

## Enhancing Elderly Well-being Through Age-Friendly Community, Social Engagement and Social Support

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### Abstract

The aged population worldwide encounters numerous difficulties in carrying out their regular tasks. The population of individuals aged 60 years and over in Bangladesh is seeing a significant growth rate, primarily attributed to advancements in the overall quality of life. The issue above should be regarded as a burgeoning challenge, given that the senior population would necessitate distinct care provisions and specialized caregiving services. The objective of this study is to empirically assess key elements of the World Health Organization's guidelines for creating an age-friendly community. To achieve this, a survey was conducted among a sample of 210 older individuals (aged 60 years and above) who engage in self-care, as well as 150 informal caregivers in Bangladesh. This study employed a combination of exploratory and confirmatory factor analyses to examine the interrelationships among several attributes of World Health Organization (WHO) standards about the well-being of elderly individuals, social engagement, and the concept of age-friendly communities. The creation of an age-friendly environment is influenced by several key factors, namely transportation and housing, community support and health services, outdoor spaces, and buildings. This assertion is supported by a structural model analysis, which yielded excellent results in terms of statistical significance. The present study uses quantitative research methods to investigate the association between certain factors and hypotheses. There exists a statistically significant positive correlation between a setting that is age-friendly and active. Social involvement functions as a mediator throughout this relationship. The results indicate that constructed environments, such as publicly accessible spaces, should prioritize the social environment when designing an age-friendly environment. These encompass cost-effective and readily available healthcare services, housing and transportation alternatives, as well as infrastructure and open spaces that are tailored to meet the needs of older adults. The reduction of environmental barriers and the improvement of public transportation services offer short-term strategies to address the various and growing requirements of the elderly population. Future research could employ a combination of quantitative and qualitative methodologies to further investigate the nuanced aspects of aged well-being and the creation of age-friendly environments.

**Keywords:** Age-friendly Community, Social Support and Elderly well-being.

### Introduction

Historically, the aged population in Bangladesh was conventionally provided for by the collective efforts of society. However, the prevailing circumstances have transformed as a result of shifts in social dynamics, psychological perspectives, and economic conditions. The rapid growth of the old population in Bangladesh is a matter of great concern when viewed from social, economic, and political lenses. Based on the National census data collected in 1974, 2011, and 2022, there has been a consistent upward trend in the older population. The population within the age range of 60-64 years experienced a notable increase over the years. Specifically, in 1974, the population count stood at 1,682,629 individuals. Subsequently, in 2011, this figure grew to 3,218,974 individuals. Furthermore, by the year 2022, the population within this age group had surged significantly, reaching a staggering 11.09 million individuals. In a same manner, the demographic group consisting of individuals aged 65-69 years exhibited a population count of 735,255 in the year 1974, which subsequently experienced an increase to 1,998,760 by the year

2011. During the aforementioned time frame, there was an observed increase in the number of individuals aged over 70 years, which rose from 1,639,056 to 1,998,760. According to the research, the proportions of those classified as elderly within the age groups of 60-64, 65-69, 70-75, and over 70 years were 37%, 21%, 20%, and 22% correspondingly. The report released by the Bangladesh Bureau of Statistics indicates a discernible and steady rise in the senior population. The graph presented in Figure 1 depicts the gradual increase in the proportion of elderly individuals within the population of Bangladesh [3]. The expeditious implementation of efficacious policies that enhance the autonomy and well-being of the aged population is of paramount importance [2]. These policies must consider the age-friendly guidelines put forward by the World Health Organization (WHO) [5]. Although the notion proposed by the World Health Organization (WHO) is really attractive, it is important to note that there remains a scarcity of research about age-friendliness within several unique situations. Driven by these considerations, the present study endeavours to examine the interrelationships among age-friendly surroundings, active

aging, and social connectedness, while concurrently elucidating the determinants associated with age-friendly attributes as delineated by the World Health Organization (WHO) within the specific context of Bangladesh. This study utilizes structural equation modeling to incorporate age-friendly characteristics with the concepts of active aging and social connectivity. This technique is innovative and constitutes one of the limited number of studies conducted on age-friendly surroundings. Moreover, the comprehensive examination of this integration remains limited, particularly about middle-aged and older individuals.

The objective of this study is to assess the importance of the eight age-friendly characteristics identified by the World Health Organization (WHO) in facilitating active aging and fostering social connectivity in a developing country. The research will validate the proposed model by employing goodness-of-fit criteria. Structural equation modeling is selected due to its capacity to account for measurement errors and statistically assess the model using goodness-of-fit indices [7]. This study further enhances the current body of literature by investigating the correlation between age-friendliness and its resultant effects, including social connections and active aging. The structural model that has been developed contributes empirical data to the existing body of literature on Lawton's person-environment fit theory [10] and Bronfenbrenner's ecological theory [8]. The results of the study emphasize the importance of prioritizing age-friendly domains about built environments, such as transportation, outdoor spaces, and buildings, over characteristics linked to social interactions in developing nations. The presence of significant infrastructural obstacles, as seen by middle-aged and older adults, can be attributed to several factors such as transportation, housing, outdoor spaces, and structures. The provision of modern public transportation and the promotion of accessibility are widely recognized as crucial factors in fostering social connectivity and facilitating engagement in health and community services. An age-friendly environment refers to a setting that effectively modifies its physical infrastructure and provisions to ensure accessibility and inclusivity for older adults with varying needs and abilities.

