ORIGINAL ARTICLE

Prevalence and Associated Factors of Geriatric Syndromes Among Older Adults in Southern Kyrgyzstan

Sagynali Mamatov[1], Mira Arstanbekova[1], Diana Smailova[1], Merim Murzaibragimova[2], Chynara Kasymbaeva[1], Gilbera Romankulova[3], Medina Zheenbaeva[4], Amanai Kadyrbaeva[1]

[1]Department of Hospital Internal Medicine with a course of Hematology, I. K. Akhunbaev Kyrgyz State Medical Academy, Bishkek, Kyrgyzstan, [2]Department of Quality Management of Medical Services, Clinical Hospital of the Office of the President and the Government of the Kyrgyz Republic, Bishkek, Kyrgyzstan, [3]Department of Public Health and Public Care, I. K. Akhunbaev Kyrgyz State Medical Academy, Bishkek, Kyrgyzstan, [4]Department of Normal, Pathological Physiology and Pharmacology, Faculty of Medicine, Osh State University, Osh, Kyrgyzstan

Abstract

Background: Geriatric syndromes (GSs) are complex clinical conditions that significantly affect morbidity and mortality in older adults. This cross-sectional study aimed to evaluate the occurrence of GSs and determine the factors associated with multiple GSs among 570 older adults aged 65–94 years in the southern region of the Kyrgyz Republic. **Methods:** Participants underwent a comprehensive geriatric evaluation to examine frailty syndrome, depression, malnutrition, orthostatic hypotension, urinary incontinence, fecal incontinence, cognitive impairment, basic dependence in daily activities, falls, visual impairment, hearing impairment, sensory deficits, and chronic pain syndrome. **Results:** 90.4% of the participants had at least one GS, with 76.2% experiencing two or more. The most prevalent GSs were visual and hearing impairment, chronic pain syndrome, dependency in daily life, cognitive impairment, depression, urinary incontinence, malnutrition, and risk of malnutrition. The prevalence of frailty syndrome was 25.2%, whereas pre-frailty was observed in 31.5% of the cases. Factors associated with frailty syndrome included being female, older age, poor socioeconomic conditions, living alone, and lower levels of education. Oral health evaluation revealed a high prevalence of periodontal disease, bone loss, and edentulousness. **Conclusion:** The findings highlight the need for comprehensive geriatric evaluation, collaborative care models, and preventive measures in primary healthcare to reduce the impact of geriatric conditions and improve the quality of life of Kyrgyzstan's elderly population.

Key words: Cognitive impairment, frailty, geriatric syndromes, multimorbidity, older adults, quality of life

INTRODUCTION

Geriatric syndromes (GSs) are complex clinical conditions that are common among older adults and do not fit into specific disease categories. These conditions significantly affect morbidity and mortality in older adults. Falls, cognitive decline, delirium, frailty, urinary incontinence, and polypharmacy are the most frequent GSs.[1-3] These syndromes develop from impairments across physiological systems, reducing the ability to cope with health issues.[2] Risk factors include advanced age, cognitive and functional impairment, and reduced mobility. Vascular disorders and aging are key contributors, making vascular health crucial for prevention.[3]

The intricacy of GSs stems from their complex nature and the presence of multiple risk factors. Frailty and malnutrition exert

Address for correspondence:
Sagynali Mamatov, Department of Hospital Internal Medicine with a course of Hematology, I. K. Akhunbaev Kyrgyz State Medical Academy, Bishkek, Kyrgyzstan.
E-mail: sgn.mamatov@gmail.com

Received: 17-08-2025
Revised: 22-09-2025
Accepted: 28-09-2025

more than double the influence of other factors on survival rates in older adults.[4] These syndromes are frequently underdiagnosed in both community and healthcare settings.[5] In elderly cancer patients, GSs such as polypharmacy and depression occur more frequently, complicating treatment. Screening tools help identify at-risk individuals, enabling the implementation of supportive care.[2]

Elements such as socioeconomic status, education, health conditions, and lifestyle decisions influence GSs. Older individuals who are homeless, less educated, and have multiple health issues face a higher risk.[6] Addressing these factors is essential for developing prevention strategies that enhance the quality of life and reduce the risks associated with GSs.[7]

