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Essential service accessibility and contribution to quality of life: a systematic review

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Abstract

Background Essential services ensure the health, safety, and well-being of individuals and their communities. However, there is currently a lack of consensus on what constitutes an essential service in Australia. This gap hinders a detailed spatial understanding of essential service provision, access, and influence on populations. This systematic review critically assessed the literature on essential services and their impact on quality of life to understand service definitions and their relative contributions to quality of life.

Methods A systematic search of ten databases was undertaken following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses methodology. Five criteria were established for the inclusion of studies: (i) major developed economies, (ii) defined essential service and focus on spatial access, (iii) quality of life outcome, (iv) peer-reviewed, and (v) published between 2000 and 2024.

Results From 1,473 unique records, seven studies met the inclusion criteria, with studies from Europe, Asia-Pacific, and North America. Across the studies, services were characterised based on their primary function and contributions to quality of life. Service categories included food, retail, personal services, health, education, culture and recreation, and faith-based services. Despite demographic and scale variations, services that fostered social connection and a sense of place showed the highest positive impact on quality of life.

Conclusions Findings indicate limited and inconsistent evidence on essential service measures and their relationship with quality of life. The persistent lack of justification for classifying services as essential in research hinders definitive conclusions about which services most effectively enhance quality of life. Future research should adopt standardised, validated measures, and address representation gaps across diverse populations and regions. This work is fundamental for developing a validated set of essential services, to improve national modelling of geographic access and inform policy, decision-making, and understanding of how access to services influences quality of life.

Keywords Essential services, Access, Quality of life, QoL, Systematic review

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Background

Access to essential services has been found to relate positively to an individual's quality of life (QoL) [1]. Essential services are necessary to maintain a minimum living standard, ensure the health, safety, and well-being of individuals and communities, and support societal functioning [1]. Access to these services fosters social inclusion, enhances labour market participation, and promotes societal resilience, ultimately protecting and maintaining people's QoL [2]. QoL has varying interpretations across disciplines, including well-being, happiness, life satisfaction, and liveability [3, 4]. Understanding what constitutes an essential service and how it contributes to QoL is warranted to ensure that key services are accessible where they are needed most.

Access is a complex concept that encompasses both spatial and aspatial dimensions. Spatial access refers to geographic factors, such as location and proximity, while aspatial access includes non-geographic factors, such as affordability, appropriateness, and quality [5]. These dimensions shape an individual's ability to utilise essential services. However, without geographic access, the other aspects of access are moot; a service must be geographically available before the other dimensions can be considered. Australia's inequitable distribution of services is well documented, and issues associated with spatial access are often influenced by Australia's vast landmass, challenging geographic environments, concentrated metropolitan populations, and sparsely distributed populations in rural areas [6].

In line with international efforts to define remoteness [7], Australia has made multiple attempts to define and quantify accessibility using a tiered lens from metropolitan to remote or very remote areas. However, rurality and remoteness, often used interchangeably, remain poorly defined and are described using various geographic classification systems [8, 9]. Since the early 1990s, four classifications have been developed to represent access and remoteness: Rural, Remote and Metropolitan Area (RRMA) Classification 1991 Census Edition (1994) [10], Accessibility/Remoteness Index of Australia (ARIA, 1999; ARIA+, 2001) [11], Australian Statistical Geography Standard - Remoteness Structure (ASGS-RA) (2011) [12], and the Modified Monash Model (MMM) (2015) [13].

Of these models, RRMA, ASGS-RA, and the MMM all use aggregations of the statistical areas defined by the Australian Bureau of Statistics (ABS) statistical geography standards. RRMA divides each of Australia's states and territories into three zones and seven categories within these zones. The ASGC-RA/ASGS-RA classified ARIA + into five groups from metropolitan through to very remote. The MMM further classified the ASGS-RA into seven groups of access. ARIA + is an index of access that uses population size as a proxy measure to determine service availability. It is a continuous index covering the whole of Australia and underpins the ASGS-RA and MMM classifications [11]. ARIA + is calculated using road distance measurements between populated centres and localities and population 'service centres' across Australia, assuming that service centres with larger populations contain more services.

These access measures do not allow for a detailed spatial understanding of access as they do not measure accessibility to actual services, and use spatial units not designed to understand service access. By assuming that larger populations equate to greater service provision, ARIA + oversimplifies accessibility by ignoring geographic constraints, such as road closures or seasonal limitations. These limitations are carried forward into other classifications (e.g., MMM), which compounds implications for health and policy decisions. Advances in locational data and improvements to spatial modelling offer the potential to build detailed individual address-level access to actual services.

A paradigm shift in modelling service access in Australia requires a clearer understanding of the services and facilities essential to QoL. Currently, there is no universally accepted definition of what constitutes an essential service in Australia, a challenge highlighted during the COVID-19 pandemic lockdowns [14]. During this period, public debate and policy decisions exposed inconsistencies in how essential services were defined and prioritised across jurisdictions [14]. Similarly, international literature has shown that social infrastructures, such as community centres, childcare, and education, were often overlooked despite their profound impact on QoL [15, 16]. Given this lack of consensus, this review seeks to identify which services contribute to QoL, providing evidence that may help inform future definitions of essential services.

As QoL itself is a broad and multifaceted concept without a standardised definition, understanding its relationship with service access is crucial. The European Union (EU) defines QoL as the overall well-being of individuals in a society and has established a comprehensive framework for assessing QoL across the EU [17]. Since 2003, the European Quality of Life Surveys (EQLS) have monitored QoL across multiple dimensions, incorporating individual and societal perspectives and objective and subjective indicators, including access to public services and amenities [17].

Over the past decade, there has been increasing research interest in the role of the built environment in generating or sustaining QoL. Wesz et al. [18] reported on a systematic review of factors influencing QoL in urban sustainable development, and Gao et al. [19] explored urban amenities. From an urban

liveability perspective, Badland and colleagues [20] analysed health and well-being indicators, and Dsouza et al. [21] examined the reliability and validity of QoL measures. Although many reviews take a multidimensional approach to understanding QoL, the impact of essential service access, particularly spatial access, remains poorly understood.