### Literature Review

Ageing is an interdisciplinary field of research that examines the process of aging and its associated dimensions concerning older individuals, encompassing the physiological, psychological, and sociological transformations that transpire along the aging journey. The topic in question comprises a diverse array of disciplines, including but not limited to biology, psychology, sociology, healthcare, economics, and policy. The basic objective of the field of gerontology is to comprehensively comprehend the intricate dynamics of the aging process and effectively respond to the distinct requirements and obstacles encountered by the elderly population. Scholars and experts in the field of gerontology investigate a wide range of subjects, including but not limited to age-related ailments and disorders, cognitive transformations, sociocultural dimensions of aging, caregiving practices, matters pertaining to the end of life, and policies that pertain to the elderly population.

The field of gerontology endeavors to enhance the overall welfare and standard of living of elderly individuals by the examination of the aging phenomenon, the identification of approaches for promoting healthy aging, the creation of interventions and initiatives, and the promotion of policies that

cater to the requirements of older adults. Gerontologists are employed in a diverse range of settings, encompassing research institutions, healthcare organizations, social service agencies, government agencies, and academic institutions. Professionals engage in collaborative efforts to formulate comprehensive strategies aimed at effectively addressing the multifaceted requirements of the elderly population and fostering favorable experiences associated with the aging process.

From an ecological standpoint, it is imperative to acknowledge and integrate the social and physical dimensions of the ecosystem. The significance of this concept is further underscored by the discoveries made by Lui et al. [6], who performed a meta-analysis of 32 scholarly articles pertaining to age-friendly environments. The significance of incorporating the physical and social environment and promoting collaboration between policymakers and the elderly to establish age-friendly environments was emphasized. Emlert and Moceris (2015) conducted a study to explore the importance of social connectivity in age-friendly environments. The researchers employed a qualitative research design and conducted focus group interviews with a total of 23 participants aged 40 and above. The study was conducted within a community forum setting in the United States. The study conducted identified three primary themes: social reciprocity, meaningful connections, and structural demands and barriers. These themes collectively underscore the significance of social connectedness within communities that specifically serve the senior population.

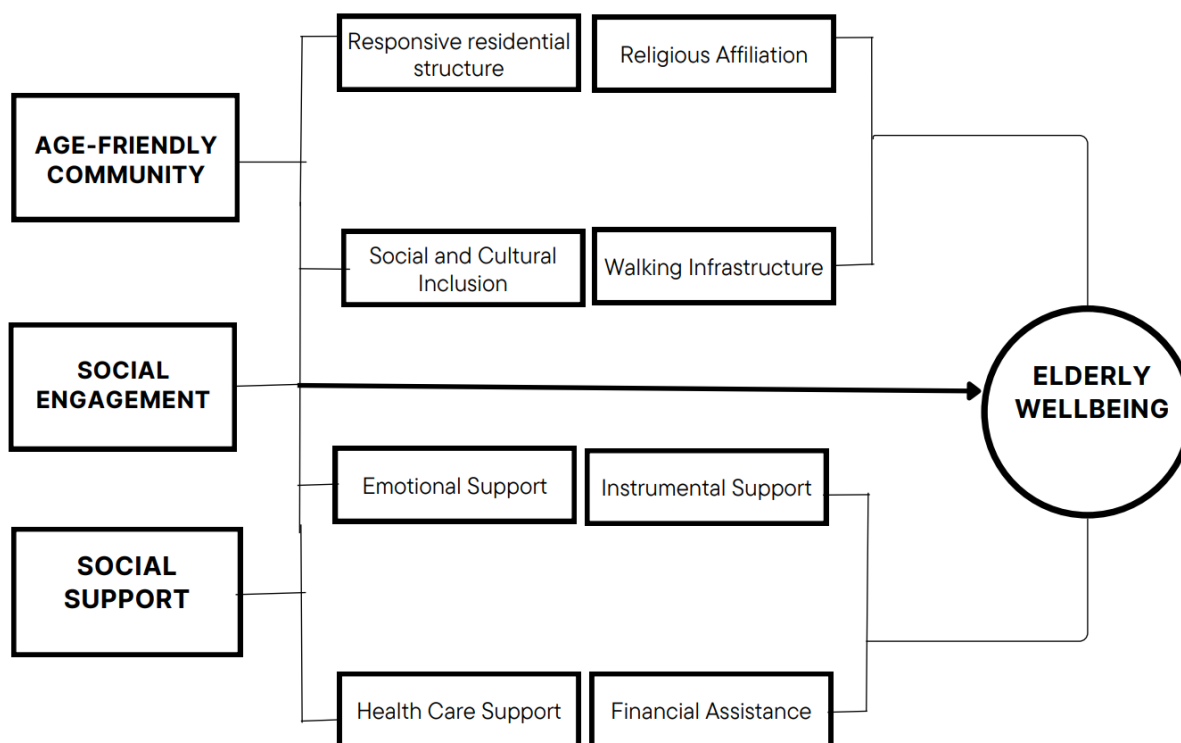
Bangladesh has implemented a Program Implementation Plan aimed at safeguarding the health and well-being of its senior people, while also ensuring their access to essential healthcare services. The main objective of this program is to construct a health service delivery and management system that is both effective and sustainable. The program emphasizes the development of a resilient healthcare infrastructure and the improvement of healthcare personnel efficiency.