As populations age, there is a growing need to focus on the health of older adults. In this demographic, individual illnesses and multiple chronic conditions are becoming increasingly prevalent, leading to substantial healthcare expenses. GSs are such comorbidities, including pressure sores, urinary incontinence, falls, reduced functionality, and delirium.[1] An increase in GS is linked to a higher risk of physical disability and decreased life satisfaction.[1,8]

Internationally, the Kyrgyz Republic has not yet been classified as an aging nation. As of early 2024, those aged 65 and older comprise 5.7% of the population, totaling 407.9 thousand individuals. This percentage is lower than that of other Commonwealth of Independent States countries.[9] UN projections indicate that by 2030, the share of the elderly population in Kyrgyzstan, aged 65 and above, will reach nearly 7%.[10]

Factors linked to GS include being over 65 years old, having an alcohol use disorder, experiencing functional impairments such as mobility or cognitive issues, having a history of falls, suffering from medical conditions with comorbidities, and using medications such as psychoactive drugs.[8,11] Furthermore, socioeconomic status, including country of birth, education, occupation, income, and wealth throughout life, is related to psychological, physical, and cognitive health, as well as mortality in older age.[11]

Research on multimorbidity and GSs has been conducted in social inpatient facilities for the elderly in the Kyrgyz Republic.[12,13] However, studies focusing on broader society are lacking. Therefore, it is crucial to investigate the prevalence of key GSs among older adult patients in clinical settings. Addressing this issue can help enhance medical and social services and improve the quality of life of patients.

This study aimed to evaluate the occurrence of GSs and determine the factors associated with multiple GSs among older adults residing in the southern region of the Kyrgyz Republic.

METHODS

This observational, cross-sectional study was conducted from June 2022 to December 2024 at Family Medicine Centers in the Osh Region, Kyrgyz Republic. A total of 570 patients aged 65–94 years participated in the study. The participants were divided into three age groups: Group 1 (65–74 years): $n = 210$; Group 2 (75–84 years): $n = 207$; and Group 3 (85–94 years): $n = 153$.

Participants were eligible if they (1) were 65 years or older, (2) were enrolled at a Family Medicine Center in the Osh Region, and (3) could provide written informed consent. Individuals were excluded if they had severe acute illness, cognitive impairment that prevented questionnaire completion, or if they declined to participate.

A thorough geriatric evaluation was conducted, examining the following GSs: Frailty syndrome, depression, malnutrition, orthostatic hypotension, urinary incontinence, fecal incontinence, cognitive impairment, basic dependence in daily activities, falls within the past year, visual impairment, hearing impairment, sensory deficits, and chronic pain syndrome.

The Mini–Mental State Examination (MMSE) questionnaire was utilized to assess cognitive function.[14] During the informed consent process, participants' orientation, comprehension, and writing skills were evaluated by asking them to provide personal information, follow the instruction "Turn the page," and write the sentence "I have no complaints." The practical application of the MMSE instructions was monitored during the Romberg test.

The 15-item geriatric depression scale evaluated depressive symptoms.[14] A physician and nurse conducted interviews to ensure accurate responses. Scores were interpreted using established thresholds, with higher scores indicating more severe depressive symptoms.

Frailty screening was evaluated using the "Age is Not a Hindrance" questionnaire, validated for the Kyrgyz population.[15] This assessment covers eight areas: Weight, vision, hearing, injuries, mood, memory, urination, and walking ability. Each affirmative answer was scored 1 point. The scores were interpreted as follows: 3 points indicated likely frailty syndrome, requiring geriatric consultation; 2 points suggested pre-frailty ("preasthenia"), with geriatric consultation recommended; and 0 points indicated no frailty syndrome.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) Statistics for Windows, Version 23.0 (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). Descriptive statistics were used to summarize the initial characteristics. The Student's *t*-test was used to compare continuous variables between groups. Statistical significance was set at $P < 0.05$. The Ethics Committee of I.K. Akhunbaev Kyrgyz State Medical

Academy approved this study (protocol no. 5, 20 May 2022). All procedures complied with the Declaration of Helsinki, and written informed consent was obtained from the participants before enrollment.

