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Research Article

Prevalence of Geriatric Morbidities and Functional Dependence Among Elderly Population

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A B S T R A C T

Background: Population aging has become a major public health concern worldwide. Elderly individuals are particularly vulnerable to chronic diseases, nutritional deficiencies, functional impairment, and psychosocial problems.

Objective: To assess the prevalence of geriatric morbidities and functional dependence among elderly individuals residing in selected communities of Punjab, India.

Methods: A community-based cross-sectional study was conducted among 260 elderly individuals aged ≥60 years. Sociodemographic characteristics, nutritional status, chronic illnesses, activities of daily living, and lifestyle practices were assessed using structured questionnaires and clinical evaluation.

Results: Hypertension (48.1%) was the most common chronic illness followed by diabetes mellitus (34.2%), osteoarthritis (31.5%), and cardiovascular disease (16.2%). Functional dependence was significantly associated with increasing age, multimorbidity, poor nutritional status, and physical inactivity. Approximately 28.5% participants demonstrated moderate-to-severe dependency in activities of daily living.

Conclusion: Geriatric morbidities and functional dependence are highly prevalent among elderly individuals in Punjab. Early screening, nutritional support, lifestyle modification, and community-based geriatric healthcare services are essential for improving quality of life among older adults.

Keywords: Geriatric disease, Elderly population, Functional dependence, Chronic illness, Aging, Punjab

Introduction

Population aging has become one of the most important demographic transitions of the twenty-first century and represents a major global public health challenge.[1] Improvements in healthcare services, vaccination programs, nutrition, sanitation, education, and socioeconomic development have contributed significantly to increased life expectancy and declining mortality rates worldwide. Consequently, the proportion of elderly individuals within the global population is rapidly increasing. According to the World Health Organization, the global population aged 60 years and above is expected to double by 2050, reaching nearly 2.1 billion individuals.[2]

India is currently undergoing substantial demographic and epidemiological transition with rapidly expanding elderly population. Census projections indicate that older adults will

constitute a significant proportion of the Indian population in coming decades.[3] Increased longevity, declining fertility rates, urbanization, and changing family structures have collectively contributed to growth of geriatric population in both urban and rural regions of the country.

Aging is a complex biological process characterized by progressive physiological decline affecting multiple organ systems including cardiovascular, musculoskeletal, neurological, endocrine, respiratory, renal, and immune systems.[4] These age-related changes increase susceptibility to chronic diseases, infections, disability, cognitive impairment, frailty, nutritional deficiencies, and functional dependence. Elderly individuals therefore commonly experience multimorbidity, polypharmacy, reduced mobility, and increased healthcare utilization.

Geriatric diseases represent a major cause of morbidity and mortality among older adults. Chronic illnesses such as hypertension, diabetes mellitus, osteoarthritis, cardiovascular disease, chronic obstructive pulmonary disease, visual impairment, hearing loss, dementia, and depression are highly prevalent among elderly populations.[5] These disorders significantly impair physical functioning, independence, and quality of life while simultaneously increasing financial and caregiver burden.

Hypertension remains one of the most common chronic conditions among elderly individuals and is strongly associated with increased risk of stroke, ischemic heart disease, heart failure, and renal impairment.[6] Similarly, diabetes mellitus contributes substantially to cardiovascular complications, neuropathy, retinopathy, nephropathy, and functional decline among aging populations. Osteoarthritis and degenerative musculoskeletal disorders frequently impair mobility and activities of daily living, leading to reduced independence and increased disability.

Functional dependence is an important indicator of geriatric health status and reflects the ability of elderly individuals to perform activities necessary for independent living.[7] Activities of daily living (ADL) such as bathing, dressing, feeding, toileting, walking, and transferring are commonly affected among older adults with chronic illnesses and frailty. Functional impairment may result in social isolation, depression, poor self-care, increased hospitalization, and reduced quality of life.

Frailty is another important geriatric syndrome characterized by decreased physiological reserve, weakness, fatigue, reduced endurance, weight loss, and increased vulnerability to adverse health outcomes.[8] Frail elderly individuals are at greater risk of falls, fractures, hospitalization, institutionalization, disability, and mortality. Early identification of frailty and functional decline is therefore essential for implementing timely preventive and rehabilitative interventions.

Nutritional deficiencies are also highly prevalent among elderly populations. Advancing age is frequently associated with reduced appetite, poor dentition, chewing difficulty, altered taste sensation, chronic illnesses, medication effects, and socioeconomic limitations, all of which contribute to inadequate nutritional intake.[9] Malnutrition and sarcopenia significantly increase risk of frailty, infections, muscle weakness, and dependency.