Furthermore, the implementation of the Parent Care Act of 2013 in Bangladesh mandated that offspring assume the duty of providing care and support to their parents for a duration of three years. Nevertheless, the implementation of this regulation is still incomplete. Several groups with a specific focus on the well-being of the elderly are currently engaged in providing help to the older population in Bangladesh. The initiatives aimed at addressing the needs of the elderly population in Bangladesh encompass various organizations such as Probin Hitoishi Kendra, Probin Hitoishi Sangha, Bangladesh Association for the Aged and Institute of Geriatric Medicine (BAAIGM), Retired Officers Welfare Association (Dhaka), Retired Police Officers Welfare Association (Dhaka), Service Center for Elderly People (Rajshahi), Elderly Development Initiative (Manikganj), and Senakalyan Sangstha, among others. However, despite the presence of these government, non-governmental, and social organizations, the combined efforts remain inadequate in meeting the comprehensive needs of the entire elderly population in Bangladesh.

In contrast, it is worth noting that social connectivity exerts a significant influence on the physical and mental health of elderly adults. According to Raviglione et al. (25), the elderly who actively engage and participate in activities that promote healthy aging are likely to experience a sense of fulfillment in their lives. Conversely, abstaining from social engagements can give rise to

mental health concerns. The concept of social connection refers to the engagement of older adults in various social activities and relationships, which can have a substantial impact on their overall well-being [20]. This study examines the relationship between social capital, social cohesion, and well-being among a

sample of 945 senior persons residing in Rotterdam. The results of their study demonstrated that the provision of social support and living in a closely connected community were crucial factors for the aged population, as they had the potential to significantly improve their overall state of well-being.



**Figure 1:** Conceptual Framework of the research developed for the research

The literature research provides useful insights into an integrated model that includes an age-friendly environment, active aging, and social connection. This model is depicted in the theoretical framework, as shown in Figure 1. The proposition suggests that a notable correlation can be observed between age-friendly environments and active aging, wherein social connectivity serves as a mediating factor. Three hypotheses have been created to investigate the factors related to age-friendly community and the interrelationships among age-friendly environments, social engagement, and social connectedness.

The proposed hypotheses are as follows:

**H1:** The Age-friendly Community, Social Engagement and Social Support have a positive association with Elderly Well-being.

**H2:** Responsive residential structure, Religious affiliation, Socio-Cultural inclusion, and Walking infrastructure mediate the relationship among The Age-friendly Community, Social Engagement, Social Support and Elderly Well-being

**H3:** Emotional Support, Instrumental Support, Health Care Support, Financial Assistance moderate the relationship among The Age-friendly Community, Social Engagement, Social Support and Elderly Well-being

The integration of age-friendly community with the active aging concept is a comprehensive approach aimed at improving the well-being of older individuals through modernization and the sharing of resources within the older population. Additionally, this model seeks to address environmental challenges, by the environment docility hypothesis. The importance of social

connectivity has been recognized as a significant element in the development of age-friendly surroundings [9] and the improvement of the general well-being of older individuals. Based on the aforementioned observations, it may be inferred that social connectedness serves as a mediator in the direct association between an age-friendly environment and active aging.

The concept of an age-friendly environment is consistent with Bronfenbrenner's ecological theory, namely the mesosystem, which highlights the dynamic interplay between an individual and their immediate context [8]. This environment effectively promotes the mobility of older individuals, contributes to the preservation of their health, fosters social connection, and stimulates active engagement within their residential community. The scope of this ecosystem surpasses the mesosystem, establishing a direct relationship between age-friendly conditions and the promotion of active aging. When the environment is conducive to the needs of older individuals, they can engage in active aging and experience favorable health outcomes. Therefore, social connectivity, which is in alignment with Bronfenbrenner's ecological theory's macrosystem, serves to strengthen the process of active aging [8].

### Social Engagement

Social engagement refers to the active participation and interaction of individuals within a social context. It encompasses several forms of involvement, such as social. Social engagement encompasses the dynamic involvement and interpersonal interaction of individuals within their social milieu, encompassing their engagement with familial relationships,

friendships, communities, and the broader societal sphere. It comprises a diverse array of activities and behaviors that facilitate the establishment of connections, relationships, and a feeling of inclusion. The active participation of persons in social interactions significantly influences their well-being, mental health, and general quality of life. The establishment and sustenance of significant connections with one's family, friends, and peers are vital aspects of engaging in social interactions. These interpersonal connections offer individuals with emotional assistance, a feeling of inclusion, and occasions for communal encounters. Engaging in active involvement within one's community, which encompasses activities such as volunteering, club membership, and participation in local events, serves as a means to both contribute to and derive advantages from the overall welfare of a community.