RESULTS

The study included 570 elderly people with a mean age of 79.12 ± 10.44 years. Of these, 349 individuals (61.2%) resided in rural areas, 390 (68.4%) were women, 309 (54.2%) had a high level of education, 369 (64.7%) were married, 170 (30.4%) maintained a normal weight, and 285 (50.0%) reported being in good health [Table 1].

The mean BMI indicated excess body weight, with 36.8% of patients having excess weight, which was higher than the 30.4% of patients with normal weight. Most elderly (66.3%) resided with their families, while 33.7% were single, and one-third were married. The group comprised people with varying education levels, from primary (20.7%) to higher education (54.2%), with 25.1% completing secondary education. Among those aged >65 years, 30.2% remained employed. In the 85-94 age group, more were single (45.8%) and living alone (46.4%), with lower education and financial resources, and none were working.

Analysis of the disease spectrum showed that hypertension, coronary heart disease, diabetes mellitus, cerebrovascular diseases, hyperlipidemia, peripheral vascular diseases, malignant tumors, gastrointestinal diseases, and respiratory diseases were prevalent [Table 2]. Multimorbidity, defined as the presence of two or more chronic conditions, was observed in 85.9% of patients.

Table 1: Sociodemographic characteristics of the patients included in this study

Indicators	Total (*n*=570)	65–74 years (*n*=210)	75–84 years (*n*=207)	85–94 years (*n*=153)	*P*-value
Age, years	79.12±10.44	70.3±7.8	77.4±8.6	89.1±9.4	0.002
Residence					
Rural	349 (61.2)	127 (60.5)	184 (88.9)	38 (24.8)	0.002
Sex					
Female	390 (68.4)	162 (77.1)	133 (64.2)	95 (62.1)	0.043
Male	180 (31.6)	48 (22.9)	74 (35.7)	58 (37.9)	0.043
Body mass index, kg/m^2	26.8±3.72	31.0±4.62	27.6±4.29	23.5±3.93	0.001
Weight categories					
Underweight	81 (14.2)	19 (9.0)	27 (13.0)	35 (22.9)	0.001
Normal	173 (30.4)	61 (29.0)	69 (33.3)	43 (28.1)	0.001
Overweight	210 (36.8)	78 (37.1)	81 (39.1)	51 (33.3)	0.623
Obesity	106 (18.6)	52 (24.8)	30 (14.5)	24 (15.7)	0.001
Marital status					
Single/divorced/ widowed	201 (35.3)	43 (20.5)	88 (42.5)	70 (45.8)	<0.001
Married	369 (64.7)	167 (79.5)	119 (57.5)	83 (54.2)	<0.001
Living arrangement					
Alone	192 (33.7)	41 (19.5)	80 (38.6)	71 (46.4)	<0.001
With family	378 (66.3)	177 (84.3)	115 (55.5)	86 (56.2)	<0.001
Education					
Primary	118 (20.7)	37 (17.6)	51 (24.6)	30 (19.6)	<0.001
Secondary	143 (25.1)	65 (30.9)	43 (20.8)	35 (22.9)	<0.001
Higher	309 (54.2)	108 (51.4)	113 (54.6)	88 (57.5)	<0.001
Currently working	172 (30.2)	121 (57.6)	46 (22.2)	5 (3.3)	<0.001
Material resources					
Low	133 (23.3)	41 (19.5)	39 (18.8)	53 (34.6)	<0.001
Average	261 (45.8)	137 (65.2)	91 (43.9)	33 (21.6)	<0.001
High	176 (30.9)	32 (15.2)	77 (37.2)	67 (43.8)	<0.001

Data presented as *n* (%), *n*: Number of patients, %: Percentage of patients, Mean±Standard Deviation (M±m). Statistically significant differences between age groups at *P*<0.001

This study examined the quantity of oral medication consumed. The study group had a mean intake of four oral drugs, with 70.3% using more than four types and 11.0% using only one type. We then assessed the oral medications used by the participants [Figure 1]. The findings showed that aspirin was consumed by half of the group ($n = 285$, 50.0%), followed by calcium channel blockers ($n = 214$, 37.5%), statins ($n = 193$, 33.9%), β-blockers ($n = 152$, 23.2%), P2Y12 receptor antagonists ($n = 127$, 22.3%), nitrates ($n = 91$, 15.9%), angiotensin receptor blockers ($n = 77$, 13.5%), trimetazidine ($n = 68$, 11.9%), angiotensin converting enzyme inhibitors ($n = 52$, 9.1%), and proton pump inhibitors ($n = 40$, 7.2%) as the top medications taken.