To better understand challenges to essential service access in Australia, it is first necessary to identify which services and facilities contribute to QoL. However, there is limited Australian-specific research linking service accessibility with QoL outcomes. To address this gap, international evidence is considered. To our knowledge, no reviews have been undertaken that examine the accessibility of essential services with QoL outcome measures. A synthesis of evidence is needed to understand and identify gaps and provide recommendations for future research that can enhance models of remoteness and accessibility, ensuring more meaningful modelling of spatial access. This systematic review aims to address this knowledge gap by answering the question: *What essential services have empirical evidence for improving quality of life outcomes when accessibility is considered?*

Methods

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement [22]. The completed PRISMA checklist is available in the supplementary materials [see Supplementary file 1]. A protocol for this review was developed in advance and registered in PROSPERO (CRD42024576921).

Table 1 PICOS inclusion and exclusion criteria

CRITERIA	INCLUSION	EXCLUSION
P (Population)	• Major developed economies	• Economies in transition • Developing economies
I (Intervention)/ Exposure	• Type of essential service • Spatial access to an essential service	• Does not specify the type of essential service • Aspatial access to an essential service
C (Comparison)	• none	
O (Outcomes)	• QoL outcomes	• Does not include a QoL outcome
S (Study design)	• Peer-reviewed experimental or observational research, including, but not limited to, cross-sectional studies, cohort studies, randomised controlled trials and case studies • Published in English	• Study protocols, editorials, conference abstracts, grey literature, qualitative studies • Not published in English
Time period	• 1 January 2000 to 13 August 2024	• Publication dates outside of 1 January 2000 to 13 August 2024

Eligibility criteria

The PICOS mnemonic was used to frame the inclusion and exclusion criteria (Table 1). *Population* included countries classified as major developed economies based on the United Nations country classifications [23]. The *exposure* was the type of essential service, with the *intervention defined as* access to these services. *Comparison* was not included. *Outcome* was a measure of QoL. QoL lacks a standard definition and is often used interchangeably with well-being, happiness, life satisfaction, and liveability [3, 4]. Therefore, this review included all terms relating to the concept of QoL. Literature published in English in a peer-reviewed journal between 1 January 2000 and 13 August 2024 was included. *Study design* considered for inclusion included peer-reviewed experimental or observational research, including, but not limited to, cross-sectional studies, cohort studies, and randomised controlled trials. Study protocols, editorials, conference abstracts, grey literature, and qualitative studies were excluded from this review. Relevant systematic and scoping review reference lists were checked for eligible studies.

Information sources

A literature search was conducted on 13 August 2024, using ten electronic databases: Business Source Complete (EBSCOhost), CINAHL (EBSCOhost), EMBASE (Elsevier), Environmental Complete (EBSCOhost), Global Health (EBSCOhost), GreenFILE (EBSCOhost), Health Policy Reference Center (EBSCOhost), MEDLINE Complete (EBSCOhost), Scopus, and Web of Science. Reference lists of relevant studies were also reviewed for additional studies.

Search strategy

Search terms were developed from a preliminary search of databases, MEDLINE and CINAHL and a literature review of key relevant studies, such as systematic reviews. The keywords contained in the titles and abstracts of relevant studies and the Medical Subject Headings (MeSH) terms used to describe the studies were used to develop the full search strategy. A combination of search terms related to the following concepts were used: [1] essential service; [2] access; and [3] well-being. A supplementary file outlines the complete search strategies [see Supplementary file 2]. A librarian with expertise in developing search strategies for health databases reviewed the searches. The search strategy, including all identified keywords and index terms, was adapted for each database.

Screening and selection

All identified citations were collated and uploaded into Endnote (Version 20.2.1, Clarivate, Philadelphia, PA). Citations were then imported into Covidence (Veritas

Health Innovation, Melbourne, Australia), and duplicates were removed. Titles and abstracts were dual screened in Covidence by four independent reviewers (SW, KP, HB, MB) using the prespecified eligibility criteria. Potentially relevant studies were retrieved as full texts and dual-assessed in detail against the inclusion criteria by four independent reviewers (SW, KP, HB, MB). Reasons for exclusion at the full-text stage were recorded. Reference lists of included studies were screened for additional studies. Any reviewer disagreements during the selection process were resolved through discussion with a third reviewer.

Data extraction

Data were extracted from eligible studies by SW and KP and tabulated with the following headings: first author and year, article title, country, geographic scale (e.g., urban, rural), study aim/objective, sample size, data collection methods, services tested for QoL, statistics used, and the main results. Any reviewer disagreements were resolved through discussion or with an additional reviewer.

Quality assessment

Quality assessment of included studies was conducted using the relevant Joanna Briggs Institute (JBI) critical appraisal tools for analytical cross-sectional studies [24]. SW and KP completed the quality appraisal. Any disagreements between the reviewers were resolved through discussion with a third reviewer.

Data synthesis

A narrative synthesis was conducted to summarise and interpret the findings of the included studies. This involved examining each study's characteristics, including the study setting (e.g., geographic location and context), population demographics (e.g., age, sex), sources of secondary data (e.g., population surveys), and QoL measures used. Essential services were identified and categorised by type (e.g., health, education, social services), with individual services grouped into broader categories based on their primary function for a structured classification.

Results

As detailed in Fig. 1, the search retrieved 2,560 studies, of which 1,087 duplicates were removed. The remaining 1,473 studies were screened for inclusion based on their title and abstract. During title and abstract screening, 1,302 studies were excluded, leaving 170 full-text studies to be screened for eligibility. During the full-text screening, 163 studies were excluded for the following reasons: not focused on access to essential services ($n = 42$), developing economies ($n = 39$), no QoL outcome ($n = 38$), research protocol or conference abstract ($n = 28$), did not specify the essential service ($n = 9$), and not published in English ($n = 7$). At the conclusion of the full-text screening, seven studies met the strict inclusion criteria, and were included in the final synthesis.

Study characteristics

The characteristics of the seven included studies are presented in Table 2. Studies were published between 2015 and 2024 and varied in geographic scale and sample size. Most studies were from Europe ($n = 4$), followed by Asia and the Pacific ($n = 2$), and Northern America ($n = 1$). Four studies were conducted across a single city [25–28], two were multi-city within the same country [29, 30], and one was a multi-national study [31]. Three studies were conducted within urban areas [25–28], one in a rural setting [30], and two were mixed [29, 31]. The largest study included 139,470 responses across 300 municipalities [29], and the smallest study included 213 respondents aged 65 or over from Noord-Limburg, The Netherlands [28].

