Sex disparities in older patients attending the european emergency departments: an EGERS sub-analysis

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Abstract

This study explores the epidemiology and sex-specific characteristics of geriatric patients presenting to 36 Emergency Departments (EDs) across 9 European countries (EGERS study). This sub-analysis investigates potential associations between sex disparities and various characteristics, including demographics, personal traits, clinical findings, and main clinical outcomes, both in the general study population and across different age groups (old: 65-74 years, older: 75-84 years, and oldest: 85 years and above). Overall, females were more represented than males (51.5% *vs*. 48.5%), and this difference increased with increasing age groups. Females were more likely to use home support services, were visited for traumatic causes, and had a history of falls. In contrast, males had higher rates of hospitalization in ordinary wards (45.4% *vs*. 41.2%) and intensive care units (9.8% *vs*. 7.6%). In-hospital mortality was also higher in males (9.3%) compared to females (7.5%), and the difference increases with increasing age. In ED patients, the male-to-female ratio favoured women, particularly among those aged 85+ years. Males had more comorbidities, such as coronary artery disease, dyslipidaemia, active malignancy, prior stroke, chronic renal failure, history of coronary events, chronic liver disease, excessive smoking and alcohol abuse. Females had more traumatic events and falls. Hospitalisation and mortality rates were higher in males, especially in the older and oldest age groups.

Introduction

The elderly are increasingly faced with difficulties in accessing adequate and timely care. This entails the need for individuals with limited access to primary care or specialist services to visit the ED.[1] The increase in elderly patients, who turn to EDs even for reasons not strictly linked to the emergency context, is creating more and more problems for healthcare organizations, leading to an overall increase in hospital admissions and longer stays, with a consequent rise in waiting times at the emergency room and overcrowding.[2]

The available data reveal a lack of knowledge and competence in the treatment and management of elderly subjects in the EDs: this results in an increased number of complications, functional decline, and unfavorable prognosi.[3,4] Although awareness of frailty

syndromes is growing, translating this knowledge into daily clinical practice remains challenging.[5]

Sex differences due to biological factors, personal risk profiles, and diagnostic and therapeutic uncertainties pose additional challenges for emergency physicians. In a recent study involving more than 5,000 patients over the age of 65 who visited 36 Emergency Departments (EDs) in 9 European countries (EGERS study), the epidemiological, clinical, and outcome characteristics of cases admitted to hospitals were examined.[6]

The present study presents a sub-analysis of the original database, aiming to explore in depth the associations between various patient characteristics and sex differences across different age subgroups.

Materials and Methods

Study design, population

The detailed design, methods, and main results of the EGERS study have been previously reported.[6] In brief, the study included 36 EDs across 9 European nations, *i.e.* [France (n=8), Turkey (n=7), Ireland (n=6), Hungary (n=5), Germany (n=4), Italy (n=2), Croatia (n=2), Norway (n=1), and Greece (n=1)]. This chart review analysis included all consecutive patients aged 65 and older who attended the ED between October 19 and November 30, 2020 (7 consecutive days). The first published original study reported patient demographic, clinical, and laboratory data. The national ethics committees approved the protocol, and all participants provided written informed consent for trial participation.[6]

The original study protocol excluded subjects transferred from other hospitals, those presenting to the ED with ongoing cardiopulmonary resuscitation, individuals with a 'do not resuscitate' order, those unwilling to participate, and those revisiting the ED during the study period.

Data collection included demographics, day of the week, time of admission (classified into three time slots: 08:00-16:00; 16:01-23:59; 00:00-08:00), major presenting complaints, initial vital signs upon presentation, main comorbidities, current medications, home support services, a history of falls within the last 6-months, and clinical findings at arrival in ED.

