Original Article

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Clinical profile and outcomes of patients without an attendant admitted to the emergency departments of selected governmental hospitals in Addis Ababa, Ethiopia

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ABSTRACT

Background: *Emergency department provides timely intervention for patients with life-threatening emergency medical and surgical conditions. This is possible through the support and involvement of families or caregivers during clinical evaluation and management. However, in some cases, patients present to the emergency department alone or with other agents, such as police or passersby, making their presence during the patient's emergency stay impractical. Understanding the clinical characteristics and outcomes of patients managed without attendants is important for optimizing emergency care delivery and informing health care planning. This study assesses the prevalence, clinical profile, and outcomes of patients without attendants in selected governmental hospitals of Addis Ababa.*

Methods: *A prospective cross-sectional study was conducted from August 1 to November 1, 2025, in selected governmental hospitals of Addis Ababa. After obtaining ethical clearance, data were collected by trained personnel from patients using a data extraction tool and a questionnaire from patient documents/EMR. Data were cleaned and exported to SPSS version 26.*

Descriptive statistics, including frequencies and percentages, were generated for the prevalence, clinical profile, and outcomes of patients without an attendant at emergency department admissions. Considering a p-value <0.05 with a 95% confidence interval, a logistic regression model was conducted to assess the strength of association between major outcomes and the clinical profile of patients without attendants.

Results: *One hundred thirty-seven (79.2%) participants were male. The median age was 35 years (IQR: 25–46). The prevalence of patients without attendants was 2.57%. The median length of stay was 11.2 days (IQR: 5.6–19.7). Thirty-four (19.6%) patients died. Male sex, high-acuity triage category (red and orange), and patients with ventilatory and vasopressor support were significantly associated with patient mortality.*

Conclusion: *Length of stay and mortality among patients without attendants are higher than standard ED benchmarks. Mortality is significantly associated with male sex, high-acuity triage category,and patients with ventilatory and vasopressor support.*

Keywords:Patient without attendant; prevalence; length of stay; mortality; Addis Ababa

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1. Introduction

The Emergency Department (ED) is where lifesaving and critical interventions are provided to critically ill patients who depend on coordinated efforts involving health care providers, family members, or attendants, along with a well-prepared emergency setup. [(1)] Emergency care can be overwhelmed if any of these components are missing. [(2)]

In most cases, patients arrive at the ED with relatives or caregivers who support care by sharing important clinical information, obtaining medications and supplies, assisting with payments, facilitating transfers, and helping during discharge processes. [(3–5)]Their involvement plays an important role in ensuring smooth patient management and workflow in the ED. [(4,5)]

Patients without attendants (PWOA), defined in this study as patients who remain alone in the ED without support from family members or caregivers until their outcome is determined, represent an increasingly recognized public health concern in many countries. [(6,7)] Globally, although no comprehensive data exist on the prevalence of adults without caregivers or family who are admitted and treated in the ED alone, estimates vary widely by region, health care system, and demographics; most studies have focused on pediatric and elderly cohorts, where unaccompanied rates may reach as high as 68% (8–10). In contrast, some single-center studies have shown much lower prevalence of 0.0007% in Turkey and 0.4% in Nepal and the USA. [(5,11,12)]

Studies have shown that such patients experience impacts on patient flow and morbidity, including prolonged length of stay (LOS) and death, in both busy emergency and non-emergency settings. [(1,7,13)] Vulnerable groups including the elderly, individuals with disabilities, and those from distant or marginalized communities are disproportionately affected. [(14,15)] This burden is greater in countries lacking strong social security services. [(16)]

In our setting, little is known about the burden, clinical profile, and outcomes of PWOA. Therefore, this study aims to determine the prevalence, clinical characteristics, outcomes, and predictors of adverse outcomes among these patients. The findings would provide local estimates of the problem and help identify high-risk groups that may benefit from targeted interventions and improved support systems.

The primary beneficiaries of this study are PWOA themselves, who will receive faster, safer, and more organized care as a result of the evidence generated. This study also helps health care providers by identifying gaps in assessment, decision-making, and patient flow, allowing ED teams to design clearer protocols for managing unaccompanied patients. Hospital administrators may use these findings to improve resource planning, including the need for stronger social work support, patient navigation services, or a dedicated support system. In addition, the results can inform regional and national policies aimed at improving the safety, equity, and quality of care for this vulnerable patient group.

2. Materials and methods

Study setting and period

This study was conducted at Tikur Anbesa Specialized Hospital (TASH) and Zewditu Memorial Hospital (ZMH) from August 1 to November 1, 2025. Both hospitals are located in Addis Ababa, the capital city of Ethiopia, in the central part of the country (17).

Study design

A prospective cross-sectional study was conducted within the specified data collection period.

Population

Source population: All patients who visited the ED of governmental hospitals in Addis Ababa during the study period.

Study population: All patients who presented to the TASH and ZMH ED without an attendant during the data collection period and who fulfilled the inclusion criteria.

Sampling/study unit: Individuals who presented at the TASH and ZMH ED during the data collection period, fulfilled the inclusion criteria, and volunteered to participate in the study.