Study quality

Seven studies were evaluated using the JBI quality appraisal tool for analytical cross-sectional studies. A supplementary file includes the quality appraisal for all studies (see Supplementary file 3). Of the seven studies, five (71%) clearly defined their inclusion criteria, and six (85%) provided detailed descriptions of study subjects and settings. All studies used objective, standard criteria for measurement and identified confounding factors. Furthermore, six studies (85%) explicitly stated strategies to address the confounding factors. The validity and reliability of outcome measurements were unclear in two studies that utilised secondary datasets, as they lacked information about primary survey validation. Despite this limitation, all studies employed appropriate statistical analyses.

Service characteristics

There was considerable variation in the types of services identified, and the terms used to describe these across the studies (Table 3). Some studies presented results based on individual service types, whereas others grouped results with broader categories. Davern et al. [26] developed a conceptual framework of 'social infrastructure' to measure how neighbourhood attributes impacted behavioural, intermediate, and long-term health and well-being outcomes. The framework's definition of social infrastructure was guided by established literature, and attributes were linked to geocoded health survey data to analyse how accessibility and mix of social infrastructure impacted the subjective well-being of individuals.

Kourtit et al. [29] developed a conceptual model in an earlier paper [32] defining the 'body' and 'soul' aspects

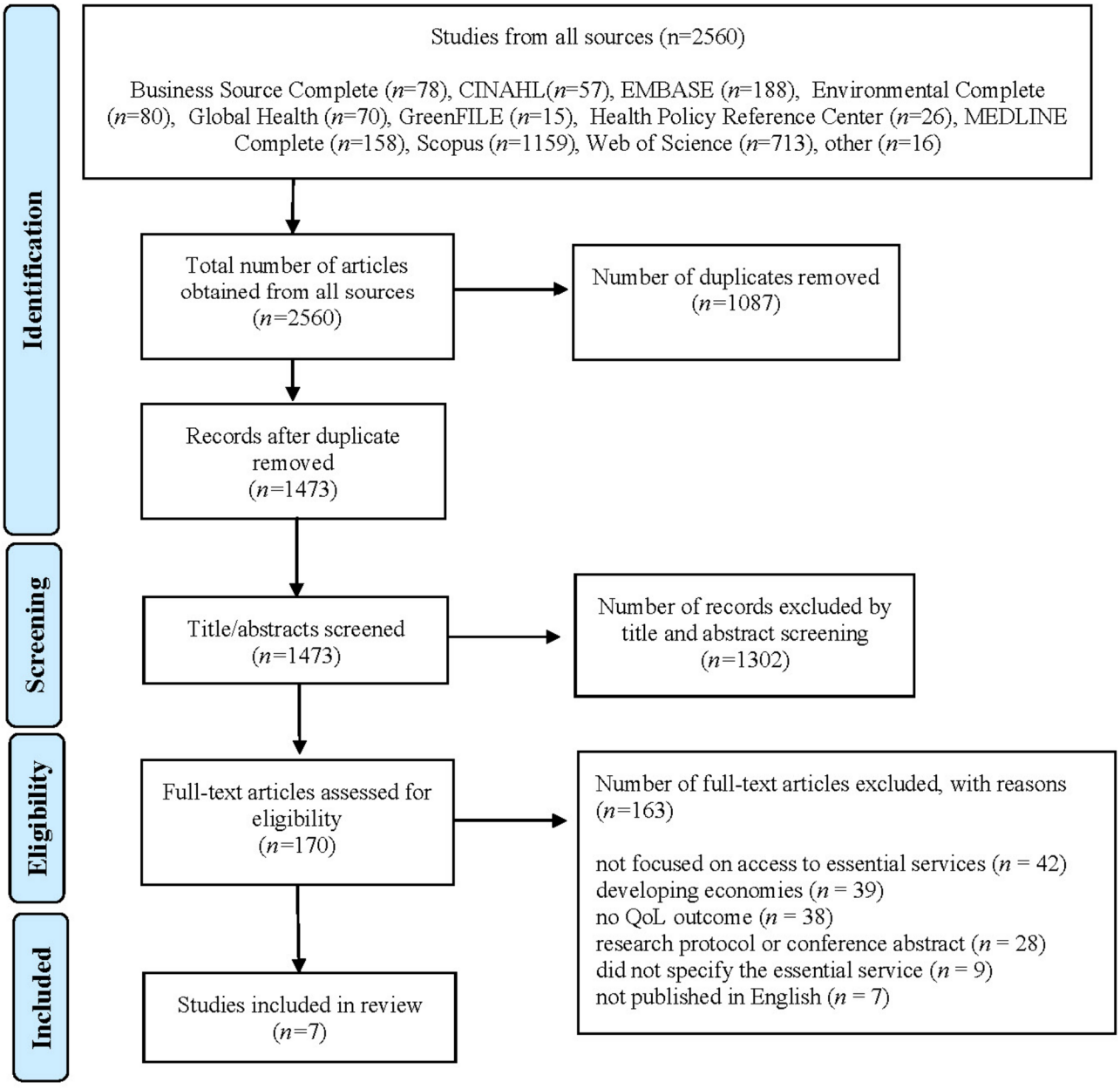

Fig. 1 PRISMA flow diagram of the screening process

of 'city love', the former of which included tangible and functional amenities, like public and commercial services. This was utilised in their cross-sectional analysis of Belgian municipalities, where they sought to estimate the relationship between measurable indicators of urban liveability and residents' feelings of appreciation and contentment toward their environment. Kourtit et al. [29] developed a set of variables representing key functional ('body') amenities and cultural, lifestyle, and social ('soul') amenities using statistical socio-economic and environmental data. The relationship between these amenities and city love was measured via a resident survey, and regression modelling was used to incorporate spatial dependencies when examining the results.

