Neighborhood Characteristics and Quality of Life (QoL) of Older Adults: A Qualitative Exploration from the Perspective of Indian Older Adults (Case Study of Kolkata, India)

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Abstract

Population ageing combined with the disintegration of the traditional family structure is leading to increased vulnerability of the older adults, especially in the Southeast Asian countries like India. With decline in physical abilities, the older adults limit their daily activities to the peripheries of their familiar residential environment. Though the Indian older adults vary significantly in their perspective to life and ageing from their western counterparts, explorations of neighborhood parameters required for the well-being of the older adults have been limited in the Indian context. Though recent studies on Indian older adults reveal the emergence of groups of older adults with belief in independence and active ageing, a majority of the older adults in India still hold on to traditional beliefs systems like intergenerational interdependence, and disengagement in old age. Since the aim of the present study is to understand the link between neighborhood features and the overall QoL from a holistic approach, the study adopts the qualitative research technique which allows the freedom to explore the concept from varied perspectives. The study collects data through discussions with 83 older adults divided in in nine groups residing in nine different neighborhoods in Kolkata, India. The technique of content analysis was then conducted on the findings from focus group discussions to identify a holistic list of activities and their associated neighborhood infrastructure and attributes, perceived to contribute to the QoL domains of Indian older adults. The findings of this study can be useful to policy makers in formulating design guidelines for the built environment in order to cater to the overall QoL of the older adults.

Keywords Perceived Quality of Life · Indian older adults · Aging-in-place · Age friendly neighborhood

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Introduction

India, along with many other South Asian countries, are experiencing a gradual rise in their aged population. The changes in the traditional Indian family structure and the loss of family based care givers for the older adults, are consequently leading to a rise in the concern for care-giving for the older adults in these countries. The present socio-demographic milieu has steered the role of care-giving for the older adults on the government of these countries, who now need to concentrate on designing policies and programs for the welfare of their older adult citizens, through provision of home and community based infrastructure and services. In order to be efficient and relevant, the policies targeting at the welfare of the older adults needs to focus on the holistic improvement of the overall QoL of the older adults.

Aging, in general, is associated with deteriorating health conditions, decline in social relationships, increase in dependence and vulnerability to diseases and social adversities (Bowling, 2011). Since the concept of Quality of Life (QoL), encompasses all the aspects of health, social and psychological status, it can be assumed that the QoL is likely to decline in old age (Bowling, 2011). The importance of the immediate surrounding environment on the well-being of the older adults is thus substantially higher in comparison to the middle aged or young adults due to the combined effects of decline in physical capacity, mobility, and mental health, which in some cases, might lead to subsequent decline in social relationships and social support (Khosravi & Tehrani, 2019). Hence, availability of required infrastructure and opportunities in the neighbourhood in which they reside, might ensure better chances of these activities being performed / undertaken by the older adults. The contribution of aging-in-place in helping the older adults to maintain their level of independence, of social connections and living in a familiarized lifestyle, have also been recognized in various studies (Jayantha et al., 2018; Kendig et al., 2017; Tang & Pickard, 2008). Besides, in India, the expenses involved in institutional care, and the social taboo associated with the same, (Brijnath, 2012), also is a reason for the older adults to choose ageing-in-place.

In the Indian context, despite the escalating need for research on ageing and the aged in India, studies on both QoL of Indian older adults and age friendly neighborhoods is still a comparatively less explored area of research.

Besides, some countries are now experiencing the rise of a new group of older adults who are more economically stable, have higher education, are well acquainted with new technologies and are aware about their physical and mental wellness (Domínguez-Párraga, 2019). The attitude towards aging has now shifted from disengagement to active aging. Older adults are now seeking for more active participation in the community, and independent lives in their own homes (Domínguez-Párraga, 2019). Hence, research on Indian older adults also needs to explore if there needs to be a focus on creation and development of spaces which can encourage social interaction and active lifestyle for them.

Presently, though the Indian government has developed various policies and programmes for the welfare and well-being of the aged, very few policies or

programs have focused on the design of the environment for the holistic well-being of the older adults and the proposals of these programs have been primarily restricted to the generic provisions of barrier free infrastructure.

A detailed understanding of the neighbourhood attributes impacting upon the QoL of the older adults requires an exhaustive understanding of the needs of the older adults residents which define or contribute to the factors influencing their QoL, followed by the identification of the list of activities that people associate with each of these QoL factors and finally the identification of corresponding neighbourhood level infrastructure and respective attributes required for the execution of each of these activities.

The Neighborhood and Quality of Life of Older Adults

The neighborhood, also sometimes referred to as the "built" environment—has been defined as the "objective and perceived characteristics of the physical context in which people spend their time" (Van Cauwenberg et al., 2011 as cited by Padeiro et al., 2022). It generally includes features such as public spaces, sidewalks, crossings, and community-level features, such as land-use characteristics, built-up densities, and the existence and accessibility of green areas (Hanson et al., 2012) and neighborhood infrastructure which cater to people's daily needs such as shops and local services (groceries, community pharmacies, recreation, health care, transportation, banks, post offices, administrative services, and social support). The neighborhood is one of the most essential urban elements which acts as a link between the city and citizens to enhance their quality of life (Sadeghi et al., 2022). For example, an aesthetic, neat, and walkable environment (benches, shade) encourages older people to come outside of their homes, consequently increasing their opportunities for social interactions and physical activity, which ultimately enhances their wellbeing (Padeiro et al., 2022). Domínguez-Párraga (2019) observes that scarcity of places that encourage socialization among residents, such as the practice of outdoor activities such as exercise or leisure activities, absence of grocery stores, green zones, result in a decrease in the quality of life for residents.

Studies in the field of environmental gerontology, have primarily explored the impact of the neighborhood environment on the health and well-being of the older adults. Though there has been substantial research on effects of residential environment on the health of older adults, studies examining the relation between the residential environment and the mental or psychological aspects of subjective well-being has been comparatively less explored (Zhang & Zhang, 2017). Zhang et al. (2018) examines the associations between neighborhood characteristics (public space, senior population density, and senior service) and the well-being of older adults, with sense of community as a potential mediator and personal resilience as a potential moderator.

Yu et al. (2019) observes that sense of community plays a role in the relationship between perceived neighborhood environments and self-rated health. As observed by Sadeghi et al. (2022) various research has attempted to investigate the relationship between the characteristics of the built environment and subjective well-being.

In their study Sadeghi et al. (2022) identifies a list of variables of neighborhood structural characteristics, such as residential density, walkability, aesthetics, etc. which are related to some aspects of subjective well-being, through literature. However, the link between the holistic list factors influencing overall QoL with the neighborhood infrastructure is a research domain which is yet to be explored.

