environment suit. Disparities in racial groups’ access to safer areas remain even as people age (Riley et al., 2016).

Background noise in the suburbs must be studied more thoroughly to maintain a pleasant quality of life for residents. Traffic

noise has been studied in greater detail, focusing on specific nuisances to lessen their impact on the uncontrolled factors specified in the field of research (Segaran et al., 2020). Other studies have shown that lower cortisol levels are linked to more green urban areas. In addition, there has been a correlation between more open space in suburban communities with less cortisol in this disadvantaged metropolitan group of middle-aged unemployed men and women (Roe et al., 2013). Figure 2 summarizes the twelve most important neighborhood residential environment characteristics that have a substantial influence on the quality of life of the elderly.

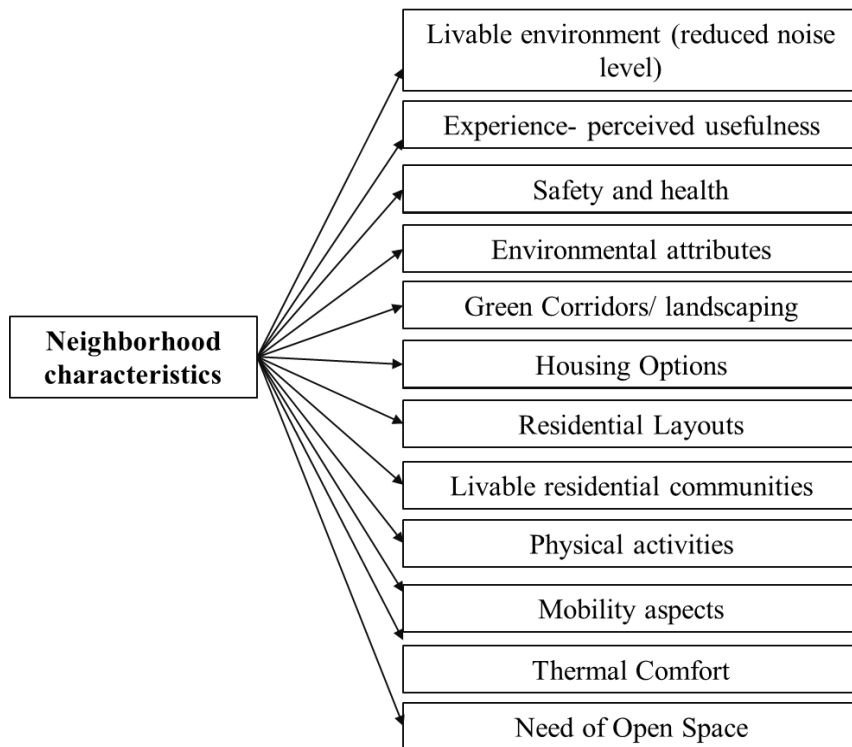


Figure 2. Characteristics of neighborhood residential environments

RQ-2: What are the various attributes of quality of life influenced by the neighborhood's residential characteristics?

Quality of life (QOL) is subjective and multidimensional at the most fundamental level. Because it is subjective, it is better evaluated from the patient's perspective in medical science. Because it is multifaceted, assessing it requires the investigator to inquire about several elements of the patient's life, such as physical well-being, mental capability, cognitive well-being, and social well-being (Kaplan & Ries, 2007). QOL is a term used variably inside and across disciplines. This theory was mostly established by analysis rather than theory construction. From an architectural standpoint, the notion of QOL is linked with built environment qualities that relate it to people's well-being (Theofilou, 2013). The satisfaction of older adults living in cities in terms of livability, convenience, pleasantness, safety, and other relevant social elements is more likely to impact residents' quality of life (Joon, 2020). Gardening activity and biodiversity contribution are determined primarily by the motivation of the gardener and socio-demographic factors that contribute to an active lifestyle for the elderly (Zasada et al., 2020). Other studies concentrate on residential environments, which are more than functionally designed living rooms and must be similarly attentive to the unbuilt, which, in contrast to the building, has a larger role in residents' and users' comfort (Gulati, 2019).