Major presenting complaints were categorized as traumatic, nontraumatic, or both. The following comorbidities were considered: Hypertension (HTN), Diabetes Mellitus (DM), history of Coronary Artery Disease (CAD), dyslipidemia, active malignancy, Chronic Obstructive Pulmonary Disease (COPD)/asthma, history of stroke, dementia/Alzheimer disease, Chronic Renal Failure (CRF), Left Ventricular Failure (LVF), prior percutaneous Coronary Intervention (PCI)/Coronary Artery Bypass Grafting (CAGB), Chronic Liver Disease (CLD), smoking (defined as active smoking or having stopped smoking within the last year), and history of alcohol abuse (defined as >30g/day for males and >20g/day for females).

Upon arrival, the following vital signs were considered: Systolic Blood Pressure (SBP) <100 mmHg, SBP >140 mmHg, Diastolic Blood Pressure (DBP) >90 mmHg, mean arterial pressure (MAP) >90 mmHg, pulse rate <60 beats/min, Pulse Rate (PR) >100 beats/min, Respiratory Rate (RR) >25 breaths/min., temperature >38 °C, Oxygen saturation (Sat O_2) <90% additional O_2 support, and Glasgow Coma Scale <15. Upon presentation, the Modified Early Warning Score (MEWS),[7] the Rapid Emergency Medicine Score (REMS), and the National Early Warning Score (NEWS)[8] were also calculated.

The primary outcome measures included the epidemiological characteristics and sex differences of elderly subjects presenting in Emergency Departments (EDs) across Europe, as well as the rates of hospitalization, intensive care unit admissions, and in-hospital mortality. All analyses were conducted in three different age groups: the old (65-74), the older (75-84), and the oldest (≥85).

Statistical analysis

Patients were classified based on their age. Normality analyses of the data were performed using the Kolmogorov–Smirnov and Shapiro–Wilk tests. The normally distributed quantitative variables were expressed as the mean ± SD, while non-normally distributed quantitative variables were expressed as the median (25th percentile–75th percentile, interquartile range – IQR). The categorical variables were expressed as frequencies (percentages).

The one-way ANOVA and Kruskal–Wallis tests were used to assess the inter-group differences in quantitative variables. The inter-group differences between categorical variables were evaluated using the Chi-square and Fisher's Exact tests as appropriate. To remove variables, we used multivariable logistic regression with forward stepwise selection, setting the P value threshold at 0.05. The Odds Ratio (OR) and 95% confidence intervals (95% CI) were also calculated. Two-tailed P values <0.05 were considered statistically significant. Statistical analyses were conducted using the Statistical Package for the Social Sciences SPSS/PC+, 20.0 edition). Cases with missing data for a variable were excluded from analyses pertaining to that variable but included in other analyses.

Results

The analysis of the original database of the EGERS study (5,765 patients) indicated that females were more represented (51.4%) than males (48.5%); this difference progressively increased with age (Table 1). The distribution of the encounters by day of the week ranged from 16.8% (15.9-17.8%) (95% CI) on Monday to 11.0% (10.2-11.9%) (95% CI) on Sunday, without differences between males and females.

Arrival time by time slot did not differed between males and females and was 53.7% (52.4-55.0%); (95% CI) from 08:00 to 16:00, 35.5% (34.3-36.7%) (95% CI) from 16:00 to midnight and 10.7% (10.0-11.6%) (95% CI) from 00:00 to 08:00.

Traumatic causes of presentation were more common in females (18.4%) compared to males (13.3%), and this difference increased proportionally with age (Table 1). Likewise, a history of falls was also more frequent in females (30.8%) in contrast to males (23.4%), as well as the availability of a home help service (28.7%) *vs*. (22.3%) (Table 1).

Main comorbidities, such as CAD, dyslipidemia, active malignancy, previous stroke, CRF, history of coronary events, CLD, excessive smoking, and alcohol abuse, were more frequent in males. At the same time, HTN and dementia were more common in females (Figure 1).

Chronic medications were reported in 85.7% (84.8%-86.6%) (95% CI) of cases. One or two medications were taken by 26.2%, (27.3%-25.0%) (95% CI) of subjects, three to four medications in 36.0% (34.8-37.3%) (95% CI), while five or more medications in 9.6%, (8.8%-10.4%) (95% CI) of subjects.