Social involvement frequently encompasses the exchange of assistance amongst individuals in the face of adversity. The provision of support, which can manifest in emotional, practical, or informational forms, is vital for effectively managing the challenges encountered in life. Participating in cultural, recreational, and leisure pursuits facilitates the establishment of social bonds and offers avenues for individual development and pleasure. The breadth of activities encompasses a variety of domains, including sports, hobbies, arts, and cultural events. Engaging actively in the resolution of societal challenges and promoting constructive transformation is a manifestation of social engagement that yields advantages not only for individuals but also for the wider community [23]. Social responsibility encompasses several endeavors such as engaging in philanthropic endeavors through volunteering for charitable organizations, actively participating in environmental initiatives, and advocating for social justice concerns. Social involvement plays a significant role in promoting mental and emotional well-being through its ability to alleviate sensations of isolation, loneliness, and stress. Frequent social encounters have the potential to elevate one's self-esteem, improve emotional well-being, and foster a feeling of meaning and direction in life. The ability to communicate effectively plays a fundamental role in facilitating social interaction. This process encompasses not just verbal communication, but also the active engagement of listening and comprehending the viewpoints and requirements of others. Effective communication has a crucial role in the establishment and sustenance of interpersonal connections.

Numerous studies continuously demonstrate that those who actively participate in social interactions exhibit a greater propensity to report elevated levels of life satisfaction and overall pleasure. Participating in a social network can engender a feeling of satisfaction and meaning. The significance of social interaction is heightened among older persons due to its role in mitigating social isolation, cognitive decline, and physical inactivity. Participating in social endeavors and nurturing interpersonal connections might contribute to a heightened level of engagement and satisfaction during one's latter stages of life. Social engagement is a complex and comprehensive notion that incorporates the diverse methods via which individuals establish connections, engage in interactions, and actively participate within their social environment (14). The concept holds significant implications for the overall welfare of individuals, the cohesiveness within communities, and the advancement of society as a whole. Promoting a healthy and dynamic society

necessitates the important inclusion of encouraging and supporting social involvement.

### **Social Support**

Social support encompasses the provision of aid, nurturance, and motivation that individuals derive from their social connections, including familial ties, friendships, peer relationships, and communal affiliations. These networks offer a range of assistance, including both material and psychological support, in times of crisis or to enhance individuals' overall welfare. Social support is an intrinsic element of interpersonal connections and assumes a pivotal function in the preservation of both mental and physical well-being. This is providing individuals with empathy, love, and understanding as a means of assisting them in managing stress, bereavement, or other emotional difficulties. The range of supportive actions can encompass active listening, extending emotional support, or manifesting a compassionate presence. Instrumental support encompasses concrete forms of aid, including practical assistance, material resources, or guidance. Illustrative instances encompass various forms of support such as monetary aid, transportation services, childcare provisions, and guidance in the realm of problem-solving. The provision of information, guidance, or expertise with the aim of assisting persons in making informed decisions is considered a valuable type of support [15]. This can encompass the dissemination of guidance, empirical information, or scholarly materials pertaining to a specific circumstance. Appraisal support entails providing individuals with constructive comments and direction to facilitate their evaluation of personal circumstances, decision-making processes, and the cultivation of self-assurance. Appraisal support encompasses constructive feedback and reassurance as instances of supportive actions.

Social support encompasses the perception of affiliation and interconnectedness within a certain social network. The experience of being accepted and valued by others plays a vital role in promoting emotional well-being and fostering a positive sense of self-esteem. In periods of crisis, the presence of social support plays a crucial role in offering prompt assistance, safeguarding individuals, or offering guidance. This includes actions such as promptly addressing situations, procuring expert aid, or effectively managing available resources. The presence of social support has been found to exert a direct influence on both physical and mental well-being. There is evidence to suggest that engaging in certain activities can have a positive impact on the recovery process following illnesses, as well as the reduction of stress levels and the promotion of overall well-being. The presence of a robust support network has been shown to have positive effects on immune functioning, reducing susceptibility to mental health disorders, and improving overall quality of life. Social support plays a crucial role in individuals' lives, particularly during significant life transitions, such as marriage, motherhood, retirement, or bereavement. Supportive networks play a crucial role in assisting individuals in effectively navigating these changes by enhancing their ability to adapt and bounce back. The establishment and sustenance of social relationships play a crucial role in the acquisition of social support. The presence of robust familial and friendship ties, active engagement in community activities, and the availability of diverse social networks are crucial for obtaining the necessary support [22]. The concept of social support frequently encompasses a mutually beneficial dynamic wherein individuals engage in a reciprocal exchange of aid and assistance.



Reciprocity serves to enhance social connections and fortify the existing network of support. The concept of social support is multidimensional, encompassing a range of forms of assistance and care that are delivered within social networks. The aforementioned phenomenon exerts a significant influence on the whole state of an individual's well-being, encompassing both physical and mental health, as well as their capacity to effectively navigate and manage the various obstacles encountered along their life journey. The cultivation and fostering of social support networks are crucial for the development of resilience and the augmentation of overall life satisfaction.