Rhubart et al. [30] analysed 'third places' as a contributor to civic life, health and well-being in rural United States. This study focused on the 'meaningful use' of third places, assessed by time spent socially interacting with others. The third places were derived from an earlier typology developed by the authors and included five categories: 'free and publicly available third places', 'social services,' 'low-cost commercial third places', 'creative, athletic and entertainment third places', and 'personal services.' The study surveyed rural working-age adults

Table 2 Study characteristics ($n=7$)

Study	Region	Country	Location*	Population summary	Sample size	Sex (%)	Age*	Data source
Davern, 2017	Asia/ Pacific	Australia	31 local government areas in urban metropolitan Melbourne	Adults aged 18 years and over	$n=7,141$	F = 58% M = 42%	Mean age = 53.6*y* (SD 16.5)	Secondary data source: VicHealth Indicators Survey
Kourtit, 2024	Europe	Belgium	300 Flemish municipalities	NR	$n=139,470$	NR	NR	Secondary data sources: Federal Bureau for Statistics, the National Bank of Belgium, Flemish Bureau for Statistics, Municipality-City Monitor
Rhubart, 2023	Northern America	US	Rural USA	Working aged adults living in the rural US	$n=1,135$	F = 53% M = 47%	18-34*y* = 386 (34%) 35-64*y* = 743 (66%)	Primary data source: Cross-sectional survey
Takamine, 2024	Asia/ Pacific	Japan	Metropolitan area (i.e., Tokyo, Kanagawa, Chiba, and Saitama)	Adults aged 20–80 years	$n=2,601$	F = 49% M = 50%	20-29*y* = 438 (17%) 30-39*y* = 439 (17%) 40-49*y* = 438 (17%) 50-59*y* = 440 (17%) 60-69*y* = 439 (17%) 70-89*y* = 407 (166%)	Primary data source: Survey
Tiitu, 2024	Europe	Finland	3 city districts in Helsinki (i.e., Kannelmäki, Koivukylä, Ristinummi)	Residents aged at least 18 years	$n=750$	F = 61% M = 39%	Mean age = 59*y*	Primary data sources: Postal and participatory survey, workshops
Van den Berg, 2015	Europe	Netherlands	Noord-Limburg	Older adults aged 65 or over	$n=213$	F = 57% M = 43%	65–69*y* = 74 (35%) 70–74*y* = 44 (21%) 75–79*y* = 43 (20%) ≥ 80*y* = 52 (24%)	Primary data sources: Two-day social interaction diary data and questionnaire
Węziak-Białowolska, 2016	Europe	Multiple EU countries	83 cities	NR	$n=41,645$	NR	NR	Secondary data sources: Flash Eurobarometer 366: Quality of life in the European cities

KEY = EU: European Union, F: female, M: male, Metro: metropolitan, NR: not reported, SD: standard deviation, US: United States, *y*: years

*as described in studies

to predict the odds of how often a respondent used and meaningfully used a third place. Across the studies, services were characterised based on their primary function and contributions to QoL. The categories include food, retail, personal services, health, education, culture and recreation, and faith-based services (Table 4).

Food services

Three studies identified cafés, coffee shops, restaurants, and bars as important for social interaction and QoL [25, 27, 33]. Takamine et al. [27] found that cafés and restaurants in Tokyo were central to relaxation, making memories, and socialising, with these spaces fostering a sense of well-being. Similarly, van den Berg et al. [28] showed that bars and restaurants were rated highly important for social interactions among older adults in the Netherlands. Grocery stores were also highlighted by Tiitu et al. [25] in Finland, where both residents and practitioners regarded access to food services as an important component of a liveable neighbourhood.

Retail services

Retail stores were highlighted as essential for both daily living and well-being. Takamine et al. [27] found that in Tokyo, retail stores were popular destinations for residents to visit with family or to relax, contributing to their overall subjective well-being. Similarly, through a cross-sectional analysis of a national Belgian survey, Kourtit et al. [32] found that a diverse range of recreational shopping opportunities positively impacted citizens' satisfaction with place and well-being. Węziak-Białowolska et al. [31] also identified the availability of retail outlets as a factor influencing dissatisfaction with life in European cities.

Table 3 Service characteristics ($n=7$)

Study	Outcome measure	Definition / justification	Analysis	Service examined	Source of services	Results
Davern, 2017	Subjective well-being	SWB is an alternative measure of well-being needed to understand the influence of policy decisions on individuals.	Linear regression, multi-level models, spatial autocorrelation, ICC	Community centres, culture & leisure (cinema / theatre, library, museum, art gallery), early years (childcare), education (state primary, state secondary), health and social services (aged care, community health centres, dentists, GP, maternal child health), sport and recreation (swimming pools, sports facility)	Literature review	Access to a mix of 15 social infrastructure services increased SWB on average by 2.3 points.
Kourtit, 2024	City love, urban well-being	City love is a multidimensional concept that captures the individual place-based attraction of residents to a locality. Feelings of satisfaction of urban residents reflect their 'love for the city'.	Ordinal least squares regression model, beta regression, spatial autocorrelation	Sports infrastructure (open air, sports halls, swimming pools), stores (clothes and fashion, free time, hotels, restaurants, bars, culture, recreation), healthcare facilities and cultural, lifestyle, and social amenities	Federal Bureau for Statistics, the National Bank of Belgium, Flemish Bureau for Statistics, Municipality-City Monitor	A diverse range of shopping opportunities and the organization of cultural events seem to positively impact city satisfaction.
Rhubart, 2023	Meaningful use	Meaningful use was defined as engaging with others in conversation in a third place for more than 30 min.	Frequencies (weighted and unweighted), binary logistical regression	Public retail establishments (coffee shops, restaurants, bars, liquor and tobacco stores, or salons and barbershops), social event or meeting places (bowling alleys, religious and spiritual organisations, civic organisation, libraries, recreation facilities, community centres, schools, or parks)	Previous research and typology developed by authors	The most common third places that are meaningfully used among rural working-age adults are religious organisations, parks/lakes, and dine-in restaurants.
Takamine, 2024	Subjective well-being and cognition	SWB is a comprehensive indicator of health status (including psychosocial aspects such as loneliness and isolation).	Logistic and multiple regression	Exercise facility, cultural facility, educational facility, meeting hall, medical and welfare facility, religious facility, leisure facility, café and restaurant, retail store, life service facility	N/A	The most commonly used places to relax, memories, show others, socialise, and visit with family were cafes and restaurants. Cultural facilities and retail stores were other places used to relax and visit with family. The number of clinics in the area was significantly correlated with SWB.
Tiitu, 2024	Comfort factor (liveability)	Comfort factors refer to the neighbourhood characteristics of a resident's living environment.	Z-scores, and fourfold table visualizations were made using the mean values	Cultural services, exercise facilitates, grocery shops, health and social services, indoor meeting places, kindergartens, restaurants, school	Literature review and workshop	Residents rated cultural services and exercise facilities as high importance, whereas practitioners rated schools and kindergartens as high importance. Health and social services and grocery shops were rated high importance by both.