Vital signs upon presentation in the ED are shown in Table 2. An SBP >140 mmHg was more frequently registered in females, while an RR >25 breaths/min and a body temperature >38 °C in

males (Table 2) were more prevalent in males.

Main discharge or admission diagnoses, classified by ICD-10 coding categories, are reported in Table 3. Diagnoses of trauma, poisoning, and other consequences of external causes (S00-S88), those indicative of mental, behavioral, and neurodevelopmental disorders (F01-F99) were most commonly reported in females, in contrast diseases of the respiratory system (J00-J99) and genitourinary system (N00-N99) were most frequently reported in males (Table 3)

The Length of Stay (LoS) in the ED was 5 (3.0-8.0) hours (median [IQR]) without differences between males and females, while the time spent in the observation units did not differ (5.2 hours in males vs. 6.0 hours in females) (Figure 2). A total of 62 of 5,765 cases, 1.1% (0.8-1.4) (95% CI), died during ED stay, but no differences were found in relation to sex category or age group.

The hospitalization rate both in the ordinary ward and in intensive care unit was higher in men than in women (Figure 2), as was the length of hospital stay: males 5 days; (1.0-11.0), (95% CI) vs women 4 days (1.0-10.0),(95% CI, P<0.001).

In-hospital mortality was higher in men 9.3% (8.2%-10.4%) *vs*. 7.5% (6.5%-8.5%) (95% CI, P=0.017) (Figure 3). This difference between males and females increased with age (Figure 3).

In the logistic analysis, the variables entered the model for mortality were age in the older age categories, *i.e.* age 75-84 years (OR 1.64, 1.19-2.26) (95% CI; P=0.002), ≥ 85 years (OR 2.27; 1.61-3.22) (95% CI; P<0.001), trauma causes (OR 0.29, 0.14-0.60) (95% CI; P<0.001), an advanced NEWS level at arrival (OR 1.30, 1.25-1.35) (95% CI; P < 0.001), the presence of home support service (OR 1.40, 1.06-1.89) (95% CI; P=0.019), the need for intensive care (OR 0.60, 4.50-8.05) (95% CI; P<0.001). However, sex category was not included among the variables selected by the model.

Discussion

This sub-analysis of the EGERS study reveals that females, particularly in the older age groups, more frequently visited the ED due to traumatic causes and had a higher likelihood of requiring home support services and having a history of falls. In contrast, males had a higher burden of comorbidities, including CAD, dyslipidemia, active malignancy, previous stroke, CRF, history of coronary events, CLD, excessive smoking, and alcohol abuse. Males were more frequently hospitalized, both in ordinary wards and ICUs, and had a higher in-hospital mortality rate, especially in the oldest age groups.

Our findings confirm recent studies that report increased mor-

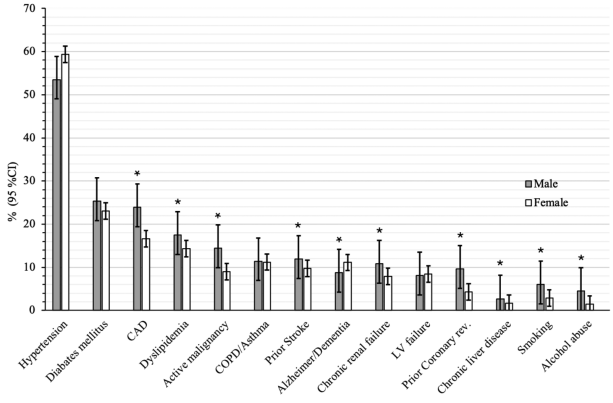

Figure 1. Main comorbidities of patients in relation to age or sex disparities. Data reported as number of cases and percent with 95% confidence intervals (95% CI). P<0.05 for significance.

Table 1. Patients' characteristics in relation to major complaint, home help service and history of falls in relation to sex categories and age groups: old (65-74 years), older (75-84 years), oldest (≥84 years). Data reported as number of cases, percent with 95% confidence intervals (95% CI).