Eligibility criteria

Inclusion criteria: All patients aged ≥13 years who visited the ED without an attendant, or who came with an attendant but left unattended before the patient outcome, were included.

Exclusion criteria:

Patients who acquired a family member or caregiver after ED admission or during ED stay

Repeated visits by the same patient during the study period

Sample size determination and sampling technique

A consecutive sampling method was used; patients were enrolled based on arrival within the study period until the calculated sample size was reached.

The sample size was calculated using the single population proportion formula, based on a mortality rate of 10.9% among PWOA reported in a Nepali hospital-based study (5), estimating an initial sample size of 150. After adjusting for a 10% non-response rate, the final sample size was 167.

The sample size was also designed to ensure sufficient statistical power for multivariate logistic regression analysis of predictors of mortality among PWOA in the ED. Using an expected mortality of 47% among unattended patients reported in a previous study (18) and the events-per-variable (EPV) rule, the required sample size was calculated as 213. During the study period, 205 PWOA visited the two EDs, of whom 32 were excluded, leaving 173 eligible patients enrolled in the study. Full details are provided in the supplementary information.

Study variables

Independent variables: Socio-demographic characteristics, baseline characteristics, and initial clinical characteristics.

Dependent variables: Length of stay (LOS) and mortality.

Operational definitions

PWOA: any patient visiting the ED by self, referred from a nearby health institution without a significant other, or brought by non-attendants such as police or passersby, who has no caretaker until a final clinical outcome is reached; or any patient brought by family or friends but left unattended until the outcome is determined.

Adult population: any patient aged ≥13 years, as our setting accepts and treats patients aged 13 years and above.

LOS: total time a patient stayed in the ED and/or, if admitted to wards or the ICU, the total time the patient stayed in the hospital.

High-acuity patients: patients triaged as red or orange under the ED triage system.

Low-acuity patients: patients triaged as yellow or green under the ED triage system.

Conscious patients: those with a Glasgow Coma Scale (GCS) of 15 at initial clinical assessment.

Impaired level of consciousness (LOC): patients with a GCS ≤14 at initial clinical assessment.

Data collection tools and procedures

A data collection tool (questionnaire and checklist) was developed after reviewing multiple studies and a standardized emergency care assessment tool (19–21). Key variables, definitions, and measurement items were adapted from previously published literature and modified to fit the study context (see supplementary Annex 2: Data collection tool).

Data quality management

Data were collected by trained nurses, and the investigator closely supervised the data collection process. Collected data were checked for completeness before entry. Records were excluded if the primary outcome or a key predictor variable was missing; records with more than 20% missing data for other variables were discarded.

Data processing and analysis

Data were collected using Google Forms and exported to SPSS version 26 for analysis. Descriptive statistics were used to determine the prevalence, clinical characteristics, and outcomes of PWOA. Death and LOS were also compared with the general ED population during the same period.

Regression analyses were performed for key outcomes. Variables with a univariate $p<0.2$, based on clinical relevance, were entered into the multivariable model. Collinearity was assessed using tolerance and variance inflation factor (VIF) values. Model fit was assessed using the Hosmer–Lemeshow goodness-of-fit test ($p>0.05$ considered a good fit). Associations are expressed as odds ratios (OR). Some independent variables were regrouped, recoded, and dichotomized for sample adequacy and ease of analysis, with cutoff points selected based on clinical relevance, prior literature, or data distribution (11,12,22). Hospital-level effects were assessed separately for TASH and ZMH using sensitivity analysis. Variables with more than 10% missing or unknown values were excluded. Results are presented in tables, charts, and graphs.

Ethical statement

Data collection commenced after obtaining approval from the Department of Emergency and Critical Care Medicine (Ref. No. 487/17) and the Addis Ababa Health Bureau Research Institutional Review Board (IRB) (Ref. No. A.A/Gov/21959). An official letter was submitted to each participating institution prior to data collection. Given the emergency nature of the presentation, informed consent procedures followed the approved IRB protocol; full ethical declarations are available in the supplementary information.

3. Results

Socio-demographic characteristics of participants

A total of 173 eligible patients participated in the study, with an 86% response rate. Of these, 137 (79.2%) were male. The median age was 35 years (IQR: 14–56). Forty-seven (27.2%) participants were unemployed, and 102 (59%) were single. A total of 97 (56%) participants had a monthly income below 1,500 birr or an unknown income (Table 1).