Punjab, one of the agriculturally and economically important states of India, has experienced significant demographic and lifestyle changes over recent decades. Urbanization, dietary transition, obesity, tobacco use, alcohol consumption, physical inactivity, and increasing prevalence of metabolic disorders have contributed substantially to rising burden of non-communicable diseases among elderly individuals in the region.[10]

Rural elderly populations in Punjab often face additional healthcare challenges including limited accessibility to specialized geriatric services, poor transportation facilities, financial dependency, inadequate health insurance coverage, and reduced awareness regarding preventive healthcare.[11] Social changes including migration of younger family members and declining traditional joint family systems may further contribute to loneliness, neglect, and reduced caregiver support among older adults.

Mental health disorders such as depression, anxiety, cognitive decline, and dementia are increasingly recognized among elderly populations and significantly affect psychological well-being and quality of life.[12] Elderly individuals experiencing chronic illnesses and social isolation are particularly vulnerable to mental health problems, which may further worsen functional impairment and healthcare outcomes.

Community-based geriatric healthcare programs play a crucial role in promoting healthy aging and reducing disease burden among elderly populations. Comprehensive geriatric assessment involving medical evaluation, nutritional assessment, functional status assessment, cognitive screening, and psychosocial evaluation may help identify vulnerable individuals requiring early intervention.[13] Preventive strategies including physical activity promotion, nutritional counseling, vaccination, rehabilitation services, and chronic disease management are essential for improving geriatric health outcomes.

Despite increasing elderly population in India, geriatric healthcare services remain underdeveloped in many regions. There is limited availability of specialized geriatric clinics, rehabilitation centers, trained healthcare professionals, and long-term care facilities.[14] Public health policies focusing on healthy aging, community support systems, and integration

of geriatric care into primary healthcare infrastructure are therefore urgently needed.

Considering the growing burden of chronic diseases and functional dependence among elderly populations, assessment of geriatric morbidities and associated risk factors is critically important for planning healthcare services and preventive interventions. Identification of common health problems among elderly individuals may help policymakers and healthcare professionals formulate targeted strategies aimed at improving quality of life and reducing healthcare burden.

The present study was therefore conducted to assess the prevalence of geriatric morbidities and functional dependence among elderly individuals residing in selected communities of Punjab, India.

Materials and Methods

Study Design

The present study was designed as a community-based cross-sectional study aimed at assessing the health and socio-demographic characteristics of elderly individuals residing in selected communities. The cross-sectional design enabled the collection of data from participants at a single point in time for analysis and comparison.

Study Setting

The study was conducted in selected urban and rural communities of Punjab between January 2025 and November 2025 (Figure 1). The selected areas represented diverse socio-economic and living conditions, allowing inclusion of elderly participants from different backgrounds. Data collection was carried out through community visits and direct interaction with the participants.

Study Population

The study population comprised elderly individuals aged 60 years and above who were permanent residents of the selected study areas. Participants were approached through household visits, and those willing to participate were included in the study after obtaining informed consent.

Sample Size

A total of 260 participants were included in the study. The sample size was considered adequate to provide reliable information regarding the variables under investigation and to allow meaningful statistical analysis of the collected data.

Inclusion Criteria

- Age ≥60 years
- Permanent resident of study area
- Willingness to participate

Exclusion Criteria

- Critically ill individuals
- Severe psychiatric illness
- Non-consenting participants

Data Collection

The following parameters were assessed:

- Sociodemographic profile
- Chronic illnesses
- Nutritional status
- Body mass index
- Physical activity
- Activities of daily living (ADL)
- Lifestyle practices

Statistical Analysis

Data were analyzed using SPSS version 26.0. Chi-square test and logistic regression analysis were applied. p-value <0.05 was considered statistically significant.

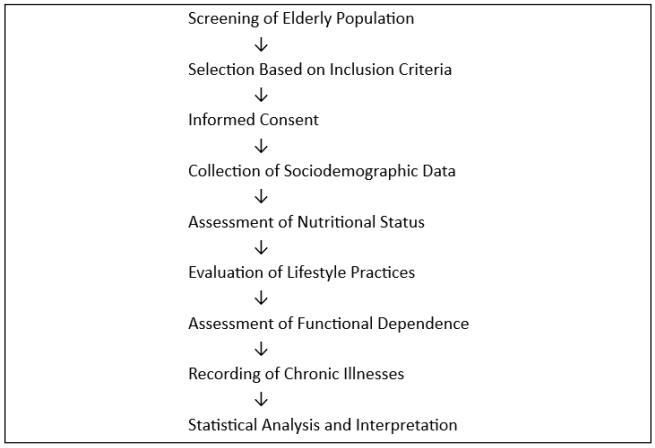

Figure 1.Study design

Results

Table 1.Sociodemographic Characteristics of Participants

Variable	Frequency (n=260)	Percentage
Age 60–69 years	118	45.4%
Age 70–79 years	92	35.4%
Age ≥80 years	50	19.2%
Male	146	56.2%
Female	114	43.8%
Rural residents	154	59.2%
Illiterate	102	39.2%
Physically inactive	116	44.6%

