

Review Article

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Age-Friendly City Indicators and General Health Among Older Adults

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ABSTRACT

Background and Objectives: Population aging is an inevitable demographic trend, and preparing for aging societies is part of sustainable social and economic development. Many older adults experience social exclusion due to individual and societal factors, diminishing their sense of dignity, social value, and belonging. Therefore, evidence-based policies and interventions that enhance quality of life, preserve functional independence, and promote social participation should be prioritized in health policy and planning.

Methods: This descriptive cross-sectional study was conducted among older adults attending five elderly centers in Tehran, Iran. A total of 713 participants was selected based on the Morgan sample size table. Data were collected using the Goldberg General Health Questionnaire (GHQ) and the World Health Organization (WHO) Age-friendly Cities Questionnaire. Descriptive and inferential statistical analyses were performed using SPSS version 22 ($P < 0.05$).

Results: No statistically significant differences were observed in general health across the study regions. General health was not significantly associated with the domains of social respect and inclusion or community and health services. However, significant associations were found between general health and social participation, interpersonal relationships, and cultural and recreational services ($P < 0.001$).

Conclusion: Several age-friendly city indicators remained below recommended standards. None of the four evaluated domains provided optimal conditions for older adults, highlighting the need for targeted policies and interventions to improve age-friendliness, strengthen social participation, and support healthy aging. These findings may inform policies to enhance the well-being and quality of life of older adults.

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Population aging is one of the most significant demographic transformations of the twenty-first century, with profound implications for health systems, social welfare, and urban development. Globally, the population aged 60 years and older is increasing faster than any other age group and is projected to exceed the number of children younger than 10 years by 2030. This unprecedented demographic shift has intensified the need for policies that support healthy aging, maintain functional ability, and promote social participation throughout later life [1].

Iran is experiencing one of the fastest demographic transitions in the Middle East. Since 2016, the country has entered the aging phase of its demographic transition, and projections indicate that older adults will account for approximately 15% of the population within the coming decades [2]. These demographic changes have increased demand for health and social policies that extend beyond medical care to address the environmental and social determinants of healthy aging.

Healthy aging is influenced not only by individual characteristics but also by the physical and social environments in which older

adults live. Accessible transportation, safe public spaces, age-friendly buildings, community support, and opportunities for social participation are recognized as essential determinants of health and quality of life. Such environments facilitate independence, reduce social isolation, and encourage active engagement in community life, ultimately improving both physical and psychological well-being [3].

To address these challenges, the World Health Organization (WHO) introduced the Age-Friendly Cities framework, which promotes urban environments that enable older adults to live safely, independently, and actively. The framework identifies eight interrelated domains, including outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation, communication and information, and community support and health services [4,5]. Increasing evidence indicates that age-friendly environments are associated with improved health, greater social participation, and enhanced quality of life among older adults, although the strength of these associations varies across countries and settings. Recent reviews also emphasize that evidence remains heterogeneous because age-friendly environments are measured differently across studies, highlighting the need for context-specific research [6].

Tehran, the largest metropolitan city in Iran, has adopted the WHO

age-friendly approach and joined the WHO Global Network for Age-Friendly Cities and Communities as part of its efforts to respond to rapid population aging [7]. Despite these initiatives, important challenges remain regarding accessibility, community participation, cultural and recreational opportunities, and equitable access to health services for older adults [8]. Moreover, although several Iranian studies have assessed individual aspects of age-friendly environments, limited evidence has examined how multiple age-friendly city indicators are associated with the general health of older adults. This gap restricts the ability of policymakers to prioritize interventions that simultaneously improve urban environments and population health [4].

Community health professionals play a central role in promoting healthy aging through preventive, educational, and community-based interventions. Identifying the age-friendly characteristics that are most strongly associated with general health can provide evidence for designing effective urban and public health policies [5-7]. Therefore, the present study aimed to examine the association between general health and age-friendly city indicators among older adults in selected districts of Tehran.

