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# Determinants of Active Aging Among Older Adults: A Comparative Analysis of Rural and Urban Communities in District Sargodha, Punjab, Pakistan

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## ABSTRACT

The study aimed to explore and analyze the factors that affected the active ageing in the older age group (60 years and above) in rural and urban areas of District Sargodha, Punjab, Pakistan. The design was quantitative, compared and cross sectional. The structured questionnaire used five-point Likert scales along with the Katz Index of Activities of Daily Living, and the Lubben Social Network Scale-6. It was completed by 200 older adults through purposive sampling technique. Data analyzed by descriptive statistics and multiple linear regression in SPSS. The regression model indicated that the six determinant domains together accounted for about 61% of the variance in active aging ($R^2 = .610$), $F(6, 193) = 45.68$, $p < .001$, with the highest regression coefficients being found for participation ($\beta = .276$), psychological and cognitive well-being ($\beta = .238$), and physical health status ($\beta = .221$). The results showed that active aging is a multi-dimensional outcome that depends on the interaction between health, social, economic, psychological and environmental factors.

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## 1. Introduction

Population ageing is a major demographic shift of the 21st century. The United Nations estimated the global population over the age of 65 was approximately 761 million in 2021, and in 2050, it would more than double from about 10% to one sixth of the world's population by the middle of the century (United Nations, 2023). This shift was previously regarded as predominantly a phenomenon of high-income nations, but this is now happening at a quicker pace in low-income and middle-income countries (LMICs) such as Pakistan, where the population of individuals aged 60 years and older is around 13.52 million (Pakistan Bureau of Statistics, 2023).

Aging is a different experience for everyone. Even in chronological age, older people vary significantly in terms of their functional capacity, social networks, financial situations and capacity to engage in community life (Beard et al., 2016). According to the WHO (2002), the active ageing concept gives a new perspective on older people, in which opportunities for health, participation and security are optimized to allow older people to live. This view is based on the Successful Aging Model proposed by Rowe & Kahn (1997) who described successful ageing as: avoidance of disease and disability, maintenance of physical and cognitive function and sustained engagement with life.

As older people in Pakistan become more dependent on family, the family is the dominant source of care for these older individuals, however, urbanization, migration and shifting family structures are altering the availability of family care for older persons (Tariq et al., 2023). Rural and urban older people are also likely to find themselves in a different situation of advantage and constraint. The urban older people having increased access to services and greater social isolation, while rural older people experience comparatively more social support and lower access to health care, transport and specialist services (Rasheed et al., 2024). The district Sargodha, where rural and urban settlements existed in the same area is an adequate place where people consider differences in an empirical manner instead of by assumption.

The objective of this study was to (a) find out the determinants of active ageing among older adults in rural and urban areas of District Sargodha highlighting social interaction, mobility and health status, (b) make comparison between older adults of rural and urban areas regarding active ageing and focus social interaction, mobility and health status, and (c) explore how social support networks and healthcare access can enhance the quality of life and active ageing among older adults.

## 2. Literature Review

### *The Concept of Active Ageing*

The World Health Organization (2002) officially recognized active ageing as the process of "maximizing opportunities for health, participation and security in order to optimize quality of life as people grow older. The idea shifts the focus of discussion on later life from disease and dependency to participation and autonomy, and sustained contribution. Later, this concept expanded to include psychological wellbeing, social interaction, cognitive stimulation and involvement in the community, and it was seen that the opportunities and resources for all these are different for each person and community (Fernández-Ballesteros et al., 2013; Foster & Walker, 2015, 2021). One of the key characteristics of active ageing is that older people continue to participate even when they have chronic conditions if they are provided with the right care, rehabilitation, social and supportive services and environments (Beard et al., 2016).

### *Theoretical Framework*

The study is based on a conceptual model of Successful Aging by Rowe and Kahn, (1997) which proposed that successful aging is associated with low disease and disability, functioning physically and cognitively and continued life engagement. This is supported by WHO's healthy and active ageing framework, which considers functional ability as a result of the interaction between an individual's intrinsic capacity and the physical and social environment (WHO, 2020, 2021). This

multidimensional perspective is further evidenced by recent systematic studies, which consistently find correlations between the determinants of physical health, lifestyle, socioeconomic conditions, psychological well-being and social relationships with successful, active ageing (Marzo et al., 2023; Rodrigues et al., 2023). Inequalities that build up as life unfolds in education, work and resource access also manifest themselves as inequalities in health and independence in old age (Ben-Shlomo & Kuh, 2002; Dannefer, 2021).