Table 3 (continued)

Study	Outcome measure	Definition / justification	Analysis	Service examined	Source of services	Results
Van den Berg, 2015	Importance of interactions per location	The importance of older adults' social interaction was analysed to understand their location choices and personal, residential, and mobility attributes.	Latent class multinomial logit model	Play facility, community centre, church, supermarket, shop/services, local shop, shopping centre, health facility, bar, restaurant sports facility, library, school	N/A	The results suggest that both personal and mobility characteristics play an important role in social activity patterns of older adults.
Węziak-Białowolska, 2016	Urban QoL, satisfaction	Satisfaction with life in a city was used as an indicator of urban quality of life.	Logistic regression	Health care services (doctors and hospitals), cultural facilities (concert halls, theatres, museums and libraries), sport facilities (sport fields and indoor sport halls), retail shops, public spaces (markets, squares and pedestrian areas)	Flash Eurobarometer 366: Quality of life in the European cities	Dissatisfaction with cultural facilities and availability of retail outlets contributed significantly to dissatisfaction with life in a city.

KEY = QoL: Quality of Life, ICC: Intraclass autocorrelation, N/A: Not available, SWB: Subjective well-being

Personal services

Personal services, such as hair salons, nail salons, and barbershops, were found to serve a social function, offering spaces where individuals can relax and engage in informal social interactions. Rhubart et al. [30] further highlighted personal services in the context of rural USA, finding that they were among the most frequently used "third places" where meaningful social interactions occurred.

Health services

Two studies found that health services and medical facilities promote QoL [25, 27]. Helsinki residents and practitioners deemed access to health and social services essential to neighbourhood liveability [25]. Conversely, Węziak-Białowolska et al. [31] found that health services did not influence satisfaction with life in a city.

Education services

Educational facilities, including schools and kindergartens, were identified as important by urban practitioners in Helsinki, who rated them as essential to the liveability of neighbourhoods [25].

Cultural and recreational services

Three studies identified cultural and recreational services as important for liveability and well-being [25, 27, 31]. In Finland, Tiitu et al. [25] found that residents placed high importance on cultural services and exercise facilities, valuing these amenities as contributing to a positive living environment. Similarly, Takamine et al. [27] reported that Tokyo residents frequently used cultural facilities as places to relax and visit with family, which contributed to their subjective well-being. In contrast, van den Berg et al. [28] noted that sports facilities accounted for only 6% of social interactions among older adults in the Netherlands and were rated relatively low in importance. Węziak-Białowolska et al. [31] highlighted that the limited availability of cultural services influenced dissatisfaction with life in European cities. Kourtit et al. [29] explored how localised and non-localised shopping facilities and recreational (cultural and other) services could be located outside the municipality without negatively impacting local city love.

Faith-based services

Rhubart et al. [30] found that in the rural USA, places of worship, such as churches and other spiritual organisations, were among the most used third places where people gathered for meaningful social interactions. Conversely, van den Berg et al. [28] found that the church was rated the lowest importance in social interactions among older adults in the Netherlands.

Quality of life

The concept of QoL was measured using various approaches across the studies reviewed (Table 3) [see Supplementary file 4 for further information]. Two studies [26, 27] assessed subjective well-being through surveys, focusing on individuals' perceptions of life satisfaction. Rhubart et al. [30] measured the meaningful use of third places by surveying participants about the time spent in social spaces and the nature of their interactions, while van den Berg et al. [28] used a 5-point Likert scale to evaluate the importance of social interactions by location. One study [29] investigated QoL through the lens of place-based attachment and happiness, conceptualised as city love, focusing on emotional connections to the urban environment in Belgium. Węziak-Białowolska et al. [31] used satisfaction with life in a city as an indicator of urban QoL across European cities, emphasising the importance of broader environmental and social factors.

Table 4 Reported essential services ($n = 7$)

Service type	Individual service	Davern, 2017	Kourtit, 2024	Rhubart, 2023	Takamine, 2024	Tiitu, 2024	Van den Berg, 2015	Węziak-Białowolska, 2016
Food services	Supermarket						1	
Food services	Grocery shop					1		
Food services	Café/coffee shops			1	1*			
Food services	Restaurant (dine-in)		1	1*	1*	1	1*	
Food services	Fast food restaurants			1				
Food services	Bar/tavern		1	1*			1*	
Food services	Liquor and tobacco stores			1				
Retail services	Local shop						1*	
Retail services	Retail store				1*			1*
Retail services	Shopping centre						1	
Retail services	Clothing and fashion store		1*					
Personal services	Hair salon			1*				
Personal services	Nail salon			1*				
Personal services	Barbershop			1*				
Health service	Health service		1			1*	1	
Health service	Medical facility				1*			
Health service	Doctor/general practitioner	1						1
Health service	Hospital							1
Health service	Dentist	1						
Social service	Social service					1*		
Social service	Life service facility				1			
Social service	Aged care	1						
Social service	Community health centre	1						
Social service	Maternal child health	1						
Social service	Community centre				1		1*	
Social service	Welfare facility				1			
Education service	Educational facility				1			
Education service	Childcare	1						
Education service	Kindergartens					1*		
Education service	Primary school	1			1	1*	1	
Education service	Secondary school	1			1	1*	1	
Education service	University							
Education service	College							
Cultural and recreational service	Concert hall							1
Cultural and recreational service	Cinema	1						
Cultural and recreational service	Theatre	1						1
Cultural and recreational service	Museum	1						1
Cultural and recreational service	Art gallery							
Cultural and recreational service	Library	1		1			1	1
Cultural and recreational service	Cultural facility		1		1*	1*		1*
Cultural and recreational service	Recreation facility		1		1			
Cultural and recreational service	Exercise/sports facility	1			1	1*	1*	
Cultural and recreational service	Open-air		1					
Cultural and recreational service	Sport field							1
Cultural and recreational service	Soccer field							
Cultural and recreational service	Indoor sport hall		1					1
Cultural and recreational service	Swimming pool	1	1					
Cultural and recreational service	Bowling centre			1				
Cultural and recreational service	Golf course							
Cultural and recreational service	Rifle range							
Cultural and recreational service	Tennis court							
Cultural and recreational service	Play facility						1	