A total of 70.5% of the participants in this study (70.5%) utilized assistive devices. The most common assistive devices were glasses/lenses (84.6%), dentures (75.6%), canes (30.1%), and urinary pads (17.7%). The third group used assistive devices more frequently.

Based on the geriatric assessment, frailty syndrome prevalence among those aged ≥65 years was 25.2%, while pre-frailty was observed in 31.5% of cases [Table 3]. The predominant GSs were visual and hearing impairments (69.1% and 53.0%, respectively), chronic pain syndrome (65.9%), dependency in daily life (47.0%), cognitive impairment (41.6%), depression (38.7%), urinary incontinence (29.1%), malnutrition (25.5%), and risk of malnutrition (32.6%). The least common GSs were fecal incontinence (1.9%) and orthostatic hypotension (11.0%). Less than 1% of elderly patients were fully reliant on external assistance and required long-term care [Table 3].

Geriatric evaluation findings show that all GSs increase with age, except for fecal incontinence, which may be underreported due to disclosure hesitance. The most common GSs, affecting over 50% of patients in both groups, were polypharmacy, chronic pain syndrome, falls within the past year, and visual and hearing impairments.

The distributions of individuals with none, one, two, three, four, five, or more GSs were 9.6%, 14.2%, 16.3%, 23.3%, 29.8%, and 50.9%, respectively [Figure 2].

To identify the elements linked to frailty syndrome, we conducted a comparative analysis based on the presence of the syndrome. The study found that 25.2% of participants had frailty syndrome (confidence interval 95%, 15.6–33.1). Among those affected, 61.4% were women, and 71.0% were aged ≥85 years. Patients with frailty syndrome were characterized by poor socioeconomic conditions, mainly comprising individuals living alone without children. Fewer individuals were in formal marriages, living with their families, or having children.

The educational backgrounds of the study participants varied based on frailty syndrome diagnosis. Those diagnosed with frailty syndrome had a higher proportion of primary education and fewer with higher education. This group also showed more limited opportunities, with fewer rating their material opportunities as average or high. Some patients remained employed.

The likelihood of developing frailty syndrome was inversely related to socioeconomic status, with lower status correlating with higher syndrome frequency. Being married and living with family contributed to a 37% reduction in the risk of frailty syndrome. In addition, employed individuals experienced

Table 2: Disease structure and reasons for hospitalization in the study population

Nosology	*n* (%)
Hypertension	442 (77.5)
Ischemic heart disease	173 (30.3)
Peripheral vascular diseases	139 (24.4)
Cerebrovascular diseases	94 (16.5)
Respiratory diseases	78 (13.7)
Diabetes mellitus	76 (13.3)
Gastrointestinal diseases	65 (11.4)
Male reproductive system diseases	61 (10.7)
Other heart diseases	39 (6.8)
Malignant tumors	32 (5.6)

Data presented as *n* (%), *n*: Number of patients, %: Percentage of patients

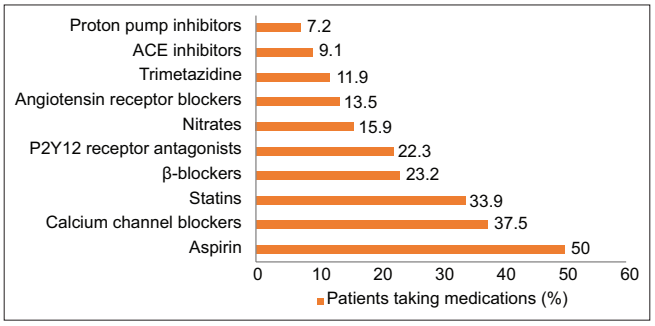

Figure 1: Ten main groups of drugs were administered to the patients included in this study