Table 2.Prevalence of Geriatric Morbidities

Morbidity	Frequency	Percentage
Hypertension	125	48.1%
Diabetes Mellitus	89	34.2%
Osteoarthritis	82	31.5%
Cardiovascular Disease	42	16.2%
Chronic Respiratory Disease	30	11.5%
Visual Impairment	74	28.5%
Hearing Impairment	46	17.7%

Table 3.Functional Dependence among Elderly Participants

Functional Status	Frequency	Percentage
Independent	124	47.7%
Mild Dependence	62	23.8%
Moderate Dependence	48	18.5%
Severe Dependence	26	10.0%

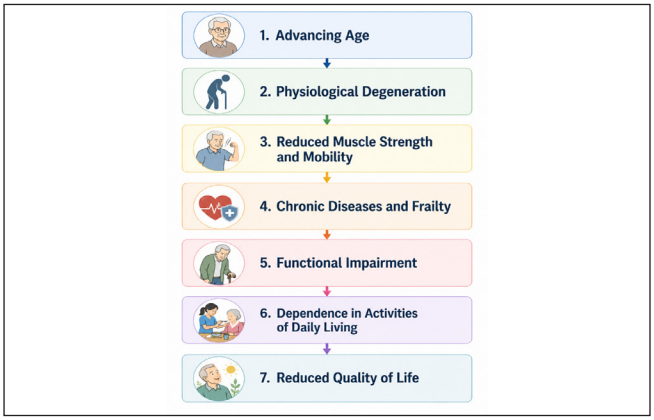

Figure 2.Aging and Functional Decline

Discussion

The present study assessed the prevalence of geriatric morbidities and functional dependence among elderly individuals residing in selected communities of Punjab, India. The findings demonstrated a high burden of chronic diseases, nutritional problems, and functional impairment among older adults, highlighting the growing healthcare challenges associated with population aging in developing countries.

Hypertension emerged as the most common chronic illness among elderly participants in the present study. Similar findings have been reported in several Indian and international studies where hypertension constituted one of the leading geriatric health problems.[5,8] Advancing age is associated with progressive vascular stiffness, endothelial dysfunction, reduced arterial compliance, and altered autonomic regulation, all of which contribute to elevated blood pressure among older adults.[15] Poorly controlled hypertension substantially increases risk of stroke, ischemic heart disease, heart failure, chronic kidney disease, and cognitive decline in elderly populations.

Diabetes mellitus was also highly prevalent among study participants. Aging is associated with impaired glucose metabolism, insulin resistance, reduced physical activity, obesity, and metabolic dysfunction, which collectively contribute to increased prevalence of diabetes mellitus among elderly individuals.[16] Chronic hyperglycemia significantly affects cardiovascular, neurological, renal, and visual health, thereby increasing morbidity and functional dependence among older adults.

Osteoarthritis represented another major health problem identified during the study. Degenerative joint disease commonly affects elderly populations because of age-related cartilage degeneration, chronic inflammation, obesity, reduced muscle strength, and cumulative mechanical stress.[17] Osteoarthritis frequently causes chronic pain, reduced mobility, gait instability, and difficulty performing activities of daily living. Consequently, elderly individuals with musculoskeletal disorders often experience reduced independence, social isolation, depression, and poor quality of life.

The present study additionally demonstrated substantial prevalence of visual and hearing impairment among elderly participants. Sensory impairments are highly prevalent during aging and significantly affect communication, mobility, psychological well-being, and functional capacity.[18] Visual impairment increases risk of falls, fractures, medication errors, and dependency, while hearing loss contributes to social withdrawal, loneliness, cognitive decline, and depression.

Functional dependence was significantly associated with advancing age, multimorbidity, poor nutritional status, and physical inactivity. Similar observations have been reported in previous geriatric studies where chronic illnesses and frailty substantially affected activities of daily living.[7,19] Functional decline among elderly individuals often results from cumulative physiological deterioration involving musculoskeletal weakness, neurological impairment, balance disturbances, reduced endurance, and chronic disease burden.