QOL is characterized by a sense of belonging and place attachment, which encourages the elderly to remain active and engaged in their communities (Ochodo et al., 2014). As a result, it creates a sense of community bolstered by security and safety measures. Creating an atmosphere where safe habits and activities are more easily available might be a precondition for keeping and implementing new healthy behaviors (Auchincloss et al., 2012). Rishi et al. (2015) concluded that older persons have a high quality of life in nursing homes since health care is easily accessible. It also implies that older people's personal, social, and environmental well-being is greater than that of their younger contemporaries rather than within their family arrangement. In their studies, Panday et al. (2015) have found that having a supporting family set up for the elderly is essential for quality of life. The interrelationships between built environments, social connections, and community happiness are diverse and heavily influenced by sociopolitical situations (Li et al., 2012).

Many city inhabitants, suburbanites, and rural residents live in neighborhoods afflicted by environmental stressors and disturbances such as pollution, traffic, crime, and insufficient physical fitness, all of which aggravate the beginning of mental disease (Ochodo et al., 2014). As a result, considering the elderly's well-being, the design and planning of a safe and secure residential setup within the built environment are critical. Physical location rather than psychological or

behavioral factors have been found to influence residents' contentment with their homes, according to the research of Rioux and Werner (2011). The four pillars of the study were the surrounding area, utility connectivity, interpersonal interactions, and specific housing. According to the hypothesis that older people have

complicated and subjective assessments of their homes and communities, each variable was related to numerous predictors (Rioux & Werner, 2011). Figure 3 summarizes the numerous facets of QOL that contribute to the satisfaction and well-being of the elderly.

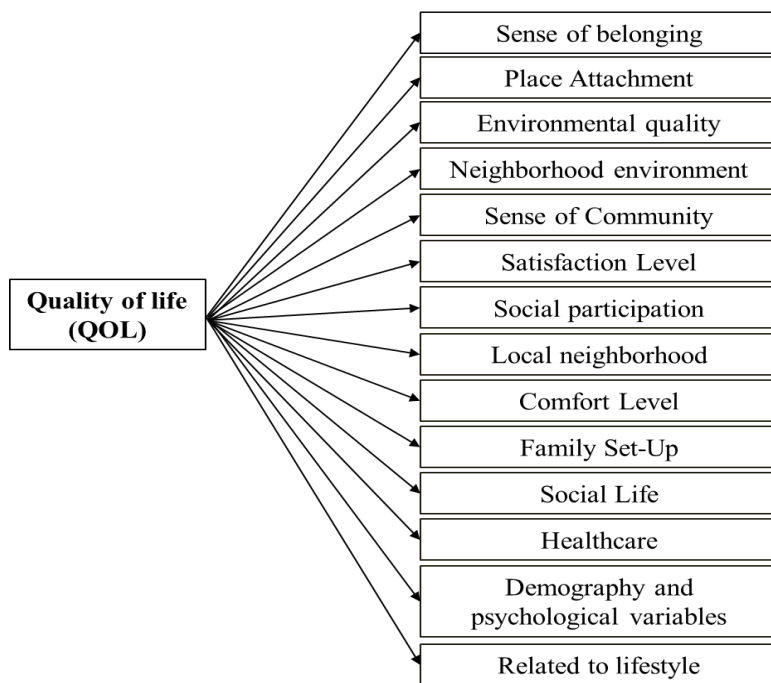


Figure 3. Various attributes of quality of life (QOL)