Table 1. Sociodemographic characteristics of patients without an attendant (PWOA) in the selected health institutions of Addis Ababa, Ethiopia (N=173)

Variable	Category	Frequency (N=173)	Percentage
Hospital	TASH	90	52.0%
	ZMH	83	48.0%
Gender	Female	36	20.8%
	Male	137	79.2%
Age (years)	13–17	13	7.5%
	18–39	90	52.0%
	40–59	51	29.5%
	60–79	19	11.0%
Place of living	Addis Ababa	152	87.9%
	Out of Addis Ababa	19	11.0%
	Unknown	2	1.2%
Marital status	Married	43	24.9%
	Divorced	3	1.7%
	Single	102	59.0%
	Unknown	17	9.8%
	Widowed	8	4.6%
Educational status	Basic literacy (read/write)	29	16.8%
	Illiterate	38	17.9%
	Primary education	66	38.1%
	Secondary education	16	26.6%
	Higher education	1	0.57%
	Unknown	23	13.3%
Monthly earnings (birr)	≤1500	30	17.3%
	1501–3000	41	23.7%
	3001–9000	35	20.2%
	Unknown	67	38.7%

Baseline clinical characteristics of patients

A total of 146 (84.3%) patients were referred from a nearby health center, and 147 (84.9%) arrived by ambulance. Treatment had been given at the referring institution for 144 (83.2%) patients. On arrival, 63 (36.4%) patients were triaged as red and 52 (30.1%) as orange (Table 2).

Table 2. Distribution of PWOA by baseline clinical information, Addis Ababa, Ethiopia, 2025 (N=173)

Variable	Category	Frequency (N=173)	Percentage
Chief complaint	CNS	35	20.8%
	Fever and headache	68	38.8%
	GI	17	9.8%
	Skin/MSS	6	3.5%
	Non-specific	7	4.1%
	Respiratory	24	13.9%
	Sexual assault	2	1.2%
	Trauma	12	6.9%
Mode of arrival	Ambulance	147	84.9%
	On foot/people's shoulder	21	12.1%
	Private car/taxi	3	1.76%
	Unknown	2	1.2%
Source of referral	Public health center	146	84.3%
	Other public hospitals	7	7.14%

	Private health facility	1	0.6%
	Self/other	19	10.98%
Patient brought by	**Family member**	19	11%
	Friends/neighbor	25	14.5%
	Health professional	72	41.6%
	Passerby	6	3.5%
	Police	26	15.0%
	Self	25	14.5%

Prevalence and nature of Emergency Department admissions

During the 3-month data collection period, 6,715 patients visited the ED of both institutions; 173 PWOA were identified and included in the study, giving a prevalence of 2.57%. Seventy-two (41.6%) patients were transported to the hospital by health professionals alone, while 26 (15%) were brought by police. The top three causes of ED admission were febrile illness (relapsing fever) and related complications, 99 (54.3%); trauma and related conditions, 33 (19%); and respiratory tract infection and related conditions, 10 (5.8%) (Figure 1).