Approximately one-third of participants demonstrated moderate-to-severe dependence in activities of daily living, indicating considerable need for caregiver assistance and rehabilitative support. Functional impairment among elderly populations represents a major public health concern

because it increases hospitalization rates, healthcare expenditure, institutionalization, and caregiver burden.[20] Loss of independence additionally affects self-esteem, emotional health, and overall quality of life among older adults.

Frailty likely contributed significantly to functional dependence observed in the present study. Frailty syndrome is characterized by decreased physiological reserve, muscle weakness, exhaustion, slow walking speed, weight loss, and reduced physical activity.[21] Frail elderly individuals are more vulnerable to infections, falls, fractures, disability, hospitalization, and mortality. Early recognition of frailty is therefore essential for implementing preventive and rehabilitative interventions aimed at preserving independence and mobility.

The findings of the present study also highlight the important role of nutritional status in geriatric health. Elderly individuals frequently experience inadequate nutritional intake because of poor appetite, chewing difficulties, chronic illnesses, socioeconomic limitations, medication effects, and social neglect.[22] Malnutrition and sarcopenia contribute significantly to muscle weakness, frailty, immune dysfunction, delayed wound healing, and functional decline. Nutritional assessment and dietary counseling should therefore be integrated into routine geriatric healthcare services.

Physical inactivity was another important factor associated with chronic disease burden and functional dependence among elderly participants. Sedentary lifestyle contributes to obesity, insulin resistance, hypertension, osteoporosis, sarcopenia, cardiovascular disease, and reduced mobility.[23] Regular physical activity improves muscle strength, cardiovascular fitness, balance, joint flexibility, and mental health while reducing risk of falls and disability. Community-based exercise and rehabilitation programs may therefore significantly improve functional outcomes among older adults.

The present study additionally reflects the growing burden of multimorbidity among elderly populations in India. Many participants suffered from two or more chronic conditions simultaneously, requiring multiple medications and long-term healthcare support. Multimorbidity increases complexity of clinical management and predisposes elderly individuals to polypharmacy, adverse drug reactions, medication non-compliance, and frequent hospitalization.[24]

Mental health concerns among elderly populations also deserve significant attention. Chronic illnesses, disability, loneliness, financial dependency, bereavement, and reduced social support frequently contribute to depression and anxiety among older adults.[25] Psychological distress may further worsen physical functioning and treatment adherence. Comprehensive geriatric assessment should therefore include evaluation of mental health and psychosocial well-being.

Rural elderly populations in Punjab face several unique healthcare challenges including poor accessibility to healthcare facilities, transportation difficulties, financial dependency, limited health literacy, and inadequate specialized geriatric services.[11] Migration of younger family members and changing family structures have further reduced traditional caregiver support systems in many communities. Strengthening primary healthcare infrastructure and expanding community-based geriatric outreach services are therefore essential.

Preventive healthcare strategies play a crucial role in promoting healthy aging and reducing disease burden among elderly populations. Early screening for hypertension, diabetes mellitus, visual impairment, osteoporosis, malnutrition, cognitive decline, and depression may help identify high-risk individuals requiring intervention.[26] Vaccination programs, rehabilitation services, nutritional counseling, physiotherapy, and chronic disease management are equally important for improving geriatric health outcomes.

Community awareness programs focused on healthy aging, physical activity, balanced nutrition, medication adherence, and mental health support may substantially improve quality of life among elderly individuals. Family involvement and caregiver education are also important components of comprehensive geriatric care.

The present study highlights the urgent need for strengthening geriatric healthcare services in India. Specialized geriatric clinics, rehabilitation centers, long-term care facilities, and trained healthcare professionals are required to address the growing healthcare needs of aging populations.[27] Integration of geriatric care into primary healthcare systems and implementation of national healthy aging policies may significantly improve elderly healthcare delivery.

Despite important findings, the present study has certain limitations. Being a cross-sectional study, causal relationships could not be established. The study was conducted in selected communities of Punjab and findings may not fully represent the entire elderly population of India. Larger multicentric longitudinal studies are therefore recommended for better understanding of geriatric health trends and healthcare needs.

Overall, the findings of the present study emphasize the growing burden of chronic diseases and functional dependence among elderly individuals in Punjab and

highlight the importance of preventive geriatric healthcare strategies aimed at promoting healthy aging, independence, and improved quality of life.