A major segment of research on neighborhood environment for the older adults have explored the methods and mechanisms of promoting "successful aging" and "active aging" (Elsawahli et al., 2017a, b; Marquet et al., 2017; Michael et al., 2006). The concept of successful aging-in-place focuses on enabling the older adults to be physically active and independent in performing instrumental activities of daily living for leading meaningful and social life within their own community and neighborhood (Nyunt et al., 2015). Traditionally, research on ageing in India has been predominantly based on the premise of disengagement and a collectivist society, which is starkly different from the approach towards ageing in Western societies. However, a transition towards an amalgamated system composed of "Westernized" and traditional norms is now being observed mostly due to the rise in the urban middle-class older adults who have better economic stability and are showing growing interest towards non-traditional patterns of ageing, including living alone and choosing to live in age segregated communities catering to their interests) (Asztalos Morell et al., 2023). Hence, it is essential to explore how these changing perceptions and attitudes reflect upon their demands from their surrounding built environment or neighborhood.

The vastness of the concept Quality of Life (QoL), which comprises of a broad range of aspects extending from an individual's physical and mental health, to the characteristics of an individual's social and physical environment (Birren & Dieckmann, 1991), has rendered it difficult to arrive at a consensus on a comprehensive list of factors defining QoL. Research on QoL has been explored from both subjective and objective approaches. In this research, we have adopted the subjective approach to understanding overall QoL, which includes the direct perceptions of people; their self-evaluation, on the various aspects of their lives.

The broad domains observed to influence QoL of older adults had been identified from QoL instruments used for the assessment of QoL of older adults. The process of identification of QoL domains from these studies has been discussed in the study by Saha et al. (2022). In this paper, we are considering the QoL domains 1) a) Health (physical), b) Health (mental), 2) Social activities and relationships, 3) Leisure activities, 4) Level of independence, 5) Life perceptions affecting emotional well-being, 6) Religious/spiritual beliefs, and 7) Financial stability.

The present study is a part of a broad research project focusing on identification of urban neighborhood level infrastructure catering to the QoL of Indian older adults. In the main broad research, the relationship between well-being and environmental support has been linked by the theory of personal projects in a study by Sugiyama and Thompson (2007). The theory of Personal Projects proposed by Little in 1983 (Little, 2014), suggests that our personal goals in life can be translated into a set of projects, which can be accomplished through a set of actions or activities. Accomplishment of these goals can be assumed to contribute to our well-being and overall QoL. But in case of the older adults, whose daily activities and interactions are mostly restricted

to the immediate periphery of their residential areas, the performance of these activities are dependent on the presence of absence of required neighborhood level infrastructure and the quality of their attributes. The research framework adopted for the main broad research project is represented in Fig. 1. In the broad research project, of which the research in this paper is a part, initially, the concept of QoL has been categorised into a broad list of domains, which have been further categorised into a list of factors or sub-domains. Next, taking inspiration from the concept of Personal Projects by Little (1983) and the study by Sugiyama and Thompson (2007), the activities required to fulfill or cater to each of these factors or sub-domains were identified. Finally, the list of neighborhood infrastructure and their respective attributes required for the performance of each of these activities were identified (Saha, 2021). The present paper discusses the process and results of the first phase of identification of activities and neighborhood infrastructure and attributes for the list of QoL domains only.

Study Methods

The present study adopts the qualitative technique of focus group discussions, which has been adopted in various studies for the identification of determinants influencing satisfaction with residential and outdoor environments (Bengtsson & Carlsson, 2006); Kennedy and Coates (2008). Qualitative interview techniques, which include open ended discussion, help in collecting information on the issue of interest, from the perspective of the target population under study (Vaismoradi et al., 2013). Besides, open
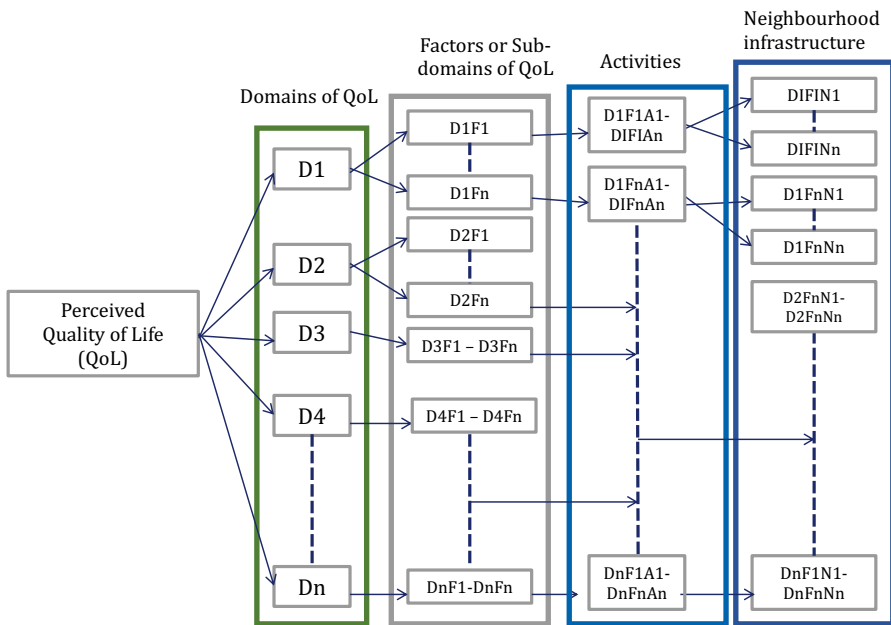

Fig. 1 Research framework of the main research project (Saha, 2021)

ended interviews have also been observed to be less intimidating to the participants. Close ended formats often limit responses to a given set of choices and therefore might be unsuccessful in extracting substantial data from participants who face problem in expressing their feelings. Group discussions, on the other hand, enables the spontaneous exchange of ideas, opinions and perceptions and also help in extracting responses, which might otherwise remain unobserved (Lau et al., 1998). Since the objective of this study is to explore the perceptions and expectations of the older adults from their neighborhood environment, the technique of focus group discussion was adopted for this study.

The procedure for identification of neighbourhood infrastructure in our present study is based on the three concepts stated by Sugiyama and Thompson (2007), where we first identify the activities that are performed by the older adults, the neighbourhood characteristics helping or obstructing the performance of the same and finally the identification of desired activities which are presently left un-met due to the unavailability of facilities or opportunities to perform the same.

The Focus Group Discussions: Procedure, Sample Selection and Study Area

The focus group discussion for this study was conducted along with another study on identification of factors influencing perceived QoL of Indian older adults, as discussed in Saha et al. (2022) and the methods adopted for the survey and the participants for both the studies are same.

A team of five members, whose mother tongue was *Bengali* and could also speak and understand *Hindi*, accompanied the first author in conducting the focus group discussions. The first author had discussed the purpose of the study, the questionnaire and each of the questions with each of the team members two days prior to the start of the focus group discussions. The team members were then asked to go through the questions and conduct some trial interviews to check if they could extract responses required for the study.