### Social Well-being of Elderly People

The well-being of elderly individuals is a fundamental component that significantly influences their overall quality of life during the aging process. It encompasses multiple dimensions that exert influence on individuals' physical, mental, emotional, and social well-being. The promotion and safeguarding of the well-being of elderly folks is a topic of ethical concern and a responsibility that society must uphold [11]. The preservation of optimal physical health is of utmost importance for the overall welfare of the elderly population. Regular medical examinations, adherence to a balanced diet, engagement in physical exercise, and availability of healthcare facilities are crucial factors. Preventive interventions, such as the administration of immunizations and the effective management of chronic illnesses, are also of considerable importance. The cognitive well-being of elderly adults is of utmost importance. This encompasses cognitive functions such as cognitive agility, memory retention, and the capacity to participate in intellectually demanding pursuits. The prevention and management of disorders such as dementia and depression play a crucial role in promoting mental health. Emotional well-being encompasses the effective regulation of emotions and the cultivation of a positive perspective towards life. Emotional support, self-expression, and coping methods are integral elements that play a crucial role. The reduction of stress and anxiety is also of fundamental importance. The establishment and maintenance of robust social relationships are fundamental to the overall well-being of the senior population. The experience of loneliness and social isolation has been found to be associated with adverse health consequences. Active involvement in familial, social, and communal spheres holds significant importance. The elderly's economic well-being is of paramount importance, as it directly impacts their capacity to

obtain healthcare services, secure suitable housing, and meet their basic needs. Sufficient allocation of funds for retirement, the utilization of social security payments, and the implementation of effective financial planning strategies are crucial factors to be considered.

The provision of secure and appropriate housing holds significant importance for the aging population [15]. Residing in an environment that is suitable for their age group and caters to their physical requirements can greatly contribute to the improvement of their overall welfare. The preservation of an individual's sense of freedom and autonomy is of utmost importance in one's daily existence. This can encompass the utilization of assistive technologies, the modification of living environments, and the provision of necessary assistance, all while maintaining a sense of autonomy. The prompt and consistent availability of healthcare services and routine examinations are crucial for the effective management of health issues and the prevention of consequences. This include the provision of specialized medical practitioners, pharmaceutical interventions, and proactive healthcare measures. The establishment of a sense of purpose and active involvement in one's life is crucial for the enhancement of overall well-being. Engaging in ongoing educational pursuits, pursuing personal interests and hobbies, participating in volunteer activities, and actively engaging with the community can contribute to a profound sense of satisfaction and contentment. Ensuring a sense of safety and security within the living environment holds paramount importance for the senior population. This encompasses safeguards against physical injury, financial manipulation, and mistreatment [18]. The overall well-being of aged individuals is contingent upon their capacity to derive satisfaction from life, actively pursue their personal interests, and actively participate in their community. The assessment of quality of life extends beyond mere physical well-being and involves the capacity to derive happiness and satisfaction. The consideration of end-of-life care preferences and the availability of palliative care services have the potential to enhance the overall welfare of older adults and their families. The well-being of elderly individuals is a multifaceted construct that incorporates diverse dimensions of their physical, mental, emotional, and social health. To ensure the aging population can maintain a good quality of life and dignity, it is imperative to adopt a comprehensive approach that encompasses not only healthcare but also their emotional, social, and economic requirements.



**Figure 2:** WHO well-being index

### **The Data and Methodology Employed in the Research.**

The survey instrument was initially constructed to incorporate the variables of urbanization level, old-age dependence ratio, and a significant population of older adults in Bangladesh. The sample for this study was obtained from the division of Dhaka, Chittagong, Mymensingh, Barisal, Sylhet, and Khulna. The study focuses on two specific populations: self-care adults and informal caregivers who do not exhibit any evident cognitive decline. These individuals are aged 60 and above, or can be classified as midlife individuals engaged in active aging. Self-care among adults refers to the practice of individuals taking responsibility for their own well-being and engaging in activities that promote their physical, mental, and emotional health. Individuals reside within communities rather than within institutional settings. Informal caregivers refer to persons who offer care to the older population. According to the definition provided by Backman and Hentinen (25), self-care adults are those who possess the inclination to persist in their existence as proactive agents. The participants being recruited for this study are those in the midlife and older adult age range. According to Jaques (26), adults in this stage of life have developed an awareness of their own mortality, prompting them to reevaluate their aspirations and goals, while concurrently seeing a sense of temporal opportunity. The demographic cohort commonly referred to as pre-tensioners consists of individuals between the ages of 60 and above [24]. The perspectives and insights provided by those who have not yet reached the older adult stage are valuable in informing policy development for an age-prepared community, since they offer foresight into future requirements. Prior to conducting the survey, the researchers obtained informed consent from the participants, ensuring that they were fully aware of the purpose and nature of the study and voluntarily agreed to participate by providing their signed assent.

The questionnaire has been translated from English to Bengali by language experts. The English and Bengali versions of the surveys were validated for accuracy by an English language specialist and researchers who possess familiarity with both languages. Prior to commencing the real data collection, a preliminary study was undertaken involving a sample of 30 individuals aged 60 years and above. All components exhibited strong dependability, as indicated by Cronbach's alpha coefficients exceeding 0.7. With the exception of demographic characteristics, all items were assessed using a five-point scale. Demographic variables refer to a range of factors including gender, nationality, age, educational attainment, marital status, income level, employment status, and dwelling situation. Given the absence of a standardized instrument for evaluating an age-friendly environment, the researchers took the initiative to create their own assessment tool. This was accomplished by modifying existing measures, specifically drawing from the checklist of global age-friendly cities [30] and the Internet usage scale [11].