Conclusion

The aging population represents one of the most important public health challenges of the modern era, particularly in developing countries such as India where demographic transition is occurring rapidly. The present study demonstrated a high prevalence of geriatric morbidities and functional dependence among elderly individuals residing in selected communities of Punjab. Chronic diseases including hypertension, diabetes mellitus, osteoarthritis, cardiovascular disease, visual impairment, and respiratory disorders were highly prevalent among the study participants and significantly affected their physical functioning and quality of life.

The findings of the study highlight that advancing age is strongly associated with increasing burden of multimorbidity, frailty, nutritional deficiencies, reduced mobility, and dependency in activities of daily living. Functional dependence observed among elderly individuals reflects the cumulative impact of physiological aging, chronic illnesses, physical inactivity, and inadequate nutritional status. Elderly individuals with multiple comorbidities frequently experience difficulty performing routine self-care activities such as bathing, dressing, walking, toileting, and feeding, thereby increasing dependence on caregivers and healthcare services.

Hypertension emerged as the most common geriatric health problem identified in the study, emphasizing the growing burden of cardiovascular diseases among aging populations. Poorly controlled hypertension significantly increases risk of stroke, ischemic heart disease, heart failure, renal impairment, and cognitive decline among elderly individuals. Similarly, diabetes mellitus and obesity contribute substantially to metabolic dysfunction, vascular complications, neuropathy, reduced mobility, and frailty.

Musculoskeletal disorders such as osteoarthritis were also major contributors to disability and functional decline among study participants. Chronic joint pain, stiffness, and reduced mobility frequently impair independence and increase risk of falls, fractures, social isolation, and psychological distress. Early rehabilitation, physiotherapy, exercise promotion, and pain management interventions are therefore essential for preserving mobility and functional capacity among older adults.

The study additionally demonstrated considerable prevalence of visual and hearing impairment among elderly individuals. Sensory impairments significantly affect communication, balance, cognitive functioning, medication adherence, and overall quality of life. Routine sensory screening and timely corrective interventions may therefore improve independence and reduce disability among aging populations.

Poor nutritional status and physical inactivity emerged as important factors associated with frailty and functional impairment. Elderly individuals commonly experience inadequate nutritional intake because of poor appetite, chronic illnesses, financial limitations, dental problems, and social neglect. Malnutrition and sarcopenia contribute significantly to muscle weakness, reduced endurance, immune dysfunction, and increased vulnerability to infections and disability. Nutritional assessment, dietary counseling, and community-based nutritional support programs are therefore crucial components of geriatric healthcare.

The findings also emphasize the importance of promoting physical activity among elderly populations. Regular exercise improves cardiovascular health, muscle strength, joint flexibility, balance, bone density, metabolic function, and mental well-being while simultaneously reducing risk of falls and disability. Community-level physical activity programs and age-appropriate rehabilitation initiatives may therefore substantially improve healthy aging outcomes.

Mental health and psychosocial well-being are equally important components of geriatric care. Elderly individuals frequently experience loneliness, depression, anxiety, financial dependency, and reduced social interaction due to chronic illnesses, bereavement, migration of family members, and changing family structures. Comprehensive geriatric care should therefore include psychological support, social engagement programs, caregiver assistance, and mental health counseling.

The present study further highlights the urgent need for strengthening geriatric healthcare infrastructure in India. Specialized geriatric clinics, rehabilitation centers, long-term care facilities, community-based elderly care programs, and trained healthcare professionals are essential for addressing the complex healthcare needs of older adults. Integration of geriatric services into primary healthcare systems may facilitate early detection and management of chronic diseases and functional decline.

Public health policies focusing on healthy aging, preventive healthcare, nutritional support, rehabilitation, social security, and community participation are critically important for improving quality of life among elderly populations. Awareness programs promoting healthy lifestyle practices, regular medical checkups, medication adherence, balanced nutrition, vaccination, and physical activity may significantly reduce morbidity and dependency among older adults.

Family involvement and caregiver education also play a vital role in improving geriatric healthcare outcomes. Supportive family environments contribute significantly to emotional well-being, treatment adherence, functional independence, and social security among elderly individuals. Community-based caregiver support programs may further reduce caregiver stress and improve quality of care.

Although the present study provides valuable insights into geriatric health problems and functional dependence among elderly individuals in Punjab, larger multicentric longitudinal studies are required to better understand regional variations, healthcare needs, and long-term outcomes among aging populations in India.

Overall, the findings of the present study emphasize that early geriatric assessment, preventive healthcare strategies, chronic disease management, nutritional support, rehabilitation services, mental health care, and community-based interventions are essential for promoting healthy aging, preserving independence, reducing disability, and improving overall quality of life among elderly populations.

Conflict of Interest: None

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