During the main focus group discussions, each discussion process started with the researcher (first author) first explaining the purpose of the group discussion or survey, and the questions that were to be asked. Respondents who were not comfortable with the entire process were not included in the discussion. Only respondents who agreed to participate after listening to the introduction and purpose of the discussion, and were mentally and physically capable to sit through the entire process, which spanned for almost 45 min to 1 hour, were included.

Initially the questionnaire was prepared by the authors in English. The questions were then translated to the local language, *Bengali (*the mother tongue of majority of the respondents), by the first author along with a local language expert and a trial interview was conducted on some people whose native language was *Bengali* to check if the questions could extract the type responses which the discussions aimed at.

Convenience sampling technique was used to collect respondents for this survey. The sampling also considered factors such as gender, educational qualification, and household income to ensure heterogeneity in the sample. Only older adults people who were physically and mentally capable of sitting through and actively participating in the approximately one hour-long discussions were considered. Initially, the

first author communicated with one or two persons known to either of the authors in each of the nine neighborhoods and explained to them the purpose of the study. Next, approximately ten people were gathered by the people communicated with in their own neighborhoods for the focus group discussions. In case of gated communities, permission had to be taken from the head/ chairman of the respective housing committee/society to conduct the discussion in their housing premise.

The survey was conducted on 83 older adult respondents (excluding respondents who left the survey in between the process) in nine different neighborhoods in Kolkata Municipal Corporation (KMC) and adjoining Bidhannagar Municipal Corporation (BMC), located in West Bengal, India. The administrative boundaries or the wards were used to demarcate the neighborhoods in case of organically developed neighborhoods, whereas the block boundary was used to demarcate the planned neighborhood in AC Block, Salt Lake under BMC; in case of housing complexes, the particular housing complex was used to define the neighborhood. The focus group discussions revealed that people residing in housing complexes or gated communities associated the boundary of the gated community as their neighborhood boundary.

Though ten respondents were collected initially in each neighborhood, since some respondents did not wish to participate considering the time duration, the total respondents are 83. One focus group discussion was conducted in each of the nine neighborhoods. Each discussion had approximately eight to ten participants.

In order to ensure a sense of comfort and safety to the respondents, they respondents were allowed to choose to not answer any question if they felt uncomfortable or unwilling. However, it is interesting to note that all the respondents who agreed to participate stayed for the entire discussion. Besides, in order to maintain anonymity of the respondents, their names, address, phone number, etc. was not recorded or documented.

The focus group discussions were divided into two parts. The first part included interviews with each of the respondents, where a set of structured questions were asked to identify their daily activities, the domains of QoL that they assumed these activities to cater to, the problems they faced during the performance of these activities (related to infrastructure), the aspects that they liked about the place of activity. The second part consisted of group discussions where they were asked to mention the activities that they desired to perform in order to cater to all the domains of their QoL and the list of associated neighborhood infrastructure and attributes that they desired to avail in order to perform or conduct these activities.

In order to ensure participation of all the respondents during the focus group discussions and to avoid biased responses, dominant group members were not allowed to influence the thought process of the other participants. Before ending the discussions, the responses were summarized and read out to the respondents to ensure if the responses had been accurately interpreted and the documentation had been done appropriately.

Sample Distribution

The details of the respondents are shown in Table 1. In this study, people belonging to the age group of 55–59, who shall soon turn into senior citizens, have also been considered because their preferences should help in formulation of the needs of the future generation of the older adults.Since the focus group discussion for this study

Table 1 Details of survey respondents for focus group survey

Socio-economic groups	Number of respondents	Percentage	Group Code
Age			
55–59	23	27.7	Age 1
60–69	32	38.6	Age 2
70–79	19	22.9	Age 3
80 and higher	9	10.8	Age 4
Gender			
Male	45	54.2	Gender 1
Female	38	45.8	Gender 2
Educational Qualification			
Primary (Class V and below)	13	15.7	Edu 1
Secondary (Class X)	5	6.0	Edu 2
Higher secondary (Class XII)	5	6.0	Edu 3
Graduate	27	32.5	Edu 4
Post graduate and higher	17	20.5	Edu 5
None of the options (Illiterate or no formal education)	16	19.3	Edu 6
*Income Group**			
Low Income Group (LIG)	41	49.4	Inc 1
Lower Middle Income Group (lMIG)	11	13.3	Inc 2
Upper Middle Income Group (uMIG)	10	12.0	Inc 3
High Income Group (HIG)	21	25.3	Inc 4

*Income group classification specified by West Bengal Housing Board, India (Table previously published in Saha et al., 2022)

was conducted along with another study on identification of factors influencing perceived QoL of Indian older adults, discussed in Saha et al. (2022) (both of the studies are part of the same research project), the participants for both the studies are same.

Analysis Technique

The collected responses were first translated into English by the researcher (first author) and then was discussed with the co-authors to ensure that the interpretation was correctly done. The mother tongue of all the authors is *Bengali*, and all the authors are well acquainted with the English language. Content Analysis is a descriptive approach to analyze qualitative data which helps in attaining a condensed and broad description of the issue under study by distilling important words relevant to the study objective. The outcome of content analysis is a list of categories describing the issue (Elo & Kyngas, 2008). The inductive approach to content analysis was adopted in this study. In the inductive approach, the process includes open coding, creating categories and abstraction, followed by grouping

of the data to create categories by collapsing those "items" that are similar or dissimilar into categories (Elo & Kyngas, 2008).

The responses were analysed by the first author manually. All the responses were first categorized according to the questions asked i.e. the responses to daily activities, the domains of QoL that they assumed these activities to cater to, the problems they faced during the performance of these activities (related to infrastructure), and the aspects that they liked about the place of activity were documented separately in an excel sheet in different columns. The responses to the questions on the list of daily activities, and the domains of QoL that they assumed these activities to cater to did not need any content analysis and were listed as mentioned.

For each QoL domain, the responses to the questions on the problems they faced during the performance of these activities (related to infrastructure), the aspects that they liked about the place of activity and the activities that they desired to perform in order to cater to all the domains of their QoL and the list of associated neighborhood infrastructure and attributes that they desired to avail in order to perform or conduct these activities, were first clubbed together and then analysed through content analysis. In this study, meaning units were directly extracted from the responses in some cases. For example, for the response "*Sometimes when we are outside for long hours, we feel the need to go to toilets. So, if there were some well-maintained clean public toilets, it would have been very helpful for us.*" (refer Table 2) to the question related to the neighborhood infrastructure related to morning/ evening walk, the meaning unit "Public restrooms along roads at short intervals" could be directly extracted. Meaning units had to be clubbed into categories for some other responses. For example, for the responses "*Every morning I like to take a stroll in the neighborhood and sit at the temple or at the tea stall. But there are too many dogs in the neighborhood. In rainy season, the roads get water logged and there are too many potholes. Taking walk in the rainy season becomes very difficult.*" and "*I get tired after walking for 10 min. So, if there would have been enough places to sit while walking along the road, I would have felt more interested to take walks.*", the meaning units extracted were "take a stroll in the neighborhood and sit at the temple or at the tea stall" and "enough places to sit while walking along the road" (refer Table 2). These meaning units were then clubbed together into the category or dimension "Seating areas at short intervals" (refer Table 2). The categories are groups of concepts with similar meanings.