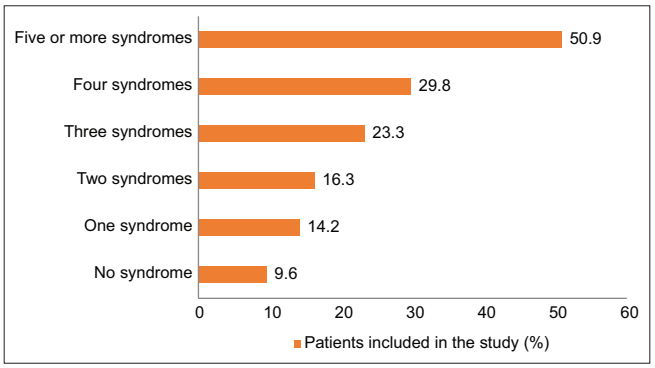

Figure 2: Comparative analysis of the incidence of geriatric syndromes in patients aged ≥65 years

Table 3: Frequency of geriatric syndromes in patients aged ≥65 years

Syndrome	Total (%)	65–74 years (*n*=210)	75–84 years (*n*=207)	85–94 years (*n*=153)	*P*-value
Cognitive impairment	237 (41.6)	44 (20.9)	84 (40.6)	109 (71.2)	<0.001
Depression	221 (38.7)	89 (42.4)	109 (52.7)	23 (15.0)	<0.001
Orthostatic hypotension	63 (11.0)	13 (6.2)	32 (15.5)	18 (11.8)	0.552
Chronic pain syndrome	376 (65.9)	96 (45.7)	152 (73.4)	128 (83.7)	<0.001
Urinary incontinence	166 (29.1)	31 (14.8)	77 (37.2)	58 (37.9)	<0.001
Fecal incontinence	11 (1.9)	0 (0.0)	5 (2.4)	6 (3.9)	0.897
Falls in previous year	304 (53.3)	193 (91.9)	142 (68.6)	31 (20.3)	<0.001
≥2 falls/year	166 (54.6)	65 (30.9)	90 (43.5)	11 (7.2)	<0.001
High risk of falls	81 (26.6)	17 (8.1)	28 (13.5)	36 (23.5)	<0.001
Visual impairment	394 (69.1)	131 (62.4)	149 (72.0)	114 (74.5)	<0.001
Hearing impairment	302 (53.0)	78 (37.1)	108 (52.2)	116 (75.8)	<0.001
Dependence in daily life	268 (47.0)	78 (37.1)	151 (72.9)	53 (34.6)	<0.001
Malnutrition	145 (25.5)	8 (3.8)	46 (22.2)	91 (59.5)	<0.001
Pre-frailty	180 (31.5)	77 (36.7)	63 (30.4)	40 (26.1)	<0.001
Frailty syndrome	144 (25.2)	3 (1.4)	57 (27.5)	84 (54.9)	<0.001

Data presented as n (%), n: Number of patients, %: Percentage of patients. Statistically significant differences between age groups at *P*<0.001

half the risk of developing this syndrome compared to unemployed individuals.

Patients underwent an oral health evaluation through a bedside examination and scored between 8 and 24. Scores of 8–10 signified normal oral health, 11–14 indicated moderate impairment, and 15–24 denoted severe impairment. Periodontal disease was prevalent in 76.8% (438 out of 570) of the participants, with 60.0% (263 out of 438) showing clinical signs of gingivitis. Meanwhile, 40.4% (177 out of 438) of the patients exhibited signs of moderate-to-severe periodontal disease. Most patients (78.5%, 344 out of 438) displayed clinically detectable crest bone resorption, potentially linked to edentulism or severe periodontal disease. Among those examined, 34.7% (152 out of 438) had complete maxillary edentulism and/or retained roots without prosthetics. The oral health scores ranged from 3 to 8. Only 28.5% (125 out of 438) achieved a score of 6, while over half scored below 6 (67.6%, 296 out of 438). Of these, 58.1% (172 out of 296) received a score of 5, 50.0% (148 out of 296) scored 4, and 8.1% (24 out of 296) scored 3 points.

DISCUSSION

This study detailed the occurrence of GS and factors linked to multiple GSs among the elderly in Kyrgyzstan. Our findings showed that the location of residence, age, marital status, body weight, and self-assessed health were significantly related to multiple GSs in older adults.