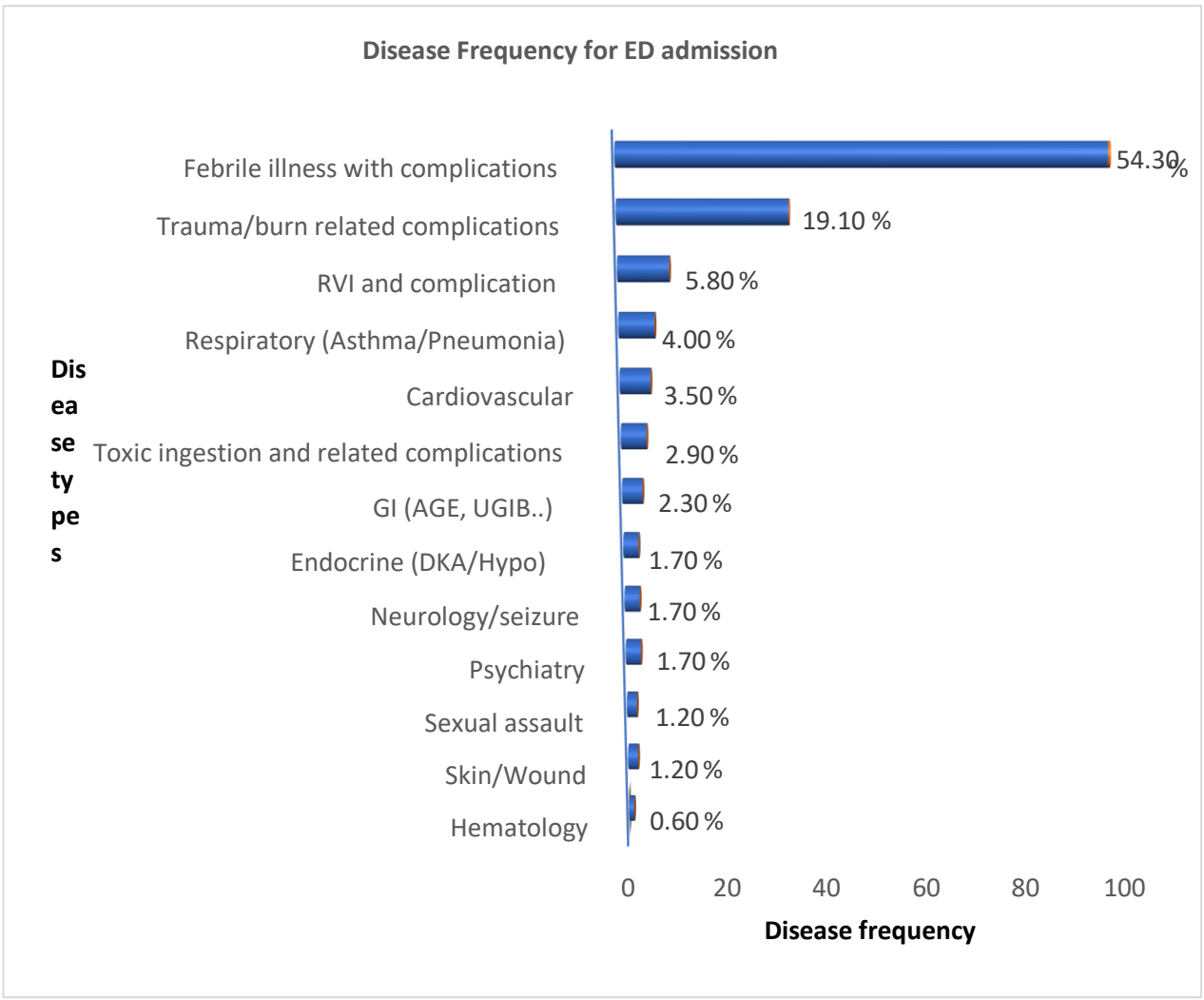

Figure 1. Disease frequency of PWOA admitted in the selected health institution of Addis Ababa, Ethiopia

Table 3. Patient disease characteristics, emergency care, and outcomes for PWOA after admission, Addis Ababa, Ethiopia

Variable	Category	Frequency	Percentage
Treatment at referring hospital	**Yes**	130	75.14%
	No	43	24.86%
Intervention post-referral	**Medical**	132	76.3%
	Surgical	7	4.0%
	Both	34	19.7%
Needs ventilatory support	**Yes**	33	19%
	No	136	81%
Needs vasopressor support	**Yes**	56	32.36%
	No	117	67.64%
Patient outcome	**Discharged from ED**	71	41.0%
	Died at ED/ICU	34	19.6%
	Remained in ED	9	5.2%
	Admitted and discharged (ward/ICU)	40	23.1%
	Transferred elsewhere	12	6.9%
	Discharged AMA	7	4.0%
Length of stay	**<24 hours**	10	5.8%
	≥24 hours	163	94.2%

Patient outcome

Among all PWOA seen over the 3 months, 34 (19.6%) died, including 26 (15%) who died in the ED. Seventy-one (41%) were discharged from the ED; 32 (18.5%) and 18 (9.2%) were admitted to the ward and ICU, respectively, and 8 (4.6%) were admitted to and died in the ICU (Table 3). Regarding LOS, only 10 (5.8%) patients stayed less than 24 hours, while 23 (13.3%) stayed longer than one month. LOS was right-skewed and is presented as median (IQR): 11.2 days (IQR: 5.6–19.7) (Figure 2).

Figure 2: Showing LOS of PWOA in the selected health institution of Addis Ababa Addis Ababa, Ethiopia.

Factors affecting outcomes of patients without attendants

Table 4 shows the association between predictor variables and mortality. All predictors had ac-

ceptable tolerance (0.4–0.9) and VIF (1.2–2.5) values, indicating no multicollinearity. The logistic regression model showed good fit (Hosmer–Lemeshow $\chi 2 = 5.8$, df = 8, p = 0.66) and explained 54.4% of the outcome variance. Variables with $p<0.2$ in binary regression were entered into the multivariate model.

Table 4. Association of socio-demographic and clinical characteristics with patient outcome (death) among PWOA, Addis Ababa, Ethiopia

Variable	Category	Alive n(%)	Death n(%)	COR (95% CI)	AOR (95% CI)
Age	**<35**	76 (54.7%)	10 (29.4%)	1	1
	≥35	63 (45.3%)	24 (70.6%)	2.90 (1.29–6.50)	1.44 (0.54–3.85)
Gender	**Female**	34 (24.5%)	1 (2.9%)	1	1
	Male	105 (75.5%)	33 (97.1%)	10.69 (1.4–81.09)	10.2 (1.1–100)
Living condition	**With someone else**	113 (81.3%)	25 (73.5%)	1	1
	Alone	26 (18.7%)	9 (26.5%)	0.86 (0.75–0.99)	3.28 (0.96–11.9)
Triage category	**Low acuity**	57 (41%)	1 (2.9%)	1	1
	High acuity	82 (59%)	33 (97.1%)	25.0 (3.0–167)	6.25 (1.7–14.3)
Chronic medical illness	**Yes**	41 (29.5%)	14 (41.2%)	1	1
	No	73 (70.5%)	20 (58.5%)	1.52 (1.02–2.26)	1.74 (0.99–3.04)
Level of consciousness on arrival	**Conscious**	42 (30.2%)	17 (50%)	1	1
	Impaired LOC	97 (69.8%)	17 (50%)	0.43 (0.20–0.93)	0.94 (0.36–2.50)
Time to start of treatment	**Immediate (<10 min)**	27 (19.4%)	15 (44.1%)	1	1
	Late (≥10 min)	112 (80.6%)	19 (55.9%)	0.305 (0.14–0.68)	0.56 (0.18–1.70)
Ventilator support given	**Yes**	9(6.5%)	24(70.6%)	0.001	34.67(12.75-94.26)
	No	130(93.5%)	10(29.4%)	1	1
Vasopressor support given	**Yes**	27(19.4%)	29(85.3%)	0.001	24.06(8.52-67.93)
	No	112(80.6%)	5(14.7%)	1	1