The process of analysis is demonstrated with a few examples in Table 2. Table 2 shows few examples of responses to the activity of morning/ evening walk for the domain of Health. The responses in column 3 of Table 2 identifies the infrastructure and the responses in column 5 of Table 2 identifies the attributes with respect to the infrastructure.

Results

Table 3 shows the comprehensive list of neighbourhood infrastructure and their associated attributes required to actualize the activities to satisfy the QoL domains, identified from the group discussions. The attributes have been identified from the specific feature of an infrastructure being used by the respondent for a particular

Table 2 Examples of extraction of meaning units or codes directly from response (phrases in bold shows the meaning units)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Examples of responses	Existing and Desired Neighbourhood Infrastructure	Examples of responses	Associated Neighborhood Attribute (desired marked in italics)
Health (Physical and mental)	Morning/ Evening walk	"Every morning I like to take a **stroll in the neighborhood** and sit at the temple or at the tea stall. But there are too many dogs in the neighborhood. In rainy season, the roads get water logged and there are too many potholes. Taking walk in the rainy season becomes very difficult." "There are too many shops along the **road**…They take up half the space of the road. How will I **walk**?" "I sometimes go out for a **walk in the neighborhood** in afternoon around 4 or 5 p.m. and I come back before sunset because I can't see properly in dim light"	Road inside neighbourhood	"I sometimes go out for a **walk** in the afternoon around 4 or 5 p.m. and I come back before sunset because I **can't see properly in dim light**". "I would like to take **walks** in the neighborhood in the evenings. But, it doesn't feel safe. The **roads are not well lit**". "Every morning I like to **take a stroll** in the neighborhood and **sit at the temple or at the tea stall.** But there are too many dogs in the neighborhood. In rainy season, the roads get water logged and there are too many potholes. Taking walk in the rainy season becomes very difficult."	Adequate lighting along streets Seating areas at short intervals

Table 2 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Examples of responses	Existing and Desired Neighbourhood Infrastructure	Examples of responses	Associated Neighborhood Attribute (desired marked in italics)
		"Too much of traffic in the **road**. Very difficult to **walk**".		"I get tired after walking for 10 min. So, if there would have been **enough places to sit while walking along the road**, I would have felt more interested to take walks."	
				"Sometimes when we are outside for long hours, we feel the **need to go to toilets**. So, if there were some **well-maintained clean public toilets**, it would have been very helpful for us."	*Public restrooms along roads at short intervals*
				"Every morning I like to take a stroll in the neighborhood and sit at the temple or at the tea stall. But there are **too many dogs in the neighborhood**. In rainy season, the roads get water logged and there are too many potholes. Taking walk in the rainy season becomes very difficult."	*Control of population of stray dogs*
				"Roads are **very dirty**. How will I take walks?"	Dustbins and covered garbage disposals at regular intervals for cleanliness

Table 2 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Examples of responses	Existing and Desired Neighbourhood Infrastructure	Examples of responses	Associated Neighborhood Attribute (desired marked in italics)
				"There are **too many shops along the road**…They take up half the space of the road. How will I walk?"	Prevention of encroachment of road spaces from shops
				"if you are asking for what features we desire, I would also like to include a **drinking water stand** somewhere in the road. It must be **maintained by the authorities to ensure that all people who are outside, working for long hours in the hot summers get drinking water**."	*Drinking water stands along road*
				"Every morning I like to take a stroll in the neighborhood and sit at the temple or at the tea stall. But there are too many dogs in the neighborhood. In **rainy season, the roads get water logged and there are too many potholes**. Taking walk in the rainy season becomes very difficult."	*Prevention of water logging*
				"last week, **I fell** while going to the neighborhood store. No one bothers to maintain the roads…**so many cracks and holes on the road**".	*Removal of potholes*

Table 2 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Examples of responses	Existing and Desired Neighbourhood Infrastructure	Examples of responses	Associated Neighborhood Attribute (desired marked in italics)
				"if walking has to be encouraged, roads need to be maintained by **removing all potholes, unevenness, etc.**	
				"**Too much of traffic** in the road. Very difficult to walk".	*Control of traffic*
		"We have proper maintained footpaths in the neighborhood. So I always use footpaths when I am outside to avoid traffic. However, they are narrow in some places….so it becomes little inconvenient".	Footpath	"We have proper maintained footpaths in the neighborhood. **So I always use footpaths when I am outside to avoid traffic.** However, they are narrow in some places…so it becomes little inconvenient".	Maintenance of footpaths
				"We have proper maintained footpaths in the neighborhood. So I always use footpaths when I am outside to avoid traffic. However, **they are narrow in some places…so it becomes little inconvenient**".	Width of footpath

Table 2 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Examples of responses	Existing and Desired Neighbourhood Infrastructure	Examples of responses	Associated Neighborhood Attribute (desired marked in italics)
	I like to take a walk along the **park**. There are places to sit under the trees so I can relax after walking for a while."	Open space/ park inside neighbourhood/ housing	"We do take walks in the park. But **if there was some dedicated walking or jogging tracks**, then we could have felt more comfortable as children also come to play here."	*Jogging tracks*
	"the **parks/ grounds**, where we go for our regular exercises **should be free from potholes and should not have too many level changes**".		"Some places in the park are not well maintained. So **if the cracks and potholes could be maintained, our experience of walking would have been more comfortable**."	*Removal of potholes*
			"the parks/ grounds, where we go for our regular exercises **should be free from potholes and should not have too many level changes**".	*Maintenance of gradual slopes in place of level change*
			I like to take a **walk along the park. There are places to sit under the trees so I can relax after walking for a while**."	Shaded places to sit and relax

Table 3 Findings of neighbourhood infrastructure and attributes from focus group survey

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
Health (Physical and mental)	Morning/ Evening walk	Road inside neighbourhood	Adequate lighting along streets
			Seating areas at short intervals
			Public restrooms along roads at short intervals
			Dustbins and covered garbage disposals at regular intervals for cleanliness
			Prevention of encroachment of road spaces from shops
			Drinking water stands along road
			Water Logging
			Potholes
		Footpath	Maintenance of footpaths
			Width of footpath
		Open space/ park inside neighbourhood/ housing	*Jogging tracks*
		Walking space around lake/ water body	
	Daily marketing	Shopping complex or multi-utility market complex	
	Light Exercise	Open spaces/ Parks	*Space for practicing sports or exercising*
		Space inside community centre in neighbourhood	
	Yoga	Open spaces/ Parks	
		Space inside community centre in neighbourhood	