Table 4 (continued)

Service type	Individual service	Davern, 2017	Kourtit, 2024	Rhubart, 2023	Takamine, 2024	Tiitu, 2024	Van den Berg, 2015	Węziak-Białowolska, 2016
Cultural and recreational service	Leisure facility				1			
Cultural and recreational service	Public space							1*
Cultural and recreational service	Market							1
Cultural and recreational service	Square							1
Cultural and recreational service	Indoor meeting place					1		
Cultural and recreational service	Meeting hall				1			
Faith-based service	Religious organisation			1*	1			
Faith-based service	Church						1	
Faith-based service	Spiritual organisation			1*				

* Indicates a meaningful impact on QoL

Tiitu et al. [25] examined liveability in Helsinki, where residents rated the importance of neighbourhood characteristics, referred to as 'comfort factors,' through a survey.

Discussion

This systematic review aimed to identify studies on essential service accessibility where a QoL outcome was measured. Despite the increasing discourse around defining essential services, this review identified only seven studies that met the inclusion criteria, indicating a lack of quantitative evidence on how essential services are defined and contribute to QoL in developed countries.

The findings of this review highlight several key considerations for understanding essential services and their contribution to QoL. In many cases, the selection of services in studies appeared to be constrained by data availability rather than a systematic assessment of their potential importance to QoL. While just over a quarter of the services measured were shown to have a meaningful impact on QoL outcomes, inconsistencies across studies make it challenging to draw definitive conclusions. Commonly assumed essential services, such as healthcare services, lacked robust evidence linking them to QoL improvements. This may be partly due to the use of health-related QoL measures in healthcare access studies [34–36], which encompasses patient functioning and well-being rather than broader QoL, potentially leading to their exclusion during database searching. However, the absence of consistent evidence does not negate the importance of these services; rather, it highlights the need for more comprehensive research methodologies that can clarify why and how these services are regarded as essential for enhancing QoL.

Studies measured QoL using varying dimensions, such as subjective well-being and urban QoL, satisfaction with life, city love, and meaningful use of places. The larger studies [26, 29, 31] used secondary data from existing surveys to examine city love, urban QoL, and subjective well-being. The smaller studies [25, 27, 28, 30] collected residents' responses to examine the meaningful use of places, subjective well-being and cognition, the importance of interactions in a place, and liveability. A previous systematic review [37] found a significant positive relationship between social capital and aspects of the built environment; however, similar to this review, there were variations in conceptualisations and operationalisations of social capital measures.

The essential services provided to citizens are key to these analyses, although what constitutes a service as 'essential' also varied between studies and contexts. The services identified in this review with the greatest impact on QoL were those that promoted social connections and connectivity to place. Studies that only examined urban areas [25, 27, 28] found the greatest positive influence for food services (e.g., café/coffee shops, dine-in restaurants, and bars/taverns), cultural services, retail services (e.g., retail and local shops), health services (e.g., health and medical facilities), social services (e.g., community centres), sports and recreation (e.g., exercise and sports facilities), and educational services (e.g., kindergartens and public schools). The only rural-focused study [30] examined access to 'third places' and found the greatest positive influence was for personal services (e.g., nail and hair salons), faith-based services (places of worship, religious and spiritual organisations), and food services (dine-in restaurants and bar/taverns). Studies that examined both rural and urban areas [29, 31] found the greatest positive influence was for cultural and retail services (e.g., retail and clothing stores).

Due to the heterogeneity in definitions and measures applied by studies, it was difficult to compare across contexts. The variety of descriptors underlines the issue that a lack of definition presents [3]. This review has highlighted that there is very little crossover between these studies and no clear enumeration of a set of services that should be studied by researchers concerned with what services are essential to support QoL. A key challenge in assessing the relationship between essential services

and QoL is the heterogeneity in how QoL is conceptualised and measured across studies. While well-established indices such as the Human Development Index [38] and the Better Life Index [39] provide macro-level assessments of well-being, their applicability at the micro-level is less suitable [29]. The diversity of QoL measures identified in this review highlights the need for a more standardised approach. Future research could benefit from developing a comprehensive framework that considers both subjective and objective dimensions of QoL at various spatial scales. This could involve adapting existing indices to better account for local and contextual variations in QoL determinants or establishing a unified approach to measuring access to services and their contribution to well-being.

While this review has identified a few disparate measures, it does not provide a working base for establishing a clearly defined set of services. Instead, it highlights the need for a further review to examine studies focused on access to services that may not have included a QoL outcome. This review identified a large number of studies ($n = 38$) that examined access to essential services but did not include a tested QoL outcome and were therefore excluded. This emphasises the issue of measuring access to services to examine liveability without justifying the inclusion of services, or quantifying whether the service impacts QoL in the population being examined.

The excluded studies mostly examined access to essential services in urban design and city liveability contexts, with x-minute neighbourhoods and walkability as primary outcome measures. The justification for services deemed essential in these studies was based on existing literature, registries, point-of-interest data, and OpenStreetMap, and the measured services most frequently included education, food, and health services. If these studies had been included, they might have broadened the understanding of how accessibility influences service use and overall liveability, but without QoL-specific outcomes, it remains unclear whether improved access directly translates to enhanced QoL. Comparatively, this review found education and health services to have a limited positive influence on QoL; however, this could be due to the studies' contexts. For example, education services were examined only in metropolitan-based studies in this review and were highlighted as important by practitioners but not residents. Another reason may be that services such as education and health may be presumed essential, while services facilitating other dimensions of QoL, such as social well-being, cohesion, or connectedness, may show a more positive influence. Future research that examines access and QoL outcomes could help understand these relationships and strengthen the evidence base for defining essential services.