Of the total deaths, 33 (97.1%) were male, and 1 (2.9%) was female; males had 10.2 times higher odds of death compared with females (AOR: 10.2, 95% CI: 1.1–100, p<0.02). Similarly, 33 (97.1%) deaths occurred in the high-acuity group, who were 6.25 times more likely to die than the low-acuity group (AOR: 6.25, 95% CI: 1.7–14.3, p<0.014).

Even though they are mediator variables, the two variables; patients who were given invasive ventilatory support (AOR: 0.036, 95% CI: 0.006- 0.219, P<0.001) and vasopressor support (AOR: 0.05, 95% CI: 0.10- 0.266, P<0.001), were significantly associated with patient outcomes.

Patients without chronic illness had higher odds of death (AOR: 1.74, 95% CI: 0.99–3.04, p<0.053), approaching statistical significance. Living alone was similarly associated with an increased likelihood of death (AOR: 3.28, 95% CI: 0.96–11.9, p<0.057), also approaching significance.

Sensitivity analysis

Site-specific sensitivity analysis did not reveal major hospital-level variation overall. In TASH, high acuity triage category, not significant in the pooled model, became near significant predictor of mortality (AOR: 1.32, 95% CI: 0.02–01.02, p<0.054). No significant associations were observed at ZMH. Other pooled predictors were not significant in the separate hospital-level analyses (see supplementary material) Table 5).

Table 5. Sensitivity analysis of socio-demographic and clinical predictors of mortality among PWOA patients, Addis Ababa, Ethiopia

Sensitivity Analysis	variables	Category	Out come		Crude Odds Ratio		Adjusted Odds Ratio	
			Alive	Death	Sig.	COR (95% CI)	Sig.	AOR (95% CI)
TASH Patients	Patient triage	Low acuity	32(45.1%)	1(5.3%)	1	1	1	1
		High acuity	39(54.9%)	18(94.7%)	0.01	0.07(0.09-0.54)	0.054	1.32(0.02-
	Chronic medical illness	Yes	30(42.3%)	10(52.6%)	1	1	1	1
		No	41(57.7%)	9(47.4%)	0.07	1.69(0.96-2.97)	0.45	1.36(0.60-3.07)
	Intervention patient received	Medical	51(71.8%)	17(89.5%)	1	1		1
		Medical and surgical	15(21,1%)	2(10.5%)	0.20	2.5(0.52-12.06)	0.23	3.16(0.49-20.38)
	LOC on arrival	Conscious	20(28.2%)	11(57.9%)	1	1	1	1
		Impaired LOC	51(71.8%)	8(42.1%)	0.01	0.29(0.1-0.83)	0.07	0.13(0.02-1.20)
	Time between arrival and start of treatment	Late (>=10 minutes)	60(84.5%)	11(57.9%)	1	1	1	1
		Immediate (<10 minutes)	11(15.5%)	8(42.1%)	0.01	0.25(0.08-0.77)	0.34	0.44(0.08-2.38)
ZMH Patients	Gender	Female	15(22.1%)	1(6.7%)	1	1	1	1
		Male	53(77.9%)	14(93.3%)	0.20	3.96(0.48-32.62)	0.22	3.88(0.45-33.54)
	Chronic medical condition	Yes	11(16.2%)	4(26.7%)	1	1	1	1
		No	57(83.8%)	11(73,3%)	0.02	0.12(0.03-0.46)	0.23	1.53(0.77-3.02)
	Patient Arrival to treatment initiation	Immediate (<10 minutes)	16(23.5%)	7(46.7%)	1	1	1	1
		Late (>=10 minutes)	52(76.5%)	8(53.3%)	0.08	0.35(0.11-1.12)	0.18	0.38(0.09-1.55)

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Discussion

Over the 3-month study period, we identified 173 PWOA cases, accounting for 2.57% of 6,715 ED visits. This figure is similar to rates reported in pediatric and youth populations (2–3%) [10], but higher than findings from Nepal, Turkey, and the USA. [5,18,23] This variation likely reflects differences in population characteristics, socioeconomic conditions, disease burden, and access to social support systems. It may also highlight how local health system structure, institutional policies, and emergency response systems can influence who is classified as PWOA. [24] In addition, comparisons across studies are challenging because the definition of PWOA is not uniform and may encompass different groups, including unidentified and unconscious patients, unrepresented adults, socially isolated individuals, patients isolated from family during the COVID-19 era, and similar terms. [5,6,11,16]

Most PWOA in our study presented with febrile illness, mainly relapsing fever (54.3%), followed by trauma-related conditions (19.1%). This pattern differs from reports in India, Brazil, Japan, and Canada, where trauma, substance use, psychiatric conditions, and chronic disease complications are more common. [4,13,18] This difference may reflect local epidemiology and the seasonal, recurrent nature of relapsing fever in our setting compared with other regions.