*Determinants of Active Ageing: Health, Function, and Social Support*

Being physically healthy and able to function is one of the most frequent factors mentioned as indicators of active ageing. Chronic illness, sensory loss and limited mobility limit functioning in daily and social activities, while adequate health care, exercise and preventative health services maintain function (D'Amore et al., 2023). The Katz Index of Activities of Daily Living and other functional assessments reflected that older adults carried out the most basic self-care activities without the assistance of others and have an ability to closely associated with their social and family functioning (Katz et al., 1963).

A second important determinant is social relationships. Emotional and practical support from family members, friends, neighbours and social networks linked to reduced feeling of loneliness and social isolation and to more positive psychological outcomes (Holt-Lunstad, 2022; National Academies of Sciences, Engineering, and Medicine, 2020). The Lubben Social Network Scale-6 (Lubben et al., 2006) is the most common scale for quantifying the size and frequency of social contacts in family and friendship networks and has been used across various settings including in rural populations where social interaction has been associated with increased physical activity (Marthammuthu et al., 2023).

### *Economic, Environmental, and Psychological Determinants*

Economic security influenced older people's capacity to access health services, to access nutrients, and to engage in social and recreational activities; financial insecurity has the opposite effect. In older people are less able to participate in activities outside the family unit and to receive healthcare, without being able to obtain the nutrients (Marzo et al., 2023) Mobility is another factor impacting independence and participation, as is the physical environment, such as the quality of housing, road and pathway safety, and accessibility of transportation, especially for older adults with mobility limitations (Buffel et al., 2018). Psychological and cognitive well-being, such as purpose, confidence in decision making and participation in cognitively stimulating activities, have also been associated with improved outcomes in later life, and cognitive training and ongoing engagement with cognitively stimulating activities are associated with maintaining cognitive function (Li et al. 2024).

### *Rural–Urban Differences in Active Ageing*

The determinants of active ageing exist and act differently according to setting of residence, based on evidence from various settings. While older adults in rural areas have stronger informal family and community networks and be active in farming and domestic duties and caregiving, they are often also more constrained in their access to health and social services, transportation and income (Hussain et al., 2023; Wang et al., 2022; Sakakibara et al., 2022). In urban areas, older adults have better physical mobility around their local health care facilities, transportation and markets, but may experience higher levels of social isolation due to the alteration of family and neighbourhood connections (Stearns et al., 2023; Bonaccorsi et al., 2023). A comparative study in Pakistan between older adults in Karachi and Thatta revealed that the ageing process had systematic differences between rural and urban contexts, highlighting the necessity of a comparative data that is sensitive to the local context rather than assuming a common rural and urban experience (Rasheed et al., 2024).

### *Active Ageing Research in Pakistan*

While research on ageing in Pakistan is relatively low but steadily increasing. Among the older people living in senior care facilities in Punjab, autonomy, loneliness and satisfaction with services

were found to be significantly related to QOL as shown by Tariq et al. (2023). Bibi et al. (2023) translated and validated a culturally adapted Active Ageing Scale for the Pakistani older adults, and found that it is feasible to assess active ageing using locally relevant Urdu language tools. Although some progress has been made, there are few studies that directly compare the rural and urban elderly at district level in a multidimensional approach covering health, functional independence, social support, economic status, healthcare access and community participation in District Sargodha, Punjab.

## 3. Methodology

### *Research Design*

A quantitative, comparative cross-sectional design was used, which was suitable for measuring the prevalence of active ageing and its determinants at one point in time and comparing rural and urban older adults using the same instruments and procedures. It examined the associations between active ageing and its postulated determinants.

### *Study Area and Population*

The study was carried out in the study area in District Sargodha, Punjab, Pakistan which has both urban settlements and rural communities which helped for the comparison of the experiences of ageing in both urban and rural people. The study subjects were community-dwelling older persons aged 60 years and older, from both rural and urban localities of the district (excluding those who had stayed permanently in institutional care settings).