The COVID-19 pandemic exposed a critical gap in Australia's definition of essential services, revealing the lack of a pre-determined list and the evolving nature of what is considered 'essential' [14]. Globally, essential services like healthcare, utilities, and transport were prioritised. In contrast, social infrastructure, such as civic institutions, community centres, and sports clubs, were largely overlooked despite their crucial role in building social resilience and supporting communities during crises [15]. This highlights the need for a more comprehensive and unified definition of essential services in Australia. A shared definition of essential services and a greater understanding of how these services contribute to QoL would allow for more detailed and meaningful modelling of spatial access, rather than relying on models that use population size as a proxy for service access. This would ensure that future policies not only cover basic needs, but also incorporate the social support structures necessary for community resilience and well-being.

Implications

This review is part of a Linkage Infrastructure, Equipment and Facilities (LIEF) project developing a detailed access measure between Australian addresses and services and facilities with a focus on residential addresses. This review intended to provide a starting point for generating a list of essential services that would be used in the address-level model. Due to the study contexts, the included services varied, with no clear rationale provided for what constituted an essential service. The findings highlight the need for a more consistent approach to defining essential services and improving spatial accessibility. Several key steps should be taken to address these gaps. First, policymakers should establish a standardised definition of essential services, incorporating basic services (e.g., healthcare, education) and social infrastructure (e.g., community centres) to better reflect community needs. Second, spatial accessibility measures should move beyond population-based proxies by integrating minimum service levels and adopting address-based spatial units that utilise road networks and modelled travel times. A validated subset of essential services would enhance models of remoteness and accessibility, allowing for more accurate assessments of geographic access based on measurable realities. Third, validated access models should guide planning and resource allocation, ensuring infrastructure investments target underserved regions and spatial accessibility is embedded in regional and urban planning frameworks.

Strengths and limitations

A strength of this systematic review is the use of rigorous and robust methods to identify, appraise and synthesise the literature pertaining to essential service accessibility

and contribution to QoL. To our knowledge, this is the first review to synthesise quantitative evidence on the services most conducive to QoL. This review builds on existing evidence to understand accessibility in Australia, drawing from studies across countries classified as major developed economies to address the limited Australian-specific research. However, several limitations warrant acknowledgement. First, gaps in the literature, with the inclusion of a single Australian study, may restrict the generalisability of the findings to the Australian context. As most of the included studies were concentrated in a few countries and used varying QoL measures, comparability was limited. Additionally, there was an underrepresentation of specific population sub-groups, with only one study addressing a rural population, which limits the applicability of findings across diverse settings. Second, the inclusion of only cross-sectional studies, which can provide insights into associations at a point in time but restrict any causal inference. To address this, longitudinal studies are needed to understand the impact of access to services and QoL. Furthermore, two studies [29, 31] did not clearly define their inclusion criteria or study sample characteristics, which may introduce selection bias and limit the generalisability of their findings [24]. Third, many excluded studies focused solely on access to services without examining their direct impact on populations, particularly within the urban liveability literature. Future research could strengthen the evidence base by integrating mixed-method approaches, such as conducting longitudinal surveys or community-based research alongside spatial analyses. This would provide a more comprehensive understanding of how service access influences lived experiences and well-being within the local context. Standardised QoL measures should be incorporated into spatial studies to enhance comparability and ensure access meets population needs. Fourth, restricting this review to peer-reviewed studies may also have increased the risk of publication bias due to exclusions of grey literature. Future reviews could explore a broader range of essential services and examine the grey literature to understand how services are defined and prioritised.

Conclusion

Despite the systematic approach of this review and its inclusion of studies spanning 2000 to 2024, the findings highlight limited and inconsistent evidence on the relationship between essential services and QoL. A key challenge is the variation in how QoL is defined and measured across studies, with a lack of standardisation undermining the comparability and robustness of results. While standardised well-being indicators exist, they primarily take a macro perspective and may not capture localised QoL outcomes at finer spatial scales. This inconsistency and the sparse evidence limit the ability to draw definitive conclusions about which services most effectively enhance QoL. However, the available evidence suggests services that foster social connection, and a sense of place have a positive impact. These findings emphasise the need for future research to adopt standardised, validated QoL measures and address representation gaps across diverse populations and regions.

Abbreviations

ABS	Australian Bureau of Statistics
ARIA	Accessibility/ Remoteness Index of Australia
ASGC-RA	Australian Standard Geographical Classification-Remoteness Area
ASGS-RA	Australian Statistical Geography Standard–Remoteness Area
COVID-19	COronaVIrus Disease of 2019
EQLS	European Quality of Life Surveys
EU	European Union
JBI	Joanna Briggs Institute
LIEF	Linkage Infrastructure, Equipment and Facilities
MeSH	Medical Subject Headings
MMM	Modified Monash Model
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-analyses
QoL	quality of life
RRMA	Rural, Remote and Metropolitan Area

Supplementary Information

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Supplementary Material 1

Supplementary Material 2

Supplementary Material 3

Supplementary Material 4

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Author contributions

SW and KP led the systematic review design and data screening, extraction, data analysis, and manuscript drafting. NTC and EB were involved in the systematic review design, data analysis, and manuscript drafting. HB and MJB were involved in the systematic review design and data screening. MB and VLV were involved in the systematic review design and manuscript drafting. All authors were involved in drafting, reading, and approving the final manuscript.

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Data availability

All data supporting the findings of this study are available within the paper and its Supplementary Information.

Declarations

Competing interests

The authors declare no competing interests.

Conflict of interest
None to declare.

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Ethics approval is not required for this review of the literature.