Regarding outcomes, the main measures assessed were mortality and LOS. Overall mortality among PWOA was 19.6%, accounting for 11.7% of all ED deaths during the study period. This rate is higher than reported in some studies, [18,23,25] but similar to others. [4,5] The variation may relate to differences in social vulnerability, prehospital care, disease severity at presentation, and study design.

Compared with unpublished monthly audit data, the overall ED mortality rate within 24 hours at the respective institutions was approximately 0.6%, while the overall ED mortality rate during the data collection period was 3.85%. This unpublished finding is comparable to some studies; [23,26] however, our study found significantly higher mortality among PWOA, consistent with other reports. [27,28]

As shown in the results, death was significantly associated with male gender, high-acuity triage category, patients with ventilatory and vasopressor support which is consistent with several other studies. [27,29–31] In contrast, our findings differ from studies where older age, rural residence, non-communicable disease status, and language barriers among foreign patients were strongly associated with mortality. [32,33]

Although living alone was not statistically significant, the effect size was large, suggesting a clinically meaningful increase in risk. Similarly, chronic

medical illness showed a borderline association with outcome, with the result falling slightly above the conventional significance threshold (p=0.053). The direction and magnitude of this effect are consistent with existing literature showing worse outcomes among patients with chronic illness. [6,28, 34–36]

Although the pooled model identified four significant predictors of mortality, hospital-level sensitivity analysis revealed heterogeneity across sites; neither hospital individually reproduced a significant association with the outcome variable, though TASH patients showed a near-significant association with LOC. This variation may reflect smaller hospital-level sample sizes reducing statistical power, differences in patient case mix, severity, and referral patterns, variability in clinical practice, and differences in resource availability.

The other key outcome examined was LOS, defined as total ED boarding and inpatient stay, which was markedly prolonged among PWOA

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relative to ED standards. Nearly 94.2% of patients stayed longer than 24 hours, and 28.5% remained hospitalized for more than two weeks. The median LOS was 11.2 days (IQR: 5.6–19.7), substantially higher than standard ED expectations. While this contrasts with some studies, [25,37] it is consistent with reports from Ethiopia and South Africa. [38,39] Prolonged stays in our setting may relate to bed shortages, limited isolation capacity, severe illness requiring ICU care, and social challenges that delay discharge or transfer to supportive facilities.

Strengths and limitations

This study may be one of the few in our setting to evaluate the prevalence, clinical profile, and outcomes of this patient group and provides a baseline for future research. The participating institutions are major referral centers for this population, so the findings may reflect one estimate of burden, although broader multicenter studies are still needed.

This study has several limitations, including a relatively small sample size and lower-than-expected mortality, which reduced statistical power and precision and widened confidence intervals. Data collection was constrained by time and resources, limiting the number of sites included. The absence of a matched comparison group may introduce confounding from unmeasured factors, such as staff workload and institutional care processes, which may have influenced patient outcomes.

4. Conclusion and recommendations

This study reported the prevalence of patients without attendants in emergency departments at major specialized hospitals in Addis Ababa. Mortality in this group is significant compared with the overall ED population, and length of stay is markedly prolonged. Mortality was significantly associated with male sex and high-acuity triage category, in patients with ventilatory support and patients with vasopressor support. These findings support targeted protocols, stronger social work and patient identification support, and improved resource planning for unaccompanied patients in emergency care settings.

Abbreviations

AAU: Addis Ababa University
ED: Emergency Department
EMR: Electronic Medical Record
IRB: Institutional Review Board
LOC: Level of consciousness
LOS: Length of stay
OR: Odds ratio
AOR: Adjusted odds ratio
PWOA: Patients without an attendant
TASH: Tikur Anbesa Specialized Hospital
ZMH: Zewditu Memorial Hospital

Author Contributions

STM**:** Selected the title, drafted the proposal (conceptualized and designed the study), analyzed and interpreted the data, and drafted the manuscript.

GTM**:** Revised and finalized the study protocol, provided constructive comments on overall preparation, and commented on and finalized the manuscript.

MKM**:** Approved the title and proposal with revisions, finalized the study protocol, revised the manuscript, and provided constructive comments to finalize the manuscript.

FDY: Approved the title and proposal with revisions, finalized the study protocol, revised the manuscript, and provided constructive comments to finalize the manuscript.

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Competing interests

The authors declare no competing interests.

Data Availability

The data are available with the PI upon formal request.