### *Sample Size and Sampling Technique*

There were 200 older adults were participated by using purposive sampling technique and under specific eligibility criteria which included age (60 years and above) and residing in one of the selected rural or urban communities of District Sargodha. The final sample consisted of 100 women and 100 men based on gender. The majority of the respondents were from the urban areas 140 (70%) while from the rural areas 60 (30%) participants of the district Sargodha.

### *Instrumentation*

A structured questionnaire was used to collected data on the following topics: socio-demographic characteristics, health status, functional independence, social support, economic situation, physical environment and transportation, psychological and cognitive well-being, and family and community contribution (rated from strongly agree to strongly disagree, on a five-point Likert scale). Functional independence was measured with the Katz Index of Activities of Daily Living (Katz et al., 1963) which included activities such as bathing, dressing, toileting, transferring, continence and feeding. A Lubben Social Network Scale-6 (Lubben et al., 2006) was used to assess social support. The content validity was determined by an expert review by experts from the social work field, sociology, gerontology, public health, and research methodology whose recommendations were included in the final instrument. The questionnaire was conducted in English or Urdu as per the need and respondents' understanding to maintain the meaning of the standardized questionnaires.

### *Data Collection and Ethical Considerations*

The data were collected after the approval of the institutions and the participants were approached one by one and informed consent was asked before they began to fill in the questionnaire. There was no forced participation and respondents were offered the option of not answering any items or to stop participating during the survey without penalty. The process of obtaining information was treated confidentially, and no information identified the respondents was retained in the analytical dataset. Comfort and understanding of elderly respondents were given special attention when collecting information.

### *Data Analysis*

The coding of data was quantitative and analyzed in SPSS. Characteristics of respondents and item-level responses were summarized by using descriptive statistics (frequencies and percentages for categorical variables and means and standard deviations for continuous variables). Using multiple linear regression, the combined and

incremental contribution of six domains of determinants (physical health status, functional independence, participation and social support, economic and environmental factors, cognitive and psychological well-being, and family and community contribution) to active ageing was tested, with $p < .05$ considered statistically significant.

## 4. Results

### *Sample Characteristics*

The sample was evenly split by sex, with 100 males (50%) and 100 females (50%) respondents. By residence, 140 respondents (70%) were from urban areas and 60 (30%) from rural areas of District Sargodha. Respondents' ages ranged from 60 to 75 years, with the largest group (45%) aged 60–63 years and progressively smaller groups in the 64–65, 66–68, and 69–70 age bands (15% each), and 10% aged 70–75 years.

**Table 1:** *Sample Characteristics by Gender, Residence, and Age (N = 200)*

| Characteristic | Category | n | % |
|---|---|---|---|
| Gender | Male | 100 | 50 |
| | Female | 100 | 50 |
| Residence | Urban | 140 | 70 |
| | Rural | 60 | 30 |
| Age (years) | 60–63 | 90 | 45 |
| | 64–65 | 30 | 15 |
| | 66–68 | 30 | 15 |
| | 69–70 | 30 | 15 |
| | 70–75 | 20 | 10 |

### *Descriptive Findings on Active Ageing Domains*

In the six domains considered, the agreement of respondents with statements about active ageing at the age of 78 or more was fairly high on the whole but varied substantially from domain to domain. Family support and the belief that being socially, physically, and mentally active is necessary for good quality of life in elderly age were supported in the strongest way; about 70% of participants were in agreement with these statements. The aspects of functional independence, social participation, and psychological wellbeing were endorsed by 55–67% of respondents. The physical environment and transport were shown to be the least endorsed factors in this respect (the share of supporters being 50–52%), meaning that they can be considered as rather underdeveloped ones in terms of active ageing.