	Males		Females		
	N cases	% (95% CI)	N cases	% (95% CI)	P
Age groups					
All Cases	2796	48.5 (47.2-49.8)	2967	51.4 (50.2-52.7)	
Old	1185	42.4 (40.5-44.2)	1077	36.3 (34.6-38.0)	<0.001
Older	1052	37.6 (35.8-39.4)	1039	35.0 (33.3-36.7)	
Oldest	561	20.0 (18.6-21.5)	85 1	28.7 (27.1- 30.3)	
Traumatic Major Complaint					
All cases	338	13.3 (11.9-14.6)	508	18.4 (17.0-19.9)	<0.001
Old	136	12.5 (10.5-14.4)	143	14.0 (11.9-16.1)	0.304
Older	116	12.3 (10.2-14.4)	167	17.5 (15.0-19.9)	0.002
Oldest	86	16.8 (13.6-20.0)	198	25.4 (22.3-28.4)	<0.001
Home Help Service					
All cases	537	22.3 (20.6-23.9)	742	28.7 (27.0-30.4)	<0.001
Old	134	12.9 (10.9-14.9)	117	12.2 (10.2-14.3)	0.619
Older	210	23.8 (21.0-26.6)	240	27.0 (24.1-29.9)	0.182
Oldest	193	39.5 (35.1-43.8)	385	52.0 (48.4-55.6)	<0.001
History of falls					
All cases	352	14.7 (13.2-16.1)	470	18.3 (16.8-19.8)	0.002
Old	97	9.4 (7.6-4.8)	98	10.4 (8.4-12.3)	0.670
Older	141	16.0 (13.6-18.4)	146	16.5 (14.1-19.0)	0.705
Oldest	114	23.4 (19.6-27.1)	226	30.8 (27.5-34.2)	0.015

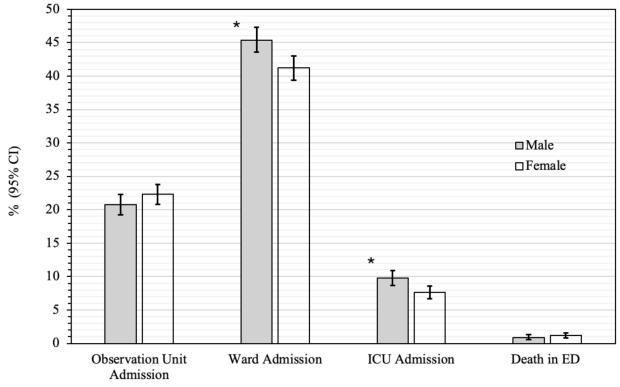

Figure 2. Main outcome measures of old patients in relation to sex categories. Data reported as number of cases and percent with 95% confidence intervals (95% CI). P<0.05 for significance.

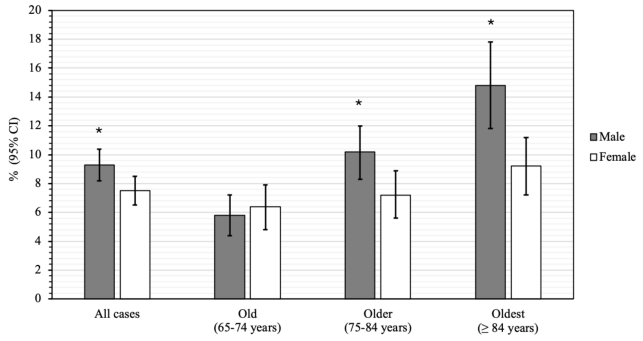

Figure 3. In hospital mortality of subjects visited in the ED, in relation to sex category in each age groups: old (65-74 years), older (75-84 years) oldest (≥84 years). Data reported as number of cases and percent with 95% confidence intervals (95% CI).P<0.05 for significance.

Table 2. Clinical findings at ED arrival in relation to sex differences and age categories: old (65-74 years), older (75-84 years) oldest (≥ 84 years). Data reported as number of cases, percent with 95% confidence intervals (95% CI).