Table 3 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
	Purchase of medicines	Pharmacy	
	Availing medical services	Clinics	
		Health Centres	
		Multi-speciality Clinic	
		Hospitals	
		Diagnostic Centre	
	Learning Driving		
	Psychiatric counselling	*Counselling centre*	
		Clinics	
	Sports	*Playground/ Open space*	
Social activities and relationships	Morning/ evening walk	Road inside neighbourhood	Adequate lighting along streets
			Covered seating spaces
			Public restrooms along roads at short intervals
			Dustbins and covered garbage disposals at regular intervals for cleanliness
			Drinking water stands along road
			Eateries/ tea stalls at regular intervals
		Open space/ park inside neighbourhood/ housing	Covered seating spaces in park for chatting with friends and neighbors
		Walking space around lake/ water body	
	"Adda" or chatting with friends/ neighbours	Road inside neighbourhood	Covered seating spaces
		Park/ Open space inside neighbourhood	Covered seating spaces

Table 3 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
		Local stalls/ shops	Space to sit and watch children playing in park
		Local temple	
		Local groceries*	
		Verandah (from home)*	
	Organising cultural activities ocassionally	Open spaces/ Parks	Space for hosting cultural programs in parks or open playgrounds
	Singing classes	Neighbours' residence	
		Ladies' club	
	Social work (NGO)	*Local ladies' club organising NGO*	
	Visiting relatives	Inside/ outside neighbourhood	
	Participating in religious activity	Place of worship	
	Playing cards with neighbours	*Park/ Open space inside neighbourhood*	*Covered seating spaces*
		Local stalls/ shops	
	Indoor games, eg. Carrom	*Community centres*	*Space for group activities in community centre*
	Reading books of choice	*Library*	*Space for library in community centre*
	Organizing local magazine	*Community centres*	*Space for group activities in community centre*
Leisure activities	Participating in religious activity	Place of worship	
	Accompanying grandchildren for playing outside in the evening	Park/ Open space inside neighbourhood	Covered seating spaces

Table 3 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
	"Adda" or chatting with friends/ neighbours	Road inside neighbourhood	Covered seating spaces
			Spraying mosquito repellent
		Park/ Open space inside neighbourhood	Seating areas at short intervals
		Local stalls/ shops	*Adequate seating spaces*
		Local temple	*Adequate seating spaces*
		Local groceries	
		Verandah (from home)	
		Clubs for older adults	
	Organising cultural activities ocassionally	Open spaces/ Parks	
		Local club	
	Casual shopping	Shopping malls	
	Singing classes,	Neighbours' residence	
		Ladies' club	
		Space for learning arts and crafts	
	Reading books,newspaper, etc	*Library*	
	Indoor games, eg. Carrom	*Clubs for older adults*	*Space for indoor games inside community centres*
		Community centres	
	Reading books of choice	*Library*	
	Organizing local magazine	*Clubs*	
		Community centres	
	Spiritual conversation	*Community centres*	

Table 3 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
	Involvement in social work	*Community centres*	*Space for group activities in community centre*
	Participating in informal meetings with same age group people	*Clubs*	
		Community centres	
Level of independence	Exercise	*Community centres*	
		Park/ Open space inside neighbourhood	
	Teaching at coaching centre	*Community centres*	
	Job	*Community centres*	
	Organizing cultural events/ publishing local magazine	*Community centres*	
	Opportunity to earn by selling handicrafts/ food items, etc.*	*Community centres*	
Life and self-perceptions affecting emotional well-being	Playing cards with neighbours	Park/ Open space inside neighbourhood	*Adequate shaded spaces for people to sit*
		Local stalls/ shops	*Adequate shaded spaces for people to sit*
		Local groceries	*Adequate shaded spaces for people to sit*
	Reading books,newspaper	*Library*	*Space for library in community centre*
	"Adda" or chatting with friends/ neighbours	Road inside neighbourhood	Covered seating spaces
			Flowering trees along pathways
			24×7 security guard from municipality
			CCTV camera from municipality
		Park/ Open space inside neighbourhood	Seating areas at short intervals

Table 3 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
	Evening/ morning walk	Local stalls/ shops	Space to sit and watch children playing in park
	Casual shopping	Local temple	Covered space to sit and relax in park in isolation
	Evening tea with family	Local groceries*	*Adequate seating spaces*
	Watching T.V	*Verandah (from home)**	*Adequate seating spaces*
	Practicing/ listening to music	*Clubs for older adults*	
	Social work		
	Spiritual/ religious conversation		
Financial stability	*Teaching underpriviledged children*	*Community centre*	Adequate availability of travel mode
	Travelling to and from job	Local Schools	Traffic control
		Road	Road maintenance
			Adequate street lighting in the neighbour-hood

Table 3 (continued)

QoL Domain	Existing and Desired Activities (desired marked in italics)	Existing and Desired Neighbourhood Infrastructure (desired marked in italics)	Associated Neighborhood Attribute (desired marked in italics)
	Visiting bank/ post office		Adequate availability of travel mode
			Adequate street lighting in the neighbourhood
	Creating handicrafts, art work, making dry foods, traditional delicacies for selling them *	*Community centre*	*Space for group activities in community centre*
		Clubs	*Space for group activities in community centre*
	Setting up beauty parlors	*Beauty Parlor*	
	Setting up boutiques	*Boutique*	
	Help from local youth or volunteers in management of house repair		Local clubs
Religious/ Spiritual beliefs	Participating in daily religious rituals	Place of worship	
	Attending religious/ spiritual discourses	Place of worship	
		Community centre	*Seminar halls in community centre*

The findings unique to this survey have been marked with *

activity and the problems that the respondents stated to face with an infrastructure for the performance of an activity. For example, in case of a park, the presence of big groups of older adults clustered below shaded areas helped the researcher to identify the attribute of covered seating spaces for older adults in parks to enhance social relationship.

The group discussion yielded adequate responses from the respondents. In many cases, the respondents identified certain results which were not neighbourhood infrastructure, but neighbourhood based support services. For example, the need for adequate number of qualified doctors, with their fees within their affordable range, developing trust in NGOs among the older adults, 24×7 ambulance service, creating awareness about special older adults needs among the local youth, etc. Since, identification of support services does not fall under the purview of our study, we have exempted these results from our discussion.

Existing Activity Pattern of the Older Adults

The findings related to the existing activity pattern of the respondents reveal that the daily lifestyle is similar across all socio-demographic groups. The responses reveal a fairly sedentary lifestyle, where most of the activities are restricted within their home. Very few respondents involved themselves in active outdoor activities. The activities outside their residence are in most cases limited to daily marketing, taking morning/ evening walks in the neighbourhood lanes, or parks or meeting neighbours and friends. In some cases, the outdoor activities include some occasional activities like visiting medical stores, health centres or clinics, banks, post office, etc.