EVALUATION FRAMEWORK

We developed the evaluation framework by contextually evaluating the factors influencing neighborhood characteristics and quality of life and extracting variables to include gratifying experiences within residential environments to enable older adults to live comfortably and foster a sense of well-being. Two criteria comprise the

assessment framework's categories: quality of life (QOL) and local features (NC). The contextual study revealed that several factors influence the quality of life of the elderly within a community. Social care, chronic comorbidities, gender, outdoor leisure activities, and others were substantially connected with neighborhood characteristics and quality of life. As mentioned in each of

the chosen articles, the purpose of the built environment is to increase the quality of life of older individuals by enhancing their well-being. We discovered the basic components of healthy settings that promote human, psychological, and environmental well-being. Environmental health necessitates considering not just the natural environment but also the social context. As stated in each of the selected articles, the ultimate objective of a neighborhood's livable environment is to enhance the health and well-being of older adults, with safety being one of the most important factors. We determined that the neighborhood elements that have the greatest impact on the quality of life of the elderly are those that foster a feeling of community and belonging via social involvement.

Enhancing comfort level, providing open spaces for them to engage in a variety of physical activities, and developing the place attachment attribute to improve their mobility to these spaces are crucial factors that must be prioritized if the second phase of life for the elderly is to be of high quality. Environmental well-being involves both the natural and social environments and their interrelationships. It is challenging to locate the response to the issue, "an exciting and vibrant space be created for older adults in papers chosen for community outreach," in the published works. Thus, although it may be right to claim that making for a positive environment is vital, it is also necessary to be conceived as one that encourages psychological well-being. Most seniors retain their dignity and self-and decision-

making capacity through the end of their lives. The best method is to do things themselves, with assistance from others, or to get it done by themselves to keep freedom. Elderly adults need to maintain control of their environment, especially when they cannot execute everyday activities because of physical impairments and cognitive deterioration.

Spaces need to be designed to provide affordance with insight to assist with their acceptance and functioning of the smart living world. It is also important to help their physical and cognitive functioning while also allowing them to provide themselves with affordable options. The design of the built environment should show the intimate and intricate connections between the user, the community, and the environment.

The evaluation framework represented through Harvey Balls Method is used to represent the various factors that are inter-related between characteristics of the neighborhood to achieve the quality of life for the elderly is summarized in Figure 4, where the factors and their inter-relationship are rated as "Very Poor," "Poor," "Average," "Good," "Very Good." In addition, all the attributes and characteristics of NC and QOL are listed. Based on each research paper, to qualitatively visualize and rate the subjective experience, the Harvey balls technique is used. For instance, safety and physical activities strongly induce a sense of community belonging and place attachment with a high satisfaction level. It is therefore concluded that inducing safety attributes and spaces for physical activities (NC) through