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References

1) Correia TSP, Martins MMFPS, Barroso FF, Pinho LG, Fonseca C, Valentim O, et al. The Implications of Family Members' Absence from Hospital Visits during the COVID-19 Pandemic: Nurses' Perceptions. IJERPH. 2022 Jul 24;19(15):8991. doi:10.3390/ijerph19158991
2) Vardanjani AE, Golitaleb M, Abdi K, Kia MK, Moayedi S, Torres M, et al. The Effect of Family Presence During Resuscitation and Invasive Procedures on Patients and Families: An Umbrella Review. J Emerg Nurs. 2021 Sep;47(5):752–60. doi:10.1016/j.jen.2021.04.007
3) McCabe M. Impact of Family Presence in the Healthcare Setting [senior thesis]. Liberty University Honors Program; 2020. Available from: https://digitalcommons.liberty.edu/honors/459
4) Sateesh VL, Janardhana N. Study of Medico-Social Aspects of Patients without Attendants Treated in a Tertiary Care Hospital at Bangalore. Indian J Psychol Med. 2002 Jan;25(1):25–7. doi:10.1177/0975156420020106
5) Singh DP, Acharya RP, Singh S. Profile of unaccompanied, unconscious patients in the emergency department. J Inst Med. 2010;32:2.
6) Barrenetxea J, Tan KB, Tong R, Chua K, Feng Q, Koh WP, et al. Emergency hospital admissions among older adults living alone in the community. BMC Health Serv Res. 2021 Nov 3;21(1):1192. doi:10.1186/s12913-021-07216-3
7) Barreto MS, Garcia-Vivar C, Dupas G, Misue Matsuda L, Silva Marcon S. The absence of the family in emergency care contributes to suffering in patients and family members. Enferm. Intensiva. 2020 Apr;31(2):71–81. doi:10.1016/j.enfie.2019.03.003
8) Singh DP, Acharya RP, Singh S. Profile of unaccompanied, unconscious patients in the emergency department. J Inst Med. 2010;32:2.
9) Zaalberg T, Barten DG, Van Heugten CM, Klijnsma P, Knarren L, Hiemstra Y, et al. Prevalence and risk factors of burden among caregivers of older emergency department patients. Sci Rep. 2023 May 4;13(1):7250. doi:10.1038/s41598-023-31750-1
10) Treloar DJ, Peterson E, Randall J, Lucid W. Use of emergency services by unaccompanied minors. Ann Emerg Med. 1991 Mar;20(3):297–301. doi:10.1016/S0196-0644(05)80944-8
11) Elkum NB, Barrett C, Al-Omran H. Canadian Emergency Department Triage and Acuity Scale: implementation in a tertiary care center in Saudi Arabia. BMC Emerg Med. 2011 Dec;11(1):3. doi:10.1186/1471-227X-11-3
12) Mahmoodian F, Eqtesadi R, Ghareghani A. Waiting Times in Emergency Department after Using the Emergency Severity Index Triage Tool. Arch Trauma Res. 2014 Dec 7;3(4). doi:10.5812/atr.19507
13) Pope TM. Unbefriended And Unrepresented: Better Medical Decision Making For Incapacitated Patients Without Healthcare Surrogates. Ga State Univ Law Rev. 2017;33. Available from: https://readingroom.law.gsu.edu/gsulr/vol33/iss4/3
14) Pope TM. Legal Briefing: Adult Orphans and the Unbefriended: Making Medical Decisions for Unrepresented Patients without Surrogates. J Clin Ethics. 2015 Summer;26(2):180–8. PMID: 26132070
15) Karp N, Wood E. Incapacitated and Alone: Health Care Decision-Making for the Unbefriended Elderly. Washington (DC): American Bar Association Commission on Law and Aging; 2003.
16) International Social Security Association. Excellence in Social Security: Improving Health Insurance Systems, Coverage and Service Quality. Geneva: ISSA; 2021.