	Males		Females		
	N = 2798	% (95% CI)	N=2967	% (95% CI)	P
SBP <100 mmHg	140	5.2 (4.4-6.1)	133	4.7 (3.9-5.5)	0.364
SBP >140 mmHg	1216	45.3 (43.5-47.2)	1431	50.5 (48.6-52.3)	<0.001
DBP >90 mmHg	629	23.5 (21.9-25.1)	647	22.8 (21.3-24.4)	0.573
MAP <65 mmHg	62	2.3 (1.7-2.9)	75	2.6 (2.1-3.2)	0.435
Pulse <60 beats/min	197	7.4 (6.4-8.4)	113	4.0 (3.3-4.7)	0.001
Pulse >100 beats/min	405	15.2 (13.9-16.6)	446	15.8 (14.5-17.2)	0.562
RR >25 breaths/min	205	9.6 (8.3-10.8)	166	7.5 (6.4-8.6)	0.014
Temperature <36°C	83	3.1 (2.4-3.8)	71	2.5 (1.9-3.1)	0.186
Temperature >38°C	70	2.6 (2.0-3.2)	37	1.3 (0.9-1.7)	<0.001
Sat O_2 <90%	187	7.1 (6.1-8.1)	182	6.5 (5.6-7.4)	0.365
O_2 support	404	16.7 (15.2-18.1)	394	14.9 (13.6-16.3)	0.096
GCS <15	277	9.9 (8.8-11.0)	362	12.2 (11.1-13.4)	0.011

Table 3. Most represented main ICD10 diagnosis code of patients in relation to sex categories. Data reported as number of cases and percent with 95% confidence intervals (95% CI).

	Males (N=2798)		Females (N= 967)		
ICD 10 Code groups	N cases	% (95% CI)	N cases	% (95% CI)	P
Diseases of the circulatory system (I00-I99)	398	14.7 (13.4-16.0)	447	15.4 (14.1-16.7)	0.371
Injury, poisoning and certain other consequences of external causes (S00-T88)	384	14.2 (12.9-15.5)	519	17.9 (16.5-19.3)	<0.001
Certain infectious and parasitic diseases (A00-B99)	359	13.3 (12.0-14.5)	324	11.2 (10.0-12.3)	0.024
Diseases of the respiratory system (J00-J99)	278	10.3 (9.1-11.4)	218	7.5 (6.6-8.5)	<0.001
Diseases of the digestive system (K00-K95)	267	9.9 (8.7-11.0)	305	10.5 (9.4- 11.6)	0.355
Diseases of the nervous system (G00-G99)	215	7.9 (6.9-9.0)	249	8.6 (7.6-9.6)	0.333
Diseases of the genitourinary system (N00-N99)	207	7.6 (6.6-8.6)	148	5.1 (4.3-5.9)	<0.001
Symptoms. signs and abnormal clinical and laboratory findings (R00-R99)	166	6.1 (5.2-7.0)	149	5.1 (4.3-5.9)	0.132
Diseases of the musculoskeletal system and connective tissue (M00-M99)	106	3.9 (3.2-4.6)	150	5.2 (4.4-6.0)	0.019
Diseases of the skin and subcutaneous tissue (L00-L99)	72	2.7 (2.1-3.3)	74	2.5 (2.0-3.1)	0.037
Diseases of the blood and blood-forming organs (D50-D89)	63	2.3 (1.8-2.9)	47	1.6 (1.2-2.1)	0.064
Endocrine. nutritional and metabolic diseases (E00-E89)	60	2.2 (1.7 - 2.8)	87	3.0 (2.4-3.6)	0.058
Neoplasms (C00-D49)	42	1.6 (1.1-2.0)	25	0.9 (0.5-1.2)	0.020
Mental. behavioural and neurodevelopmental disorders (F01-F99)	27	1.0 (0.6-1.4)	64	2.2 (1.7-2.7)	<0.001
Diseases of the eye and adnexa (H00-H59)	24	0.9 (0.5-1.2)	43	1.5 (1.0-1.9)	0.039
Diseases of the ear and mastoid process (H60-H95)	23	0.8 (0.5-1.2)	25	0.9 (0.5-1.2)	0.796
Factors influencing health status and contact with health services (Z00-Z99)	17	0.6 (0.3-0.9)	28	1.0 (0.6-1.3)	0.147

tality in males, even after adjusting for disease severity. This increased risk is consistent across triage priorities and main presenting complaints, such as chest pain, suspected infection, and trauma, particularly in older age groups.[9]