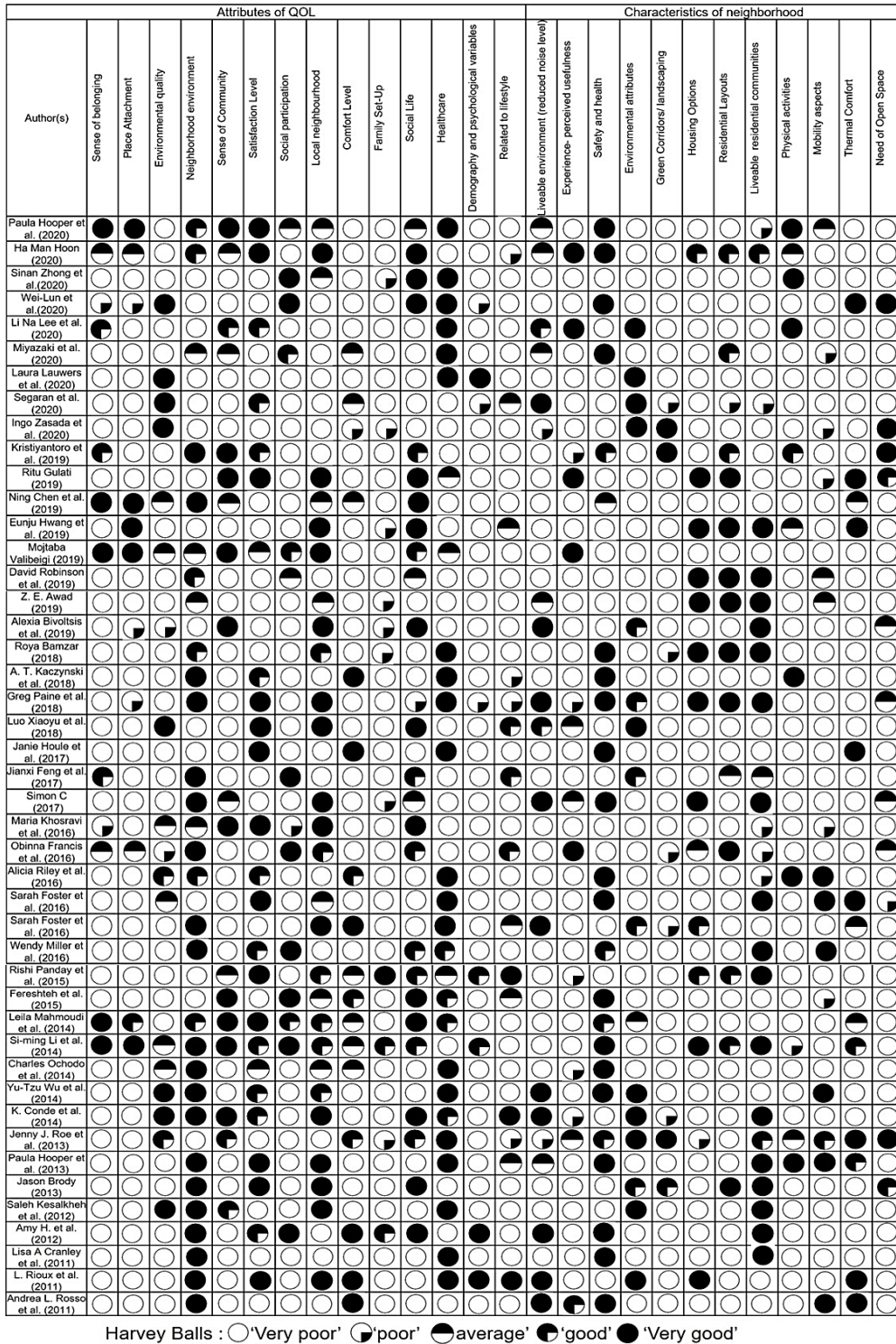


Figure 4. Harvey Balls Method: Inter-related factors of residential characteristics and QOL

design interventions in neighborhood layout facilitates a sense of satisfactory pleasurable experience (QOL) influencing the lifestyle of the elderly.

DISCUSSION

Critical Review on Neighborhood Characteristics Influencing Quality of Life for Elderly

The review reveals that satisfaction with key features of the neighborhood affects QOL through the mediation effect of one's overall feelings towards the neighborhood. That is, satisfaction through health-promoting activities that promote community belonging and the place attachment within a residential setup tends to contribute to one's overall satisfaction with the neighborhood (neighborhood satisfaction), which establishes a positive relationship in overall feelings towards social life (QOL). Likewise, housing satisfaction, in turn, affects home satisfaction, and both home satisfaction and community satisfaction, in turn, affect social life (QOL). Safety measures and open space integration in residential development also help to foster social cohesion (QOL). Residents with a more optimistic view of their area reported higher happiness and contentment in their daily lives. However, our study focused more on social interaction with residents' perceptions of the neighborhood's physical qualities rather than physical characteristics. Physical-environmental factors also influence residents' feelings of community. Variables directly impacting the connection to a residential site include the sense of

physical care and safety in the community. As a result, the physical aspects of a person's home can have a significant impact on their emotional well-being. Residents' quality of life will suffer if forced to live in a less-than-ideal setting. Hence, it is evident that all the aspects of neighborhood characteristics are complementary to the aspects of Quality of Life which is the outcome of the research.