The questions about the age-friendly environment evaluate the respondents' perception regarding the significance of the World Health Organization's age-friendly features within the community. The scoring of these items is conducted through a 5-point scale, which spans from 1 (representing a state of very low relevance) to 5 (representing a state of tremendous importance) [4]. The extant amount of scholarly literature suggests that there is currently no universally recognized scale for measuring active aging. As a result, this study has developed

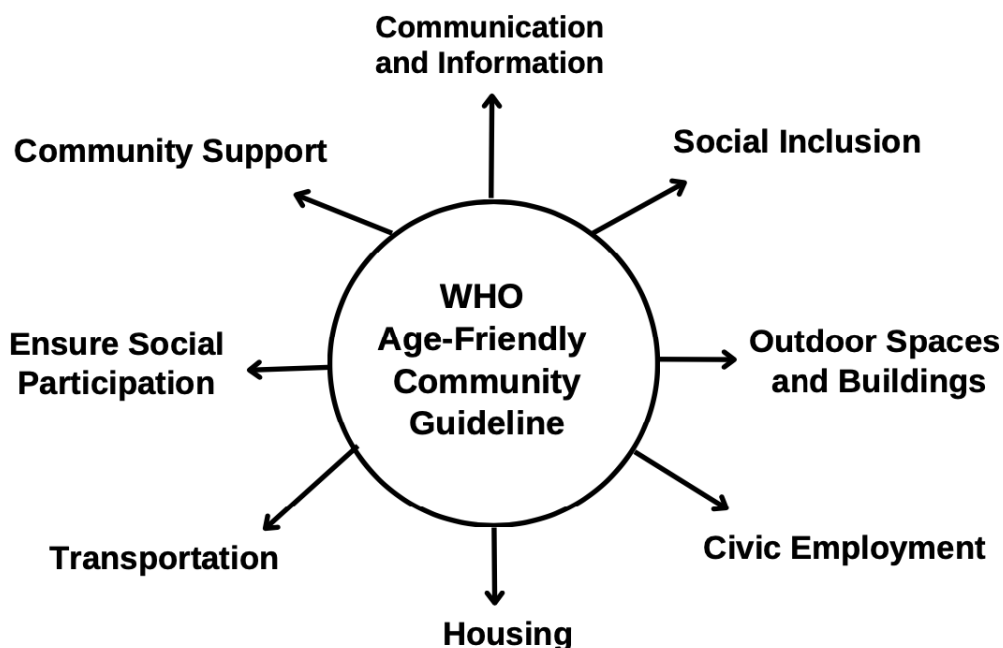
an autonomous active aging scale to evaluate the extent of active aging, which incorporates dimensions about quality of life and holistic well-being. On the other hand, the assessment of social connectivity entails the use of six items that have been drawn from the framework on social connectedness proposed by Lee and Robbins (22). The social connection construct evaluates the subjective sense of emotional disconnection or connectedness among individuals within a specific cultural context. Elevated scores are suggestive of a more robust perception of social interconnectedness, defined by a diminished presence of social isolation. The classification of items is reversed as a result of their utilization of negative terminology. The assessments for active aging and social connectedness were evaluated using a Likert scale with five points of agreement. The response options ranged from 1 (indicating severe disagreement) to 5 (indicating strong agreement).

In the preliminary stage, the researchers performed Cronbach's alpha reliability analysis and exploratory factor analysis (EFA). To assess the accuracy and consistency of the measurement items, a preliminary Exploratory Factor Analysis (EFA) was conducted before proceeding with the Structural Equation Modeling (SEM) methods. This action was deemed required because the constructions being examined had not yet been established or publicly acknowledged. It is advisable to do both exploratory and confirmatory factor analyses using fresh sets of samples (22, 24). As a result, the researchers proceeded to conduct an exploratory factor analysis (EFA) utilizing data obtained from a sample of 150 persons who were fulfilling the role of informal caregivers. Subsequently, a confirmatory factor analysis (CFA) was conducted on a distinct sample of 210 individuals who actively participate in self-care practices. The research utilized exploratory factor analysis (EFA) as a statistical technique to examine a collection of 37 items of the various aspects of an age-friendly workplace. The analysis employed the principal axis factoring (PAF) method, which was subsequently followed by promax rotation in order to improve the interpretability of the factors. The constructs employed in structural equation modeling (SEM) are presented in the Appendix.

The proposed model is estimated using a two-step method to structural equation modeling (SEM), beginning with the specification of the measurement model. The skewness and kurtosis values for each item fall under the absolute thresholds of two and seven, respectively, suggesting that the data exhibits a normal distribution [15]. Furthermore, the maximum likelihood method is employed for the estimation of structural equation modeling. Upon establishing the adequacy of the measurement model, the present study advanced to the structural model. A model is considered to have a satisfactory fit when the goodness-of-fit indices are met. The insignificance of the  $p$  value, the observed normed chi-square value (CMIN/df) lower than 3, the goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), Tucker-Lewis Index (TLI), and normed fit index (NFI) being greater than 0.9, the root mean squared error (RMSEA) and standardized root mean square residual (SRMR) being less than 0.08, and the expected cross validation index (ECVI) being close to zero are all indicators of the goodness-of-fit. These indices were reported in previous studies [6, 36]. In order to assess the soundness of the model, the researchers conducted tests to evaluate its convergent validity and discriminant validity. The evaluation of

convergent validity encompasses various measures, including standardized factor loading, average variance extracted (AVE), with a minimum threshold of 0.50, and composite reliability (CR), with a minimum threshold of 0.70 [12]. The term "AVE"

denotes the average of the variance collected from the elements inside each construct [18]. The following equations illustrate the calculations for AVE (Average Variance Extracted) and CR (Composite Reliability).