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References

1. Rogge N, Van Nijverseel I. Quality of life in the European union: A multidimensional analysis. Soc Indic Res. 2019;141(2):765–89.
2. Almeida V, Hoffmann C, Königs S, Monroy AM, Salazar-Lozada M, Terrero-Dávila J. Geographic inequalities in accessibility of essential services. In. Paris: OECD; 2024.
3. Kapuria P. Quality of life in the City of Delhi: an assessment based on access to basic services. Soc Indic Res. 2014;117(2):459–87.
4. Sousa Gomes MC, Luís Rocha Pinto M, Gomes dos Santos G. Quality of life: a reappraisal. Int J Sociol Soc Policy. 2010;30(9/10):559–80.
5. Wood SM, Alston L, Beks H, Mc Namara K, Coffee NT, Clark RA, Wong Shee A, Versace VL. The application of Spatial measures to analyse health service accessibility in Australia: a systematic review and recommendations for future practice. BMC Health Serv Res. 2023;23(1):330.
6. Versace VL, Skinner TC, Bourke L, Harvey P, Barnett T. National analysis of the modified Monash model, population distribution and a socio-economic index to inform rural health workforce planning. Aust J Rural Health. 2021;29(5):801–10.
7. Beks H, Ewing G, Charles JA, Mitchell F, Paradies Y, Clark RA, Versace VL. Mobile primary health care clinics for Indigenous populations in Australia, Canada, new Zealand and the united States: a systematic scoping review. Int J Equity Health. 2020;19(1):201.
8. Wakerman J. Defining remote health. Aust J Rural Health. 2004;12(5):210–4.
9. Australian Institute of Health and Welfare. Rural, regional and remote health: a guide to remoteness classifications. Canberra: Australian Institute of Health and Welfare; 2004.
10. Energy, DoPIa. Department of human services and health: rural, remote and metropolitan areas classification 1991 census edition. Canberra: Australian Government Publishing Service; 1994.
11. Australian Bureau of Statistics. Australian statistical geography standard (ASGS) edition 3. Australian Statistical Geography Standard (ASGS); 2021.
12. Australian Statistical Geography Standard (ASGS.) Edition 3 [https://www.abs.gov.au/statistics/standards/australian-statistical-geography-standard-asgs-edition-3/latest-releasefiles/1175/jul2021-jun2026.html].
13. Modified Monash Model. [https://www.health.gov.au/health-topics/rural-health-workforce/classifications/mmmfiles/1173/mmm.html].
14. Mortimer G. What actually are 'essential services' and who decides? The Conversation 2020.
15. Bear L, Simpson N, Bazambanza C, Bowers RE, Kamal A, Lohiya AG, Pearson A, Vieira J, Watt C, Wuerth M. Social infrastructures for the post-Covid recovery in the UK. In. London: LSE Monograph; 2021.
16. Nandy A, Tiwari C, Kundu S. Managing the COVID-19 pandemic: does social infrastructure matter? Evidence from India. Transforming Government: People, Process and Policy; 2021.
17. Eurofound. European quality of life survey 2016: quality of life, quality of public services, and quality of society: overview report. LU: European Foundation for the Improvement of Living Working Conditions; 2017.
18. Wesz JGB, Miron LIG, Delsante I, Tzortzopoulos P. Urban quality of life: A systematic literature review. Urban Sci. 2023;7(2):56.
19. Gao R, Shen W, Wang H, Feng C. Urban amenities: a systematic review over the past decade and future research agenda. 2024.
20. Badland H, Whitzman C, Lowe M, Davern M, Aye L, Butterworth I, Hes D, Giles-Corti B. Urban liveability: emerging lessons from Australia for exploring the potential for indicators to measure the social determinants of health. Soc Sci Med. 2014;111:64–73.
21. Dsouza N, Carroll-Scott A, Bilal U, Headen IE, Reis R, Martinez-Donate AP. Investigating the measurement properties of livability: a scoping review. Cities Health. 2023;7(5):839–53.
22. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, Shamseer L, Tetzlaff JM, Akl EA, Brennan SE, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71.
23. UN: World Economic Situation and Prospects 2023. In. New York. 2023: 176.
24. Critical Appraisal Tools [https:http://jbi.global/critical-appraisal-toolsfiles/1889/critical-appraisal-tools.html].
25. Tiitu M, Nyberg E, Halonen JI, Pasanen TP, Viinikka A, Lehtimäki J, Lanki T, Vierikko K. Comparing City practitioners' and residents' perceptions of a liveable neighbourhood in Finland. Eur Plan Stud. 2024;32(5):1118–45.
26. Davern M, Gunn L, Whitzman C, Higgs C, Giles-Corti B, Simons K, Villanueva K, Mavoa S, Roberts R, Badland H. Using Spatial measures to test a conceptual model of social infrastructure that supports health and wellbeing. Cities Health. 2017;1(2):194–209.
27. Takamine S, Goto H, Lin S-h, Yamakawa Y. Association between subjective well-being and cognition of neighborhood places: an online questionnaire study conducted in the Tokyo metropolitan area. Japan Architectural Rev. 2024;7(1):e12437.
28. van den Berg P, Kemperman A, de Kleijn B, Borgers A. Locations that support social activity participation of the aging population. Int J Environ Res Public Health. 2015;12(9):10432–49.
29. Kourtit K, Neuts B, Nijkamp P, Wahlström MH. Cityphilia and Cityphobia: A multi-scalar search for City love in Flanders. J Urban Manage. 2024.
30. Rhubart D, Kowalkowski J, Pillay T. Third places in rural America: prevalence and disparities in use and meaningful use. J Rural Stud. 2023;104.
31. Węziak-Białowolska D. Quality of life in cities– Empirical evidence in comparative European perspective. Cities. 2016;58:87–96.
32. Kourtit K, Neuts B, Nijkamp P, Wahlström MH. A structural equation model for Place-based City love: an application to Swedish cities. Int Reg Sci Rev. 2021;44(3–4):432–65.
33. Rhubart D, Henly M, Guest MA, Henning-Smith C, Powell MA. Social infrastructure and health among mid-life and older adults in rural America: an environmental scan of existing data. Aging Health Res. 2024;4(2).
34. Kaplan RM, Hays RD. Health-Related Quality of Life Measurement in Public Health. Annual Rev Public Health. 2022;43:355–373.
35. Kelly C, Hulme C, Farragher T, Clarke G. Are differences in travel time or distance to healthcare for adults in global North countries associated with an impact on health outcomes? A systematic review. BMJ Open. 2016;6(11):e013059.
36. Wang Y, Wu Y, Chu H, Xu Z, Sun X, Fang H. Association between Health-Related quality of life and access to chronic disease management by primary care facilities in Mainland China: A Cross-Sectional study. Int J Environ Res Public Health. 2023;20(5):4288.
37. Mazumdar S, Learnihan V, Cochrane T, Davey R. The built environment and social capital: A systematic review. Environ Behav. 2018;50(2).
38. Human Development Index (HDI). [https://hdr.undp.org/data-center/human-development-index#/indicies/HDI].
39. Better Life Index. [https://www.oecdbetterlifeindex.org/#/11111111111].

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