Neighbourhood Infrastructure and Attributes Required for the Desired and Existing Activities of the Older Adults

Health (Physical and Mental)

The health benefits of physical activity participation in later life are widely recognized (Zhang et al., 2022). In this study too, light exercise, walking, yoga, etc. are observed to be attributed to the domain of Physical Health by most of the respondents. The number of respondents who participate in morning walk or exercise in planned neighbourhoods is comparatively more than that in organically developed neighbourhoods. The presence of infrastructure like internal roads, footpaths, parks or organised open spaces, etc. which enable obstruction-free performance of activities like walking, jogging, exercise, encourages more people to indulge in health related activities. A similar list of infrastructure was also identified in a study by (Zhang & Zhang, 2017) exploring the relation between perceived residential environment and subjective well-being of Chinese older adults. Bengtsson and Carlsson (2006) also observes that the older adults in their study were satisfied with small level of activities, like taking short walks in the garden, sitting and relaxing, or talking, etc. The attributes associated with the infrastructure, road, include street lighting, maintenance issues like presence of potholes, water logging, fear of being attacked

by stray dogs, heavy traffic, etc. Presence of trees, flowering plants and waterbodies were observed to be the attributes that encouraged visiting and involvement in activities in the parks or open spaces. The role of environmental aesthetic in attributing to the physical health of the older adults was also established by Zhao and Chung, (2017). Bengtsson and Carlsson (2006) notes in their study that waterbodies and gardens creates a sense of calm in the older adults, and helps in dealing with restlessness. The responses of our study also corroborate with various other researches on built environment and the health of the older adults population, as can be observed in the findings by Garin et al. (2014). Zhang et al., also observes that there have been some studies on older adults' perceptions of general physical activity, which includes activities such as household chores, non-structured physical activity including walking, and hobbies. Zhang et al. (2022) also observes that the main reason for physical activity is how it contributes to a purposeful and fulfilling life, rather than the health benefits.

Examples of few responses corresponding to the identified infrastructure and attributes are given below:

> "I like to take a walk along the park. There are places to sit under the trees so I can relax after walking for a while." *(Female, Age 2, Edu 4, Inc 4)*
>
> "Every morning I like to take a stroll in the neighborhood and sit at the temple or at the tea stall. But there are too many dogs in the neighborhood. In rainy season, the roads get water logged and there are too many potholes. Taking walk in the rainy season becomes very difficult." *(Male, Age 3, Edu 4, Inc 4)*
>
> "There are too many shops along the road…They take up half the space of the road. How will I walk?" *(Female, Age 2, Edu 3, Inc 1)*
>
> "Too much of traffic in the road. Very difficult to walk". *(Male, Age 3, Edu 4, Inc 4)*
>
> "I sometimes go out for a walk in the afternoon around 4 or 5 p.m. and I come back before sunset because I can't see properly in dim light". *(Male, Age 3, Edu 4, Inc 3)*

The other activities that people associated with their Physical Health included going for daily marketing, light exercise, yoga, going for regular health check-up in clinics, medical center or going for regular tests at diagnostic centers, and buying medicines. Only one respondent was involved in a new hobby, like learning to drive.

The group discussion revealed that irrespective of residential or socio-economic background, the respondents were dissatisfied with the lack of availability of health related facilities in their neighborhoods, thus indicating the immediate importance of adequate medical support facilities. A small number of respondents, especially from higher educational background identified the need for psychiatric counselling centres to help them deal with depression, psychiatric ailments and mental disorders. Few respondents also desired to have hospitals or multi-specialty clinics in the neighborhood, which might be economically unfeasible, but were however retained in the final list of findings by the authors. Few male respondents, in the category of Age 1 (below 60 years) desired to engage in active sports, like football in the neighborhood and hence wished to have an open space or playground where they could play football:

"I am a very active person. I don't think myself as someone old. I wish I could involve myself in something challenging and active. I still wish I could continue to play football. But, there is no opportunity here in the neighborhood for people of our age to engage in active sports. I have seen photos of older adult people in foreign countries who look so active and healthy. Why can't we too do the same? Why do we have to think that…Oh! I have become old. I have to only sip tea and chat." *(Male, Age 1, Edu 5, Inc 4)*.

Social Activities and Relationships

Both formal places of interaction like parks, playgrounds, singing classes in clubs, and informal spontaneous types of interaction places like tea-stalls, groceries, temples are observed to be associated with the domain of social relationships by the respondents. The presence of a lake or a waterbody is observed to be an effective attribute in attracting the older adults for daily outdoor social gathering. In comparison to the respondents from planned neighbourhoods, the respondents from organically developed neighbourhood were observed to spend more time with their neighbours or friends. The activity, morning/ evening walk is identified as an essential infrastructure for both the domains of Health and Social Relationship. However, some of the attributes associated for each these domains vary. For example, the attribute, eateries / tea stalls along roads, is identified for the domain of Social relationship, while regular maintenance of issues like water logging and potholes, etc. is identified for the domain of Health. The attributes which were observed to be shared by both the domains for the infrastructure, internal road, included 'covered seating spaces', 'adequate lighting along streets', 'dustbins and covered garbage disposals at regular intervals for cleanliness', 'drinking water stands along roads', etc. The role of resting places in yards, in enhancing social interaction across generations was also observed in a study by Verma and Huttunen (2015). The lack of benches along paths and long walking distance between home and certain facilities also limit the access of the older adults to these amenities. Promoting outside activities for the older adults requires the provision of pathways that are accessible and safe (Verma & Huttunen, 2015). The following response explains the above finding.

"While taking morning walks, we sometimes come and sit here, have a cup of tea, listen to radio and read newspapers. It feels nice to chat with each other." *(Male, Age 3, Edu 4, Inc 4)*

The presence of neighborhood open spaces not only encourages in performance of health based activities, provision of open spaces also provide scope for people to socialize, if these are located on their way to the daily markets.

"This park is very near to the market. So, on our way back home, sometimes we sit and relax by the water body." *(Male, Age 2, Edu 5, Inc 4)*

Accompanying grandchildren to schools and parks are also observed to be an interesting opportunity for socialization of the respondents. Hence, the attribute

'Space to sit and watch children playing in park' was associated with the infrastructure, Park, for the domain of Social Relationship. In some organically developed neighborhoods, temple and neighborhood groceries, are also observed to be used for interaction with neighbors. In one planned neighborhood, the female respondents had formed a ladies' club in their neighborhood, for participating in cultural activities like, recitation, organizing literary magazines, etc. Since the members of this club had to meet at their neighbors' home for their weekly meetings, they desired for a club or community space. Occasional activities like cultural programs organized in the open spaces in the neighborhood were also observed to provide opportunity for social interaction.

The group discussions reveal that the respondents, specially, those belonging to higher educational backgrounds, desired to participate in social work through some Non-Profit Organization or Non-Government Organizations (NGO), to serve the underprivileged. Occasional trips with neighbors, as also observed in a study by Rioux and Werner (2011) was also noted in this study. Few of the respondents from organically developed neighborhoods, especially from lower income and economically weaker background liked to spend time by playing cards and carom with their neighbors in tea stalls or informal spaces in the road and hence, wished to have an organized space in the neighborhood where could participate in such activities. Some respondents who loved to read books, wished to have a library in the neighborhood.