**Figure 3** WHO Age-Friendly Community Guideline

**The Outcomes of the Research**

The Perceptions of Individuals Regarding the Requirements of an Age-Friendly Community. The study revealed a lower level of awareness among individuals regarding an elderly-friendly community initiative in Bangladesh, as depicted in Table 1. This disparity can be attributed to the relatively limited adoption and promotion of the initiative within Bangladesh, in contrast to its more widespread implementation and promotion in other

countries. Canada, Costa Rica, and the United States are among the countries that are actively engaged in the building of housing that is specifically designed to cater to the needs of the senior population. In contrast, recent advancements in the realm of retirement homes or elderly-friendly housing in Bangladesh include the establishment of Ara Greens Residence in Uttara Model Town, Gulshan, and Dhanmondi.

**Table 1:** The awareness of the age-friendly community

Gender	Aware	%	Unaware	%	Total (%)
Male	150	50	60	50	100.0
Female	99	25	51	25	100.0

The age of the participants was a significant factor in shaping their perspectives on the requirements of an age-friendly community. According to the data presented in Table 2, a significant majority of respondents from various age groups, namely 98%, agreed with the necessity of elderly-friendly neighbourhoods in Bangladesh. A minority of individuals in the

age range of 30-39 expressed a lack of necessity for specialized housing intended for the elderly. According to the data presented in Table 2, a significant proportion of the participants expressed a strong desire for the development of more neighborhoods that place a high emphasis on catering to the needs and preferences of elderly persons in the coming years.

**Table 2:** Aware of the needs of the age-friendly community in Bangladesh by age

Age	Number of respondents		
	Needed	No Need	Total
<20	40	2	42
20 – 29	60	10	70
30 – 39	80	7	87
40 – 49	90	0	90
50 – 59	60	1	61
60 and above	10	0	10
<b>Total</b>			360

Furthermore, the respondents' marital status was found to have an impact on their varying perspectives regarding the requirements of an age-friendly society. According to the findings shown in Table 3, it can be observed that all widowers expressed a belief in the necessity of a specifically constructed dwelling for the elderly. Conversely, a minority of both single

and married participants held the view that such housing was not required. It may be demonstrated that widowers perceived a need for this particular residential environment due to their preference for a companion to navigate the challenges associated with the aging process.

**Table 3:** The marital status of respondents and the needs of an age-friendly community

Number of respondents			
Marital Status	Need	Lees need	Total
Single	140	10	150
Married	150	5	155
Widower	30	5	35
Others	20	0	20
<b>Total</b>			<b>360</b>

The study revealed that individuals exhibited a preference for single-story landed houses in order to accommodate the ease of senior individuals, who may lack the physical strength to remain on their feet for extended durations. This also elicited apprehension around the act of ascending steps, a concern that was particularly widespread among the senior population. The present study's findings are consistent with the research conducted by Siti Uzairiah et al. (2021), wherein it was shown that older individuals preferred single-story residences. According to a recent study conducted by Ling et al. (2022), it appears that the younger generation in Bangladesh exhibits a preference for residing in landed homes.

safety, and the availability of sports facilities and recreational amenities indicated in Table 4.

The significance of incorporating aging-friendly components inside an age-friendly community. The study encompassed various variables pertaining to this sector, namely the architectural components of a building and outdoor area, considerations of accessibility and environmental factors, community resources and healthcare services, the perception of

according to the findings shown in Table 4, the respondents indicated that the inclusion of building and outdoor space, along with its many components, is crucial for the development of an elderly-friendly neighbourhoods. The respondents regarded the characteristics of accessibility and surroundings as highly significant. In addition, with respect to community support and health services, the components of cost-effective physiotherapy, home nursing, and housekeeping services were deemed significant, whereas affordable medical services were deemed highly significant. The participants assigned a high level of importance to the sense of security component. The inclusion of aspects such as a dancing area, walking track, and passive recreational area has been identified as significant components in the development of an age-friendly community. On the other hand, the sole factor deemed to possess moderate significance was the presence of sports facilities. The respondents did not categorize any element as unimportant or very unimportant.

**Table 4:** Ageing-friendly elements for community members

Elements	Mean Score*	Average Mean	Rank
<b>1. Building &amp; outdoor space</b>			
Wide-paved walkway	4.07	4.03	Important
Traffic signals	4.06		Important
Leisure space	3.96		Important
<b>2. Accessibility &amp; environment</b>			
Accessibility of toilet	4.22	4.25	Very Important
Public transportation	4.29		Very Important
Pollution-free community	4.25		Very Important
<b>3. Community support &amp; health services</b>			
Affordable physiotherapy	4.07	4.02	Important
Affordable medical care services	4.28		Very Important
Home nursing	3.94		Important
Housekeeping services	3.79		Important
<b>4. Sense of security</b>			
Secure environment for social activity	4.27	4.27	Very Important
<b>5. Sports facility &amp; recreational area</b>			
Sports facility (badminton/tennis)	3.17	3.65	Moderate
Dancing area	3.40		Important
Walking track	3.98		Important
Passive recreational area	4.04		Important

\*Score = 1: not important, 2: less important, 3: Natural, 4: Important, 5: Very important



## Discussions and Implications

The present discourse aims to examine and analyze the discussions surrounding a particular topic, as well as explore the potential implications that arise from these discussions. By engaging in a comprehensive examination. The comprehensive structural model demonstrates a correlation between the age-friendliness of an individual's surroundings and their engagement in active aging. The relationship described is partially influenced by social connectivity, which is consistent with the concepts of person-environment fit (references 7 and 14) and aligns with Bronfenbrenner's ecological theory (reference 8). Age-friendly surroundings facilitate the active aging process for adults, as evidenced by research findings that demonstrate a notable and favorable correlation between age-friendly environments and active aging [11, 25]. Social participation and excellent health have been found to have a positive impact on active aging (15). The mediated model posits that a significant proportion, specifically 21%, of active aging can be ascribed to the influence of an age-friendly environment and social connectedness.