**Table 2:** *Percentage of Respondents Agreeing ("Agree" or "Strongly Agree") with Selected Active Ageing Indicators (N = 200)*

| Domain / Indicator | % Agreement |
|---|---|
| Has the ability to undertake everyday tasks without any trouble | 60% |
| Receives the right treatment when necessary | 55% |
| Leads active lifestyle to maintain self-reliance | 64% |
| Performs daily personal care tasks with ease | 60% |
| Carries out household/personal activities without asking for help from others | 59% |
| Independence makes it possible to sustain close ties with family and friends | 61% |
| Has adequate emotional and practical support from family | 70% |
| Communicates with friends, relatives, neighbours, etc. regularly | 65% |
| Active connections with people result in the maintenance of a lively and engaged lifestyle | 67% |
| Goes to public events or religious or leisure activities | 57% |
| Available funds are sufficient for fulfilling major needs | 55% |
| Money allows one to obtain medical services if needed | 59% |
| Home environment is secure for elderly persons | 52% |
| Transportation makes it easy to get to clinics or shops | 50% |
| Has a clear objective in life | 67% |
| Is confident in taking essential decisions | 63% |
| Takes part in mentally engaging activities | 55% |
| Helps family or community with doing things that are essential for them | 64% |
| Has the ability to undertake everyday tasks without any trouble | 70% |

### *Predictors of Active Ageing*

An analysis of multiple linear regression was conducted with the outcome of active ageing and determinants as the predictors. The result indicated that the overall model was statistically significant and accounted for the amount of variance in active ageing, $R^2 = .610$, $F(6, 193) = 45.68$, $p < .001$ which implies that the variance in active ageing amongst the participants were about 61% based on the joint contribution of physical health status, functional independence, participation and social support, economic and environmental aspects, cognitive and psychological wellbeing as well as contributions from family and community.

**Table 3:** *Multiple Linear Regression Predicting Active Ageing (N = 200)*

| Predictor | B | SE | β | t | p |
|---|---|---|---|---|---|
| Physical health status | 0.214 | 0.072 | 0.221 | 2.972 | 0.003 |
| Functional independence | 0.186 | 0.068 | 0.197 | 2.735 | 0.007 |
| Participation and social support | 0.263 | 0.074 | 0.276 | 3.554 | <.001 |
| Economic and environmental factors | 0.157 | 0.069 | 0.158 | 2.275 | 0.024 |
| Cognitive and psychological well-being | 0.231 | 0.071 | 0.238 | 3.254 | 0.001 |
| Family and community contribution | 0.194 | 0.067 | 0.203 | 2.896 | 0.004 |
| Constant | 0.842 | 0.318 | — | 2.648 | 0.009 |

All six predictors accounted for significant, positive and unique variance in active ageing (all $p < .05$). Participation and social support were the most powerful predictor ($\beta = .276$), followed by cognitive and psychological well-being ($\beta = .238$), and physical health status ($\beta = .221$). Family and community contribution ($\beta = .203$), functional independence ($\beta = .197$), and the economic and environmental factors ($\beta = .158$) were also highly significant, but had relatively smaller effects. The findings suggest non-dominating role of any one domain; older people's active ageing in District Sargodha is a result of combined effects of health, functional, social, economic, psychological and environmental factors.

## 5. Discussion

The results validate the concept of active ageing as proposed in the WHO active ageing framework and the Successful Aging Model (Rowe & Kahn, 1997; WHO, 2002) which considers an active ageing experience as a multidimensional concept. In the sample of older adults surveyed, active ageing was not attributable to a single key determinant, but rather the interplay of health, functional independence, social relations, economic conditions, psychological health and environmental conditions, consistent with the findings found in the systematic review in other settings (Marzo et al., 2023; Rodrigues et al., 2023).

The significant role of participation and social support as the strongest predictor are consistent with a large amount of evidence connecting family, friend, and community networks with better outcomes in later life (Holt-Lunstad, 2022; National Academies of Sciences, Engineering, and Medicine, 2020). In the Pakistani context, family is the main source of support for older people, the results of the study are consistent with previous studies that found that social and psychosocial support are of major importance to the wellbeing of older people in Pakistan (Tariq et al., 2023). The comparatively lower levels of endorsement for community (57%) and religious (57%) and recreational participation (57%) indicate that whilst family based support is strong, wider community level support less developed and targeted area for active ageing interventions.