The observation and analysis of the evaluation framework gave us a broad understanding of the neighborhood features contributing to a better quality of life for the elderly. Firstly, good health and social cohesion make a neighborhood-friendly environment within a residential community for the elderly. Conceptual, as well as analytical considerations related to current research, are issues that must be taken into consideration when one wishes to investigate disparities in health at the community level, such as selection, aggregation, various measuring attributes, and the nature of features as objective and dynamic characteristics (Parrott et al., 2020). The living condition encourages social cohesion and, as a result, improves safe life expectancy (Miyazaki & Ando, 2020). Focusing public health care on the most important factors would help mitigate costs and raise community health (Vaezghasemi et al., 2016). It has been revealed from the review that the social life of the elderly is mostly influenced by the comfort level within the built environment, which allows them to socialize. Open spaces establish a positive relationship with social cohesiveness. Therefore, safety and well-

being need to be integral to residential planning to induce social cohesiveness amongst the elderly.

Secondly, “Livable Neighborhoods” are mostly influenced by satisfaction level and a sense of community belonging and place attachment influencing their lifestyle. Various urban planning components correlate with walking, community, and safety-related results, which was compatible with international literature. Instead of recommendations, these structural elements may become mandatory criteria in potential suburban design policies (Hooper et al., 2020). Indeed, there are several aspects in which the standards of the neighborhood and street-based inclusive physical activity (PA) for all age groups can be elevated to a higher degree of attention. For example, it may be useful in socioeconomically diverse communities, as the mobility level and perception of services can affect users’ participation in PA (Kaczynski et al., 2018).

It can also be seen that while residential satisfaction and preference concerns are not motivated by lifestyle, they are not independent of the various lifestyles and are desired by users. Therefore, residential lifestyles can meet all the varied criteria and needs (Xiaoyu et al., 2007). From the review, it is found that contextual settings majorly influence livable neighborhoods. Environmental features like thermal comfort, visual comfort, and psychological comfort are the major indicators that successfully contribute to the quality of life of the elderly. It is also evident through the review that a healthy lifestyle for the elderly primarily

relies upon the amount of time spent on physical activities for their active aging.

Thirdly, the residential layouts in a community establish a strong relationship with social life within the local neighborhood for the elderly. Emotional, mental, as well as physical issues regarding the resident’s well-being must be addressed (Gulati, 2019). Increased sensitivity to environmental factors creates the impact of land diversity and habitat services on human health (Tsai et al., 2020). It has been investigated that perceived residential environment efficiency (PREQ) metrics impact urban local community identity (ULCI). While neighborhood attachment (NA) is an essential component of urban local identification, upkeep and care now establish a local identity more than neighborhood attachment (Valibeigi et al., 2020). Chen et al. (2019) show that residential satisfaction plays a major mediating function between environmental satisfaction and location attachment, implying the significance of residential satisfaction in residents’ attachment-building to place. It is recommended that future designers develop strategies towards making these spaces through creative placemaking concepts to foster a sense of attachment and belonging, considering environmental features which promote elderly well-being.

Fourthly, housing options and residential layouts have significantly influenced the quality of life of the elderly in establishing their social life and health care aspects. More people over 65 currently reside in nursing homes rather than in the housebound

community. Therefore, greater emphasis would be needed on studies involving older people and smart technologies as the population continues to develop. Panday et al. (2015) suggested that the findings lead to a high-quality level for individuals who live in nursing facilities, including monthly checkups by doctors. Those older adults who live in a family community have a higher level of physical, social, and environmental well-being than those who live in a supported facility.