Methods

This descriptive study was conducted among older adults in five selected districts of Tehran, Iran (north, south, east, west, and central regions). Based on the Morgan sample size table, 317 participants were selected from a target population of 1,832 older adults with active records. Participants were recruited using cluster sampling, with proportional allocation across districts: 92 from northern, 62 from southern, 30 from eastern, 42 from western, and 91 from central Tehran.

Data Collection Instruments and Eligibility Criteria

Data were collected using the Abbreviated Mental Test (AMT), a demographic characteristics questionnaire, the WHO Age-Friendly City criteria questionnaire, and Goldberg's 28-item General Health Questionnaire (GHQ-28). The validity and reliability of all instruments had been previously confirmed.

Eligible participants were older adults aged ≥ 65 years who were registered at the selected elderly centers, willing to participate, scored ≥ 7 on the AMT, and had at least a secondary school education. Participants were excluded if they discontinued cooperation during questionnaire completion or submitted incomplete questionnaires.

Data Collection Procedure

After obtaining approval from the Research Deputy and Ethics Committee of the Islamic Azad University of Medical Sciences, Tehran Branch, the researcher visited the study settings and collected data after receiving permission from the elderly centers. Eligible participants were informed about the study objectives and procedures, and written informed consent was obtained before questionnaire completion.

First, the Abbreviated Mental Test (AMT) was administered, and only participants with scores ≥ 7 were included. Subsequently, participants completed the demographic questionnaire, Goldberg's General Health Questionnaire (GHQ-28), and the Age-Friendly City Components Assessment Questionnaire to evaluate general characteristics, health status, and age-friendly city indicators, respectively.

Results

Table 1 presents the dimensions and total score of general health among older adults. The mean general health score was 41.87 ± 4.66 . Among the assessed dimensions, social dysfunction had the highest mean score (14.39 ± 2.31), followed by somatic symptoms (10.44 ± 1.75), anxiety (9.17 ± 1.90), and severe depression (7.88 ± 1.23).

Table 2 presents the mean scores of age-friendly city domains among older adults. The mean total score of age-friendly city indicators was 103.01 ± 18.50 . Among the evaluated domains, cultural and recreational services had the highest mean score (33.28 ± 7.96), whereas social participation and relationships had the lowest mean score (15.84 ± 4.60).

Table 3 presents the regression analysis of general health based on age-friendly city indicators. The results showed a significant positive association between social participation and relationships and general health ($\beta = 0.52$, $t = 6.53$, $p = 0.001$). Similarly, cultural and recreational services were significantly associated with improved general health ($\beta = 0.33$, $t = 5.53$, $p = 0.001$). However, healthcare services showed no significant association with general health ($\beta = 0.05$, $t = 0.63$, $p = 0.532$). The overall age-friendly city indicator score was not significantly associated with general health ($\beta = 0.44$, $t = 4.37$, $p = 0.46$).

Table 1: Mean Scores of General Health Dimensions Among Older Adults

GHQ dimensions	Mean	SD
somatic symptoms	10.44	1.75
anxiety	9.17	1.90
social dysfunction	14.39	2.31
severe depression	7.88	1.23
general health (total score)	41.87	4.66

Table 2: Mean Scores of Age-Friendly City Domains Among Older Adults

Age-friendly city domains	Mean	SD
Social respect	26.73	4.39
Social participation and relationships	15.84	4.60
Cultural and recreational services	33.28	7.96
Health and healthcare services	27.17	4.06
Total score	103.01	18.50

Table 3: Regression Analysis of General Health According to Age-Friendly City Indicators

Predictor variable	β	t-value	P-value
Constant (Social participation and relationships)	37.50	34.55	<0.001
Social participation and relationships	0.52	6.53	0.001
Constant (Cultural and recreational services)	34.63	19.73	<0.001
Cultural and recreational services	0.33	5.53	0.001
Constant (Health and healthcare services)	42.78	20.69	<0.001
Health and healthcare services	0.05	0.63	0.532
Constant (Overall age-friendly indicators)	45.86	2.37	0.001
Age-friendly city indicators	0.44	4.37	0.46

Discussion

The findings of the present study showed that the mean general health score among older adults was 41.87 ± 4.66 . Regarding age-friendly city indicators, the mean scores of social respect (26.73 ± 4.39), social participation and relationships (15.84 ± 4.60), cultural and recreational services (33.28 ± 7.96), and healthcare services (27.17 ± 4.06) indicated that none of the evaluated domains had reached a satisfactory level. These findings suggest that the current conditions of age-friendly city components in the studied districts of Tehran require further improvement.