Compared to the general rural–urban focus of the study, the results for items pertaining to the environment and transportation are relatively low (50–52%). Previous studies indicated that older adults in rural areas have to travel long distances to access services and lack access to transportation, whereas older adults in urban areas typically have access to services, but have other service-access issues due to changes in family dynamics and social isolation (Rasheed et al., 2024; Stearns et al., 2023). The skew of the respondent's sample towards urban (70%) and less urban (30%) population as compared to the planned balanced allocation does not mean that these results reflected a formally tested rural–urban statistical contrast. It merely means that the results are representative of the overall study population, but the comparatively weaker environmental and transportation support

would be consistent with broader evidence that the physical and service environment remains an area of unmet need for the older persons of District Sargodha irrespective of their location.

The substantial amount of cognitive and psychological well-being (β = .238) adds to the growing literature that supports the importance of maintaining a sense of purpose, decision-making confidence, and cognitive engagement to support active ageing (Li et al., 2024). There is moderate support for cognitively stimulating activity (55%), indicating the need for increased provision for older adults in the district to have access to opportunities for lifelong learning, problem solving, and technology. Likewise, 64% of respondents endorsed that older people also engage in unpaid and informal roles, such as caregiving, household work, farming and volunteering, in addition to holding formal jobs or participating in leisure activities when they are older (Beard et al., 2016; Dommaraju & Wong, 2021).

The general pattern of findings was in line with the life-course and person–environment paradigm on ageing that posits that intrinsic capacity is influenced by social and environmental factors, which in turn affect functional outcomes (Ben-Shlomo & Kuh, 2002; WHO, 2020). The findings indicate that interventions for promoting active ageing in District Sargodha need to be multi-pronged, involving a combination of interventions related to access to healthcare, family and community-based social support, economic security, cognitively engaging activities, and improvement of the physical and transportation environment, rather than any one type of intervention.

## 6. Conclusion and Recommendations

This study aimed to find the determinants of active ageing among older people in rural and urban areas of district Sargodha and to explore the significance of social support and healthcare access in the active ageing and quality of life of older adults. The results validated that active ageing is a multi-faceted and interrelated concept that is influenced by all five of these dimensions: physical health, functional independence, social support and participation, economic and environmental factors, psychological and cognitive, and family and community contribution, in total accounting for around 61% of the variance in this sample. Family support and the perception that being active contributes to quality of life were the most highly supported dimensions, and the physical environment and transportation infrastructure were less robust supports of older adults' independence and participation.

The following policy, practice and research recommendations are proposed based on these findings:

- Ensure that health services are accessible, affordable and age friendly, especially for underserved groups, and promote regular health screening for early detection of health problems.
- Support for young children to engage in age appropriate physical play, stretching and light exercise that does not result in dependence but promotes functional independence in everyday life.
- To support families to give emotional and practical support, respecting the dignity, choice and independence of older people.
- Increase community based opportunities for social, religious, cultural and recreational activities geared to the interests and capabilities of older adults.
- Increase social protection, pension, financial support programmes, and increase the availability of affordable healthcare, medicines, transport for people with low incomes.
- Self-employment and enhanced safety and accessibility of roads, pathways and public spaces, and better affordable mobility solutions for older people to reach health and community services.
- Promote psychological health through purposeful community engagement that develops confidence, a sense of connectedness and a sense of purpose.

- Understand and identify the opportunities for older adults to share their skills, knowledge and experience in meaningful ways, such as volunteering, mentoring and caring.
- Evaluate active-ageing interventions in the light of the rural–urban differences, in access to health services, mobility, economy and community services, and not use a uniform approach.
- Increase the visibility on healthy and active ageing, independence and the rights and contributions of older adults in targeted campaigns.
- Conduct future research with larger and more diverse samples of representative districts and provinces of Pakistan, including longitudinal designs, mixed-methods designs, and formally test rural–urban comparisons – with balanced sampling.
- To sum up, good practice to encourage active ageing in District Sargodha (and other comparable contexts in Pakistan) must be coordinated and take into account the health, independence, social connection, economic security, psychological wellbeing and physical environment of older people in a way that is sensitive to the very different contexts of rural and urban communities.

## Declaration of Conflicting Interest

The author declared no potential conflicts of interest with respect to research.

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