Leisure Activities

The existing neighbourhood infrastructure is observed to contribute very little to the domain of Engagement in leisure activities. Leisure, for most of the respondents included activities like watching T.V., reading books, newspaper, listening to newspaper, etc. Some also spent their leisure time by playing with their grandchildren, at home. Respondents from organically developed neighbourhoods associated activities like chatting/ spending time with friends, reading newspapers, etc. with this domain. In some planned neighbourhoods (gated housing communities), the organized community spaces helped respondents to participate in activities like practicing music, or other hobbies in these spaces. The desire for more opportunities to participate in more meaningful activities was observed in the group discussions. Few respondents also participated in leisure activities like visiting shopping malls, watching movies in multiplexes, etc. Engaging in spiritual discussions were also documented as an activity associated with this domain by a few respondents, especially those belonging to the higher educational groups.

Few example of the responses have been provided below:

"I visit the mall sometimes with my daughter in the weekends. She takes me to watch latest movies and then we go to different restaurants for dinner. That is my only outdoor leisure activity. Otherwise I spend the entire day in household work. Sometimes, I read books or watch T.V. or listen to music." *(Female, Age 1, Edu 3, Inc 4)*

"I visit Rama Krishna Mission sometimes. I like spending time in spiritual discussions and readings". *(Female, Age 2, Edu 4, Inc 4)*

Level of Independence

Activities which enables in maintaining physical fitness, and financial independence, was observed to contribute to this domain. Respondents from higher education groups, wished to engage themselves in publishing local magazines or organizing cultural activities. One respondent communicated the need to receive help from local youth for management of house repair with this domain, which can be interpreted to relate to one's ability to maintain their home. Though this factor has been identified under the domain of Financial Stability in literature, respondents have associated the factor also with the domain of Level of Independence. The desired activities, in this domain, also include 'teaching at coaching centre', 'opportunity to earn by selling handicrafts/ food items', etc. Few examples of the responses are given below:

"I have taken up a part-time job as a consultant in a private firm. It helps to keep me active." *(Male, Age 2, Edu 5, Inc 4)*
"I wish I could do something from home and earn money. I cannot go outside and work now." *(Female, Age 1, Edu 1, Inc 1)*
"My house needs to be repaired. But, I can't manage the entire repairing on my own. If I could someone trustworthy to help me, it would be good." *(Male, Age 2, Edu 5, Inc 4)*

Life and Self-Perceptions Affecting Emotional Well-Being

Among the many factors influencing this domain, loneliness is one of the key factors. As observed by Morlett Paredes et al. (2021), while exploring loneliness in older adults that companionship, i.e., interacting with others, acceptance of aging, and environment which enables socialization are some of the coping strategies for loneliness. Most of the respondents associated home based activities like spending quality time with family over meals or evening tea, listening to music, spiritual or religious activities, with this domain. The activities and infrastructure identified for this domain are similar to those identified for Social relationship. This can be interpreted as the importance of meaningful relationships and activities in the lives of the older adults. The group discussions also revealed the desire to participate in charitable activities, mainly among respondents belonging to comparatively better socioeconomic backgrounds. Greenery, open spaces, parks and waterbodies were also associated with this domain because these neighborhood infrastructure contribute to a sense of calmness among the older adults (Bengtsson & Carlsson, 2006). View of greenery and interactive spaces like parks or organized green or open spaces from the balcony of one's home contributed to emotional well-being. The desired attributes of the parks and open spaces associated with emotional well-being included 'covered space to sit and relax in park in isolation', 'space to sit and watch children

playing in park'. The desired attributes of Road associated with this domain included aesthetic attributes like 'flowering trees along pathways'.

Few examples of the responses are given below:

"I come to this place every day because it's so calm and peaceful. This lake, specially, makes me feel calm and relaxed. I can sit below a tree and read a book." *(Female, Age 2, Edu 5, Inc 4)*

"They can plant some more trees in the neighborhood. It would look so beautiful if the roads would be lined with flowery trees. Flowers make me happy. I also love gardening. Nurturing trees makes me happy." *(Female, Age 2, Edu 5, Inc 4)*

"I don't like too much of activity these days. I just wish to sit here quietly in the park and sometimes I meditate." *(Male, Age 2, Edu 5, Inc 4)*

Some respondents also desired to have a CCTV camera installed at different locations in the neighborhood and 24×7 security guards for sense of safety against crime.

Financial Stability

The respondents belonging to lower income groups were mostly involved in informal jobs like 'working at shops, eateries' or 'serving as maid' and desired for more opportunities to earn and ensure financial stability of their families. The respondents belonging to higher income groups identified visiting banks and post offices as the activities associated with this domain. Few respondents, desired to set up beauty parlors, boutique shops for selling designer apparel. Few respondents of lower income groups also desired for opportunities to engage in activities like 'creating handicrafts, art work', 'making dry foods, traditional delicacies, etc. and selling them'.

Examples of few responses have been provided below:

"I cannot work like before. But I make *achar, papad* and *bori* at home and sometimes sell these to my neighbors. If I can get some tie-up with a shop, then I could earn some more money." *(Female, Age 2, Edu 1, Inc 1)*

"My daughter has done a beautician course. She is quite good at it. If I could open up a small beauty parlor for her, it would be very beneficial to her." *(Female, Age 2, Edu 3, Inc 4)*.

Religious/Spiritual Beliefs

Most of the respondents conducted their daily religious activities at home. Since most of the respondents were *Hindu*, and almost all the neighborhoods had a small temple, the participants visited the same for their occasional religious activities. Some of the respondents, especially those belonging to higher

education groups also desired for 'opportunities to participate in spiritual discussions'. The desire for a religious place of worship in order to engage occasionally in religious events like "*kirtan", "ishwar naam jop*" (different forms of prayer) was also observed for some of the respondents.

Discussion

The findings reveal a mix of responses corresponding both to the concepts of active ageing and disengagement. The theory of Disengagement was one of the first theories of ageing in social gerontology which posits disengagement from society as the natural tendency of people as they age. The theory of disengagement views old age as a time of life when people withdraw from all kinds of obligations, work related responsibilities and social roles. The theory of disengagement corroborates with the concept of '*Vanaprastha*' and '*Sanyasa*' as stated in the ancient Hindu philosophy, where the life of an individual is divided into four stages: *Brahmacharya, Grihasthya, Vanaprastha* and *Sanyasa*. The stage of '*Vanaprastha'* suggests that an individual must withdraw from his duties as a householder, detach from his social and familial ties and embark upon a spiritual journey (Mishra, 2012). The last stage *'Sanyasa'*, is to be conducted by austere living, complete abandonment of worldly activities and spend their time in meditation and spiritual pursuit (Mishra, 2012). In contrast to the basic concept behind the theory of disengagement, various other theories focusing on the active engagement of older adults were proposed: Activity theory of aging, Successful ageing, Productive ageing, and Continuity Theory (Zaidi & Howse, 2017). These theories propose that individuals should keep continuing the activities and duties of their middle ages and continue in their contribution to the society. Activity theory proposes taking up on new roles, such as volunteer activities post retirement for enabling successful adaptation to old age. Productive ageing proposed the maintenance of the participation of the older adults in the labour force for as long as possible (Zaidi & Howse, 2017). Social engagement, maintenance of physiological functioning, avoidance of disease or disability, and the ability to adapt to age-related changes are suggested as proponents of Successful ageing (Zaidi & Howse, 2017).