The percentage of females attending the ED increased in relation to age groups, as did the rate of transport through the emergency medical system, hospitalization rate, and mortality.[10] This difference was also confirmed in some case series of individuals hospitalized for specific diagnoses like sepsis, where females had lower hospitalization rates and 30-day mortality compared to males, as well as a lower comorbidity profile, disease severity, and incidence of complications such as thrombocytopenia and fever, but a higher incidence of urinary tract infection.[11]

In our prognostic model, although mortality was higher in males, sex was not considered as an independent predictive variable. The lack of significance could be attributed to the sample size, as the relevant difference in comorbidities and clinical presentations in males may have influenced the results. A multidimensional approach that includes a validated frailty assessment could potentially improve the predictive accuracy of such models.[12] In a recent study of a group of elderly patients visiting the ED for suspected sepsis, women showed fewer comorbidities, particularly chronic lung disease, chronic kidney disease, coronary artery disease, and diabetes. Also in this case, despite the lower severity of the disease, sex was not among the variables selected by the logistic model for 30-day mortality.[11]

Our results confirm that elderly males presenting to the ED have more comorbidities than females; however, neither sex nor the comorbidity index was selected as an independent variable associated with mortality in the logistic model. A larger number of cases with more homogeneous disease severity could likely reveal sex differences. Polypharmacy was indicated as an indirect indicator of a severity profile associated with increased 3-month mortality.[13] Although the association observed between polytherapy and mortality is complex, due to the confounding effect of comorbidity and frailty,[13] a positive association between polytherapy and adverse events has been proven.[14,15] In our series, the association between the number of drugs taken in relation to increasing age is confirmed, but no difference between males and females was observed, and no association in the predictive model on mortality was found.

Although we did not use a clinical frailty scale, we provided an indirect measure of frailty, such as the need for home support services, the number of falls in the previous six months, and the number of daily medications. The lower availability of home support services in males could be viewed as a negative prognostic indicator.

A multidimensional evaluation performed at the initial approach in the ED, using a simplified score, could support the emergency physician in clinical decisions and in predicting a patient's outcome. In a recent study, the use of the Brief MPI[16] proved to be a useful predictor of frailty, demonstrating excellent discriminating capacity comparable to that of other scores widely validated in clinical practice, regardless of the patient's age or sex. Such a clinical approach, even in the emergency area, could improve the quality of care.[17] In this context, an expert task force of physicians has produced clinical guidelines for geriatric emergency medicine to promote their application in current clinical practice.[18]

Given that elderly patients make up a significant portion of ED visits and require substantial resources, the findings of our study could help raise awareness during the initial assessment of these patients upon ED arrival.

Limitations

Several limitations should be acknowledged.

First, our results should not be considered reliable for describing the state of European emergency departments, as the recruitment period for cases was limited to only one week. Furthermore, it should not be forgotten that the cases were recruited during the COVID-19 pandemic, representing a different case mix than today. Finally, all the cases studied came from only 9 European countries. More extensive data collection, involving a larger number of countries, may address the weaknesses of our study.

Second, variations in access to EDs and observation units across different countries, due to differences in healthcare systems and administrative practices, could have influenced the results. Moreover, not all centers had specialist geriatric units, potentially leading to differences in admission criteria.

Third, while the study provided indirect measures of frailty, it did not consider a multidimensional evaluation of patients, which could have affected hospitalization criteria, complication rates, and mortality.

Lastly, although hospitalization decisions were based on the judgment of individual physicians, varying organizational structures in different countries might have introduced inconsistencies in admission decisions.

Despite these limitations, we believe that this observational study may expand the knowledge of the epidemiology of patients accessing the EDs across Europe. The diversity in practices and patient profiles, even within the same country or city, is a key feature of this study, rather than a limitation.