The results of this study on pre-frailty and frailty syndrome align with those of earlier studies, such as that of Sanford *et al*., who found that 41.0% and 30.4% of 11,344 individuals aged ≥65 years in Missouri met the criteria for preasthenia and frailty, respectively.[11] A cross-sectional study in Brazil from 2009 to 2010 with 1,705 participants aged ≥60 years reported a 32% prevalence of polypharmacy, which was lower than that observed in our study.[16] The higher polypharmacy rate in our study could be attributed to over a quarter of older adults in Kyrgyzstan having multiple chronic conditions.

This study found that 90.4% of older adults had at least one GS, with 76.2% experiencing two or more. This rate is higher than that reported by Yang *et al*., who found that 40.2% of community-dwelling seniors had more than two GSs.[17] The differences in the prevalence of multiple GSs could be due to regional and lifestyle factors, which require further investigation.

Research is increasingly focusing on physical and mental GSs. According to Veizi *et al*., urinary incontinence was identified as the most prevalent GSs, affecting 69% of individuals, followed by polypharmacy (60 %) and depression (43 %).[18] A cross-sectional study in Moscow outpatient clinics found that 34.8% of patients experienced reduced instrumental activities of daily living, 25.8% were at risk of malnutrition, 8.6% showed probable cognitive impairment, and 36.2% exhibited depressive symptoms.[19] Our findings align with research indicating a high prevalence of physical and mental GSs. This has implications for public health policies and medical resource distribution in Kyrgyzstan. Our study recommends that the government enhance medical resources for the elderly and create a network of medical services centered on primary health facilities and hospitals. In addition, healthcare professionals should implement the

traditional comprehensive assessment model, comorbidity management model, and multidisciplinary teamwork model to provide care to older adults, aiming to maintain and restore their functional status.

Oral health is crucial for older adults. According to the nursing staff at the inpatient facilities in this study, dental care is often overlooked, with family members primarily responsible for maintaining oral health. Research shows that nursing teams hesitate to prioritize dental care, primarily due to insufficient dental knowledge and unease about performing oral procedures.[20,21] In addition, patients often neglect oral hygiene and resist help from facility staff owing to behavioral issues associated with GSs. Despite this, treatment programs for older adult patients with GSs lack a dental care system.

Although this study offers insights, it has some limitations. As it was cross-sectional, it did not establish causal links. As the study was conducted in only one city, the findings may not apply to other areas. Given these limitations, additional research is needed to validate the results and extend their applicability.

CONCLUSION

This study evaluated GSs among older adults in the Osh Region of the Kyrgyz Republic. The results showed high rates of multimorbidity, frailty, polypharmacy, and functional impairment, with most participants experiencing two or more GSs. The prevalent conditions included hypertension, chronic pain, cognitive impairment, depression, and sensory deficits, which increased with age. Frailty was linked to being female, older, having a lower socioeconomic status, and social isolation, while protective factors included being married, living with family, and remaining employed.

Oral health issues, including periodontal disease, bone loss, and toothlessness, are prevalent and neglected, highlighting the need to incorporate dental care into geriatric healthcare. These findings emphasize the need for thorough geriatric evaluation, collaborative care models, and preventive measures in primary healthcare. Enhancing community-based geriatric services and socioeconomic support could reduce the impact of geriatric conditions, promote functional independence, and improve the quality of life of Kyrgyzstan's elderly population.