Research that serves a function incredibly well through older adults is how we learned to improve technology-assistive resources and activities to keep them out of danger and strategies for independent existence within a neighborhood (Lee & Kim, 2020). Recognizing housing as more than a means of increasing value is significant, especially considering the well-established and largely acknowledged contribution of housing to health and well-being in old age (Robinson et al., 2020). While discussing the policy proposals that may be utilized to enhance the housing conditions of older people, an emphasis on the aspect that older people should be provided to live in the neighborhoods where they have resided during their adult lives is important (Donald, 2009). It is also evident from the study that neighborhood environments are characterized by the type of residential setup, the type of community the elderly reside in, and the preferred housing options they prefer for their stay. While designing residential layouts for the elderly, it is necessary to consider

the abovesaid features to make their life comfortable and active in their aging.

Fifthly, mobility has been viewed as a noteworthy impact on social life, encouraging safety and security for the elderly whether in open space visits or near a business zone (Farahani & Lozanovska, 2014). Personal safety was affected more by mobility than by expectations of protection. Public health and social well-being are predicted to increase as a result of more people participating in outdoor activities such as cycling (Foster et al., 2016). In order to maintain existing healthy habits and adopt new ones, it may be necessary to alter the home environment in such a way as to make safe habits and activities more widely available (Auchincloss et al., 2012). Although mobility is a crucial factor for the elderly to encourage their physical activity, it is critical to consider the physical attributes of the residential environment incorporating open space features like seating, lighting, street furniture, street width, crossing design, and public toilets and considering the universal design concept to encourage the mobility of the elderly. The spatial planning and the residential layout that facilitates meeting opportunities for the elderly by integrating public open spaces to meet and interact is the third major characteristic of neighborhood planning, contributing to QOL.

Sixthly, socioeconomic health inequalities related to family set-up and their status are the consequence of socioeconomic, spatial, and environmental issues. A longitudinal (cohort) analysis of a

group of individuals' growths over a long enough period is considered realistic but infeasible in gathering health outcomes (Van Kamp et al., 2004). However, the pre-formal pre-researchers possess a sense of culture that can be used to articulate their feelings and suggestions. While time-consuming, the participatory approach provided many public housing inhabitants for contemplation and involvement (Coulombe et al., 2018). Explicitly, women were significantly more undereducated, and a number of them also did unpaid work and thus lacked a sense of security (Farzianpour et al., 2015).

In particular, it stresses the significance of further refining energy policies needed for older people to comply with their individual needs and desires (Miller et al., 2017). Findings also suggested that sustainability benefits can be anticipated primarily in environmental and socio-cultural aspects, especially for urban biodiversity protection and aesthetic green urban spaces, with economic contributions (Zasada et al., 2020). The research suggested that a QoL measure may have more to do with gender and the disparities between men and women. The policymakers of the health sector should focus on societal problems like education, healthcare, and the person's physiological functioning, which eventually contribute to a better lifestyle and quality of life.

CONCLUSION

The review attempts to determine the interdependence of important features of the elderly's neighborhood local environment to guide them to a better living in their

later years. The elderly must become self-sufficient and independent to fulfill all domains of quality of life significantly connected with social care, co-relations, and gender health. The numerous features recognized from the literature from a global viewpoint as important attributes to improve QoL have been identified. According to the review, the most influential component for a good QOL is the elderly's sociability or social life, which is the most crucial aspect that keeps the old active during their aging process. Livable neighborhood surroundings also contribute to QOL because they foster a sense of belonging and place attachment, both of which are QOL characteristics. Mobility variables produce a substantial association between group participation and outdoor activities, as well as geriatric involvement in contributing to QOL. Furthermore, the scope of this research will be in assessing the impact of these attributes on the lifestyle of the overall standard of living in the physical realm for the elderly, as well as how older adults optimize person-environment fit in the face of neighborhood disadvantage, particularly when the option of relocating to a better neighborhood is limited. More research is also required to develop various strategies and design interventions by planners and designers to foster a sense of belonging and place attachment with their built environment, which will enable for leading healthy aging phenomenon, which is the need of the time for the elderly to keep them fit and active in their daily lives.

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