The existence of social connections gives rise to the significance of emotional support provided by family and friends, which serves as a useful asset for individuals. As a result, the enhanced social capital, self-esteem, and social position enable individuals to engage in active aging. Consequently, this phenomenon promotes interpersonal relationships, thereby indirectly augmenting their impact and standing within the present-day societal context. The enhancement of trade resources serves to reinforce intergenerational interactions. Several elements seem to impede active aging. The presence of limited and inconsistent transportation choices poses significant challenges for middle-aged and older individuals, impeding their ability to actively participate in social, civic, and employment endeavors within their respective areas. The resultant absence of intergenerational interaction indirectly contributes to a dearth of reverence from the younger cohort towards their elder counterparts. Furthermore, the notion of age-friendly communities is still in its early stages of development in Bangladesh. Consequently, the current state of outdoor areas, buildings, and work environments does not adequately cater to the specific requirements of the aging population. The limited nature of modification plans and career prospects for older adults, especially post-retirement, can impede their ability to engage in work and community involvement [25].

Finally, the perceived exorbitant expense associated with Internet connectivity serves as a deterrent for older participants, particularly those with little educational attainment, in adopting sophisticated technological devices such as personal computers and cell phones. To tackle this issue, it is recommended that non-governmental organizations or local authorities take the initiative to arrange lifelong learning programs for the elderly population. In contrast to the findings (5), it may be argued that addressing age-friendly domains about the social environment poses greater challenges in the context of Bangladesh. Due to its status as a developing nation, Bangladesh continues to face challenges in the development of many physical environments and infrastructures, including the establishment of comprehensive contemporary public transit systems. Hence, the results of this study underscore the imperative for policymakers in Bangladesh to provide the utmost importance to the advancement of age-friendly built environments to mitigate structural obstacles. It is important to acknowledge that the

presence of a supportive social environment is equally significant as material circumstances when it comes to assessing the overall welfare of elderly individuals. In summary, an age-friendly community should provide a comprehensive and easily accessible physical and social environment that promotes the well-being, social engagement, and safety of older adults [4]. The aforementioned results contribute to our comprehension of how an environment that is accommodating to individuals of middle and old age might facilitate their overall welfare, enabling them to sustain their engagement in societal activities throughout the aging process. The findings possess the capacity to mitigate social isolation among the elderly. Nevertheless, the ultimate model accounts for 72% of the variance in the age-friendly environment, 3% in social connection, and 25% in well-being. Hence, there are certain characteristics, specifically those about social connectivity and active aging, that have yet to be elucidated, presenting promising avenues for future research.

## Summary and concluding remarks

This study aimed to determine the primary objectives required for the establishment of a community that effectively addresses the requirements of the senior demographic. The objective of this study was to deepen the researcher's comprehension of the characteristics that define a community as being elderly-friendly. This was accomplished by conducting a comprehensive assessment of relevant literature and administering surveys in the form of questionnaires. The literature review played a pivotal role in elucidating the difficulties encountered by the senior population and in enhancing the understanding of the importance of creating a community that caters to their needs. Additionally, it emphasized the core concepts and strategic components that warrant particular consideration to provide a conducive residential milieu for community inhabitants.

An agreement was reached regarding the significance of establishing a community that is accommodating to the old, based on the feedback obtained from respondents of various age groups, including both younger individuals and the elderly. The majority of participants, irrespective of their age, exhibited a significant inclination towards single-story residences. In addition, a significant majority of respondents expressed the importance or high importance of various characteristics and amenities often associated with housing designed to accommodate the needs of aging individuals. However, it is worth noting that sporting facilities such as tennis or badminton were generally regarded as having a moderate level of importance. An ideal elderly-friendly community should provide a conducive environment for the elderly population to reside comfortably, while also facilitating their participation in a range of activities including dancing, strolling, interacting with peers, and engaging in other leisurely pastimes. The prioritization of certain aspects within this community should include minimal levels of pollution, well-maintained sidewalks that ensure safety, accessible and secure toilet facilities, efficient public transit, affordable physiotherapy services, accessible medical care services, home nursing, and cleaning services. The results of this study offer significant implications for government officials, developers, urban planners, and architects who are involved in the creation of inclusive communities that address the unique requirements of older individuals. Future research endeavours may focus on exploring the intricate design components necessary for establishing a community that caters to the needs of the senior population.

### Conflict of Interests

The concept of conflict of interest refers to situations where individuals or entities are faced with competing interests or obligations that may compromise their ability to act impartially or in their best interest. The authors assert that there are no conflicts of interest about the publishing of this research, and the funding received did not give rise to any conflicts of interest about it.

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