Conclusions

This sub-analysis of the EGERS study describes the characteristics of elderly subjects accessing the ED highlighting gender differences. Women were the majority, particularly in the older age group, while men had a higher prevalence of severe age-associated comorbidities. In contrast, traumatic events and falls were more common in women. Hospital admissions and mortality were higher in males, particularly in older age groups.

References

1. van Oppen JD, Keillor L, Mitchell Á, et al. What older people want from emergency care: a systematic review. Emerg Med J 2019;36:754-761.
2. Magidson PD, Carpenter CR. Trends in geriatric emergency medicine. Emerg Med Clin North Am 2021;39:243-55.
3. Aminzadeh F, Dalziel WB. Older adults in the emergency department: a systematic review of patterns of use, adverse outcomes, and effectiveness of interventions. Ann Emerg Med 2002;39:238-47.
4. Gruneir A, Silver MJ, Rochon PA. Emergency department use by older adults: a literature review on trends, appropriateness, and consequences of unmet health care needs. Med Care Res Rev 2011;68:131-55.
5. Dent E, Martin FC, Bergman H, et al. Management of frailty: opportunities, challenges, and future directions. Lancet 2019;394:1376-86.
6. Karamercan MA, Dündar DZ, Slagman A, et als. Epidemiology of geriatric patients presenting to emergency departments in Europe: EGERS study. Eur J Emerg Med

2023;30:117-24. Erratum in: Eur J Emerg Med 2023;30:224.
7. Subbe CP, Kruger M, Rutherford P, Gemmel L. Validation of a modified Early Warning Score in medical admissions. QJM 2001;94:521-6.
8. Smith GB, Prytherch DR, Meredith P, et al. The ability of the National Early Warning Score (NEWS) to discriminate patients at risk of early cardiac arrest, unanticipated intensive care unit admission, and death. Resuscitation 2013;84:465-70.
9. Candel BG, Dap S, Raven W, et al. Sex differences in clinical presentation and risk stratification in the Emergency Department: An observational multicenter cohort study. Eur J Intern Med 2022;95:74-9.
10. Lee SB, Oh JH, Park JH, et al. Differences in youngest-old, middle-old, and oldest-old patients who visit the emergency department. Clin Exp Emerg Med 2018;5:249-55.
11. Wanrooij VHM, Cobussen M, Stoffers J, et al. Sex differences in clinical presentation and mortality in emergency department patients with sepsis. Ann Med 2023;55:2244873.
12. Kabell Nissen S, Rueegg M, Carpenter CR, et al. Prognosis for older people at presentation to emergency department based on frailty and aggregated vital signs. J Am Geriatr Soc 2023;71:1250-8.
13. van Dam CS, Labuschagne HA, van Keulen K, et al. Polypharmacy, comorbidity and frailty: a complex interplay in older patients at the emergency department. Eur Geriatr Med 2022;13:849-57.
14. Salvi F, Rossi L, Lattanzio F, Cherubini A. Is polypharmacy an independent risk factor for adverse outcomes after an emergency department visit? Intern Emerg Med 2017;12:213-20.
15. Banerjee A, Mbamalu D, Ebrahimi S, et al. The prevalence of polypharmacy in elderly attenders to an emergency department - a problem with a need for an effective solution. Int J Emerg Med 2011;4:22.
16. Cella A, Veronese N, Custodero C, et al. Validation of Abbreviated Form of the Multidimensional Prognostic Index (MPI): The BRIEF-MPI Project. Clin Interv Aging 2022;17:789-96.
17. Di Prazza A, Canino B, Barbagallo M, Veronese N. The importance of prognosis in geriatric patients attending the emergency department: a comparison between two common short geriatric assessment tools. Aging Clin Exp Res 2023;35:3041-6.
18. Lucke JA, Mooijaart SP, Heeren P, et al. Providing care for older adults in the Emergency Department: expert clinical recommendations from the European Task Force on Geriatric Emergency Medicine. Eur Geriatr Med 2022;13:309-17.

Online supplementary materials
EUSEM Research network study group (EUROCOV Investigators list).