REFERENCES

1. Inouye SK, Studenski S, Tinetti ME, Kuchel GA. Geriatric syndromes: Clinical, research, and policy implications of a core geriatric concept. J Am Geriatr Soc 2007;55:780-91.
2. Magnuson A, Sattar S, Nightingale G, Saracino R, Skonecki E, Trevino KM. A practical guide to geriatric syndromes in older adults with cancer: A focus on falls, cognition, polypharmacy, and depression. Am Soc Clin Oncol Educ Book 2019;39:e96-109.
3. Strandberg TE, Pitkälä KH, Tilvis RS, O'Neill D, Erkinjuntti TJ. Geriatric syndromes--vascular disorders? Ann Med 2013;45:265-73.
4. Kane RL, Shamliyan T, Talley K, Pacala J. The association between geriatric syndromes and survival. J Am Geriatr Soc 2012;60:896-904.
5. Meyer AM, Becker I, Siri G, Brinkkötter PT, Benzing T, Pilotto A, *et al.* The prognostic significance of geriatric syndromes and resources. Aging Clin Exp Res 2020;32:115-24.
6. Brown RT, Kiely DK, Bharel M, Mitchell SL. Factors associated with geriatric syndromes in older homeless adults. J Health Care Poor Underserved 2013;24:456-68.
7. Wang LY, Hu ZY, Chen HX, Tang ML, Hu XY. Multiple geriatric syndromes in community-dwelling older adults in China. Sci Rep 2024;14:3504.
8. Bell SP, Vasilevskis EE, Saraf AA, Jacobsen JM, Kripalani S, Mixon AS, *et al.* Geriatric syndromes in hospitalized older adults discharged to skilled nursing facilities. J Am Geriatr Soc 2016;64:715-22.
9. Mamatov SM, Arstanbekova MA, Imanalieva FE, Kanatbekovna NA, Omurbekovich MA, Yethindra V, *et al.* About the status and prospects of gerontology and geriatrics in the Kyrgyz republic. IJFMT 2020;14:2028-31.
10. United Nations. Department of Economic and Social Affairs, Population Division. World Population Prospects; 2019. Available from: https://www.un.org/development/desa/pd/news/world-population-prospects-2019-0 [Last accessed on 2025 Aug 02].
11. Sanford AM, Morley JE, Berg-Weger M, Lundy J, Little MO, Leonard K, *et al.* High prevalence of geriatric syndromes in older adults. PLoS One 2020;15:e0233857.
12. Arstanbekova MA, Imanalieva FE, Mamatov SM, Aidarov ZA. The activities of a social in patient facility for the elderly people of Bishkek city and the State health of their wards. J Vestnik KRSU 2019;19:81-5.
13. Arstanbekova MA, Musakeev AO, Turdaliev SO, Azhimamotova RM, Ymynapazova RZ, Mamatov SM. The frequency of the main geriatric syndromes in elderly patients of the social institution of Kyrgyz republic. Adv Gerontol 2022;12:30-4.
14. Pinto TC, Machado L, Bulgacov TM, Rodrigues-Júnior AL, Costa ML, Ximenes RC, *et al.* Is the Montreal cognitive assessment (MoCA) screening superior to the mini-mental State examination (MMSE) in the detection of mild cognitive impairment (MCI) and Alzheimer's disease (AD) in the elderly? Int Psychogeriatr2019;31:491-504.
15. Shleptsova MV, Frolova EV. Prevalence of the main geriatric syndromes in geriatric practice in outpatient clinic and possible ways of its correction. Russ Fam Doct 2018;22:30-6.
16. Pereira KG, Peres MA, Iop D, Boing AC, Boing AF,

Aziz M, *et al.* Polypharmacy among the elderly: A population-based study. Rev Bras Epidemiol 2017;20:335-44.
17. Yang DC, Lee JD, Huang CC, Shih HI, Chang CM. Association between multiple geriatric syndromes and life satisfaction in community-dwelling older adults: A nationwide study in Taiwan. Arch Gerontol Geriatr 2015;60:437-42.
18. Veizi BG, Taşcı İ, Naharci MI. Geriatric syndromes in the population older than 90 years: The prevalence and association with chronic diseases. Australas J Ageing 2023;42:472-9.
19. Tkacheva ON, Runikhina NK, Ostapenko VS, Sharashkina NV, Mkhitaryan EA, Onuchina JS, *et al.* Prevalence of geriatric syndromes among people aged 65 years and older at four community clinics in Moscow. Clin Interv Aging 2018;13:251-9.
20. Yi Mohammadi JJ, Franks K, Hines S. Effectiveness of professional oral health care intervention on the oral health of residents with dementia in residential aged care facilities: A systematic review protocol. JBI Database System Rev Implement Rep 2015;13:110-22.
21. Willumsen T, Karlsen L, Naess R, Bjørntvedt S. Are the barriers to good oral hygiene in nursing homes within the nurses or the patients? Gerodontology 2012;29:e748-55.

Source of Support: Nil. **Conflicts of Interest:** None declared.