Except for the activities that are essential to the basic activities of daily living, which includes activities related to health and medical welfare and daily marketing, most of the existing and desired activities, were sedentary and passive in nature and corresponded to the concept of disengagement. Most of the respondents were not observed to be keen on developing new social relationships or learning new hobbies. As observed in a study by Brown (1974), on people over 55 years old, discusses that the respondents preferred to disengage from social contacts which were not completely satisfying to them but maintained their relationship with their family members even if the relationships were not satisfactory. It can be therefore assumed that the older adults prefer to maintain social connections only with familiar and satisfying relationships.

Few activities like organizing local magazines, cultural events, sports activities, etc. were identified by some of the respondents. Certain activities like walks and physical activity (sports and exercises) which have been observed to contribute to active ageing have also been observed in our findings. However, the conversations revealed that these activities served the domain of social relationship along with health. The activities identified in our study also reveal that the respondents are not too keen in engaging in physically or mentally intensive activities. Only few respondents belonging to the lower income groups wished to engage in activities that could enable them to earn independently and few respondents belonging to high income groups wished to engage in social work like teaching underprivileged children. The list of activities also highlights the role of morning/ evening/ leisurely walks in contributing to all the domains of QoL of older adults.

Studies exploring neighborhood characteristics that promote active ageing in neighborhoods focus on aspects that promote activity participation in the older adults (Beard & Petitot, 2010; Cheng et al., 2019; Marquet et al., 2017; Michael et al., 2006; Annear et al., 2014). A study by Adlakha et al. (2020) have also established the role of internal roads, parks and community centre are essential for the development of older adult friendly neighborhoods in India to promote active ageing and associated attributes like graffiti, litter, broken benches, poor maintenance of parks negatively impact on the satisfaction with these infrastructures. Our study observes that though some of the infrastructure identified in this study are similar to those observed in studies on active ageing, most of the activities preferred and chosen by the older adult respondents are those which are less intensive, passive and are with which they have been familiar. Asztalos Morell et al. (2023) observes in their study that though the life conditions of Indian older adults deviate from the traditional norms of filial piety and intergenerational interdependence, their value systems are deeply rooted in the traditional philosophy of disengagement and renunciation amalgamated with the western perceptions of independence, autonomy and self-reliance. Activities that correspond to religious and spiritual activities have also been noted to be essential contributors to the QoL of Indian older adults. Though the participation in religious or spiritual activities, and withdrawal from an active social life might appear as a form of disengagement to the outsiders, Mindel and Vaughan (1978) observes that the individual in question might consider him/herself to be completely engaged. The contribution of religious and spiritual activities to the perceived QoL for Indian older adults can therefore be considered to be of immense significance.

Conclusion

The present study, by linking the multi-dimensional concept of QoL with neighborhood infrastructure through daily activities, identifies a holistic list of neighborhood infrastructure and their respective attributes required to cater to the overall QoL of Indian older adults.

Identification of neighbourhood level infrastructure and their respective attributes was based on the assumption that the fulfilment of people's needs and desires, which influence their aspirations and ambitions, depends upon the availability of

opportunity for actualization of the same. The qualitative approach used in this study helped in understanding the perception of the Indian older adults about their built environment by considering their direct experiences from interactive conversations.

One of the major limitations of the study is the small sample size and the sample selection technique. It has been observed that the perception of a space influences an individual's use and interaction with their built environment (Martins et al., 2021). The perception of a larger sample size can help in arriving at a conclusive and exhaustive list of built environment features contributing to the QoL of older adults. Besides, the use of a convenience sampling, a non-probability sampling technique for selection of respondents can lead to bias (Adlakha et al. (2020).

The contribution of the study lies in its identification of neighborhood features that can satisfy the requirements of both categories of older adults- those who choose disengagement and those who prefer active ageing, for catering to their perceived QoL. However, recent studies on Indian older adults, have also discussed about the emergence of a new group of Indian older adults who believes in leading active, independent lives besides the conventional majority of the older adult population who believe in the traditional system of inter-dependence (Gangopadhyay, 2019). This denotes a gradual shift in the attitude of the Indian older adults towards ageing, especially among the older adults who are financially independent, and choose to live an active life, corroborating with the theory of active ageing (Gangopadhyay, 2019). The juxtaposition of these two groups of Indian older adults who nurture these varied perceptions, needs further exploration on larger sample of respondents to arrive at a complete and better understanding of the neighborhood level infrastructure and their respective attributes, required to cater to the perceived QoL, i.e. the overall well-being of Indian older adults.

Considering the demand for aging-in-place in a country like India, the present findings may help policy makers in formulating a broad outline of features that are required to be incorporated in a neighborhood in order to cater to the well-being of its older adults.

With respect to research on neighborhood and well-being of older adults, since the study is based on the qualitative exploration of the innate perceptions of the aged, connecting their well-being with their surrounding built environment, these findings may contribute to research focusing on the attributes of place-making for the Indian older adults. The study findings can also help in research focusing on the development of an assessment tool for analyzing the extent to which a neighborhood can cater to the well-being of its older residents.

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Declarations

Conflicts of Interest The manuscript has not been submitted to any other journal. The submitted is original and have not been published elsewhere in any form or language. Results are presented clearly, honestly, and without fabrication, falsification or inappropriate data manipulation. No data, text, or theories by others are presented as if they were the author's own ('plagiarism'). Proper acknowledgements to other works has been given.

Informed Consent Since the survey conducted in this research is a part of a research project being conducted at IIT Kharagpur, India, the concerned authorities were informed prior to the survey.

Ethical Treatment of Experimental Subjects (Animal and Human) For the surveys conducted in housing complexes, a letter explaining the purpose and type of the survey was first submitted to a member/ chairman/ head of the housing/ society and the surveys could be conducted only after they permitted us to conduct the survey. Before starting the survey in all the study areas, all the participants were explained about the purpose of the survey, the questions to be asked, the approximate time duration of the survey and shown the questionnaire format and then the participants were included in the survey only if they gave their verbal consent to the survey. They were also explained that they could leave the survey if they felt uncomfortable or disinterested at any point of time, and could choose to not answer any question if they felt uncomfortable or unwilling. Besides, the personal details (names, address, etc.) of the participants were not documented. In the end of each survey, the responses were summarized and read out to the participants.

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