17) World Population Review. Addis Ababa Population 2025 [Internet]. 2025 [cited 2025 Jun 24]. Available from: https://worldpopulationreview.com/cities/ethiopia/addis-ababa
18) Claps PJ, Berk WA. The John Doe syndrome: Diagnosis and outcome of patients unidentified at the time of emergency department admission. Am J Emerg Med. 1992 May;10(3):217–8. doi:10.1016/0735-6757(92)90212-G
19) Woyessa AH, Dibaba BY, Hirko GF, Palanichamy T. Spectrum, Pattern, and Clinical Outcomes of Adult Emergency Department Admissions in Selected Hospitals of Western Ethiopia: A Hospital-Based Prospective Study. Emerg Med Int. 2019 Aug 6;2019:1–10. doi:10.1155/2019/8374017
20) Chaudhary R, Bhandari R, Giri S, Shrivastav V, Bhandari R. Abandonment of Patients in Emergency Department of Tertiary Care Hospital of Eastern Nepal — an Observational Study [Internet]. 2021 [cited 2025 Nov 28]. Available from: https://www.researchsquare.com/article/rs-1031308/v1 doi:10.21203/rs.3.rs-1031308/v1
21) Asinakew T, Habte T. The Outcomes of Emergency Admissions and Associated Factors Among Children Admitted to the Pediatric Emergency Unit at Selected Public Hospitals in Addis Ababa, Ethiopia — A Retrospective Cross-Sectional Study. Qeios. 2024 Mar 11. doi:10.32388/W9LXXC
22) Liu T, Gu Y, Chen H, Zhang Y, Zheng L, Huang X, et al. A foundational triage system for improving accuracy in moderate acuity level emergency classifications. Commun Med. 2025 Jul 31;5(1):322. doi:10.1038/s43856-025-01052-w
23) Acar D, Tekin FC. The problem of unconscious and unidentified patients in emergency department admissions: a 3-year retrospective study. PLoS One. 2024 Jul 24;19(7):e0307540. doi:10.1371/journal.pone.0307540
24) NIHR Dissemination Center. Non-urgent attendances to emergency departments are more common among younger adults [Internet]. 2018 Oct [cited 2025 Nov 28]. Available from: https://evidence.nihr.ac.uk/alert/non-urgent-attendances-to-emergency-departments-are-more-common-among-younger-adults doi:10.3310/signal-000657
25) Chaudhary R, Bhandari R, Giri S, Shrivastav V, Bhandari R. Abandonment of Patients in Emergency Department of Tertiary Care Hospital of Eastern Nepal — an Observational Study [Internet]. Research Square Platform LLC; 2021 [cited 2025 May 1]. Available from: https://www.researchsquare.com/article/rs-1031308/v1 doi:10.21203/rs.3.rs-1031308/v1
26) Jacobson N, Miller A, Mackman SA, et al. Mortality in the Emergency Department and the Effectiveness of Conventional Safety Event Reporting. Cureus. 2023 Sep 18;15(9):e45472. doi:10.7759/cureus.45472
27) Abebe F, Habtamu A, Workina A. Risks of Early Mortality and Associated Factors at Adult Emergency Department of Jimma University Medical Center. Open Access Emerg Med. 2023 Sep;15:293–302. doi:10.2147/OAEM.S420660
28) Messelu MA, Amlak BT, Mekonnen GB, Belayneh AG, Tamre S, Adal O, et al. Mortality and its determinants among patients attending emergency departments. BMC Emerg Med. 2024 Jul 19;24(1):125. doi:10.1186/s12873-024-01050-6
29) Serra M, Yuguero O. Clinical factors of patients who die in an emergency department: the significance of early clinical data, especially for the elderly. Signa Vitae. 2024;20(7):53–59. doi:10.22514/sv.2024.083
30) Hunchak C, Teklu S, Meshkat N, Meaney C, Puchalski Ritchie L. Patterns and predictors of early mortality among emergency department patients in Addis Ababa, Ethiopia. BMC Res Notes. 2015 Dec;8(1):605. doi:10.1186/s13104-015-1592-z
31) Chen KC, Hsu JZ, Wen SH. Sex differences in clinical characteristics, timeliness of care, and in-hospital outcomes of adult non-trauma patients in the emergency department. PLoS One. 2025 Sep 17;20(9):e0332468. doi:10.1371/journal.pone.0332468
32) Alimohammadi H, Bidarizerehpoosh F, Mirmohammadi F, Shahrami A, Heidari K, Sabzghabaie A, et al. Cause of Emergency Department Mortality; a Case-control Study. Emerg (Tehran). 2014 Winter;2(1):30–5. PMID: 26495339

33) Abebe F, Habtamu A, Workina A. Risks of Early Mortality and Associated Factors at Adult Emergency Department of Jimma University Medical Center. Open Access Emerg Med. 2023 Sep;15:293–302. doi:10.2147/OAEM.S420660
34) Murray SB, Bates DW, Ngo L, Ufberg JW, Shapiro NI. Charlson Index Is Associated with One-year Mortality in Emergency Department Patients with Suspected Infection. Acad Emerg Med. 2006 May;13(5):530–6. doi:10.1197/j.aem.2005.11.084
35) Gobena GG, Tadesse F, Beyene B, Yeheyis T, Jemebere W, Chekol AT, et al. Determinants of Early Mortality Among Deaths at Adult Emergency Departments in Southern Ethiopia. J Emerg Med. 2024 Nov;67(5):464–74. doi:10.1016/j.jemermed.2024.07.018
36) Bose KS, Sarma RH. Multimorbidity and adverse outcomes following emergency department attendance: population based cohort study. 1975 Oct 27;66(4):1173–9. doi:10.1016/0006-291x(75)90482-9
37) Jones S, Moulton C, Swift S, Molyneux P, Black S, Mason N, et al. Association between delays to patient admission from the emergency department and all-cause 30-day mortality. Emerg Med J. 2022 Mar;39(3):168–73. doi:10.1136/emermed-2021-211572
38) Motimele L, Lalloo V, Sefala T, Engelbrecht A, Majake-Mogoba L, Basu D. Factors contributing to extended length of stay in the emergency department and potential strategies for improving patient flow in a central hospital in the Gauteng Province, South Africa. Afr J Emerg Med. 2025 Dec;15(4):100896. doi:10.1016/j.afjem.2025.100896
39) Mulugeta H, Zewdie A, Getachew T, Deressa W. Injury epidemiology and emergency department length of stay in trauma hospital in Addis Ababa, Ethiopia. PLoS One. 2024 Nov 11;19(11):e0309962. doi:10.1371/journal.pone.0309962