The present study found no significant differences in general health status among older adults across the selected districts of Tehran. This finding was consistent with previous studies conducted [9-12]. The similarity of findings may indicate that differences in residential areas do not necessarily result in variations in general health status among older adults when similar environmental and social challenges exist.

The findings also demonstrated that age-friendly city indicator scores did not differ significantly among the selected districts. These results were consistent with the studies of [13-15]. However, they were inconsistent with the findings of [16]. This difference may be explained by variations in environmental characteristics, social structures, and contextual factors between the study settings.

In the present study, no significant relationship was observed between general health and the social respect domain ($p = 0.57$). Although increased social respect scores were associated with improved general health, this relationship was not statistically significant. These findings were consistent with reported a significant association between social respect and older adults' health status [17-19]. Differences in cultural perceptions of social respect and variations in study populations may explain these inconsistent findings.

A significant positive association was identified between general health and social participation and relationships ($p < 0.001$). Regression analysis indicated that each increase in this domain score was associated with a 0.52-point improvement in general health. These findings were consistent with studies [2,13,20]. However, reported different results, which may be related to differences in cultural contexts and living environments among study population [18].

The results also showed a significant relationship between cultural and recreational services and general health ($p < 0.001$). An increase in this domain score was associated with a 0.33-point improvement in general health. The findings were consistent with reported inconsistent findings [17,21]. Differences in cultural characteristics and access to recreational opportunities among populations may account for these variations.

No significant association was observed between healthcare services and general health ($p = 0.532$). Although higher healthcare service scores were associated with a 0.05-point improvement in general health, this relationship was not statistically significant. These findings were consistent with [22]. This result suggests that healthcare accessibility alone may not be sufficient to improve older adults' general health without considering broader social and environmental determinants.

Finally, the overall age-friendly city indicator score was not significantly associated with general health ($p = 0.46$), although

higher scores showed a positive trend with a 0.44-point improvement in general health. This finding differed from which may be attributed to differences in environmental, social, and contextual characteristics of the study settings [18].

Overall, the findings emphasize that improving older adults' health requires a multidimensional approach beyond healthcare services alone. Strengthening social participation, interpersonal relationships, cultural opportunities, and supportive urban environments should be considered essential components of age-friendly policies and healthy aging strategies.

Strengths and Limitations

This study has several strengths, including the assessment of multiple age-friendly city domains and their association with general health among older adults in different districts of Tehran. The use of validated instruments and the inclusion of participants from various geographical areas of the city enhanced the reliability of the findings. However, some limitations should be considered. Due to the cross-sectional design of the study, causal relationships between age-friendly city indicators and general health cannot be established. In addition, the study was conducted among older adults registered in selected elderly centers of Tehran; therefore, the findings may not be fully generalizable to older adults who are not engaged with such centers or to other regions with different social and environmental characteristics.

Conclusion

The findings of this study indicate that the evaluated age-friendly city domains in Tehran have not yet reached desirable levels from the perspective of older adults. Although social participation and relationships, as well as cultural and recreational services, were significantly associated with better general health, the overall age-friendly city indicators were not significantly related to general health. These findings highlight the importance of adopting a multidimensional approach to healthy aging that considers not only healthcare services but also social inclusion, community participation, and supportive urban environments. Policymakers, urban planners, and healthcare professionals should collaborate to strengthen age-friendly initiatives and improve the health and quality of life of the growing older population [23].

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Conflict of Interest

The authors declare no conflicts of interest. No financial or personal relationships influenced the conduct of the study or reporting of its findings.

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